

8. TRANSPORTATION

A safe and efficient transportation network is an essential component for the development of a well-functioning and accessible community. Land use and transportation are inextricably linked. Informed and thoughtful transportation planning is an essential part of guiding development in order to preserve valued features of the community while achieving and enhancing community goals. Dunbarton's transportation system and its connections to the regional and state network provide access to the goods and services that residents and commerce require. It plays a large role in the development of the Town, and in defining its character. With all future development, balancing the desires of residents to maintain Dunbarton's rural character will be vital to the Town's future.

The existing transportation network has a profound influence on the location and development of land uses throughout the Town. Development trends in Dunbarton have traditionally been influenced by NH 13 and 77. The Town's low density residential and undeveloped areas which give the Town its distinct character, have been, and will continue to be, important elements in what it means to live in Dunbarton.

All land use activities, regardless of scale or type require access to adequate transportation routes and are most likely to locate where access is the easiest and least costly. Due to the financial commitment required for the improvement and maintenance of an

VISION STATEMENT

Promote the improvement of public roads in Dunbarton; encourage a system of transportation that will meet the mobility needs of all local residents by providing for the efficient movement of people, goods, and services within Dunbarton and throughout the region; maintain a commitment to the rural and historical character of the community; and provide a well-maintained and safe transportation system that meets the functional and aesthetic needs of the community, in a cost-effective manner.

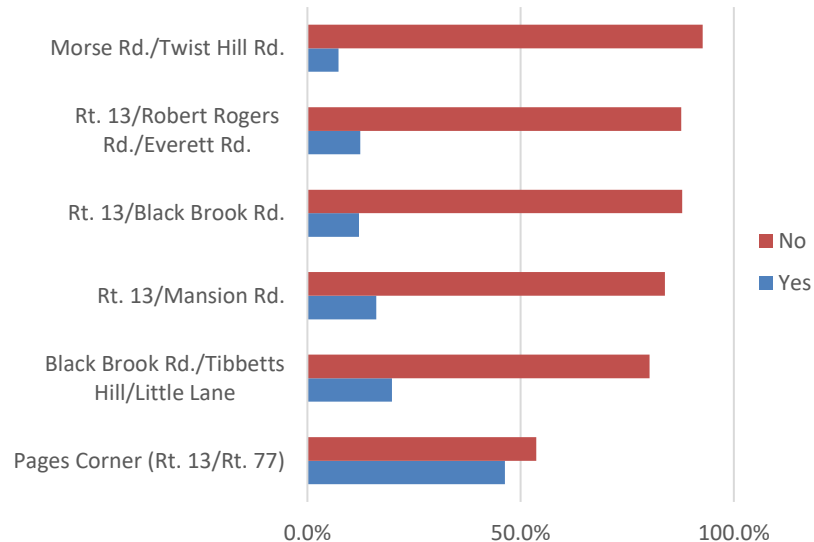
adequate transportation system and the direct relationship between land use patterns and traffic circulation, the identification and analysis of current transportation needs is crucial to the orderly accommodation of growth and development. This chapter of the master plan is intended to provide such an analysis, while also enabling the Town of Dunbarton to fully participate in all levels of transportation planning – local, regional, state and federal.

COMMUNITY SURVEY RESULTS

Residents who responded to the Community Survey expressed the desire to retain Dunbarton's "small town atmosphere" and "rural character." Seventy percent (70%) of participants identified this characteristic as important or very important. As Dunbarton continues to grow and the use and pressure on local and major roads intensifies, a balance should be found between those traditional characteristics that residents value and the needs for a safe and efficient transportation system. Keeping the rural character of the roads in Dunbarton while maintaining and improving safety concerns should be an important consideration. The following questions taken from the Community Survey best represent residents' opinions on Dunbarton's transportation.

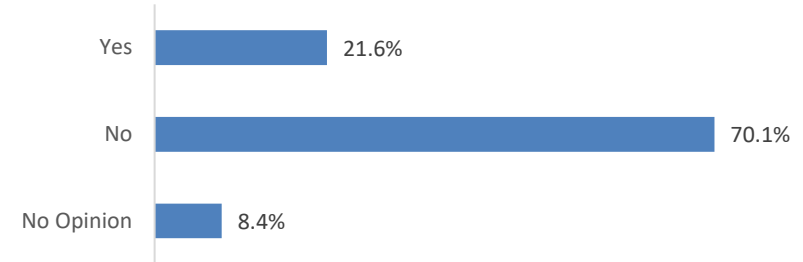
Community Survey Question #8:

Are you concerned about any of these locations?



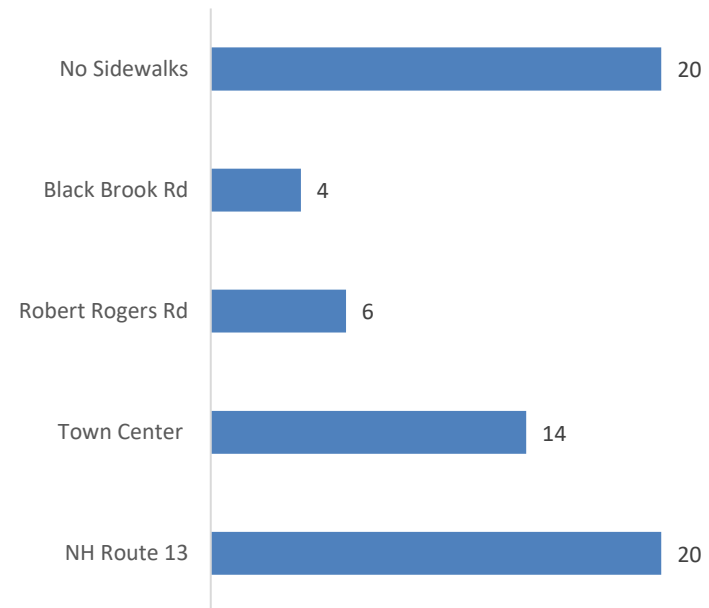
Community Survey Question #9:

Do you have any concerns regarding parking in the Town Center?



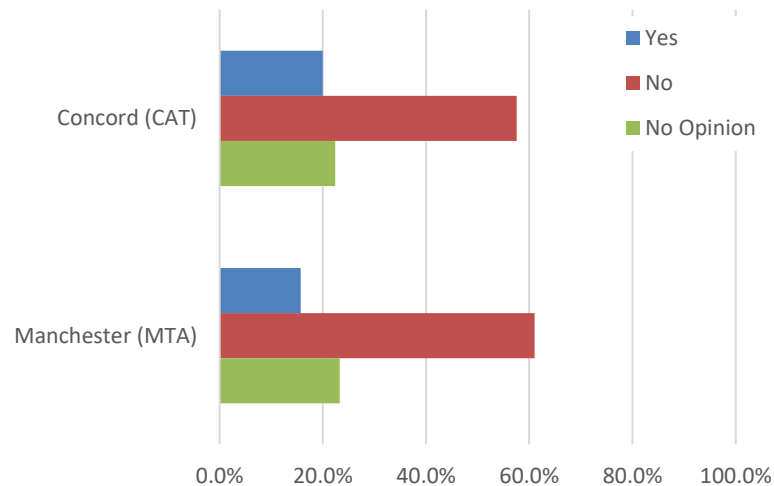
Community Survey Question 10:

Please identify any streets where you feel sidewalks or accommodations for cyclists/runners are needed:



Community Survey Question 11:

Do you believe there is a need to provide a link from Dunbarton to public transit systems in the area?



COMMUNITY VISIONING SESSION

Overall, residents who attended the Master Plan Community Visioning Session highly valued the Town's rural character, indicating it as a strength that has been defined by past and current land use. There was consensus that the NH 13/NH 77/Jewett Road (Page's Corner) intersection was the number one safety concern in Town. There were also concerns for pedestrian and bicyclist safety in the area. Other discussion points included support for improving the NH 13 (Clinton Street) and I-89 Exit 2 northbound off-ramp and a concern with the Black Brook Road and NH 13 intersection.

Residents also expressed interest in more parking and a pedestrian friendly Town Center. There was also a discussion on the potential for a crosswalk at the town center and how to make it feel more like a town center so people slow down.

EXISTING TRANSPORTATION NETWORK

A key component in planning for future transportation improvements in a community is to carry out a complete inventory of the existing transportation infrastructure serving a town.

Dunbarton's transportation network is dominated by NH Route 13 and NH Route 77, both of which are the responsibility of the NH Department of Transportation. However, there are a number of different types of town roads which are important to the overall transportation network.

HIGHWAY CLASSIFICATION

The State Aid classification system, which is identified by NH RSA 229:5 and 229:231, establishes responsibility for construction, reconstruction, and maintenance as well as eligibility for use of State Aid funds. This classification system also provides a basic hierarchy of roadways.

Of the seven possible state classifications, Dunbarton's roads fall into five of these: Class II, Class III, Class V, Class VI and private roads. Dunbarton's road system is typical of most New Hampshire towns, in that the most mileage is accounted for by Class V roads. Table 8.1 below displays roadway mileage by classification.

Table 8.1: State Legislative Classification

Class	Mileage	Percent of total
Class II: State Aid Highways	10.3	13.5%
Class III: Recreational Roads	5.4	7.1%
Class V: Rural Highways	45.3	59.3%
Class VI: Unmaintained Highways	7.8	10.2%
Class VII: Federal Roads	0.6	0.8%
Private Roads	7.0	9.2%

CLASS II STATE AID HIGHWAYS

Class II highways include all highways on the secondary state highway system, excepting portions of the highways within the compact sections of cities and towns, which are classified as Class IV highways. All sections improved to the state standards are maintained and reconstructed by the state. All other sections must be maintained by the city or town in which they are located until brought up to state standards. The same applies to bridges on Class II highways. In Dunbarton, NH Route 77, NH Route 13 and Jewett Road are Class II roads.

CLASS III RECREATIONAL ROADS

All roads leading to, and within, state reservations designated by the Legislature. NHDOT assumes full control of reconstruction and maintenance.

CLASS V RURAL HIGHWAYS AND BLOCK GRANT AID

This classification consists of all traveled highways that the town has the duty to maintain regularly. The state provides funding to towns for road maintenance on Class IV and V roads in the form of Highway Block Grant Aid.

Table 8.2 shows the Block Grant Aid Dunbarton has received over the last five fiscal cycles. These funds are distributed by the State of New Hampshire on a yearly basis with partial disbursements made four times a year. The payments are made as follows: 30% in July, 30% in October, 20% in January and 20% in April with unused balances carrying over.

The funds come from a portion of the total road toll and motor vehicle registration fees collected by the State. The funds can only

be used to fund or match funding for constructing, reconstructing or maintaining Class IV and V (town maintained) highways as well as equipment for maintaining local roads.

The funds are allocated from an annual apportionment (State Fiscal Year) of not less than twelve percent (12%) of the total highway revenues collected from the preceding year. As seen in Table 8.2, Dunbarton received more funds in State Fiscal Year (SFY) 2016 because of the state's increased revenue in SFY 2015 due to Senate Bill 367 which increased the road toll (gas tax). Half of that total apportionment is distributed based on population and the other half is distributed based on Class IV and V road mileage. This comes out to approximately \$1,200 for each mile of Class IV and V highway and about \$11 for each person.

A second apportionment of funds is allocated from a sum of \$400,000. The formula for disbursement is based on the value of property and roadway miles. The formula is designed to give the greatest benefit to municipalities with low property values (on an equalized basis) and high road mileage.

To ensure Dunbarton receives the proper allotment it is crucial to provide accurate information regarding Class IV and Class V road mileage to NHDOT. Highway Block Grant Aid distribution formulas do not take into consideration the condition of roads or the traffic on municipal roads.

Table 8.2: Highway Block Grant Aid payments for Dunbarton

SFY 2015	SFY 2016	SFY 2017	SFY 2018	SFY 2019
\$ 84,975.39	\$95,566.02	\$98,010.88	\$100,470.93	\$102,590.03

Source: New Hampshire Department of Transportation

Dunbarton Class VI Roads Policy

The Board of Selectmen adopted the Policy and Procedure Regarding Erection of Buildings on Class VI Highways on 8/2/2001. The document outlines the legal principles (NH RSA 674:41) related to building on Class VI roads and describes procedures, standards and criteria that need to be addressed if a property owner seeks to build on such roads.

Key variables include the distance to Class V roads, and the requirement that the applicant upgrade and maintain the roadway to town specified standards. In addition, that applicant must sign an Agreement and Release Regarding Building Permits for a Class VI Highway with the Merrimack County Registry of Deeds.

A recent example of the interpretation of the Town's Class VI road policy can be found in the Guidelines from the Selectmen for the Everett Road Extension. The guidelines describe expected improvements related to culverts, the phasing of improvements, right-of-way width, roadway width, the road base, slope and signage.

CLASS VI UNMAINTAINED HIGHWAYS

Class VI roads are roads that are not maintained by the Town, may be subject to gates and bars, and normally consist of a gravel or dirt surface. A Class V road can become a Class VI road if the Town has not maintained it for five years or more. Under RSA 674:41, I(c), for any lot whose street access (frontage) is on a Class VI road, the issue of whether any building can be erected on that lot is left up to the "local governing body" (Board of Selectmen) who may, after "review and comment" by the Planning Board, vote to authorize building

along that particular Class VI road, or portion thereof. Without such a vote, all building is prohibited.

Even if the Board of Selectmen does vote to authorize building, the law states that the municipality does not become responsible for road maintenance or for any damages resulting from the road's use. The purpose of RSA 674:41, I(c) is to prevent scattered and premature development. It seems that Dunbarton residents are in agreement with this law, as a strong view was represented during the community survey and visioning session that future development should be limited in remote areas of Town and on Class VI roads.

Devilsteps Rd, Everett Rd, Guinea Rd, Legache Rd, Line Hill Rd, Long Pond Rd, Old Mills Hill Rd, Olde Mill Brook Rd, Rangeway Rd, Sowle Rd, Stone Rd and Story Hill Rd are either fully or partially designated as Class VI roads in Dunbarton. Class VI roads are an important component of a Town's transportation infrastructure and for potential recreational opportunities.

FUNCTIONAL CLASSIFICATION SYSTEM

The functional classification system identifies roads by the type of service provided and by the role of each highway within the state system based on standards developed by the US Department of Transportation. While the state aid classification system is the primary basis for determining jurisdiction, the following system is important for determining eligibility for federal funds.

Recognition of the principal function that a highway, road, or street is intended to serve can reduce potential conflicts between land use activities and traffic movements. For example, from a theoretical standpoint, residential development should never be permitted or encouraged to locate along major highways due to the opportunity for direct land use/traffic conflicts. The need for direct access to

residential properties causes numerous left turn and crossover movements as well as ingress/egress movements, all of which slow and/or interrupt the smooth flow of traffic, while substantially increasing the potential for crashes to both pedestrians and vehicles.

Generally, future development in Dunbarton should only be permitted to take place at locations where the primary road function is appropriate for the type of development proposed. As part of its Site Plan Review Regulations, the Planning Board should consider the functional classification of any road on which development is proposed to ensure that the proposed development is appropriate for the existing roadway function

MAJOR COLLECTORS

These roadways differ from arterial roadways due to size and general service area. Collectors serve traffic in a specific area, whereas arterials generally serve traffic moving through an area. Thus, average trip lengths on collectors are shorter than trips on arterials. Furthermore, collectors gather traffic from local roads and streets and distribute them to the arterial.

MINOR COLLECTORS

These roads provide access to smaller communities within a geographic area or economic region. They may link locally important trip generators, such as shopping centers, to surrounding rural areas. They also serve as links between two or more major collectors.

LOCAL ROADS

These roads and streets are used primarily to provide access to adjacent properties.

Table 8.3: Federal Functional Classification

Federal Functional Classification	Mileage	Percent of total
Major Collectors	10.1	13.7%
Minor Collectors	10.9	14.8%
Local Roads	51.7	51.7%
Class VI or Private Roads	19.7	19.7%

BRIDGE NETWORK

Bridges are a key component of the highway system. Bridges are the most expensive sections of roads, and a lack of adequate bridges can create transportation bottlenecks, which are often difficult to remedy.

The New Hampshire Department of Transportation (NHDOT) maintains an inventory of all bridges in New Hampshire using Federal Sufficiency Ratings (FSR), a nationally accepted method for evaluating bridges. An FSR represents the relative overall effectiveness of a bridge as a modern day transportation facility. With an FSR greater than 80 a bridge is generally accepted to be in good condition overall.

A bridge having an FSR between 50 and 80 is eligible for Federal bridge rehabilitation funding. A bridge with an FSR less than 50 is eligible for either Federal bridge replacement or rehabilitation

funding. These ratings are based on modern, federally accepted standards, and often historic bridges do not meet these standards.

Table 8.4 shows the bridges in Dunbarton as listed on the NHDOT 2019 Bridge Summary. The bridges in Dunbarton are classified as Culverts according to the National Bridge Index because they span less than 20 ft across. It should be noted that the Mansion Road bridge over Stark Brook, which was closed for several years, has recently been replaced and reopened.

NHDOT manages three bridge aid programs including State Aid Bridge which is state funded, Senate Bill 367 (gas tax revenue) which is also state funded and Municipal Off-System Bridge Rehabilitation and Replacement which is federally funded. Projects begin by a municipality submitting an application for a preliminary estimate or hiring an approved consultant to do the estimate. NHDOT determines a potential program and year of funds for construction, this process takes several months. As per RSA 234:20 bridges that are constructed or reconstructed using bridge aid funds must be maintained “to the satisfaction of the Commissioner of Transportation.”

Table 8.4: Bridges in Dunbarton

Bridge	Location	FSR	Culvert	Owner	AADT	Inspection Date
055/132	Mansion Road over Stark Brook	97.0	8 – Very Good	Municipality	92 (2017)	Oct. 2018
109/141	Grapevine Road over Bela Brook	98.0	6 - Satisfactory	Municipality	176 (2017)	Aug. 2018

AADT= Average Annual Daily Traffic

Source: New Hampshire Department of Transportation Bridge Summary, April 2019

TRAFFIC COUNT HISTORY

The Central New Hampshire Regional Planning Commission (CNHRPC) maintains an ongoing traffic count program for monitoring the region's transportation network. Each year CNHRPC offers to collect traffic data at up to ten (10) locations for each municipality. In addition, CNHRPC collects traffic count data for the New Hampshire Department of Transportation (NHDOT) in accordance with federal guidelines under the Federal Highway Performance Monitoring System (HPMS).

The Traffic Counts Location Map displays the Average Annual Daily Traffic (AADT) volumes for 2011 – 2018, which are published on the NHDOT website at <http://www.nh.gov/dot/org/operations/traffic/documents.htm>. AADT is a basic measure of traffic demand for a roadway and represents the volume of traffic travelling in both directions. CNHRPC provides traffic count data to the NHDOT, who then calculates the AADT by applying correction factors to raw data to account for weekday and seasonal variations in traffic volumes.

Only two roads where traffic count information is available in Dunbarton show a decrease in traffic between over the last 5 years: Mansion Road south of Barnard Hill Road and NH 13 at the Goffstown Town line. The rest of the count locations show either stable or increasing vehicle volumes during this time frame. The largest increases in traffic are seen along the NH 13 (Clinton Street) and NH 77 (Weare Road) corridor.

ROADWAY CONDITIONS

Pavement condition data from 2016 was obtained from the NHDOT's Pavement Management Section for state-maintained (Class I and II) roads and is displayed in the **Pavement Condition Map**. The pavement condition is rated based on its Ride Comfort

Index (RCI), which is calculated directly from the average pavement roughness measured in the left and right wheel paths of roadways. That data indicates that significant segments of the collector roads in Dunbarton require some work.

Because the NHDOT data is from 2016, some roads may have been repaired and some roads may have fallen into worse disrepair. Since the data was collected, NHDOT has already completed resurfacing on Jewett Road and NH 13.

In 2017, Dunbarton requested CNHRPC to inventory the town's road surface using a Road Surface Management System (RSMS) that was developed by the NHDOT, UNH and NH's 9 Regional Planning Commissions. RSMS provides an objective method to assess the towns road surface conditions, help prioritize road improvements and develop a transparent system for short, medium and long term improvements. The 2017 assessment showed that only 5% of paved, town maintained roads were in poor condition, 66% of the towns paved roads were found to be in fair condition and 29% of road surfaces were found to be in good condition. RSMS provides a systematic approach for local officials to answer basic questions about their road system, to gauge current network conditions and to guide future improvement and investment in line with municipal Capital Improvement Programs.

MOTOR VEHICLE CRASHES

Motor vehicle crash data from 2013 - 2017 was obtained from NHDOT, who receives the data from the Department of Safety for crashes with over \$1,000 in damage. The data represents roughly 80% of all crashes with over \$1,000 in damage that took place during this time period; the remaining 20% of crashes are not locatable based on the information contained in the crash reports. Locatable crashes that occurred in Dunbarton were reviewed and

are summarized graphically in the **Crashes Map** and in summary tabular form for the most frequent locations in Table 8.5.

It is reasonable to assume that a number of smaller crashes may also have occurred during this time period which did not require the intervention of the police department. Any crashes reported in Dunbarton are a cause for concern and should be monitored at regular intervals to determine locations where improvements are needed to enhance safety.

PAGE'S CORNER

Initial proposals have been developed to address safety issues at intersection of NH77 and NH13, otherwise known as "Page's Corner." This intersection is unique in that it requires a three-way stop and gives the right-of-way to westbound traffic. The design can cause driver confusion and risky driving behaviors, such as failing-to-yield, speeding, and stop sign violations. The high traffic volumes at this intersection, combined with the three-way stop configuration, contributes to a dangerous and confusing traffic pattern.

Short term solutions may include oversized stop signs with LED beacons, permanently mounted speed display signs for traffic entering the intersection, and/or changing the configuration of the intersection to a two-way (eastbound and westbound free flowing) or four-way stop. A potential long-term solution is a roundabout. The roundabout would require future inclusion in the State Ten Year Plan.

Table 8.5: Crash Hot Spots 2013-17

State Maintained Highways	Number of Crashes 2013-2017
NH Route 77 (Concord Stage Road)	25
NH Route 13 (Stark Highway)	20
NH Route 13 (Clinton Street)	12
Everett Dam Road	3
Mansion Road	3
Town Maintained Roads	Number of Crashes 2013-2017
Robert Rogers Road	12
Black Brook Road	9
Twist Hill Road	7
Kimball Pond Road	5
Montalona Road	5
Intersection Locations	Number of Crashes 2013-2017
NH 13/NH 77/Jewett Road	9
Old Fort and Route 77	3
Old Hopkinton Rd and Route 77	2

Source: NHDOT/NH Department of Safety

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

The purpose of NHDOT's Highway Safety Improvement Program (HSIP) program is to achieve a significant reduction in fatalities and serious injuries on all public roads through the implementation of highway safety improvement projects. HSIP typically deals with the Crash Location emphasis areas outlined in the New Hampshire Strategic Highway Safety Plan 2012 – 2016.

The process for which a project receives funding from HSIP for a roadway segment or intersection is highly dependent on data. If data warrants further examination a Road Safety Audit (RSA) is typically the next step. The RSA is a collaborative approach to review safety issues and make recommendations for improvements. A cost/benefit analysis is used to determine the best solution for improving safety at the road segment or intersection. CNHRPC assists towns in applying for HSIP funds and completing small scale RSAs that offer safety solutions.

The severity of serious traffic crashes could be reduced through roadway improvements, where appropriate, such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, adding rumble strips, improving intersection layout, and providing better road markings and upgrading or installing traffic signals.

COMMUTING PATTERNS

The US Census Bureau's American Community Survey (ACS) is an ongoing survey that provides data every year in the form of 1-, 3- and 5-year period estimates representing the population and housing characteristics over a specific data collection period. The ACS differs from the decennial Census in that the Census shows the number of people who live in an area by surveying the total

population every 10 years. The ACS shows how people live by surveying a sample of the population every year. ACS collects and releases data by the calendar year for geographic areas that meet specific population thresholds; for areas with populations under 20,000, such as Dunbarton, 5-year estimates are generated. The most recent release represents data collected between January 1, 2010 and December 31, 2014.

Journey to Work Commuting data from the 2010-2014 5-year estimates for Dunbarton were reviewed and are displayed graphically in the provided charts. In general, the majority of the working population residing in Dunbarton drive alone and work outside of the community.

As is typical in most New Hampshire towns, the most popular transportation option for Dunbarton residents is the private automobile (86.3%), while working at home (7.2%) is the second most common option which demonstrates the importance of broadband internet for telecommuters. As shown in Figure 8.1, Carpooling was the third highest means of travel at nearly six (6) percent. This is an encouraging sign and points to the usefulness of Park and Ride locations in the state. More information on carpools and alternative modes of commuting can be found at www.commutesmartnh.org.

The high occupancy rates at the Bow Park and Ride lot on NH-3A, the Clinton Street (NH13) Park and Ride lot at I-89 Exit 2 in Concord, and the Hooksett Park and Ride Lot off of I-93 indicate that additional Park & Ride capacity may be warranted in the area. Working at home is anticipated to increase during the next twenty years where Broadband internet service is available.

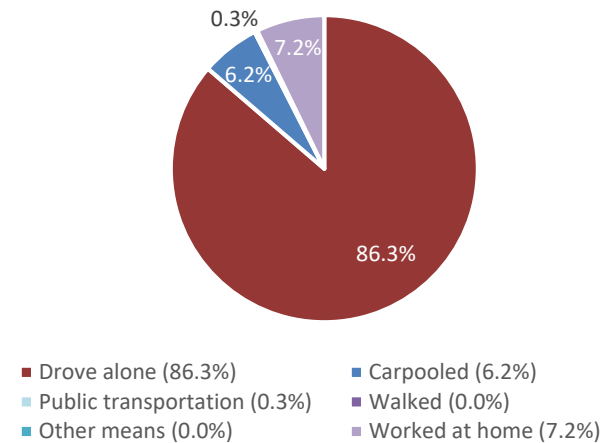
Figure 8.2 shows that almost 60% of Dunbarton's residents travel distance to work exceeds ten (10) miles. This statistic highlights the

importance of the arterial and collector road system that serves the Town. In all future planning decisions, at the local, regional or state level, Dunbarton should ensure that the functionality of these important routes are maintained and that future land-use and transportation decisions support the functional characteristics of Dunbarton's road network to ensure continued ease of access for residents and visitors to the Town.

Figure 8.3 Forty-eight (48) percent of the work force in Dunbarton commutes to locations categorized as "All Other Locations." In reviewing the raw data, the "All Other Locations" are widely distributed to many communities in New Hampshire, Massachusetts, Maine, and even further afield. None of these destinations attract more than a 1% of the total resident workers. The closest employment center (Manchester) attracts nearly twenty-two (22) percent of the commuters.

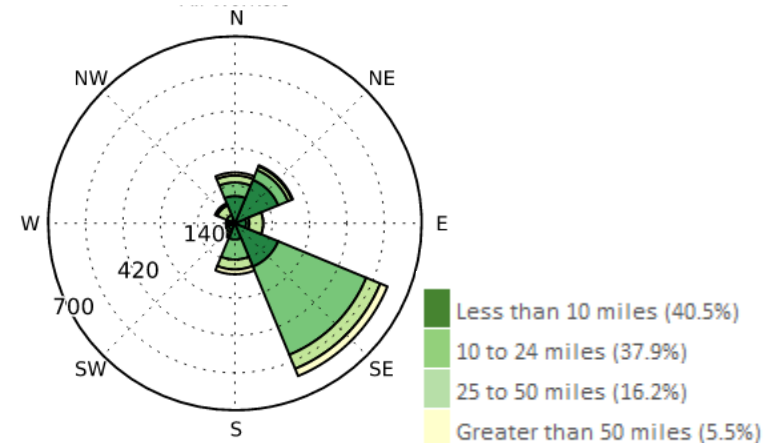
Understanding the commuting patterns of the labor force in the community can assist in planning roadway improvements that will make important travel routes more efficient, safe, and promote economic growth in a sound and coordinated fashion. Similarly, local residential roads that are not suited for heavy commuter traffic should be identified and this "through traffic" should be minimized wherever viable alternatives can be provided. Traffic counts should be reviewed and analyzed to identify roads that have shown an increase in traffic over the years. Finally, yearly traffic counts should be carried out on roads that the Town sees as a concern in order for reliable usage patterns to be analyzed.

Figure 8.1: Means of Transportation to Work



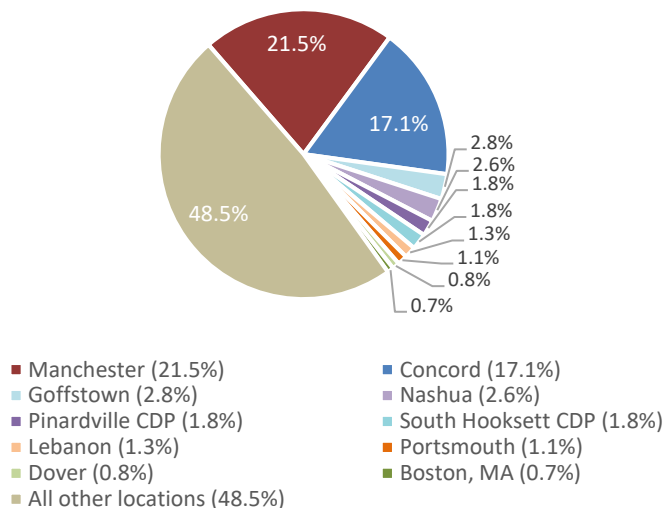
Source: U.S. Census Bureau, 2010-2014 American Community Survey

Figure 8.2: Distance/Direction to Work



Source: U.S. Census Bureau, OnTheMap Application

Figure 8.3: Place of Work (Town or City)



Source: U.S. Census Bureau, 2010-2014 American Community Survey

LAND USE AND TRANSPORTATION

NEW DEVELOPMENT

New development is often phased over extended periods of time and the ultimate, as well as the immediate, impacts of development on traffic volumes and transportation systems should always be considered. The magnitude of new development obviously determines the traffic impacts that the development will have. Depending on existing roadway traffic volume, distribution patterns, and the physical condition of local roadways, small scale as well as large-scale development can often have significant impacts on the surrounding roadway network. By requiring transportation/traffic impact studies for new developments of a certain size or for developments located in areas where significant transportation problems are known to exist, the Planning Board can

effectively evaluate the scope of impacts associated with any new development. Through this kind of scrutiny, recommendations for project phasing, and developer participation in necessary improvements can be developed and problems of safety, congestion, and expensive upgrading of poorly planned roads can be avoided.

As federal and state assistance for local road construction has decreased (in most cases), in recent years, and will likely continue to decrease in future years, the construction, improvement, and maintenance of local roads has increasingly become the responsibility of municipalities and developers. The fact that a developer accepts the responsibility for performing all necessary "on-site" infrastructure improvements is now considered standard practice. However, where developments will have significant impact on the transportation infrastructure in Dunbarton, developers should also be responsible for addressing these issues.

CONNECTIVITY

The functional roadway classification system provides an organized hierarchy to a town's roadway system. However, for the roadway system to be effective, efficient, and to serve to maintain a sense of community, the roadway system needs to exhibit a sense of connectivity. Roadway connectivity refers to a street system that provides multiple routes and connections to the same origins and destinations.

A well connected street system provides motorists, pedestrians and bicyclists better, more direct and shorter travel routes to schools, shopping and other neighborhoods. A well connected street system not only provides shorter and more efficient connections but also serves to reduce traffic congestion along the major arterial roadways. The result is a more efficient roadway system with less

need to be continually adding capacity to a town's major roadways. A well connected street system also improves emergency response times for firefighters, police, and ambulance services.

ACCESS MANAGEMENT

Access management involves providing (or managing) access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity, and speed. It is the practice of coordinating the location, number, spacing, and design of access points to minimize site access conflicts and maximize the traffic capacity of a roadway. Applicable opportunities for access management include possible connections between existing and future subdivisions, the consideration of shared driveways when possible, and consistent coordination and communication between the Town and NHDOT District 5 when considering access applications on State Highways.

TRAFFIC CALMING

Traffic calming can be a significant challenge for many communities in the United States. This is particularly true for small, rural communities in New Hampshire where the main roadway through the town serves a dual role. Outside the town, the roadway provides high-speed travel over long distances; within the built-up area, however, the same roadway accommodates local access, pedestrians of all ages, parking, bicycles, and the many other features unique to the character of a community. This convergence of roadway purposes presents both an enforcement challenge for the community and a potential safety problem for the public.

Addressing the issue through law enforcement alone often leads to temporary compliance at a significant cost. A more permanent way to reinforce the need to reduce speed is to change the look and feel of the road by installing traffic calming treatments that

communicate to drivers that the function of the roadway is changing. Traffic calming has been evaluated and used extensively within low-speed urban areas in the United States but less so in rural areas where driver expectations and traffic characteristics are different.

Lowering speed limits is a well-established method of improving pedestrian safety and other non-motorized modes of travel. The minimum speed limit a town can impose on town maintained roadways is 25 miles per hour based on an engineering study. Limits can be made lower at intersections (RSA 265:63) and in school zones (RSA 265:60). Traffic calming can involve road design techniques using active or physical controls (bumps, barriers, curves, rumble strips, etc.) and passive controls, such as signs and traffic regulations, to reduce vehicle speeds. Traffic calming measures foster safer and quieter streets that are more accommodating to pedestrians and cyclists and enhance neighborhoods and downtown environments. The potential benefits of traffic calming include reduced traffic speeds, reduced traffic volumes – by discouraging “cut-through” traffic on residential streets – and often improved aesthetic quality of streets. An example of some effective and applicable traffic calming techniques include:

Speed Humps, Speed Tables, and Raised Crosswalks: All of these techniques involve raising the height of the pavement in a more subtle fashion than with a speed bump, allowing vehicles to pass over them at the intended speed of the road, but preventing excessive speeds and alerting drivers to the existence of non-motorized users.

Chicanes or Medians: These devices effectively narrow road width and slow down traffic by placing a physical impediment either in the

middle of the road (median) or on the side of the road (chicane). These traffic-calming devices lend themselves to landscaping and improve the visual experience for all users of the road, as well as reducing speeds. Both techniques can provide additional safety for crossing pedestrians. Medians may serve as a refuge by allowing pedestrians to cross one lane of travel at a time, while chicanes provided at crosswalks reduce the overall distance from one side of the road to another and slow down traffic at those crossings.

Narrow Lane Widths: A low-cost way of reducing speeds is to narrow the roadway lane through the use of edge lines and centerlines. A number of jurisdictions across the country have installed this type of pavement marking application to create 9 to 10-foot-wide lanes. Narrow lanes force drivers to operate their vehicles laterally closer to each other than they would normally be accustomed to. Slower speeds are a natural result.

Roundabouts: Not to be confused with a traditional high-speed rotary or traffic circle, this is an intersection treatment that forces motorized traffic to slow down to speeds under 25mph in order to negotiate a center island that can be landscaped. Such speeds allow pedestrians to safely cross around the perimeter of the roundabout and cyclists to safely become a part of the circulating traffic.

SCENIC ROADS

A major component of a town's rural character can be its unpaved and scenic roads. These roads help to retain a sense of history and rural quality that Dunbarton's residents have indicated a strong desire to maintain. RSA 231:157 allows towns by a vote at town meeting to designate any road other than a Class I or II highway as a Scenic Road. A municipality may rescind its designation of a scenic road using the same procedure.

The effect of designation as a scenic road is that, except in emergency situations, there shall be no cutting of trees with a circumference of 15 inches at 4 feet from the ground or alteration of stone walls by the town or a public utility within the right-of-way without a hearing, review, and the written approval of the Planning Board. This law does not affect the rights of individual property owners; nor does it affect land uses as permitted by local zoning.

In recognition of the fact that the state law is not very stringent, the statute was amended in 1991 to allow towns to adopt provisions other than what is spelled out in the law. These additional regulations could include giving protection to smaller trees or by inserting criteria for the Planning Board to use in deciding whether to grant permission. RSA 231:157 is an important piece of legislation for the preservation of culturally important and scenic roads in Dunbarton. Currently, Dunbarton's Conservation Commission oversees the following scenic roads; Black Brook Rd between the ends of Long Pond Rd, County Rd, Gile Hill Rd, Guinea Rd, Rangeway Rd, Line Hill Rd, Stone Rd and Tenny Hill Rd.

REGIONAL AND STATE PLANNING

TRANSPORTATION ADVISORY COMMITTEE

The regional transportation planning process in the Central NH Region is driven by bottom-up community participation through the Planning Commission's Transportation Advisory Committee (TAC). The TAC is an advisory committee to CNHRPC and is comprised of representatives from all twenty (20) Central NH communities. TAC representatives vary from municipal staff, such as town planners and road agents, to municipal officials, such as Planning Board members and Selectmen. CNHRPC and NHDOT work collectively to inform all members of the TAC regarding transportation at the local,

regional and state level. The members act as liaisons between CNHRPC, municipal and state officials as well as the general public.

TAC Members provide input on transportation related issues and the needs of the local and regional communities in Central New Hampshire. This is done partially by assisting CNHRPC staff with the development of transportation related plans and programs. CNHRPC staff also work with the TAC to solicit and provide guidance on local projects such as Road Surface Management Systems and Road Safety Audits. A well informed, well represented Transportation Advisory Committee is essential in regional coordination and the success of CNHRPC transportation planning activities.

NEW HAMPSHIRE TEN YEAR PLAN

The New Hampshire Ten Year Plan identifies and prioritizes the critical transportation projects in New Hampshire in an ongoing effort to address transportation needs at the local, regional and statewide levels. The TYP is updated every two years – allowing transportation priorities to be revisited, existing projects to be removed as appropriate and allowing new projects including, roads, bridges, transit, rail and aviation projects to be added.

With the previous TYP as a starting point, the Plan process includes input from individual communities, development of regional Transportation Improvement Plans (TIPs) by the Regional Planning Commissions (RPCs), numerous public hearings by the Governor's Advisory Commission on Intermodal Transportation (GACIT) and review and approval by the Governor and Legislature before it is adopted.

Performance measures and conditions such as pavement condition, bridge ratings, congestion levels, safety issues, economic impacts,

user surveys and available funding levels are considered in determining project need and prioritizing project implementation.

The process to prepare the Central NH Regional Transportation Improvement Plan (TIP) begins with the CNHRPC soliciting project requests from local communities, followed by an evaluation process by the Planning Commission's Transportation Advisory Committee (TAC) where new and existing projects are prioritized.

The Regional TIP update process gives a clear indication of the different transportation needs in the Central NH Region. Just as the TYP is established as the transportation project guide for the state, CNHRPC will utilize this regional TIP to full effect to plan for current and future transportation needs in the Central NH Region.

The Fiscal Year 2021-2030 CNHRPC TIP includes a proposal for future improvements to the three way stop at Page's Corner. The project was the second highest (of six) ranked project in the TIP.

OTHER TRANSPORTATION NETWORKS

BICYCLE & PEDESTRIAN INFRASTRUCTURE

Residents of Dunbarton value the rural and historic character of the Town. Pedestrian facilities, such as paved sidewalks and gravel walking paths are valuable features for roadways with high volumes of traffic or high speeds. The primary purpose of sidewalks is to improve safety for pedestrians by separating them from travel lanes of roadways. In addition to this, sidewalks can also serve as a source of recreation for residents, a non-motorized mode of travel, serve to beautify an area, or stimulate economic activity in rural and village settings.

Similar to the provision of pedestrian infrastructure, planning for a bicycle network requires a different approach from that of

motorized transportation planning. Bicyclists have different needs from those of motorists, including wider shoulders, better traffic control at intersections, and stricter access management.

As the concern over air quality, traffic congestion, and other issues increases, the need and desire for a well-maintained and safe bicycle & pedestrian route system will continue to grow from a luxury into a necessity. By creating adequate local bicycle & pedestrian infrastructure, members of the community will have the ability to travel within Town for employment, education and recreational purposes without driving. Consideration should be given to adding pedestrian and bicycle facilities to local roads to allow for safe access to existing schools and recreation areas in the community for non-motorized transportation.

PUBLIC TRANSPORTATION

The closest public transit systems to Dunbarton are Concord Area Transit (CAT) and Manchester Transit Authority. In addition, there are intercity services located at the Concord and Manchester bus stations. Only a small percent of people who answered the Master Plan Survey felt there was a need to provide a link to public transportation in Concord or Manchester. This could change as the Town's population continues to age and more people become less likely be able to safely drive themselves.

The Mid-State Regional Coordinating Council (RCC) for Community Transportation runs a volunteer driver program that serves the region's elderly and disabled populations. The primary purpose of these trips are for essential social services and medical appointments (including long distance medical). Currently the Mid-State RCC's volunteer driver program does not charge for rides although donations are accepted.

CLASS VI ROADS & TRAILS

Class VI roads are roads that are not maintained by the town, may be subject to gates and bars, and normally consist of a gravel or dirt surface. A Class V road can become a Class VI road if a town has not maintained it for five years or more. Under RSA 674:41, I(c), for any lot whose street access (frontage) is on a Class VI road, the issue of whether any building can be erected on that lot is left up to the "local governing body" (Board of Selectmen) who may, after "review and comment" by the planning board, vote to authorize building along that particular Class VI road, or portion thereof. Without such a vote, all building is prohibited.

Even if the Board of Selectmen does vote to authorize building, the law states that the municipality does not become responsible for road maintenance or for any damages resulting from the road's use. The purpose of RSA 674:41, I(c) is to prevent scattered and premature development. It seems that the residents of Dunbarton are in agreement with this law, as a strong view was represented during the community survey and visioning sessions that future development should be limited in remote areas of Town and on Class VI roads.

Across the State, many communities are beginning to look at Class VI roads as candidates for designation as Class A Trails. These roads have little or no development associated with them, are scenic, have no inherent liability concerns, public access is already allowed, and also serve to connect large areas of open space, conservation, and/or agricultural lands. By reclassifying certain roadways that meet these criteria to Class A Trails, the community could be taking a step in creating a community-wide system of greenway trails. Unlike Class VI roads that a town does not maintain, towns, at their option, may conduct maintenance on Class A Trails. Dunbarton also has an extensive system of snow mobile trails on both public and

private properties. Class A trail designation can act to preserve and protect portions of these trails.

It is important to stress that reclassification of Class VI roads to Class A Trails will not inhibit the access rights of landowners along the roadways. In the case of a Class A trail, landowners can continue to use the trail for vehicular access for forestry, agriculture, and access to existing buildings. However, under such classification, new building development as well as expansion, enlargement, or increased intensity of the use of any existing building or structure is prohibited by New Hampshire Statute. Towns and owners of properties abutting Class VI roads are not liable for damages or injuries sustained to the users of the road or trail.

Class VI roads are an important component of a municipality's transportation infrastructure due to their rural character and potential recreational opportunities.

OBJECTIVES OF THE CHAPTER AND RECOMMENDATIONS

OBJECTIVE 1

To support the efforts of the New Hampshire Department of Transportation to ensure that state maintained roadways within Dunbarton are adequately maintained, safe and provided with sufficient capacity to meet the needs of both residents, businesses and travelers through the region.

- Actively engage with the Central New Hampshire Regional Planning Commission and the New Hampshire Department of Transportation to ensure that Dunbarton's transportation needs and priorities are adequately represented in the both the Regional and the Statewide Transportation Improvement

Program. A notable example is both short and long-term improvements to the Pages Corner intersection.

OBJECTIVE 2

To regularly monitor road conditions and traffic counts in Dunbarton to ensure that road improvement projects that are strategically important to Dunbarton's transportation network are adequately addressed.

- Implement a Road Surface Management System to guide the selection and prioritization of infrastructure improvements and maintenance activities, including road widening, improvements to horizontal and vertical alignments (grading and curves), drainage system improvements, and paving/resurfacing.
- Inventory all stream crossings and culverts on the Municipal and State road network.
- Continue to participate in the CNHRPC traffic counting program. Publish the traffic count on the Town website.

OBJECTIVE 3

To reduce the number of crashes in Dunbarton that may be caused by unsafe road conditions or poor transportation infrastructure.

- Identify and prioritize locations on local roads that need improvement on account of safety issues.
- Annually review crash locations and determine enhancements that could be made to improve safety.

OBJECTIVE 4

To consider developer sponsored off-site improvements as part of

any development that has an impact on Dunbarton's transportation network.

- As a condition of the Final Approval of a Subdivision or Site Plan Application, the Planning Board, where appropriate, should require the developer to pay a proportionate share of the costs of municipal transportation related improvements, which are necessitated in whole or in part by the development. Such fees shall be limited to capital costs and shall be expended only on new or additional capital facilities. At its discretion, the Board may require the developer to construct capital improvements, as an alternative.

OBJECTIVE 5

To incorporate a full set of access management provisions the Subdivision and Site Plan Review Regulations. To improve access to existing properties during road construction projects, redevelopment or proposed expansions of existing businesses.

- Incorporate access management provisions for each functionally classified street in both the Site Plan and Subdivision Regulations.
- Where applicable, to promote connectivity the Planning Board should require developers to provide rights-of-way and/or direct access to connect both new and existing developments.

OBJECTIVE 6

To take a context sensitive approach to traffic calming techniques to make Dunbarton more accessible and safer for all road users.

- Promote a "share the road" campaign to alert drivers to the possibility of pedestrians and bike users at certain locations in Dunbarton.

- Investigate the use of low cost methods to increase safety and support non-motorized transportation, such as raised crosswalks, stripped of colored crosswalks, increased signage, and reduced lane widths to provide larger shoulders for pedestrian and bicycle use.
- Design, construct and maintain a system of defined bicycle and walking paths.
- Investigate the use of appropriate traffic calming measures to discourage high speeds where the potential for conflict with other roadway users exists.

OBJECTIVE 7

To maintain the current scenic road designations and consider adding additional Scenic Roads in the community.

- Continue to provide information about the existing scenic roads.
- Identify if additional roads are suitable for Scenic Road designation.

OBJECTIVE 8

To facilitate the creation of a bicycle & pedestrian infrastructure network that allows safe, efficient and reliable transportation options in certain locations in Dunbarton.

- Investigate the development of a pedestrian and bicycle route system to maximize transportation opportunities to existing schools and recreation areas.
- Work with the NH DOT to provide wider shoulders for other state maintained highways for pedestrian and bicycle use.

- Where applicable, consider widening, striping, and paving the shoulders of Town roads to accommodate bike lanes.

OBJECTIVE 9

To ensure that transportation options are available to all residents of Dunbarton regardless of socio-economic status.

- Consider providing financial assistance and continue to promote the volunteer driver programs currently serving Dunbarton.

OBJECTIVE 10

Discourage inappropriate, scattered and premature development along VI roads in Dunbarton.

- Consider for designation, as Class A Trails, some of the Class VI roads within Town by working with abutting landowners.