CHAPTER 3

TRANSPORTATION

Exeter Master Plan
2010 Update

May, 2010

The development of this is chapter was funded in part by a grant from the New Hampshire Coastal Program (NH Office of State Planning) pursuant to the National Oceanic and Atmospheric Administration award NA170Z2342. June 2003.

TABLE OF CONTENTS

Tables

Figures

Maps

1. Section I: Introduction

A. Purpose and Vision Statement

With its multitude of intersecting state highways and rail connection, Exeter has long been an important transportation crossroads for Rockingham County and Southeastern New Hampshire. Ongoing development in the Exeter Area is dependent upon the transportation systems of individual towns and the region as a whole, yet it also impacts those same systems. The 1994 Master Plan's Transportation Chapter presented a set of objectives and recommendations. Many of those objectives have been successfully implemented and others are in progress. The intent of this update to the Master Plan is to build on those successes and continue moving forward in the planning process to further improve Exeter's transportation system. One of the purposes of this chapter of the Master Plan is to look at the current transportation system and determine changes that could promote multi-modal transportation and provide safe, efficient and effective means to move people and goods through the Town, while connecting to a wider transportation network.

Vision Statement:

As the New Hampshire seacoast region grows, Exeter will continue to work with citizens and agencies on all levels (Federal, State, regional and local) to improve the transportation system in Exeter and the greater region. Specifically this involves enhancing auto, transit, bicycle and pedestrian transportation modes by emphasizing safety and interconnectedness between modes and between places, as well as overall improvements to the efficiency and effectiveness of the transportation network.

Exeter and the surrounding region will benefit from a transportation system that includes a broad spectrum of transportation modes (automobile, walking, cycling, transit, etc.). This chapter provides background data on the transportation system in Exeter, goals and objectives that support the vision discussed above, as well as recommendations for improvements.

B. Goal and Objectives

Goal - The Town of Exeter desires a truly multi-modal transportation system, which promotes the safe, efficient and effective movement of people and goods into, around and through the town, connecting to the wider transportation network.

Objectives:

1. Provide access to a diversity of employment, housing, shopping, recreation, health care, and other opportunities.
2. Work to ensure that individuals or categories, such as the elderly, are not arbitrarily excluded from accessing opportunities due to income, race, age, or physical disability.
3. Work to provide individuals control over when, where, how, and whether or not to travel for opportunities.
4. Continue the analysis of existing and projected traffic volumes on town roads and highways for the purpose of identifying necessary modifications.

5. Develop town transportation corridors in a manner that integrates land use planning and all modes of travel, mobility, connectivity, and recognizing the role that these areas play in the economic base of the community.

C. VISIONING SESSION KEY ISSUES

The completed (January, 2004) Exeter Master Plan Visioning Sessions highlighted a large number of important issues related to growth and transportation. These issues included the following:

- A perception of poor road systems circulation, especially along the major corridors and the Downtown Area.
- Inadequate public transportation.
- Inadequate capacity at many intersections.
- Need for more extensive, connected pedestrian and bicycle facilities.
- Concern for "cut through" traffic in several residential areas.
- Parking shortages in the Downtown area.
- Concerns over the shift in traffic due to the High School relocation.
- Primary arterials are not bicycle and pedestrian friendly.

At the same time, the Visioning Sessions also highlighted many perceived strengths in Exeter's transportation system:

- Availability of multiple modes of travel. In addition to the general availability of auto travel, walking and biking, Exeter has some bus and train service available.
- Direct access to major highway facilities.
- Extensive sidewalk network that connects many areas of town.

For the full list of visioning session results see Appendix B.

D. ACCOMPLISHMENTS FROM 1994 PLAN GOALS

The 1994 Master Plan's Transportation Chapter (Chapter 4) presented a set of ten objectives and recommendations. Of the ten, seven of these have been met and two others are being actively worked on at this time. In meeting these objectives, the following has been accomplished:

- The Town has prepared a long range pavement maintenance plan for all town roads. Because of funding levels and environmental conditions, the comprehensive list of roads to be paved may fluctuate. See the Department of Public Works website for the Road Resurfacing Program Schedule (Plan Objective)
- Town is working to create "transportation corridors" along the major arterial streets. The Portsmouth Avenue improvements related to the NH 101 widening have facilitated the movement of traffic along that corridor and improved travel. The next few years will see the development of an access management plan for Epping Road to reduce the impacts of higher traffic volumes on that road. (Plan Objective)
- The Town has actively supported the resumption of passenger rail service from Portland, Maine to Boston, Massachusetts. A rail station platform with parking was constructed in 2001 in time for the start of Downeaster service in December, 2001. Also a ticket kiosk was placed in Jerry's

Variety store located adjacent to the station. The Exeter stop on the Downeaster is currently one of the most visited on the corridor and continues to grow. (Plan Objective)

- The Town continues to develop and maintain an integrated sidewalk network and is working to improve that network through maintenance, infill and expansion activities. An example of this is the expansion of sidewalks down Hampton Road towards the recreation fields, and the reconstruction of sidewalks along Main Street. (Plan Objective)
- Improvements have been made to Portsmouth Avenue from the Stratham town line southwest to just beyond the water treatment plant (such as new curbing, signals, additional landscaping, and roadway widening) in conjunction with the NH 101 expansion that was completed in 2001. (Plan Objective)
- Signal improvements at the intersection of Portsmouth Avenue with Alumnae Drive and at Portsmouth Avenue and Green Hill Road including the addition of audible pedestrian crossings to assist the vision impaired. (Plan Objective)
- The Town continues to support COAST service which connects Exeter, Pease Tradeport and Portsmouth. (Plan Objective)
- The Town appointed a study committee to investigate the need for additional downtown parking. The results of that study confirm that additional long-term parking is needed for business and residential uses in the downtown. (Plan Objective)
- Swasey Parkway road improvements and Traffic Calming have been implemented. This now encourages most through traffic to use Water Street instead of taking the "shortcut" through the Parkway.
- Shoulders have been added to High Street/Hampton Road (NH 27) to provide safe space for bicycling. This area is part of a bicycle loop route that stretches from Exeter to Hampton and the coast, then to North Hampton and returns to Exeter.
- Traffic signal timing improvements were made to the signal at the intersection of Portsmouth Avenue/High Street to help reduce queue lengths at that location.
- Signal timing changes have also been made along Portsmouth Avenue.
- The Great Bridge rehabilitation has successfully improved the quality of that facility.
- Circulation changes at the Water Street/Front Street intersection have been implemented to facilitate traffic flow through the downtown area.
- The Town is a participant in the Exeter Region Transportation Committee which formed in May 2007 to address the needs of transportation dependent citizens with emphasis on the elderly.

The two remaining 1994 Plan Objectives that need to be addressed are the comprehensive analysis of existing and projected traffic volumes on town roads to identify needed improvements and the more nebulous objective of encouraging the use of alternate modes of transportation "through all available means".

2. Section II: Existing Transportation System

Section II will detail various components of the existing transportation network as well as the transportation issues facing the community. The network can be seen graphically on the maps for this chapter of the Master Plan. ***Map 1*** shows the Exeter area and the variety of transportation modes available including transit and bicycle routes. ***Map 2*** provides information on the roadway classification within the town.

A. ROADWAY NETWORK

This section will detail the characteristics and functions of the existing roadway portion of Exeter's transportation network. First, the section will discuss the purpose and type of classification of the roadway system. This will be followed by a discussion of traffic volumes and patterns of growth, and roadway safety.

i. State Roadway Classification

In the 1940's, New Hampshire adopted state law that serves as the basis for the State Road System Classification that is still in use today. This classification scheme has eight categories of public roads; each roadway is grouped based on the role of the roadway, as well as on the entity responsible for its maintenance. Exeter is served by State-classified Class I, II, IV, V and VI roadways, as shown in ***Table 1***.

Class I: Class I roads are State-maintained primary highways and there are presently 16.91 miles of these highways in Exeter, comprised of NH 101, as well as portions of NH 108 south of the urban compact area.

Class II: Class II roads are State-maintained secondary highways and there are approximately 10 miles in Exeter, comprised of Epping Road (NH 27), Newfields Road (NH 85), Brentwood Road (NH 111A), and Kingston Road (NH 111), outside of the urban compact boundaries.

Table 1: Legislative Classification

	2008
Class I (State-maintained)	16.91
Class II (State-maintained)	9.88
Class IV (Urban-compact)	10.856
Class V (Town-maintained)	64.715
Class VI (Non-maintained)	0.077
Private Roads	10.779
TOTAL	90.25

Class IV: Class IV roads are known as Urban Compact roads, and make up a small percentage of Exeter's highway mileage (10.8 miles or about 9.5%). These roadways consist of State Highways located within the NH DOT established Urban Compact Boundaries of the town (see Map 3) that are maintained by Exeter with some financial support from NH DOT. Portions of NH 27 (Epping Road and Hampton Road), NH 111A (Brentwood Road), NH 111 (Kingston Road), and NH 108 (Portsmouth Ave & Court St) are included in the Compact as are the roadways in the center of town where these state routes all come together (Front St, Main St, and Water St).

Class V : Class V roads are town owned and maintained and are the largest portion of roadways in the community, constituting nearly 65 miles of streets (57%). This category of roadway is the only one that continues to grow appreciably, as new residential subdivision streets that are turned over to the Town become Class V roads once they become public.

Class VI roads are non-maintained roadways belonging to the Town and there is just .077 miles in Exeter.

ii. Federal Roadway Classification

In addition to the State classification scheme, there is a Federal Classification system that distributes roadways based on the function of the roadway and type of service provided. These classifications, which complement the State classifications, are primarily based on the traffic capacity and volumes attributed to the roads, and are further divided into rural and urban systems. The system is hierarchical in its organization, with higher order roadways (arterials) more oriented towards moving traffic, and lower order roadways (collectors and local streets) more oriented towards providing access to land uses adjacent to the roadway. This is important because roadways that have a functional class of Collector or higher are eligible for federal improvement funds for improvement projects. In addition, understanding the function of each roadway is important for setting policy and for designing improvements.
Each of the four basic functional classes is represented in Exeter as described below and shown generally on Map 2. Many roadways carry multiple classifications depending on their location (urban/rural), and the amount of traffic that they carry. Table 2 contains examples of Exeter roadways classified as Collector or above and **Map 2** shows how the roadways in central Exeter fit into this classification scheme.

Principal Arterial: These serve major centers of activity, the highest traffic volume corridors, and the longest routes. In addition, they generally carry the major portion of traffic entering and exiting the community. Route 101 performs this function around Exeter, and provides connections to the town via four interchanges, as well as high speed connections to Interstates 93 and 95.

Minor Arterial: Minor arterials are roads that provide local links between communities, but place a greater emphasis on land access than the principal arterials, with lower speeds and mobility. Epping Road, High Street, Portsmouth Avenue, Court Street, and Front Street, the major corridors into the Exeter downtown area, perform this function, providing connections to NH 101, surrounding residential and commercial areas, and to adjacent towns and employment sites.

Collector: These provide direct access to land uses along the roadway, as well as circulation within residential neighborhoods, and/or to commercial and industrial areas. The collectors gather traffic from the local streets in residential neighborhoods and channel it into the arterial system. These roadways generally have lower traffic volumes than arterials. Once outside of the urban compact area, those routes that serve as arterials become collectors. Newfields Road and Lincoln Street are considered collectors.

Table 2: Federal Functional Classification

Roadway	Principal Arterial	Minor Arterial	Collector
NH 101	√		
Epping Road/ Main Street		√	
Portsmouth Ave		√	
Front Street		√	
Water/High Streets		√	
Court Street		√	
Lincoln Street			√
NH 111			√
NH 111A			√
Newfields Road			√
NH 88			√

Local Roads: Comprise all facilities not on any of the three systems described above. Their function is to primarily provide direct access to land and access to the higher order systems. They offer the lowest level of mobility, and service to through traffic is usually discouraged. Local roads are generally not eligible for federal funding for improvements or maintenance. In Exeter, local roadways, such as Washington Street, account for nearly 50% of roadway miles.

iii. Urban Compact

Exeter is one of 27 communities in New Hampshire that are part of the Urban Compact Program which establishes the community as responsible for maintenance and operational control of the state highways within densely populated areas. This program provides funding on a per mile basis for communities to maintain the State Primary and Secondary roadways (except turnpikes and freeways) within the defined urban compact boundaries. Program communities are also eligible for the NH DOT's Urban Allocation program to fund roadway improvements within the compact boundaries. This program distributes an annual allocation of $5 million among the 27 Urban Compact communities (and 13 additional), for improvements on roads classified as collectors or arterials.

The Urban Compact boundary is established by the Department of Transportation and incorporates all town maintained streets and state roadways within the area "where the frontage on any highway, in the opinion of the commissioner of transportation, is mainly occupied by dwellings or buildings in which people live or business is conducted, throughout the year and not for a season only." As shown in Table 3 (and on Map 2), in Exeter this includes 2.1 miles of State Primary System roads, such as Portsmouth Avenue and Court Street (NH108); 6.8 miles of State Secondary System roadways such as Front Street (NH 111), Epping Road and High Street (NH 27); and 25.4 miles of town owned facilities such as Lincoln and Winter Streets.

Table 3: Urban Compact Mileage

Road Type	Mileage
State Primary System within Urban Compact	2.1
State Secondary System within Urban Compact	8.72
Town maintained streets within the Urban Compact	25.4
TOTAL (miles)	34.3

iv. Scenic Byways

Exeter is home to the American Independence Byway, one of the State's fourteen Scenic & Cultural Byways designated through the NH Office of State Planning's Scenic & Cultural Byways Program. The Program was established in 1992 under RSA 238:19 to "promote retention of rural and urban scenic byways, support the cultural, recreational and historic attributes along these byways and expose the unique elements of the state's beauty, culture and history.

The American Independence Byway (**Map 1**) links Exeter with Kensington and the coastal towns of Hampton and Hampton Falls. The Exeter portion of the byway begins at the town line with Kensington on NH 108, and follows that route into town via Court Street, then Front Street to Water Street. From here it travels east to NH 27/High Street to the Exeter town line with Hampton. The route then continues to NH 1A in Hampton, where it turns south on NH 1A to Winnacunnet Road following that road west to US Route 1. The byway goes south on Route 1 to NH 84 in Hampton Falls and follows that roadway to NH 150, and then NH 108 in Kensington where it returns to Exeter.

The Rockingham Planning Commission developed a management plan in 2002 for this Byway, with the primary purpose to identify recommendations for protecting and managing the scenic, cultural, historic, and natural resources along the Byways. Transportation-related recommendations include:

1. Support for roadway improvements that maximize safe and efficient traffic flow while retaining the character of the corridor,

2. Bicycle and pedestrian improvements to foster safe travel for non-motorized forms of transportation,
3. Public transportation services to better accommodate seasonal visitors as well as year-round travel by residents.

The management plan also makes these roadways eligible for Federal Byways program funds for projects such as interpretive centers, scenic overlooks, safety improvements and marketing materials.

v. Scenic Roadways

Under New Hampshire law (RSA 231:157), municipalities can designate selected Class IV, V or VI highways as "scenic roads" by town vote. This is a separate specification from the Scenic Byways program with the primary effect being that the Planning Board (or other designated municipal body) must approve the removal of trees or stonewalls by the municipality itself or a public utility. In Exeter, there are five roadways that have been designated as Scenic; Pickpocket Road (1973) John West Road (1980) Garrison Lane (1987), Birch Road (1992), and part of Powdermill Rd (1994). In addition, Jolly Rand Road was previously designated as a Scenic Road (1980), but was redesignated as a Class A Municipal Trail (RSA 231:A) by Town Meeting vote in 2000. These roads are highlighted on **Map T-1**.

vi. Roadway Conditions

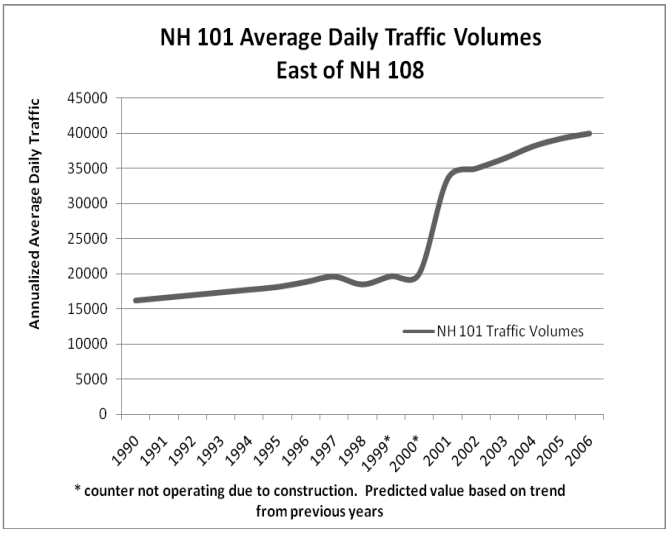
The Highway Department of Exeter Public Works is responsible for repair and maintenance of Town maintained roads and sidewalks with the goal of providing the traveling public well-maintained and smooth roads. This is done to the extent possible within the annual operating budget and Capital Improvement Program (CIP). Each year a proposed budget and CIP is presented to the Town Manager, Budget Committee, and Selectmen for review and approval prior to the residents for voting. The resulting budget is then used to cover the expenses for all road and sidewalk work. New Hampshire State Highway Aid helps subsidize road maintenance expenses.

The existing conditions of the roads and sidewalks range from very good to poor. A long term paving and sidewalk plan has been developed to provide a guide and priority listing of improvements. The objective of the plan is to provide sufficient maintenance and/or reconstruction activities based on visual inspections, pavement conditions, and priorities. Ideally all roads should be resurfaced at least every 15 years based on deterioration characteristics. However, given budgetary limitations, priorities are established based on actual pavement conditions and traffic volumes. Sidewalk priorities are established on surface conditions, proximity to schools, and classification of the adjacent road.

vii. Traffic Flow and Travel Patterns

The NHDOT's Bureau of Transportation Planning Traffic Research Section monitors traffic growth throughout New Hampshire and publishes monthly Automatic Traffic Recorder Reports for many locations. In addition, NHDOT and the Rockingham Planning Commission (RPC) conduct traffic counts during the summer months at supplemental locations responding to community requests. Over the years, traffic volumes have been monitored at approximately 90 locations within Exeter. Many of these locations have been monitored only

Figure 1



infrequently, while others are checked every few years or even annually. In addition, data from studies performed by NHDOT, Exeter, the RPC, and other agencies, is available to supplement the scheduled traffic counts. The most recent counts from some of these locations are shown in figure 1 and Table 4. The volumes are shown in Annualized Average Daily Traffic, or AADT which is the daily traffic averaged over the year to eliminate seasonal fluctuations. In addition, more extensive traffic count information is available on the NH DOT Traffic Bureau website: http://www.nh.gov/dot/org/operations/traffic/tvr/index.htm.

As with many communities in the region, Exeter has exhibited significant increases in traffic volumes over the past decade. In an effort to monitor changes in traffic volumes, the NHDOT and the RPC conduct annual traffic counts using automatic recorders at varying locations throughout the region. In addition, the NHDOT maintains a network of permanent counters at key locations around the State to monitor long-term trends. There is a set of these devices in Exeter, located on NH 101 east of NH 108, and Figure 1 shows the volumes that have been measured at that location since 1990. Overall, volume on this highway has increased from an Average Daily Traffic (ADT) of approximately 16,000 cars per day in 1990 to approximately 40,000 cars per day in 2006. Much of this growth occurred immediately after the widening of that highway was completed in 2001, and is reflected in the 82% growth in traffic between 1998 and 2001. Since that initial burst, the annual growth on the corridor has averaged 3.4% per year which is a much more moderate growth although still high compared to other roadways in the region.

Other roadways have shown an increase in volumes since the last time the Transportation Chapter of the Master Plan was updated. Epping Road had the greatest growth with annual increases of 3.8% per year and Portsmouth Avenue also saw heavy increases of 2.9% per year growth. There were also streets that showed little change over the same time period such as High Street and the southern end of Portsmouth Avenue which saw slight decreases in volume over time. This may have more to do with the limitations of the counting equipment than any real change as high volumes of slow moving traffic can cause the counting machines to miss some cars or double count them.

Table 4: Selected Traffic Counts

Route	Location	Historic Count*	Historic Year*	Volume (1994 Plan)	Year (1994 Plan)	Most Current Volume	Most Current Year
Main Street	near railroad crossing	7,100	1977	9,000	1993	10,000	2004
Epping Road	West of NH 111A	4,900	1977	7,623	1992	12,512	2005
NH 101	Brentwood TL	14,780	1983	20,372	1992	41,000	2006
Brentwood Rd (NH 111A)	Brentwood TL	1,400	1981	2,000	1991	1,800	2006
Chestnut St	South of Jady Hill	1,200	1982	1,500	1991	2,100	2006
Front Street	West of Garfield St	9,800	1983	10,800	1991	9,000	2006
Hampton Falls Rd (NH 88)	Hampton Falls TL	1,900	1977	2,700	1991	2,700	2005
High Street	East of Great Bridge	20,000	1977	22,900	1991	21,000	2005
Portsmouth Avenue	at High Street	15,000	1977	14,400	1991	15,000	2005
Portsmouth Avenue (NH 108)	Stratham TL	17,200	1977	18,000	1991	22,000	1998
Newfields Rd (NH 85)	Newfields TL	2,400	1982	4,100	1990	5,600	2005
Court Street (NH 108)	Kensington TL	5,200	1979	6,600	1988	6,100	2005
Hampton Road (NH 27)	Hampton TL	3,200	1982	3,900	1988	4,200	2006

* Traffic counts including the 1994 Master Plan from the late 1970's and early 1980's.
Additional count locations in Exeter can be found on the NH DOT Traffic Volume Count website located here:
http://www.nh.gov/dot/org/operations/traffic/tvr/locations/index.htm

viii. Commuting Patterns

According to the 2000 Census, there are approximately 9,500 people who work in the Town of Exeter, and NH Department of Employment Security estimates for 2006 have increased this to over 9800 individuals. The majority of these people either come from Exeter (26%) or other New Hampshire communities (65%), primarily nearby seacoast towns such as Newmarket (517 people), Portsmouth (427 people), and Hampton (412 people). Of Exeter residents who work, 34% work stay in town to do so, while another 49% commute to a job somewhere else in NH. Most of the remaining 17% go to jobs in Massachusetts. 92% of the people who commute to Exeter for work come from somewhere else in NH, with most of the remainder coming from Massachusetts (4%) and Maine (3.8%). At the time of the census in 2000, 78% of workers drive alone to their job, while another 10% carpool. Since the time of the census, the addition of the Downeaster service and a companion bus service have increased the options for commuters destine for or starting from Exeter. While no numbers are available regarding commuter use, consistently increasing gas prices point to a likely increase in importance of transit in the region as a cost-effective option for getting to work.

ix. Roadway related Issues and Challenges

Surface conditions and maintenance: Continued maintenance and improvements to the roadway network remain a challenge to the Town (and all municipalities) as needs continue to grow while funding remain limited. Road surface conditions are a constant issue, and vary considerably from very good to poor. Many older roads were improperly built on poor sub-soils, with sub-standard materials and application methods. Much of Exeter's roadway sub-surface material is clay and muck which presents drainage and construction problems. Winter weather, and the resulting snow plowing cause potholes, cracking, and damage from frost/heave action. This is exacerbated by large volumes traffic and heavy vehicles utilizing the roadway and excavations performed by utility companies and other construction that create pavement patches and manholes/drainage grates that are not flush with the road surface. This deterioration of the roadway surface creates hazards for motor vehicles, cyclist, and pedestrians as well. Reconstruction of roadways is the preferred method of roadway maintenance but is extremely costly and historically the residents have been reluctant to support this. In its place, the Public Works Department has recommended a less expensive alternative to full reconstruction namely, pavement asphalt injection and reclamation process. However, this is a less effective measure than full reconstruction.

The great variation in road surface conditions requires the Public Works Department to devote considerable time to maintain the Town's transportation network. Most time is spent repairing potholes and other pavement problems, and correcting drainage issues to minimize the impacts of poor drainage on the roadway surface. Public Works maintains a strict utility excavation-permitting program, which requires excavators to properly repair pavement excavations. The Department annually resurfaces roads within the confines of the annual operating budget that is approved by the voters.

Snow fighting and removal: The Public Works Department utilizes both in-house equipment/manpower and private contractors to perform snow fighting and snow removal operations. Initial operations commence with the accumulation of 2-3 inches of snow and continue until all streets are cleared and de-iced. Snow removal operations in the downtown area and other select areas are usually conducted two to three days after snow fighting operations cease and employees have an opportunity to rest. Snow that is removed is deposited at the Public Works Department complex located off Newfields Road. Sidewalk snow removal is limited to areas close to the schools, arterial roads, and the downtown area. Great fluctuation in weather patterns and severity from year to year make establishing budgets for these operations one of the more difficult to predict.

Roadway width: An issue identified in prior Master Plans is the narrowness of roads and the lack of adequate shoulder space and snow storage. This has become more critical as car traffic has steadily increased and bicycle traffic has become more popular as a recreational activity. Lack of shoulders creates hazards for vehicles needing to stop on the roadside as well as forcing cyclists to ride in the travel lane of the roadway. This issue has two improvements that help to mitigate safety concerns. First is the creation of adequate shoulder space via construction projects. In addition cyclists and drivers need to be educated on how to share the road to keep it safe for all users. Whether a motorist is in-town, backing out of a parking spot or a cyclist is making a turn, all users should understand and use the rules of the road.

Bridge & Major Culvert Maintenance: The Town owns and maintains eight bridges and large culverts. Routine maintenance includes sealing, painting, cleaning and spot repairs as required. All of the Town facilities are in fair to good condition with the exception of culverts located on Water Street, Swasey Parkway, and Industrial Drive. The first two are planned to be rebuilt in 2010, and Industrial Drive culverts are to be replaced in 2009. In addition, long term plans are in place to refurbish the String Bridge in 2015 via the State Bridge Aid program. All other bridges will need routine maintenance such as sealing, painting, and cleaning.

Cut-thru Traffic: As vehicles enter the community from the major access points, experienced travelers have determined that their shortest and quickest route toward their destination involves travelling through various residential neighborhoods. The most significantly affected areas include: Buzzell Avenue, Columbus Avenue, Pine Street, Washington Street, Park Street and Winter Street. The addition of "No through truck traffic" signs has reduced the impact on some of these streets but motor vehicle traffic remains a problem. Still, dispersion of traffic to these alternative routes does provide some relieve for arterial roads, which tend to experience the heaviest backups. The traffic management of cut-through areas and their associated arterials should be studied, especially where safety issues are concerned. Traffic calming measures may be considered as traffic increases and safety concerns persist.

Congestion: The 1994 Master Plan update identified Exeter's primary transportation concern as the flow of traffic around and through downtown. As the juncture of NH Routes 27, 108, and 111, downtown Exeter serves as the hub for tremendous through traffic, including dedicated truck routes. Without a route to bypass the downtown, Water Street (Rte 27/108) and Front Street (Rte 108/111) carry over 22,000 vehicles per day. As such, the Town has evolved and adapted its seventeenth century streets to convey today's 21st century traffic. The widening of NH 101 and development of that facility into a fully grade separated roadway has eased this issue somewhat over the last several years, but it can still be difficult at times to get through the center of town.

Truck Traffic: As the area grows, additional truck traffic can be expected and concerns rise among residents about the volume of truck traffic on specific roadways. This can be a particularly bad problem in residential neighborhoods where noise and safety issues become a great concern. Conflicts exist due to truck traffic that must travel local roads in order to access businesses in Exeter's downtown as well as other areas.

The Town can adopt an ordinance restricting vehicles above certain weights from designated Town roads during seasonally wet periods. In order to assure that trucks use the proper roads, the town should enforce RSA 47:17, Section VIII "Traffic Devices and Signals" which empowers the Board of Selectmen:

"To make special regulations as to the use of vehicles upon particular highways, except as to speed, and to exclude such vehicles altogether from certain ways; to establish stop intersections, erect and provide for the control of traffic by, stop signs or other traffic devices or signals which shall conform to standards set by the highway commissioner and shall be approved by him as to type, size, installation and method of operation."

B. PUBLIC TRANSPORTATION

This section presents an examination of existing public transportation service available to Exeter residents, from which recommendations for improving service to residents will be developed. For the purpose of this document, public transportation is defined as any transportation service available to the general public, whether it is publicly or privately funded.

Public transportation clearly can play an important role in addressing the traffic issues that a community may be facing. It represents a more efficient use of the existing road network by carrying passengers that otherwise might be driving their own vehicles. A successful public transportation system can remove a significant number of vehicles from the roadway and offer social benefits by providing a reliable means of travel for those who are unable or otherwise choose not to drive themselves. While the Town recognizes the value of, and supports the concept of public transportation, it currently provides financial support only for the fixed route COAST service, and the limited demand-response transportation service outlined below.

i. Fixed-Route Bus Service

The Cooperative Alliance for Seacoast Transportation (COAST) Route 7 provides four round trips per day between Exeter and Newington/Portsmouth, with stops in Stratham, Newmarket and Greenland. This service enables multimodal connections for travelers at both the Exeter Train Station (Downeaster) and Portsmouth Transportation Center (COAST Trolley and C&J Trailways). With schedule changes implemented in June 2007, more opportunities were opened up for intra-community use of the system for shopping, doctor visits, downtown trips, and other uses. Ridership on this service is growing, and was up 10% for FY06 and 18% for FY07. The fare to ride is $1.50 with half fares privileges extended to seniors, disabled and individuals possessing a valid Medicare card.

Table 5: COAST Route 7 Stops in Exeter

Westbound Stops	Eastbound Stops
Portsmouth Ave. (Stop & Shop)	Exeter Train Station/Lincoln St.
Portsmouth Ave. (Wentworth Volvo)	Lincoln St./Front St.
Exeter Hospital/Alumni Dr.	Front St. (Exeter Inn)
Alumni Dr. (Globe Shopping Plaza)	Front/Elm Sts.
Green Hill Rd./Portsmouth Ave.	Front St. (Town Hall)
Jady Hill Ave./Jady Hill Cir.	String Bridge (Exeter Public Library)
String Bridge (Exeter Public Library)	Jady Hill Ave./Jady Hill Cir.
Front St. (Town Hall)	Green Hill Rd./Portsmouth Ave.
Front/Spring Sts.	Exeter Hospital/Alumni Dr.
Front St. (Exeter Inn)	Alumni Dr. (Globe Shopping Plaza)
Front St./Lincoln St.	Portsmouth Ave. (Osram-Sylvania)
Exeter Train Station/Lincoln St.	Portsmouth Ave. (Stop & Shop)
Main St./Ash St.	
Main St. (Phillips Exeter Academy)	
Water/Main Sts.	
Exeter Housing Authority/Water St.	
Water/Main Sts.	
Main St. (Phillips Exeter Academy)	
Main St./Ash St.	
Exeter Train Station/Lincoln St.	

COAST piloted a new bus route serving the communities of Epping, Exeter, and Hampton during the summer of 2008 with the assistance of Hampton and Exeter Area Chambers of Commerce, Exeter Hospital, NH Department of Parks and Recreation, and Unitil Corporation. The ***COAST Beach Bus*** operated Saturdays and Sundays during the months of July and August with 5 trips

to Hampton and 6 return trips to Exeter and Epping daily. The final weekend of service was September 6th and 7th for the Hampton Seafood Festival. Passengers were able to board the bus at scheduled times approximately every ¼ mile along the route. The route traveled primarily along Route 27 from Exeter to Hampton Beach, then following Ocean Boulevard into the heart of Hampton Beach. Between Epping and Exeter, the bus operated on Route 101 to exit 9. Some highlighted stops along the route included the Epping Wal-Mart, the Exeter Recreation Center and NHDOT Park & Rides in both Epping and Hampton. Additionally, the bus made numerous stops in the downtown areas of Exeter and Hampton. The same route was travelled in reverse order when returning to Exeter and Epping. Passengers that boarding and exiting within the same town paid just $1 per trip. Passengers riding out of town paid $3. It was hoped that this first year pilot will demonstrate demand for the service and prompt local public investment in following years. Long-term, a public transit link connecting coastal hotspots in Hampton, North Hampton, Rye, Newcastle and Portsmouth is envisioned. The service successfully demonstrated a growing interest and need for additional transit service in the region. There was a clear demand for inter-community travel between Epping, Exeter, and Hampton. COAST will continue to discuss options with the communities to implement new services or augment existing services such as Route 7.

C&J Trailways provides commuter and traveler service along the Interstate 95 corridor linking Portsmouth to Boston and Logan Airport, with connections to COAST service at the Portsmouth Transportation Center. There are currently approximately 30 round trips per day between Portsmouth and the two Massachusetts destinations.

A Portsmouth-Manchester East-West Bus Service has been proposed, and in 2007-2008 the Rockingham Planning Commission and Southern NH Planning Commission conducted a feasibility study for a service that would connect Portsmouth with Manchester-Boston Regional Airport and Downtown Manchester. The study concluded that the best way to develop such service given current limitations on State funding would be to integrate a new fixed route service with demand-response airport shuttle service such as provided by Flightline/Manchester Shuttle. In 2010 NHDOT published a Request for Proposals to provide an East-West service with stops at Portsmouth Transportation Center, Manchester Airport, and Downtown Manchester, with optional stops in Exeter, Epping, and/or Downtown Portsmouth. Simultaneously NHDOT developed an application for CMAQ funding to support the start-up of the successful service proposal. Selection of CMAQ projects is anticipated for early 2011. If the project receives CMAQ funding the service is anticipated to launch in mid 2011, and would include a flag stop at the Exeter Train Station, creating a link with the Downeaster.

Since the 1994 Master Plan, the recommendation has been to explore the implementation of a fixed route mini-bus service within the Town to help reduce downtown traffic and improve the mobility of residents with no or limited access to private automobiles. Ten years later, during the 2004 visioning sessions, participants ranked the development of a local loop transit as one of the top five transportation related concerns.

ii. Demand-Response Service

COAST also offers demand-response service for individuals who are unable to ride the Route 7 bus due to their disability. Individuals must be certified eligible to access the service and pickup is provided within a ¾-mile radius of a COAST bus stop and at comparable times to when the fixed-route bus is otherwise in the area. The fare for this service is double the equivalent fare on the fixed-route bus(es).

Exeter provides financial support for demand-response transportation service through Lamprey Transportation, which services all of Rockingham County. Service for medical and shopping trips is available only for disabled residents and those ages 55 years and up, and residents must contact Lamprey Transportation in advance to schedule a pick-up time. A fare is charged for using the service.

Additional transportation services in the Exeter area are provided by a variety of health and human service agencies and ecumenical organizations; each varies in its schedule and the clientele/population that it serves. These services are typically not available to the general public, but limited to a particular agency's own clientele, the elderly population, or those with disabilities. Many of these agencies have developed their own transportation services because their clients do not have access to, or are unable to drive, a motor vehicle, and because public transportation options are not available.

Exeter Region Transportation Committee: On May 7, 2007, a Senior Transportation Summit was held in Exeter. Attended by 40 civic leaders, consumers, elected officials and town employees, it was convened to learn about and address the needs transportation dependent seniors. Out of this meeting, the Exeter Region Transportation Committee was formed. Participating in this committee are representatives of the Town, the Exeter Area Chamber of Commerce, the Rockingham Planning Commission, COAST bus, three local low-cost or no-cost nonprofit senior transportation providers (Transportation for Seacoast Citizens, Rockingham Nutrition Meals on Wheels, and Lamprey Healthcare,) Exeter Housing Authority, Exeter Council on Aging and private citizens. In addition to advocating for the implementation of the Local Option Fee to help fund transportation options for seniors, the Summit participants prioritized their short-term recommendations as follows:

- Improve consumer awareness of transportation options
- Improve coordination between existing services
- Increase pool of volunteer drivers
- Establish a demand-response service with volunteer drivers
- Create a loop system to connect people to the town
- Revive the taxi-type service (affordable) utilizing a public/private partnership

The ERTC has convened monthly to address local needs and it participates in the broader regional and state efforts to establish a coordinated brokered transportation system for both seniors and those with disabilities. The long-term goal of these efforts is that the needs of all citizens who are transportation dependent, for whatever reasons, will be met. At this time, the ERTC has requested that the Exeter Board of Selectmen establish a standing transportation committee to oversee development needs, service provision, and funding of Exeter's system which includes non-profit providers of rail, bus, van and car services.

iii. Rail Transit

For the first time in over thirty five years and after twelve years of effort, rail passenger service returned to Exeter on December 15, 2001. Amtrak operates the 115 mile service from Boston to Portland over Pan Am Railways mainline with stops in seven communities: Portland, Old Orchard Beach (Seasonally), Saco, and Wells in Maine, Dover, Durham-UNH, and Exeter in New Hampshire, and Haverhill and Woburn in Massachusetts. The Woburn stop provides direct shuttle express bus service to Logan Airport in Massachusetts. The one way trip from Portland to Boston takes two hours and forty-five minutes to complete and Exeter is near the mid-point at one hour fifteen minutes from Boston, and one hour thirty minutes from Portland.

Exeter was the first Town to put up local taxpayer dollars to build its station platform, voting twice at town meeting (1993 and 2001) to fund a total of $500,000. These funds were matched with a Federal CMAQ Grant which provided over one million dollars to buy, upgrade and build the station adjacent to the original train station on Lincoln Street. Since inception of service, all of the operation and maintenance costs for the station have been the responsibility of the community requiring approximately

$60,000 per year for insurance, upkeep and seasonal costs, with insurance constituting the largest portion.

The Downeaster began with four roundtrips daily, and in 2007 expanded to five trips in refurbished Metroliner II Cars that includes food service. It is intended to provide long distance, interstate passenger service, and it is very popular with occasional users especially students attending Phillips Exeter and the University of New Hampshire. The fifth train added in 2007 provides an evening "commuter" service that leaves Boston at 5:00 PM and arrives in Exeter just after 6:00 PM. This service is matched in the morning by a bus trip provided by C&J Trailways that connects Dover, Durham, and Exeter with Boston. This service leaves Exeter at 6:20 AM for a 7:25 AM arrival at South Station. There is also a bus trip north from Boston that leaves at 3:00 PM for a 4:05 PM arrival in Exeter. The two services are designed to work together and provide an excellent alternative for Boston commuters.

Table 6: Exeter Passenger Statistics

Year	Origin	Destination	Total
2001*	737	1,244	1,981
2002	18,621	23,767	42,388
2003	21,011	22,817	43,828
2004	24,582	24,092	48,674
2005	27,121	27,807	54,928
2006	30,069	30,393	60,462
2007	39,212	39,079	78,291
2008	48,586	48,606	97,192
To Date	209,939	217,805	427,744

*service started December, 2001

Since the Spring of 2003, on-site ticket purchase has been possible via a Quik Trak Machine (requiring a debit or credit card) installed in Gerry's Variety store adjacent to the train station. The Train Station committee is currently developing a proposal for a station management plan that will address this and other issues such as parking in the long term.

Ridership on the Downeaster initially was very high with over 300,000 riders in the first 13 months of service in 2001-2002. Use decreased somewhat in 2003 and 2004 to slightly fewer than 250,000 riders and since that time, has grown each year to a high of 381,000 riders in 2007. Given the volume of passengers seen so far in 2008 (January to March) total ridership is could be 450-500,000 people for the year as more people turn to transit as an alternative in the face of increasing energy prices. The Exeter station has consistently been the stop with the most activity outside of Portland and Boston. Total origins (trips starting in Exeter) and destinations (trips ending in Exeter) have increased every year since inception **(Table 6)**, more than doubling between 2002 and 2008 from 42,000 to 97,000 passengers per year. If current ridership trends continue the station could see over 100,000 passengers during 2009.

iv. Park and Ride/Ridesharing

Driving alone is not only expensive, but it also contributes to increased traffic congestion and air pollution. To help commuters cut costs and to reduce traffic congestion and air pollution, the NHDOT has constructed more than 25 park and ride lots throughout the State. The most successful park and ride in the area is also the largest facility of this type. The Portsmouth Park and Ride has capacity for 975 cars and has many amenities and connections to C&J Trailways and COAST bus systems. The average daily utilization of the system is 64% or roughly 628 cars. As fuel prices continue to increase, use of the park and ride system in NH is growing and is beginning to strain the capacity of not only the parking lots, but the transit services that feed them.

Area residents commuting west on Route 101 or South/North on Route 125 can utilize the Epping park and ride located near the interchange of Route 101/Route 125. This large facility has capacity for 246 cars, is well lit, and contains a public telephone and bike racks. The project was purposely over designed with the thought that growth along the 101 and 125 corridors would result in additional users in the not so distant future. There is also a park and ride just off of NH 101 on Route 27 in Hampton that has seen increased use over the last few years. A study examining park and ride use in the region is currently in the planning stages and will provide updated utilization statistics.

The New Hampshire Rideshare Program

The New Hampshire Department of Transportation is working with the Regional Planning Commissions and employers statewide to encourage ridesharing and implement a statewide system. The website for the program is www.nhrideshare.com and provides a free commuter matching service that is dedicated to finding an alternative way for commuters to travel to and from work. The NH program uses Geographical Computer Matching to provide users with information and assistance about ridesharing and alternatives to the single occupancy vehicle including carpools, vanpools, and transit options. Joan Clinton is the current NH Rideshare Coordinator and she can be reached at (603)271-4043.

v. Taxi Service

Since the early 1970's, the Town had maintained a subsidized taxi voucher program. The program provided subsidized taxi vouchers (typically a 50% discount) to senior citizens in the community to assist with their mobility. The program was managed out of the Parks and Recreation Department and users paid $2.00 per ticket, and then used the tickets to pay the taxi driver. Unfortunately, due to increased costs, an Exeter resident may have had to pay up to $4.00 for tickets, or $8.00 for a round trip to the supermarkets and other stores on Portsmouth Avenue in Stratham. According to the Parks and Recreation Department, in the past, the taxi program had been very popular among the senior citizens in Exeter. However, due to the increase in taxi prices, the number of program users dropped substantially. Eventually the taxi service went out of business. Money that had gone to the taxi service program was shifted to "Meals on Wheels" to subsidize their transportation program. There is interest in reviving this program if a new taxi can be established.

vi. Public Transportation Issues and Challenges

While Exeter has excellent connections to the public transportation system via COAST and the Downeaster, there is still room for improvements in service. The greatest challenge however is the lack of regional support available to cover basic service needs, expand routes, and provide connections to locations other than those currently being served. The Visioning Session in 2004 and subsequent efforts have shown particularly strong support for the Downeaster Service and for providing transportation services for seniors in town.

Service Improvements: Many transit service enhancements have been implemented over the years for both COAST and the Downeaster. An earlier train to Portland to allow more time to explore that city and getting to events in that city earlier in the day, and allowing the loading and unloading of bicycles at the Exeter train station were two improvements suggested for the Downeaster during the 2004 Visioning Session. More frequent COAST service and more direct connections to Portsmouth and other destinations were also desired at that time.

Train Station Parking: The current parking area at the train station is often full forcing riders to utilizing business parking on Lincoln Street. In that regard, a Federally funded Congestion Mitigation and Air Quality (CMAQ) project is in place to create additional parking for that facility.

Addressing Senior Transportation Needs: With a rapidly aging population (the population over 65+ in Rockingham County grew 28% between 1900-2000) the need for some form of public transit system for seniors and people with disabilities is greater than ever. According to AARP, 21% of American senior citizens do not drive. Unfortunately, the availability of some form of fixed route or demand responsive bus service is limited. Older people who do not drive are less likely to participate in their communities, with 15% fewer trips to the doctor, 59% fewer trips to go shopping or to restaurants, and 65% fewer trips to participate in social activities. Exeter is presently served by COAST bus as well several other nonprofit agencies providing limited rides to grocery stores and medical appointments. It is projected (based on 2000 census data) that Exeter's transit depended population, including seniors, individuals with disabilities, and low income residents without reliable access to a private automobile, will require 21,750 one-way trips per year. While the State of New Hampshire has been working to establish regionally coordinated transit systems, Exeter cannot afford to wait for a state system to be in place and must build on its past public transit projects to assure that our citizens are able to meet their health, educational and social needs.

Maintaining Funding Sources: Paying for services remains the largest challenge to maintaining the current system, and providing necessary expansions to keep up with growing demand. In 1998, the NH State Legislature established the Local Option Fee to provide a source of revenue directly to towns for Transportation Funding. This statute allows a municipality to collect an additional motor vehicle registration fee of up to $5.00 for the purpose of supporting a Municipal Transportation Improvement Fund. Of the amount collected, up to 10 percent, but not more than $0.50 of each fee paid, may be retained for administrative costs. Article 36 on the March 11, 2008 Exeter Town Warrant proposed that such a fee be collected "for the purpose of supporting, wholly or in part, public transportation with emphasis on the needs of the elderly in the Town of Exeter. It passed and funds will accrue in the previously established Municipal Transportation Improvement Fund. It is anticipated that this fund will raise approximately $32,000 per year. The provisions of RSA require the Town to vote appropriations out of the fund as determined by the NH Department of Revenue Administration. The Exeter Board of Selectmen has worked with the Exeter Regional Transportation Committee to determine the distribution of these funds.

When the Local Option Fee was established, the Town of Exeter had been allocating $16,800 from the general fund to support "senior transportation." In addition, it funded both Lamprey Health Care van services and COAST bus from the general fund. In August 2008, a Taxi Voucher program was reinstituted under the Parks and Recreation Department. This provides a 50-50 match for seniors who are able to utilize a taxi for local needs. With the downturn in the economy, the Board of Selectmen have chosen to eliminate some of the funding for transportation from the general fund and make greater use of the Municipal Transportation Improvement Fund. In order for Exeter to increase transportation services in the future (in response to anticipated needs based on available demographic data), it is likely that the Local Option Fee will need to be raised in the future and/or transportation funding will need to return to the general budget.

The State of New Hampshire contributes no matching funds to assist in the provision of transit services requiring that COAST, the Downeaster, and other transit agencies obtain all of their federal matching funds from the various communities that are directly served. Local officials should work to encourage the State of New Hampshire to become an equal partner in the provision of both bus and rail transit service. The town also provides all of the costs of operating the train station although a large percentage of users of the station do not live or work in Exeter. Providing a regional or state-wide funding for that expense would ease that burden and free up funding for other transportation services.

C. PEDESTRIAN AND BICYCLE

Exeter has a robust network of sidewalks and is proud to be considered a very walkable community. The village area has sidewalks on at least one side of most streets, including many of the residential neighborhoods. As you move further from the downtown area, the number of sidewalks drop somewhat, but connections between residential areas and public and commercial areas is still available. Recent projects by the Town have improved the quality of the sidewalks on Epping Road, NH 111A to Washington Street, Main Street, Portsmouth Avenue and Front Street, as well as those on the Swasey Parkway. Improvements to the Swasey Parkway continue to make this site one of the showcase trademarks for the town. The installation of speed humps and adjustments to the entrances have reduced the speed and volume of traffic using the parkway, and are making the area much more pedestrian and bicycle friendly.

Summer and winter maintenance of the sidewalks is performed in central areas by the Public Works staff. This includes the painting of crosswalks, repairs to existing segments, and snow plowing in the immediate downtown area. The current policy of both the Planning and Public Works Departments are to require adequately designed sidewalk construction in new site plan and subdivision developments. Where possible, these are connected to existing trail and sidewalk systems.

Cycling Related Resources

Seacoast Area Bike Routes (SABR) provides a large volume of cycling related information on the internet regarding bike routes in the area, cyclist safety, links to other local and national advocacy groups, and events. Their website is www.seacoastbikes.org

NH DOT has provided maps to regional bicycle route maps free of charge at state welcome centers, rest areas, and at the Regional Planning Commission offices around the state.

Similar to pedestrian travel, Exeter has a variety of facilities that are suitable for safe bicycling. Many of the primary routes around town have shoulders that facilitate bicycling and there are a multitude of side streets in the village area that provide alternatives to traveling on the main roads. Two of the recommendations out of the 1994 Master Plan were to identify bike path "corridors" along major roads and to pursue Federal funding for the creation of bike lanes. Since 1997, Exeter has been awarded over $370,000 from the NHDOT's federally funded Transportation Enhancement program for three separate projects involving shoulder widening and sidewalk improvements along Route 27. The largest of these was completed in the autumn of 2003. This project focused on the shoulder along Hampton Road (Route 27), from the Route 88 "connector road' to the Hampton town line. The project's goal was to accommodate bicycles and pedestrians, and to link residential areas with the town's Recreation Park on Hampton Road.

According to members of the local cycling community (interviews with the owners of Wheel Power and Exeter Cycles, Exeter's two local bicycle stores), the trend over the last few years is the steadily increasing popularity of road cycling. It was mentioned that due to this trend, drivers have become more accepting of cycling in general and folks are more willing to share the road than they have been in the past. However, both owners indicated that sharing the road was still an important issue that could always use improvement.

Mountain bike use on town trails has steadily increased over the years as information regarding local and regional trails has become available on the Internet. A simple web search on mountain bike trails leads one to several sites that discuss Exeter's Fort Rock Trail.

Exeter's public and private high school systems provide bicycle racks for students and teachers wanting to cycle to school. According to public school officials, approximately 1 to 2% of students ride their

bikes to school but the location of the Middle and High Schools discourage this activity for most students. Philips Exeter Academy is primarily a boarding school with most students living on campus. As students are not allowed to have vehicles, school officials estimate that 50% of the boarders, or just over 400 students, use bicycles to get around campus and town.

There has been some bicycle transportation planning going on at the State and Regional Level. In the spring of 2000, the NHDOT updated its Statewide Bicycle and Pedestrian Plan, an element of the State's Long Range Statewide Transportation Plan. One of the plans primary goals was to recognize, support and encourage bicycling and walking as alternatives to motorized forms of transportation. The state recognizes regional planning commissions and other agencies as important partners to assist meeting and carrying out this and other plan goals. The plan includes a "Statewide Bicycle Route System," which was adopted as the most suitable network of existing roads to serve the needs of inter-regional bicycle trips.

NHDOT partnered with the Department of Resources and Economic Development (DRED) to undertake a comprehensive study of existing, planned, and potential trails throughout New Hampshire. This study included extensive research and cataloging of completed off-street trails (particularly through the Transportation Enhancements and Congestion Mitigation and Air Quality programs), abandoned and inactive railroad corridors that are being used as trails (or could be in the future), and other potential trail opportunities. The plan was completed in 2005 and included the following components:

- Identification and description of the abandoned railroad corridors that are owned by the State of New Hampshire
- Catalog of other (non-railroad) off-street trails and pedestrian / bicycle oriented projects throughout the state
- A summary of planning studies and documents that address off-street trails, pedestrian accommodations, and bicycle facilities
- Guidelines for developing trails

Bike to Work Day is an annual event held for the first time in New Hampshire in 2003. That first year, more than 250 commuters left their cars at home and walked or rode to one of eight Commuter Breakfasts held in Concord, Dover, Durham, Exeter, Portsmouth, and Stratham. The goals of Bike to Work Day are to promote bicycling as a healthy and safe way to get to work, decrease traffic congestion, improve air quality, and raise public awareness of opportunities to improve bike facilities around the State. Each year's spring event has seen growth in participation in the seacoast despite poor weather and date changes over the last couple of years.

i. Pedestrian and Bicycle Issues and Challenges

Network deficiencies: The largest problem are multiple gaps the sidewalk network. Cooperation of property owners will be necessary to facilitate construction within the right-of-way, or on pedestrian easements in some cases, as trees, ledges and fences may need to be removed to provide safer walking areas. In some cases, the addition of curbing at the sidewalk edge leaves little or no room for on street parking or may restrict Fire Department access if not designed appropriately.

The primary deficiency for bicycling is the lack of shoulders on many routes into and around Exeter and the poor conditions of some roads. During the Master Plan visioning sessions, many recommendations described creating bike paths, improving and widening road shoulders and linking sidewalks. In 2005, a

capital reserve fund was created and supported with the plan that an annual contribution towards this fund would provide the funds needed to eventually create safe walking and biking areas along all of Exeter's arterial roadways. Front and Court Streets as well as Kingston, Epping and Brentwood Roads would be the priority arterials for this type of improvement. The program was supported for three years and has $150,000 in the fund.

Left: Kingston Road with no shoulders.
Right: Newly recently constructed shoulders on Hampton Road.

Funding: CIP funding is critical to the effort to address existing and future deficiencies to the pedestrian network yet is often one of the first areas cut when budgets are tight. Funding, including from private development, should concentrate priority on areas where the greatest common benefit will be received and highest intensity of use will be achieved. When these critical elements are complete, the improvements should focus on the six main feeder roads to provide safe pedestrian access.

Connections: The visioning session held in 2004 produced a suggestion that off-street trails should be encouraged and planned to interconnect through the numerous areas of conservation land and easements where public access is permitted. This would provide connections around the community and eventually to adjacent towns. The Conservation Commission must be consulted to ensure that areas with prime sensitivity are protected and not subject to abuse or possible damage from overuse. Where possible, these rural trails should accommodate bicycles as well as pedestrians.

D. PARKING

Parking is a significant issue in several parts of Town, most notably the downtown, and in the vicinity of Phillips Exeter Academy. This portion of the Transportation Chapter will focus on these areas.

The Town maintains a 135 space municipal parking lot between Water and Bow Streets. In addition, there are two other parking lots in the downtown area, one on Center Street near the Post Office with 24 spaces, and another adjacent to the boat launch on the riverfront that has 28 spaces. In addition to this off-street parking, Water Street and the other downtown streets host approximately 250 on street parking spaces that are limited to a two hour time limit. This two hour parking extends out of the downtown along Front Street to encompass the Phillips Exeter Area and also street parking in the vicinity of the old High School. All of the Town's public parking in the downtown is free of charge. In addition, there are private parking lots and other miscellaneous parking serving businesses and private

residences. Table 7 portrays the makeup of the existing public parking supply within Downtown Exeter, but does not include areas where parking is allowed, but no spaces are explicitly marked.

Table 7 - Downtown Public Parking Supply

Service Category	On-Street	Off-Street	Total
2-hour Limit	232	0	232
All day / unlimited	17	187	204
TOTAL	249	187	436

Together these public facilities, as well as privately owned parking areas, must serve several needs of often competing constituencies. One group, typically but not exclusively employees and business owners, require accessible long-term (4 to 8 hour) parking. The balance, typically visitors and customers, but also including a number of part-time employees, need access to short-term (1 to 3 hour) parking. The exclusive use of 2-hour spaces and all-day parking has resulted in a shortfall of long-term parking and inefficient use of short-term parking.

The 2004 Visioning Sessions confirmed the public perception of the issues raised in the Parking study, but primarily focused on ways to address the shortage of long-term parking in the downtown area. Many felt that a parking garage would be appropriate with two locations given primary consideration; the municipal lot behind the Exeter Town Offices and the privately owned parking between Citizen's Bank/Town Hall, which has since been redeveloped into a mixed use commercial/residential building and a two level parking deck.

A 2001 study of parking in the downtown area included an examination of the patterns of use for both on and off-street parking. Some important conclusions can be drawn from the information obtained in this study:

- First, is that overall there is sufficient on-street parking capacity (59.8% average utilization) in the downtown area. However, spaces on Water Street between Center and Bow Streets are the most heavily used and are the most difficult to find available spaces between 10:00 AM and 2:00 PM. At the same time, other areas are underutilized, such as Center Street, Water Street in the vicinity of the Swasey Parkway, and much of Front Street. Again, it is most difficult to find parking in these areas during the middle of the day, but much less so than the more heavily used areas.
- The second finding is that the off-street parking is being utilized at or beyond its effective capacity for most of the time between 8.00 AM and 4:00 PM. Overall during the peak use period, 93% of the spaces are occupied at any given time, and at noon, the average occupancy of the off-street parking was greater than 100% with illegally parked vehicles.

There were three recommendations of the study that were felt to be the most pertinent for consideration by the town.

- Given the high utilization of the parking lots, the amount of off-street parking available should be increased. This could be accomplished through the purchase or leasing of land for purposes of creating public parking, creating a commuter lot to reduce the use of the large municipal lot as a carpool meeting point, or via constructing a parking structure at the large municipal parking site or some other downtown location.
- Examine more closely the benefits and impacts of converting the underutilized on-street parking on Center Street to all day parking. A second area to consider would be the String Bridge/Chestnut Street parking.

- Consider alternative ways to finance the costs of additional parking in the downtown.

i. Parking Issues and Challenges

Downtown Parking: Providing access to convenient, safe, and well maintained parking in the Historic Downtown District has been the subject of considerable discussion for the past several years. It is well recognized that the continued health and vitality of Downtown is directly linked to the ease of access. As Exeter becomes more of a destination, and the shopping area and offices within the Historic Downtown achieve full occupancy, the demand on the limited parking resources will continue to grow. An enjoyable, vibrant downtown area not only provides simple access to the businesses, but also provides an environment conducive to pedestrians. Unfortunately, in an attempt to gain additional spaces, parking has encroached upon crosswalks reducing sight distances to less than what the Manual of Uniform Traffic Control Devices consider necessary for motorists to effectively anticipate pedestrian crossings.

Parking near Phillips Exeter Academy: Parking in the vicinity of Phillips Exeter Academy has also been an issue at times, most recently regarding parking along Front Street between Spring Street and Tan Lane. The elimination of parking on the north side of Front Street in front of the campus, as well as the two hour time limitations beyond Tan Lane have placed remaining unlimited parking spaces in the area at a premium, reducing turnover and creating parking problems related to events. Furthermore, winter months see reduced roadway width due to snow storage causing parking and snow removal issues. It is important for the town to continue working with the Academy to address parking in general and to come up with a working solution for the grid of street from Elm Street on the East to Pine Street on the West, Court Street on the South and Main Street on the North.

E. SAFETY

A comparison of some basic accident statistics provided for 2003 and 2007 by the Exeter Police Department shows some slight changes occurring over time. Overall, in 2003 there were 329 accidents, including 70 injuries but no fatalities. In 2007, the overall number of accidents had decreased to 280, however there was a much smaller drop in injuries to 64 and a single fatality. Friday is generally the day with the greatest number of motor vehicle incidents in both years, and the mid-to-late afternoon is the peak time of day (around 3:00 PM).

The major corridors through town are the roads with the most traffic, and also the locations that consistently show the most problems with traffic safety. Portsmouth Avenue has the highest number of accidents in both 2003 and 2007 with 50 and 55 respectively. In 2003, Front Street and Water Street with 27 and 26 accidents respectively were the second highest accident areas however the number of accidents on Epping Road more than doubled between 2003 and 2007 from 17 to 36 making that the second highest accident area in Exeter. This likely reflects the continued growth of traffic on that roadway from commercial development as well as the relocation of the Exeter Area High School to Epping Road from Linden Street, which saw a drop in accidents during that same period.

TABLE 8: Traffic Accidents

Street	2003	2007
Portsmouth Avenue	50	55
Front Street	27	26
Water Street	26	27
Hampton Road	20	19
Linden Street	20	12
Epping Road	17	36
High Street	12	10
Court Street	12	10
Newfields Road	11	11

i. Safety Issues and Challenges

Downtown Safety: The geometric arrangement of the Water Street/Front Street intersection is complicated, particularly for those unfamiliar to the area. Photos of the intersection, taken in the 1800s, show a similar traffic pattern as today. Information from that era report on the same issues we have at present: safety concerns, lack of parking, maintenance issues, etc. It is because of this unique geometry that vehicular traffic is forced to slow down substantially, allowing for safer movement especially around Exeter's bandstand. In recent years, the Town added a stop sign at the eastbound lane at the Water Street/ Front Street intersection. This small measure made a significant safety improvement for both vehicular traffic as well as pedestrian movement across Front Street.

In the immediate downtown area, much of the parking is angled. Angled parking is viewed by some as a safety hazard, while others view it as a safe means of traffic calming. Again, due to the slow, steady speed of traffic, the angled parking fits into the overall system. During the 2003 visioning session, various opinions regarding the number and locations of crosswalks were shared. For several years, the Planning Department worked with consultants, staff and volunteers to address pedestrian safety, traffic flow and parking concerns through various improvements within the downtown area. Unfortunately, although the improvements were supported by many and engineered plans were proposed, the support for implementation was denied. Still, these issues remain and eventually need to be addressed as continued growth increases safety concerns for both vehicular and pedestrian traffic.

Corridor Safety: The majority of accidents in Exeter take place on the main transportation corridors into the community and this is reflective of their higher volumes of traffic and larger numbers of driveways and turning movements occurring. As these corridors continue to grow, the number of accidents along them will likely grow as well and consideration needs to be given towards both capacity and safety improvements as they are needed.

In 1999, many corridor improvements along Portsmouth Ave were implemented including access to businesses, sidewalks, and landscaping. These improvements coincided with route 101 changes. The Epping Road corridor has also been targeted for improvements. It is currently under evaluation for specific improvements, funded in part by the New Hampshire Department of Transportation. While retrofitting an access management program to a corridor is a challenge, the safety and traffic flow improvements gained from better management of how and where cars access the roadway can be tremendous.

Although corridor overhauls are infrequent, improvements to specific parcels do occur as redevelopment occurs. Such improvements may be scattered, but they do allow the town to address various issues such as access, pedestrian safety and even off-site improvements one site at a time.

F. LAND USE

Transportation and land use are intimately linked. A new transportation infrastructure project such as expansion of a highway typically spurs land development, housing and employment growth in the communities it serves. Likewise, an increase in population or employment in a sparsely settled area can overwhelm the existing road system in the area and require major new infrastructure investments. The prospect of cheaper land is usually a factor for new development projects, large or small, private or public. However, the cost savings in land is often offset by a range of other costs. These include the cost to extend or expand roads and utilities to the site, traffic congestion, lack of access for members of the community without automobiles, loss of open space, and increased air pollution as more people need

to make more vehicle trips to access goods and services. The resulting development pattern has commonly become referred to as sprawl.

While many definitions of sprawl have been put forward in recent years, perhaps the simplest definition relates to the inefficient way such development consumes land. We are consuming land in the region at a greater rate than previous generations, and not just because population is growing faster. Between 1953 and 1974, 0.75 acres of land were developed in Rockingham County for each person added to the population. Between 1974 and 1982, this rate of land consumption more than doubled to 1.59 acres per capita.[1] This shift is due to a combination of factors including market trends, zoning, and natural constraints on remaining undeveloped land. The dispersed land use pattern it creates is reflected in a comparison of population growth to traffic volume in the region. From 1982 to 1997 population in Seacoast New Hampshire grew by about 38%, while traffic volume in the region grew by 169% - a factor of more than 4 to 1. [2]
A classic example of poor integration of land use and transportation planning is strip development along highways, resulting in congestion, safety problems, lack of access by modes other than automobile, and eventual need for expensive capacity improvements on the road. This is the scenario of the "***Transportation Land Use Cycle***" shown in ***Figure 2***. In this cycle a well-traveled road with excess capacity attracts additional land development (often retail or commercial development in need of high visibility and access). This results in additional traffic generation and the erosion of highway capacity and function. Eventually the congestion becomes severe enough that a further expansion of the roadway is prompted, and the cycle begins again. This cycle can be seen along many highways in the region such as Route 1, NH 125 in Epping, and to some extent locally along Portsmouth Avenue.

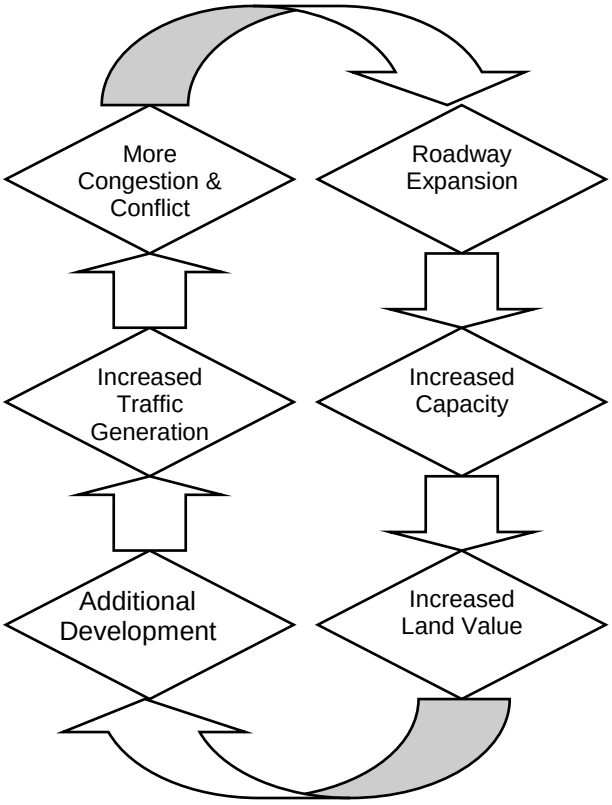


Figure 2
The Transportation Land Use Cycle
"…this cycle continues until it is physically or economically impossible to further expand capacity. Access Management together with good land use controls can preserve highway capacity and effectively slow down or halt the cycle."
-- FHWA Access Management Project

i. Land Use Issues and Challenges

Historical Perspective: When one considers that Exeter and its seacoast neighbors began to settle the area in the early 1600's, one quickly realizes that zoning regulations defining what could be built where are relatively new. Exeter, for example, adopted its first zoning regulations in 1966. Later in 1973

[1] Land Use Change: Rockingham County NH 1953-1982. Befort, Luloff, and Morrone, 1987.
[2] RPC & SRPC traffic count data

those regulations grew from 3 pages to a more comprehensive booklet. Since then, the Planning Board with assistance from staff and members from other volunteer boards have grappled over improving, further defining and clarifying the zoning ordinance as issues have presented themselves. Since 2007, a committee made up of staff and board volunteers has been charged by the planning board to methodically review the ordinance and propose changes. In doing so, the "ZORC" (Zoning Ordinance Review Committee), has considered suggestions from master plan visioning sessions while analyzing the "big picture" changes and desires of an ever-growing community. ZORC has reviewed chapters on definitions, permitted uses and zoning districts, specific issues within general regulations such as signage, and even established new innovative sections such as wind turbine uses. One of the goals of the committee was to provide some allowances for mixed use development within specified commercial and transitional districts such as NP – Neighborhood Professional, to provide additional flexibility within those districts. Still not tested by new development, Exeter has attempted to maintain a vibrant core through its zoning while preserving quality of life needs in its residential districts. Providing a balance between residential and non-residential uses will likely continue to challenge the town's planners for years to come.

Decentralizing Essential Services:
One of the more recent trends in land use development has been to move essential services such as schools, post offices, and regional government offices out of town centers, into the more rural areas of towns.

In 1998, the Exeter Regional Cooperative Middle School was moved to the east end of town off Guinea Road in Stratham from its central location on Linden Street, and more recently, the Exeter Area High School moved from downtown to the northwest section of town off Epping Road from its Linden Street location. These moves created a substantial change in traffic on both the roads adjacent to the new school sites (Hampton, Stratham Heights, and Guinea roads for the Middle School and Epping Road for the High School), as well as the areas around the former locations on Linden Street. The relocation of the schools to areas outside of the town has eliminated the ability of students to walk to school as they are located too far from most residential areas and are not served by any pedestrian facilities.

Linear Pattern of Development: While residential growth has spread into the outskirts of the community, commercial development (and redevelopment) continues to be concentrated along the major roadway corridors of Epping Road, Hampton Road, and Portsmouth Avenue. While concentrated, it has been linear in nature, with almost all development and redevelopment occurring immediately adjacent to the roadways. The result is roadways with large numbers of driveways, few interconnections, and little depth, creating traffic safety and flow problems.

3. Section III: Recommendations

This section lists the recommendations for making improvements to the transportation system as well as planning and coordination efforts to better link the land development process to the functioning of the transportation network. Recommendations are organized in the same manner as the discussion of the transportation system in the previous section.

A. Roadways and Congestion

1. Identify intersections in need of safety or capacity improvements and create a strategic plan to address those needs.
2. Identify and implement specific safety improvements for pedestrians and bicyclists, especially in the downtown and school areas.
3. Develop funding strategies for maintaining existing road, sidewalk and trail systems and for creating new connections within the network of roads, sidewalks and trails.
4. Continue to develop, program and fund short and long-range plans for maintenance of town roads, bicycle paths and sidewalks.
5. Implement an Access Management plan for Epping Road, and develop similar plans for Portsmouth Avenue and Hampton Road to reduce the number of driveways, smooth traffic flow, and improve safety.
6. Update and implement the Pavement Management Program with a program that can provide condition projections and budget consequences.
7. Review existing roadway signage and develop a Sign Management Program to coordinate and manage all directional and traffic oriented signage.
8. Review all traffic signage on each of the six main roads into Exeter to make recommendations for improvements to assist first-time visitors, novice pass-through drivers, commercial vehicles and bicycle travelers.
9. Develop a formal process and methodology to utilize corridor and access management plans to leverage private development funds for transportation system improvements in the community.
10. Identify problematic roadways where truck traffic has caused maintenance and traffic issues for local roads, and adopt a town ordinance restricting vehicles above certain weights from specific roads during seasonably wet periods.
11. Review downtown parking and crosswalks for consistency with the 2003 Manual of Uniform Traffic Control Devices.
12. Support implementation of projects in the Capital Improvement Program including bridge, culvert, sidewalk, shoulder widening, intersection improvements, and other roadway improvements.

B. Public Transportation

1. The Town should continue to encourage the use of public transportation (Amtrak, COAST, and other services) in order to achieve reductions in vehicular traffic thus reducing air pollution, congestion, and parking needs. Specific projects aimed at improving or supporting alternative modes of transportation should be planned and funded through the annual CIP.

2. Local elected officials should work with state and federal delegations to continue funding Amtrak on a national level as well as provide state financial support for operating and maintaining the train station.
3. The Town should encourage a New Hampshire Partnership in the Downeaster Service especially with consideration that nearly half of the passengers are from New Hampshire Communities.
4. Implement station stop improvements including expanded parking, and a full-service train station including a heated/ air-conditioned waiting area, a ticket kiosk, and public restrooms for patrons.
5. The Town should continue to financially support COAST bus service and seek improved route connections to the wider network and other Seacoast communities.
6. In order to better serve Exeter residents, the Town should work with COAST, the Parks and Recreation Department and Exeter's Senior Center to develop alternative transportation services including creation of a local loop transit service.
7. Work with the NHDOT and local businesses in advertising the region's park and ride facilities and rideshare program.
8. Work with bus companies to expand their services to include Hampton and Epping Park and Ride facilities.
9. Continue the support of Amtrak service and seek additional service through collaboration with such organizations as "Train Riders Northeast" and "Northern New England Passenger Rail Authority (NNEPRA)".

C. PEDESTRIAN AND BICYCLE

1. Maintain the road network so that road hazards are minimized for bicyclist.
2. Promote an integrated sidewalk and bicycle path network so that people can have an alternative (to the automobile) means of moving about Exeter.
    a. Specifically the Town should develop and fund a ten-year sidewalk and bicycle network improvement plan.
    b. Priority should be given to creating bike paths along arterial roads.
    c. Consider amending Site and Subdivision Regulations to include allowing alternatives to sidewalk construction such as a contribution towards shoulder widening along major arterials.
    d. Continue to work with the Rockingham Planning Commission, NHDOT and other agencies to assist local efforts in achieving bicycle trail/road improvements throughout Exeter.
3. Convene a bicycle committee to develop a strategic plan in making Exeter more "bicycle friendly". Strategies might include:
    a. Work with interested groups on identifying, creating and maintaining an integrated street/trail network.
    b. Installation of "share the road" signs,
    c. Prioritization of shoulder widening or bicycle path projects,
    d. Work with Conservation Commission on road/trail links, and
    e. Creation of bicycle safety program with the schools.

4. Review safety and efficiency issues regarding crosswalks. Create policies regarding management of school crosswalks with concern to both pedestrian and vehicular traffic.
5. Create bicycle and pedestrian connections between adjacent but unconnected neighborhoods and other areas to reduce travel distances as well as keep these users off of arterial roadways were possible.

D. PARKING

1. Regularly evaluate parking within the Historic Downtown District and propose changes based upon the changing users.
2. A Parking Authority should be established that would work on a combined transportation and economic development agenda and include close ties with the Town Planner, Planning Board, Economic Development Committee, and Chamber of Commerce.
3. Reconfiguration of existing on-street facilities can increase parking supply in areas where it is needed.
4. Encourage peripheral parking for long-term needs. Better identification of existing peripheral parking, promotion of peripheral parking to business owners and employees, and initiation of discussions regarding high-frequency transit within the Downtown area.
5. Encourage coordinated private/public parking ventures for expansion of parking facilities.
6. Consider long-term development of the municipal lot behind the Town Offices and the private lot behind Town Hall. These parcels should be considered for more productive use or for a long-term market based parking and mixed-use facility in scale with the Downtown District. Ideas should be explored utilizing it as some combination of parking, businesses, and residences, coordinated with the Exeter Train Station and the rest of the core downtown area.

E. SAFETY

1. Address safety issues on primary roadway corridors through the development and implementation of access management plans. More details on access management are available in Appendix A.
2. Continue to expand the bike and pedestrian facilities in the community to improve safety for those users of the system.
3. Consider the use of modern roundabouts as a safer alternative to traffic signals where feasible.
4. Develop a traffic calming (See Appendix A) strategy for the community to reduce cut-through traffic in neighborhoods and improve the safety of side streets.

F. LAND USE

1. Promote compact, mixed use land development to reduce infrastructure costs and improve the viability of public transportation, walking, and bicycling as options for travel.
2. Encourage the continued investment of public funds into public services in central areas of the community and discourage relocation of such services to the outskirts.
3. Encourage the coordination of land use and transportation planning to ensure that existing and future industrial, commercial, and service centers and housing concentrations are adequately connected; and appropriately located to preserve the quality of life in surrounding areas.

APPENDIX A

TRANSPORTATION TOOLS FOR COMMUNITIES

Appendix A: Transportation Tools for Communities

This section is intended to provide decision-makers with some additional guidance on methods to offset the impacts of traffic congestion as well as some resources that can be utilized in the planning process.

A. Funding for Transportation

One of the biggest challenges facing the communities will be in financing roadway improvements. Traditionally construction projects have been advanced to the State Ten Year Plan to be queued for eventual implementation. However, given the current financial limitations with respect to state and federal funding, waiting for any individual project to be constructed via that route is likely to take a minimum of 10 to 15 years, and might be a viable option only for the larger, long range projects. Given existing and expected resources on the Federal and State level, communities will benefit from finding alternate means of financing many improvements. This will mean working with citizens, other communities, NH DOT, and private interests to find appropriate mechanisms.

FEDERAL FUNDING PROGRAMS

There are a number of different categories of Federal Transportation funding that could be utilized to construct improvements. Use of these funds will require that the project be listed in the State Ten Year Plan, as well as the Metropolitan Planning Organization (Rockingham Planning Commission) Transportation Improvement Program, and will mean that they are competing for priority with other projects around the state.

Surface Transportation Program (STP): This program is the source of most of the funds apportioned to the State and is the most flexible in what the money can be used for. STP funds may be obligated for construction, reconstruction, rehabilitation, resurfacing, restoration, and operational improvements for highways including Interstate highways and bridges. They also may also be used to pay intercity bus capital costs, carpool projects, parking facilities and programs, bicycle and pedestrian facilities on any public roads, and the modification of public sidewalks to comply with the Americans with Disabilities Act of 1990.

Transportation Enhancements (TE): This is a set aside from the STP, and may be used for any activities that provide facilities, safety improvements and education for pedestrians and bicycles, and scenic beautification or environmental mitigation. Also eligible are projects that preserve historic transportation related facilities and abandoned railroad corridors including rail to trail conversions. In New Hampshire, TE funds are programmed on a two year cycle through a competitive project selection process that begins with communities submitting project proposals to the Regional Planning Commission where they are prioritized regionally. Projects then are sent to the state TE committee for statewide review and prioritization. Funded projects are then added to the State Ten Year Plan.

Highway Bridge Replacement and Rehabilitation Program (HBRRP): These funds may be used for the rehabilitation, reconstruction, or replacement of a bridge with safety or structural deficiencies, or that is functionally obsolete on any public road.

Congestion Mitigation and Air Quality (CMAQ): This is a program that sets aside funds specifically to address air quality issues and the reduction of congestion and eligible projects must help to improve air quality. There is a long list of projects types that are eligible for this funding including implementing transportation control measures, traffic management, monitoring, and congestion relief strategies, transit expansion or enhancement, alternative fuel projects, inspection and maintenance (I/M) programs, and

intermodal freight improvements as well as many others. In New Hampshire, CMAQ funds are programmed using the same process as TE funds, with the additional step of an air quality benefits analysis for each project.

Highway Bridge Replacement and Rehabilitation Program (HBRRP): Bridge rehabilitation and rehabilitation funds may be used for the rehabilitation, reconstruction, or total replacement of a bridge with safety or structural deficiencies, or that is functionally obsolete on any public road.

STATE FUNDING SOURCES

Funding from the state is somewhat more flexible in how quickly it can be obtained and programmed for construction of improvements, but somewhat less flexible in how the funding can be used.

State Aid Funds for Class I, II, and III Highways (RSA 235:10-:21): These funds are provided for the purpose of constructing or reconstructing sections of Class I, II, and III highways. This work includes improvements to unimproved sections or to advance the priority of construction for special types of work such as improving drainage, riding surface, or elimination of sharp curves on Class I highways or improved sections of Class II highways. Qualifying and approved projects receive 2/3rds state funding of the project cost, with the municipality expected to contribute 1/3rd.

Bridge Aid Funds (RSA 234): These consist of both State and Federal Highway Funds budgeted for construction or reconstruction of structures on Class IV and Class V highways as well as municipally-maintained bridges on Class II highways. Structures having a clear span of at least 10 feet qualify for state funds, and those having a span of at least 20 feet qualify for federal funds. The ratio for the aid is 80% Federal or State and 20% municipality. Construction of Class II bridges transfers the maintenance responsibility from the municipality to the State.

Highway Block Grant Aid Funds (RSA 235:23 & :25): come from a portion of the total road toll and motor vehicle registration fees collected by the State and given to municipalities for the purpose of constructing, reconstructing, or maintaining Class IV and V highways. These funds are apportioned to all municipalities on a yearly basis as follows:

- Apportionment A: These funds are allocated from an annual apportionment of not less than 12% of the total highway revenues collected the preceding fiscal year. The amount distributed is based on one-half (1/2) mileage and one-half (1/2) population.
- Apportionment B: These funds are allocated from an annual apportionment of $400,000 distributed based on a formula using equalized valuation and Class V mileage. It is designed to give the greatest benefit to municipalities with low, equalized valuations and high road mileage.

State Support for Transit: New Hampshire provides very limited funding for public transportation. Traditionally the State has assisted transit agencies with vehicle purchases, providing half of the required non-federal matching funding for capital costs (10% of total cost). The State also provides a small amount of operating assistance to transit agencies based on ridership, amounting to about $38,000 annually for COAST, and $8,000 annually for CART. New Hampshire ranks 45th nationally in the amount of State funding contributed to public transportation, and a distant last among the six New England states. As of 2005 New Hampshire contributed 17 cents per capita to public transportation, compared to $1.18 in Maine, $10.06 in Vermont, and $187.09 in Massachusetts.

MUNICIPAL FUNDING SOURCES

There are a variety of resources available to the community that can be raised locally. The advantage of generating the funds locally is primarily the speed at which they can be raised and put towards improvements as well as the flexibility in how they can be used in many cases.

CIP/Warrant Article: The Warrant Article has been the primary approach to locally funding transportation improvements in New Hampshire. This involves placing the proposed project on the ballot for the community to approve funding via local property tax and can be utilized either to directly finance a project or to pay for a project that is being reimbursed by Federal or State funds, or other local revenue generating mechanism. In Exeter, it has most often been utilized as a source for maintenance funds instead of highway improvement projects.

Local Option Fee: The Local Option Fee for Transportation Funding is one means of generating local funding via local vehicle registration fees. A New Hampshire law passed in 1998, commonly referred to as HB 648, allows a municipality to collect an additional motor vehicle registration fee of up to $5.00 for the purpose of supporting a municipal transportation improvement fund. Communities in the study region are not yet taking advantage of this funding source. Of the amount collected, up to 10 percent, but not more than $0.50 of each fee paid, may be retained for administrative costs. The remaining amount is deposited into a municipal transportation improvement fund to pay for projects on the local or regional transportation system including roads, bridges, bicycle and pedestrian facilities, parking and intermodal facilities, and public transportation. At the 2008 Town Meeting, Exeter approved the inclusion of a $2.50 option fee to assist with funding public transportation in the community.

Traffic Impact Fee: A onetime fee to new developments to pay for the cost of serving the additional traffic that it generates. These fees are calculated based on the number of trips generated by the new development as established in an approved traffic study. The cost of correcting existing deficiencies is usually excluded from the calculation for equity and legal reasons. A Roadway Impact Fee is a variation of this that is levied on a fair share basis based on the new development's anticipated portion of total traffic on a roadway.

Development Agreements: This is a negotiated agreement between a developer and the community to mitigate the impacts of a proposal by meeting community conditions of approval. This is accomplished during zoning or subdivision approval, when local government has broad discretion in approving a project. This method is flexible in meeting community needs, but can be applied unevenly.

Transportation Development District (TDD): Also known as a Special Assessment District, properties abutting a designated section of roadway are assessed for their fair share of the cost of the road improvement. Fees can be assessed based on linear frontage, area, or by trip generation and are usually for specific improvements benefiting property within the district. Generally this applies to all properties fronting the roadway to be improved, but can be expanded into a larger district if the improvements or impacts are to a larger area. If the district crosses municipal boundaries, it is considered a Regional Development District. Through an inter-municipal agreement allowed by RSA Section 53-A, the communities along Route 1 could form a district to provide a larger pool of funds for transportation improvements.

Tax Increment Financing: The projected increase in property value from a development is partially taxed for a prearranged time period. The community (or developer in some cases), pays for initial off-site improvements, and the expenditure is recouped from difference in developed and undeveloped tax base. Frequently a TIF District is established to gather funds from multiple sources.

Transportation Utility Fees: In this case, roads are treated like a public utility and developed properties are charged a fee for service, similar to water, sewer, and other utilities. They are imposed on a jurisdiction-wide basis and continue in perpetuity. The fee varies by type and size of land use and is assessed to all property owners.

B. Access Management

Access Management is the process of balancing the competing needs of traffic movement and land access. The character of development and the roadway network in Exeter provide limited opportunity to widen roadways beyond the existing cross section. While there are opportunities to add turning lanes, acceleration and deceleration lanes as development and related traffic increases, there is very little space for additional through lanes of any length. Given this, it is important that the existing network be used as efficiently as possible. One method to improve the safety and efficiency of the roadway network is the use of access management. The principal of access management is to provide access to developed land (or developing) while preserving the ability of the roadway network to move traffic safely and efficiently. This primarily involves establishing principles relating to the location, design and operation of driveways accessing the public road network addressing the basic questions:

- Where should access points to the roadway be located?
- When should an access point be put in place?
- What is the most appropriate design for the access point?

Symptoms of Poor Access Management

- *High Crash Rates*
- *Poor traffic flow and congestion*
- *Numerous brake light activations by drivers in through lanes*
- *Unsightly strip development*
- *Neighborhoods disrupted by through traffic*
- *Using a local street parallel to the overburdened "arterial" to make a one-way pair*
- *Pressures to widen an existing street or build a bypass.*
- *Bypass routes as congested as the roadways they were built to relieve*
- *A decrease in property values.*

This process includes:

- Understanding the functional classification of each roadway and how that reflects the importance of each roadway to mobility.
- Setting standards for each road class that address access in terms of location, spacing, design and timing.
- Applying appropriate geometric design criteria and traffic engineering analysis to any proposed access that is allowable according to access management standards.
- Adopting appropriate regulations and administrative procedures to establish the process and account for exceptions or variances.

Exeter is already exhibiting some of the symptoms of poor access management, specifically on Portsmouth Avenue. Traffic is congested, especially during peak periods, long queues form at traffic signals, and it can be difficult to make left turns from businesses, as well as from the roadway to businesses.

The benefits of implementing access management are many. Safety is improved with fewer and less severe accidents, as well as improved safety for bicyclists and pedestrians. Traffic moves more

smoothly and with less overall delay due to improved use of roadway capacity. Because roadway widening is limited, access management can also be utilized to make improvements to efficiency, while at the same time enhancing community character and keep neighborhood integrity intact. Finally, corridors can become more attractive as pedestrian and bicycle oriented improvements and aesthetic treatments are implemented, and roadways are kept to a smaller scale.

There are a large number of specific techniques that are used in access management to make the best use of the roadway. The following listing encompasses the basic techniques to provide an overview of those methods.

Medians: The intent of a median is to separate opposing lanes of traffic, and there are two types; traversable and non-traversable. Traversable medians are primarily striped as two-way left-turn lanes which allow traffic to make left turns at any point. Non-traversable medians are raised to prohibit crossing, although breaks may be implemented to allow for left turn bays at specific locations. Medians of any kind improve safety and traffic flow, although raised medians prove to be the most safe and efficient. An additional benefit of raised medians are that they can provide mid-street crossing refuges for pedestrians, as well as allowing for landscaping that beautifies the corridor.

Auxiliary lanes: Left and right-turn lanes/bays remove turning traffic from the through lanes of the roadway minimizing traffic conflicts. These are significantly less expensive to implement (in most cases) than more significant widening and perform the task of consolidating turning traffic into specific locations.

Signalized Intersection Spacing: To facilitate efficient traffic movement, distances should be uniform between signalized intersections (ideally no less than 1/4th mile). This can also provide additional benefits if signals are coordinated.

Driveway Location and Design: The location and design of each driveway affects the ability of the driver to enter or exit a particular site. Sight distances, turning radii, and driveway widths all impact the ability of a driver to enter and exit the roadway safely and efficiently. This impacts traffic flow on the roadway by determining how smoothly and quickly a vehicle can enter or exit traffic flow. If this process is too slow, it can result in accidents and increased congestion.

Driveway Spacing: Establishes minimum distances between driveways. Driveway spacing standards should vary according to facility type, with more stringent standards applied to arterials than collectors to account for higher traffic volumes and speeds. Minimum distances should be established based on the engineering standards, driver behavior and vehicle dynamics necessary for drivers to respond to vehicles entering and exiting the roadway. An absolute minimum spacing is considered to be the stopping distance at driving speed on a facility.

Corner Clearance: This involves setting minimum safe distances between an intersection to the nearest access point. Assuring adequate lot size with appropriate corner clearance will help protect the functional integrity of the intersection and the development potential of corner lots.

Joint and Cross Access: This involves consolidating access points on adjacent parcels into a single access point.

Reverse Frontage: This method uses interior streets to connect small commercial and residential uses as opposed to allowing each an access onto a main thoroughfare. This collects traffic at intersections that can safely handle the interaction with the primary street

The Town's Site Plan Review Regulations specify that the number of access points for a development will be minimized, preferably one access point per street. Beyond that, neither the Town's Subdivision nor Site Plan Review Regulations directly address access management as part of the development review process. Guidelines could be developed as part of the Town's Subdivision or Site Plan Review Regulations, or could be developed as a separate plan for specific corridors and adopted by reference.

C. Traffic Calming

A second approach for dealing with traffic congestion is known as traffic calming. There are many different approaches to traffic calming (Table 9), but the primary method is to reduce the speed of traffic by altering the street. Limiting cars to more appropriate and safe speeds has the effect of reducing noise and air pollution, lowering the number and severity of traffic accidents, as well as increasing the capacity of the roadway to handle more vehicles.

TABLE 9: GENERAL TRAFFIC CALMING METHODS

1.	Reduce the speed at which autos travel by altering street design
2.	Change the psychological feel of the street by altering street design
3.	Increase incentives to use public transportation
4.	Discourage use of private motor vehicles
5.	Encourage more efficient travel
6.	Create strong local communities

Traffic calming has two general approaches; active and passive, and many individual approaches are shown in Table 10. Active techniques force a driver to change his/her behavior (such as a barrier forcing the vehicle to turn off a street), thereby enforce themselves. Passive controls, such as a speed limit sign or other traffic sign, do not physically require a change in behavior, but instead rely on the driver to comply with local and state laws. Another approach to implement traffic calming is to change how the street feels to the motorist. By replacing wide, open streets with more narrow travel lanes, broken sight lines, and generally a more closed in feeling, drivers will have a tendency to slow down. Other methodologies for implementing traffic calming require less physical infrastructure changes, and more policy and perceptual changes within a community. Encouraging the use of transit, more efficient use of transportation, and creating strong local communities require larger changes in how land use is allocated, personal preferences for where to live and how to get around.

TABLE 10: TRAFFIC CALMING TECHNIQUES

Technique	Description	Use
Speed Bumps & Speed Tables	Raised humps in road surface. Speed Tables are 8-12 feet long and comfortably crossed at 15-25 mph.	Have been shown to reduce speed and volume of traffic. Speed bumps have widespread use in parking lots, but also create hazards and plowing problems. Speed tables reduce the plowing problem by providing a more gentle slope
Rumble Strips or Changes in Roadway Surface	Patterned sections of rough pavement cause slight vibrations which cause the driver to become more alert and slow down	Can reduce accidents if properly placed. Some concerns about bike travel and increased noise.
Diagonal Diverters	Barrier placed diagonally across a four way intersection to separate it into 2 unconnected streets with each making a sharp turn.	Used in residential neighborhoods to eliminate cut-through traffic by making the route more circuitous. Best used as part of an overall plan for a neighborhood.
Dead-end Streets or Cul-de-sacs	Placing a barrier across one end of a street to eliminate motor vehicle traffic.	Used primarily in residential neighborhoods, eliminates cut-through traffic while still allowing pedestrian and bicycle access.
Semi-diverters, Neckdowns, Chicanes, Chokers & Protected Parking	Methods of restricting traffic flow without eliminating it entirely. Generally the curb is pushed out into the street at specific location(s) to create a narrowing of the roadway. Semi-diverters restrict one direction of traffic from entering a street; neckdowns and chokers reduce the width to only allow one direction of travel at a time. Chicanes extend the curb on alternating sides of the street to require vehicles to adjust their path of travel at intervals, Protected parking places curb bulb-outs at either end of parking reduce street width and reduce illegal parking.	Most of these techniques are used in residential neighborhoods to reduce the volume and speed of traffic. If sloped curbing is used, emergency vehicle movement is not blocked and snow plows can have an easier time clearing the road. Semi-diverters don't allow a vehicle to enter a street from one end, but allow two way traffic on the street itself.
Traffic Circles or Round-abouts	These are raised islands usually located at the intersection of two streets. Vehicles must go around the median to continue on the same street or to make a turn. Vehicles usually must slow to 15-25 mph to navigate them.	These work best on residential non-arterial streets where they reduce speed and accidents without diverting traffic to other streets. Can also be used on arterial and collector streets as an alternative to standard traffic signals
Stop signs, Speed Limit signs, Turn prohibition signs	Signage directs traffic to operate according to certain restrictions	Stop signs assign right-of-way, turn prohibition signs limit turning movements, and speed limit signs limit speeds (somewhat). Can be used anywhere.
One-way Streets	Discourages through traffic by eliminating travel from one direction	Used on residential streets to eliminate cut-through traffic
Traffic Signals	Properly tuned traffic signals can reduce delay on arterial streets and improve traffic flow.	Use on primary arterials. Linked and coordinated signals reduce delay, improve traffic flow and help to reduce impacts on other streets from traffic seeking alternate routes through the congested area.

APPENDIX B

VISIONING SESSION RESULTS

Appendix B: 2004 Visioning Session Results

Transportation Topic	Votes
ROADWAYS AND CONGESTION	
Possibility of one-way traffic downtown	11
Circumferential bypass around downtown (cars)	7
How to divert traffic from High Street – Severe Congestion, concern regarding growing traffic	6
Traffic solutions need to respect residential and business uses (noise, motorcycles, trucks, etc) along routes such as Hampton Rd.	4
Shift in traffic patterns due to high school relocation (new issues on Epping Road, etc)	4
Need to review Portsmouth Ave/High St. Intersection design (signal, additional lanes)	3
Keep Newfields Rd RR trestle – acts as traffic calming device	2
Reduction in congestion may encourage additional traffic	0
Measures to inhibit speed	*
Close Water Street	*
Main problem to transportation is congestion	*
RR Ave./Front St. Intersection visibility concern	*
PARKING	
Parking garage: at municipal lot behind Town offices or behind Citizen Bank and Town Hall, possibly underground	26
Long-term parking shortage	9
Parking space too close to intersections	3
Parking based on vehicle size (dedicated spaces for small/large vehicles)	1
No parking behind bandstand	0
Change some of municipal lot parking to short-term (2 hours)	0
Danger of angle parking	*
Prefer open lots rather than structure	*
Consider parking restrictions (such as Durham) to encourage van pooling	*
TRAIN SERVICES	
Service expansion for additional runs (a.m. and p.m.), more commuter and local trains, incl. Portland and Boston.	23
Would more cars on train increase ridership	2
Additional station in Newmarket to reduce congestion on 108	0
BUS SERVICES	
Develop local loop transit (link businesses, recreation areas, residential neighborhoods; could be seasonal or year round)	16
Promote bus use for school transportation, create incentives, improve schedule for both middle and high schools	5
Trolley between new school and downtown	4
Promote a transit alternative	0
Local transit/trolley could be private enterprise	0
Regional coordination (bus service including Coast and Wildcat links)	*
Bus route designation – need route and time info.	*
FUNDING ISSUES	

Transportation Topic	Votes
State funding of bike routes	0
BICYCLE	
Conservation land used for bike trails to link streets, create bicycle paths off road, and create a circumferential bicycle network	24
Designated bike routes through downtown; promote Exeter as a bike friendly community, create a bike corridor and ensure Exeter is part of the statewide bike route system	17
Bicycle racks downtown	7
Businesses/employers to create incentives to support biking to work.	5
Enforcement of prohibition of bicycles on sidewalks	2
PEDESTRIAN ISSUES	
Additional sidewalks/safe walking routes at Swasey Parkway and surrounding neighborhoods	12
Sidewalks ending abruptly need extensions (i.e. Washington St, Winter St)	8
Promote safe means for walking/biking to schools, incl. safe walking routes (ie. walking school bus)	9
Extend sidewalks to business areas	0
SIGNAGE	
Permanent and accessible display for information	4
Dog walking signage	3
Safety signage for bicycle usage	1
Signage and striping of bike routes	1
Improve signage on residential streets	1
MAINTENANCE	
Better sidewalk plowing	0
Repaint traffic/parking lines more frequently	3
SAFETY	
Runner/jogger visibility	1
Rte 101/Epping road interchange is accident prone	1
Enforcement of speed violators	0
Refresher courses for motorists - awareness	0
OTHER	
Water route to Portsmouth – raising trestle at Stratham/Newfields	9
Courtesy campaign – driver behavior	3
Recognize vehicles are just one mode of transportation.	1
Downtown Restoration Project	1
Driver side mailbox drop-off in downtown location	1
How do we manage Segway type of transportation	1
Public education/awareness of transportation inter-relationships	0
Review policies related to driving and parking at the new high school	0
Encourage alternative modes of trans. i.e.golf carts, etc. (incentives for quiet/clean modes)	0
Coordinate parking and growth development	*
Develop information piece on Town’s parking and streets	*