

# Chapter 5. Transportation

## Introduction

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Lisbon's transportation infrastructure connects residents, businesses and visitors with each other and to surrounding communities and major population centers. Within the community itself, the road network provides connections to homes, businesses, services and to trails for motorized and nonmotorized travel and recreation.

Lisbon faces challenges similar to other northern New England communities, such as aging infrastructure coupled with the increased costs of deferred maintenance, and the unavoidable conflicts when Main Street is a major US highway.

This chapter will review the existing transportation system, the condition and safety of the system, and look at some strategies for reducing conflicts between users and increasing safety in the future.

## Highway Classifications

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### Legislative Classification

Public highways are classified by their role in the state highway system and responsibility for maintenance. Table 5.1 on the following page lists the legislative classes in Lisbon and the mileage in each.

Most major improvements on Class I and II highways are funded as projects through the state's Ten Year Plan process. This is a very competitive and long process conducted on a two-year cycle. Proposed projects need to be submitted through North Country Council (NCC) and then ranked by the NCC Transportation Advisory Committee (TAC). The TAC's recommendations and priorities are then submitted to NHDOT, which in turn, prepares the Statewide Ten Year Plan draft for submission to the Governor's Advisory Commission on Intermodal Transportation (GACIT). GACIT then holds hearings on the draft, makes adjustments, and forwards the Plan to the Governor for submission to the state legislature. The projects on the approved Ten Year Plan are funded with federal funds and some state match. Smaller projects can be conducted by NHDOT using Betterment Funds. These are state funds

allocated to each NHDOT District for highway construction, reconstruction, resurfacing, highway maintenance, bridge construction, bridge reconstruction and bridge maintenance projects.

TABLE 5.1 ROAD MILEAGE BY LEGISLATIVE CLASSIFICATION		
CLASS	DESCRIPTION	MILEAGE
<b>Class I</b>	Primary state highways- US 302/NH 10	<b>7.6</b>
<b>Class II</b>	Secondary state highway system - NH 117, Landaff Rd., Scotland Rd., Lyman Rd., Parker Hill Rd.	<b>7.4</b>
<b>Class V</b>	All travelled ways which the town has a duty to maintain	<b>39.6</b>
<b>Class VI</b>	All other existing public ways including those discontinued subject to gates and bars, and all highways which have not been maintained and repaired by the town in suitable condition for travel for five successive years or more	7.3
Source: RSA 229:5; <b>NHDOT 2018 ROADS &amp; HIGHWAYS TOWN CENTER LINE MILES BY LEGISLATIVE CLASS</b>		

Although Class I and II highways are state-maintained, improvements can be requested by the Town and paid on a cost-share basis. For constructing, reconstructing or maintaining Class V roads, the state provides Highway Block Grant Aid Funds to the town quarterly. The funds are from tolls and registration fees and are allocated using a formula based on mileage, population and equalized valuation. This makes it important to update NHDOT when the Town takes over a private road or resumes maintenance of a town highway that had become Class VI.

State law provides that no permit can be issued for building on a Class VI road, or private road not approved by the Planning Board, unless the Selectboard votes to issue permits on that section of road and the applicant has filed a waiver of the town's responsibility for maintenance and liability for damages with the Registry of Deeds (RSA 674:41). The law also provides for the Selectboard to provide the Planning Board with an opportunity for review and comment. It is important to think not just about the town's liability, but also about the risks to visitors, future residents, and emergency responders. Sample Class VI road policies are available to help ensure that relevant issues are discussed and considered by the two boards ahead of time, and that all applications are evaluated against the same criteria. The Planning Board and Selectboard should review the samples and those from other towns and adopt a Class VI road policy.

## Functional Classification

A 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 DOT. The purpose of utilizing such a system is to correlate the land planning and traffic planning functions of the Master Plan. Recognition of the principal function that any road is intended to serve can reduce potential conflicts between land use activities and traffic movements. Lisbon's roads are organized into the following categories:

### ARTERIALS

US 302/NH 10 within Lisbon is classified as a Minor Arterial. Minor Arterials are highways that are designed for long distance travel and connect to other Arterials. The Arterial Highway System is the group of roads constituting the highest degree of through-traffic movement and largest proportion of total travel. The roads are designed for larger traffic volumes and higher speeds. US 302 is an important east-west corridor in the northeast connecting Montpelier, Vermont's capital city in the center of the state, with Portland, Maine. Like the railroad in the early years of the community, this highway connects Lisbon with the region's other socioeconomic centers and the rest of the country.

### COLLECTORS

NH 117 connecting Sugar Hill to US 302/NH 10 in Lisbon is considered to be a Major Collector. Lyman Road and Pearl Lake Road are Minor Collectors. These roads are generally designed to

move medium traffic volumes at lower speeds between or within communities. They connect to other Collectors or to Arterials. Collectors provide a link between roads serving primarily through-traffic movement and those with primarily direct private property access functions.

#### LOCAL STREETS

All other public roads in Lisbon are considered Local Streets. Local Streets are primarily for providing direct access to abutting properties. They are generally designed for lower traffic volumes and lower speeds. Local Streets can connect to any class of highway.

## Traffic Patterns

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### Traffic Volumes

Traffic counts are conducted by NHDOT and NCC through the placement of traffic counting devices at certain specific locations on about a three-year cycle. Data are adjusted to produce average annual daily traffic (AADT). As shown on Table 5.2 on the following pages, although there have been some fluctuations in local traffic, volumes have not been increasing over the last fifteen years on either state or local roads.

**TABLE 5.2**  
**AVERAGE ANNUAL DAILY TRAFFIC, 2005-2019**

<b>Year</b>	<b>US 302 east of Mill Brook Rd.</b>	<b>US 302 over Pearl Lake Brook</b>	<b>US 302 over Ammonoosuc River</b>	<b>US 302 at Littleton TL</b>	<b>NH 117 east of River Rd.</b>	<b>NH 117 at Sugar Hill TL</b>
<b>2005</b>		5700	5200			
<b>2006</b>						
<b>2007</b>	3600			5000	880	850
<b>2008</b>		5400	5100			
<b>2009</b>						
<b>2010</b>	3500			4700	820	750
<b>2011</b>		4900	6300			
<b>2012</b>						
<b>2013</b>	3500			5400	800	690
<b>2014</b>		5200	5000			
<b>2015</b>						
<b>2016</b>	3460			4606	796	
<b>2017</b>		5296	5176			703
<b>2018</b>						
<b>2019</b>	3582			5235	872	785

Source: NHDOT TRANSPORTATION DATA MANAGEMENT SYSTEM

TABLE 5.2

AVERAGE ANNUAL DAILY TRAFFIC, 2005-2019, con't

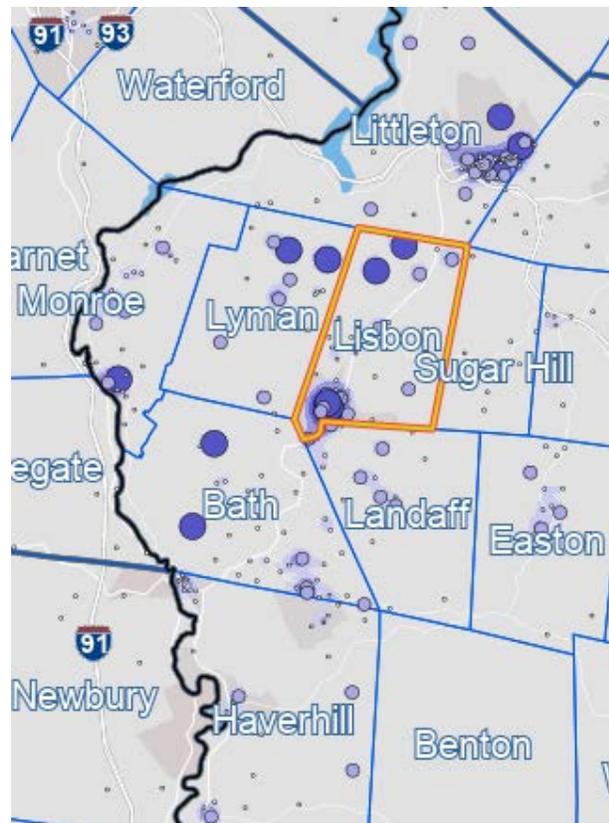
<b>Year</b>	<b>School St. over Ammo- noosuc river</b>	<b>Savageville Rd. west of Atwood Ave.</b>	<b>Parker Hill Rd north of Cole Plain Rd.</b>	<b>Pearl Lake Rd west of Barrett Hill Rd (in Landaff, just over TL from Scotland Rd.</b>
<b>2005</b>	2100	450		
<b>2006</b>				
<b>2007</b>			280	130
<b>2008</b>	3000	360		
<b>2009</b>				
<b>2010</b>			270	150
<b>2011</b>	2500	350		
<b>2012</b>				
<b>2013</b>			240	140
<b>2014</b>	2300	440		
<b>2015</b>				
<b>2016</b>			276	129
<b>2017</b>	2175	559		
<b>2018</b>				
<b>2019</b>			281	131
Source: NHDOT TRANSPORTATION DATA MANAGEMENT SYSTEM				

TABLE 5.2 AVERAGE ANNUAL DAILY TRAFFIC, 2005-2019, con't					
Year	Bishop Rd. at Lyman Rd.	Lyman Rd. west of Bishop Rd.	Lyman Rd. at Lisbon TL	River Rd over Salmon Hole Brk	Streeter Pond Rd. over Ammono- noosuc River
2005	150	860		150	780
2006			670		
2007					
2008	120	680		160	820
2009			540		
2010					
2011	110	640		130	690
2012			560		
2013					
2014	80*	610		200	720
2015			550		
2016					
2017	82*	719		205	835
2018			498		
2019					
*Lisbon Village Country Club no longer in operation					
Source: NHDOT TRANSPORTATION DATA MANAGEMENT SYSTEM					

## Commuting Patterns

Lisbon has several large traffic generators associated with large traffic volumes in and around the village area at certain times of the day. New England Wire Technologies, a specialty wire products company, employs about 400 people (NH Employment Security, December 2018). This company is located at the east end of the village center with access to the facilities from US 302/NH 10. Lisbon is also home to DCI Furniture, a furniture manufacturer employing about 200 people with access also from Route 302/NH 10 at the west end of the village area (NH Employment Security, December 2018). Another traffic generator with peaks at certain times of the day is the Lisbon Regional School accessed from US 302/NH 10 in the middle of the village via School Street and Highland Ave.

The US Census Bureau collects information on commuting patterns of the labor force – that is, where people go to work from their town, and where people come from to work in a particular town. As was shown on page 2-5, the majority of Lisbon residents work in Lisbon, Littleton or Haverhill, most using US 302/NH 10 for at least part of their commute. The number of all people who work in Lisbon, regardless of residence, was estimated to be 823 in 2017 (ON THE MAP, U.S. Census Bureau, Center for Economic Studies). Of these jobs, 694 were reported to be performed by people commuting to Lisbon to work. As the heat map to the right illustrates, those commuting to Lisbon are coming from a broad area, utilizing various Collectors as well as US 302/NH 10.



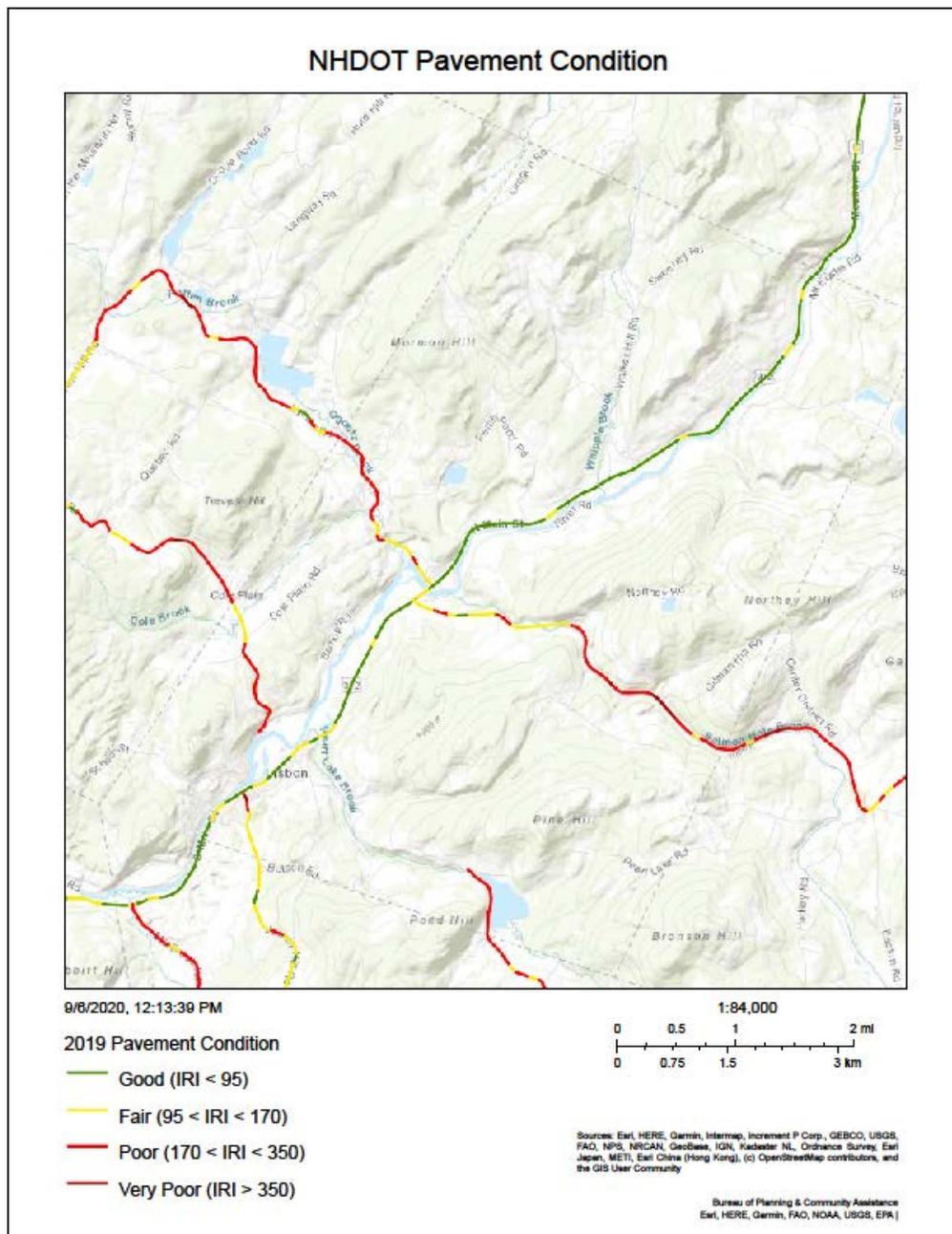
Larger, darker circles indicate a larger number of people commuting to Lisbon to work.

(Source: ON THE MAP, U.S. Census Bureau, Center for Economic Studies)

# Road Condition and Safety

## Highways

NHDOT periodically measures the condition of state highway pavement surface as one factor in prioritizing the need for repaving or other work. Highway segments are scored using the International Roughness Index (IRI). As shown on the following map, in 2019, US 302/NH 10 was in good shape but all of the other state highways in town were rated fair or poor.



## Traffic Safety

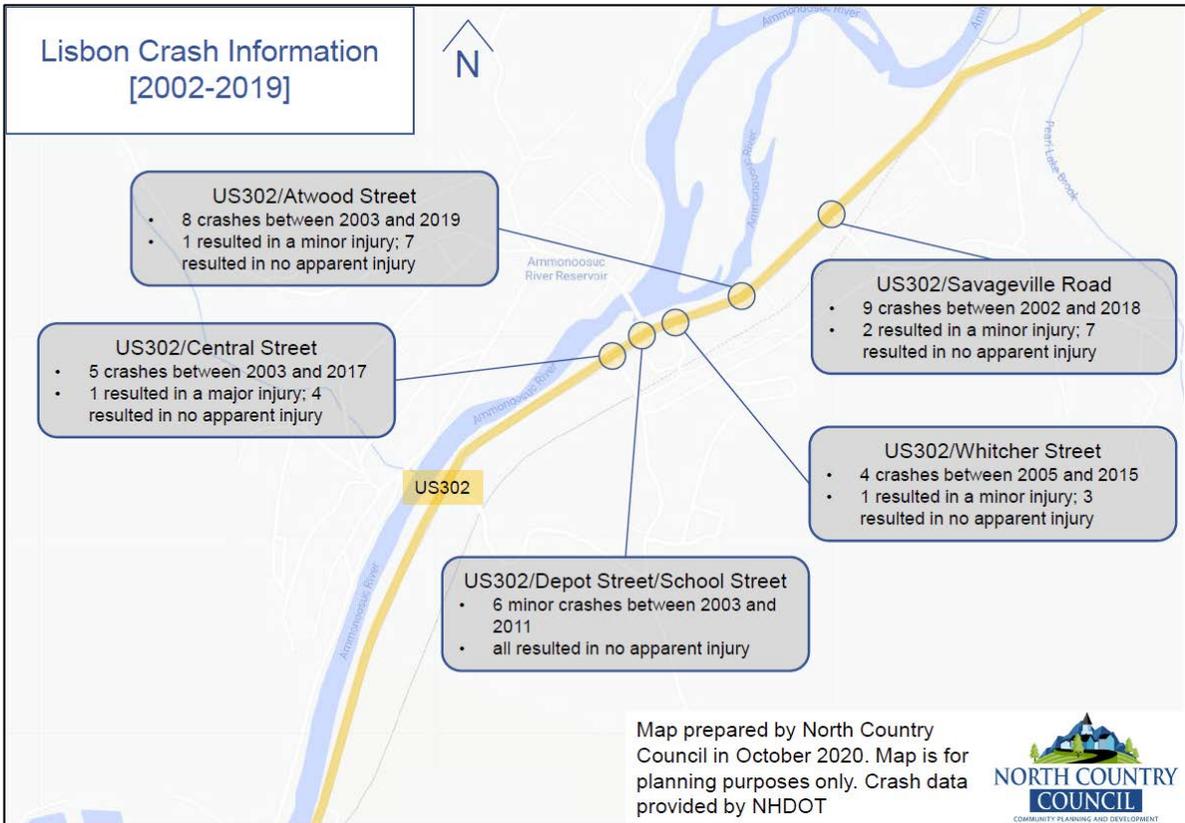
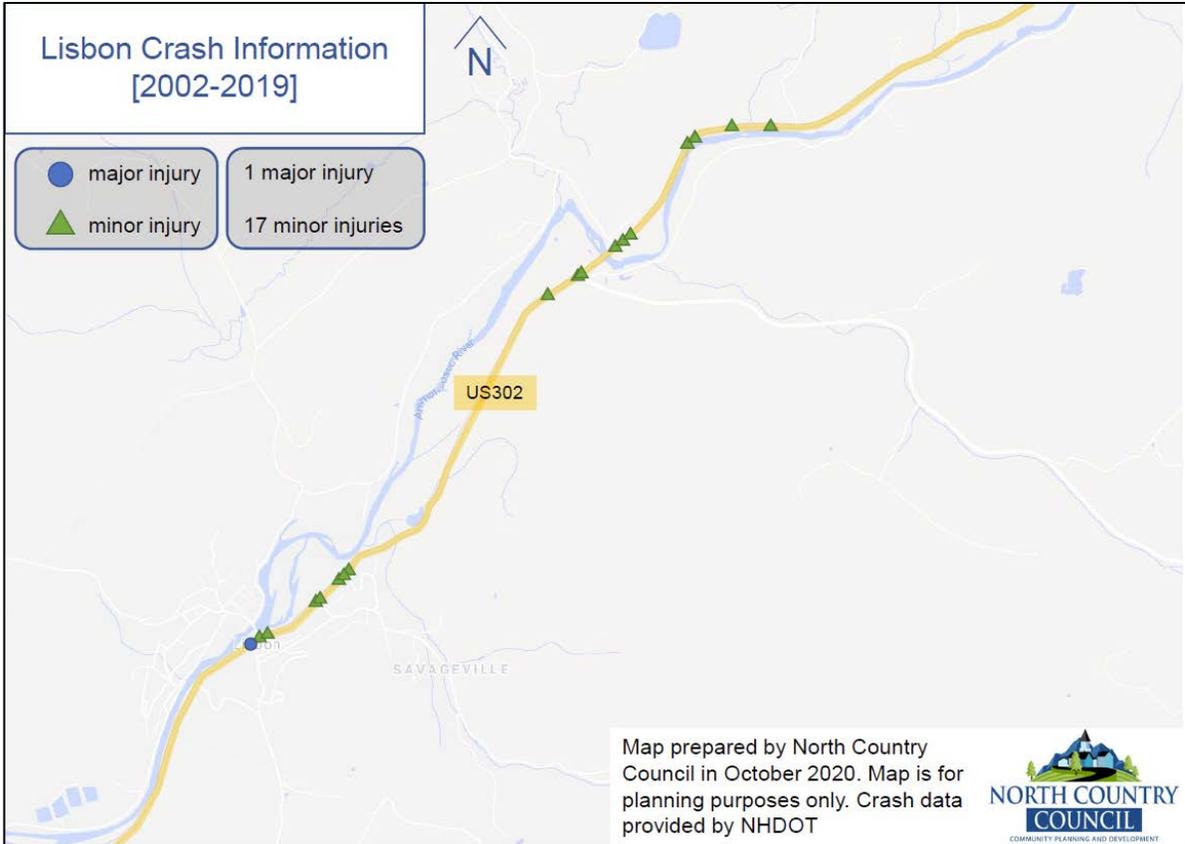
One of the key items in determining a roadway's sufficiency is its safety record. Accident data is collected by local and state police and provided to NHDOT. Accident data should be used with caution for several reasons. Not all accidents are reported. Locations are variously given by street address, distance from an intersection, and/or simply a street name. Nonetheless, a concentration of accidents around a certain intersection or stretch of roadway is an indicator that further review is needed. In some cases, a safety audit can be arranged with professionals from NHDOT and UNH Technology Transfer Center to identify low cost approaches to improve safety.

North Country Council provided an overview of crash data reported to NHDOT along the US 302/NH 10 corridor in Lisbon from 2002 to 2019, and a closer look at the village area (following page). As shown, crashes have been concentrated in three stretches - the village area; the vicinity of the intersection with NH 117, Ammonoosuc River bridge and Lyman Road; and the stretch from Perch Pond Road to the curve to the west. None of these locations experienced a very high number of accidents relative to the number of years or to the traffic volumes. As shown, only one major injury was reported. The Lisbon Police Chief, based on his experience, does not feel there are any locations in town that warrant a safety audit at this time. There are, however, a few locations that would benefit from further study and/or additional signage.

The intersection with NH 117 was mentioned in the previous master plan as an area of safety concern due to poor visibility. This is both due to the geometry of the roadway, guardrail placement, and lack of warning for drivers when NH 117 comes to an end. As shown in these Google images,



NHDOT removed the streetlight and downgraded the warning sign sometime between 2008 and 2019. Replacement of these safety devices, moving the guardrail back to improve the sight distance from NH 117, and signage for drivers approaching the end of NH 117 may all help improve safety in this location.



In the village area, the on-street parking, sidewalks and crosswalks, and high level of activity both cue drivers to slow down and present potential conflicts. As shown below, at the intersection of US 302 and School Street, the location of parking and configuration of the intersection are both sources of potential confusion and distraction for drivers and pedestrians, as well as poor visibility of those pedestrians who cross in the intersection rather than using the crosswalks. In addition, the angled parking makes it difficult for those backing out into the road to see if cars are coming until drivers are already well into the road. This intersection and parking configuration might benefit from further study to see, for example, if changing the angled parking to parallel parking would be helpful. The change would only reduce the number of spaces by one or two.



The traffic volumes and potential conflicts in this area are of course exacerbated at the beginning and end of the school day when parents drop off and pick up their children. One-way traffic is being trialed this year during these hours using West Street and Highland Ave and seems to be working well so far.

One additional area of concern is the Sports Center entrance on US 302. The grade of the road and grade and angle of the entrance make it difficult to see cars entering the roadway. One improvement in this area since the last master plan has been the removal of the passing zone. Signs to warn drivers of traffic entering or blind drive might be beneficial as well.

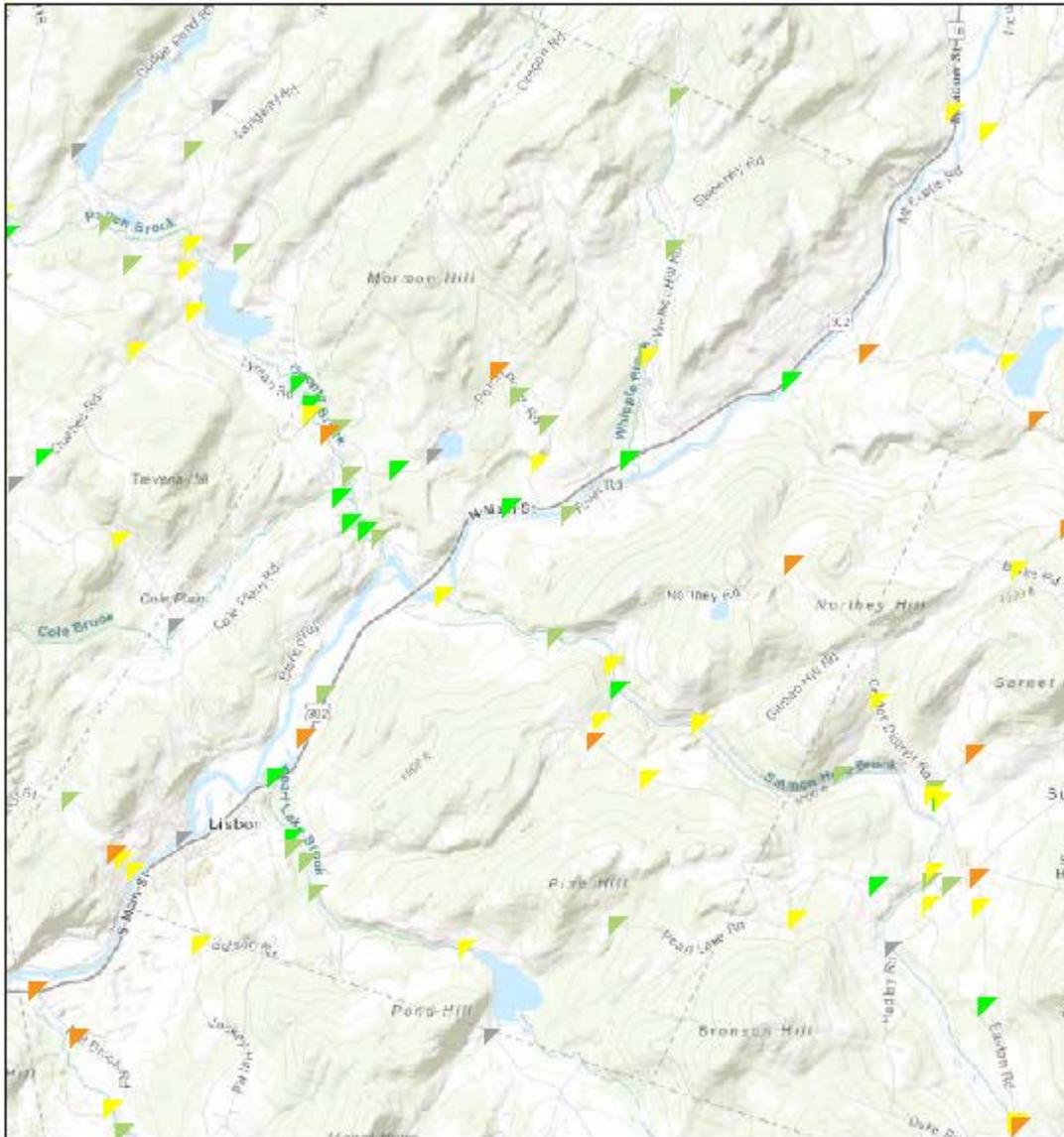
## Bridges

The NH DOT has a state-wide bridge inspection program based on the National Bridge Inspection Standards System. All municipal bridges need to be inspected every two years. Bridges found to be structurally deficient are put on the "red list" and are inspected once or twice each year until funds are available for rehabilitation or replacement. Red List bridges are ranked for funding based on condition, risk, type, capacity and importance. There are no state bridges on the State Bridge Red List at this time. There is currently one bridge in Lisbon on the 2019 Municipal Bridge Red List - Plains Road over Ogontz Brook. A recent inspection indicated that the bridge on School Street over the Ammonoosuc River may need to be placed on the Red List as well. Federal and state funds are available for cost-sharing for construction or reconstruction of municipally-maintained bridges. The town puts money into a bridge capital reserve fund each year.

## Other Stream Crossings

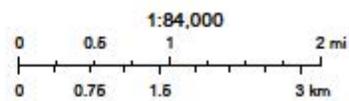
Stream crossings in Lisbon were inventoried and assessed in 2016 as part of the Ammonoosuc River Stream Crossing Assessment Project. The Project was carried out through a partnership of private conservation groups and public agencies and collected data important to NHDOT, NHDES and NH Fish & Game. The data inform municipal and state officials about culvert conditions, habitat connectivity and flood resilience. Culverts and other stream crossing structures that are compatible with the shape and size of a stream, called "geomorphic compatibility," are much less likely to back up or blow out during extreme storm events. Those that are misaligned, too narrow, or a different slope than the stream channel also increase the potential for sediment to deposit on the upstream end. This reduces the amount of water that can get through and so increases the velocity of the water during a storm. The map on the following page shows that several culverts in Lisbon were rated as partially or mostly incompatible with stream geomorphology. This data, along with consideration of the importance of each road and other data about the culvert such as condition and the degree of interference with habitat connectivity (discussed in Chapter 4 Natural Resources) can be used to prioritize culvert replacements. There are several grant programs with the potential to assist with this work.

# NH Stream Crossing Initiative



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- Geomorphic Compatibility**
- ▲ Fully Compatible
  - ▲ Mostly Compatible
  - ▲ Partially Compatible
  - ▲ Mostly Incompatible
  - ▲ Other



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBasc, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

UNH Technology Transfer Center  
 VCGL, Esri Canada, Esri, HERE, Garmin, USGS, NOAA, EPA, USDA, NPS

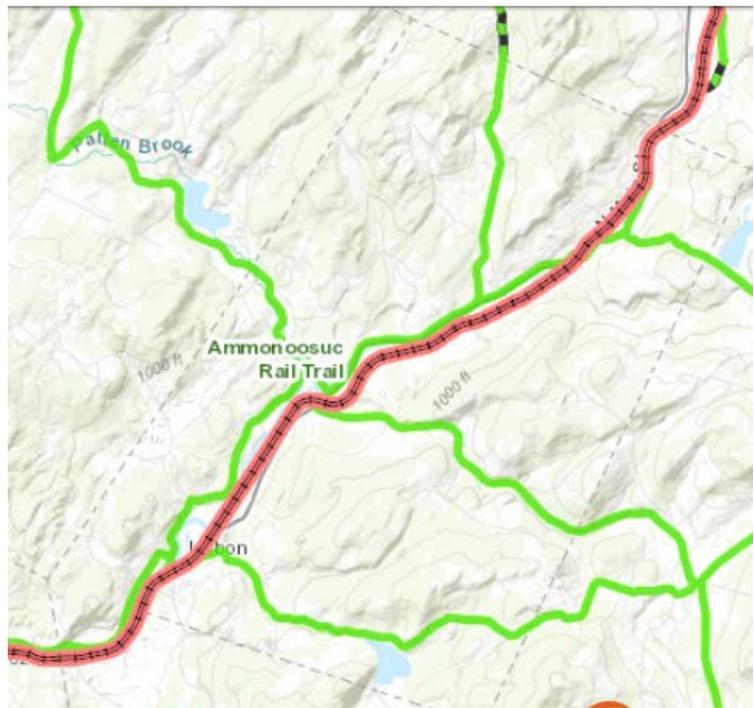
## Infrastructure for Bicycles and Pedestrians

Most roads were designed and constructed with little or no consideration for anything but vehicles. This often leads to unsafe conditions for pedestrians, bicyclists, and those dependent on mobility aids who must share the road with cars and trucks.

Several thousand vehicles pass through Lisbon's village area on US 302/NH 10 each day, many of them large trucks. Sidewalks are available along US 302/NH10 in the village area, extending to the major employers at each end of the village. Sidewalks are also provided along most of the main routes to the village and to the school.

Several crosswalks can be found in the center of the village area. The area between these crosswalks and parking spaces should be clearly marked to ensure that drivers have a clear view of pedestrians starting across. Other traffic calming approaches that would tend to slow traffic and make drivers more aware that they are in a center of pedestrian activity starting at either end of the village area would include benches, pedestrian-oriented lampposts and sidewalk trash receptacles. Crosswalk locations should be reviewed periodically as well.

The number of adults riding bicycles has been increasing, both for the commute to work and for recreation. The map to the right shows the state's designated bicycle route in green and the rail trail in red. (The rail trail is denoted as "unimproved" due to the rough surface.) The map below is a heat map, showing the routes in and around Lisbon used by bicyclists who use the Strava on-line service to map and report their rides in blue. The darker blue lines signify more rides. As shown, many other roads in Lisbon are used by bicyclists in addition to those designated as bicycle routes.



(Source: NHDOT STATEWIDE INTERACTIVE BICYCLE ROUTE MAP)



High speeds, lack of paved shoulders of adequate size, and rough pavement (see map on page 5.9) all put bicyclists at risk. In the village area bicycles must share the travelled lane to pass behind parked cars, which in one section of road are backing out into traffic.

This lack of safe infrastructure can be addressed going forward by designing new roads with attention to users of all ages and abilities regardless of their mode of transportation, an approach known as "complete streets." With existing roads, the problems are more difficult. Where there is adequate right-of-way, paved shoulders should be widened to at least four feet when roads are reconstructed. Signage and speed limits are other tools to consider. Through the village area, "sharrows" might also be considered as a way to alert drivers to the presence of bicycles. The photo below shows the standard sharrow contained in FHWA's **MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)**.



(Source: National Association of Transportation Officials (nacto.org))

Some federal funding is available to towns for improving the transportation system for users other than vehicles through the Transportation Alternatives Program (TAP). TAP funds can be used for on- and off-road pedestrian and bicycle facilities, rail trail improvements, and safe routes to school projects. However, it is a very competitive program with many more applications than dollars.

## Public Transportation

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There is presently no local fixed route public transportation in town. A network of human service and health care agencies and volunteers meet some of the transportation needs of the non-driving population in the area. These include the Littleton Care-A-Van, a partnership between Tri-County Transit and Littleton Regional Healthcare that provides rides for those going to appointments at Littleton Regional Hospital or affiliated physicians. Concord Coach Lines has stops in Littleton and Franconia and provides service to Concord, Manchester, and downtown Boston and Logan Airport.

Airports commonly used for long-distance travel are Boston (2.5 hours), Manchester (2 hours), Montreal (3 hours), Burlington (2 hours) and Lebanon (1 hours). There are also several small General Aviation airports in the region, the closest being the Dean Memorial Airport in Haverhill.

## Strategies for Improving and Maintaining the Town's Transportation System

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### Role of the Planning Board

The Planning Board has several tools for assisting the town with the development and maintenance of a safe and effective transportation system. The different roles the Planning Board can play are:

- Laying out the Town's policies in the master plan.
- Financial planning for transportation improvements as part of a capital improvements program.
- Recommending zoning ordinance amendments to Town Meeting that will direct intense uses to sites where the roads will handle them.
- Preventing congestion and safety hazards through the regulation of driveway connections or curb cuts with driveway regulations.
- Ensuring that subdivision regulations and site plan regulations provide for safe and efficient transportation connections for users of all ages and abilities.

### Planning Strategies

There is a significant relationship between land use and transportation. When road corridors are built or upgraded, additional development is encouraged. Similarly, road capacity must sometimes be increased to accommodate growth where it occurs. It is important for safety, cost and mobility that the interrelationship between land use and transportation is considered in land use planning and in planning road improvements. Some planning strategies to ensure land use and transportation planning are well coordinated include:

#### FOCUS DEVELOPMENT IN THE VILLAGE

Providing for mixed use and higher densities in and around the village area rather than in the outlying parts of town allows for the efficient use of existing infrastructure.

#### IDENTIFY APPROPRIATE LAND USES

The Zoning Ordinance should be reviewed periodically to ensure that development will be compatible with the road system. Applications for development must always be reviewed with the scale of proposal relative to the road network and abutting land uses in mind.

#### PLAN FOR PEDESTRIAN AND BICYCLE CONNECTIONS

The Town can advocate for pedestrian and bicycle connections when NHDOT is preparing plans involving the state highways, and make every effort to see that all due consideration is given to the accommodation of non-motorized traffic including those dependent on mobility aids.

#### DEVELOP AND ADOPT A CLASS VI ROAD POLICY

The Planning Board and Board of Selectmen should develop a road policy that would guide development in town based on the status of existing roads and any future plans for roads. This can go far to ameliorate potential questions and problems when applications are submitted for the upgrading of a road, or for a building permit on a Class VI road.

#### CAPITAL IMPROVEMENTS PROGRAM

A Capital Improvements Program (CIP) that set forth the planned capital expenditures over a six-year period can also help guide road development. In conjunction with a Class VI Road Policy, the CIP can set the schedule as well as the degree and type of road improvements.

#### NCC TRANSPORTATION ADVISORY COMMITTEE

Participation in this Committee provides an opportunity for the Town to be involved in the development of the Region's 10-year Transportation Improvement Plan as well as the Regional Transportation Plan. It is also the best way to stay abreast of any other funding opportunities.

## REGULATORY STRATEGIES

#### ROAD STANDARDS

Included in the Subdivision Regulations administered by the Planning Board are standards for road construction. In addition to certain local standards, the Regulations incorporate NHDOT's Standard Specifications for Road and Bridge Construction and Geometric Design Standards for Rural Roads. The standards address such things as width of the traveled way, width of shoulders, type of materials

to be used and depth of each layer. Ensuring that roads proposed to provide access to new lots are constructed and maintained to these standards can protect the town from expensive upgrades and repairs later on if the Town takes over the road. Steps the Planning Board can take to safeguard future residents and the town by ensuring new and upgraded roads are built to these standards include:

- Require the cost of inspections by a town engineer during and after the construction of the road to be paid by the developer and placed in escrow before plans are signed and recorded.
- Require a performance bond or letter of credit, reviewed by the town attorney, to be provided to the town for the cost of road construction prior to plans being signed and recorded.
- Require covenants, reviewed by the town attorney at the developer's expense prior to approval, to be incorporated into each deed ensuring that there will be a mechanism in place with the capacity to carry out and pay for summer and winter maintenance of the proposed road in perpetuity.
- In case the road is allowed to deteriorate despite these precautions, include as a condition of approval that, prior to any request for the town to take over the road, it will need to be brought up to town standards at the expense of homeowners.
- Require that all conditions be either written on the plan to be signed and recorded, or write a separate notice of action including all conditions to be recorded with the plan.

#### DRIVEWAY REGULATIONS

The Planning Board is allowed by state statute to adopt and administer regulations for the construction and permitting of driveways. The NH DOT regulates curb cuts on state roads; towns are allowed the same authority for town roads. Driveway regulations ensure that the access will not threaten the safety of those using the town highway due to poor visibility or drainage of water and ice onto the road.

#### ACCESS MANAGEMENT TECHNIQUES

For the US 302/NH 10 corridor, which still has quite a bit of development potential, careful land use planning can manage the impacts of land development on highway congestion and safety. Access management requirements and traffic calming in the village area can help ensure that future development doesn't have a negative impact on through-traffic or existing local traffic on this arterial highway. Some access management techniques are applied through the zoning ordinance or

subdivision and site plan regulations and others are applied at the time of review of a specific development proposal. Access management techniques include:

- Reducing the number of curb cuts by increasing frontage requirements or the required distance between driveways, and encourage the use of common driveways.
- Encourage the development of service roads parallel to the arterial to allow for access to adjacent commercial developments. Determine whether buildings, parking, and signs should be set back from the road sufficiently to allow for a future parallel frontage road, or moved closer to the roadway with all access from the rear of the lots.
- Require connections to adjacent developments and other roads when possible, not just the arterial roadway, to allow employees and customers to move from site-to-site without repeatedly entering and exiting the arterial.
- Place parking behind or beside buildings and screen parking when possible to make the building the focal point of the destination. Use green spaces to articulate the differences between driveways, parking, and pedestrian areas.
- Allow for pedestrian access between developments. Crossing points for pedestrians should be across driveways rather than through parking areas.
- Non-residential driveway entrances should be designed to prevent vehicles on the arterial from backing up while waiting to access the site. By providing adequate depth or driveway throat length at the curb cut access, vehicles are allowed sufficient maneuvering space on-site to move away from the entrance and allow other vehicles to efficiently and safely enter or exit the site.
- Vehicular and pedestrian traffic should be separated as much as possible. Foot traffic should be permitted to access buildings without crossing driveways or excessive parking areas.

## Subdivision and Site Plan Considerations

During the subdivision or site plan review process the Planning Board has an opportunity to review each proposal to ensure that it will augment rather than negatively impact the town's provision of a safe and efficient transportation system. Some of the pertinent issues include:

## VIEWING THE WHOLE PARCEL

It is always important to step back from an individual plan and look at it in relation to the neighboring properties and land uses. For example, if the lot fronts on more than one road, decisions can be made about which roads would better serve as access.

## LOT LAYOUT

When the opportunity presents itself through a multi-lot subdivision, the subdivision design should consider shared driveways or an interior street, with lots fronting off of the interior rather than the main roads.

## PARKING LOT LOCATION AND DESIGN

Parking lots can be located and designed to be in harmony with the town's land use and transportation system with considerations such as:

- Locating the building (s) close to the road and putting the parking on the side or in the rear of the parcel
- Requiring shared parking when feasible.
- Planning for future shared parking by designating reserved areas on the plan.
- Prohibiting parking and loading that requires backing out onto the street.
- The use of vegetative buffers between parking lots and roads.

## DRIVEWAY LOCATION AND DESIGN

Some of the general guidelines for planning accesses to commercial properties in a manner that will enhance the community include:

- Do not allow more than one entrance and one exit drive on any lot.
- Make sure the driveway is long enough to allow vehicles to pull off the road and stack inside the lot before entering the road.
- Require two-way driveways to intersect the road at an angle of 70-90 degrees. Address sight distance from the access point. Adequate sight distance will depend on the road classification

and traffic volumes and should conform with American Association of State Highways and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*.

- Avoid curb cuts on sharp hills.
- Limit the grade of driveways as they approach the public highway.