Chapter XI
TRANSPORTATION

"Transportation in Loudon is more than a means to move through, in, and out of Town. Transportation in Loudon should be a safe and pleasant way to move within Loudon by foot, bicycle, and motorized means. How we use and view our roads and pathways reflects how we and others view our Town as a whole."

- Loudon 2001 Transportation Subcommittee

INTRODUCTION

A safe and efficient transportation network is essential for the development of a prosperous community. Over the past several years, Loudon's development has been largely influenced by its proximity to NH Route 106 and Interstate 93. It is likely that these roadways will continue to play a major role in the future development of Loudon and the central New Hampshire region.

This Transportation Chapter reaffirms a commitment to the preservation of the rural and open space character of Loudon and seeks to provide an integrated system of transportation for the 21st century that will minimize traffic congestion, reduce vehicle-generated air pollution, promote an attractive entry corridor and a vibrant, viable business core. This Chapter promotes the concept of a safe, pedestrian-friendly Town and provides considerations for commuters, residents, for those with special needs.

Rural character and a sense of place are important components for a high quality of life in Loudon. Loudon's rural atmosphere is defined by its recreational trails, rustic gravel roads, historic stonewalls, and the Village. Loudon residents enjoy and treasure the ability to walk throughout the Village and cross-country ski on the quiet back roads. These features are equally important in the fabric of the identity of the community and need to be protected and preserved. However, as development continues, many are concerned that Loudon's traditional rural atmosphere and unique sense of place will slowly erode as the Town becomes a "cut-through" to other communities. This Chapter hopes to identify these important transportation infrastructure resources and propose strategies to preserve and enhance them.

This Chapter favors alternative transportation modes and routes where appropriate, and supports the continued development of an intermodal transportation strategy for the integration of pedestrians, bicycles, and public transit. These will help reduce the number of single-occupancy vehicles on the road while remaining sensitive to the needs of vehicular access to businesses and residences. The strategies listed above help support the concept of Transportation Demand Management (TDM).

This Chapter favors adding traffic calming devices on some Town roads, both in the downtown area and outside downtown, as needed. This may include such methods as installing "roundabouts," installing chicanes, reducing speed limits, or installing speed tables, while at the same time, retaining road aesthetics by honoring scenic environments and historic areas. To retain the residential character of existing neighborhoods, traffic calming measures plus signage for "residential traffic" may be appropriate solutions to the safety concerns voiced by residents.

Planning for future transportation needs should be carried out in a manner that not only accommodates anticipated future growth of the Town and local businesses, but will also help ensure that development will occur in a responsible manner. Through comprehensive planning and construction of identified roadway improvements, the Town will develop a transportation network that will foster economic development and meet the needs of the community for the foreseeable future. Thoughtful transportation planning is an essential part of guiding development in order to preserve valued features of the community, and to achieve community goals.

The purpose of this Chapter is to provide an inventory and assessment of Loudon's transportation network, detail sources of funding for projects, identify alternative modes of transport for the Town's population, and provide policy recommendations to improve the existing transportation network and achieve the overall community transportation goals.

OBJECTIVES OF THE CHAPTER

- To encourage the safe travel of pedestrians and bicyclists along North Village Road, South Village Road, and School Street, as well as for the safe passage between the Elementary School, Town Offices, Recreational Fields, the Safety Complex, and the Library;

- Provide a well-maintained, cost-effective, and safe transportation system that meets the functional and aesthetic needs of the community;

- To identify hazardous roadways, intersections, and conditions and recommend ways to make the transportation network safer and more efficient; and

- To maintain a commitment to the rural and historic character of the community.

COMMUNITY SURVEY RESULTS

A Master Plan Community Survey was distributed to all residential households and non-residential landowners in March 2000. Approximately 2,125 surveys were mailed out with 784 surveys being returned, resulting in an almost 37% response rate. The following survey questions relate to this Chapter.

Table XI-1

In your opinion, what is the general condition of roads in Loudon?

Road condition	Total	Percentage
Good	309	39.4%
Fair	372	47.4%
Poor	44	5.6%
No opinion	23	2.9%
No answer	36	4.6%
Grand Total	784	100.0%

Most respondents felt as though the roads in Loudon are generally in fair to good condition, as can be seen in Table XI-1.

Are you in favor of Loudon encouraging the following transportation projects?

Table XI-2

Create a pedestrian bridge	Total	Percentage
Yes	243	31.0%
No	321	40.9%
No opinion	163	20.8%
No answer	57	7.3%
Grand Total	784	100.0%

Table XI-3

Improve Hoit Rd.	Total	Percentage
Yes	317	40.4%
No	274	34.9%
No opinion	135	17.2%
No answer	58	7.4%
Grand Total	784	100.0%

Table XI-4

Improve traffic flow during races	Total	Percentage
Yes	412	52.6%
No	170	21.7%
No opinion	140	17.9%
No answer	62	7.9%
Grand Total	784	100.0%

Table XI-5

Widen Route 106	Total	Percentage
Yes	216	27.6%
No	357	45.5%
No opinion	145	18.5%
No answer	66	8.4%
Grand Total	784	100.0%

Table XI-6

Redirect School Street and extend Shaker Rd.	Total	Percentage
Yes	266	33.9%
No	257	32.8%
No opinion	192	24.5%
No answer	69	8.8%
Grand Total	784	100.0%

While over half of the survey respondents would like to see the traffic flow during races improved, few advocate allocating Town money to build a pedestrian bridge over Route 106 or widening 106 to accommodate more lanes of traffic. Many would like to see Hoit Road improved, and over a third are in favor of redirecting School Street and extending Shaker Road.

On April 19, 2000, a Community Visioning Session was held in which community participants were asked, "What are the three key transportation issues that Loudon is currently facing?" The following three issues are what participants at the visioning session felt were the most pressing:

- NH Route 106
- The high cost of upgrading roads
- The increased use of Class VI roads for development

STATE AND FEDERAL CLASSIFICATIONS

Functional Highway Classifications

One method by which public roadways are classified, relevant to long-range planning of roadway improvements, is on the basis of primary function, type of service, or the roadway's relation to the community transportation system as a whole. These divisions dictate what funding sources may be utilized for roadway improvements and help determine which design standards apply to a given roadway. The five basic functional classifications are described below:

- Principal Arterial: Principal arterial roadways form the basic framework of the State roadway system. They primarily function as the main routes for interstate commerce and traffic. In addition, they link major geographic and urban areas to economic districts of the State. Ideally, access to these roads by abutting parcels is not permitted. NH Route 106 is a principal arterial roadway.

- Minor Arterial: These roadways serve to connect communities and are secondary to primary arterials in that minor arterials primarily serve as links between major population areas, or between distinct geographic and economic regions. NH Route 129 is an example of a minor arterial.

- Major Collector: These roadways differ from arterials 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 arterials. Lower Ridge Road and Chichester Road are examples of major collectors.

- Minor Collector: 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. Shaker Road is designated as a minor collector.

- Local Roads: These roads and streets are used primarily to provide access to adjacent properties. These roads have numerous turning movements in and out of abutting driveways. Oak Hill Drive and Bee Hole Road are examples of local roads.

State Aid Highway Classification

Another system used to classify roadways in New Hampshire is the State Aid Highway Classification System. This system was created under the requirement set forth by RSA 229-231 to determine the responsibility for the reconstruction and maintenance of roadways located in the State. This system is also used to determine the eligibility of roads for State funding. This classification system is broken into six categories (Class I through Class VI highways). See the ***Private Road, Class V Gravel Road, Scenic Road, and Bridge Location Map*** for more detail.

- Class I, Trunk Line Highways: This classification consists of all existing and proposed highways on the primary state system, except all portions of such highways within the compact sections of communities, providing said sections are Class I highways. NH Route 106 is a Class I Highway.

- Class II, State Aid Highways: This classification consists of all existing and proposed highways on the secondary state systems, except those in compact sections of cities and towns. All sections of these roadways must be improved to the satisfaction of the NH DOT Commissioner and are maintained and reconstructed by the State. The Town must maintain all unimproved sections of these roadways, where no state or federal monies have been expended, until they are improved to NH DOT satisfaction. All bridges maintained with state or federal funds shall be maintained by the State, while all other bridges shall be the responsibility of the municipality. Shaker Road is a Class II Highway.

- Class III, Recreational Roads: This designation is assigned to all roads leading to, and within, state reservations designated by the New Hampshire Legislature. The NH DOT assumes all responsibility for construction and maintenance. There are no Class III roads in Loudon.

- Class IV, Urban Highways: This designation is assigned to all highways within the compact areas of municipalities listed in RSA 229:5, V. The compact section of any city or town shall be the territory within such city or town where the frontage on any highway, in the opinion of the NH DOT Commissioner, is mainly occupied by dwellings or buildings where business is conducted, throughout the year. No highway reclassification from Class I or II to Class IV shall take effect until all rehabilitation needed to return the highway surface to reputable condition has been completed by the State. There are no Class IV roads in Loudon.

- Class V, Rural Highways: This classification consists of all traveled highways that the town or city has the duty to maintain regularly. Piper Hill Road and Currier Road are examples of Class V Roads.

- Class VI, Unmaintained Highways: Roads under this category consist of all other public ways, including highways subject to gates and bars, and highways not maintained in suitable condition for travel for more than 5 years. Wiggins Road and Pleasant Street Extension are examples of Class VI Roads.

The following table shows the breakdown of the six different classes of roads, by mileage, in the Town of Loudon.

Table XI-7
Town of Loudon Road Mileage Survey

Road Classification	Description	Miles 1998
Class I	Trunk Line Highway	9.051
Class II	State Aid Highway	10.266
Class III	Recreational Roads	0.000
Class IV	Urban Highways	0.000
Class V	Rural Highways	65.236
Class VI	Un-maintained Highways	20.414
	Total Miles	104.967

Source: NH DOT 1/1/98 Report

CURRENT TRAFFIC CONDITIONS FOR ROADS WITH COUNT DATA

Tables XI-8 and XI-9 show traffic count data for several roads in Loudon. These counts are used to help gauge the use of the roadways by hourly, daily, weekly, monthly, and yearly increments. NH DOT and CNHRPC have conducted counts in approximately twenty-six locations from 1991-1998, which are outlined below.

Table XI-8 contains Average Daily Totals (ADT) for traffic on those roads. Traffic counters were placed on the roads for a period of one week or longer in order to get an estimate of how traveled they are on a daily basis. An ADT is calculated from a non-permanent counter's data. The ADT is the sum of all full weekday traffic volumes divided by the total number of full weekdays in the count period.

Table XI-8
CNHRPC Traffic Count Data - Average Daily Totals (ADT)

Route	Location	1997	1998	1999	2000	% Change*
Clough Hill Rd.	E. of NH 106	--	1438	2887	--	101%
Mudgett Hill Rd.	At Hollow Route Rd. Intersect	494	--	--	--	n/a
NH 106	At Concord Town Line	--	15570	--	--	n/a
NH 106	N. of Dump Rd.	--	14308	--	--	n/a
NH 106	N. of Speedway	--	8555	--	--	n/a
NH 106	At Gilmanton Town Line	--	8283	--	--	n/a
NH 129	E. of NH 106	--	--	--	3072	n/a
Oak Hill Rd.	At Concord Town Line	--	395	--	--	n/a
Pleasant St.	E. of NH 129	--	546	--	--	n/a
School St.	Concord Town Line	1583	--	--	--	n/a
Shaker Rd.	At Old Shaker Intersection	621	--	--	--	n/a

*Source: Central NH Regional Planning Commission; *change is calculated from the first and last counts only*

Table XI-9 contains Average Annual Daily Totals (AADT) for the roads counters were placed by or requested by the NH Department of Transportation (NH DOT). Correction factors are applied to the ADT, calculated by a non-permanent counter, in order to calculate the AADT. The correction factors help to adjust for seasonal variances and axle variances in a short-term, non-permanent count to provide a more annual representation of daily traffic.

Table XI-9
NH DOT Traffic Count Data - Average Annual Daily Totals (AADT)

Route	Location	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	% Change*
Chichester Rd.	Over Bee Hole Brook	--	--	--	--	--	1000	--	--	1300	1526	53%
King Rd.	At Chichester TL	--	--	--	--	--	--	770	--	--	--	n/a
Loudon Ridge Rd	Over Academy Brook	--	220	--	--	--	220	--	--	250	--	14%
Lower Ridge Rd.	Over Academy Brook	--	490	--	--	--	590	--	--	620	--	27%
Lower Ridge Rd.	Over Soucook River	--	580	--	--	--	1300	--	--	1400	--	141%
NH 106	Gilmanton TL	6300	6600	5700	--	6700	6700	6700	--	7100	--	13%
NH 106	North of Dump Rd.	--	--	--	9500	--	--	--	--	--	--	n/a
NH 106	Over Soucook River North of NH 129	--	11000	--	--	--	12000	--	--	--	15000	36%
NH 106	Over Soucook River South of NH 129	--	9100	--	--	--	9100	--	--	13000	--	43%
Oak Hill Rd.	At Concord TL	--	--	--	--	--	--	370	510	--	490	32%
Wales Bridge Rd.	At Soucook River (South of Village)	--	--	--	--	--	320	--	--	310	--	-3%
Pleasant St.	East of Stage Road	--	460	--	--	410	--	--	--	--	646	40%
North Village Rd.	North of NH 129	--	3200	--	--	--	2500	--	--	--	3000	-6%
Old Shaker Rd.	Over Shaker Brook	--	150	--	--	--	170	--	--	230	--	53%
Pittsfield Rd.	Pittsfield TL	--	--	--	--	--	630	--	--	--	--	n/a

*Source: Central NH Regional Planning Commission; *change is calculated from the first and last counts only*

The ***Traffic Count (1991-1999) and Accident Location (1995-1997) Map*** gives a better understanding of where these traffic counts were conducted in the community.

COMMUTING PATTERNS

Understanding the commuting patterns of the local labor force can assist in planning roadway improvements that will make important travel routes more efficient, safe, and able to promote sustainable economic growth. As can be seen in Table XI-10, in 1990 84.5% of Loudon residents commuted out of Town to work. The destinations of most persons traveling out of town for employment were Concord and Manchester.

Table XI-10
Commuting Patterns, 1990

	1990
Estimated Residents Working:	2,357
Commuting to Another Town:	1,992
Commuting Rate:	84.5%
Total Employed in Town	553
Nonresidents Commuting In	188
Percent of jobs in town filled by nonresidents	34.0%
To Locations Within NH:	
Concord	1,182
Manchester	200
Laconia	77
Hooksett	72
Pittsfield	62
Bow	58
Nashua	46
Boscawen	44
Out of State:	
Maine	0
Massachusetts	34
Vermont	0
Other	0
Out Of State Locations:	
Burlington, MA	9
Billerica, MA	7
Boston, MA	6
Lynn, MA	6

Source: NH Department of Employment Security Commuting Patterns 1990

In the past ten years, the rate of people commuting out of Loudon for work has increased, when comparing 1990 New Hampshire Department of Employment Security information to the results from the 2000 Master Plan Community Survey. The commuting rate went from 84.5% in 1990 to 87.7% in 2000, with Concord and Manchester still being the two main destinations for workers.

Table XI-11
Place of Work

	Full Time	Part Time	Total	Percent
Concord	262	70	332	42.8%
Loudon	63	32	95	12.3%
Bow	27	4	31	4.0%
Pembroke	10	6	16	2.1%
Other Concord Area	35	30	65	8.4%
Hooksett	12	4	16	2.1%
Manchester	39	28	67	8.6%
Other Manchester Area	16	16	32	4.1%
Laconia	10	10	20	2.6%
Other Lakes Region	20	9	29	3.7%
Seacoast	11	5	16	2.1%
Other NH	22	11	33	4.3%
Out of State	13	10	23	3.0%
Total	540	235	775	100%

Source: Loudon Community Survey, 2000

TRAFFIC FLOW AND ACCESS MANAGEMENT

Traffic flow is a major issue in Loudon that impacts local residents and businesses, as well as those visiting the community. NH Route 106 functions as the main travel way for regional traffic moving between the Concord Area and the Lakes Region, and serves the Town of Loudon as a major North/South link for local traffic.

In 1995, a corridor improvement plan for NH Route 106, from Concord to Laconia, was completed by NH DOT. This plan outlined interim and ultimate improvements for the entire length of the corridor. Interim improvements included shoulder widening and the addition of some passing, turn, and scramble lanes. The ultimate improvements included the widening of NH Route 106 to two travel lanes in each direction with a center median. Over the past several years NH DOT has implemented some of the interim improvements, including shoulder widening and intersection improvements along the corridor. The improvement plan estimated that by the year 2013, portions of NH Route 106 would be carrying upwards of 20,000 vehicles per day, as opposed to when the study was completed in 1995 when portions of the road were carrying 13,000 vehicles per day. Today, areas carry 15,500 vehicles per day, which is a reasonable increase from when the study was completed in 1995. Whether or not the ultimate improvements, as outlined in the study, will be implemented is still yet to be seen.

One tool many communities are using to improve traffic flow is access management. Access management has become an increasingly important issue for new developments in rural and suburban communities. Access management works to do the following:

- Limit the number of places vehicles are turning and entering the roadway;
- Reduce deceleration in travel lanes, thus promoting efficiency; and
- Remove turning vehicles from travel lanes.

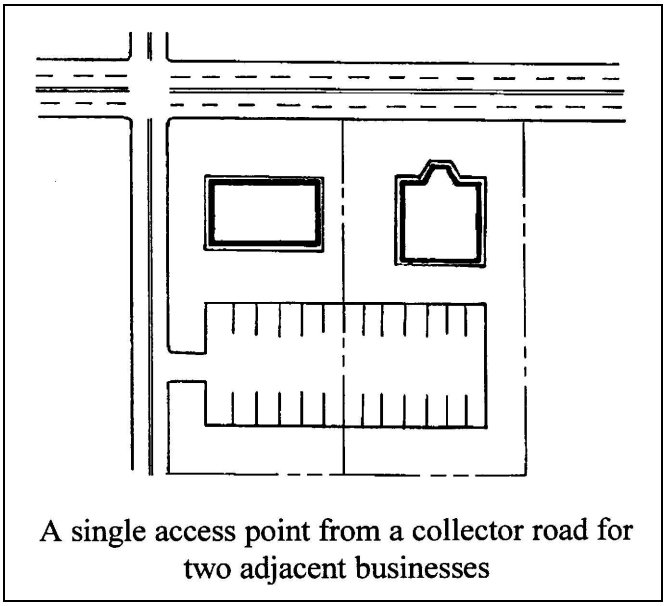
By accomplishing these three major goals, access management prevents roadways from becoming snarled with congestion, thus helping to ensure that these roadways will meet the transportation needs for years to come.

NH Route 106 has limited access points along the road that regulate the number of places vehicles can enter and exit the roadway. NH DOT controls these access points. However, there are many other roads in Town that have large numbers of vehicles traveling on them that would benefit from access management techniques and tools.

The Planning Board intends to hire a consultant in the fall of 2001 to undertake a landscaping study of the Route 106 corridor. This study will examine the current types of development that are occurring along Route 106 and their access locations. Alternative landscaping scenarios will be proposed which would be more aesthetically pleasing, help retain the rural character of the Town, discourage strip development and chain stores, encourage nodal or clustered development, and propose combined access locations. Future commercial developments may, as a result of this study, be shielded from the public view by trees and have shared parking areas behind the stores. This landscaping study should be completed by summer 2002 and could have a significant positive impact on the way commercial developments are designed and built in the future, if its recommendations are adopted by the Planning Board as amendments to the Land Development Regulations.

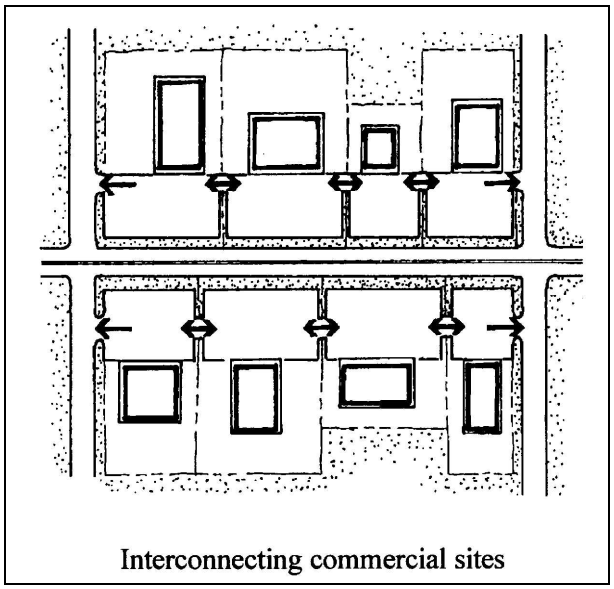
The following methods could be used to limit vehicle access on select roadways:

Figure XI-1
Shared Access Points



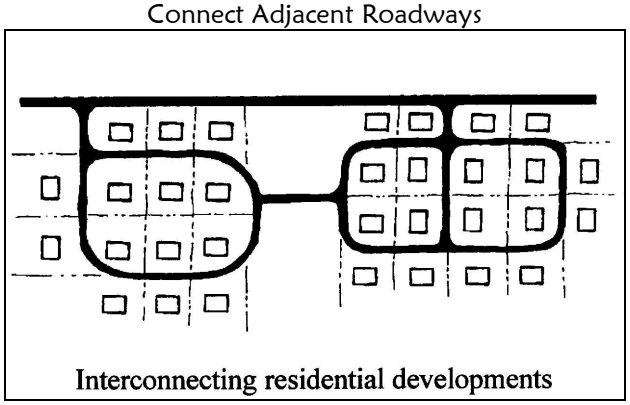
All new site plans on heavily traveled roadways should have shared access points with abutting parcels. This will reduce the number of driveways (curb cuts) on major roadways, and improve traffic movement and safety conditions.

Figure XI-2
Interconnected Sites



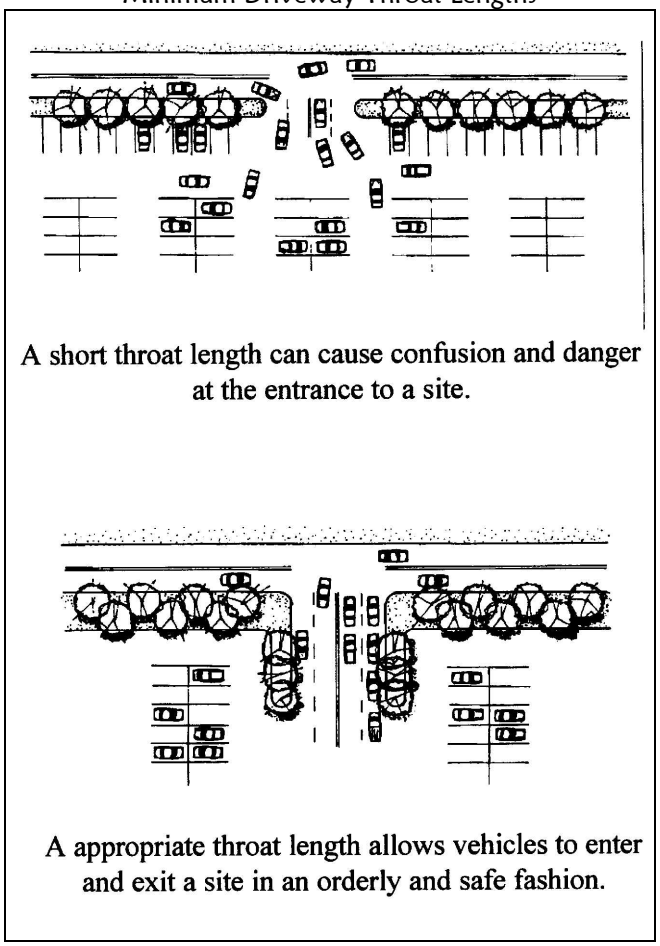
Developers should provide rights-of-way to connect commercial and multi-family sites, thus creating parallel access roads along major roadways. This will help to reduce congestion and slow the need to expand highway capacity.

Figure XI-3
Connect Adjacent Roadways



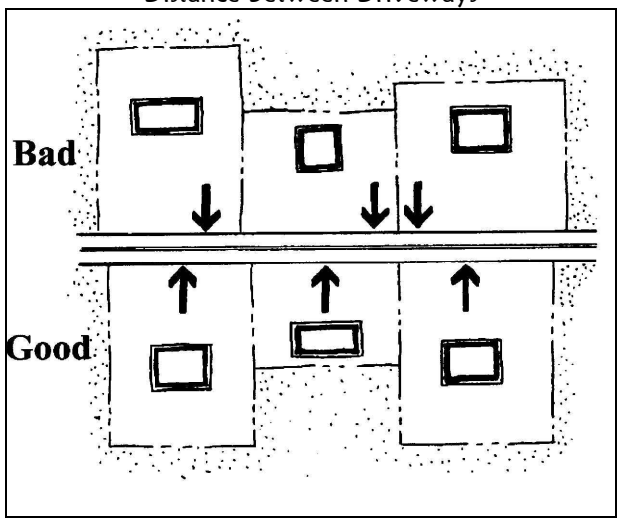
Developers should design subdivisions to connect with public roadways in other subdivisions.

Figure XI-4
Minimum Driveway Throat Lengths



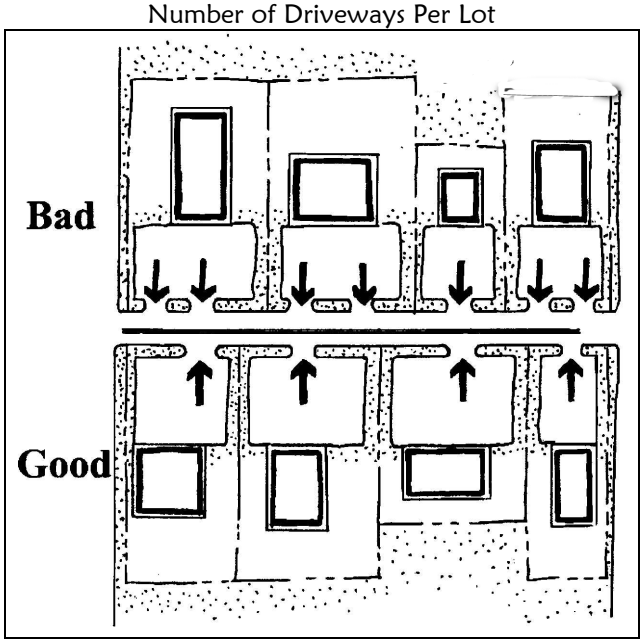
A minimum driveway throat length should be defined for commercial and large multi-family developments in order to help better define internal traffic movements at those sites.

Figure XI-5
Distance Between Driveways



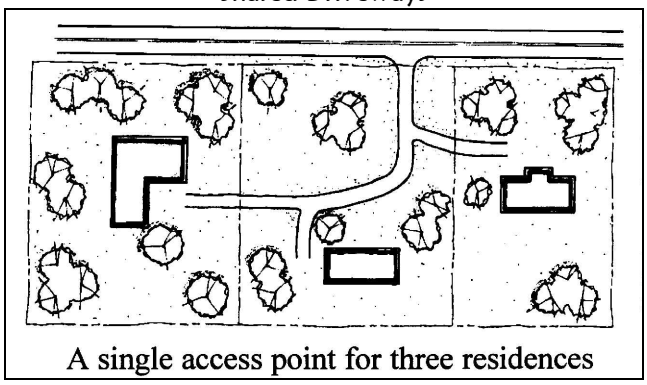
A minimum distance between commercial and multi-family driveways on major roadways should be set in order to better stream-line turning movements and improve safety.

Figure XI-6
Number of Driveways Per Lot



The Planning Board should limit the number of driveways for parcels fronting major collector or arterial roadways. Furthermore, continuous, undefined driveways should be prohibited, which often confuse drivers and contribute to accidents.

Figure XI-7
Shared Driveways



Shared driveways should be constructed for subdivisions on major roadways. This would improve traffic flow and safety conditions of the roadway. The Planning Board, when reviewing developments proposing shared driveways, should require all proper easement and maintenance agreements to be incorporated into the deed of each parcel.

PEDESTRIAN INFRASTRUCTURE

Pedestrian facilities, such as paved sidewalks and gravel walking paths, are critical features for roadways with high volumes of traffic or high speeds. The primary purpose of a sidewalk is to improve safety for pedestrians by separating them from the travel lanes of roadways. In addition to this, sidewalks can also serve as a source of recreation for residents, serve to beautify an area, or to stimulate economic activity in rural and village settings. There is currently only one sidewalk in Loudon which is located on the Village Road bridge. The locations of proposed and existing sidewalks are illustrated on the ***Pedestrian Infrastructure Map***.

Speed limits have been the usual method of improving pedestrian safety and other non-motorized modes of travel. In both rural and urban areas, the minimum speed limit a town can impose is 25 miles per hour. Limits can be made lower at intersections (RSA 265:63, (a)) and in school zones (265:60, II (a)). Crosswalks are a form of traffic regulation and therefore, must be approved by the Board of Selectmen. There are currently three crosswalks in Town, located at the Loudon Elementary School, on Recreational Drive, and at the Town Beach. Crosswalks located on State roads must be approved and installed by NH DOT, while the Town is responsible for those located on Town-owned and Town-maintained roads. The locations of proposed and existing crosswalks are illustrated on the ***Pedestrian Infrastructure Map***.

Many communities in the United States are now exploring other means besides sidewalks that place pedestrians and other non-motorized modes of travel on a more even level with motorized traffic. These measures, collectively called traffic calming, use the physical design of the roadway to prevent inappropriate automobile speeds. Most often they are used in residential or downtown areas where residents see the road as part of their neighborhood and a place where walking, recreation, and social interaction can safely coexist with motorized traffic.

Traffic calming suggests 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 speeds. Traffic calming measures foster safer and quieter streets that are more hospitable to cyclists, pedestrians, and joggers 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 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 effectively narrow the 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 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 (curb bulbs) reduce the overall distance from one side of the road to another and slow down traffic at those crossings.

- Modern Roundabout: 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 25 mph 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.

A solid pedestrian infrastructure can greatly improve the quality of life within a community and although Loudon does have some existing pedestrian infrastructure, it is very limited. The ***Pedestrian Infrastructure Map*** shows the existing and recommended locations of sidewalks and crosswalks, and areas of Town that may benefit from traffic claming measures.

ACCIDENT DATA AND ANALYSIS

One of the most obvious methods of identifying where improvements are needed is to analyze the location, frequency, and type of accidents that occur at various locations in the community. The list below, as well as the ***Traffic Count (1991-1999) and Accident Location (1995-1997) Map***, provides a quick picture of known automobile accident locations, which may be due, in part, to the conditions of the roads. Almost all of the accidents occurred on School Street, Routes 106 and 129, Pittsfield Road, East Ricker and Ricker Road, and North Village Road.

Table XI-12
Automobile Accidents 1995-1997

	1995	1996	1997
Accidents	12	66	73
Fatalities	0	0	0
Injuries	2	26	55
Property Damage only*	11	49	35

*Some accidents had more than one injury
Source: Loudon Police Department

Table XI-13
Chronic Accident Locations 1995-1997

Location	Number of Accidents		
	1995	1996	1997
Clough Hill Rd at Rt. 129		1	1
E. Ricker Rd at Chichester Rd		3	1
N. Village Rd at Oak Hill Rd		1	1
NHIS		2	3
Pine Ridge Rd West of Wales Bridge Rd	1	1	
Pittsfield Rd at Rt. 129			3
Pittsfield Rd at Sanborn Rd		1	1
Rt. 106 at Asby Rd	1	1	2
Rt. 106 at Beck Rd	1	3	
Rt. 106 at Chichester Rd		3	2
Rt. 106 at Clough Hill Rd	1	4	7
Rt. 106 at Dump Rd		2	2
Rt. 106 at Goshen Dr.			2
Rt. 106 at Gues Meadow			2
Rt. 106 at Hemlock Hill Dr.		1	1
Rt. 106 at Hollow Rt. Rd		1	2
Rt. 106 South of Josiah Bartlett Rd	1		1
Rt. 106 at Mudgett Hill Rd		3	2
Rt. 106 at Rt. 129		1	2
Rt. 106 at Staniels Rd		1	2
Rt. 106 at Wales Bridge Rd		3	
Rt. 129 West of Bee Hole Rd		1	1
Rt. 129 at Bear Hill Rd	1	1	
Rt. 129 East of Clough Hill Rd		1	2
Rt. 129 West of Clough Hill Rd		2	2
Rt. 129 at Pittsfield Rd			2
Rt. 129 at Pleasant St.	1	1	1
Rt. 129 at Rt. 106		1	1
Rt. 129 East of Wiggins Rd		1	1
School St. West of Batchelder Rd		2	1
School St. West of Oak Hill Rd		3	1

Source: Loudon Police Department

PRIVATE ROADS

Private roads are roads that have been constructed but, for various reasons, are not maintained by the Town or considered Town-owned roads. The Town does allow for the building of new private roads, although they do not provide any maintenance on them. These new private roads do not have to be built to Town road construction standards but they do have to meet fire and safety codes. In order for the Town to accept a private road as a Town-owned and maintained road, the private roads must meet Town road standards, a five-year bond is required, and a vote is required at Town Meeting to authorize the Town to accept the road.

The following is a list of private roads within the Town of Loudon. These roads can also be seen on the ***Private Roads, Gravel V Gravel Roads, Scenic Roads, and Bridge Location Map***.

Table XI-14
Private Roads in Loudon

Captain French Road	Vinton Lane	Gil Rogers Highway
International Drive	Hardy Road	Lazy Pines Drive
Pine Ridge Road	Sunset Drive	Sargent Lane
Merrill Lane	Tote Road	Greenview Drive
Cross Brook Road		

Source: Loudon Transportation Subcommittee, Road Agent, and Base Map

GRAVEL AND SCENIC ROADS

Major components of a town's rural character are its gravel and scenic roads. These roads help to retain a sense of history and rural quality that residents have indicated a strong desire to maintain in Loudon.

A special attribute the Town of Loudon has is the mix of paved and gravel roads on which to travel. Loudon, unlike many communities, has a large percentage of gravel Class V roads. The preservation of gravel roads will help to ensure that the Town honors its history and original design. The following list is of Class V Town-maintained roads in Loudon that are gravel or are a mix of gravel and pavement. The ***Private Roads, Gravel V Gravel Roads, Scenic Roads, and Bridge Location Map*** shows the location of the Town's gravel roads.

Table XI-15
Class V Town-Maintained Gravel Roads

Batchelder Road	Bear Hill Road	Berry Road
Gilmantion Road	McKenzie Road	Minery Road
Page Road	Cooper Street	East Ricker Road
Hot Hole Pond Road	Wyman Road	Coaster Road
Lovejoy Road	Flagg Hole Road	Bee Hole Road
Blake Road	Bumfagon Road	East Cooper Street
Piper Hill Road	Sanborn Road	Kenney Road
Presby Lane	Storrs Drive	Pleasant Street Extension
Youngs Hill Road	Ring Road	Flagg Road
Old Shaker Road		

Source: Loudon Transportation Subcommittee, Road Agent, and Base Map

This diversity of roads allows Loudon to retain its historic past while, to some extent, acknowledging growth and infrastructure needs.

In New Hampshire, communities have the ability to protect the character of specific scenic roads by enacting the provisions of RSA 231:157 at annual Town Meeting. Any Class IV, V, or VI highway can be designated a Scenic Road using the procedure in RSA 231:157. Ten people who are either Town voters or who own land abutting the road (even though not voters) may petition. At any annual or special Town Meeting the voters of the Town may, by vote, designate the road as a Scenic Road. A town may rescind its designation of a scenic road using the same procedure.

The effect of a Scenic Road designation is to legally require a hearing, review, and written permission by the Planning Board before the Town or a public utility can remove (or agree to the removal of) stone walls, or can cut and remove trees with a circumference of 15 inches, at 4 feet from the ground. However, this Planning Board requirement is full of exceptions. The Planning Board can be bypassed - and only Selectmen permission is needed - if the Highway Agent wishes to cut trees that have been declared a "nuisance" under RSA 231:145-146, or which, in the Road Agent's opinion "pose an imminent threat." Moreover, a public utility can cut the trees for the "prompt restoration of service" without anybody's permission (RSA 231:158, II).

The Scenic Road law does not prohibit landowners from the cutting of trees or removal of walls (RSA 231:158, IV). The only sure way to prevent owners/abutters from cutting tress is for the Town to acquire title to the highway strip, or by taking tree rights under the "Tree Warden" law (RSA 231:154). The law on stone walls as boundary markers (RSA 472:6) applies the same to landowners, whether or not the road is designated a Scenic Road.

In recognition of the fact that State law itself is not very stringent, the New Hampshire Legislature added RSA 231:158, V, in 1991, which gives a town broad power to impose scenic road regulations that are different from, or in addition to, those contained in the State law. Though some critics of the law believe it to be too weak, RSA 231:157 remains one of the few techniques available for the preservation of culturally important and scenic roads. The Town of Loudon, although it contains many roads with scenic attributes that would be good candidates for Scenic Road designation, currently has only one designated Scenic Road, which is the gravel portion of Currier Road.

The diversity of roads in Loudon contributes to the Town's unique and historic atmosphere. Maintaining the gravel roads and roads with scenic attributes in Town will further enhance the character of the community.

CLASS VI ROADS AND TRAILS

Class VI roads are roads that are not maintained by the Town, may be subject to gates and bars, and are almost always gravel. A Class V road can become a Class VI road if the Town has not maintained it for five years or more. The State recognizes that there is increasing pressure to develop along Class VI roads and enacted RSA 674.41. 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" 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 local governing body 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.

The Town of Loudon does allow the subdivision of land along a Class VI road, if the road is brought up to Class V Town road standards. The Town does allow building on existing lots along Class VI roads, without requiring upgrades, as long as the development meets all of the frontage requirements. However, the Town does not perform maintenance on these roads and the responsibility falls onto the individual property owners.

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 the Town does not maintain, Towns, at their option, may conduct maintenance on Class A 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. The Town 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 town's transportation infrastructure because they personify the community's rural character and provide vast recreational opportunities. For more information on the conversion of Class VI roads to Class A Trails, see the Loudon Open Space Trail System Plan (July 2001). This Plan inventories the various trails located in Town, highlights Class VI roads that can be used to link trail networks together, and outlines the necessary steps to be taken to expand and preserve these important features.

PARKING AND PUBLIC TRANSPORTATION

Parking and public transportation are usually the two issues that most towns spend the least time planning, studying, or regularly setting aside money for, yet they are the very issues that most residents will identify as areas in Town that need improvement.

In the Community Survey, many of the respondents said they would like to see the development of a public transportation service in Loudon. The support of public transportation expansion into Loudon was also discussed at the Community Profile Workshops in 1997. There is currently a volunteer service, the John O. Cate Memorial Van, which provides residents transportation in the Loudon-Concord area. In 2000, the van served over 540 people trips, which included trips for doctor appointments, shopping, and running errands. This service is provided to residents Monday-Friday and is subsidized by the Town. Concord Area Transit (CAT) is willing to provide transportation service to Loudon on a will-call basis. There should be an effort made to coordinate service between these two entities to ensure that the needs of Loudon residents are being met.

The key to a vibrant downtown is to not only have a pedestrian infrastructure in place but to also have accessible, safe, and convenient parking available. Loudon has a thriving downtown that they are very proud of but there needs to be more of an emphasis placed on the creation and expansion of a parking infrastructure. In order to ensure that parking facilities are in the most desirable locations, a supply and demand study should be undertaken. This would ensure that new commercial retail development being built in Loudon would create parking only in those areas and to the scale of demonstrated demand.

The ability for all residents to move freely around Town encourages a greater sense of community, as well as fostering economic development and vitality. The lack of adequate and safe parking facilities, as well as the ability of all residents to get around Town, can inhibit economic growth and weaken the overall transportation infrastructure.

LOCAL BICYCLE 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. Often, roadways are designed only with motor vehicles in mind and Loudon is no exception to this.

Transportation decisions are usually made solely for those who can drive and have access to an automobile. This leaves out transportation options for those who cannot or choose not to drive, those who choose not to own or cannot afford to own reliable automobile transportation, and those who would prefer to combine recreation and exercise with transportation.

By creating a local bicycle infrastructure, members of the community have the ability to travel within Town for employment, shopping, and recreational purposes without driving. The ***Bicycle Infrastructure Map*** shows the State and Regional bicycle networks, as well as the recommended local bicycle network here in Loudon. As concerns over air quality, traffic congestion, and other issues increase, the need and desire for a well-maintained and safe bicycle route system will continue to grow from a luxury into a necessity.

BRIDGE NETWORK

Bridges are a key component of the highway system as they connect road segments across streams, lakes, rivers, and other roads. Bridges are the most expensive sections of roads and the lack of adequate bridges creates transportation bottlenecks. Currently, there are a total of 17 bridges in the Town of Loudon.

The NH DOT maintains an inventory of all bridges in New Hampshire using Federal Sufficiency Ratings (FSR), a nationally accepted method for evaluating bridges. A FSR represents the relative overall effectiveness of a bridge as a modern day transportation facility. A FSR greater than 80 means the bridge is in overall good condition. 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.

Functionally Obsolete (FO) refers to a bridge with substandard deck width, under clearance, approach roadway alignment or inadequate waterway. Structurally Deficient (SD) refers to a bridge with one or more deteriorated components whose condition is critical enough to reduce the safe load carrying capacity of the bridge.

Table XI-18, as well as the ***Private Roads, Gravel V Gravel Roads, Scenic Roads, and Bridge Location Map***, provides more detailed information on the 17 bridges located in Loudon.

Table XI-18
Bridges in Loudon

Bridge	What Crossed	Year Built	Bridge Number	FSR	FO/SD	Owner
Staniels Road	Soucook River	2001	044048			Town
Wales Bridge Rd.	Soucook River	1934	054056	66.6		Town
NH 106	Soucook River	1977	056063	96.3		State
Chichester Road	Bee Hole Road	1920	061044	79.7	SD	Town
North/South Village Rd.	Soucook River	1926	069084	62.4	FO	Town
NH 106	Soucook River	1977	074086	96.2		State
Currier Road	Soucook River	1930	096100	77.3	FO	Town
NH 106	Shaker Brook	1951	100114	93.3		State
Old Shaker Road	Shaker Brook	1920	104133	77.0	FO	Town
Clough Hill Road	Soucook River	1960	135127	70.4	FO	Town
Lower Ridge Rd.	Academy Brook	1910	147125	78.5		Town
Pittsfield Road	Sanborn Brook	1928	161050	95.9		State
Lower Ridge Rd.	Academy Brook	1931	164124	64.1	FO	Town
Sanborn Road	Sanborn Brook	1920	172052	78.8		Town
Lower Ridge Rd.	Academy Brook	1950	177123	78.6	FO	Town
Loudon Ridge Rd.	Academy Brook	1930	187112	64.5	FO	Town
Kenney Road	Academy Brook	1960	199113	80.8		Town

Source : NH DOT Bridge Design, Mini Bridge List 1997

NEW HAMPSHIRE INTERNATIONAL SPEEDWAY

The New Hampshire International Speedway (NHIS) is located on Route 106 in Loudon and creates large volumes of traffic on race days. The Speedway features a one-mile track and a 1.6 mile road circuit, situated on approximately 1,000 acres of land. There is seating for 91,000 in the grandstand, which does not include the seating available in the suites or other areas of the Speedway.

NHIS is the largest sports facility of its kind in New England. Each year approximately 400,000 sports fans and participants visit NHIS for a wide range of activities, including professional and amateur motor sports, bicycle racing, driving and racing schools, special performance-related activities, and even soap box derby trials.

The presence of the Speedway in Loudon has both positive and negative impacts on the community. The Speedway creates major traffic concerns that impact the Town, residents, abutting communities, and people visiting the Speedway. As can be seen in Table XI-19, there is a significant increase in the traffic volumes when there is a major event occurring at the Speedway as compared to average daily trip generation:

Table XI-19
Winston Cup Race Traffic Volume

		Percentage Increase During Winston Cup Race Weekend								
		July 1998			July 1999			September 1999		
		Fri.	Sat.	Sun.	Fri.	Sat.	Sun.	Fri.	Sat.	Sun.
Roadway	Location									
West Road	East of I-93	24.6	37.9	201.2	14.2	N/A	N/A	25.8	-4.5	123.5
Route 132	N. of West Road	14.2	34.3	28.2	-5.9	-1.4	29.5	-13.4	0.8	5.9
Center Road	E. of Route 132	22.0	48.1	291.6	35.7	30.3	384.2	-33.9	30.7	164.6
Hackleboro Road	N. of Baptist Road	12.0	-0.3	-2.6	43.5	20.0	34.8	n/a	n/a	n/a
Baptist Road	E. of Canterbury Village	23.1	40.0	274.7	37.5	98.0	369.5	-10.1	22.2	267.8
Baptist Road	W. of Shaker Road	26.0	47.7	276.4	25.8	51.3	428.1	-14.1	-11.5	213.2
Shaker Road	Canterbury-Loudon TL	25.9	28.6	128.4	20.9	20.4	122.2	9.7	5.1	82.7
Shaker Road	N. of Baptist Road	-15.7	-43.5	387.4	57.2	72.9	534.8	6.6	52.5	253.7
Shaker Road	N. of Asby Road	24.5	8.0	81.2	34.8	14.7	124.3	-3.2	-16.4	67.3
Asby Road	At Shaker Road	201.7	436.1	1971.6	298.0	710.0	3640.4	146.1	3000.0	2526.1
Hoit Road	W. of Route 132	11.8	29.6	47.2	12.6	12.5	61.7	-7.5	16.4	45.4
Route 132	At Concord TL	19.2	40.8	47.2	3.5	16.7	71.4	-7.4	29.6	81.2
Hoit Road	W. of Shaker Road	14.1	34.3	46.3	15.8	8.0	57.1	-5.6	16.5	56.1
Oak Hill Road	At Concord TL	45.4	75.2	177.4	5.4	13.2	156.8	7.9	35.5	162.7
Route 106	Concord-Loudon TL	53.9	74.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chichester Road	E. of Route 106	n/a	n/a	n/a	20.4	49.7	56.4	10.1	24.3	67.3
Route 129	S. of Route 106	n/a	n/a	n/a	42.0	52.5	66.3	20.6	36.1	63.2
Route 129	N. of Route 106	12.1	23.9	6.3	14.6	16.2	6.2	-3.1	3.4	-13.5
Pleasant Street	E. of Route 106	42.7	45.4	142.0	8.3	34.0	n/a	-1.7	36.4	160.0
Route 106	North of Speedway	44.8	86.6	240.7	n/a	n/a	n/a	n/a	n/a	n/a

Source: NH DOT and CNHRPC Traffic Counts

The New Hampshire International Speedway is a major entity in the Town of Loudon. The cooperation between the two is important in order to help retain the small-town environment of the community.

TOWN ROAD CONSTRUCTION STANDARDS

How streets are designed and built are key components of well-planned and orderly growth. The design and construction of roads affects the visual quality of communities, public safety, and quality of life for years to come.

Different streets have different functions, thus requiring different designs. Road design standards should have built-in flexibility that fits with natural contours, preserves natural features, and meets other community objectives. Rigid design standards can lead to over-designed roads, which encourage excessive vehicle speeds and present a less attractive neighborhood streetscape. Sound road design should consider topographic features to assure proper road functions and to minimize impacts to vegetative and other natural features. Flexible street alignment and design standards allow new roads to fit well with the land and preserve the natural features of the area as much as possible.

Loudon does have flexible road design standards based on the estimated trips generated by the proposed development. These standards should be reviewed for their adequacy and effectiveness. The current standards do not allow for the building of new gravel roads; for the designing of narrower roads or roads that follow natural and environmental features; nor do they have a provision for ensuring that the entire development will be taken into consideration when establishing the trip generation number. These issues should be reevaluated to ensure that the road standards will help the Town reach their transportation infrastructure goals.

Residential street standards provide the basis for safe, efficient, and economical access to these areas. Safe residential streets are attained by specifying street geometrics that discourage excessive speeds and emphasize access. Residential houses are efficiently accessed with lower travel speeds on streets that are safer for bicyclists and pedestrians. The purpose of residential streets is to serve the land that abuts them. In doing so, residential streets should promote safe and efficient movement of vehicular and pedestrian traffic and take into consideration land use, construction, and future maintenance.

Many communities are taking the position that smaller, "less built" roads servicing residential areas help to preserve the residential "community feel" of a neighborhood, rather than a cut-through to other areas of Town. By allowing for smaller, narrower roads that meet all necessary safety and transportation standards, Loudon can retain the small-town feel it cherishes.

Provisions for flexible design requirements for Town roads will allow the Planning Board and developer the necessary flexibility to design, approve, and build roads that are at the appropriate scale. Keeping pavement and travel lanes to a minimum width, relative to a street's function, helps keep speed down, preserves a more appealing streetscape, reduces costs to the developer and Town, and allows the Town to retain its rural look and feel while accommodating growth.

PROJECTS IN THE 10-YEAR STATE TRANSPORTATION IMPROVEMENT PROGRAM

The Transportation Improvement Program (TIP) functions to link the statewide transportation planning process with that of the Central NH Regional Planning Commission's region and local municipalities. The program enables the needs and desires of both small and large municipalities to be discussed in an open forum and then be brought, in a refined form, to the appropriate State and Federal agencies for funding consideration. The TIP process provides a vital link between municipalities, the Region, and the State in the transportation planning process.

A TIP is a comprehensive program that involves municipalities, regional planning commissions, the NH DOT, the Governors Advisory Council on Intermodal Transportation (GACIT), the New Hampshire Governor and Legislature, and the Federal government. The regional TIP culminates into a document containing proposed transportation projects in the Central New Hampshire Region that are recommended for inclusion into the New Hampshire 10-Year Statewide Transportation Improvement Program. The TIP process typically starts at the regional planning commission level, although it is beneficial if the process is first introduced at the municipal level. All regional planning commissions within New Hampshire prepare a TIP every two years based on input from local municipalities, NH DOT, and each planning commission's Transportation Advisory Committee (TAC). The NH DOT then takes the regional TIPs and incorporates the projects with the highest level of support into the 10-year TIP, adding their own input and special projects. The 10-year TIP then becomes the transportation project guide for the upcoming years.

Table XI-20
Loudon Projects in the 10-Year Transportation Improvement Program (TIP)

Year	Project	Cost
1997-2006	Concord-Laconia NH 106 Acquire right-of-way (ROW) and Safety Improvements	$4.9 million (estimate) for entire project
2001-2010	Relocation and Bridge Replacement; Staniels Road, near the intersection of NH 106	$ 1.3 million (estimate)

Source: STIP, 12/28/95; STIP, 1/2000

Over the past several years, the NH DOT has completed extensive widening on NH Route 106 from Concord through Loudon and continuing northward. In general, the widening has focused on the extension of shoulders along NH Route 106 to twelve feet. Other improvements associated with the widening have included the addition and replacement of guardrails along the corridor and drainage improvements. Several intersections along NH Route 106 have also been improved to correct alignments and to provide safer lane configurations.

ROAD MANAGEMENT PLAN

The goal for the Town of Loudon is to maintain both the asphalt roads and the gravel roads in Town. This is accomplished through the following methods.

The road crew engages in general care of asphalt roads with particular attention paid to patching up worn areas on the road surface and the up-keep of ditch lines. Resurfacing of roads relies on a ten-year turn-around schedule. Roads are resurfaced depending on traffic and road surface conditions. Culvert conditions are checked and intersection conditions are evaluated. The care of gravel roads in Town requires culvert checks and the grading of the road is done on an as-needed basis.

The following projects were undertaken by the Highway Department in 2000, as reported in the 2000 Annual Report.

Shimming:	6,000 feet of Clough Road
	4,000 feet of Loudon Ridge Road
Paving:	Berry Road, topcoat added
Widening:	2,000 feet of Lovejoy Road

The road management plan is updated every year by the Highway Department and is based on a priority basis of the current road conditions throughout Town.

STRATEGIES TO MEET TRANSPORTATION NEEDS

Transportation, which includes bicycle lanes, bridges, trails, as well as roads, is a very important part of the community's infrastructure. The creation, maintenance, and improvement of these systems are necessary for Loudon to meet the needs of its residents and to provide a reliable transportation network. The following strategies should be reviewed by the Town as potential opportunities to meet the transportation goals set out in this chapter of the Master Plan.

Federal Programs and Resources

- Transportation Equity Act for the 21st Century (TEA-21): Enacted in June of 1998, this multi-billion dollar federal legislation authorizes the Federal Surface Transportation Programs for highways, highway safety, and transit for a six-year period (1998-2003). Essentially, this act served to reauthorize and expand ISTEA, which expired in 1997. TEA-21 is the parent legislation that funds a variety of transportation programs including the Congestion Mitigation and Air Quality (CMAQ) Improvement Program and the Transportation Enhancement (TE) Program.

- Transportation Enhancement Funds (TE): The Transportation Enhancements Program (TE) is another viable source for improving roads in communities. Funding for the TE program is slightly more than $3 million dollars annually. These funds are provided in an 80/20 match, with the State paying for the majority of the project cost. Typical examples of projects eligible for TE funds include:

- Facilities for bicyclists and pedestrians;
- Safety and education activities for bicyclists and pedestrians;
- Acquisition of scenic easements and scenic or historic sites;
- Scenic or historic highway programs;
- Rehabilitation and operation of historic transportation buildings, structures, and facilities;
- Preservation of abandoned railway corridors; and
- Establishment of transportation museums.

❖ Federal Aid Bridge Replacement Funds: These funds are available for the replacement or rehabilitation of Town-owned bridges over 20 feet in length. Matching funds are required and applications for funding are processed through the NH DOT municipal highways engineer.

State Funding Sources

❖ Highway Block Grants: Annually, the State apportions funds to all cities and towns for the construction and maintenance of Class IV and V roadways. Apportionment "A" funds comprise not less than 12% of the State Highway budget and are allocated based upon one-half the total road mileage and one-half the total population as the municipality bears to the state total. Apportionment "B" funds are allocated in the sum of $117 per mile of Class V road in the community. Block grant payment schedules are as follows: 30% in July, 30% in October, 20% in January, and 20% in April. Any unused funds may be carried over to the next fiscal year. Loudon received approximately $114,802 of highway block grant money in FY-2001 and $123,849 in FY-2002.

❖ State Bridge Aid: This program helps to supplement the cost to communities of bridge construction on Class II and V roads in the State. Funds are allocated by NH DOT in the order in which applications for assistance are received. The amount of aid a community may receive is based upon equalized assessed valuation and varies from two-thirds to seven-eighths of the total cost of the project.

❖ Town Bridge Aid: Like the State Bridge Aid program, this program also helps communities construct or reconstruct bridges on Class V roads. The amount of aid is also based upon equalized assessed valuation and ranges from one-half to seven-eighths of the total cost of the project. All bridges constructed with these funds must be designed to support a load of at least 15 tons. As mandated by State Law, all bridges constructed with these funds on Class II roads must be maintained by the State, while all bridges constructed on Class V roads must be maintained by the Town. Any community that fails to maintain bridges installed under this program shall be forced to pay the entire cost of maintenance plus 10% to the State Treasurer.

Local Sources of Transportation Improvement Funds

- Local Option Fee for Transportation Improvements: New Hampshire RSA 261:153 VI (a) grants municipalities the ability to institute a surcharge on all motor vehicle registrations for the purpose of funding the construction or reconstruction of roads, bridges, public parking areas, sidewalks, and bicycle paths. Funds generated under this law may also be used as matching funds for state projects. The maximum amount of the surcharge permitted by law is $5, with $.50 allowed to be reserved for administering the program. Based upon the approximate number of motor vehicles registered in Loudon in 2000 and assessing a $5.00 fee, this could potentially yield $18,000 annually in additional funding without increasing property taxes.

- Impact Fees: Authorized by RSA 674:21, communities can adopt impact fee programs to offset the costs of expanding services and facilities communities must absorb when a new home or commercial unit is constructed in Town. Unlike exaction fees, impact fees are uniform fees administered by the Building Inspector and are collected for general impacts of the development, as opposed to exactions which are administered by the Planning Board and collected for specific impacts unique to new site plans or subdivisions on Town roads. The amount of an impact fee is developed through a series of calculations. Impact fees are charged to new homes or commercial structures at the time a building permit is issued. When considering implementing an impact fee ordinance, it is important to understand that the impact fee system is adopted by amending the zoning ordinance. The law also requires that communities adopting impact fees must have a Capital Improvements Program (CIP). Lastly, State law also stipulates that all impact fees collected by a community must be used within 6 years from the date they were collected, or else they must be refunded to the current property owners of the structure for which the fee was initially collected.

- Capital Reserve Funds: This is a popular method to set money aside for future road improvements. RSA 35V mandates that such accounts must be created by a warrant article at Town Meeting. The same warrant article should also stipulate how much money will be appropriated to open the fund, as well as identify what Town entity will be the agent to expend the funds. Once established, communities typically appropriate more funds annually to replenish the fund or be saved and thus earn interest that will be used for large projects or expenditures in the future.

COMMON TRANSPORTATION MISTAKES, MYTHS, AND ASSUMPTIONS TO AVOID

Myth: The sole purpose of streets is vehicle traffic.
If roads are only looked at for moving traffic and for vehicle access, then planners and engineers end up designing streets fit only for cars. This is acceptable for the interstate, but not for streets whose main function is a setting around which residential and business life is built.

Assumption: The aim of road design is to serve the interests of travelers.
The needs of people who want to travel quickly through Town are well met by the State highways. Local roads, on the other hand, are for the people who live in a Town. The more local a street is in the road "hierarchy", the more it should be designed around the rights and needs of the people who live and work along it - their safety and quality of life should come first.

Mistake: Failure to recognize that road upgrades cause traffic.
Road "improvements" can be a vicious circle - upgrades attract development, causing more traffic, thus increasing those "traffic trends", and "future traffic projections", creating a push for even more upgrades, and so on. Traffic will eventually expand to fill available road space. If a town truly wants a local village or neighborhood road, build it to the minimum level for meeting the current local need.

Myth: Roads must be designed to meet traffic.
If a Town makes a commitment to upgrade a road to meet traffic projections, the Town is committing to a goal that says present trends are acceptable and should continue.

Myth: Wider and straighter equals better.
Unexpected bad spots in the road that catch a driver off guard should be looked at if safety is in question. But if an entire stretch of road is "upgraded", all that will happen is drivers on that road will drive faster and take more risks. Speed limit signs have proven the least effective way to slow people down and there is no evidence that accident rates go down due to overall road upgrades.

Mistake: Failure to include deliberate slow-down features in road design standards.
Slow-down design techniques could include: reduced road width; reduced straight-a-way length; reduced driver sight lines through curves in the road, both horizontal and vertical, especially those that honor "natural" topography; cul-de-sacs or shared driveways; and landscaped roundabouts.

Mistake: Design standards that ignore road landscaping.
Most site plan regulations include landscaping for a development itself, why not landscaping standards for roads? Trees clearly add to livability and a sense of neighborhood. But more than that, trees within the right-of-way contribute to a slower "psychological speed" or "feel" to a street, thus reducing speeds. Of course the cheapest and most natural landscaping is to conserve the existing trees when a road is built or altered.

Mistake: Ignoring the interests of bicyclists and pedestrians.
Good transportation planning should encourage walking and biking. These activities occur, and will continue to do so, whether or not proper consideration and accommodations have been made for them. Ignoring their use of the road may create safety hazards on the roadways for drivers, walkers, and bicyclists.

Mistake: Uniform and stringent road specifications.
Success at getting livable neighborhood streets requires not only managing those roads for slower speeds, but also managing other roads for taking through-traffic. Requiring every street to be built like a thoroughfare is a guarantee of failure at creating this livability. A road "hierarchy" should be created that matches roads to their function in order to have appropriate roads built for each level of the hierarchy. Low order in the hierarchy should not be thought of as low quality. On the contrary, if "quality" relates to the road's function within the overall system, narrow and cheap is often better. Spell out the hierarchy and associated standards in the Towns regulations.

SUMMARY

Bearing in mind the commitment to the preservation of the rural and open space aesthetic character of Loudon and the disruption to the quality of life that comes from vehicular congestion, this Chapter supports the principle that maximizes incentives for the use of alternative transportation modes and routes. This commitment takes the form of support for transportation demand management, traffic calming, slower speeds, preservation of the character of roads with scenic attributes, development of bike and pedestrian facilities, proper consideration of road networks as part of neighborhoods, and pedestrian paths and passageways. Movement in Loudon in all of these directions would result in the improvement of the transportation infrastructure and the protection and preservation of the open space and rural aesthetic character valued by the community.

The overall goal of the Chapter is to maintain a convenient and efficient transportation network to allow the safe transfer of goods and people throughout Loudon, while protecting the aesthetic and scenic qualities of roads within Town. The thrust of the work in CHAPTER XI, TRANSPORTATION, is an attempt to articulate a vision and a means by which that vision can be achieved for the Town as it relates to transportation issues affecting the community now and in the future.

RECOMMENDATIONS

Objective

Encourage the safe travel of pedestrians and bicyclists along North Village Road, South Village Road, and School Street, as well as between the Elementary School, Town Offices, Recreational Fields, the Safety Complex, and the Library.

- Support the State and regional bicycle networks that pass through Loudon.
- Develop a local bicycle network that would connect significant areas of Town and important places (i.e. schools, Town Hall, fire station) to the regional and State bicycle networks. An advisory committee should be developed to oversee the creation of this network that would include representatives from the Police Department, Highway Department, Recreation Department, and the School System, as well as others.
- Require developers working in Town, as part of the Site Plan Review Regulations, to provide parking for bicycles (e.g., bike racks), just as there are parking requirements for automobiles, and to provide bicycle paths and bicycle lanes along the property to connect with existing or proposed lanes and/or trails, where appropriate.
- Require developers working in Town, as part of the Site Plan Review Regulations, to provide for shared driveways and parking areas with neighboring buildings.
- Require new developments to create and/or extend the existing sidewalk network, in appropriate areas, to create an incremental expansion of the sidewalk network.
- Identify and prioritize areas with existing pedestrian facilities for regular maintenance and propose new areas for facilities that will extend and connect the existing infrastructure, if needed.
- Work with NH DOT regarding the placement and maintenance of crosswalks on State roads within Town.
- Use innovative methods to increase safety, which could include such things as raised crosswalks, stripped or colored sidewalks, increased signage, or walking paths separated from the road by landscaping.
- Continue to support the limited public transportation service currently being offered within Town on a volunteer basis.
- Investigate if there is a need and interest in extending Concord Area Transit service into Loudon.
- Investigate the creation of striped and signed bike lanes along Village Road and other appropriate roadways.

- Encourage the creation and placement of pedestrian infrastructure that would increase the safety of children traveling to and from the school, library, Town offices, and recreational areas.

Objective

Provide a well-maintained, cost-effective, and safe transportation system that meets the functional and aesthetic needs of the community.

- Minimize adverse traffic impacts of "through-traffic" on residential streets wherever viable alternatives can be provided.

- Review and evaluate the Planning Board's current road standards as to their appropriateness.

- Design and plan residential streets to follow natural contours and preserve natural features whenever practical; minimize traffic speed, volume, noise, congestion, and hazards to pedestrians; and minimize the amount of paved area to reduce stormwater runoff, and thereby protecting water resources and reducing construction costs.

- Research aesthetic and landscaping requirements and incorporate them into the Town Road Construction standards.

- Create a Private Roads Policy that would outline construction standards, maintenance, and conditions under which the Town would consider accepting an already existing private road as a Town road.

- Work with the residents of private roads and annually review all private roads to make sure they meet safety standards (the Road Agent, Police Department, and Fire Department).

- Clarify the Subdivision Regulations to ensure that any subdivision on a Class VI road will be deemed "scattered and premature" unless and until some provision is made, via a decision of the Selectmen, to improve it.

- Make sure parking facilities throughout Town meet the Americans with Disabilities Act (ADA) requirements.

- Adequately illuminate and landscape parking facilities to provide for an attractive infrastructure improvement.

- Undertake a supply and demand study to assess the current and future needs of public parking within Town.

- Be proactive and creative in seeking State TIP funding. The Town should consider establishing a local committee to help solicit ideas and create proposals for the State TIP in conjunction with the Planning Board and Selectmen.

- Work with regional, state, and federal departments and programs to prepare a comprehensive transportation plan that includes funding availability for the desired projects and programs.

- Review and amend the 5-year plan on an annual basis (the Town Road Agent, in consultation with the Planning Board and the Selectmen).

- Conduct a study of Route 106, with a focus on landscaping, architectural design, and innovative land use, to help create an attractive transportation and economic corridor.

Objective

To identify hazardous roadways, intersections, and conditions and recommend ways to make the transportation network safer and more efficient.

- Investigate the need to stripe various roads in Town.

- Identify and prioritize intersections that need improvement.

- Use traffic-calming measures to reduce speed and to direct traffic around neighborhoods.

- Examine land use trends and access management policies in locations where traffic has increased significantly, and adopt and modify these policies to best maintain and promote an efficient transportation network.

- Identify local residential roads that are not suited for heavy commuter traffic, and work to minimize this "through-traffic" wherever viable alternatives can be provided.

- Implement a policy to permit cross-access easements for commercial lots abutting one another so a driver does not need to enter the roadway in order to get to the neighboring property.

- Consider taking an inventory of all existing parking areas and ranking them as to their safety, adequacy, and usefulness. This inventory should also identify potential new parking spaces that could be created to enhance or replace existing parking areas.

- Work with NH DOT to repair, replace, and/or upgrade bridges that have a FSR of less than 80.

- Work with NH DOT to study the possibility of creating a direct connection to I-93 from NH 129, or other suitable routes, to keep heavy volumes of traffic off of local residential roads.

- Encourage the creation and placement of infrastructure that would increase the safety of children traveling to and from the school, library, and recreational areas.

- Research ways to move pedestrians and bicyclists across NH 106 in a safe and efficient manner.

Objective

To maintain a commitment to the rural and historic character of the community.

- Develop road and entrance standards for Loudon's more rural and scenic roads. These standards should be consistent with the character of these roadways, balancing scenic characteristics, safety, and sight lines.

- Consider roads in Loudon that may qualify as locally scenic roads, as defined by New Hampshire State statute, and peruse Scenic Road designation.

- Investigate the designation of Class VI roads, that meet certain criteria, to Class A trails.

- Encourage, through an overlay district in the Zoning Ordinance, agricultural and forestry operations on parcels of land that are solely accessed by Class VI road.

- Research the idea of having new roads in rural areas be consistent in road design with the rural collector roads that they are connecting to.

- Consider identifying roads with scenic vistas and aesthetic qualities, such as stone walls, historic buildings, and farms and research methods of protecting and preserving such areas.

- Consider the recommendations outlined in the Loudon Open Space Trail System Plan (July 2001).

- Reviewing road plans to examine how the road design relates to the terrain and topographic features present at the site and require, where feasible, that the road follow these natural features.

- Create a public parking area at the bottom of Oak Hill Tower Road to facilitate the use of the existing trail system (with the cooperation of NH DOT and/or NH DRED).