

TOWN OF LISBON MASTER PLAN

CHAPTER IV - TRANSPORTATION

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North Country Council

A. INTRODUCTION

The statute that deals with Master Plans, RSA 674:2, VI, calls for a transportation section that shows "...the location and types of facilities for all modes of transportation required for the efficient movement of people and goods into, about, and through the community." Good transportation planning is important because of its capital-intensive nature: streets and highways typically represent the most significant public investment in a town's infrastructure. Outside of school taxes, the highway budget is usually the largest percentage of a town's operating costs.

The primary goal of this section, then, is to identify current issues and/or needs crucial to orderly development and the safe and efficient movement of traffic. A corollary purpose is to assist the Town of Lisbon in fully participating in all levels of transportation planning. Transportation infrastructure is heavily dependent on public funds, and the NH Department of Transportation (DOT) sets the priorities for spending through the development of a statewide Transportation Plan and Transportation Improvement Program. Both of these are required under federal legislation that prescribes the disbursements to states; in order for New Hampshire to qualify for its full allocation of funds, the NH DOT must comply with federal planning requirements.

To accomplish this task, the NH DOT requires each of the nine regional planning commissions in the state to develop a regional transportation plan. This plan must describe existing state road conditions within its region, identify problems and concerns, declares goals and objectives for the regional network, and makes specific recommendations for improvements or new construction. Any local concerns relative to state-maintained roads must be addressed through the Regional Transportation Plan in order to be included in the State Plan. This section takes the regional issues into account in the process of developing local goals for a safe and efficient transportation network.

B. ROAD CLASSIFICATIONS

STATE CLASSIFICATIONS

Public roads are defined by DOT by the type of service they provide and/or by the funding that is available to build, maintain, and repair them. New Hampshire statute RSA 229:5 specifies the following roads within the state system:

- ***Class I: Trunk Line Highways:*** These belong to the primary state highway system, and the state assumes full control and responsibility for construction and maintenance.
- ***Class II: State Aid Highways:*** These belong to the secondary state highway system. The NH DOT assumes full control and responsibility for construction and maintenance.

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- **Class III: Recreational Roads:** These consist of all roads leading to and within state reservations designated by the NH Legislature. The NH DOT assumes full control and responsibility for construction and maintenance.
- **Class III-a: Boating Access Roads:** These consist of roads that lead to public waters from any existing highway. The NH DOT assumes full control and responsibility for these roads.
- **Class IV: Town and City Streets:** These consist of all sections of road that fall within urban compact areas of towns and cities with populations greater than 7,500. The municipality assumes full control and responsibility for construction and maintenance.
- **Class V: Rural Highways:** These consist of all other maintained roads that are not in the state system. They are town-owned and maintained.
- **Class VI: Unmaintained Highways:** These are all other existing public roads that are not maintained by the town and have not been for at least five years. The road may be closed subject to gates and bars, but it continues as a public roadway.

Of these seven state road classifications, Lisbon roads fall into three as follows: Route 302 is a state highway; all other roads in town are Class V and Class VI town roads. These are illustrated on the accompanying map, and the number of miles comprised by each classification is described in Table 4.1.

Table 4.1: Road Mileage by State Classification

CLASS	MILEAGE
Class I (Truck Line)	7.6
Class II	7.4
Class V	39.4
Class VI	8.5

Source: NH Department of Transportation.

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. For rural areas such as Lisbon, the following categories are identified by the US DOT:

- ***Other Principal Arterial/Controlled Access***

These are Interstates and some primary state routes. They are designed to move large volumes of truck and car traffic through and between population centers without disturbing local traffic and land uses. Controlled Access is a means of minimizing the number of curb cuts, thereby controlling the amount of turning movements along the roadway.

Within Lisbon there are no Other Principal Arterials.

- ***Arterial System – Major and Minor***

These are the streets and highways that connect communities and regions. They are designed to move large volumes of traffic to and from large traffic generators without disturbing local traffic and land uses. Minor arterials distribute traffic to smaller geographic areas, and place more emphasis on providing land access than the major arterials.

Within Lisbon there is one Minor Arterial, Route 302.

- ***Collector System – Major and Minor***

Major collectors are designed to move medium traffic volumes at low speeds between or within communities. They differ from the Arterial system in that collector streets go through residential neighborhoods, distributing traffic from the arterials through area to its ultimate destination. Minor Collectors provide alternate routes to Major Collectors.

Within Lisbon Route 117 is considered a Major Collector, and Lyman Road and Pearl Lake Road are Minor Collectors.

- ***The Local Street System***

This consists of all streets not classified in one of the higher systems. Its primary function is to provide direct access to abutting properties and to other roads and highways. It offers the lowest level of mobility.

SCENIC ROADS

In addition to the state and federal classifications, 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. The effect of this designation is that, except in emergency situations, there shall be no tree cutting or alteration of stone walls within the right-of-way without approval of the Planning Board, after a duly-noticed public hearing. The law does not affect the rights of individual property owners; nor does it affect the land uses as permitted by local zoning. The statute also authorizes towns to adopt provisions dealing with Scenic Roads that are different from, or in addition to, those that are spelled out in the law. To date, the Town of Lisbon has not classified any town roads, or section thereof, as scenic.

Planning Board members have agreed to evaluate the possibility of classifying town roads as scenic and will pursue this initiative in the near future.

C. TRAFFIC PATTERNS

TRAFFIC COUNTS

Information on traffic volume is collected by the NH DOT through the placement of traffic counting devices at various locations around the state. Some of these are permanently installed under the roadway and provide figures based on a full year count, while others are set out on a rotating basis for varying lengths of time – generally during the months of May to October for a seven-day period. Permanent counters are used only on state roads, while the temporary counters will be used on both state and local roads.

Table 2 presents averaged annual daily traffic (AADT) counts for fourteen counters, ten of them in Lisbon, and two on the border with neighboring towns (see Town of Lisbon, NH Traffic Counter Locations map on the following page). The data are not consistent for each counter, so it is not possible to compare all counters over the same time period. The location that shows the greatest amount of traffic in 2003 - the most recent year for which counts are available - is US 302 over Pearl Lake Brook. This counter has consistently registered the highest AADT's since 1996. It is important to bear in mind that these are not permanent counters, therefore any unique event during the week the counter is set out could cause the kind of reading that appears inconsistent.

Table 4.2: Averaged Annual Daily Traffic Counts, 1996 - 2003

Year	US 302 at Littleton TL	US 302 north of Ammonoosuc River	US 302 over Pearl Lake Brook	NH 117 at Sugar Hill TL	NH 117 east of US 302	Savageville Rd west of Atwood St
1996				770		
1997	5000		5300	840		410
1998		4900			960	
1999	4300	5300		900		
2000			5700			350
2001	3700			830	930	
2002		4800		780		
2003			5200			180

Source: NH DOT; North Country Council

Table 4.2: Averaged Annual Daily Traffic Counts, 1996 - 2003 (Con't)

Year	Streeter Pond Rd at Ammonoosuc River	School St over Ammonoosuc River	Parker Hill Rd over Cole Brook	Bishop Rd over Mill Brook	Lyman Rd over Mill Brook	River Rd over Salmon Hole Brook
1996						
1997	370	2400	200		720	180
1998				160		
1999						
2000	550	2700	220		810	140
2001				130		
2002						
2003	620	1500			840	200

Source: NH DOT; North Country Council

TRAFFIC GENERATORS

Most of Lisbon’s traffic is residential, since that is the primary land use in town. There is some amount of truck/commercial traffic that services the businesses, as well as travel through Lisbon to and from neighboring towns; Route 302 carries a significant amount of through truck traffic.

Aside from the residential and local business traffic, Lisbon has several large traffic generators, the single largest being NE Electric Wire Corporation, a specialty wire products company, which employs nearly 400 people. This company is located in the village center with access to the facilities from Route 302. Lisbon is also home to DCI, a furniture manufacturer employing 200 people with access also from Route 302 at the other end of the village area.

Other traffic generators in Lisbon are the Four Seasons Health Center and the Lisbon Regional School. The locations of these facilities are identified on the Town of Lisbon, NH Community Facilities map found in Chapter VI – Community Facilities.



COMMUTING PATTERNS

The US Census 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. According to these 1990 Census figures, Lisbon has an estimated 788 workers; of these, 64% commute out of town to work. The number of all people who work in Lisbon, regardless of residence, is estimated to be 1106; of these, 604 commute into Lisbon from somewhere else. Detailed 1990 Census data on commuting patterns is presented in Table 3, which illustrates where Lisbon residents go to work, and where nonresidents working in Lisbon come from.

Table 4.3: Commuting Patterns (1990)

Commuting Out To:	#	Commuting In From:	#
Littleton	169	Littleton	86
Haverhill	35	Landaff	64
Franconia	21	Haverhill	53
Lincoln	18	Lyman	39
Lyman	18	Bethlehem	33
Bath	17	Bath	26
Vermont	29	Dalton	19
		Sugar Hill	14
		Massachussetts	11
		Vermont	80

Source: US Census, 1990

As these figures in Table 3 illustrate, the largest percentage of Lisbon’s workers go to Littleton - over 50% of all commuters, whereas those who commute in are more evenly divided between the towns of Littleton, Haverhill and Landaff. Without more detail, it would appear that Route 302 carries the greatest amount of commuter traffic each day - both in and out of town. Reference to the traffic count data seems to support this assumption.

D. ROAD NETWORK

SURFACE WIDTHS AND CONDITION

Roads in Lisbon are of varying widths and surface conditions. The wideness of a road is not necessarily related to the ownership – i.e., the state roads are not always wider than the town roads, although they are more likely to have wider shoulders.

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The NH DOT has developed standards for road construction published in April of 1995 and titled “Minimum Geometric & Structural Guides for Local Roads and Streets”. The specifications recommended for minimum width and materials are based on average daily traffic – in other words, the more traffic a road carries, the wider the traveled way and shoulders, the deeper the base and top coat, etc.

According to these standards, the minimum width for the least-traveled road should be 18 feet, plus a two-foot shoulder; this is for a road carrying no more than 50 vehicle trips per day. Most town roads do not meet this standard and even with new construction, many small towns will approve an 18-foot width for a Class V town road carrying more than 50 vehicle trips per day.

Median road widths in Lisbon vary from 20 feet or less for certain Class V and Class VI roads to 22 feet. All of the state roads are between 16 and 25 feet wide, with Route 302 being the widest.

BRIDGES

The NHDOT and the Town of Lisbon Road Agent are responsible for bridge maintenance and construction. If the bridge is on a state-aid road, it is the responsibility of the state and if on a locally maintained road, it is the responsibility of the Town.

The NH DOT has a state-wide bridge inspection program based on the National Bridge Inspection Standards System. All bridges are inspected every two to three years and depending upon location, use and condition may be inspected on a less formal basis more frequently. Bridge condition is rated on a numerical system (FSR) from 1-100. The higher the number the better the condition of the bridge. Priorities are established for maintenance, repair and replacement of bridges based on this rating program. If a bridge is “red listed” it receives the highest priority for repair/replacement.

Of the bridges under responsibility of the Town none are currently in need of repair or replacement. US 302 Bridge over the Ammonoosuc River is scheduled for rehabilitation on the state 10-year plan for the year 2008. No bridges are listed on the “red list”.

ACCIDENT LOCATIONS

One of the key items in determining a roadway’s sufficiency is its safety record. As such, it is useful to examine accident data. Accident data is collected by local and state police and provided to NHDOT.

Table 4.4: Accident Locations

Roads	2000	2001	2002	2003	2004
Route 302*	18	18	15	27	14
Main Street*	15	11	7	9	11
Pearl Lake	2	1	1		1
Route 117	2	1	4	3	
Streeter Pond Road	5	2	3	3	3
Walker Hill Road	3				1
Water Street	2			1	
Highland Avenue		2	2		1

Source: Lisbon Police Department

*Route 302 and Main Street constitute the same road but are kept separate for the purpose of this analysis

Accident counts should be examined cautiously 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. In addition, accident counts would best be considered in light of the total vehicle miles traveled on the particular road over the course of a year. A high accident figure does not necessarily signal a significant problem provided that count is proportionate to the total traffic volume. High accident locations do warrant further review to determine if accident rates or recurring accident patterns indicate specific problems that should be addressed.

The accident data tends to reinforce the traffic volume data presented above. High accident volume is mostly concentrated on Route 302, which is the main state road going through Lisbon and connects surrounding towns. The NH DOT was considering bypassing the Lisbon village area with a new road but after working with the town the department is planning on doing improvements to Route 302 in the downtown area and repaving the road.

PROBLEM AREAS

In general, the roads in Lisbon appear to be in pretty good shape. Information provided by the Planning Board indicates that the intersection of Route 302 and School Street is a major problem in terms of parking and traffic congestion. In fact, the angle parking in front of Northrop's Marketplace is an important safety issue (with reduced visibility for cars backing out into the road) as it is practically impossible to see if cars are coming until drivers are well into the road. The possible reconfiguration of parking in front of Northrop would remedy this safety issue but would potentially create another problem by reducing the number of parking spaces. Parking in general, is very limited in the village area.

This intersection is also congested during peak hours of the day when people drive to work and to school. Aside from the congestion created by cars and buses, another safety issue should be looked at by town officials. The configuration of this intersection is very unwelcoming to pedestrians and has been recognized as being dangerous for kids to cross on their way to and back from school.

Another problem area to be considered is Route 302 in front of Four Seasons Health Center. The grade of the road at this location coupled with the grade of the driveway going down towards the river and building create a sight problem and could potentially cause major accidents. A "no passing zone" and signs indicating traffic entering the roadway could constitute remedies to this safety issue.

The intersection of Route 117 and Route 302 is also considered as a potential safety issue, with reduced view on the bridge side of the intersection for people waiting to turn onto Route 302. School Street also presents traffic problems at the beginning and end of the day when parents bring and pick up their children to school. School Street has been closed to traffic coming back down to the main street area, which increases the traffic problem. Improvement alternatives should be looked at for future upgrading.

E. PUBLIC/ALTERNATIVE TRANSPORTATION MODES

PUBLIC TRANSPORTATION

Public transportation plays a very small role in the overall service network of Lisbon. There are presently no bus routes that serve the town. Shuttle transportation is available for elderly residents and is offered by the Littleton Regional Hospital for access to their facilities.

BICYCLE/PEDESTRIAN TRAVEL

The focus of this analysis has been on vehicular, private transportation. Alternative travel is limited in this region, although it has certainly seen resurgence over the last several years. Most roads were designed and built with little or no consideration for anything but vehicles; pedestrians and bicyclists must share the road with cars and trucks. These issues can be partly addressed at the local level by designing new roads with attention to alternative traffic. With existing roads the problems are more difficult, since the Road Agent is dealing with a circumscribed width in most cases; warning signs and speed limits are the traditional techniques for ameliorating the conflicts, although not always effective.

There are currently no roads in Lisbon that are designated as bicycle routes. However, the Route 302 committee, working with the NH DOT on the upgrade of the road, wishes that the railroad could be changed into a bicycle path. This project potentially could provide bicycle access to Littleton and Woodsville and could bring bikers from surrounding towns to Lisbon. The old railroad station is presently being renovated and might possibly be used as a welcome center for bikers and snowmobile enthusiasts.

SIDEWALKS

Pedestrian mobility in the Village area has been a difficult issue, due to the lack of adequate walking paths, and the fact that the Village is located on a major state highway. Furthermore, several sidewalks have been removed because of their advanced stage of disrepair and the lack of financial resources available. The Planning Board members and town residents feel that sidewalks should be put back and/or repaired so as to provide safe walking paths for kids and residents in general.

The NH DOT is planning to replace and upgrade sidewalks along Route 302 during the repaving of the road. The sidewalks are planned to extend the length of the village and beyond.

F. ROAD IMPROVEMENT PROGRAM (TE & STATE TEN YEAR PLAN)

Ten Year Plan Process

The Ten Year Plan process is a two year cycle that begins with regional planning commissions requesting proposals from constituent communities for candidate projects. Projects submitted are then regionally ranked by the Transportation Advisory Committee (TAC) for each RPC. Early in the new year each RPC's TAC develops and approves a draft of the regional priorities and recommendations for consideration for submission to the New Hampshire Department of

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Transportation. These recommendations and priorities are then submitted to the NH DOT, which in turn, prepares the Statewide Ten Year Plan draft for submission to the Governor’s Advisory Commission on Intermodal Transportation (GACIT). The GACIT then amends the Ten Year Plan, after a series of public hearings, and forwards it to the Governor.

Table 5 on the next page shows the projects that have been approved by the NH DOT and are included in either the Transportation Enhancement Program or the State’s current Ten Year Plan.

Table 4.5: Approved Transportation Projects for Lisbon

ROAD	PROJECT DESCRIPTION	ESTIMATED TOTAL COST	CONSTRUCTION YEAR (STATE FY)
US 302	Bridge rehabilitation over Ammonoosuc River Red list bridge, priority #46	1.5 million	New project
US 302	Rehabilitation beginning 1,100 feet north of Perch Pond Road northerly 4 miles	1.7 million	2009
US 302	Construct Lisbon Bypass - Phase 2 Previous layout for bypass put on hold due to lack of local support - eventually need to look at upgrade Low traffic volume through village area.	15 million	2010
Central Street	Lisbon railroad acquisition & restoration project: purchase & restore the former Lisbon railroad station located on central Street. The station has steep roofs & 6 dormers & is the only B&M station of its kind	\$123,000	2005 Municipal Managed TE project

Source: NH DOT; North Country Council.

Transportation enhancement (TE) Program

The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) called for a ten percent designated share of all Surface Transportation Program funds to be used for Transportation Enhancement Activities. The intent of the program is to afford an opportunity to develop “livable communities” by selecting projects that preserve the historic culture of the transportation system and/or enhance the operation of the system for its users. The 1998 Transportation Equity Act for the 21st century (TEA-21) continued the Transportation Enhancement Program and expanded the eligible use of funds. Consult the NH DOT website (www.nh.gov/dot) or contact your regional planning commissions for more details on eligible activities for the program.

G. ROAD PLANNING

Highways bind a municipality together, and planning for adequate roads may be the most vital part of the planning board's duties. The different roles the planning board can play are:

- Laying out the town's long-term highway policies of the master plan. RSA 674:2, III (a).
- Financial planning for highway improvements as part of the capital improvements program. RSA 674:5 through 7.
- Adoption of an official map (RSA 674:9 through 14) or highway planning corridors. RSA 230-A.
- Recommending to the legislative body the enactment of zoning ordinance provisions that direct intense uses to sites where the roads will handle them. RSA 674:16.
- Preventing congestion and safety hazards through the regulation of driveway connections or curb cuts. RSA 236:13.

ROAD AND LAND USE PLANNING

There is a significant relationship between Land Use and Transportation. When road corridors are built or upgraded additional development is encouraged. Conversely, road capacity must be increased to accommodate growth. As growth continues in Lisbon it will put more pressure both on central areas through which many arterials are concentrated and on outlying areas. From a road planning perspective, growth in urban areas should be carefully managed, appropriate growth in developed areas should be encouraged, and growth in rural areas should be limited.

H. TECHNIQUES FOR ADDRESSING TRANSPORTATION ISSUES

PLANNING STRATEGIES

Focus development in the village

Provide for mixed use and higher densities in the Village area rather than in the outlying parts of town. This will also allow the efficient use of public infrastructures such as water and sewer.

Identify appropriate land uses

Existing land uses can be monitored and the Zoning Ordinance consulted 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 make sure that pedestrian and bicycle connections are always under consideration when the NH DOT is preparing plans involving the state routes, and make every effort to see that all due consideration is given to the accommodation of non-motorized traffic.

Develop and adopt a road policy

The Planning Board, in conjunction with the Board of Selectmen, can 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 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 highway Plan as well as the Regional Transportation Plan.

REGULATORY STRATEGIES

Road Standards

Included in the Subdivision Regulations administered by the Planning Board are standards for road construction. These essentially mirror the DOT standards discussed above, which address such things as width of the traveled way, width of shoulders, type of materials to be used and depth of each level. The Board also has the option, through a waiver procedure, of accepting plans for new roads with modified standards: for example, approving a graveled road rather than a paved road for developments of low traffic impact.

Driveway Standards

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. A local driveway regulation, however, can cover all aspects of driveway construction for the entire length, not just the access area off of the road. Driveway standards can encourage safe and efficient transportation corridor management through provisions that:

- Reduce the number of curb cuts along a road;
- Separate curb cuts and intersections;
- Align driveways either opposite one another or offset them by at least 125 feet for safe sight distance;
- Relate driveway design such as width, length and curb radii, to travel speed and traffic volumes;
- Require shared access and parking where appropriate; and
- Prohibit parking that requires backing out onto the road.

Development of Backlots

Backlot development is a zoning technique that allows the subdivision and/or development of lots that cannot meet the frontage requirement for the district. Allowing for this type of development gives towns the opportunity to set standards for the roads that serve these backlots, and require that the backlot share an access with the front lot, when appropriate, etc.

Access Management Techniques

These techniques range from various driveway standards and requirements to the use of medians, signalization and signage.

SUBDIVISIONS AND SITE PLAN CONSIDERATIONS

During the subdivision or site plan review process the Planning Board has an opportunity to review all proposals based on the transportation issues identified in this section. 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. If the lot fronts are on more than one road, decisions can be made about which roads would better serve as access, how the parking should be laid out, etc.

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

There are a number of issues with parking lot for commercial uses, 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; and
- The use of vegetative buffers between parking lots and roads.

Driveway location and design

- 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, but ideally, sight distance should be at least 11 times the speed limit.
- Avoid curb cuts on sharp hills.
- Limit driveway grades within 20 feet of the road to no more than 3% uphill and 6% downhill.