

# Greater Keene Intermodal Transportation Center Feasibility Study

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## Summary of Phase I Data Collection Activities

Compiled by Southwest Region Planning Commission

April, 2019



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# 1 INTRODUCTION

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How might a new or improved intermodal transportation center (ITC) support existing transportation services in the Greater Keene area? How might such a center support the expansion of transportation options in Greater Keene and Southwest New Hampshire? What facility functions should be prioritized when considering the development of an ITC? What types of criteria should be considered when evaluating different locations for ITC development?

These are some of the questions that will be examined over the course of the Greater Keene Intermodal Transportation Center Feasibility Study, a project undertaken by Southwest Region Planning Commission (SWRPC) aimed at better understanding how an intermodal transportation center (ITC) might help improve and expand transportation options in the Greater Keene area.

This document summarizes data collection activities conducted by SWRPC staff over the course of the Study's first phase. Data collection focused on compiling information about existing transportation conditions in the Greater Keene area, acknowledging that studying the feasibility of future transportation infrastructure should begin with a baseline understanding of existing transportation resources and activity. Data collection and analysis also considered demographic and socioeconomic factors closely related to the strategic development of intermodal transportation infrastructure. Summarized information is intended to serve as a technical resource during the Study's upcoming phases.

This document is broken into seven major sections. First, notable findings are summarized. Second, the study's geographic scope is described. The following five sections, which constitute the bulk of the summary, are informed by the data collection activities specified in SWRPC's original proposal to the New Hampshire Department of Transportation. Those activities include:

1. Identifying existing transportation resources and assets and their functional and locational relationships. [Examples of transportation resources and assets include public and private transportation services, ticketing, transportation service parking/loading areas, long-term parking, bicycle and pedestrian infrastructure, etc.]
2. Identifying any plans for changes to existing transportation resources and assets such as the expansion of services or infrastructure or intermodal improvements.
3. Gathering existing data on local public transit ridership information, requesting data from private transportation operators and collecting additional data as needed (i.e. recording boardings/alightings at strategic stops).
4. Collecting data or information associated with existing transportation activity in the vicinity of identified ITC focus areas including a characterization of parking, walking and bicycling activity near each location.
5. Collecting socioeconomic information and data (e.g. housing, retail and employment density) as it relates to identified ITC focus areas.

## 2 KEY FINDINGS

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1. Greater Keene is poorly connected with intercity transit, particularly with destinations in New Hampshire. For example, there is no intercity bus service between Greater Keene and Concord, NH, the most prominent hub in New Hampshire's intercity bus system. Intercity bus service to Nashua is available only on Fridays and Sundays.
2. Intercity bus ridership out of Keene, NH has remained flat over the last couple years, hovering around 2,000 boardings and 1,600 alightings in both FY17 and FY18.
3. Use of local bus service has been declining, likely attributable to lower enrollment at Keene State College.
4. According to past planning documents, there is ample parking both in downtown Keene and at Dillant-Hopkins Airport. In fact, parking may be oversupplied in both locations, giving rise to the potential of accommodating ITC parking needs offsite, through shared parking arrangements with either public or private lots. Official, long-term parking currently does not exist in Greater Keene.
5. The core of Greater Keene—downtown Keene itself—possesses many attributes that lend itself to improved walkability and bikeability. Relatively flat topography, a well-connected street grid, and close proximity of residential and commercial land uses create the potential for increased levels of walking and cycling, which could work hand-in-hand with services provided at an ITC.
6. Although the core of Greater Keene possesses an underlying structure suitable for walking and cycling, it has been only partially activated by investment in bicycle and pedestrian infrastructure. Sidewalk facilities, multi-use rail trails, and bicycle/pedestrian bridges spanning state highways could form the basis of a comprehensive pedestrian/bicycle network. On-street bicycle facilities, however, are lacking, and many existing pedestrian facilities are not universally accessible, posing challenges to individuals with mobility issues.
7. Different age groups, which may need different types of transportation services, are not distributed uniformly across Greater Keene. Seniors, for example, tend to cluster in areas with senior housing facilities and/or low to mid-cost apartments. Children are situated most densely in residential neighborhoods north and east of Central Square as well as in public housing complexes (e.g. Brookbend East and West off of Winchester St. and Pearl St. in Keene). Keene State College, unsurprisingly, contains the densest, most substantial population cluster of working age individuals (18-64 years old).
8. Ridehailing apps like Uber and Lyft are being used in Greater Keene, but seemingly at low levels (by both drivers and riders). Similarly, ridesharing platforms like Waze Carpool, while available, appear to suffer from low adoption rates.

### 3 ITC FOCUS AREAS

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Recognizing that the urban cluster within and surrounding the City of Keene functions as a regional hub for the Monadnock Region, the Greater Keene ITC Feasibility Study assumes that any new ITC facility would likely be located within that cluster, as defined by the U.S. Census Bureau (Figure 1). An ITC, however, would likely offer services whose impact extends well beyond the urban cluster in Greater Keene. Consequently, data collection efforts take into account the area within an approximately 30-minute drive of downtown Keene.

To further guide Phase I data collection and analysis, SWRPC decided to pay special consideration to three reference Focus Areas identified in the study's scope of work: Gilbo Ave., Marlboro St., and Dillant Hopkins Airport. These Focus Areas are intended to help in framing preliminary analysis, not as a final prescription of areas that should be considered over the course of the Feasibility Study. Figures 2 through 4 depict aerial overviews of these three ITC Focus Areas.

Driving, cycling and walking service areas were generated from central reference points within each ITC Focus area. A catchment area is an area of land within a certain distance or travel time of a particular location. For each ITC Focus Area, the following catchment areas were generated:

- **Walking catchment areas:** 5, 10, and 15-minute walk
- **Cycling catchment areas:** 5, 10, and 20-minute ride
- **Driving catchment areas:** 15 and 30-minute drive

One overview of walking catchment areas is shown in Figure 5, while an overview of cycling catchment areas (5-minutes only) is depicted in Figure 6. Larger scale maps of all pedestrian and cycling catchment areas are shown in Section 4.6. Driving catchment areas are shown in Figures 3 through 6, with only minor differences existing between ITC Focus Areas.

Much of the following analysis and many of the following maps will reference the above catchment areas. For walking catchment areas, an average walking speed of 3.1 MPH was assumed.<sup>1</sup> For cycling catchment areas, a cycling speed of 9.6 MPH<sup>2</sup> was assumed. It should also be noted that time of day was not considered when generating driving catchment areas. Calculating driving catchment areas for peak and off-peak hours could be a useful exercise for future consideration.

Several distance thresholds were used for each of the transportation modes listed above because the catchment area of an ITC may change, depending on the services offered and the surrounding population. For example, a younger population may be willing to walk further to

<sup>1</sup> Walking speeds vary by individual, according to a number of factors, including age, physical fitness, and topography of route traveled. The 3.1 MPH pedestrian travel speed is consistent with the average walking rate stated in *Planning, Design, and Maintenance of Pedestrian Facilities*, U.S. Department of Transportation, Federal Highway Administration, Washington, D. C., 1988. The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) cites a slightly lower figure of 2.7 MPH. More in-depth analysis of potential pedestrian catchment areas could use various pedestrian speeds in order to produce catchment areas for specific age groups. In *Design and Safety of Pedestrian Facilities* (Institute of Transportation Engineers, 1998), an average speed of 2.0 MPH is recommended when planning for older pedestrians.

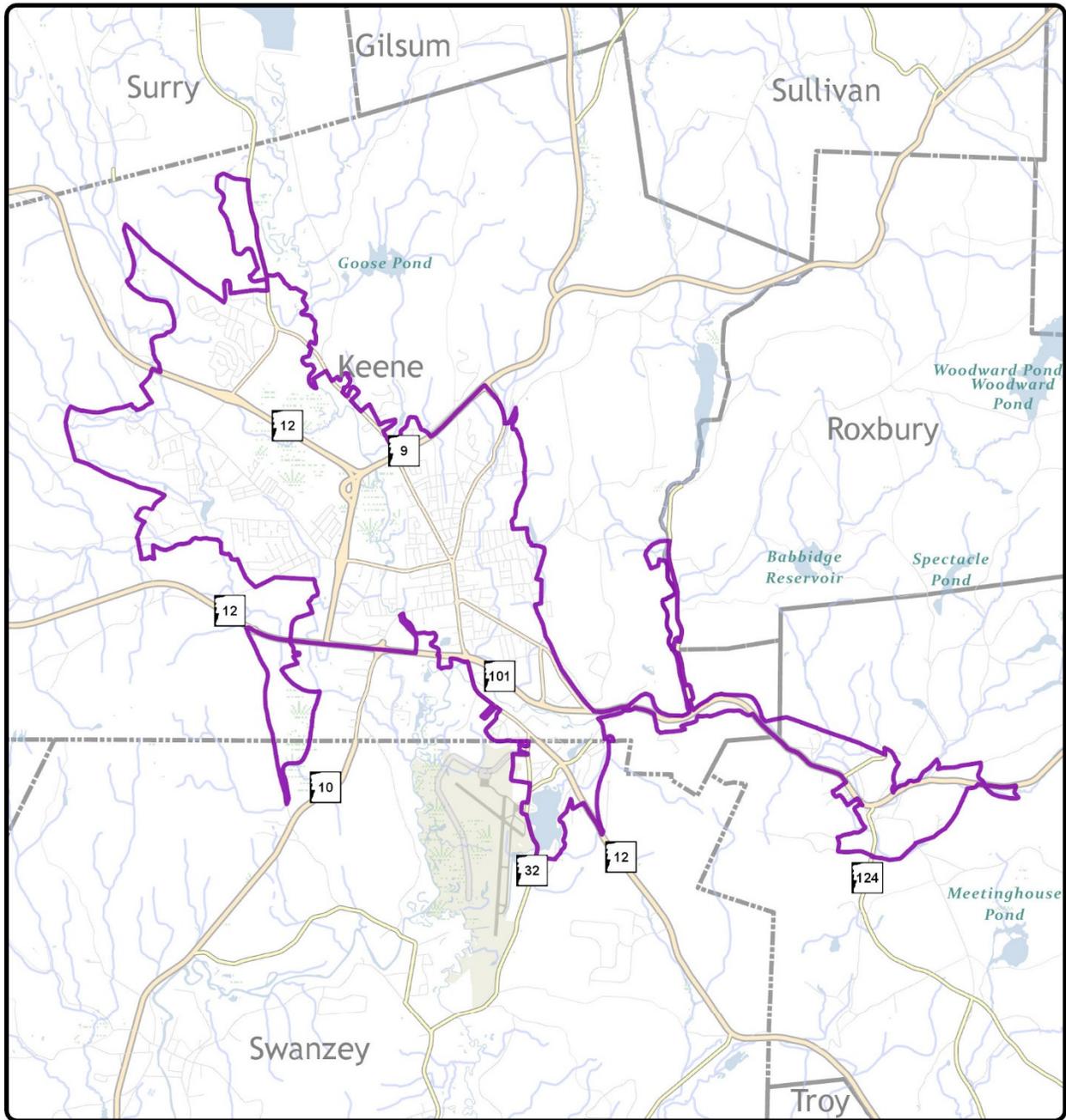
<sup>2</sup> Similar to walking speeds, cycling speeds vary by individual. The 9.6 MPH figure used for calculating catchment areas is consistent with data cited by the City of Copenhagen, which has a strong cycling culture that includes riders in a wide variety of age groups, including children and seniors.

access public transit than an older population. An individual might be willing to drive further to access intercity bus service than local bus service. Service areas are presented in this report as a *starting point* for discussion and analysis, not as a final evaluation of ITC feasibility in any given location.

The services areas have several limitations worth describing. First, they are unimodal catchment areas, and do not account for potential intermodal routes, e.g. those that combine walking and local transit. Second, the proprietary network data used for generating catchment areas, sourced from Esri, is incomplete. Most notably, network data does not incorporate area rail trails as viable pedestrian and cyclist routes. Considering the availability of other pedestrian and cyclist routes, however, the impact on generated catchment areas is small. Third, catchment areas do not incorporate slope as a factor, which in some cases may lead to overestimated bicycle and pedestrian catchment areas. Considering the relatively flat terrain for walking and bicycling near ITC Focus Areas, however, slope-related inaccuracies should be small. As the ITC Feasibility Study progresses, the above shortcomings could be considered for inclusion in future analysis.

DRAFT

Figure 1 – Greater Keene Urban Cluster – 2010 Census



 Greater Keene Urban Cluster



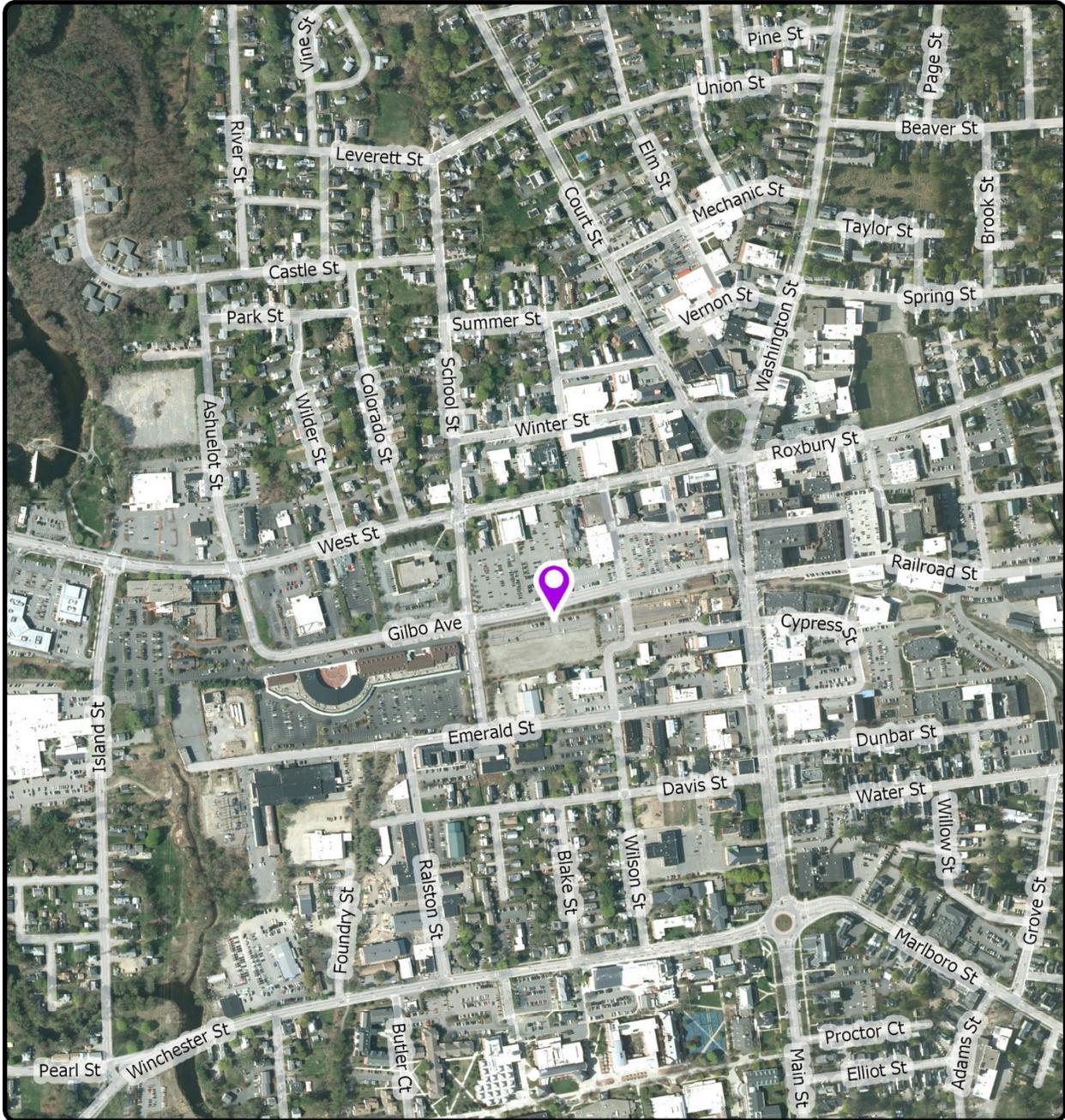
0 0.5 1  
Miles



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Sources: U.S. Census Bureau, ESRI  
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Figure 2 – Gilbo Ave. ITC Focus Area – Aerial Overview



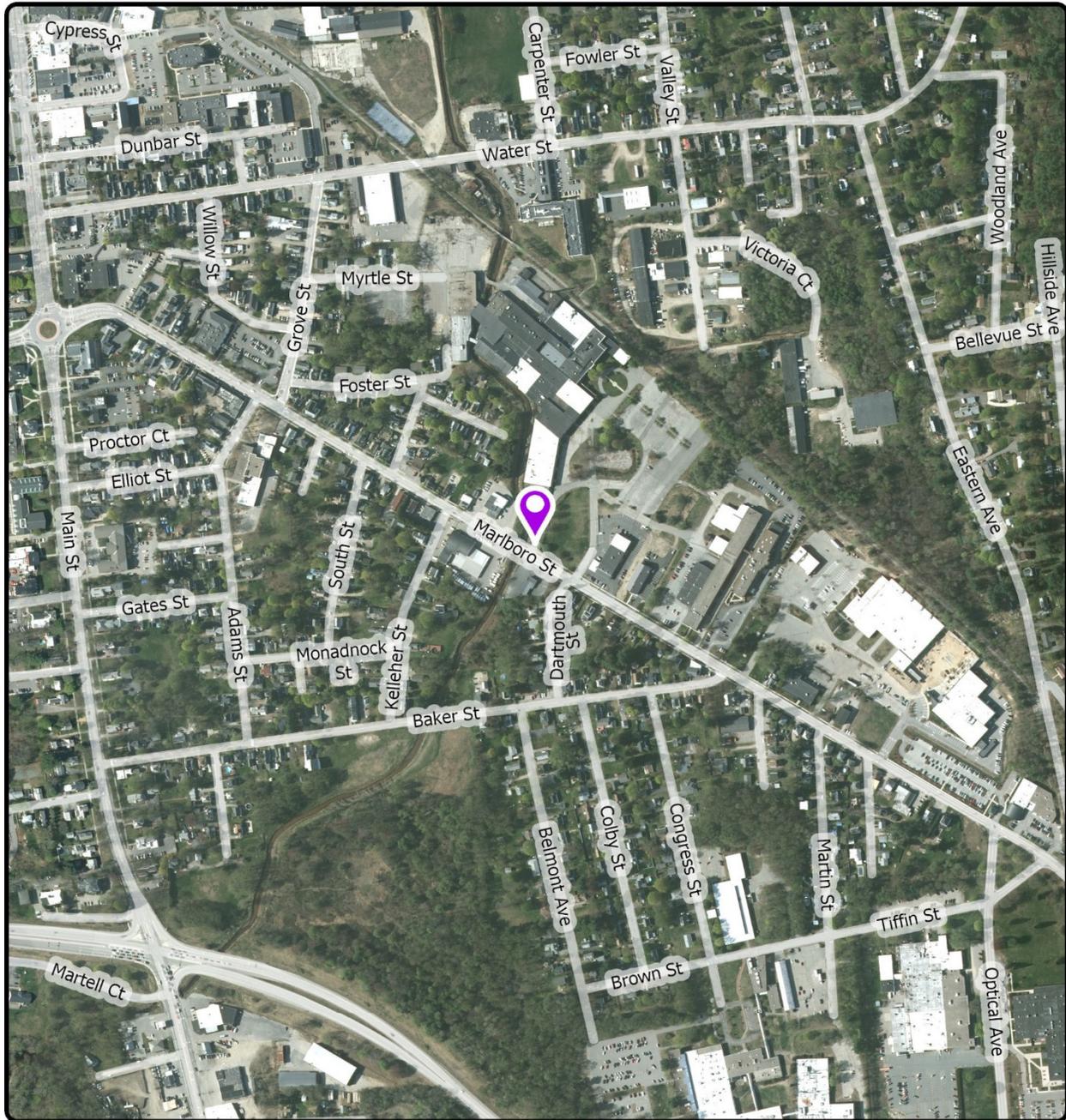
 ITC Focus Area - Central Reference Pt.



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Source: NH Granit, NHDOT  
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Figure 3 – Marlboro St. ITC Focus Area – Aerial Overview



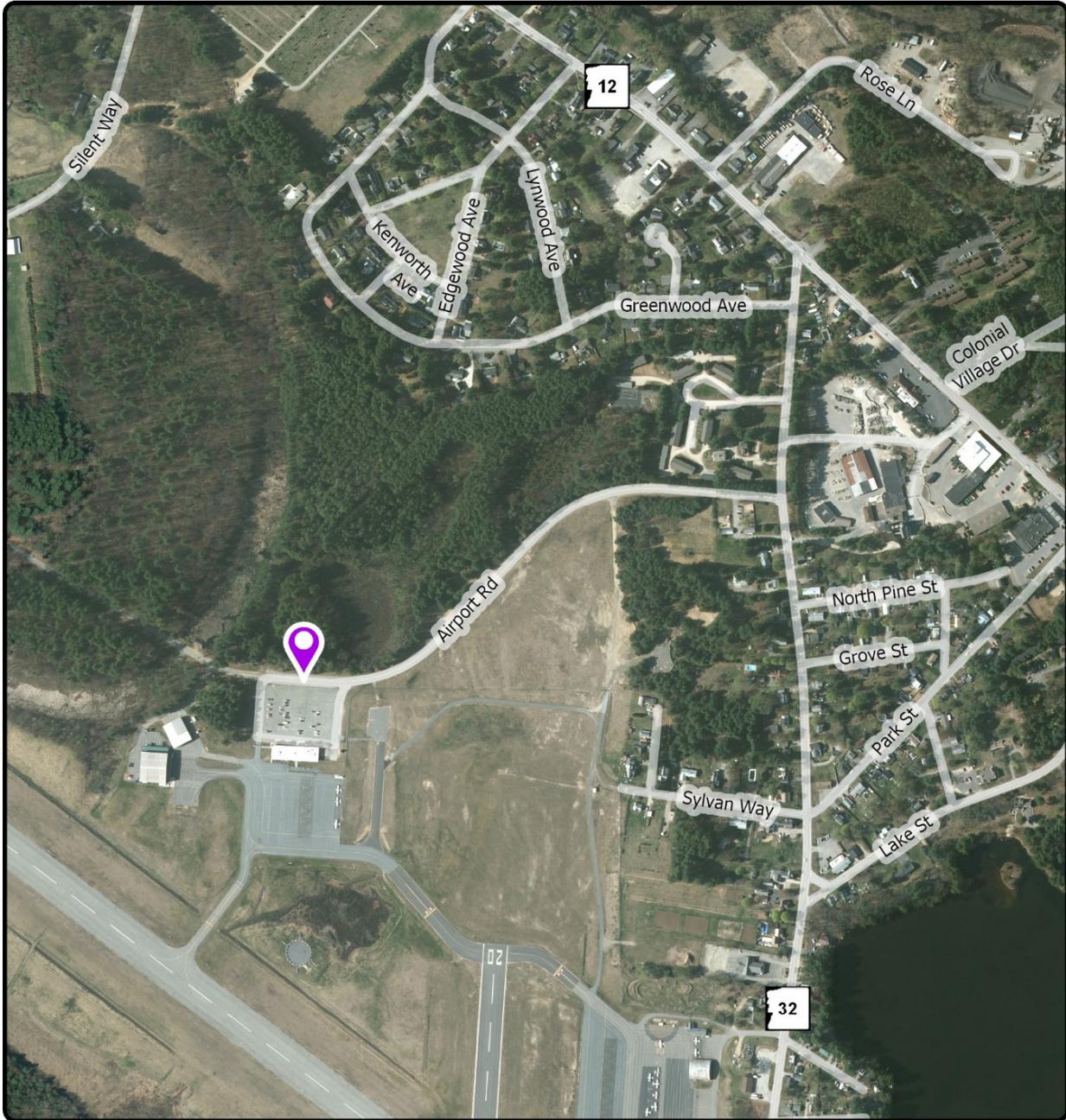
 ITC Focus Area - Central Reference Pt.



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Figure 4 – Dillant Hopkins ITC Focus Area – Aerial Overview



ITC Focus Area - Central Reference Pt.



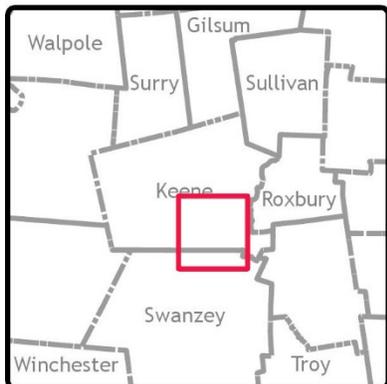
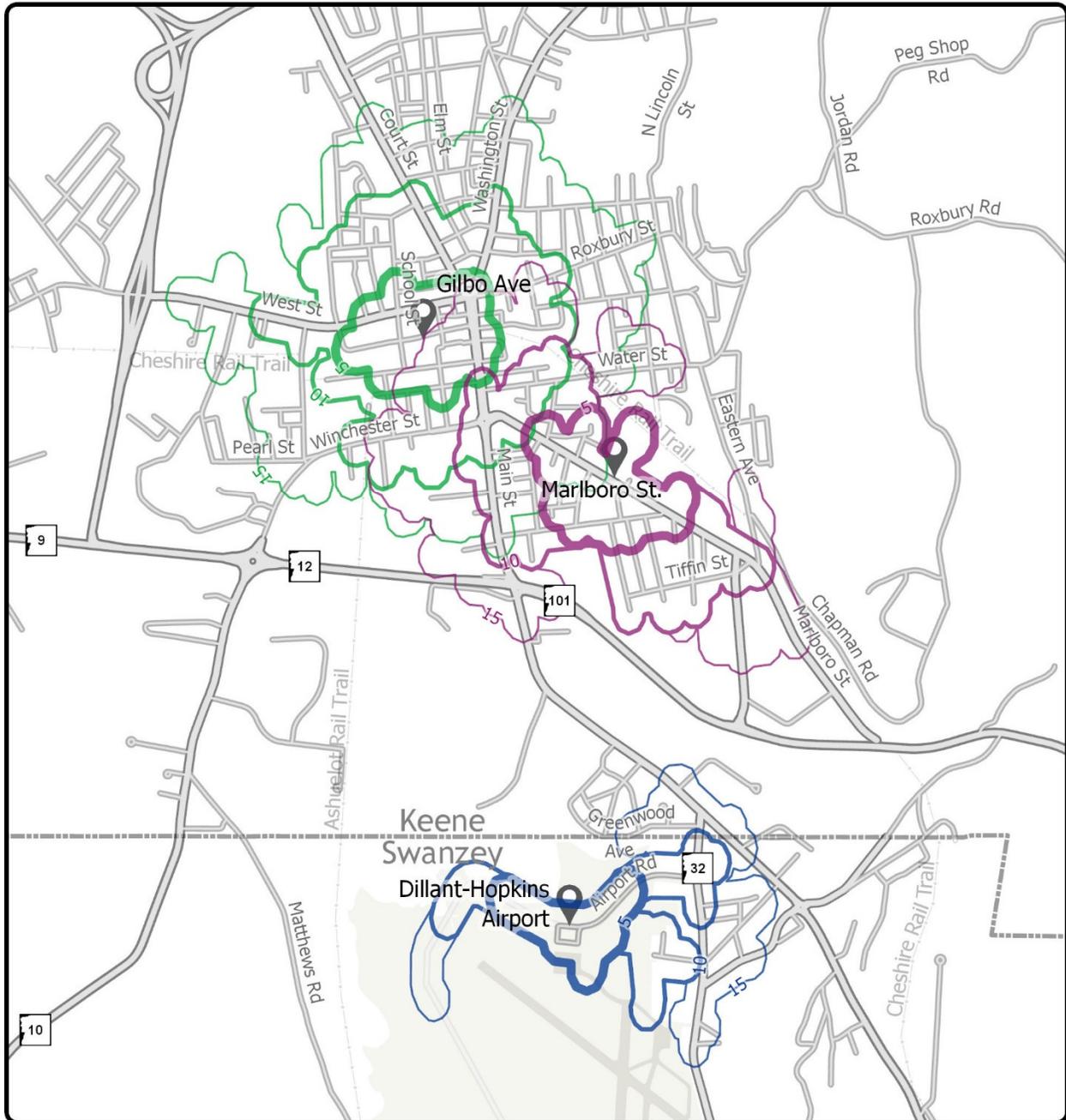
0 250 500  
Feet



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Figure 5 – Pedestrian Catchment Areas for ITC Focus Areas



**Pedestrian Service Areas**

Dillant-Hopkins	Marlboro St.	Gilbo Ave.	
15 min	15 min	15 min	ITC Focus Areas
10 min	10 min	10 min	
5 min	5 min	5 min	

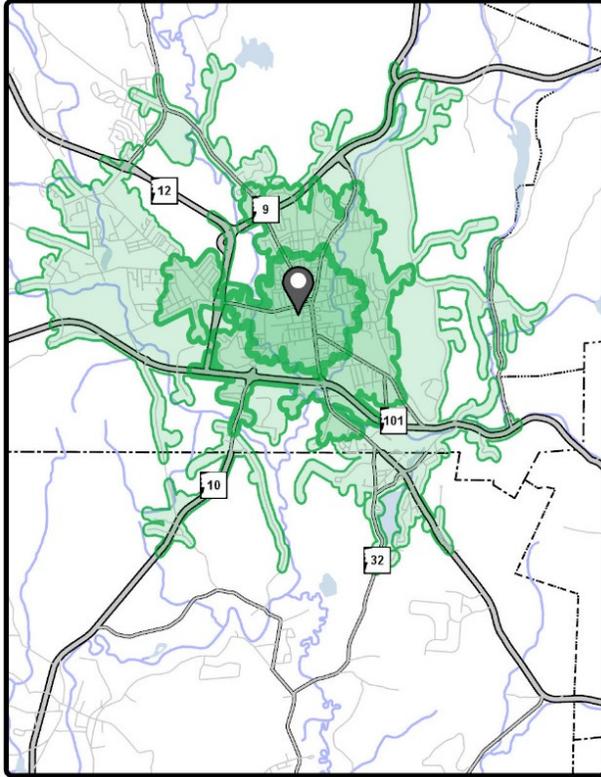
0 0.25 0.5  
Miles



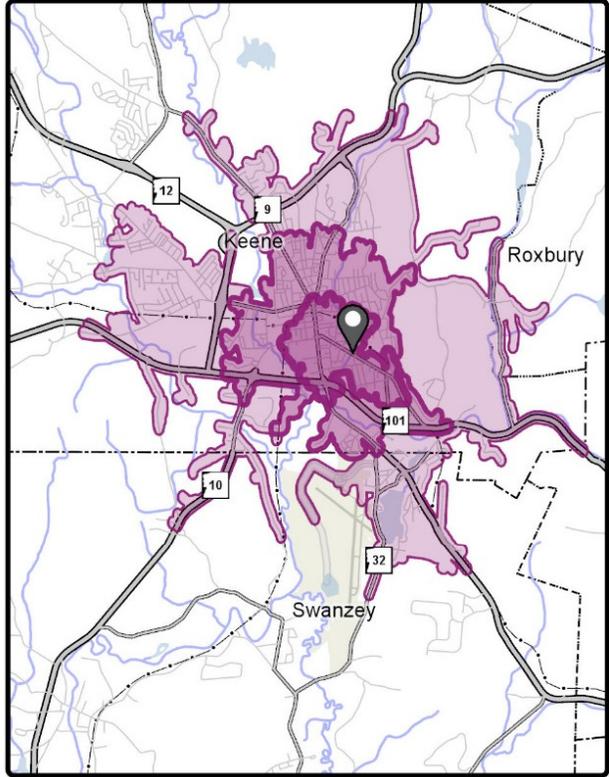
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Figure 6 - Bicycle Catchment Areas for ITC Focus Areas

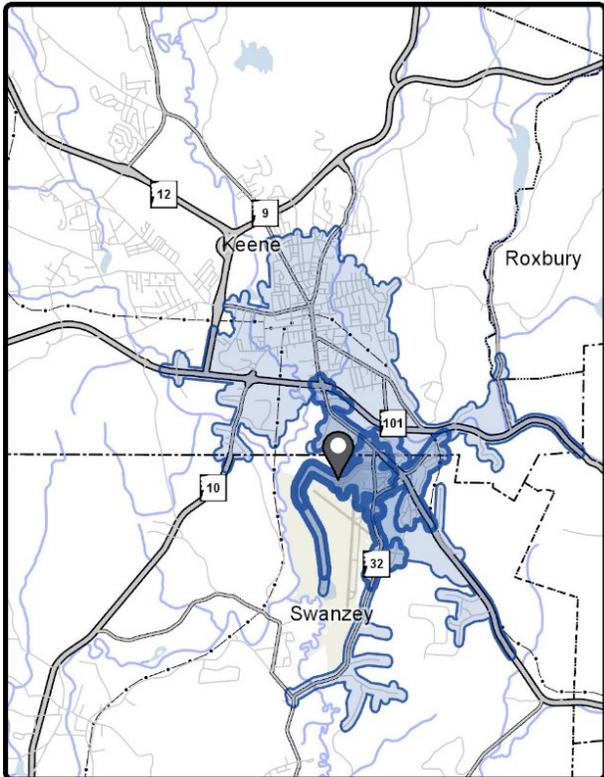
Gilbo Avenue



Marlboro Street



Dillant Hopkins Airport



 ITC Focus Area
 
 Miles

Bicycle Service Areas

Marlboro St

-  5 minutes
-  10 minutes
-  20 minutes

Dillant Hopkins

-  5 minutes
-  10 minutes
-  20 minutes

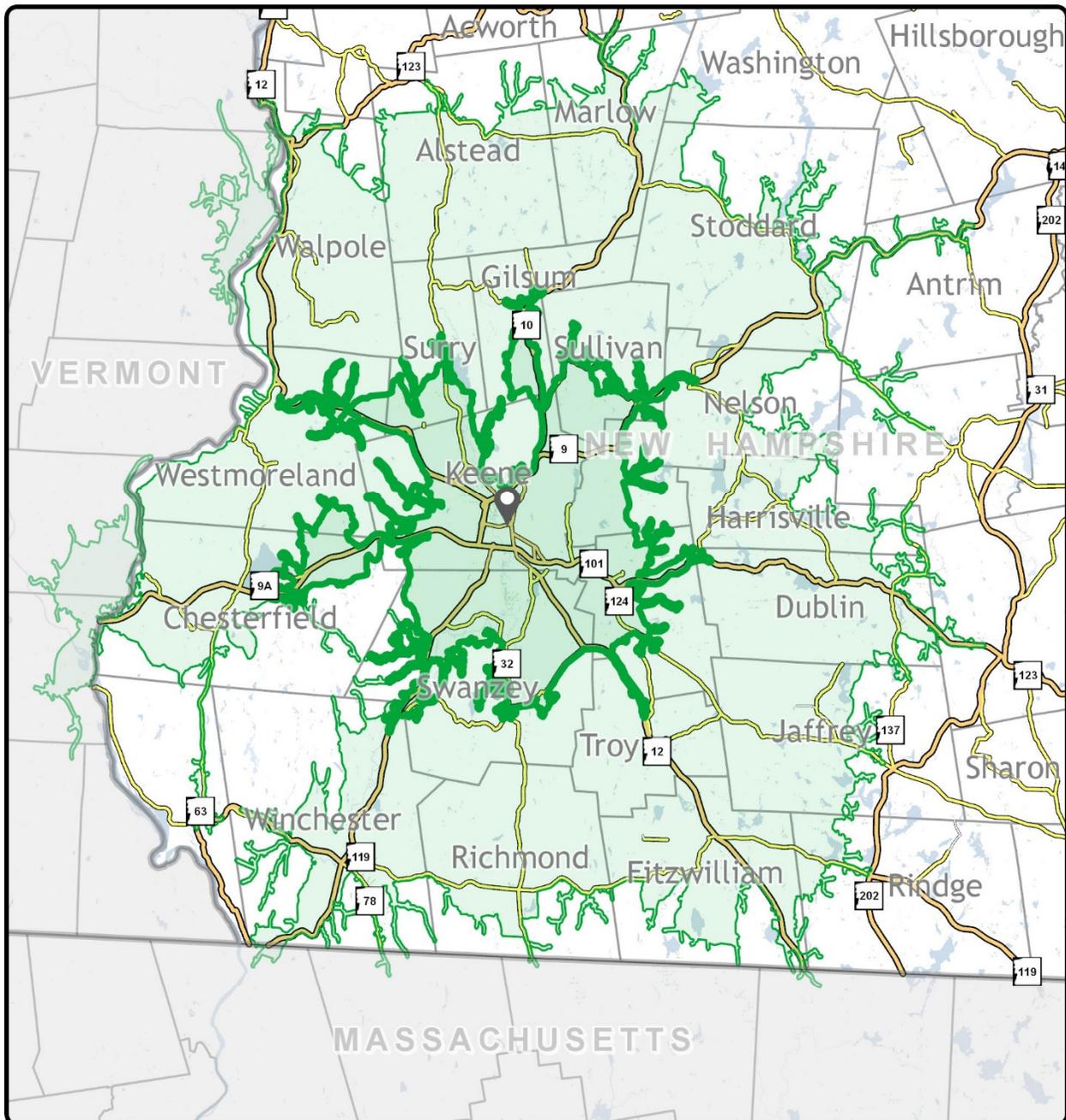
Gilbo Ave

-  5 minutes
-  10 minutes
-  20 minutes


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Figure 7 – Gilbo Ave. Driving Catchment Areas

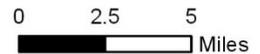


ITC Focus Area

 Gilbo Ave

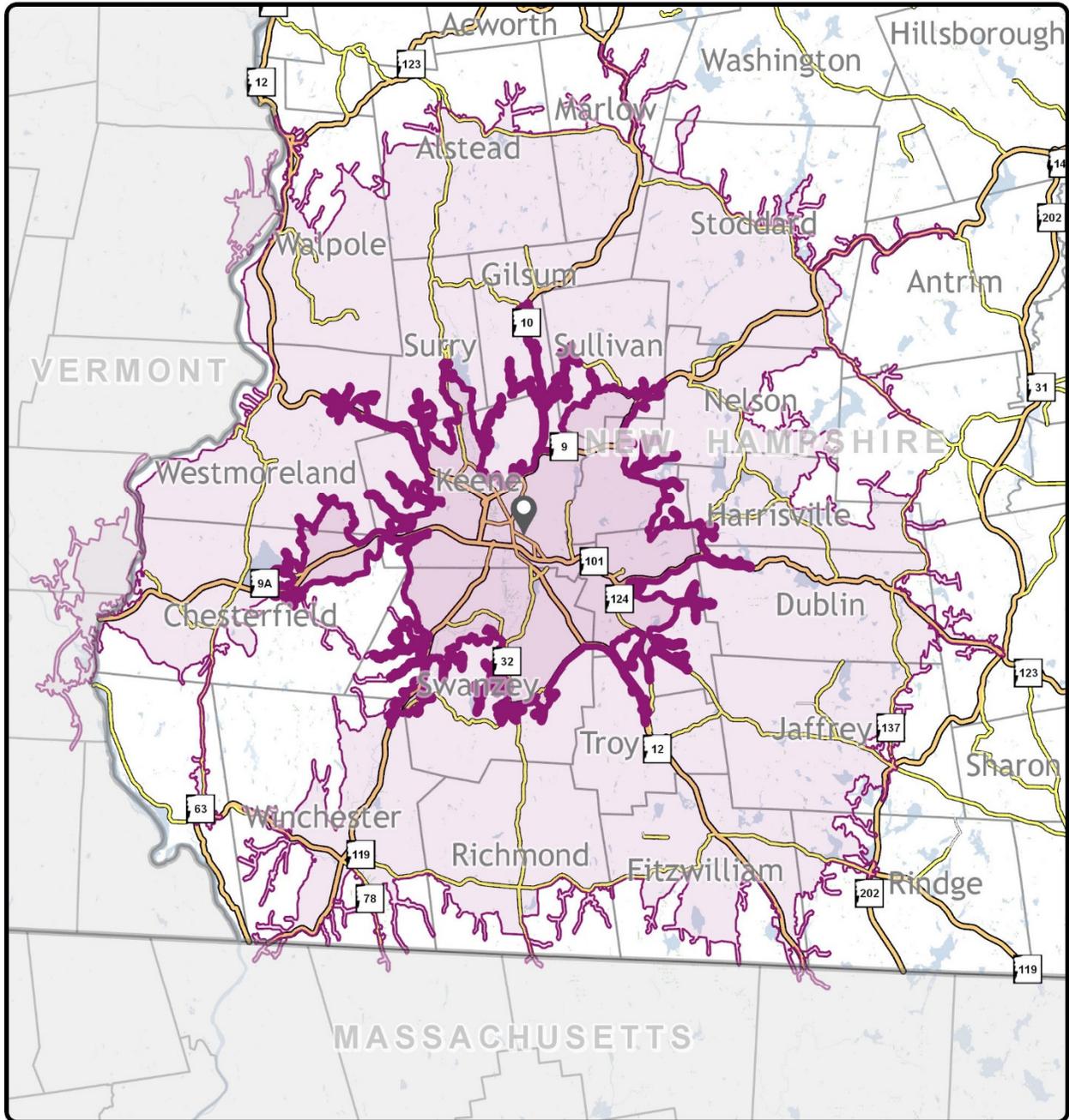
Driving Service Areas

 15 minutes  
 30 minutes

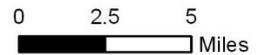


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Figure 8 – Marlboro St. Driving Catchment Areas

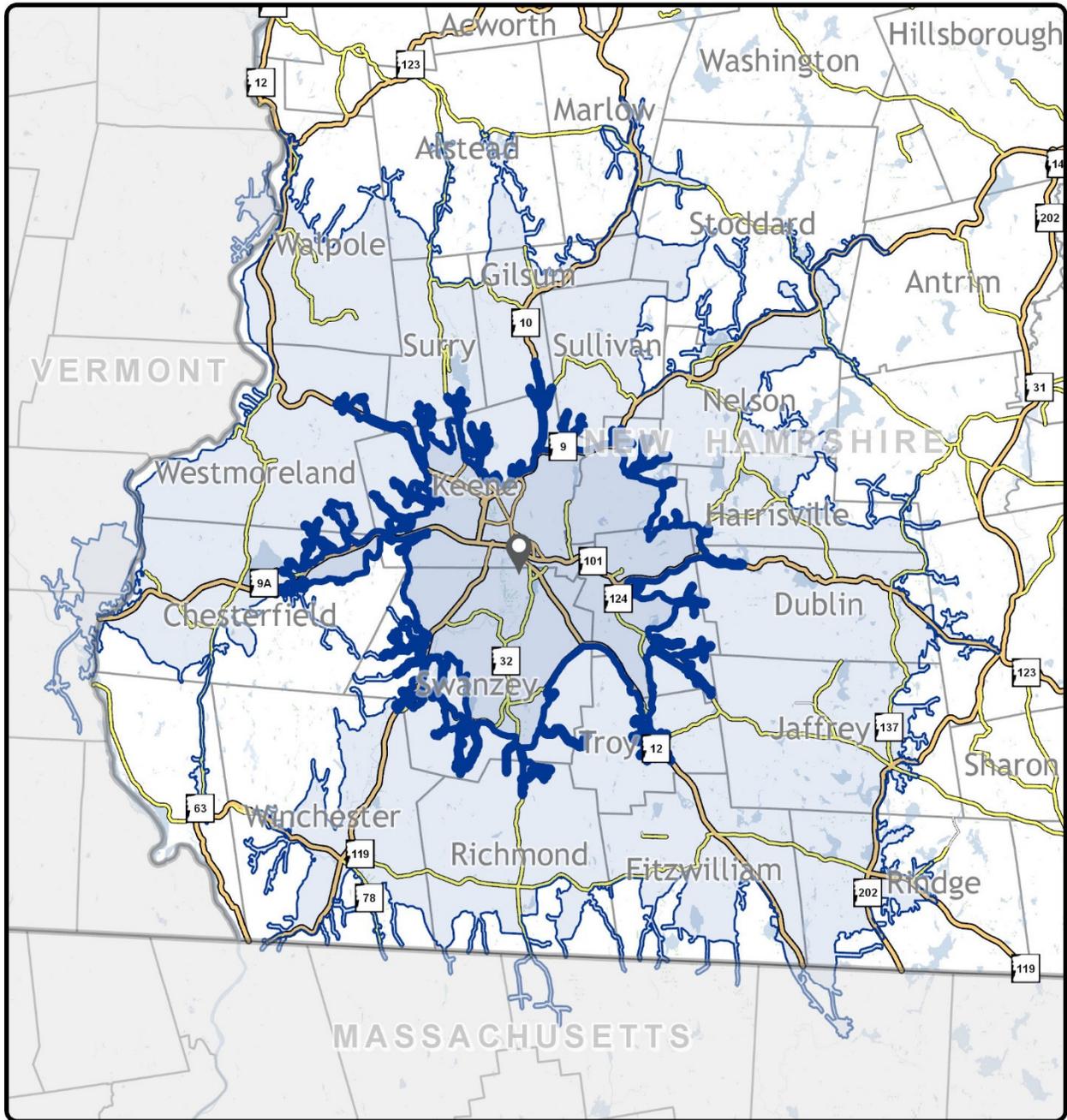


- ITC Focus Area
-  Marlboro St.
- Driving Service Areas
-  15 minutes
  -  30 minutes

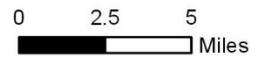


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Figure 9 – Dillant-Hopkins Airport Driving Catchment Areas



- ITC Focus Area
- Dillant-Hopkins Airport
- Driving Service Areas
- 15 minutes
  - 30 minutes



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## 4 TRANSPORTATION ASSETS AND RESOURCES

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How might an ITC support and better connect existing transportation services in the Greater Keene area? What services might an ITC support that are currently absent from Greater Keene? These questions, and others like them, will likely inform much of the discussion and analysis in later phases of the Greater Keene ITC Feasibility Study. To lay a foundation for that discussion and analysis, this section inventories some of Greater Keene's current transportation assets and resources, paying special attention to the ITC Focus Areas.

### 4.1 EXISTING INTERMODAL TRANSPORTATION FACILITIES

Although Greater Keene lacks a bustling, high-profile intermodal transportation center, the area does include two facilities that accommodate intermodal connections, albeit at a limited level: the Keene Transportation Center and Dillant Hopkins Airport. Given that a feasibility study may consider modifications or renovations at existing sites, both of these facilities are briefly described below.

#### 4.1.1 Keene Transportation Center

The City of Keene owns a structure originally built to serve as a transportation center (Figure 10). Constructed in 1976, the concrete block building is situated on Gilbo Ave., near the corner of Main St. Today, the building provides an outdoor waiting area for intercity bus (Greyhound) and local transit (City Express). A sheltered bike rack is also available beneath the eastern-facing eave. According to City of Keene assessing records, the building has a gross area of 588 square feet. The City's online parcel viewer shows a total building footprint of about 4,380 square feet. Currently, the City rents part of the interior to a frozen yogurt shop as retail space. Another portion of the building is rented out as storage space to a local restaurant. For additional background information on the Transportation Center, see Section 5.1.1 below this report.

Figure 10 – Existing Keene Transportation Center, as seen from Gilbo Ave.



Source: Google Street View

In addition to the Keene Transportation Center building, the City owns .04 acres of adjacent land at the corner of Gilbo Ave and Main Street at 2 Gilbo Ave. Although this land is owned by the City, the 744 square foot structure on the land is privately owned and is the location of the Corner News (Figure 11). Corner News currently operates as a ticket agent for Greyhound buses.

Figure 11 – The Corner News, located at Main St. and Gilbo Ave.



#### 4.1.2 Terminal at Dillant-Hopkins Airport

The terminal building at Dillant Hopkins Airport once functioned as a waiting area for commercial flight passengers. Today, the building holds office space for airport management staff and Monadnock Aviation Inc., the airport’s “Fixed Base Operator” (FBO), which

provides onsite services including flight training, aircraft fueling, flight planning, and aircraft maintenance. The former airline counter and lobby make up about 3,000 square feet. A restaurant occupies 4,400 square feet, or about one third of the building. Although the restaurant, “The Flight Deck,” brings activity to the terminal, the building remains underutilized and would be able accommodate additional uses.

Figure 12 – Lobby in Dillant Hopkins Airport Terminal



## 4.2 BUS SERVICE

### 4.2.1 Local Fixed-Route Bus

Greater Keene is served by one local fixed-route provider: City Express, operated by Home Healthcare and Hospice Services (HCS). City Express provides service to downtown Keene, with some stops also available in West Keene and northern Swanzey (Figure 13 and Figure 14). The City Express network includes three routes: the Black Route (Bus #1), Red Route (Bus #5), and Campus Community Shuttle (Bus #9). Service is available on the Black Route and Red Route year-round. The Black Route has hourly headways from 8:00 a.m.- 5:00 p.m. on weekdays while the Red route has hourly headways from 8:00 a.m. to 4:00 p.m. on weekdays. The Campus Community Shuttle offers service during the Keene State College academic session, with half-hour headways from 7:30 a.m. to 7:30 p.m. on weekdays. All fares cost one dollar, except for Keene State College Students, who can ride the Campus Community Shuttle for free. Single fares or monthly passes can be purchased on the bus. Six-month or annual passes can be purchased through the HCS transportation office, located on Marlboro St. in Keene.

The City Express provides service to a range of commercial, residential, and social service destinations in Greater Keene including the YMCA in West Keene, the Keene Recreation Center on Washington St. in Keene, Monadnock Marketplace in West Keene, Market Basket on NH 10 in North Swanzey, Cheshire Medical Center on Court St. in Keene and many other destinations in downtown Keene.

A limited number of stops are available to transfer from one route to another. Transfers between the Red Route and Black Route are available at the Transportation Center in downtown Keene, Stone Arch on Court St. the West St. Plaza, and Riverside Plaza off of Winchester St. During the Keene State College academic session, transfers are available between the Black Route and the Campus Community Shuttle at Monadnock Marketplace in West Keene. Transfer wait times vary considerably, from within a minute to about 40 minutes.

City Express buses have front-mounted bicycle racks, allowing for transport of two bicycles per vehicle. Although beyond the scope of this report, calculation of multimodal bicycle/bus catchment areas could add a useful dimension to the assessment of potential ITC sites. By combining cycling and bus travel, some individuals may be able to reach an ITC more quickly than using either transportation mode on its own.

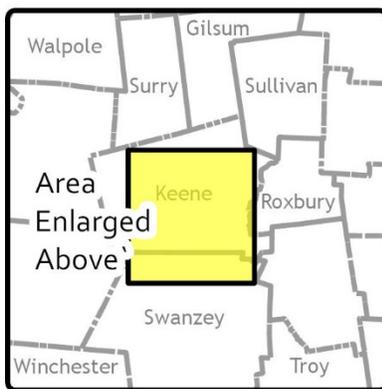
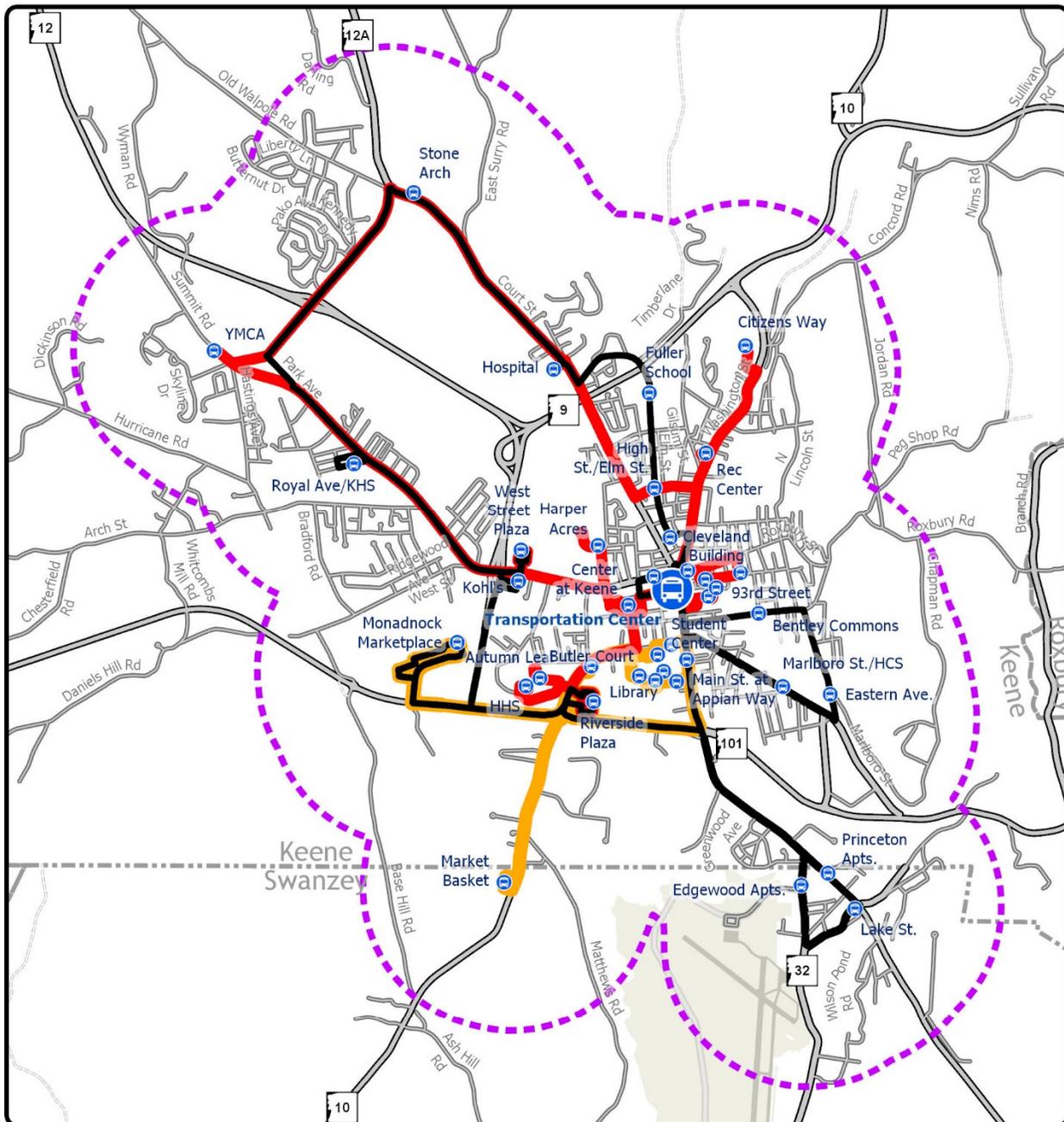
City Express ridership is discussed later in this report, in Section 6.1.

#### **4.2.2 Local Deviated Route Bus**

As an extension of City Express, HCS offers a deviated route service, Para Express, to eligible riders with disabilities. The Para Express service range includes all areas within  $\frac{3}{4}$  miles of City Express Routes (Figure 13). Individuals who wish to become Para Express riders must submit an application in advance. Next day service must be scheduled by 5:00 p.m. on the previous day. A one-way trip costs \$2.00, with any attending personal care assistants riding for free.

The Para Express service area includes a population of approximately 22,326 residents, which is roughly analogous to the City of Keene's population of 23,409 (2010 Decennial Census; ESRI).

Figure 13 – City Express Routes and Para Express Catchment Areas – Fall 2018



**City Express Routes**

- Black Route - Bus #1
- Campus Community Shuttle - Bus #9
- Red Route - Bus #5

Para Express Service Area

Keene Transportation Center

Other City Express Bus Stops

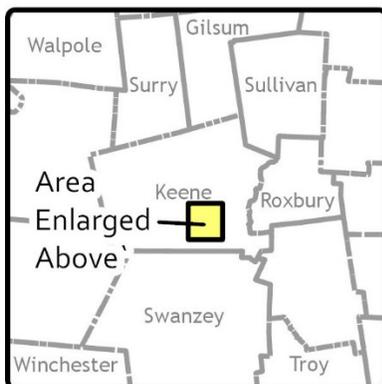
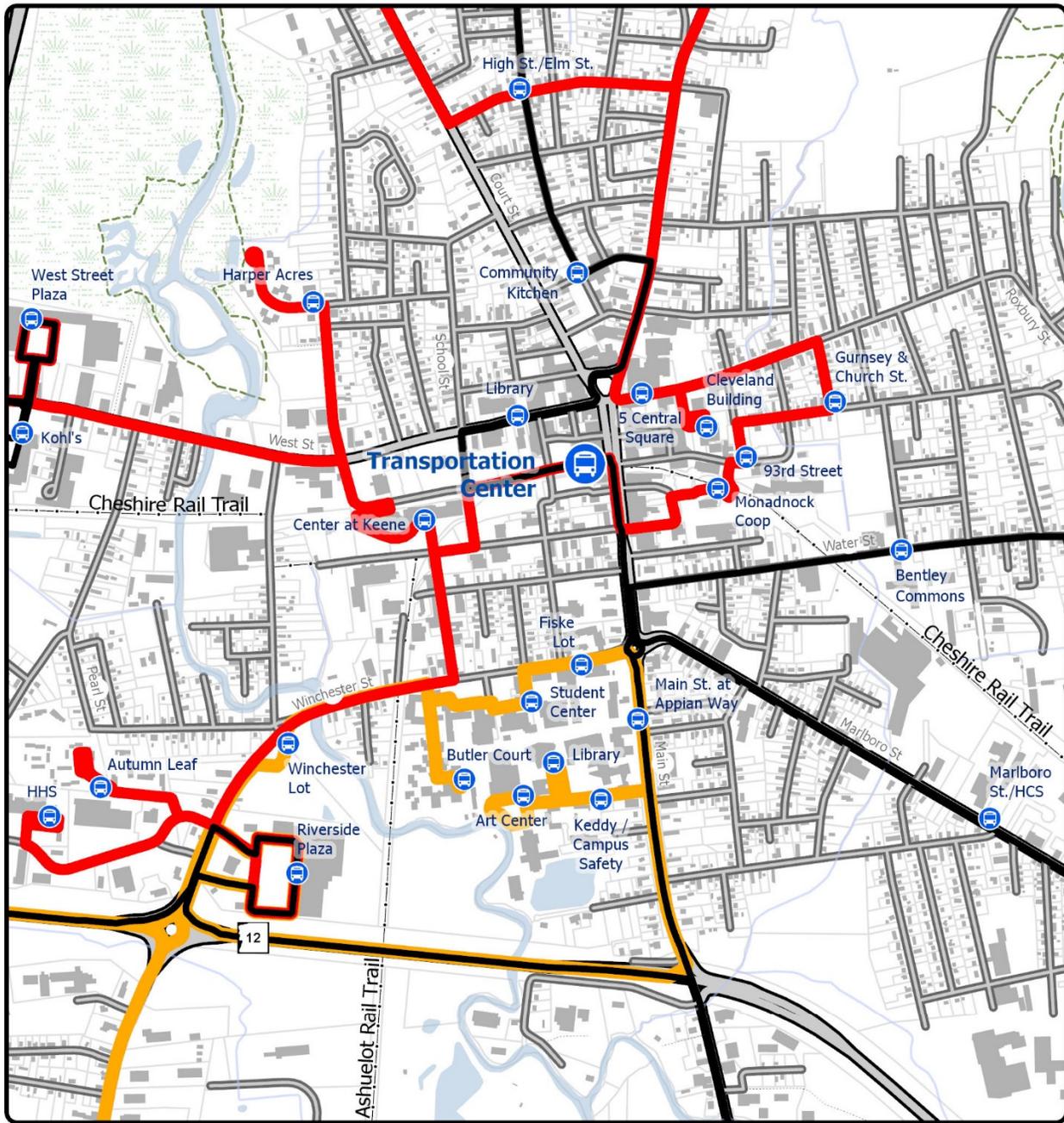
0 0.25 0.5 Miles



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Source: U.S. Census Bureau Longitudinal Household Dynamics - Workplace Area Characteristics - 2015  
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Figure 14- City Express Routes – Downtown Keene – Fall 2018



**City Express Routes**

- Black Route - Bus #1
- Campus Community Shuttle - Bus #9
- Red Route - Bus #5

Keene Transportation Center

Other City Express Bus Stops



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Source: U.S. Census Bureau Longitudinal Household Dynamics - Workplace Area Characteristics - 2015  
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### 4.2.3 Intercity Bus

Currently, only one intercity bus carrier, Greyhound Lines, Inc. (Greyhound), serves the Greater Keene area, which stops at the existing transportation center on Gilbo Ave. in downtown Keene. Daily northbound and southbound service is offered on the White River Junction, VT-New York City route. Northbound schedule 2010 departs from New York City at 5:30 a.m. and arrives in Keene at 11:55 a.m., from there it travels to White River Junction, arriving at 1:20 p.m. Southbound schedule 2033 departs White River Junction, VT at 8:25 a.m. and arrives in Keene at 9:40 a.m., from there it travels south to New York City, arriving at 4:05 p.m.

As can be seen from the schedules listed in Table 1, both northbound and southbound routes contain multiple layovers, which add significantly to travel times between Keene and New York City. Both northbound and southbound routes between Keene and New York City total approximately 6-6.5 hours (a trip by car, by contrast, takes about 4-4.5 hours). Although stops in-between Keene and NYC may serve passengers traveling to more local destinations, like Springfield or Northampton, MA, or providing bus transfer opportunities to other locations in the continental U.S. including Boston, MA, passengers seeking express service between Keene and New York City are left wanting.

Schedule 2033 approaches the Keene Transportation Center from the north, along West St., and departs southward via Main St., towards the intersection of Main St., NH 101 and NH 12. Schedule 2010 approaches and departs from the Transportation Center along an opposite route.

*Table 1 – Daily Northbound and Southbound Greyhound Service through Keene, as of January, 2019*

	Schedule 2010 Northbound (Read Top Down)	Schedule 2033 Southbound (Read Bottom Up)
New York City	5:30 a.m.	4:05 p.m.
New Haven	(A) 7:20 a.m. (D) 7:30 a.m.	- -
New Britain	8:10 a.m.	-
Hartford	(A) 8:35 a.m. (D) 8:45 a.m.	(D) 1:35 p.m. (A) 1:25 p.m.
Springfield	(A) 9:20 a.m. (D) 10:00 a.m.	(D) 12:50 p.m. (A) 11:55 a.m.
Northampton	10:25 a.m. -	(D) 11:30 a.m. (A) 11:25 a.m.
Greenfield	10:55 a.m.	10:55 a.m.
Brattleboro	11:25 a.m.	10:20 a.m.
<b>Keene</b>	<b>11:55 a.m.</b> -	<b>(D) 9:50 a.m.</b> <b>(A) 9:40 a.m.</b>
Bellows Falls	12:30 p.m.	9:05 a.m.
White River Jct.	1:20 p.m.	8:25 a.m.

Greyhound offers a limited westbound and eastbound service between Brattleboro, VT and Boston, MA. On Fridays and Sundays, westbound Schedule 7960 departs from Brattleboro, VT at 3:15 p.m. with stops in Keene (3:50 p.m.), Nashua (5:10 p.m.), and Boston (6:20 p.m.). Also on Fridays eastbound Schedule 7961 departs from Boston, MA at 11:45 a.m., with stops in Nashua (12:50 p.m.), Keene (2:10 p.m.), and Brattleboro, VT (2:50 p.m.). On holiday weekends, Schedules 7960 and 7961 run on Mondays instead of Sundays. Both schedules 7960 and 7961 approach and depart the Keene Transportation Center from the south along Main St.

The current eastbound and westbound schedules make a weekend trip from Keene to Boston difficult. Passengers who work during normal business hours would need to leave work early on Friday in order to make the 3:50 p.m. departure from Keene. The stay in Boston would be abbreviated by the Sunday morning departure from Boston. Similarly, Boston residents traveling by bus would need to take time off on Friday in order to take a weekend trip to Keene. The Sunday afternoon departure time from Keene, however, lends itself to a more extended weekend visit.

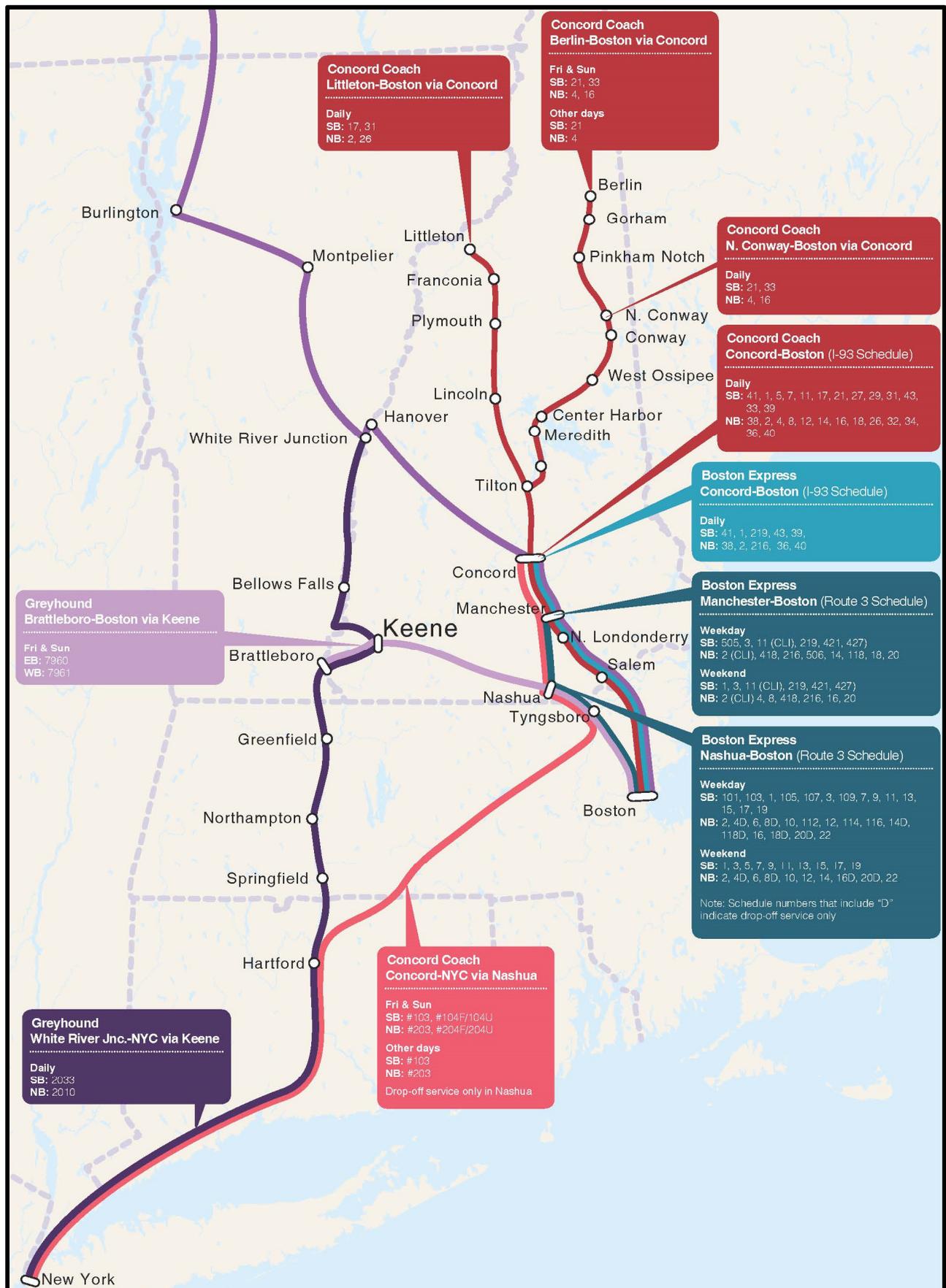
Table 2 – Friday/Sunday Eastbound and Westbound Greyhound Service through Keene, as of January, 2019

	Schedule 7960 Eastbound (Read Top Down)	Schedule 7961 Westbound (Read Bottom Up)
Brattleboro	3:15 p.m.	2:50 p.m.
<b>Keene</b>	<b>3:50 p.m.</b>	<b>2:10 p.m.</b>
Nashua	5:10 p.m.	12:50 p.m.
Boston	6:20 p.m.	11:45 a.m.

It should be noted that NHDOT is currently in the process of soliciting proposals from carriers to offer daily (7 days per week) intercity bus service between Keene and Nashua, service that would presumably function as a segment of a Brattleboro-Boston route. A selected carrier would receive a subsidy through FTA Intercity Bus Program Section 5311(f), a federal program that supports rural intercity bus service. The proposed eastbound schedule is to depart Keene at 7:30 a.m. so that the bus may connect with existing Boston service from Nashua’s park and ride lot on the FE Everett Turnpike at Exit 8 at 9:00 a.m. The proposed westbound schedule is to depart at 6:45 p.m. from Nashua and arrive in Keene approximately 1.5 hours later. If an intercity bus carrier is interested in providing this service, the two routes could begin operating as early as July 2019.

Existing intercity bus routes that pass through Keene are poorly connected with the rest of the New Hampshire intercity bus network (Figure 15). Currently, no direct intercity bus service exists between Keene and Concord, NH, one of the state’s most prominent intercity bus hubs, nor is there service to Manchester, NH, Manchester-Boston Regional Airport, Portsmouth, NH or any other significant NH destinations. Although Greyhound stops in Nashua on Fridays and Sundays, no northbound intercity bus service is available from Nashua to Concord or Manchester. Concord Express trips from Concord and Boston Express trips from Manchester accept boardings on southbound trips only. So, while it is possible to travel *from* Concord or Manchester to Keene via intercity bus, it is not possible to travel *to* either Concord or Manchester from Keene via intercity bus.

Figure 15 – Keene Intercity Bus Routes and Other Select Intercity Bus Routes, 2018



### **4.3 DEMAND RESPONSIVE TRANSPORTATION**

Unlike fixed-route local transit or intercity bus service, demand responsive transportation does not follow predetermined routes or timetables, but rather picks up and drops off passengers at locations and times according to passenger needs. Typical examples of demand responsive transportation include taxis, ride hailing services like Uber and non-emergency medical transportation. In the Greater Keene area, all demand responsive transportation providers handle their own dispatch. There is no centralized call center available.

#### **4.3.1 Human Service Transportation**

Human service transportation focuses on providing services for individuals enrolled in human service programs. With transit options limited in Greater Keene, especially in areas outside the City proper, human service transportation services function as a critical resource for some of the area's most disadvantaged individuals, many of whom are unable to drive or afford a personal vehicle. The services are often provided either free of charge or through reimbursements from federal and state programs. Greater Keene human service agency transportation providers include the Monadnock Adult Day Care Center, Monadnock Area Peer Support Agency, Monadnock Developmental Services, and Monadnock R.S.V.P Neighbors-In-Deed. All services require advanced notice before setting up a ride and services are typically provided during business hours on weekdays.

#### **4.3.2 Medical Transportation**

Several demand-responsive medical transportation providers serve the Greater Keene area. While the most visible form of medical transportation are emergency ambulance services, medical transportation also includes non-emergency medical transportation (NEMT). NEMT includes essential transportation services, like rides to doctor's appointments, treatment, therapy, and sometimes trips to the pharmacy.

NEMT providers in Greater Keene include the HCS Medical Transportation to the Upper Valley, the Jaffrey Rindge Memorial Ambulance Service, Merit Care Transportation Service, LLC, and R.J. Diluzio Ambulance. In addition to these general public services, the Disabled American Veterans offer medical rides for veterans to the White River Junction Veteran's Hospital from western Cheshire County. Like human service transportation, advance notice is required and varies from provider to provider. Disabled American Veterans do not require fare, but donations are accepted. All other service providers base fares on trip distance.

In addition to the above medical transportation providers, rides to non-emergency medical appointments are also offered by the Community Volunteer Transportation Company (CVTC), HCS and Volunteers Enabling Transportation (VET). Although these organizations offer more than medical transportation (such as transportation to social service appointments, shopping, job training/education and other basic needs trips), medical related trips are a significant proportion of the trips that they make. All of these providers operate on weekdays typically during normal business hours and require advance notice.

### 4.3.3 Senior Transportation

Some demand response transportation operating in Greater Keene specifically targets seniors. The Friendly Bus, which is operated by HCS, provides rides for people age 60 or over on weekdays from 8:00 a.m. and 4:00 p.m. No fare is required, but donations are accepted. For ridership numbers, see Section 6.1, in this report.

### 4.3.4 Private for Hire Transportation

Several taxi and chauffeur companies operate in the Greater Keene area, providing a variety of transportation services, including both local and long-distance trips, non-emergency medical transportation, and special event transportation. Inventoried companies are listed in Table 3, below.

*Table 3 – Taxi and Chauffeur Companies in the Greater Keene Area*

Name	Trip Type	Advertised Hours	Wheelchair Accessible Rides Available?
Ideal Taxi	Local, long distance, regional airport	6 a.m. – 6 p. m, later with appointment	No
Rogue Taxi	Local, long distance, regional airport	Most times, w/24 hour notice	No
Sunshine Taxi	Local, long distance, regional airport	8 a.m. – 2 a.m.	No
Tony's Taxi	Local, long distance, regional airport	5 a.m. – 2 a.m.	
Thomas Transportation	Local, long distance, regional airport, special events	24/7	No
Adventure Limousine and Transportation	Local, long distance, regional airport, non-emergency medical	24/7	Yes

### 4.3.5 Transportation Network Companies (TNCs)

Transportation Network Companies, or ride-hailing platforms like Uber or Lyft do operate in Greater Keene, but data on number of drivers, consistency of service and coverage area is not readily available.

Another ride-hailing platform, Tip Whip, operated for about one year at Keene State College, beginning in 2014. Tip Whip is a platform that enlists college students to provide rides to fellow students. The mobile app suggests to riders an appropriate amount to tip drivers, but does not require payment. According to the owner and founder of the company, Keene State College students downloaded that app about 250 times. The company ceased to offer service when it scaled back operations to focus deployment at a handful of larger school systems.

## 4.4 CAR RENTAL SERVICES

As of writing, there are three car rental establishments in Greater Keene. U-Save Car and Truck Rental and Key Rent-a-Car are both located on NH 10, about 0.3 miles south of the Winchester St./NH 10/NH 101/roundabout. Enterprise Cars, meanwhile, is located on NH 12, about 0.1 miles south of the NH 12/NH 101/Main St. intersection. There are currently no car rental establishments located in downtown Keene.

## 4.5 RIDESHARING PROGRAMS

Ridesharing programs help match drivers and potential passengers with similar commuting routes, facilitating increased levels of carpooling. Currently, there are no active ridesharing programs in Greater Keene or the wider Monadnock Region. CommuteSmart NH, recently relaunched after a multiyear hiatus, is a statewide initiative aimed at promoting alternative transportation options such as ridesharing. A component of CommuteSmart NH will entail outreach to area employers and workers regarding the state’s ridesharing platform, Rideshare NH. Currently, however, the project is in its early stages and level of future participation is unknown.

Waze Carpool, a ridesharing platform, is available for use in the Greater Keene area, but the level of adoption is quite low, with only a few drivers currently offering rides.

## 4.6 PEDESTRIAN AND BICYCLIST INFRASTRUCTURE

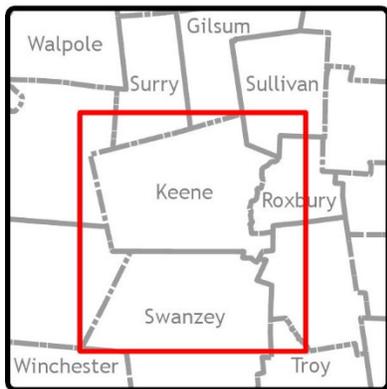
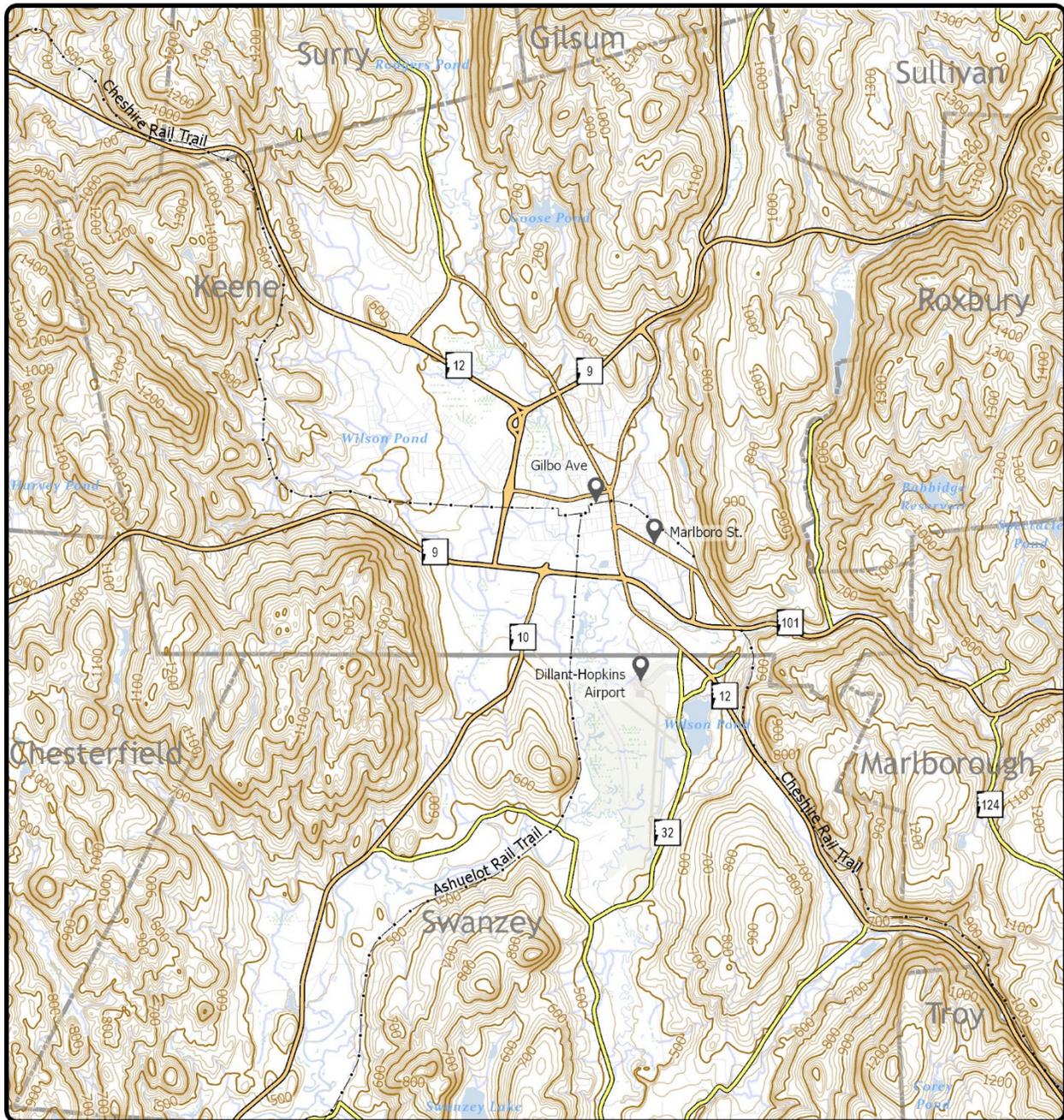
Pedestrian and bicyclist access is an important consideration when evaluating the feasibility of an ITC. Individuals who do not own a car may walk to an ITC to access local transit. Others may bicycle to an ITC to access carsharing services. If a goal of ITC development is to expand transportation options beyond the personal automobile, then the “bikeability” and “walkability” of the surrounding area become important factors. This section examines how well the transportation network in Greater Keene supports travel on foot or by bike. Pedestrian and cycling facilities are discussed, as well as other factors that impact how well the built environment supports walking or biking.

Special attention is given to the areas within walking and biking distance of the ITC Focus Areas.

### 4.6.1 Topography

Before examining bicycle and pedestrian infrastructure itself, it is worth noting the topography that underlies that infrastructure. The core of Greater Keene—including downtown Keene and western Keene—benefits from relatively flat topography, situated in a wide valley bottom (Figure 16). Road grades within downtown Keene are consequently flat, most with running grades of 2 percent or less (Figure 17). Grades are also relatively flat as one travels south from downtown Keene along NH 10, NH 12, NH 32. The flat terrain suggests that pedestrian and cycling facilities could support users of a variety of ages and abilities. The flat topography would also support the viability of a bikes share program, since participants would not need to climb steep hills. Rail trails emanating from downtown Keene represent especially important corridors for active transportation since the rail trails have relatively flat grade changes when compared with nearby roadways.

Figure 16 – Topography in Greater Keene



	ITC Focus Areas		Contours	
	Rail Trail		20 Ft.	
	Other Trail		100 Ft.	

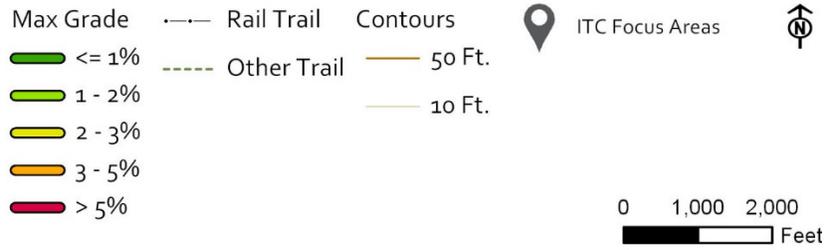
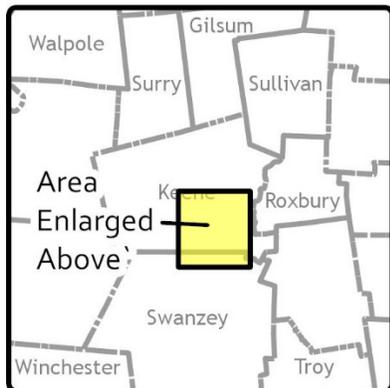
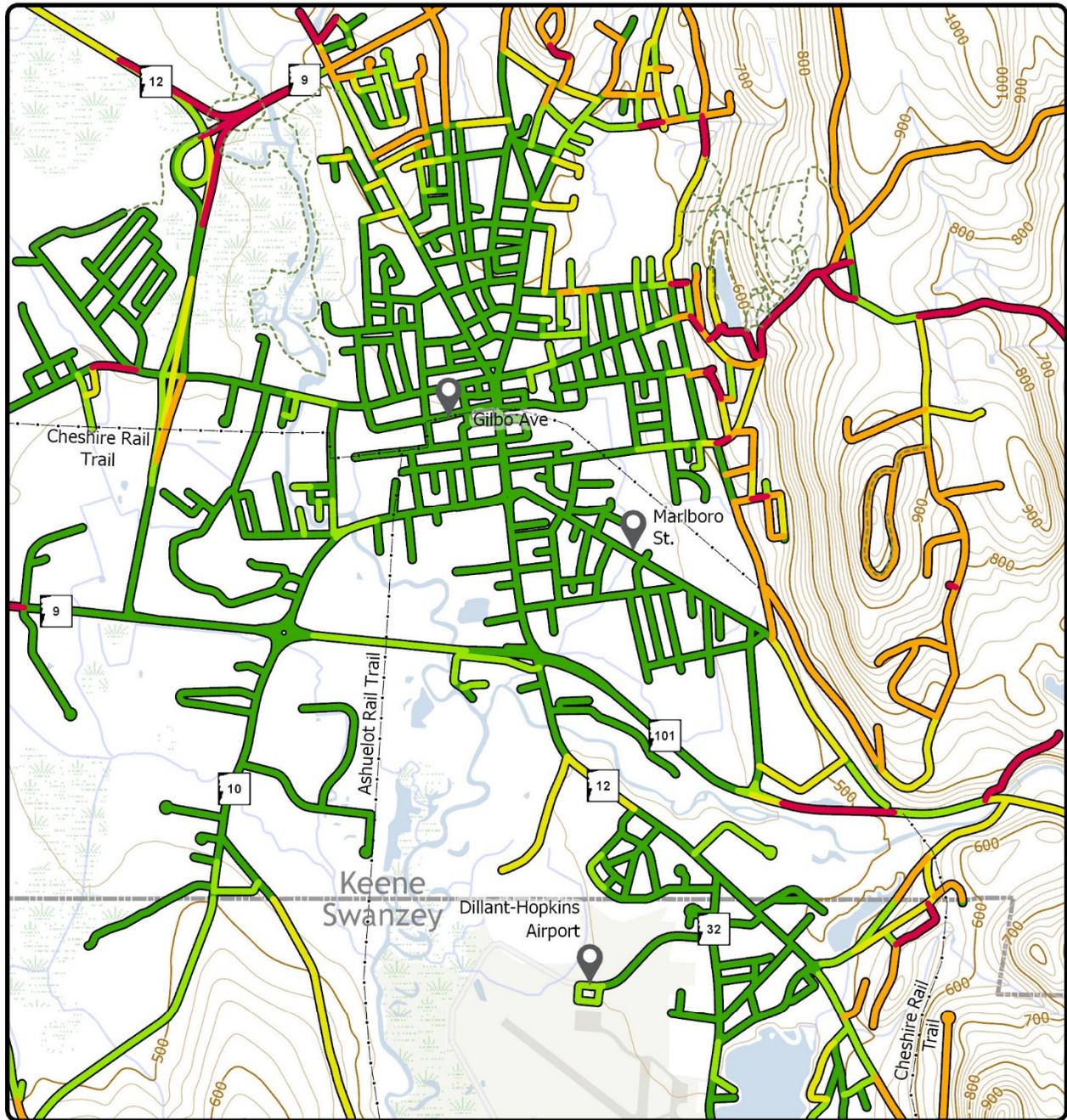
0 0.5 1  
Miles



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Sources: SWRPC, ESRI  
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Figure 17 – Max Grade of Roadways in the Vicinity of Greater Keene ITC Focus Areas



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Typical asphalt or concrete sidewalks line one or both sides of most streets in downtown Keene (Figure 18). The condition and characteristics of these sidewalks, however, are not well documented. For example, information about cross slope, running slope, minimum width, and maximum vertical deflection—all characteristics important for evaluating ADA-compliance—is unavailable for most sidewalks in Keene. Although the condition and characteristics of some sidewalks have been inventoried through the NH Statewide Asset Data Exchange System (SADES), coverage remains limited and many records are incomplete. Should the ITC Feasibility Study progress to the point of evaluating specific sites for ITC development potential, a comprehensive assessment of surrounding pedestrian infrastructure would help illuminate the degree to which pedestrians of all ages and abilities can access proposed sites.

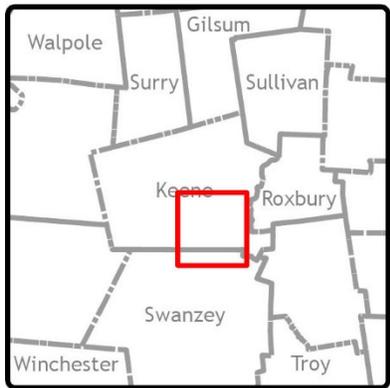
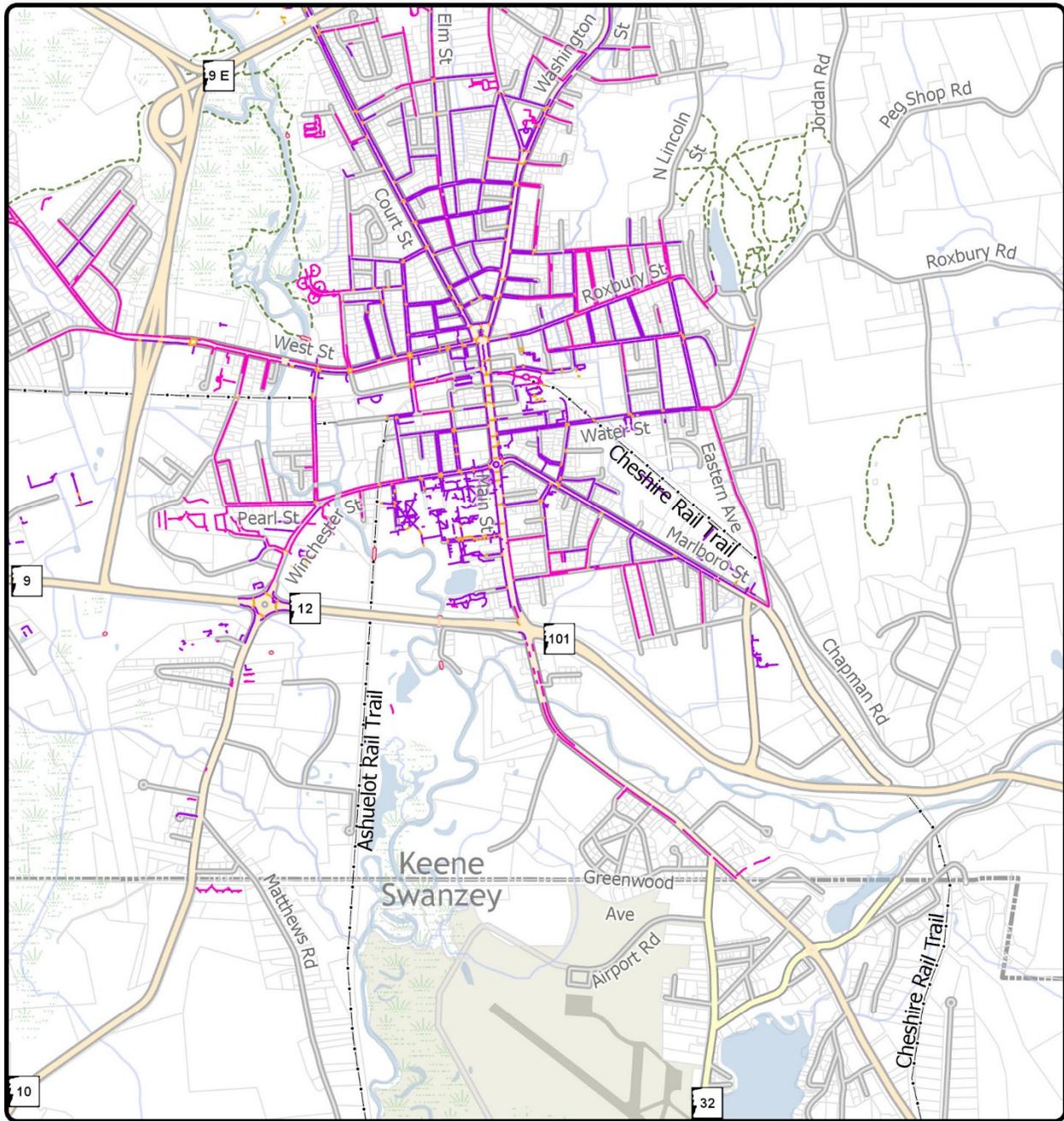
One of the most conspicuous gaps in downtown Keene’s sidewalk network lies along Gilbo Ave., from School St. to West St., (Figure 19). Pedestrians may use the privately-owned sidewalk running along the northern façade of the Center at Keene, but pedestrian facilities are completely absent beyond the western edge of the building. From that point, pedestrians seeking to travel north along Gilbo Ave. must do so either in the roadway or along areas of lawn on either side of the roadways.

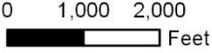
Pedestrians wishing to travel west, to the intersection of Island St. and the Cheshire Rail Trail have the choice of going through the parking lots at the Center at Keene and the Colony Mill or taking a newly created alternate public route along Emerald Street and along a newly formed multi use path that connects to Island St. The new public route is more of a circuitous route and it is unclear what proportion of people tend to use the new public route versus the private route.

The northern edge of Marlboro St. is bordered by a sidewalk, from Main St. to Eastern Ave. A sidewalk on the southern edge stretches nearly as far, from Main St. to Avalon Place. Parallel parking or a grass verge buffers on-sidewalk pedestrians from street traffic (Figure 20). The northern side of Marlboro St. is mostly absent of interconnecting grid streets with very limited access to residential and commercial neighborhoods to the north. Upcoming improvements within the right-of-way are expected to enhance the pedestrian experience on Marlboro St. (see Section 5). In addition, the City of Keene has some plans to better connect Marlboro St. with the multiuse path that parallels Marlboro St. to the north.

Gaps in pedestrian infrastructure currently discourage walking to Dillant-Hopkins airport. The facility has one road that connects to the public street system. The airport’s driveway fronts on NH Route 32, which lacks sidewalks or wide shoulders. About 1,000 feet of sidewalk would be required to connect with the sidewalk that runs along the southwest side of NH Route 12. The sidewalk along NH Route 12, however, runs only about 800 feet south of NH 12/NH 32 intersection. To the north, the sidewalk extends to the NH 101/NH 12/ Main St. intersection, but is interrupted by wide curb cuts in front of commercial parking lots.

Figure 18 – Pedestrian Infrastructure in the Vicinity of ITC Focus Areas



	Sidewalk, Concrete		Rail Trail	 
	Sidewalk, Asphalt		Other Trail	
	Footbridge, Other			
	Crosswalk, Asphalt			



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Sources: City of Keene, ESRI  
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*Figure 19 – Gilbo Ave., West of School St., looking West. The Center at Keene, which houses a variety of businesses and service providers, appears to the left.*



*Figure 20 – Marlboro St. at Adams St., looking Southeast.*



Figure 21 - NH32, looking South towards the Entrance to the Dillant Hopkins Airport



#### 4.6.2 Mixed-use Paths

The Cheshire Rail Trail and the Ashuelot Rail Trail intersect in downtown Keene, providing valuable mixed-use facilities for non-motorized users. From Keene, the Ashuelot Rail Trail extends approximately 22 miles south to Hinsdale, NH. The Cheshire Rail Trail stretches about 21 miles northwest to Walpole, NH and 21 miles southeast to Fitzwilliam, NH. Together, these trails provide important gateways from Keene to surrounding outdoor recreational opportunities.

The northern terminus of the Ashuelot Rail Trail lies at Emerald St., from where it runs south along the western edge of the Keene State College campus. It then proceeds over NH 101 on a pedestrian footbridge installed in 2016. The trail provides a critical north-south off-street facility for non-motorized users, including Keene State College students.

Further to the south, across the Keene-Swanzey town line, the Ashuelot Rail Trail runs within approximately 100 feet of Dillant Hopkins Airport property, suggesting potential to leverage an existing multiuse path to establish a safe and enjoyable pedestrian and bicycle route to the airport. Such a route, however, would need to cross the Ashuelot River, and wetland habitat. It would also pass 50-100 feet through privately owned property. The University of New Hampshire owns one parcel situated in-between the trail and Dillant Hopkins property, perhaps providing a willing partner for the development of a connector trail.

The Cheshire Rail Trail serves as a well-used east-west pedestrian and cyclist route. From its intersection with Main St., the trail runs west along the southern edge of Gilbo Ave. Here, the trail serves as the summer site for the Keene Farmer's Market and also provides an off-street facility for skateboarders, rollerbladers, and BMX riders to access the skate park, located west of the public Commercial St. parking lot. Consequently, the trail serves not only as a transportation corridor, but as a public gathering space. Between School St. and Island St. the former rail corridor is privately owned by the Center at Keene and the Colony Mill.

Consequently, the City of Keene built an alternative east-west travel space by developing sidewalks on Emerald St. and developing a small multiuse trail between Emerald St.'s dead end and Island St. Using the sidewalk on Island St., pedestrians and bicyclists can reach the original rail trail corridor and continue west into West Keene via the multi-use trail's North Bridge.

East of Main St., the Cheshire Rail Trail passes through Railroad Square, a public park that periodically functions as a venue for public events. From there, it continues southeast, past a number of anchor businesses and community institutions, such as the Monadnock Food Co-op, the Courtyard Marriott hotel, Railroad Square Senior Housing, and American House Keene (a senior housing complex). The trail then threads its way in-between a series of larger industrial and commercial properties, which limit access to the trail from Water St. to Eastern Ave. A planned connector trail from Bartholomew Court, part of a larger reconstruction activity on Marlboro St., will improve pedestrian access to the trail from Marlboro St.

#### 4.6.3 Pedestrian Signals

In addition to sidewalks and multiuse paths, a variety of other infrastructure elements are critical to fostering a safe, pleasant and accessible pedestrian experience. Pedestrian signals, for example, can be critical for facilitating safe crossing at busy intersections. Data on pedestrian signals, unfortunately, is sparse in Greater Keene. NH SADES data provides some information on signals at select locations along State-owned roadways. Currently, the only signals recorded within Greater Keene are located at the Main St./NH 12/NH 101 intersection and the West St./NH 12 interchange.

Since the Main St./NH 12/NH 101 intersection represents a critical crossing point between the Dillant Hopkins ITC Focus Area and downtown Keene, a few brief remarks upon the pedestrian signalization at that location are warranted. First, buttons and signals are present at only two corners (northwest and southwest). Pedestrians at the intersection are consequently impeded from safely crossing Main St. or NH 12. Second, according to NH SADES data, the signals lack vibro-tactile buttons, audible tone locators, or audible messages, making safe crossing difficult for visually impaired individuals.

Conducting a comprehensive pedestrian signal inventory within and around the ITC Focus Areas would help improve understanding of pedestrian safety and potential for improved signalization.

#### 4.6.4 Crosswalks

Compared to data on pedestrian signals, data on crosswalk locations are more complete. The City of Keene has compiled an extensive inventory of crosswalk locations (Figure 18). Crosswalks are present at most busy intersections in downtown Keene, as well as some key mid-block crossing points, as is the case on Winchester St., along the northern edge of the Keene State College campus.

Crosswalks, however, are notably absent from most of Marlboro St., present only at the Main St. roundabout and Grove St. Consequently, pedestrians traveling to/from residential neighborhoods south of Marlboro St. to destinations north of Marlboro St. likely cross at points lacking crosswalk facilities. Pending reconstruction of Marlboro St. will include a change in

the location and design of the crosswalk at Grove St. to improve the experience of the many children that use the crosswalk to reach Wheelock School.

Crosswalks are absent from NH 12 and NH 32 in the vicinity of Dillant Hopkins Airport. Consequently, pedestrians traveling to Dillant Hopkins from residential side streets adjoining the two state routes are forced to cross at unmarked locations.

While crosswalk location data is available for the City of Keene in its entirety, data on crosswalk conditions and characteristics is spotty. NH SADES pedestrian infrastructure data, which includes attributes regarding crosswalk width, running slope, cross slope, and other criteria important for evaluating accessibility, is available only for West St., Court St. and portions of adjoining side streets. A systematic crosswalk inventory would allow for a more thorough characterization of existing crosswalk facilities.

#### **4.6.5 Curb Ramps**

The location, condition and characteristics of curb ramps are critical to consider when evaluating the caliber of the pedestrian infrastructure network. Unfortunately, curb ramp data in Greater Keene is limited. NH SADES pedestrian infrastructure data includes records for curb ramps along West St., Court St. and some adjoining residential side streets. Expansion of the NH SADES curb ramps inventory to include the entire pedestrian network within and around the ITC Focus Areas would do much to shed light on network accessibility. Assessing running slope and cross slope would help identify whether curb ramps adequately serve wheelchair users. Identifying the presence and condition of detectable warning panels would help determine whether curb ramps are adequately alerting visually impaired individuals to the presence of road crossings.

#### **4.6.6 Bike Lanes and Sharrows**

As seen in Figure 22, limited on-street bike facilities exist in downtown Keene. Bike lanes are located on Washington St. (approx. 3,500 feet from Central Square to Wilford St) and southern Main St. (approx. 1,500 feet from NH 101 to Baker St.). Bicycle sharrows are located on Main St. (from Baker St. to Central Square) and on Marlboro St. (Main St. to Eastern Ave.). Considering the speed and volume of traffic on both of these roadways, it is questionable the degree to which sharrows improve cyclist safety or encourage additional cycling activity. The planned reconstruction of Marlboro St. includes the incorporation of bike lanes for most of the length of the corridor.

#### **4.6.7 Designated Bicycle Routes**

The New Hampshire Department of Transportation promotes on-street designated bicycle routes through printed maps and an online interactive map. Designated bicycle routes in Greater Keene include Main St., Gilbo Ave., Court St., and NH 12/Main St., among others. Designated routes include a range of roadway facilities, from local backroads with no shoulders to state routes with wide, striped shoulders. Designated bicycle routes are less notable for their physical characteristics than the fact that they are being advertised at the state level as recreational opportunities, perhaps attracting bicycle tourists and local recreational users. With the upcoming update to the statewide bicycle and pedestrian plan, these designated routes may be subject to change.

#### 4.6.8 Bicycle Parking

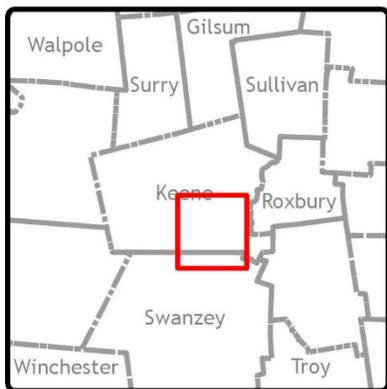
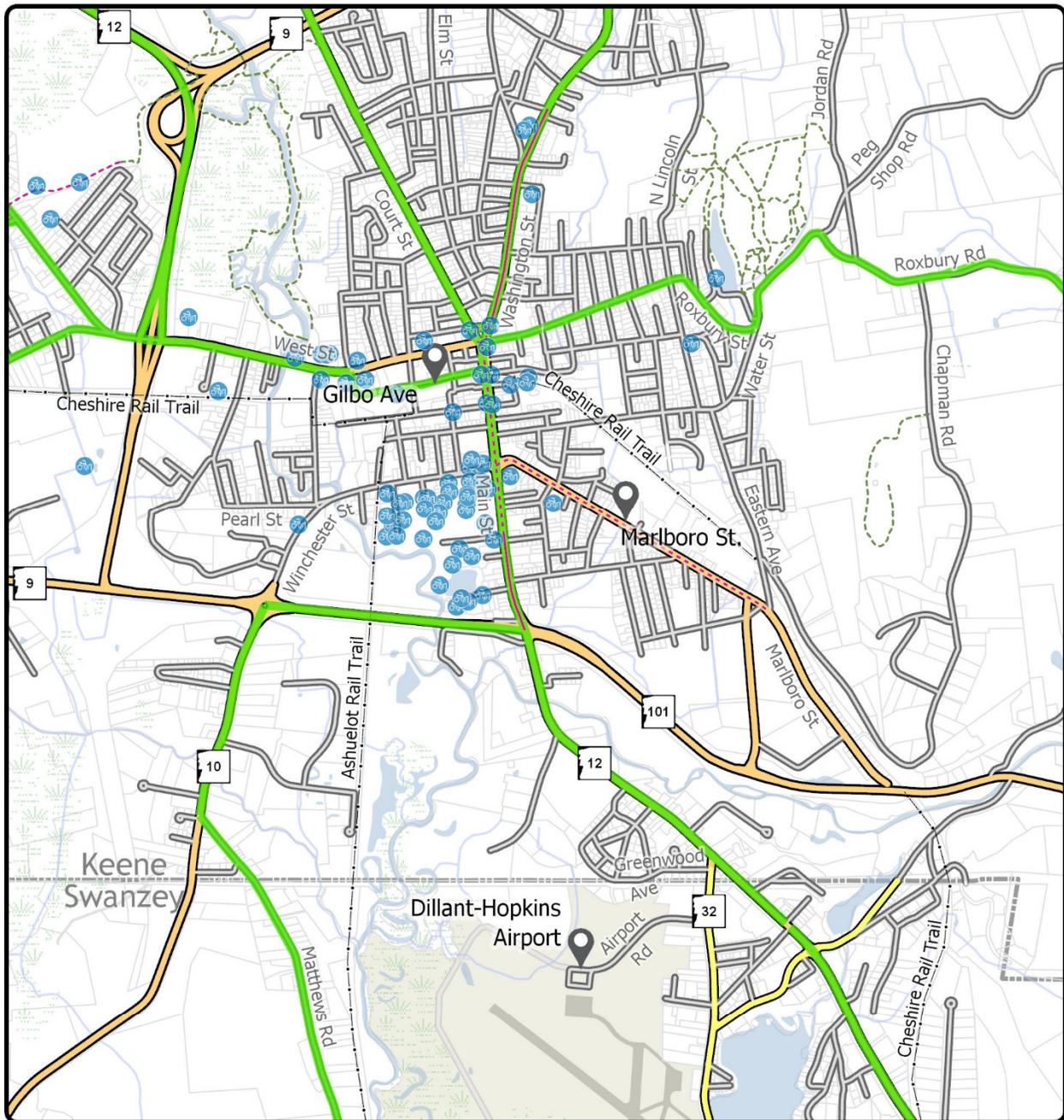
Figure 22 depicts locations of known bicycle parking facilities, including bike racks that may have been temporarily installed. While bicycle parking facilities are abundant on the Keene State College campus, they are notably lacking along the majority of Gilbo Ave. and Marlboro St. Available bicycle parking data currently covers the City of Keene only.

#### 4.6.9 Wayfinding Signage

A limited amount and variety of pedestrian and cyclist wayfinding signs exist in Greater Keene, including rail trail markers, kiosks, and on-street bicycle route signs. Wayfinding signage to key downtown Keene destinations are located at the intersection of Main St. and the Cheshire Rail Trail, albeit oriented and scaled to suit motorists more than pedestrians or bicyclists. A systematic inventory of wayfinding signage does not currently exist.

DRAFT

Figure 22 – Bicycle Infrastructure in the Vicinity of ITC Focus Areas



	ITC Focus Area		NHDOT Recommended Bicycle Route	
	Bike Parking		Rail Trail	
	Bike lane		Other Trail	
	Sharrow			

0 1,000 2,000  
Feet



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Sources: City of Keene, ESRI  
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## 4.7 PARKING

An intermodal transportation facility will likely require onsite or nearby parking facilities for those arriving by car to access other transportation modes. The types of facilities an ITC may require might differ from those currently present in Greater Keene. The following section provides a brief overview of parking facilities located within and around the ITC Focus Areas.

### 4.7.1 Downtown Keene

#### 4.7.1.1 Existing Public Parking Facilities

According to a 2018 City of Keene parking report, the City managed 1,347 public parking spaces, including both on and off-street facilities. These spaces include:

- 396 spaces reserved by permit
- 824 spaces managed with meters or kiosks
- 48 accessible spaces
- 24 loading spaces
- 55 no-charge 2-hour limited spaces

According to the City of Keene's 2018 Parking Study, there are an additional 41 unregulated spaces not included in the figures cited above: 8 on Emerald St., 12 on Norway Ave., 3 on Marlboro St., and 18 on Washington St.

City of Keene public parking facilities can be seen in Figure 23. Regulated on-street spaces concentrate on Main St., north of Emerald St. and around Central Square (136 spaces total). A significant number of regulated spaces also line other downtown streets: Court St. (31 spaces), Winter St. (48 spaces), Gilbo Ave. and St. James St. (65 spaces). Inventoried on-street parking in downtown Keene includes 541 spaces, seen in red in Figure 23.

Table 4 lists major off-street parking facilities in downtown Keene, along with the number of metered spaces, handicapped accessible spaces, and spaces reserved by permit. Gilbo Lot E and the Commercial St. Lot, located across from one another on Gilbo Ave., represent the largest cluster of public off-street parking, together totaling 249 spaces. The Wells St. Garage and Wells St. Lot constitute another significant parking complex, altogether totaling 236 spaces.

Figure 23 – Identified Parking Facilities in the Vicinity of the Gilbo Ave ITC Focus Area



- |                       |                      |
|-----------------------|----------------------|
| <b>Public Parking</b> | <b>Other Parking</b> |
| Deck                  | ITC Focus Areas      |
| Lot                   |                      |
| Reserved              |                      |
| Street                |                      |



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Regulated on-street spaces concentrate on Main St., north of Emerald St. and around Central Square (136 spaces total). A significant number of regulated spaces also line other downtown streets: Court St. (31 spaces), Winter St. (48 spaces), Gilbo Ave. and St. James St. (65 spaces). Inventoried on-street parking in downtown Keene includes 541 spaces, seen in red in Figure 23.

*Table 4 – Off-street Parking Facilities in Downtown Keene*

Facility Name	Metered Spaces	Reserved Spaces	Accessible	Lot Total
Commercial St. Lot	106	30	5	141
Gilbo Lot E	103	0	5	108
Wells St. Garage – Lower Level	42	68	3	113
Wells St. Garage – Upper Deck	0	115	0	105
Wells Lot	14	0	4	18
City Hall – Lower Level	0	44	2	46
City Hall – Upper Level	37	0	6	43
Elm St Lot	*	*	*	27
Library Annex	27	5	2	34
Cypress Lot	0	14	0	14
Total	329	276	27	649

*\* Only total parking figures available.*

*Source: City of Keene*

The City’s current parking inventory, as described in its 2018 parking study, has some limitations that bear mentioning. Most notably perhaps, the parking study does not account for unmetered on-street spaces outside of the Main St. corridor, such as those found on Marlboro St. Approximately 29 unmetered spaces line Marlboro St., from Main St. to Grove St. From Grove St. to Baker St. (approx. 2,000 ft.), wide shoulders on both sides of Marlboro St. accommodate parallel parking (Figure 24). On-street parking facilities are expected to change with the improvements planned for Marlboro St. in 2019-2020. The addition of bike lanes and traffic calming facilities may reduce shoulder parking. Some new spots may be striped, however, encouraging more efficient use of remaining space.

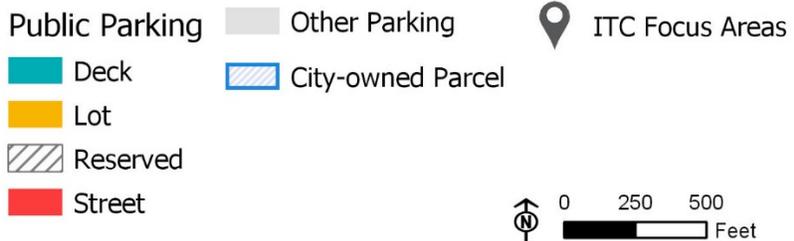
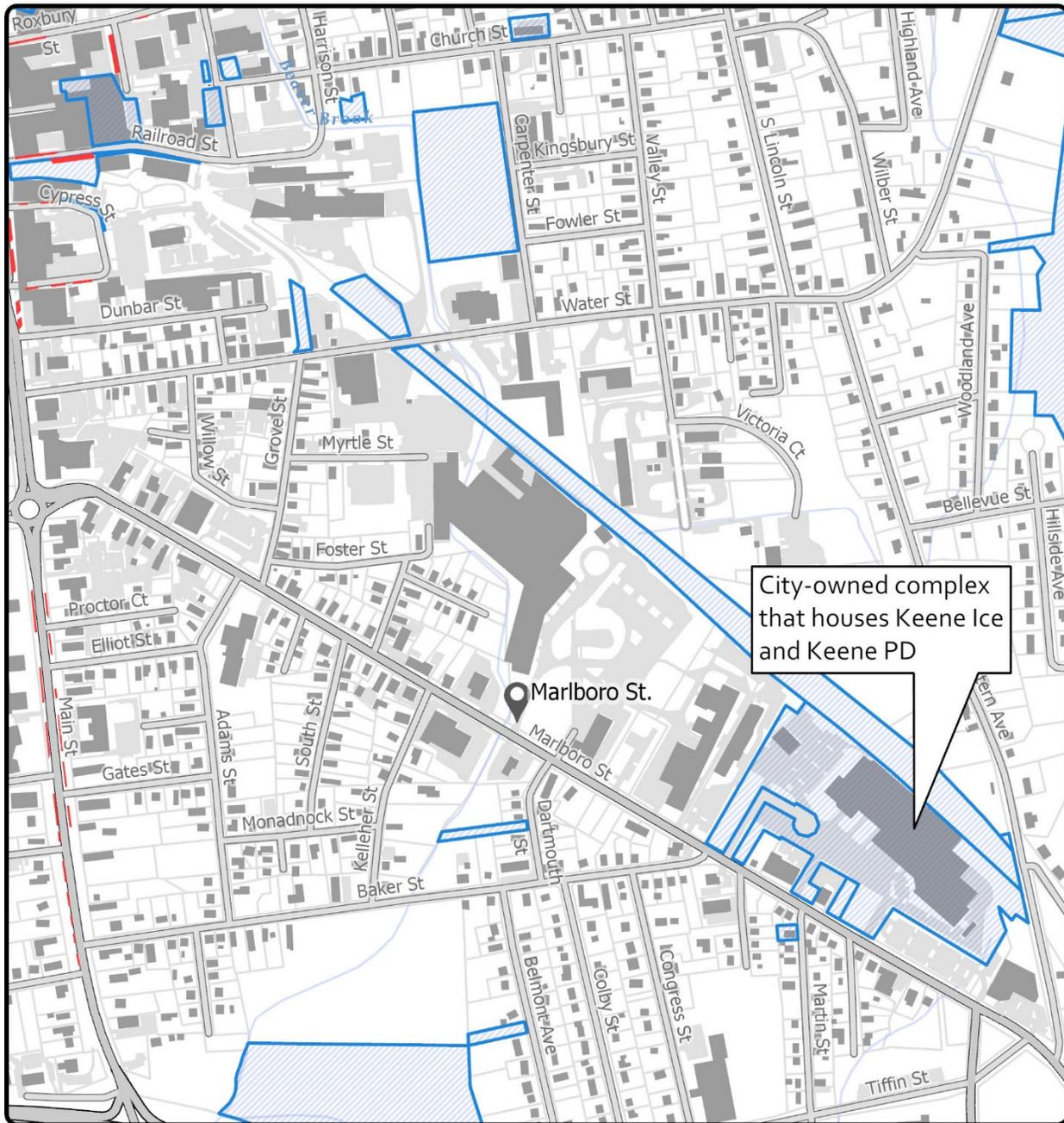
Figure 24 – Marlboro St., Looking Northwest towards South St..



While no public off-street parking facilities line Marlboro St., the City-owned parcel that includes the Keene Police Station and Keene Ice (a skating rink) hosts a sizable lot (Figure 25). While the usage rate of the 250 spaces associated with Keene Ice has not been studied, large fluctuations in occupancy are likely, considering swings in attendance due to events. High levels of vacancy in-between events poses the possibility of leveraging the lot to satisfy the parking needs of new intermodal facilities within the area.

DRAFT

Figure 25 – Identified Parking Facilities and City-Owned Parcels in the Vicinity of the Marlboro ITC Focus Area



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Source: U.S. Census Bureau Longitudinal Household Dynamics - Workplace Area Characteristics - 2015  
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#### 4.7.1.2 Public Parking Occupancy in Downtown Keene

The City of Keene 2018 Parking Report indicates that: 1) the downtown parking supply is adequate to meet current needs; and 2) that average utilization of both on-street and off-street parking facilities decreased between 2014 and 2017.

According to the 2018 Parking Study, average occupancy of all on-street parking spaces was 44%, whereas in 2017 it was 37%. Table 5 shows that while the decrease in average occupancy varied somewhat from location to location, no areas saw an increase in occupancy greater than one percent. The trend indicates a decreased demand for on-street parking across downtown Keene.

Table 5 – Downtown Keene On-Street Parking, Select Locations, Average Annual Occupancy, 2014-2017

Street/Area	2014	2015	2016	2017	4 Year Change
Washington St.	38%	44%	41%	39%	1%
Court St (W) - Superior Court	38%	44%	41%	39%	1%
Central Square (E) City Hall	66%	62%	61%	56%	-10%
Central Square (N) Church	69%	54%	48%	46%	-22%
Central Square (W) Chamber	78%	73%	57%	47%	-32%
Main St. (E) Roxbury to Railroad	50%	50%	45%	42%	-8%
Main St (W) - West to Gilbo	67%	72%	63%	52%	-15%
Railroad St	38%	44%	41%	39%	1%
Main St. (E) - Railroad to Dunbar	53%	56%	56%	52%	0%
Main St (W) - Gilbo to Emerald	58%	55%	55%	51%	-7%
Main St. Lower (E) Westwood	43%	44%	36%	31%	-12%
Main St. Lower (W) - College	38%	44%	40%	33%	-6%
Total	53%	54%	49%	44%	-9%

Source – City of Keene 2018 Parking Study

Off-street public parking facilities experienced a similar decrease in occupancy between 2014 and 2017. Annual average occupancy declined from 47% in 2014 to 38% in 2017, with changes in occupancy rates varying somewhat by location (Table 6). Utilization of the lower level of the Wells Parking Garage remained flat, while the upper deck saw the steepest decline of any public off-street facility, decreasing by 36%. The Elm St. lot was the only off-street facility to experience a rise in occupancy, experiencing a modest increase of 15% between 2014 and 2017.

Table 6 - Downtown Keene Off-Street Parking, Select Locations, Average Annual Occupancy, 2014-2017

Street/Area	2014	2015	2016	2017	4 Year Change
Wells Structure Lower	55%	31%	48%	55%	0%
Wells Structure Upper	42%	50%	3%	6%	-36%
Wells Lot	72%	76%	77%	66%	-6%
Elm Lot	25%	33%	44%	41%	15%
Library Annex	31%	31%	27%	22%	-9%
Gilbo East Lot	76%	72%	65%	61%	-16%
Commercial Lot	27%	34%	22%	17%	-9%
<b>Total</b>	<b>47%</b>	<b>47%</b>	<b>41%</b>	<b>38%</b>	<b>-9%</b>

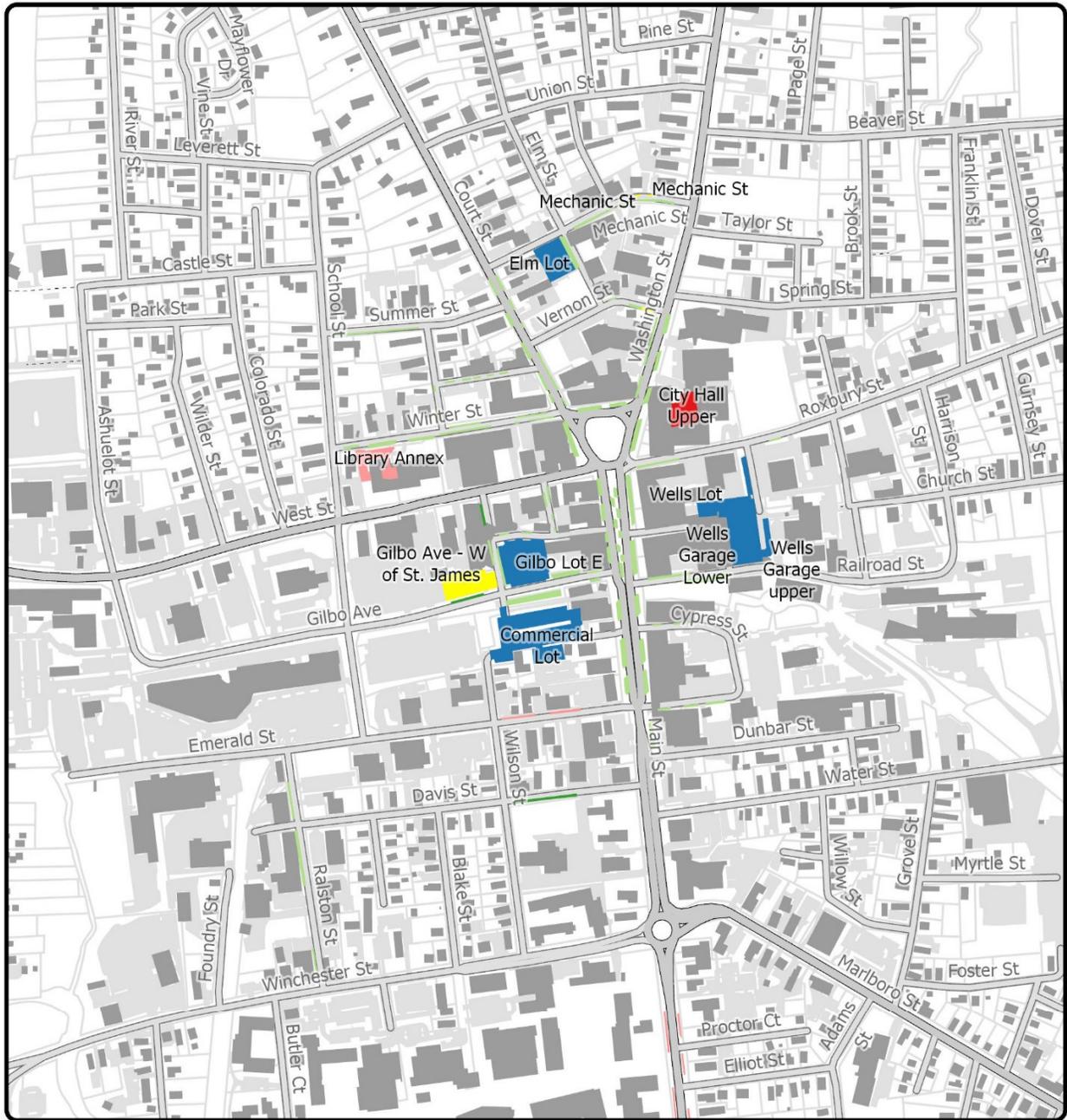
The 2018 Parking Study does not treat in great detail average *peak* occupancy of off-street and on-street facilities. The study does, however, note that while some high demand areas reach over 90% occupancy, vacant spaces are usually available on nearby streets and lots. High peak occupancies in centrally located, highly visible locations have the potential to generate public perception of inadequate parking supply when, in fact, an oversupply may exist. Recent changes in parking rates (see Section 4.7.1.3, below) have the potential to shift the parking load from high-demand facilities on Main St. to side street lots. Improved wayfinding signage may also help, as might pedestrian infrastructure improvement in-between side street lots and popular downtown destinations.

#### 4.7.1.3 Parking Period Maximums and Parking Costs in Downtown Keene

Maximum parking periods range from two hours to ten hours in downtown public parking facilities (Figure 26). Metered on-street parking is generally limited to two hours, while off-street facilities tend to have a ten-hour limit. Permitted parking lot spaces are available for lease on a quarterly basis, but no public facilities in downtown Keene offer long-term parking without a permit. In the context of assessing ITC feasibility, the provision of long-term parking may be important to consider, since individuals who drive to ITCs to access other modes often require a place to store their vehicle on a mid- to long-term basis.

Effective January, 2019 metered on-street parking rates increased from \$0.75/hour to \$0.85/hour. Off-street parking rates, meanwhile, increased from \$0.30/hour to \$0.35/hour. In other words, the difference between on-street and off-street parking rose from \$0.45 to \$0.50. Future study will be necessary to determine how the price changes affect the overall parking utilization rate as well as the distribution of the parking load among different downtown public parking facilities.

Figure 26 – Parking Facilities, by Maximum Time Allowed, in the Vicinity of the Gilbo Ave. ITC Focus Area



Max Time, Meter Type    Other Parking

- 10 Hrs, Kiosk
- 2 Hrs, Meters
- 2 Hrs, Posted
- 3 Hrs, Meters
- 4 Hrs, Kiosk
- Reserved Only



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Source: U.S. Census Bureau Longitudinal Household Dynamics - Workplace Area Characteristics - 2015  
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#### 4.7.1.4 *Private Parking in Downtown Keene*

In addition to City-managed public parking, an abundance of private parking is located in and around downtown Keene. For example, within a five-minute walk of the Gilbo Ave. ITC Focus Area, there are about 30 acres of land dedicated to parking, only a small portion of which is public. (This figure excludes driveways and garages associated with single-family homes, as well as unregulated street parking). Assuming that 330-350 square feet is needed for each space (and accompanying access aisles), there are an estimated 3,772-4,001 parking spaces within a 5-minute walk of the Gilbo Ave. ITC Focus Area. Much private parking along and around Gilbo Ave. sits idle for significant portions of the day, especially outside of normal business hours. Considering the abundance of off-street private parking facilities, assessment of ITC feasibility could consider shared or leased parking arrangements alongside onsite parking provision. The City of Keene 2018 Parking Study notes that several entities currently rent out parking spaces: Keene State College, 60 Foundry St. (EMF) and the Center of Keene (all within a 5 to 10-minute walk of the Gilbo Ave. ITC Focus Area).

#### 4.7.2 **Parking at Dillant Hopkins Airport**

According to the 2017 Dillant Hopkins Airport Master Plan Update, approximately 78,400 square feet of parking is available adjacent to the main terminal building. There are also about 13,600 square feet of parking adjacent to the terminal leased by the airport's Fixed-Base Operator (FBO).

As of 2017, there were 158 parking spaces in the lot adjacent to the terminal building. The 2017 Airport Master Plan Update tabulates parking demand for the lot, based on terminal building use (Table 7). Estimated demand totals 83 spaces, leaving 75 surplus spaces at estimated peak occupancy. It should be noted that the figures in Table 7 below are estimates generated from building use, not observed parking counts. Considering that different uses within the terminal building likely generate parking demand at different times of day and different days of the week, actual peak demand is likely lower than the estimated demand tabulated in Table 7.

Table 7 – Vehicle Parking Demand adjacent to Terminal Building

Facility/Requirement	Employee Demand (No. of Spaces)	Average Daily Peak Visitor Demand (No. of Spaces)	Total
Airport Management	2	3	5
FBO	3	6	9
Restaurant	6	35	41
Thomas Transportation	0	25	25
Miscellaneous	1	2	3
<b>Total Demand</b>	<b>12</b>	<b>71</b>	<b>83</b>

Source: Dillant Hopkins Airport Master Plan Update, 2017, Table 4-8

#### 4.7.3 Park and Ride Facilities

The Monadnock Region has only one park and ride facility: the Chesterfield Gorge State Wayside, which is owned and maintained by NHDOT. The facility is located in Chesterfield, NH off of NH Route 9. The lot is lit at night and has a public telephone, but is not serviced by any form of transit. The lot is located about seven miles from Central Square in Keene, or about a fifteen-minute car ride.

#### 4.8 AVIATION

Dillant-Hopkins Airport, owned by the City of Keene, is located just south of the City in the Town of Swanzey. Commercial air service to the airport ceased in 1998. Today, private aircraft and a flight school are primary users of the airport. In 2016, the airport fleet consisted of 80 aircraft, compared to 85 in 2005 (Dillant-Hopkins Airport Master Plan Update, 2017).

## 5 RECENT, PLANNED, OR POTENTIAL CHANGES TO EXISTING TRANSPORTATION RESOURCES AND ASSETS

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Previous planning initiatives have examined or proposed a range of changes to transportation infrastructure in the Greater Keene area. Past initiatives have also proposed changes in land use regulations that could affect transportation patterns in Greater Keene. Some proposed changes have been adopted, while others remain conceptual in nature. Some planning initiatives are ongoing, with final recommendations still forthcoming. In addition to planning initiatives, specific transportation infrastructure projects or land redevelopment projects have the potential to shape the future of transportation in Greater Keene. In an effort to provide context to the Greater Keene ITC Feasibility Study, the following section summarizes both key planning initiatives as well as important transportation infrastructure and redevelopment projects.

## 5.1 PLANNING STUDIES AND INITIATIVES

### 5.1.1 City of Keene Transportation Center Evaluation

In 2002, SWRPC conducted a study that examined the characteristics and functionality of the Keene Transportation Center on Gilbo Ave. At the time of the study, Vermont Transit Lines leased 550 square feet of the Transportation Center for use as a passenger waiting area, ticketing counter, vending machines, and luggage storage. A Vermont Transit Lines employee operated the ticketing counter seven days a week. Six routes stopped at the Center on a daily basis with an additional route stopping once on Fridays and Sundays (Table 8). Notably, twice-daily service was available to/from Boston, via Nashua, NH and Winchendon, MA. According to the Transportation Center Evaluation, about 30 Vermont Transit Lines patrons boarded or alighted at the Transportation Center each day, on average. By comparison, less than 10 intercity bus passengers used the station in FY18 (see Section 6.2)

Table 8 – Vermont Transit Routes Serving Keene, 2002

Rte. #	From:	To:	Keene Arrival
9052	Rutland/Brattleboro	Nashua/Boston	8:15 a.m.
123	Hanover/Bellows Falls	Springfield/New York	9:55 a.m.
9059	Boston/Winchendon	Brattleboro/Burlington	2:05 p.m.
9056	Rutland/Brattleboro	Winchendon/Boston	3:40 p.m.
9055	Boston/Nashua	Brattleboro/Rutland	6:40 p.m.
128	New York/Springfield	Bellows Falls/Hanover	6:55 p.m.
134	New York/Springfield	Bellows Falls/Hanover	10:10 p.m.*

\* Service Friday and Sunday Only

Source: Vermont Transit Schedule - Effective June 25, 2002

Vermont Transit Lines, a subsidiary of Greyhound Lines, was eventually rolled into the parent company's brand, and the number of daily routes diminished to two per day, with two additional routes available on Fridays and Sundays (see Section 4.2.3).

At the time of the Transportation Center Evaluation, public restrooms were accessible via the south side of the building. The report, however, does not describe when restroom facilities were open to the public or how the facilities were maintained. Today, public restrooms aren't available at the Transportation Center or elsewhere in downtown Keene (see Section 5.2.5 regarding the proposed installation of public restrooms at the Keene Transportation Center).

The Evaluation applied a series of criteria to the Transportation Center, noting to what degree it possessed desirable characteristics. Criteria included:

- Easily accessible for buses
- Easily accessible for all modes (auto, bicycle, foot)
- Proximity to employment, shopping and community facilities
- Located at a central point in existing transit system
- Can accommodate potential growth
- Ample parking capacity (short- and long-term) nearby
- Transit vehicle maneuvers do not restrict traffic flow
- Attractive, vibrant public place that visibly enhances surroundings

In its discussion of the Transportation Center's fulfillment of the above criteria, the Evaluation noted a series of observations. For example, the one-way configuration of Main St. allows for only right in/right out bus maneuvers to/from the Transportation Center, limiting access to certain areas of the City. The Evaluation also noted the Center's close proximity to key locations, including the public library, the county courthouse, shops and businesses on Main St., and Keene State College student housing. The Transportation Center is accessible by a variety of transportation modes, including automobile, biking and walking. Working against the location, the Evaluation cited the fact that it allows little opportunity to expand, with developed parcels abutting on all sides. It should be noted, however, that the Evaluation was written at a time when the Transportation Center was fully occupied, unlike today, when a portion of the building is currently unused.

### 5.1.2 Marlboro St. Zoning and Land Use Regulation Project

Concluding in 2014, the Marlboro St. Zoning and Land Use Regulation Project developed a range of recommendations aimed at enhancing Marlboro St. and the surrounding area. The project aimed at encouraging redevelopment of underutilized properties and strengthening the neighborhoods of southeastern Keene. Transportation improvement figured heavily into the Project's final recommendations, with an appendix dedicated exclusively to transportation strategies. Some of the recommendations have been incorporated into the Marlboro St. and Bartholomew Ct. improvements planned for 2019-2020 (see section 5.2.4 below).

Transportation recommendations addressed a variety of issues, including access management, intercity bus service, pedestrian and bicycle transportation, and parking.

Regarding access management, the Project recommends consolidating and limiting the number of curb cuts. Reducing the number of curb cuts can result in a number of benefits, including increasing on-street parking and lowering the number of potential collision points between pedestrians, bicyclists and motorists.

### 5.1.3 Arts and Culture Corridor

A more recent initiative spearheaded by the Monadnock Economic Development Corporation (MEDC), the Arts and Culture Corridor, proposes a variety of redevelopment projects and public infrastructure enhancements along Gilbo Ave., across Main St. and through the "Railroad Land" to Water St. The goal of the initiative is to enhance the presences of arts and culture in downtown Keene. Components of the plan include:

- Construction of at least three new structures, including a covered pavilion on Gilbo Avenue, a new skate park, and a mixed-use artist live/work building on Railroad Land.
- Completion of the Monadnock Food Co-op expansion, which will include a small performance venue within the amphitheater on Railroad Land.
- Purchase of at least two existing buildings in proximity to Gilbo Ave. and renovation of one to accommodate an artist live/work space and gallery.
- Establishment of a car-free mall along Gilbo Ave., from Main St. to Saint James St.
- Purchase, redesign, and redevelop Railroad Square to extend the pedestrian mall across Main St. and through the Railroad Land.
- Creation of a management entity to oversee scheduling of events, occupancy and upkeep of facilities and public space.

#### 5.1.4 “Center City” Planning Study

In a 2010 planning study known as “Center City,” the consulting firm Vanasse Hangen Brustlin, Inc. developed recommendations regarding urban design and transportation in the vicinity surrounding Gilbo Avenue and, across Main St., the “Railroad Land” on either side of the Cheshire Rail Trail. The study area and many of the recommendations align with the goals of the Arts and Culture Corridor. The study was a joint effort of the City of Keene, the Greater Keene Chamber of Commerce, and the Monadnock Economic Development Corporation.

Streetscape recommendations included: adding pedestrian amenities such as street trees and seating; the establishment of north/south pedestrian alleys to add connectivity to the existing street grid; closing Gilbo Ave. to traffic for special events; and the creation of a signature public space that accommodates events and programming year round.

Notable urban design recommendations included: using buildings to define important intersections, like at School St. and Gilbo Ave.; improved integration of the pedestrian streetscape environment and adjoining land uses, notably the Center at Keene; lining parking facilities with pedestrian-friendly land uses, like retail spaces; considering the establishment of a variety of public spaces, from larger-scale civic space to pocket parks.

Transportation-related recommendations included: considering temporary or permanent closure of Gilbo Ave. to vehicular traffic; traffic calming measures like speed tables, “necked-down” corners with sharpened turning radii, and planted medians; quantification of the traffic impacts of new development.

#### 5.1.5 Building Better Together Keene – Zoning and Permitting Process Update

The City of Keene is currently in the process of revamping its land use regulations and permitting processes. At the time of writing, draft regulations have not been released, so an analysis of the new regulations’ impact on ITC feasibility is not possible at this time. It should be noted, however, that ITC development may support and benefit from increased density in the surrounding vicinity. An increased variety of permitted land uses may also share mutually supportive relationships with an ITC. The more walkable environment yielded by denser development and mixed land uses, combined with expanded transportation options provided by an ITC could provide a recipe for the car-free or car-lite lifestyles desired both by younger professionals and many seniors aging out of the ability to drive. Since the revision of the City’s land use regulations are occurring contemporaneously with the Greater Keene ITC Feasibility Study, there may be opportunity for the separate efforts to inform one another.

## 5.2 NOTABLE TRANSPORTATION, PUBLIC INFRASTRUCTURE, AND LAND REDEVELOPMENT PROJECTS

### 5.2.1 Proposed 5311(f) Intercity Bus Route from Keene to Nashua

The 5311(f) Intercity Bus Program is a federally-funded program that subsidizes intercity bus capital stock and service in rural areas. Eligible applicants include private for-profit or non-profit entities, as well as local public transportation providers. In late 2018, NHDOT released an RFP seeking proposals from eligible applicants to provide service on four specified routes.

One of those routes, never before supported with 5311(f) funding, would run between Keene and Nashua, with a potential stop in Peterborough. The route is intended to function as a feeder line to the Exit 8 facility in Nashua, providing connections to Boston, Nashua and Manchester. Service would run Monday-Thursday and Saturday, one round trip per day. New service would complement existing service provided by Greyhound on Friday and Sunday. The RFP stipulates that the maximum one-way fare from Keene to Nashua shall not exceed \$10.

At the time of writing, NHDOT has not received any bids for the Keene-Nashua route. After consultation with potential service providers, NHDOT may release a modified RFP later in 2019.

### **5.2.2 Recent Changes to City Express Routes**

In 2018, City Express made several route adjustments to the Red Route (Bus #5) and Black Route (Bus #1), expanding service to new areas in Keene and Swanzey. The Red Route, for example, was extended up Washington St. in Keene, adding a stop at a forty-unit income-restricted townhouse complex located on Citizens Way. The Black Route added service in two key areas: southeastern Keene and northern Swanzey, along NH 12. New stops in southeastern Keene include Bentley Commons on Water St., the intersection of the Cheshire Rail Trail and Eastern Ave., and the HCS offices on Marlboro St. In northern Swanzey, the Black Route now stops at: Princeton at Mill Pond, an apartment complex located on Colonial Village Dr.; Waterview Apartments, a low-income complex on Lake St.; and Edgewood Apartments, located off of NH 32, on Arbor Ln. and Juniper Ln., just north of Airport Rd. Current service is reflected in Figures 13 and 14. It should be noted that while City Express routes saw changes, the overall period and frequency of service remained the same (see Section 4.2.1 for an overview of current City Express service).

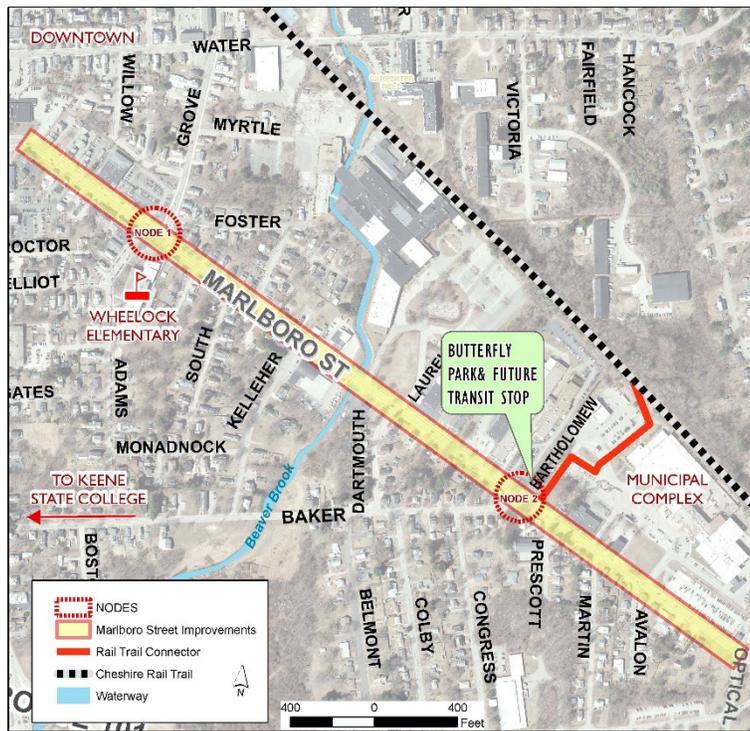
### **5.2.3 Downtown Keene Revitalization**

The 2020-2025 City of Keene Capital Improvement Plan (CIP) recognizes that since downtown Keene “is an economic engine for the community and represents the spirit and place of Keene it is important to continue investment to keep the downtown relevant and vibrant” (p. 142). Given that observation, and that the last downtown revitalization effort occurred in 1988, the CIP calls for \$180,000 in FY20 to develop a preliminary design for aesthetic and infrastructure improvement in downtown Keene, which, according to the CIP, includes not only Main St., but also the Railroad Square area, Gilbo Ave., Roxbury St., and other areas surrounding Central Square. According to city officials, the impetus for the project is to address subterranean infrastructure issues, but this will allow the City to look at fixes to roads and sidewalks as well. A final design and contract documents are proposed for completion in FY21, with construction running from FY22-FY24.

### **5.2.4 Marlboro St. and Bartholomew Ct. Improvements**

Reconstruction of Marlboro St. planned for 2019-2020 will improve pedestrian and bicycle facilities along the length of the corridor, from Main St. to Eastern Avenue. Sidewalks will be rebuilt to ADA standards, bike lanes will run the length of the corridor and pedestrian crossings will be improved with refuge islands and bump-outs. The project scope also includes the construction of a multi-use path that connects Marlboro St. with the Cheshire Rail Trail (Figure 27). The project will be supported through a Transportation Alternatives Program (TAP) grant, with the City’s CIP contributing matching dollars.

Figure 27 – Project Overview Map from Keene 2018 TAP Application



### 5.2.5 Public Bathrooms in Downtown Keene

As noted in the FY20-25 CIP, a group of concerned citizens approached the City Municipal Services, Facilities & Infrastructure Committee regarding the need for public bathrooms in downtown Keene. Through a series of discussions, a consensus was reached that public bathrooms are needed downtown and that the most eligible location is the Keene Transportation Center on Gilbo Ave. The CIP had proposed a FY20 budget of \$134,000 to install bathrooms in the building. The project timeline, however, has been delayed in order to assess how the Monadnock Economic Development Corporation’s proposed Arts and Cultural Corridor may involve the site (see Section 5.1.3). As a temporary measure, the City has extended the lease of a business renting space in the Transportation Center on the condition that bathroom facilities be made available to the public during operating hours. The tenant currently uses the space for storage, but plans to open a restaurant at the location in 2019. At the time of writing, please note that this issue is under continual review by city officials.

### 5.2.6 Skate Park Reconstruction on Gilbo Ave.

According to the FY20-25 Keene CIP, a volunteer group has organized around the idea of reconstructing the 9,800 SF skate park on Gilbo Ave. Project costs are estimated at \$300,000, with \$25,000 coming from municipal funds and the remainder raised through a volunteer-organized campaign. Construction is planned to begin in 2020.

When complete, the improved skate park would likely attract increased activity in the area by non-motorized users, including skaters and BMX riders. The park could also function as a more inviting public space, encouraging use by a variety of users, including families.

## 5.2.7 Parking-Related Projects in the City of Keene

### 5.2.7.1 *Gilbo Avenue East Lot Reconstruction*

In 2018, the Gilbo Avenue East Lot (identified as “Gilbo Lot E” in Figure 23) was reconstructed, incorporating drainage adjustments, sidewalk improvements, and concrete islands to separate parking lanes. Four new parking spaces were added along the street along with a new automated parking meter system.

### 5.2.7.2 *Smart Meters*

The 2020-2025 CIP calls for replacing 470 coin fed parking meters with “smart meters” that allow parking motorists to pay with either a credit card or coins. The smart meters are also able to transmit parking data wirelessly to a centralized parking monitoring system, allowing for more detailed analysis of parking usage and needs. The CIP proposes a budget of \$250,000 for FY24.

It should be noted that parking motorists currently have the option of paying for parking via the ParkMobile app at all regulated public parking spots in the City.

## 5.2.8 Kingsbury Property

The Kingsbury Property is a privately owned 21.6-acre brownfield located on Marlboro St. in Keene. The property’s 700-foot rear lot line abuts the Cheshire Rail Trail. The property hosts a defunct industrial facility and has known and suspected contamination issues. Particular consideration of the property is warranted due to its scale, under-utilization and corresponding impact it exerts on the surrounding area. The City of Keene is interested in rehabilitating and redeveloping the site, through cooperation with the landowner or, if need be, by acquiring the property through the tax-deeding process. Currently, further environmental assessment work is needed to better understand onsite contamination and cleanup needs.

The property may have limited potential for redevelopment as an ITC facility, since Beaver Brook splits the parcel, with a large portion of the property lying in the 100-year floodplain. The City has discussed with the owner the idea of building a Victoria Street extension, providing a much needed connection between Marlboro St. and Water St. The City has discussed the idea of developing a greenway along Beaver Brook which could serve as a bicycle and pedestrian link between Marlboro St., the Cheshire Rail Trail and Water St.

# 6 TRANSIT RIDERSHIP DATA

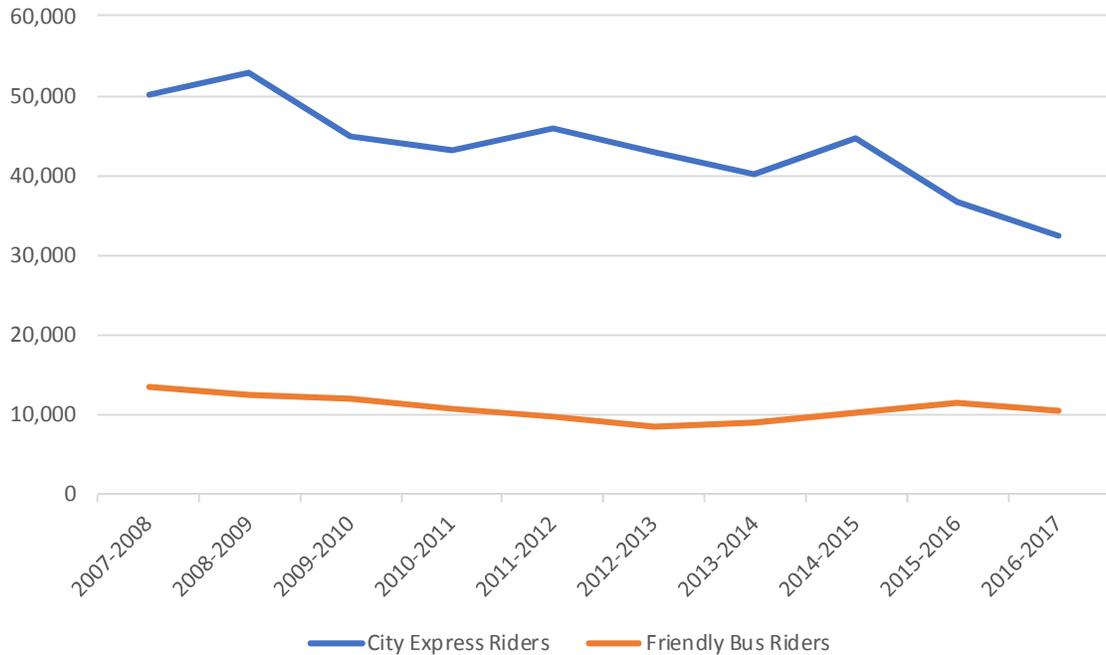
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## 6.1 LOCAL TRANSIT

As discussed in Section 4.2, local fixed-route transit is limited to one service: City Express, which is operated by Home Healthcare, Hospice and Community Services (HCS). Despite its low fare (\$1.00) and lack of competition, City Express has seen declining ridership over the past decade (Figure 28). While City Express ridership totaled 52,845 passengers during the 2008-2009 academic year, ridership reached only 32,329 passengers during the 2016-2017 academic year, representing a 39 percent decrease. Lower ridership is likely attributable to

diminished enrollment at Keene State College, students from which constitute a significant portion of City Express passengers. As noted in Section 5.2.x, HCS changed the City Express routes in 2018, capturing residential parts of the City that historically had no service, such as the Marlboro St. area with the hope that a shift in the routes would result in increased ridership.

Figure 28 – Annual City Express and Friendly Bus Ridership



Ridership on the Friendly Bus has seen a more modest decline in ridership, falling from 13,323 passengers during the 2007-2008 reporting period to 10,465 passengers during the 2016-2017 reporting period, a 21 percent decrease.

## 6.2 INTERCITY BUS

As mentioned in Section 4.2.3, Greyhound is the only intercity bus provider in Greater Keene, stopping at the existing Keene Transportation Center on Gilbo Ave. Over the past two fiscal years (ending in March) the number of arriving and originating passengers has remained flat (Table 9). In FY18, an average of 5.4 passengers per day departed from Keene, while an average of 4.4 arrived per day. The reason behind the discrepancy between arrivals and departures is unknown. Plausible reasons include passengers are permanently leaving the area or are using different transportation modes on the return journey.

Table 9 – Arriving and Originating Greyhound Passengers at Downtown Keene Station

	FY 2017	FY 2018
Arriving	1,679	1,616
Originating	2,062	1,957

## 7 TRANSPORTATION ACTIVITY NEAR ITC FOCUS AREAS

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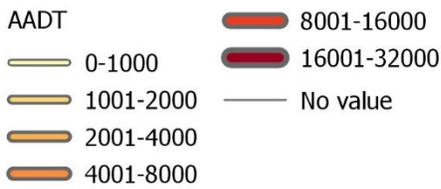
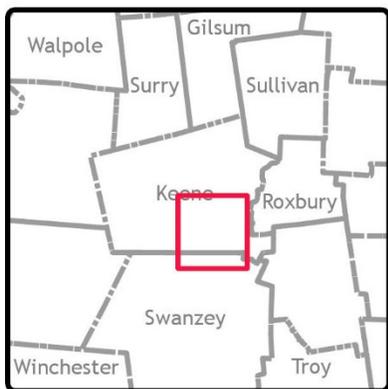
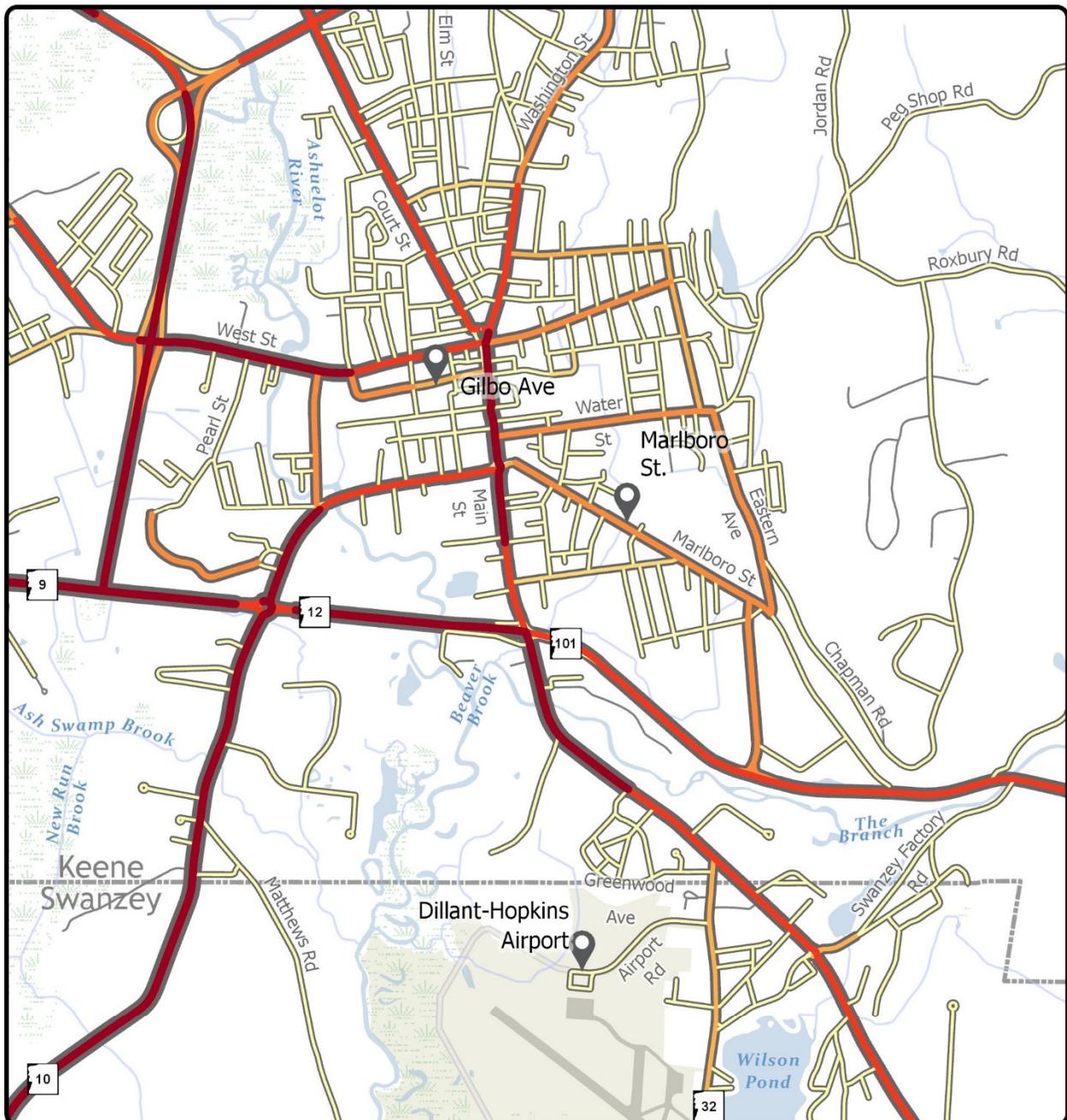
### 7.1 TRAFFIC COUNTS

The services provided by an ITC may be impacted by the level of traffic on nearby roadways. Conversely, an ITC could cause changes in street traffic patterns, depending on the services offered. For example, improved transit service and pedestrian facilities could lead to fewer individuals choosing to drive single-occupancy vehicles, thereby reducing on-street congestion. An overview of available traffic data is provided below in order to establish a baseline understanding of traffic patterns within the study area.

#### 7.1.1 AADT within Greater Keene

Annual average daily traffic (AADT) provides a simple baseline indicator of how busy a roadway is. In the Greater Keene area, the NH 10/12 bypass, north of NH 9, is the busiest road segment, with an AADT of 25,680 vehicles (Figure 30). Main St., from Winchester St. to Central Square sees slightly less traffic, with an AADT of 22,470 vehicles. West St., between NH 10/12 and Gilbo Ave., is the third busiest road segment, with an AADT of 19,260.

Figure 29 – Annual Average Daily Traffic, NHDOT Estimates as of 2018



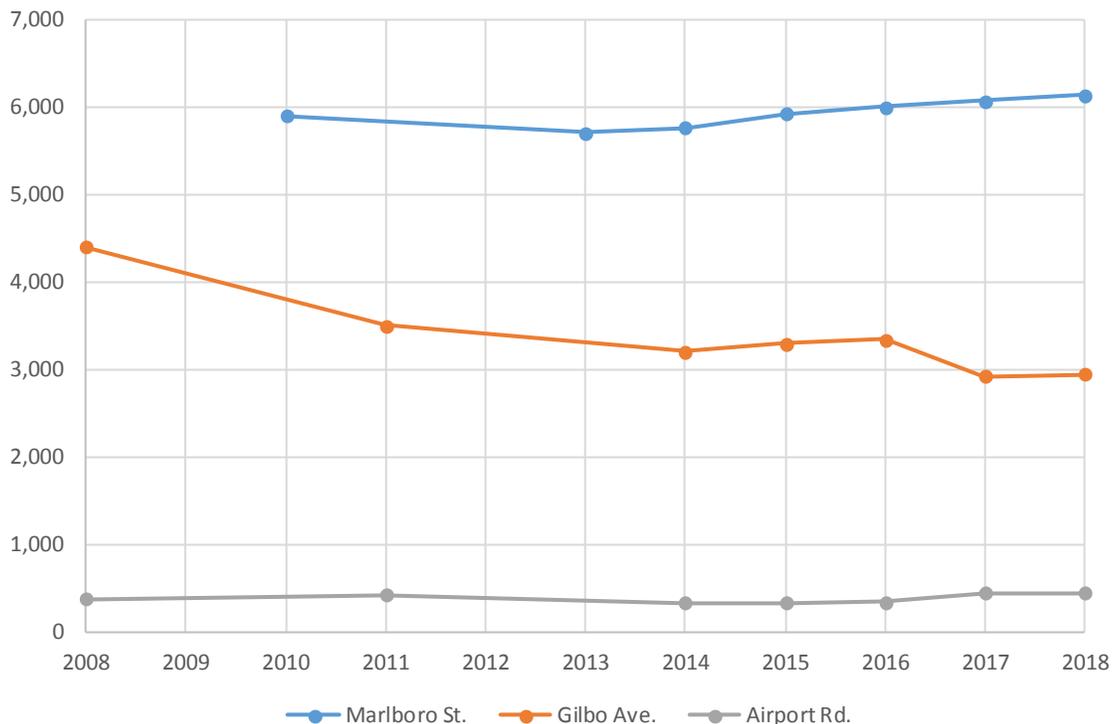
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Source: NHDOT  
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### 7.1.2 Historical Trends in ITC Focus Areas

Figure 30 shows trends in average annual daily traffic (AADT) from 2008 through 2018 (note that counts are not available for each site for every year). AADT on Marlboro St. (measured over Beaver Brook) saw a modest increase during that period, increasing from 5,900 in 2010 to 6,131 in 2018, a 4 percent change. On Gilbo Ave. (west of School St.), AADT decreased from 4,400 in 2008, to 2,943 in 2018, a 33 percent decline. Airport Rd. (at Sylvan Way), serving as the driveway to Dillant Hopkins Airport, has consistently experienced a much lower AADT during the same time period, hovering at about 400 vehicles per day.

Figure 30 – Average Annual Daily Traffic (AADT) at Select Locations in ITC Focus Areas



Source: NHDOT Transportation Data Management System

## 7.2 BIKE AND PEDESTRIAN COUNTS

### 7.2.1 SWRPC Counts

Southwest Region Planning Commission has conducted a number of bicycle and pedestrian counts in the vicinity of the ITC Focus Areas (Table 11). By far the busiest count location is on the Cheshire Rail Trail, West of Main St, with a daily average of 520 combined bicyclists and pedestrians and a peak daily count of 932 combined bicyclists and pedestrians. Count numbers recorded at the location likely include a significant number of pedestrians walking to/from parked cars in the Commercial St. Lot to/from Main St. destinations.

Table 10 – Selected Bicycle and Pedestrian Counts in Greater Keene

Location	Count Type	Start Date	End Date	Daily Average	Peak Day
Cheshire Rail Trail, West of Main St.	Combined Bike/Ped	7/31/2015	8/17/2019	520	932
Cheshire Rail Trail North of Mt. Huggins Dr.	Combined Bike/Ped	7/21/2017	05/28/2018	9	58
Ashuelot Rail Trail, North of NH 101	Combined Bike/Ped	6/22/2018	7/10/2018	121	249
Ashuelot Rail Trail, North of Winchester St.	Combined Bike/Ped	5/25/2018	6/20/2018	232	561
Cheshire Rail Trail, East of School St.	Bike Only	6/22/2018	7/11/2018	127	192
Cheshire Rail Trail, West of Main St.	Bike Only	8/5/2015	8/13/2015	135	164
Cheshire Rail Trail, Over Beaver Brook	Bike Only	9/26/2015	10/5/2015	22	32

The second busiest count location is at the intersection of the Ashuelot Rail Trail and Winchester St., reflecting the Trail’s role as a major north-south corridor for Keene State College students.

Much lower counts were seen on the Cheshire Rail Trail in eastern Keene. A count on Cheshire Rail Trail over Beaver Brook recorded only 22 cyclists on average. It should be noted, however, that this count occurred in mid fall, whereas other listed counts included summer months, when peak usage is expected.

### 7.2.2 Strava Data

Strava is a personal fitness app for cyclists, runners, hikers, or anyone interested in tracking outdoor exercise. Using the app, individuals record routes, speed, elevation gain, and other data. Although marketed as a fitness app, data collected by the platform is also useful for transportation planning. Aggregated Strava data provides a picture of cyclist and pedestrian activity across the transportation network. Although Strava users represent only a small sample of all cyclists and pedestrians, mapping their activity illuminates general patterns of cycling and walking activity. It is worth emphasizing, however, that Strava data represent primarily individuals cycling and walking for recreational rather than utilitarian purposes. Although routes taken by recreational cyclists and pedestrians may often overlap with those cycling and walking as a means of transportation, differences likely exist. Strava users may also over represent individuals from certain socioeconomic groupings.

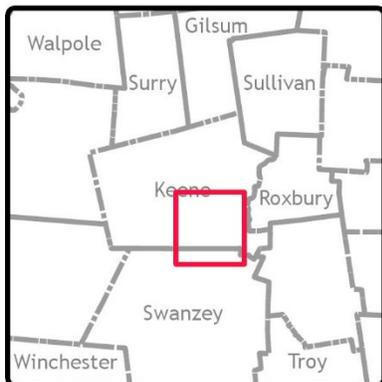
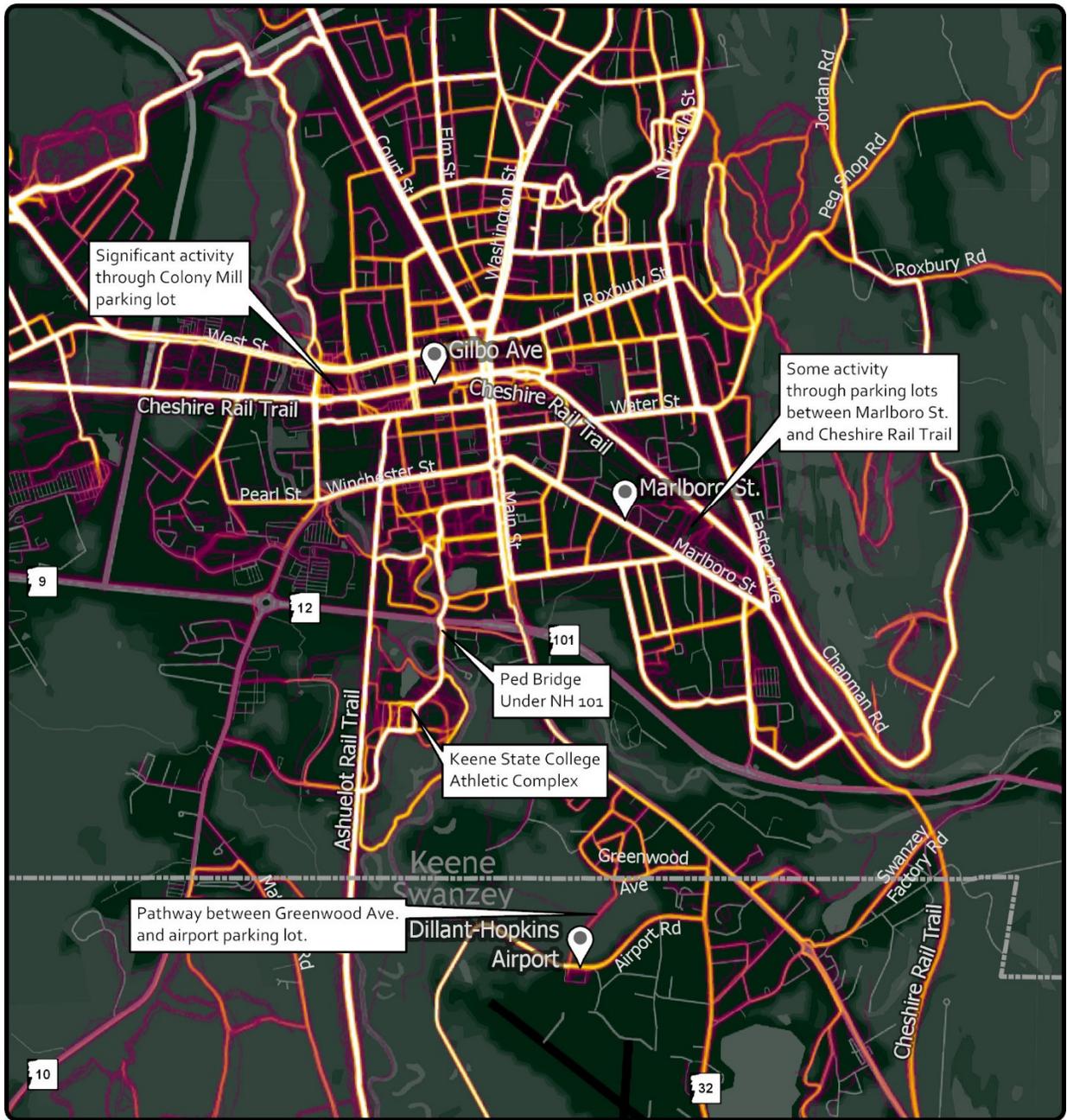
Strava offers a number of data products for analyzing and visualizing the travel patterns of app users. Fee-licensed Strava Metro data assigns metrics like number of trips, unique

pedestrians, and average speed to each road segment and intersection of the road network. The publicly accessible Strava Global Heatmap visualizes the actual routes taken by app users, whether or not those routes lie on the existing road network. Since the most recent Strava Metro data available to SWRPC at the time of writing is somewhat stale, dating back to 2016, the following analysis relies on the Strava Global Heatmap. The Global Heatmap offers the advantage of highlighting “desire lines” or routes taken by cyclists and pedestrians that do not adhere to the existing roadway and sidewalk network.

Unsurprisingly, Strava pedestrian users travel most frequently along major thoroughfare and rail trails radiating out from Central Square and Main St. in downtown Keene (Figure 31). Court St. and Washington St. north of Central Square appear to experience the most Strava pedestrian traffic out of any road segment in the area. Main St. itself, however, sees slightly less activity, perhaps indicating that traffic or other barriers make the area less desirable to runners and recreational walkers.

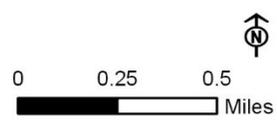
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Figure 31 – Strava Global Heatmap – Pedestrian Trips – January 2017 – January 2019



 ITC Focus Areas

Lighter, thicker lines indicate more pedestrian activity while thinner, darker lines indicate less activity.

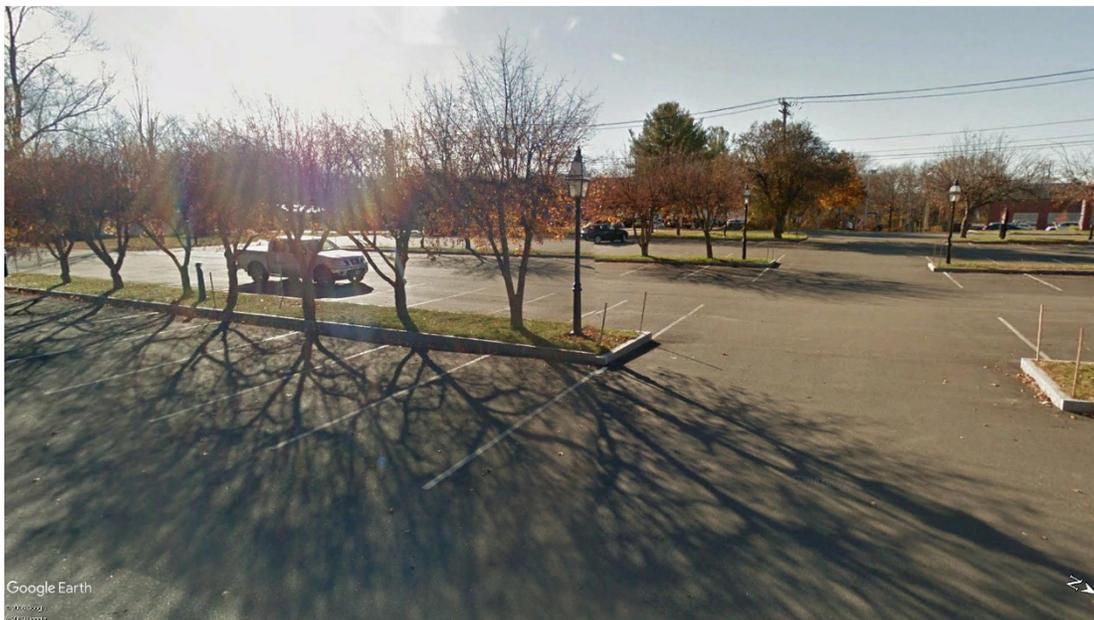


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Source: U.S. Census Bureau 2010 Decennial Census  
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Strava Global Heatmap data reveals a number of pedestrian routes that cut through existing parking lots. Most significantly, perhaps, the parking lot south of the Colony Mill (Figure 32) functions as a key pedestrian thoroughfare, linking the Cheshire Rail Trail west of Island St. and east of School St. despite the availability of a newer publicly owned east-west route between Emerald St. and Island St. A much smaller amount of activity occurs through existing parking lots between the Cheshire Rail Trail and Marlboro St. Pedestrian traffic through these parking lots will likely concentrate onto the planned connector path from the Cheshire Rail Trail to Bartholomew Ct.

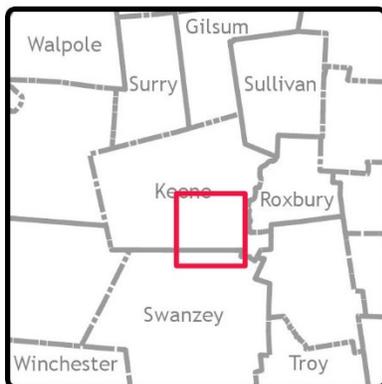
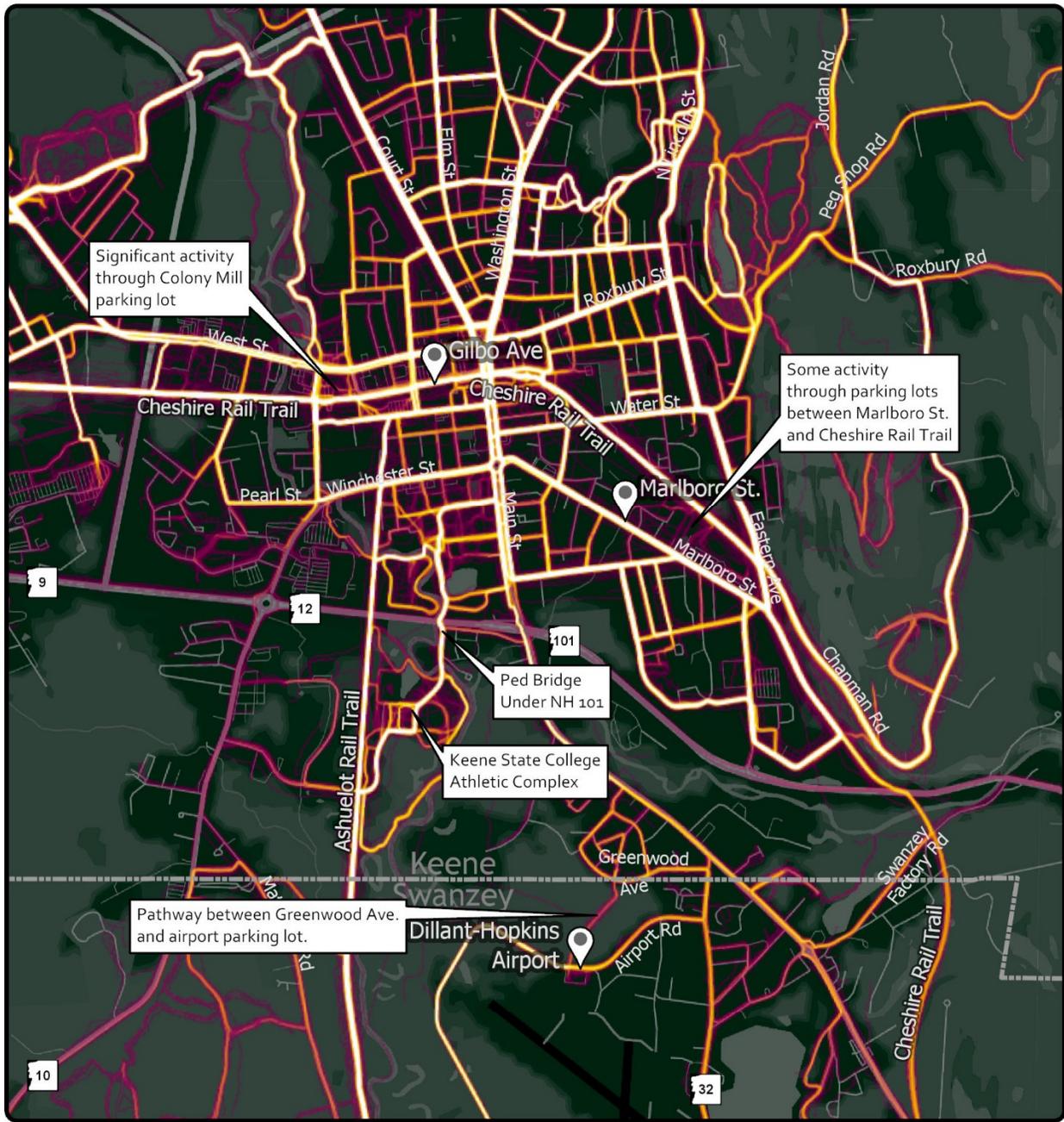
*Figure 32 – Parking lot south of Colony Mill, looking approximately west towards Island St.*



Patterns of Strava cycling activity generally mirror those of pedestrian activity (Figure 33). Major roadways and rail trails emanating from Central Square and Main St. remain some of the most well-traveled routes. The parking lot south of Colony Mill functions as a well-traveled cut-through, despite signage prohibiting bicycle traffic.

Some differences do exist between Strava pedestrian and cyclist travel patterns. Strava cyclists, for example tend to travel along Main St., relative to other routes, more than Strava pedestrians. In the vicinity of Dillant-Hopkins Airport, cyclists travel along NH 12 and NH 32 more frequently than their pedestrian counterparts. While Strava pedestrians are absent from NH 9/NH 10/NH 12, some cyclists do travel along that segment of state highway.

Figure 33 – Strava Cyclist Trips – Weekly Average - 2016



 ITC Focus Areas

Lighter, thicker lines indicate more pedestrian activity while thinner, darker lines indicate less activity.



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Source: U.S. Census Bureau 2010 Decennial Census  
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## 8 SOCIOECONOMIC AND DEMOGRAPHIC DATA

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In order to begin understanding the demographic and socioeconomic characteristics of potential ITC catchment areas, SWRPC staff compiled and mapped baseline data on population, housing and employment. The follow sections summarize data compiled as well as cursory findings.

All socioeconomic and demographic data presented in this section is sourced from U.S. Census Bureau block level data. The Census Block is the smallest geographic unit at which U.S. Census Bureau data is made publicly available.

### 8.1 POPULATION

#### 8.1.1 Total Population within Catchment Areas

SWRPC staff generated total populations for each potential ITC catchment area by summing the population of each Census Block whose centroid lies within the catchment area polygon. Considering the geometric irregularities of both Census Blocks and potential catchment areas, the method is imperfect. The results should be considered as rough estimates only. The same caveat applies to all included socioeconomic and demographic tables in this section.

Despite methodological limitations, some basic patterns emerge. While the population within driving catchment areas is quite similar across all ITC focus areas, significant differences emerge when considering the populations within the walking and cycling catchment areas of each ITC Focus Area (Table 11).

##### 8.1.1.1 *Population within Pedestrian Catchment Areas*

The Marlboro St. Focus Area has the highest population (512 people) within a five-minute walk, due to residential blocks on connecting side streets. The Gilbo Ave. Focus area has somewhat fewer people (367) within a five-minute walk, attributable to the fact that commercial development, office space, and parking predominate in the immediate area. The population within a ten-minute walk of the Gilbo Ave. Focus Area, however, significantly exceeds the population within a ten-minute walk of the Marlboro St. Focus Area, due to the fact that portions of Keene State College fall within a 10-minute walk of Gilbo Ave. All of the main Keene State College campus falls within a 15-minute walk of both the Gilbo Ave. and Marlboro St. Focus Area. Far fewer individuals live within walking distance of the Dillant-Hopkins Airport Focus Area. The difference is attributable to a few reasons, including generally lower density of residential development in the area and the time it would take for a pedestrian to travel the length of the Airport driveway, the sole route by which pedestrians can access the location.

##### 8.1.1.2 *Population within Cycling Catchment Areas*

A substantial population (7,952 people) lives within a 5-minute bike ride of the Gilbo Ave. ITC Focus Area, approximately 50 percent larger than the population within a 5-minute bike ride of the Marlboro St. Focus Area and 1500% larger than the population within a 5-minute

bike ride of the Dillant-Hopkins Focus Area. On-campus residents at Keene State College make up a substantial portion of the population within Gilbo Ave.'s 5-minute bicycle catchment area, with residential neighborhoods north and west of downtown Keene also making significant contributions. As larger cycling catchment areas (10-minute and 20-minute) are considered, population differences between the ITC Focus areas grow smaller, but remain noteworthy. The 20-minute cycling catchment area surrounding Gilbo Ave. contains 18,543 residents, 10 percent larger than population within Marlboro St.'s 20-minute cycling catchment area and 46 percent larger than the cycling area surrounding Dillant-Hopkins Airport.

### 8.1.1.3 Population within Driving Catchment Areas

Only small differences exist between the respective driving catchment areas of each ITC Focus Area. For all three ITC Focus Areas, approximately 30,000 people live within a 15-minute drive and just over 60,000 people live within a 30-minute drive.

Table 11: Total Population within Sample Catchment Areas

	<b>Gilbo Ave.</b>	<b>Marlboro St.</b>	<b>Dillant-Hopkins</b>
<b>Walking</b>			
<b>5 min</b>	367	512	114
<b>10 min</b>	4,061	1,611	166
<b>15 min</b>	7,341	5,186	513
<b>Cycling</b>			
<b>5 min</b>	7,592	5,267	513
<b>10 min</b>	13,010	10,961	1,289
<b>20 min</b>	18,543	16,754	12,648
<b>Driving</b>			
<b>15 min</b>	30,047	29,213	30,125
<b>30 min</b>	62,764	61,673	62,736

Source: U.S. Census Bureau 2010 Decennial Census

### 8.1.2 Total Population Density

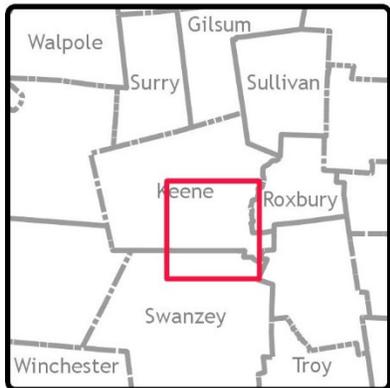
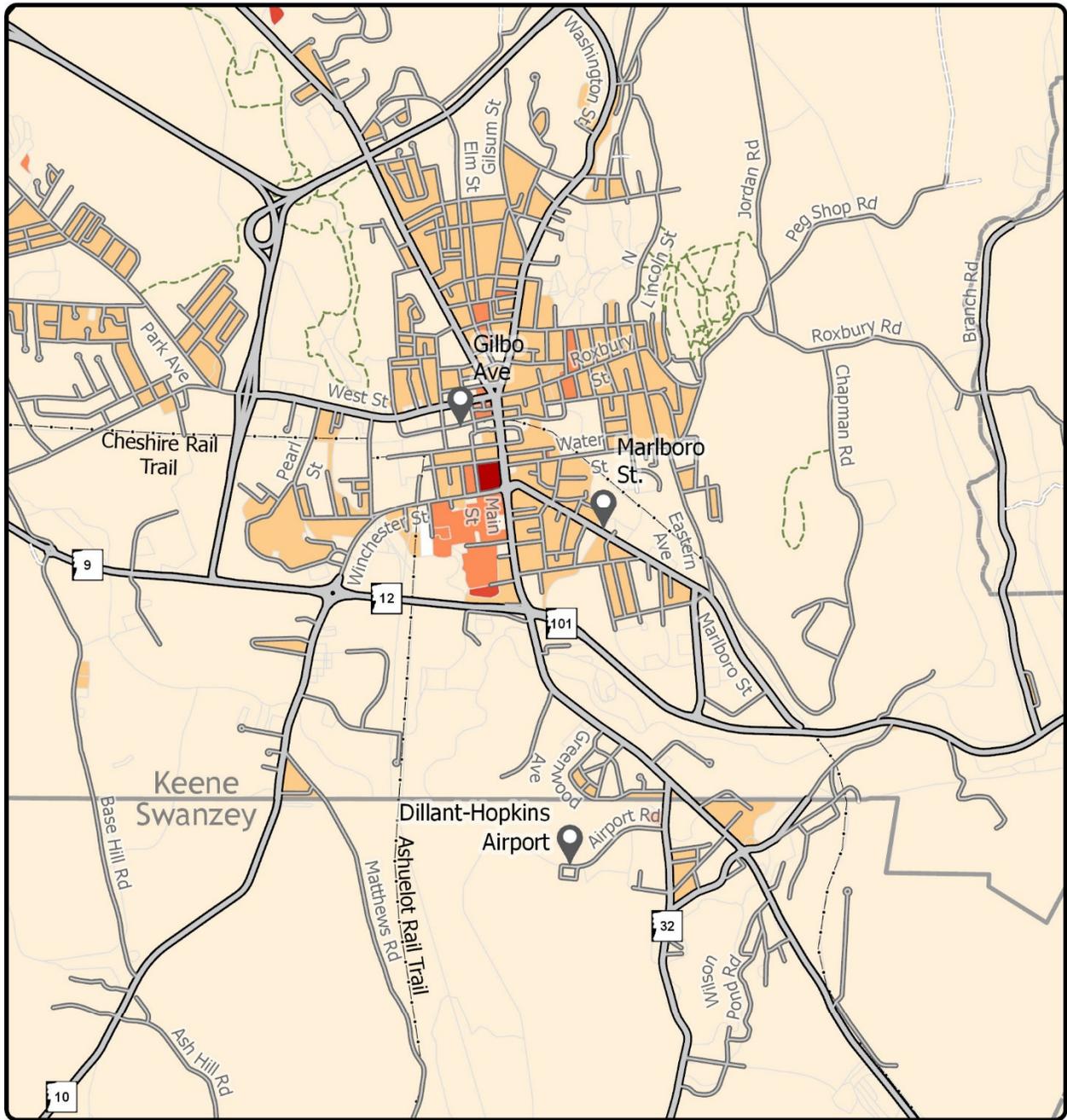
The population in Greater Keene concentrates most densely on the campus of Keene State College. At the corner of Main St. and Winchester St., the population density reaches 53 people per acre, while elsewhere on campus density ranges from approximately 15-43 people per acre (Figure 34).

It should be noted that population density figures were calculated using 2010 Census data. The total student headcount (number of students enrolled) and the number of students housed on campus has fallen significantly in the intervening time period (Figure 35 and Figure 36). Between 2014 and 2018, total fall headcount fell by 1,388 (28%), while the on-campus headcount fell by 735 (28%).

When using Census data to examine population density, another important consideration is that Census population data also does not account for the seasonal nature of the student population, which fluctuates widely depending on whether classes are in session or not.

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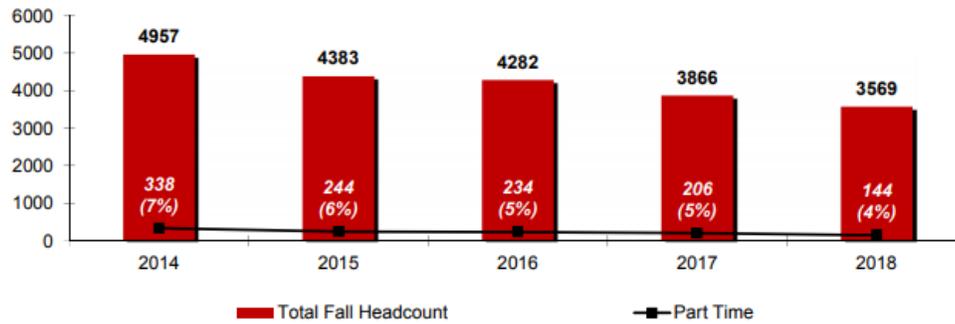
Figure 34 – Greater Keene Population Density, by 2010 U.S. Census Block



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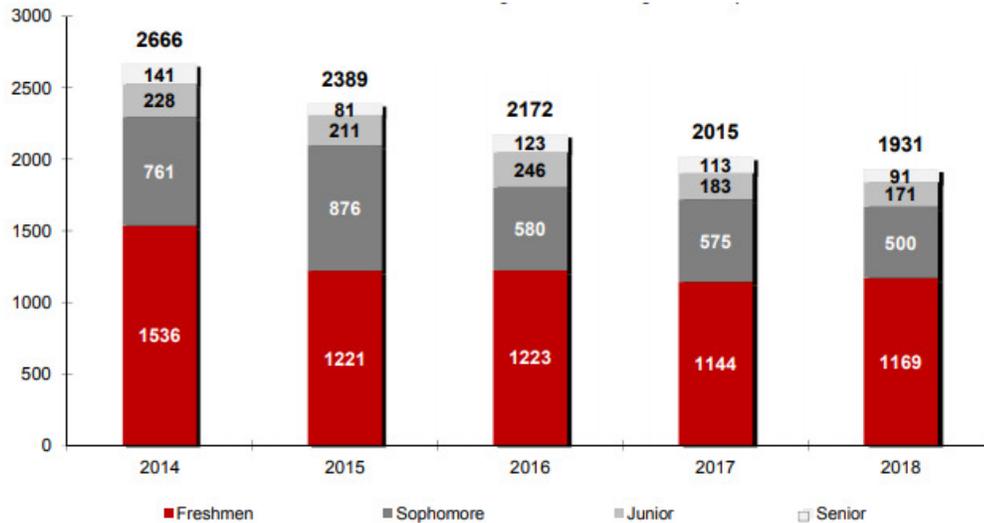
Source: U.S. Census Bureau 2010 Decennial Census  
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Figure 35 – Total Fall Headcount with Number (& Percentage) of Part-Time Students



Source – Keene State College Factbook, 2018-19, p. 33

Figure 36 – Headcount of Matriculated Undergraduates Living on Campus



Source – Keene State College Factbook, 2018-19, p.120

### 8.1.3 Age Distribution

When evaluating potential modifications to intermodal transportation options, the age of the area population is an important consideration. Different age groups have different transportation preferences and needs. Seniors, for example, are more likely to have health conditions that can make driving more difficult. Teenagers may be unable to drive due to the lack of a driver’s license or insufficient income to afford a car.

Figure 37 shows the geographic distribution of different age groups in Greater Keene. Each dot represents two people, with the age bracket indicated by dot color. Overall population density patterns may be identified, along with clusters of particular age brackets. Keene State College’s function as a population center becomes apparent, although as noted in Section 8.1.2, the on-campus population has declined in recent years. Neighborhoods of families to the north and east of Central Square are indicated by blocks of intermingled minor and working

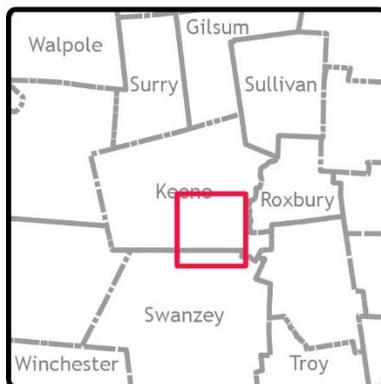
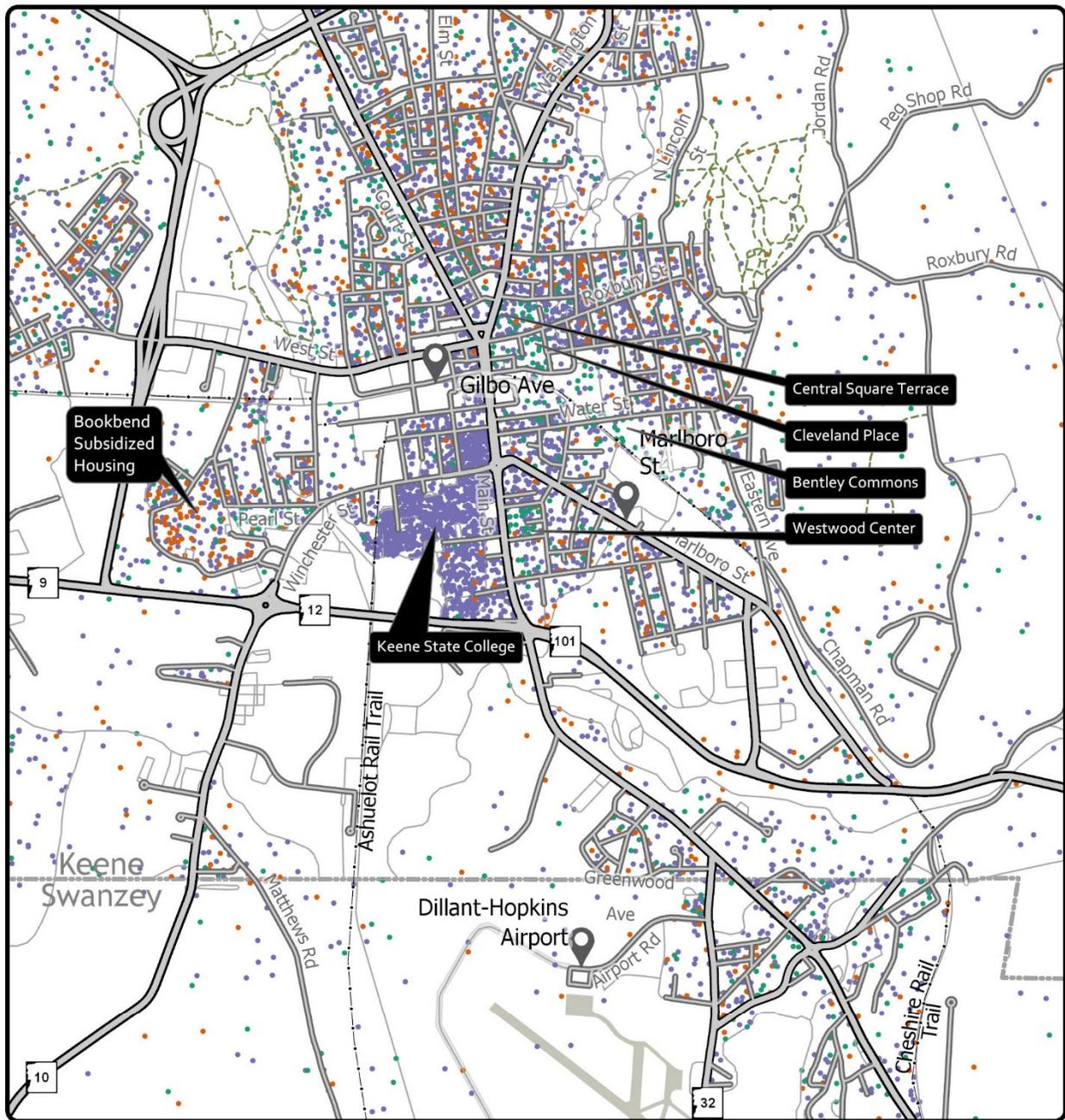
age individuals. Intermingled age groups can also be seen along the southern edge of Marlboro St., albeit at lower densities.

As would be expected, notable clusters of seniors are often associated with the presence of senior housing facilities. Figure 38 shows the quantity of seniors living in each Census block, with senior housing facilities labeled. Downtown Keene hosts a number of senior housing facilities and some of the densest senior populations. Notable senior population clusters exist, however, in other locations. The nursing care facility, for example, at Keene Center on Court St., is located in West Keene (not pictured in Figure 38). A significant number of seniors also live at Park Place apartments in West Keene.

Notably dense clusters of minors (individuals younger than 18 years old) can be seen north and west of Central Square, on residential side streets off of Park Avenue, and the Brookbend East and Brookbend West housing facilities (Figure 39).

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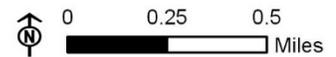
Figure 37 – Age Distribution by 2010 Census Block



1 Dot = 2 People

- 65 and Over
- Under 18
- 18-64

ITC Focus Areas

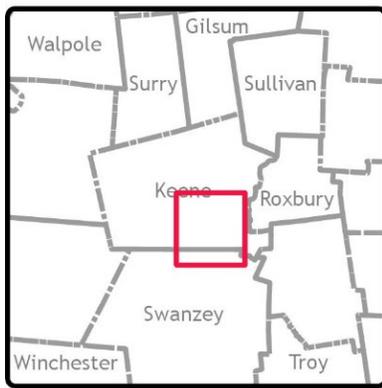
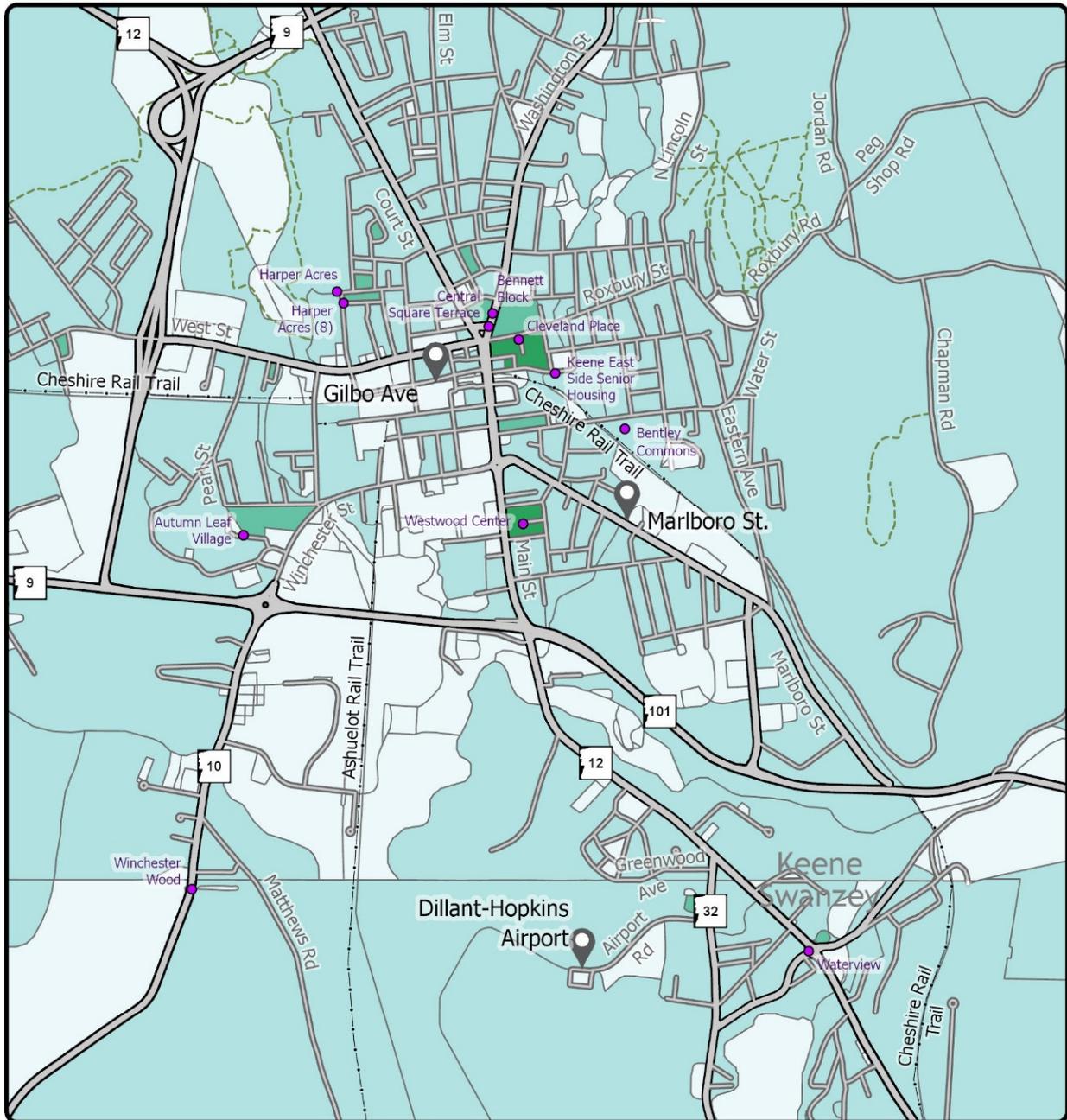


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Source: U.S. Census Bureau 2010 Decennial Census

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Figure 38 – Senior Population Density by 2010 Census Block



ITC Focus Areas  
 Senior Housing

**Seniors per Acre**

0
.01-2.00
2.01-5.00
5.00-10.00
10.00-40.00

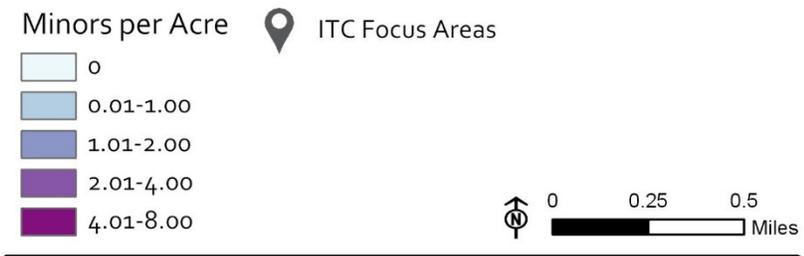
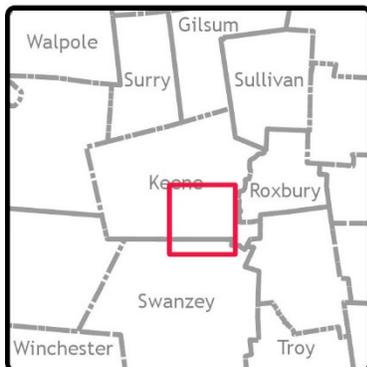
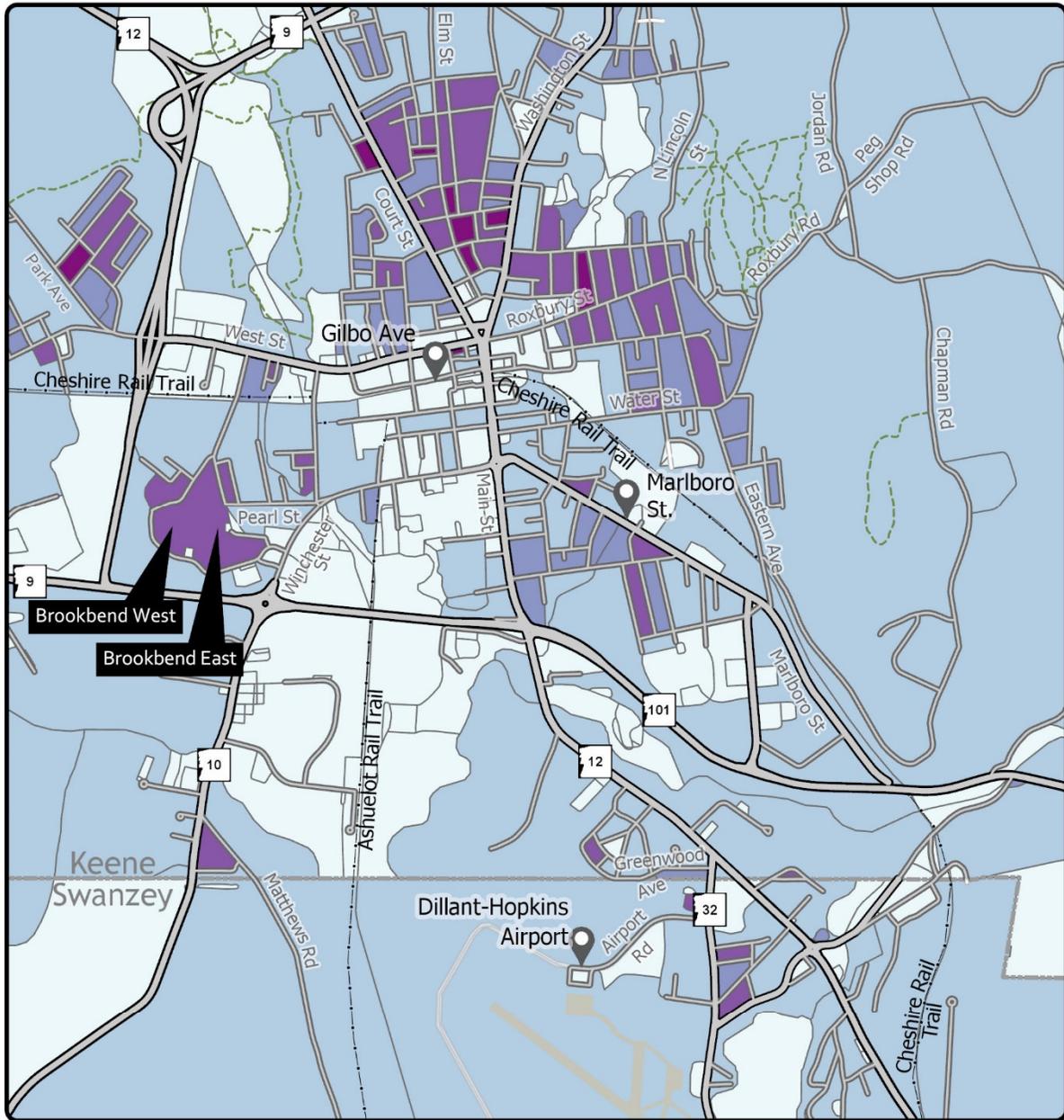
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Source: U.S. Census Bureau 2010 Decennial Census  
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Figure 39 – Minor Population Density by 2010 Census Block



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Source: U.S. Census Bureau 2010 Decennial Census  
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## 8.2 HOUSING

A person’s home is a key transportation origin and destination. This section explores the distribution and density of housing in the vicinity of the ITC Focus Areas.

### 8.2.1 Housing Units within Sample Catchment Areas

Patterns in housing unit counts among the ITC Focus Areas largely mirror trends in population. Within walking and cycling catchment areas, significant differences exist between the ITC Focus Areas in terms of surrounding housing. Differences, however, largely disappear when driving catchment areas are considered (Table 12).

The number of housing units within a five-minute walk of the Gilbo Ave. Focus Area roughly equals the number within a five-minute walk of the Marlboro St. Focus Area. Since the Dillant-Hopkins Focus Area is separated from surrounding development by the distance of the airport driveway, the housing unit count within its five-minute walking catchment area is considerably lower than the comparable catchment areas of Gilbo Ave. and Marlboro St.

Considerably more housing units fall within a ten or fifteen-minute walk of Gilbo Ave. than the other ITC Focus Areas. One might expect that the higher housing unit counts around Gilbo Ave. are attributable to on-campus housing at Keene State College. The Decennial Census, however, does not include temporary housing, like student dormitories, in its housing unit tabulations. Instead, the higher housing unit counts are due to the upper-floor apartments in mixed-use buildings, multifamily apartments and single-family homes densely situated on small lots (see Section 8.2.2, below).

Table 12: Housing Units within Select Catchment Areas for ITC Focus Areas

	<b>Gilbo Ave.</b>	<b>Marlboro St.</b>	<b>Dillant-Hopkins</b>
<b>Walking</b>			
<b>5</b>	222	233	54
<b>10</b>	1,370	693	88
<b>15</b>	2,547	1,237	255
<b>Cycling</b>			
<b>5</b>	2,686	1,280	255
<b>10</b>	5,064	4,153	624
<b>20</b>	7,714	6,809	5,045
<b>Driving</b>			
<b>15</b>	12,816	12,482	12,813
<b>30</b>	28,227	27,618	27,901

Source: U.S. Census Bureau 2010 Decennial Census

### 8.2.2 Housing Density

Examining housing densities within and around ITC Focus Areas lends some explanation as to why Gilbo Ave. walking and cycling catchment areas generally exhibit higher housing counts than Marlboro St. or Dillant-Hopkins catchment areas. Blocks surrounding Central

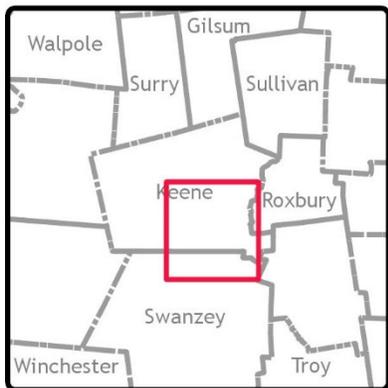
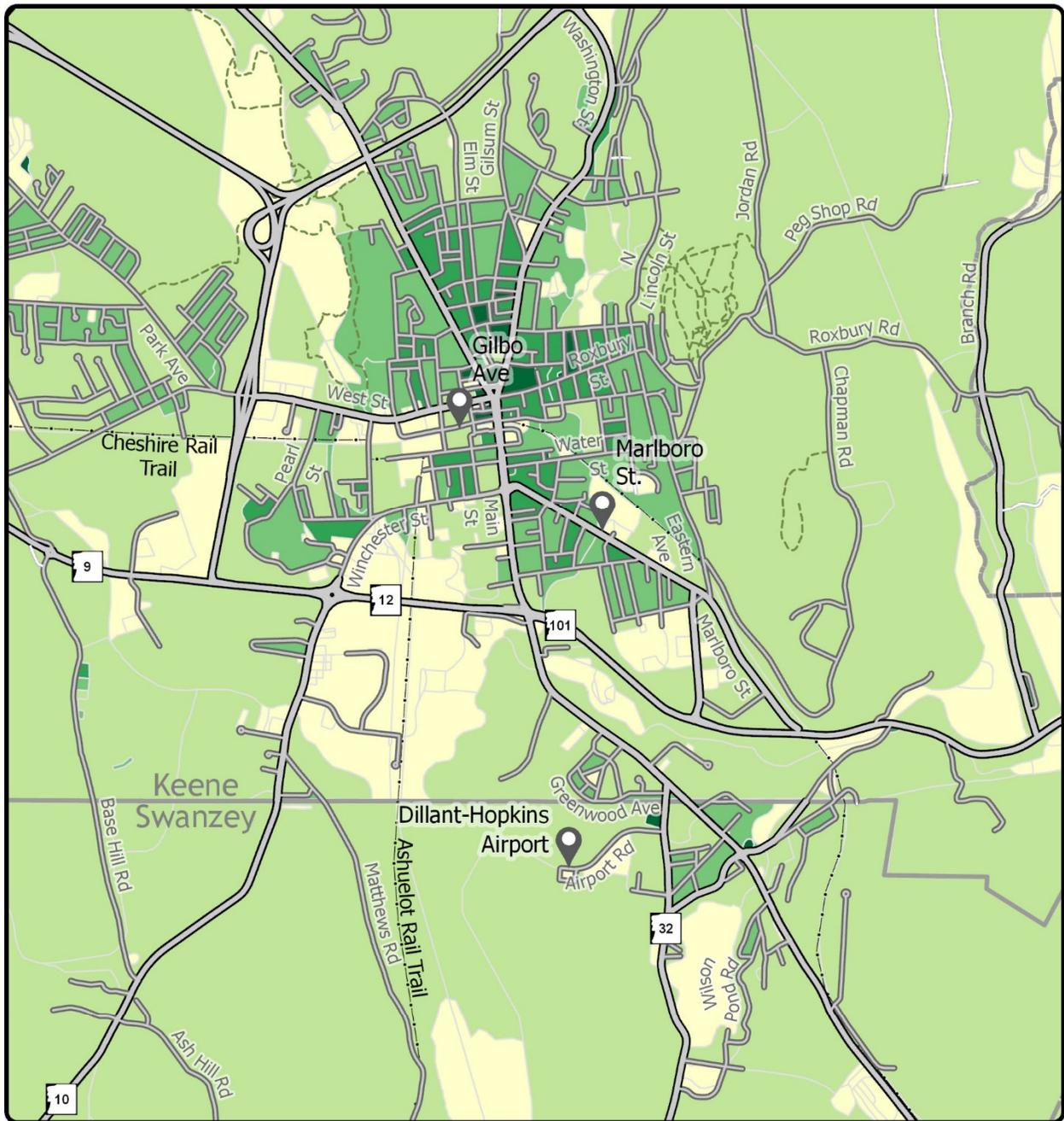
Square, located within a 10-minute walk of the Gilbo Ave. Focus Areas, exhibit some of the highest housing densities in Greater Keene. Apartments above first-floor storefronts, senior housing, and multifamily apartment buildings all contribute significant quantities of housing units in the immediate vicinity of the Square. Single-family homes on small lots also help maintain moderate housing densities throughout residential neighborhoods near Central Square. Housing densities within a 10-minute walk of the Gilbo Ave. Focus Area average about 4.1 units/acre, reaching densities as high as 38.7 units/acre.

Meanwhile, residential development along Marlboro St. and adjoining side streets is characterized predominately by commercial development and single-family homes, which translates into lower housing densities. Within a 10-minute walk of the Marlboro St. Focus Area, housing densities average 2.2 units/acre, with a maximum density of 13.0 units/acre.

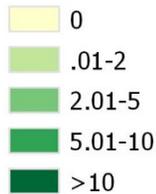
Housing densities are even lower surrounding the Dillant-Hopkins Focus Area. This is due partially to the more limited road network that surrounds the airport, as well as lower density residential development within the area. While some residential properties front on to NH 32 and NH 12, commercial development occupies much of the frontage along these transportation corridors. Small neighborhoods of single-family homes are situated along adjoining backstreets. The Edgewood Apartments, located on NH 32, just south of NH 12, supplies a notable cluster of relatively dense residential development, with 65 housing units sitting on a 7.3 acre lot. Within a 10-minute walk, housing densities average 1.2 units per acre, with a maximum density of 13.3 acres.

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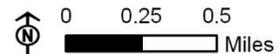
Figure 40 – Housing Unit Density, by 2010 U.S. Census Block



Housing Units/Acre



ITC Focus Areas



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Source: U.S. Census Bureau Longitudinal Household Dynamics - Workplace Area Characteristics - 2015  
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## 8.3 ALL JOBS

A person's workplace is a key transportation origin and destination. This section explores the geographic distribution of jobs, aggregated by U.S. Census Block. Examining job distribution and density begins to illuminate key employment centers that might benefit from improved intermodal transportation facilities.

### 8.3.1 Total Jobs within Catchment Areas

The Gilbo Ave. Focus Area is surrounded by an abundance of jobs within walking distance. For example, 2,133 jobs are located within a 5-minute walk. Larger employers like Cheshire County and National Grange Mutual Insurance make significant contributions to the job count, as do small business that line northern Main St. and adjoining side streets.

By comparison, Marlboro St. and Dillant-Hopkins Airport have significantly fewer jobs within a walking distances, especially within a five-minute walk. The relative scarcity of jobs within a five-minute walk of the Marlboro St. Focus Area is attributable to vacant land (such as the 21-acre former Kingsbury property), low-rise commercial development fronting on Marlboro St. and the residential character of much of Marlboro St. and connecting side streets. The job count jumps as walking distances expand to a 10 and 15-minute walk from the Marlboro St. Focus Area. At these distances, much of Keene's central business district lies within reach.

Few jobs are located within walking distance of Dillant-Hopkins Airport, with 184 jobs situated within a 15-minute walk, due partially to the length of the airport driveway, but also to the low density of commercial development along NH 12. The number of jobs increases as cycling distances are considered, jumping markedly from 552 jobs within a 10-minute bike ride to 12,654 jobs within a 20-minute bike ride. While downtown Keene lies beyond a 10-minute bike ride, cyclists can access most of its central business district within 20 minutes.

Table 13: Total Jobs within Select Catchment Areas for ITC Focus Areas

	Gilbo Ave.	Marlboro St.	Dillant-Hopkins
<b>Walking</b>			
5	2,133	51	112
10	4,864	2,491	112
15	6,994	5,902	184
<b>Cycling</b>			
5	7,037	6,305	184
10	12,882	10,719	552
20	15,218	15,118	12,654
<b>Driving</b>			
15	20,436	20,304	20,270
30	25,940	26,678	27,384

Source: U.S. Census Bureau Longitudinal Employment-Household Dynamics Workplace Area Characteristics (2015)

### 8.3.2 Density – All Jobs

Jobs concentrate most densely in and around Central Square in downtown Keene (Figure 41). Other notable job clusters include Cheshire Medical Center, Optical Ave. in Keene and lower Main St. in Keene (primarily due to Keene State College).

## 8.4 RETAIL JOBS

When studying ITC feasibility, the retail sector should be given consideration for a number of reasons, including:

- The success of a local retail sector depends heavily on how convenient, safe and enjoyable it is to access local retail establishments. Improved intermodal services can improve access to retail destinations for those traveling by car, on foot, on bike, or via transit.
- Given the rise of e-commerce, local retail districts are increasingly recognizing that creating an enjoyable and interesting shopping *experience* is critical for differentiating the services offered by brick and mortar businesses from those provided by online vendors. Retail districts that accommodate a variety of transportation options, including walking and cycling, are more likely to foster the lively street life that often marks successful retail destination.
- Retail workers, on average, earn lower wages than workers across all sectors. In Cheshire County, retail workers earn \$30,925 per year, about 32% less than workers across all occupational sectors (U.S. Bureau of Labor Statistics, QCEW, 2017). Given that retail workers earn lower wages, they are more likely to have income constraints that make car ownership difficult or less feasible.

While not a perfect proxy for overall retail activity, the geographic distribution of retail jobs serves as a reasonable indicator for retail presence.

### 8.4.1 Retail Jobs within Study Areas

More retail jobs are located within walking distance of the Gilbo Ave. Focus Area than the other focus areas, due primarily to its proximity to retail establishments along northern Main

St. and around Central Square (Table 14). While fewer jobs are located within a 5 and 10-minute walk of the Marlboro St. Focus Area, a cluster of retail jobs along southeastern Marlboro St. are accessible within a 15-minute walk. Consequently, the number of retail jobs within a 15-minute walk of the Marlboro St. Focus area (529) is only slightly lower than the number of jobs within a 15-minute walk of the Gilbo Ave. Focus Area (559). The number of jobs within a 15-minute walk of the Dillant-Hopkins Focus Area is an order of magnitude smaller than within a 15-minute walk of the other focus areas.

Although the Dillant-Hopkins Focus Areas has fewer retail jobs within walking and cycling distance than the other ITC focus areas, it has more retail jobs within a 30-minute drive. Due predominately to the fact that its 30-minute driving catchment area extends to commercial development in Rindge, the retail job count within the catchment area is 15% higher than the Gilbo Ave. 30-minute driving catchment area and 14% higher than the Marlboro St. driving catchment area.

Table 14: Retail Jobs within Select Catchment Areas for ITC Focus Areas

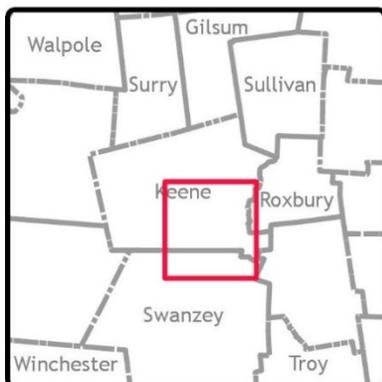
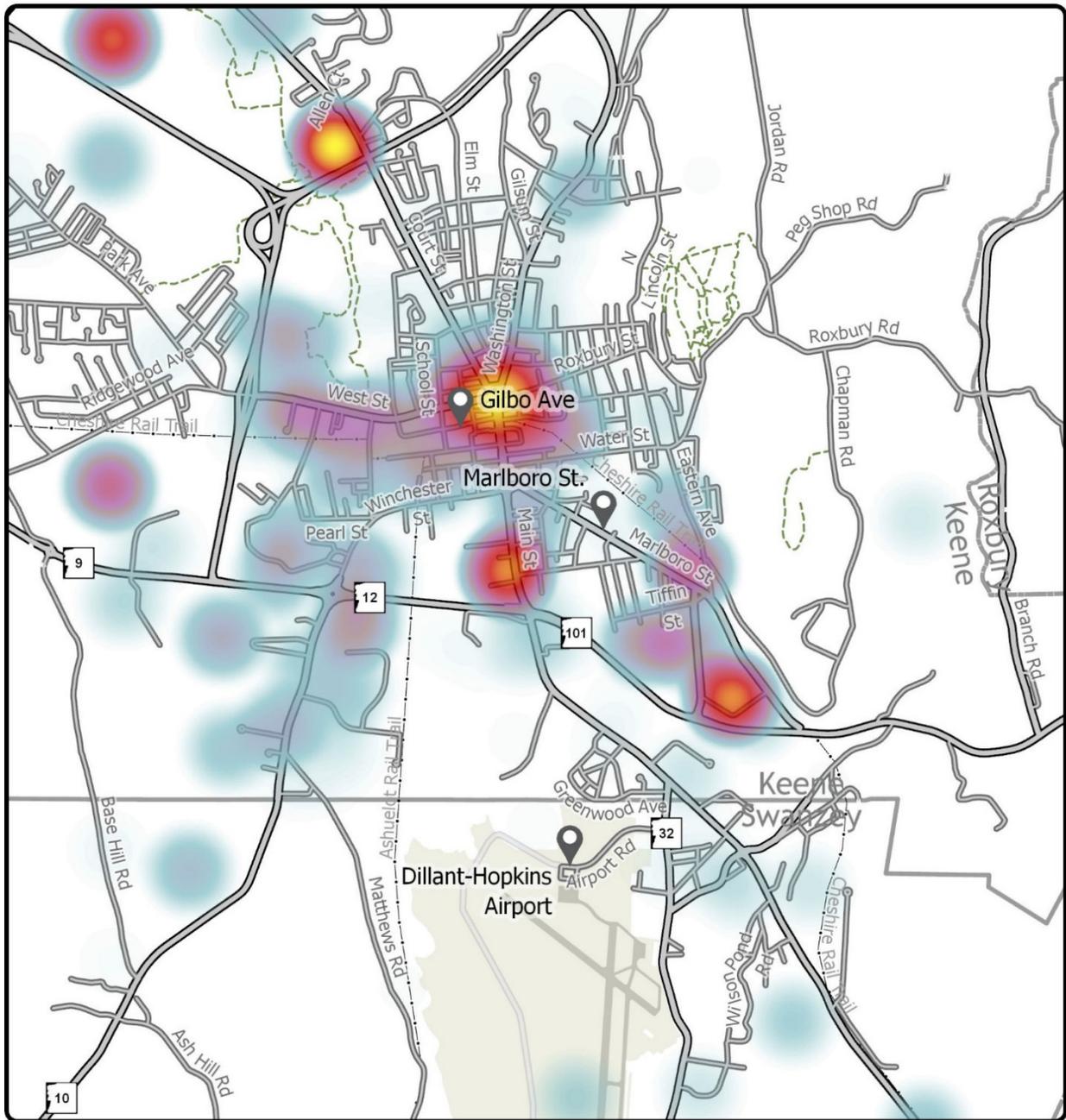
	Gilbo Ave.	Marlboro St.	Dillant-Hopkins
<b>Walking</b>			
5	221	21	22
10	429	220	22
15	559	529	34
<b>Cycling</b>			
5	561	535	34
10	1,473	1,256	132
20	2,288	2,346	1,672
<b>Driving</b>			
15	3,017	3,013	3,014
30	3,594	3,636	4,149

Source: U.S. Census Bureau Longitudinal Employment-Household Dynamics Workplace Area Characteristics (2015)

#### 8.4.2 Retail Job Density

Retail job density differs considerably from overall job density. While Central Square in downtown Keene functions as the most prominent job center in the Greater Keene area, Monadnock Plaza north of NH Route 9 contains the largest concentration of *retail* jobs in the area (Figure 42). Central Square, southeastern Marlboro St, Riverside Plaza (off of Winchester St.) and West St. also exhibit clusters of retail jobs, although to a lesser extent.

Figure 41 – Job Density, All Jobs, by U.S. Census Block



**Job Density**  **ITC Focus Areas**

 **Dense**

 **Sparse**

0 0.25 0.5  
 Miles

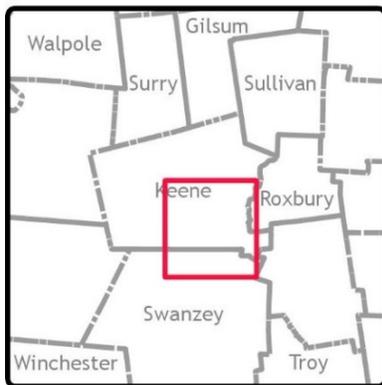
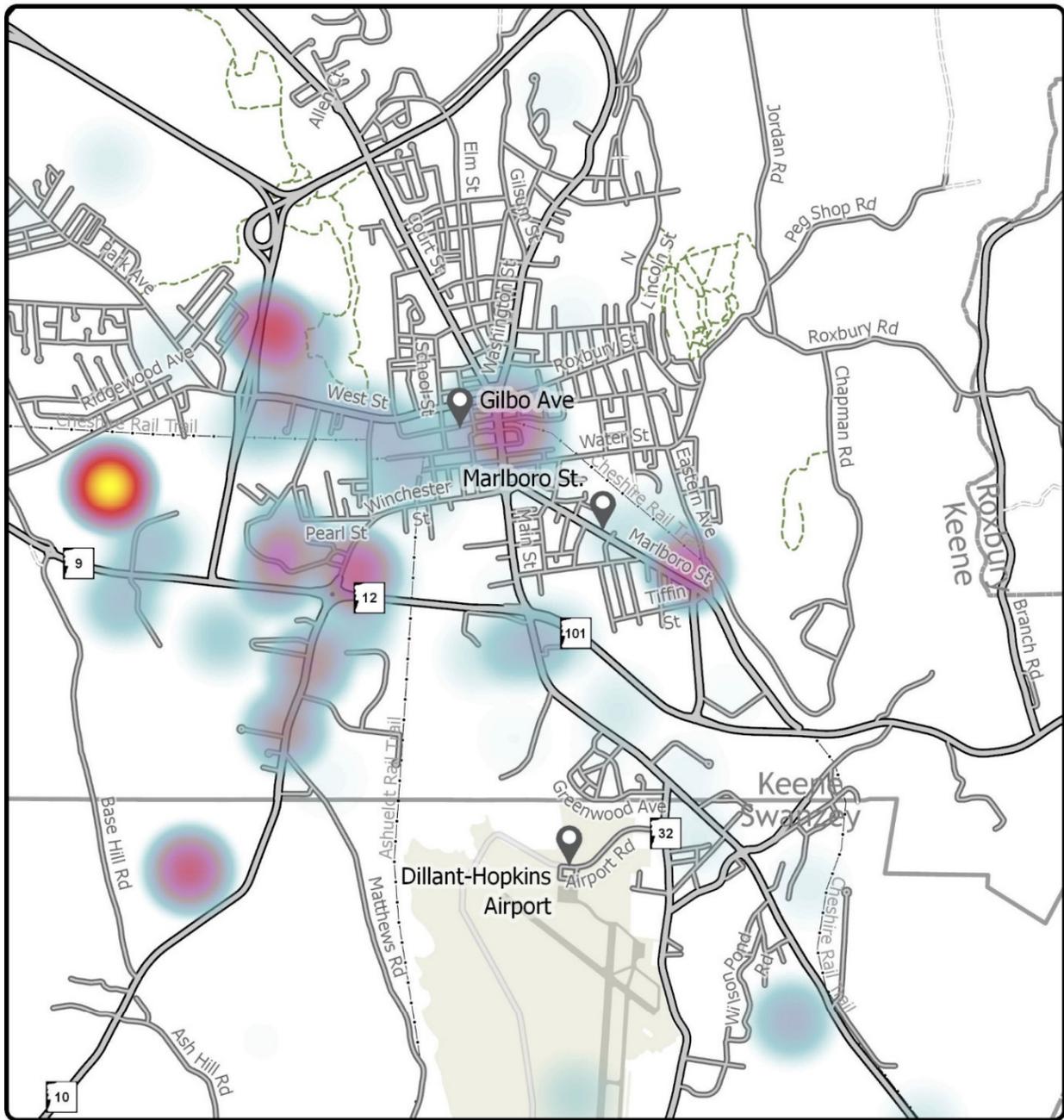




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Source: U.S. Census Bureau Longitudinal Household Dynamics - Workplace Area Characteristics - 2015  
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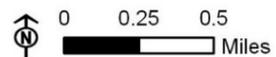
Figure 42 – Retail Job Density, by U.S. Census Block



**Retail Job Density**  **ITC Focus Areas**

 Dense

 Sparse



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Source: U.S. Census Bureau Longitudinal Household Dynamics - Workplace Area Characteristics - 2015  
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