

# **Transportation**

**November 4, 2015**  
**Adopted by Planning Board**

# 1. Introduction

The purpose of the Transportation Chapter is to identify transportation issues of concern to Plaistow officials and residents and to recommend proposed actions. Transportation planning is a local, regional and state responsibility and much of the long range transportation planning occurs at the regional and state levels based on input from local officials.

Although Plaistow is not one of the largest communities in the region in terms of population, its proximity to the Massachusetts border and the presence of NH Route 125 have combined to give the town an urban aspect often found in larger communities. In addition, many local residents commute to northern Massachusetts for employment. This situation presents the town with both opportunities and challenges with respect to transportation issues. This higher level of urbanization is accompanied by concerns such as traffic congestion and loss of rural character. However, there is also increased opportunity for public transportation and infrastructure improvements such as sidewalks and bike paths. Finding an appropriate balance between these opportunities and challenges is one of the goals of this master plan and a long-term goal for Plaistow. Demographics in New Hampshire and Massachusetts are changing and key populations will increasingly drive less and rely on public transit more. Importantly, the region's senior population is growing. Along with members of the Millennial Generation, people born between 1982 and the early 2000s, seniors drive significantly less than other cohorts.<sup>1</sup>

The continued maintenance and expansion of the local road network, parking, sidewalks, pedestrian amenities, and public transportation services play an important role in Plaistow's effort to maintain a quality of life and to plan for future growth. Maintaining an efficient road network is critical to the Town's economy which relies heavily its relationship with Massachusetts and plays a critical role in Plaistow's commercial development, as well as residents commuting south for employment. This Chapter provides a focus and direction regarding these concerns and issues.

## 2.0 Existing Conditions

### 2.1 Existing Roadway System

Highway access in the region is provided through Interstates 93, 95, and 495, U.S. Route 3, and a variety of other local and state roads, including Route 125. Interstates in metropolitan Boston and southern New Hampshire have peak-period congestion and capacity issues. I-93 in Massachusetts, in particular, has unstable traffic flow that is at or beyond capacity in key areas, making it among the most congested roadways in the nation. (See congestion maps below). The automobile commute from Plaistow to downtown Boston typically exceeds 100 minutes during peak hours, more than 2.5 times longer than a non-congested journey. Due to environmental concerns, cost, and community resistance, it is unlikely that significant roadway capacity will be added in the region in the near future, particularly in eastern Massachusetts. Therefore, congestion relief in the region will necessarily have to result from non-highway improvements.

The Town of Plaistow is served by three local major highways: NH Route 125, running roughly north to south through the central section of town; NH Route 121-A, also known as Main Street,

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<sup>1</sup> Plaistow Commuter Rail Extension Study Alternative Analysis Report, March 2015 HDR, Inc.

running roughly diagonally from the northwest corner of town to the south central area of the community; and NH Route 108, which runs north to south along the very eastern boundary of the town. A small section of NH Route 121 also serves the southern area at the Atkinson border. Routes 108, 121, and 125 all intersect Plaistow's southern border with Haverhill, Massachusetts.

### **NH Route 125**

This roadway is the key transportation corridor in the community, used as both a major commuter and commercial roadway linking the regional economies of New Hampshire and Massachusetts. Interstate 495 is located 1.5 miles to the south in Haverhill drawing many commuters from New Hampshire. Reviewing NHDOT hourly traffic figure from 2005 and 2015, a significant change in peak morning traffic volume was not found. In 2005, an average of 850 southbound cars were counted between 5 – 9 am, while in 2014 there was an average of 819 vehicles was noted. Early morning commuters, between 5 – 6 am decreased from an average 802/hour in 2005 to 753 in 2015. This roadway also links Massachusetts residents to Plaistow's retail corridor, drawing those who wish to avoid a sales tax; a major contributing factor in this retail corridor's success. Maintaining an adequate level of service along this corridor is critical to ensure the continued growth of the retail sector and the safety of the commuting public. During peak travel periods traffic congestion in the southern portions of this roadway can be severe.

### **NH Route 121**

With only a ½ mile long portion of NH121 located in Plaistow, this roadway is bordered primarily by residential land uses and carries commuter traffic from towns lying to the northwest, along with shoppers heading towards NH Route 125. Traffic levels have not changed over the last ten years and is used by area residents to avoid some of the traffic congestion seen along NH 125.

### **NH Route 108**

Although primary residential, a number on non-residential uses lie along this roadway which feed communities to the northeast of Plaistow. Although this roadway has seen an increase in traffic, it does not connect to an interchange with I-495 but does provide another means to access Massachusetts and can be used to avoid the congestion of NH 125.

### **NH Route 121A (Main Street)**

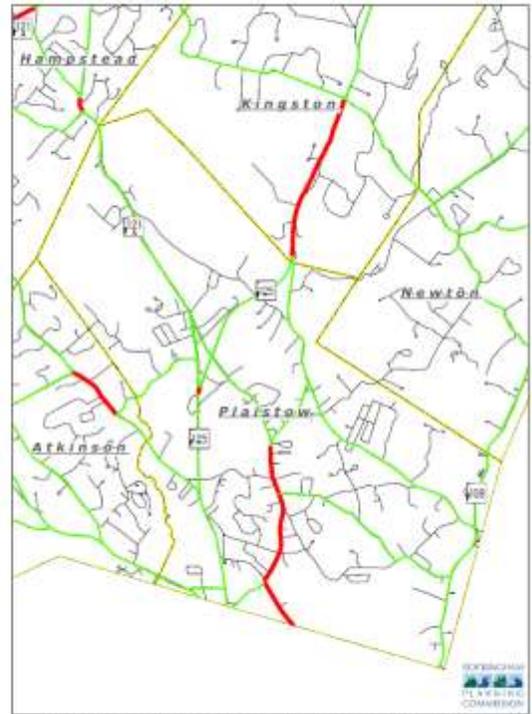
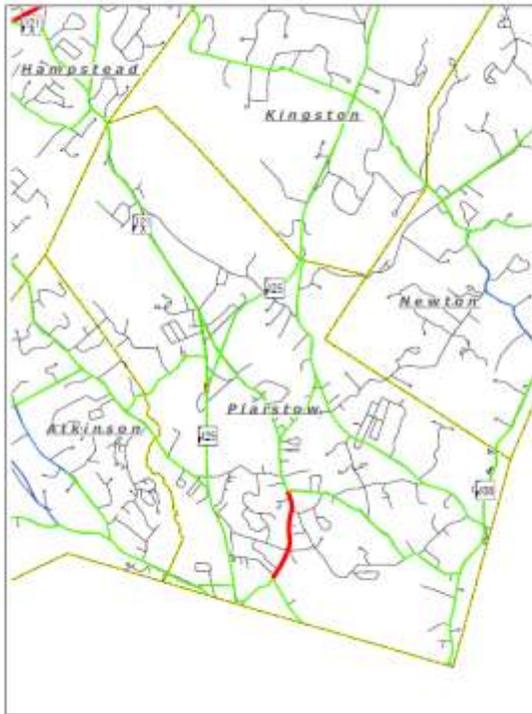
As the main spine of the community, this route attracts traffic from the majority of the community, along with connecting to communities' lying to the northwest. This street is predominately residential, but many non-residential uses either front on the roadway or have access to it. Given the length of this roadway, traffic volumes vary considerably depending on the location. As outlined in Table T-4 below, traffic ranges from 11,000 vehicles per day at the Hampstead town line to 2,700 at the Massachusetts border.

In addition to these state roads, NHDOT also maintains an additional 5.4 miles of local roads. Plaistow has a road network of 36.36 miles of town-maintained roads.

## 2010 Base Year Congestion

**AM Peak Hour**

**PM Peak Hour**



- Uncongested
- Moderate
- Congested

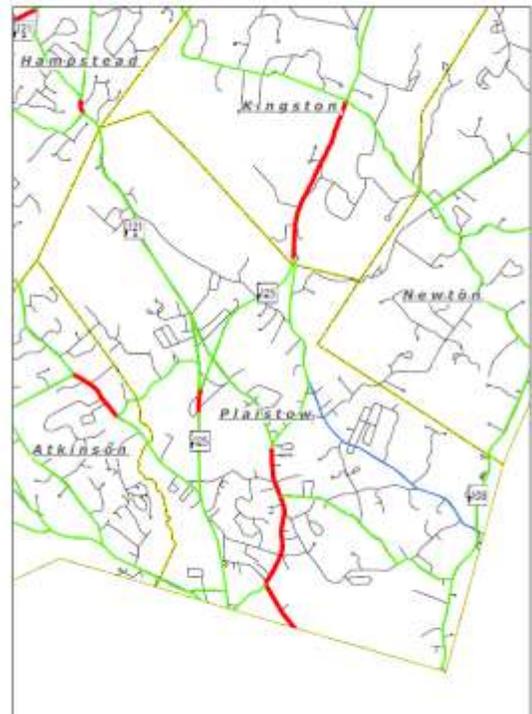
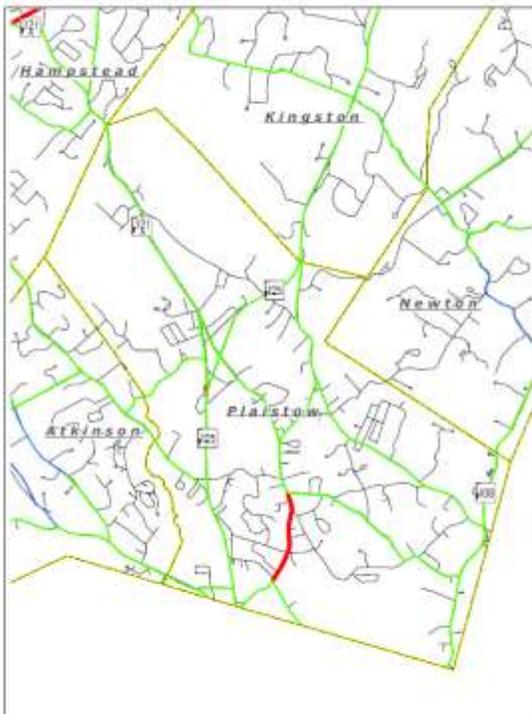


These maps reflect the baseline 2010 congestion which is used as a comparison to the 2040 future year congestion. The analysis was done using the Seacoast Regional Transportation Model.

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**AM Peak Hour**

**PM Peak Hour**



- Uncongested
- Moderately Congested
- Congested



These maps reflect the 2040 congestion which is used as a comparison to the 2010 baseline year congestion. The analysis was done using the Seacoast Regional Transportation Model.

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## 2.1.1 Roadway Classifications

The New Hampshire Department of Transportation (NHDOT) divides all roads in the state into certain classifications. There are two methods of classification commonly used to identify roadways. The Administrative Classification System, also referred to as Systems Class, determines which governmental agency is responsible for maintenance of each road. (See the Systems Classification Map) The Functional Classification System identifies the intended function of the roadway. Both classification systems are useful for town planning purposes. Careful review of this information with traffic volume data can indicate which roads may need reclassifying and/or upgrading to ensure that the system can accommodate future volumes.

### 2.1.1.1 Administrative Classification

There are 57.6 miles of roads in Plaistow, most of which are in two classes of roads. Over 63% or 36.36 miles are classified as Class V Rural Highways and 28.8% or 16.62 miles are classified as Class II State Aid Highways. These include Route 121A and Route 125. **Table T-1** provides a list of each administrative class and the number of miles of each for Plaistow. These roads are also outlined on Map T-1.

**Table T-1**  
**Plaistow Road Classifications – Administrative Class**

Administrative Class	Class Definition	Miles	Percent
Class 0 Private Roadways		4.6	8.0
Class I Trunk Line Highways	All existing or proposed highways that are part of the primary state highway system. The NHDOT is responsible for the maintenance and construction costs of these highways except for those portions that lie within compact sections of towns and cities.	0	0
Class II State Aid Highways	All existing or proposed highways that are part of the secondary state highway system. Maintenance and construction costs are controlled by the NHDOT.	16.62	28.8
Class II Recreational Roads	All roads leading to and within state reservations designated by the legislature.	0	0
Class IV Town and City Streets	All highways located within state designated compact sections of cities and towns. Town and cities control maintenance and construction costs of these highways.	0	0
Class V Rural Highways	All other traveled highways, which the town has the duty to maintain regularly, and shall be known as town roads.	36.36	63
Class VI Unmaintained Highways	All other existing public ways, and shall include all highways discontinued as open highways and made subject to bars and gates, and also highways that have not been suitably maintained for travel for five years or more.	0.079	0.1
Scenic Roads	Except for Class I or II highways, roads are designated as scenic roads by a town or city. Maintenance and construction of roads is strictly regulated.	0	0
<b>Total</b>		57.65	100.00

*Source: RPC Roads GIS Data Layer, 2012*

### 2.1.1.2 Functional Classification

The Functional Classification System defines the expected role that each road plays in overall traffic flow and land access. Of the 57.7 miles of roads in Plaistow, 28.28 miles (49.35 %) are considered locals, 14.1 miles (24.43 %) are considered collectors, and 10.47 miles (18.14 %) are considered arterials. **Table T-2** is a list of each functional class and the number of miles of each for Plaistow. See Transportation Map of Plaistow below.

**Table T-2  
Plaistow Road Classifications – Functional Class**

<b>Functional Class</b>	<b>Class Definition</b>	<b>Miles</b>	<b>Percent</b>
Arterials	Roadway systems that provide intercity and interstate traffic service. Traffic speeds typically are relatively high and there is a minimal amount of interference to through traffic. The arterials in Plaistow are Route 125, Main Street, and Newton Road (Route 108).	10.46	18.14
Connectors	Roads that connect arterials with minimal interference.	0	0
Collectors	Roads that provide traffic service between arterials and local roads. Collectors in Plaistow tend to be the major east-west roadways that connect the major north-south arterials such as Old County Road, Forrest Street, Kingston Road, and East Road	14.1	24.43
Locals	Access roads from local destination points to collector roads. Typically these roads provide direct access to land, but little or no connection between locations. Examples of local roads in Plaistow are Cottonwood Road, Pollard Road, Harriman Road, and Witch Lane.	28.47	49.35
Special Purpose Roads	Roads that service recreational areas or some other area of public need. There are no such roads in Plaistow.	0	0
Non-Public Roads		4.668	8.09
<b>Total</b>		<b>57.7</b>	<b>100.00</b>
<i>Source: RPC GIS Roads Data Layer, 2012</i>			

# Transportation Map Plaistow New Hampshire

## LEGEND

- Traffic Count Locations
- Park & Ride Locations
- Elevation Contour -25 Foot Interval
- Passenger Rail Service - Boston to Portland
- COAST Bus Service
- Statewide Bike Routes
- Regional Routes
- Rails toTrails

## BASE FEATURES

- |                                   |                             |                               |
|-----------------------------------|-----------------------------|-------------------------------|
| <b>Roads by Legislative Class</b> | <b>Political Boundaries</b> | <b>Surface Water Features</b> |
| Class I - Primary System          | State Boundary              | Stream, Shoreline             |
| Class II - Secondary System       | County Boundary             | Intermittent Stream           |
| Class III - State Recreational    | Town Boundary               | Other Water Feature           |
| Class IV - within Compact         | Railroad                    | Sedges of Water               |
| Class V - Municipal               | Abandoned Railroad          | USGS Wetlands                 |
| Class VI - Unmaintained Municipal | Major Powerline             | Adjacent Municipalities       |
| Private                           | Major Pipeline              |                               |
| Trail                             |                             |                               |

This is a public report by the Rockingham Director. All features shown are subject to the effect of this date.

**MAP DATA SOURCES**

Traffic Count Locations were mapped by NHDOT and RPC over our standard base map. Traffic Counts were collected by NHDOT and RPC. Traffic count locations are labeled on this map by a unique "Site Code" value. Found in the NHDOT traffic count database. For traffic volume information refer to the most recent information found on the NHDOT website: <http://webdot.state.nh.us/transportation/trafficcounting/rockingham.htm>

Park & Ride Locations were mapped by RPC.

Bicycle Routes were provided from the NH DOT Bureau of Transportation Planning Bicycle/Pedestrian Program. The routes were developed with the assistance of the Bicycle and Pedestrian Transportation Advisory Board and many experienced cyclists throughout the state.

Elevation Contour lines were digitally generated from USGS 1:24,000, 7.5 minute digital elevation model (DEM) files. DEM files contain point strips of surface elevations at a spacing of 20 meters in both the x and y directions. Contour lines were generated at an interval of 25 feet. Production and distribution by GRANIT, CORP, Durham, NH.

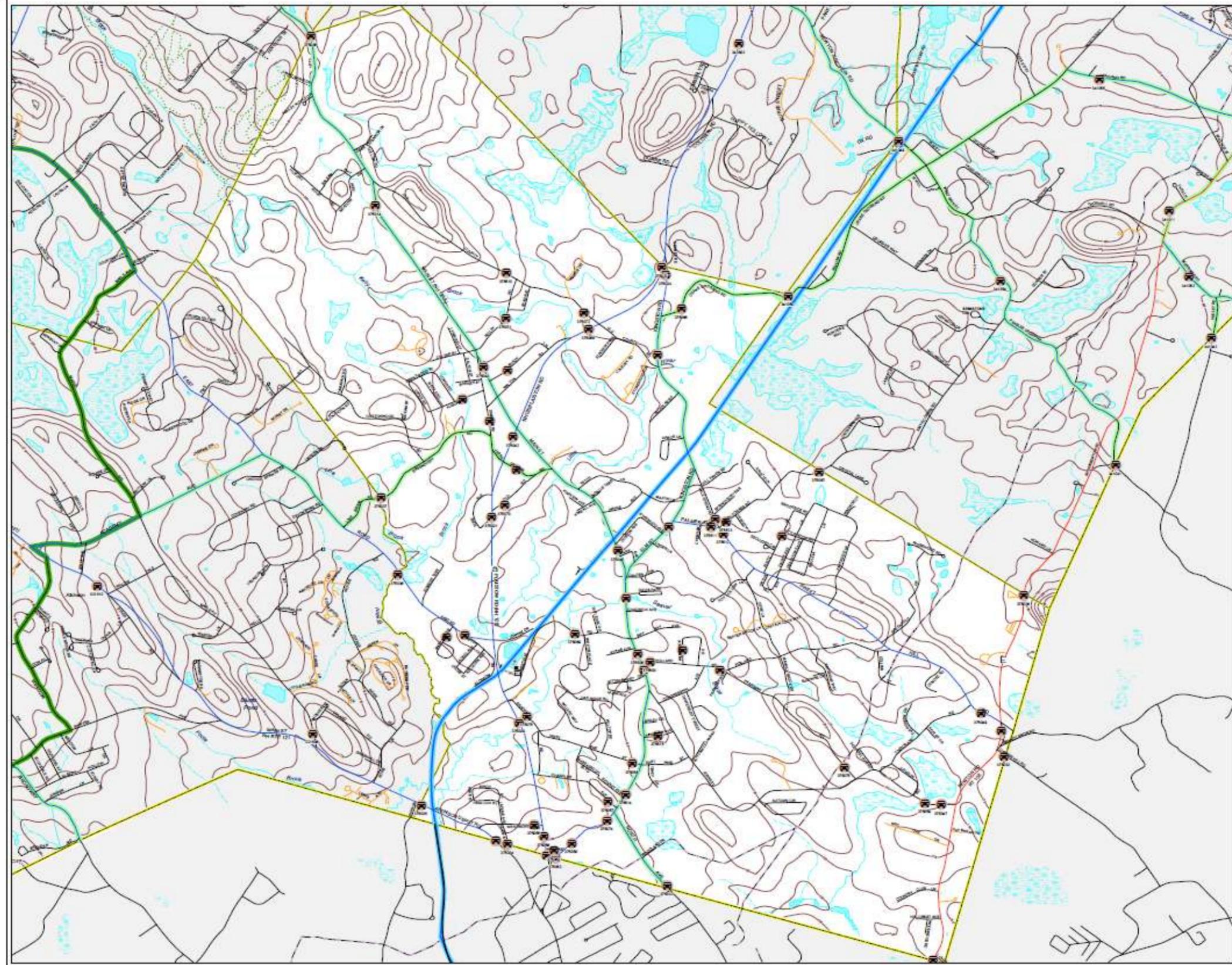
Transit Routes consist of all roads with regularly scheduled bus services and contracts with passenger service. These routes were mapped by RPC, which makes no claim to their completeness or accuracy. This information was last updated in 2004.

**Base Features**

Base Features (Transportation, political and hydrographic) were administered from USGS Digital Line Graph data, 1:24,000, as archived in the GRANIT database at Complex Systems Research Center, Institute for the Study of Earth, Oceans and Space, University of New Hampshire, Durham, NH, 1992/1999. The data within the Rockingham Planning Region have been updated by Rockingham Planning Commission and by NH Department of Transportation through ongoing efforts.



Map created on Tuesday, March 22, 2005 4:51:43 PM  
 Path: \\Eveteris-Drive\o-Plaistow\o-maps\o-std\Trans\_Pla\_24x36.mxd  
 Features represented on this map may not be complete or current at the time of map production. RPC welcomes input concerning errors or omissions.



### 2.1.1.3 Scenic Roads

Although Plaistow has not designated any roads as scenic, the following information describes the procedure to designate a scenic road. Roads may be designated within a town as scenic roads, as specified by RSA 231:157. In order to designate any road in a town as scenic, other than a Class I or Class II highway, ten persons owning land abutting the proposed road can petition the town to do so. In turn, the town votes on it at any regular or special town meeting. Voters can also rescind the designation of a scenic road at a regular meeting upon petition.

There are two potential benefits for the town in designating scenic roads. First, it establishes a town procedure for protecting the rural landscape within a public right-of-way. Secondly, it can demonstrate the public's interest to preserve the rural and historic qualities of a road. Both can help preserve the scenic quality of the road in the event that changes to the road are proposed (i.e. widening, removal of walls and trees, etc.).

The effects of designating a road scenic are detailed in RSA 231:158. Included are restrictions for the repair, maintenance, reconstruction, or paving work. Two important facets of the designation are that it does not affect the eligibility of the town to receive construction, maintenance, or reconstruction funds, or affect the rights of any landowner.

### 2.1.2 Traffic Volumes

Traffic volume data is one of the major components in evaluating traffic characteristics within Plaistow. This information is an important part of the process of establishing priorities for future roadway improvements. Design and safety standards for roadways typically incorporate traffic count data. The generally accepted standard for capacity for a two-lane road to maintain a relatively high level of service is approximately 10,000 vehicles per day. Once this figure is exceeded, there is also deterioration in a road's capacity for handling traffic efficiently.

The NHDOT's Bureau of Transportation Planning monitors traffic throughout the state and publishes monthly reports. The volume of traffic on the major roads of Plaistow has remained level or declined the past five years (2009-2013) as indicated by the NHDOT/Rockingham Planning Commission traffic volume counts presented in **Table T-3**; **Table T-4** outlines the percentage decline in traffic (over a variety of timelines) on some of these key roadways.. This trend is mostly likely the result of the Great Recession that significantly altered the job market in the area and thereby has changed commuting patterns. In the area of the Main Street intersection with Route 125 has been closed which may have also altered traffic patterns. It should be noted that Route 125, south of Wentworth Ave. did show in increase in traffic between 2010 & 2011, which conflicts with other trends in the community. The most recent comprehensive counts were taken in 2013. The Traffic Counts Map depicts traffic volume on key streets within the community. See Traffic Volumes Map below.

**Table T-3**

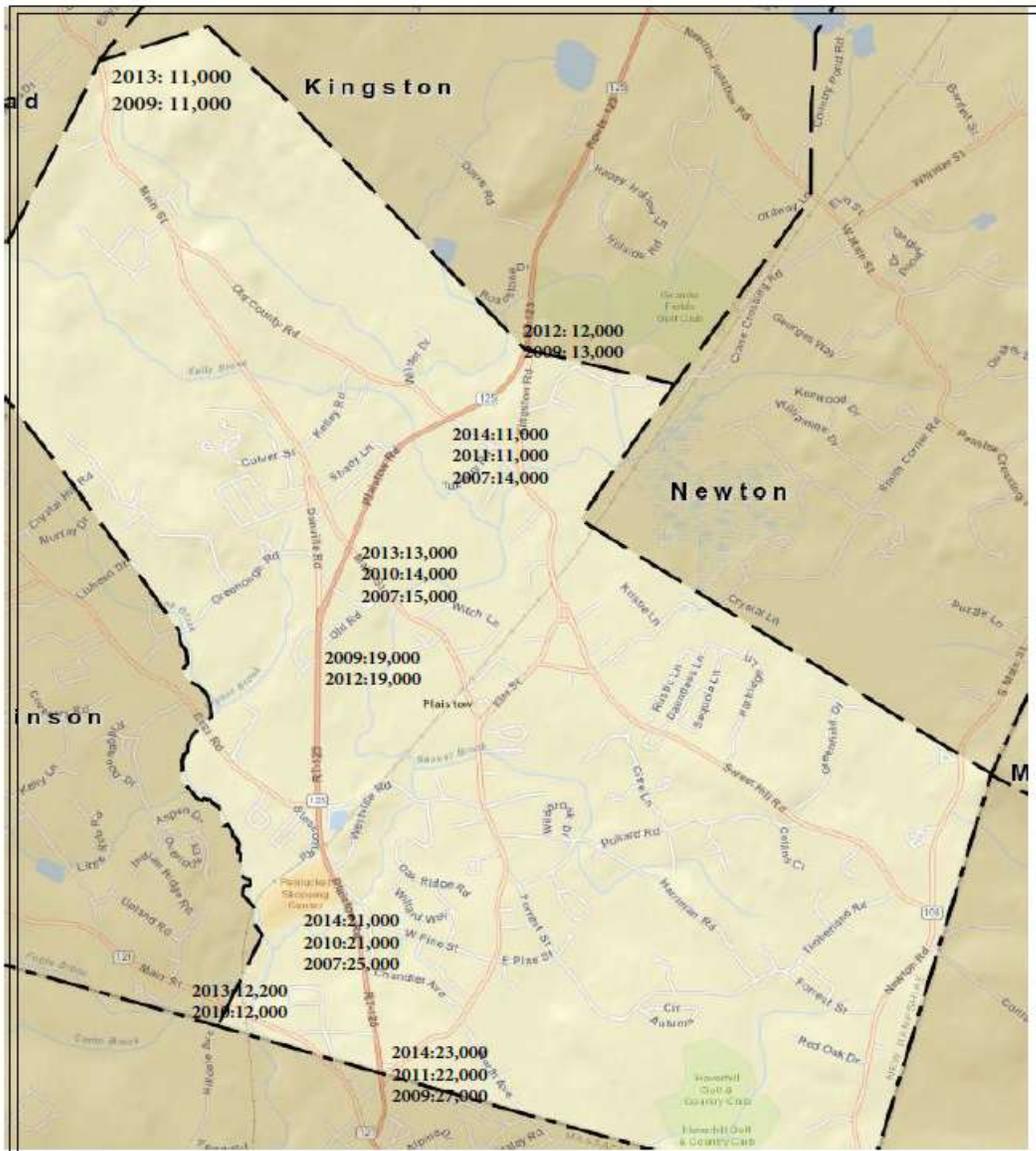
### Roadway Traffic Volumes 2007 – 2014

2007	2008	2009	2010	2011	2012	2013	2014	Location
*	*	19000	*	*	19000	*	*	NH 125 SOUTH OF OLD RD (SB-NB)
*	*	5000	*	*	4600	*		NH 108 (NEWTON RD) NORTH OF FORREST ST
*	*	13000	*	*	12000	*		NH 125 AT KINGSTON TL (SB-NB)
*	2500	*	*	3000	*	*	2300	KINGSTON RD NORTH OF CRANE CROSSING RD
<b>4700</b>	*	*	5400	*	*	4800		NH 108 (NEWTON RD AT NEWTON TL
*	*	4700	*	*	6000	*		NH 108 (NEWTON RD) AT MASS SL (SB-NB)
<b>11000</b>	*	*	*	9600	*	9100		NORTH AVE AT MASS SL (SB-NB)
<b>12000</b>	*	*	12000	*	*	12200		NH 121 (ATKINSON DEPOT RD) AT ATKINSON TL
<b>4900</b>	*	*	4500	*	*	5100		EAST RD AT ATKINSON TL
<b>2700</b>	*	*	2200	*	*	2200		GREENOUGH RD AT ATKINSON TL
*	*	11000	*	*	*	11000		NH 121A (MAIN ST) AT HAMPSTEAD TL
<b>25000</b>	*	*	21000	*	*	*	21000	NH 125 AT LITTLE RIVER
<b>11000</b>	*	*	10000	*	*	9300		NH 121A (MAIN ST) SOUTH OF DAVIS PARK RD
*	6200	*	*	8100	*	*	7700	DANVILLE RD NORTH OF GREENOUGH RD
<b>15000</b>	*	*	14000	*	*	13000		NH 125 SOUTH OF NH 121A
*	*	6600	*	*	5100	*		NH 121A (MAIN ST) E. OF DANVILLE RD (EB-WB)
<b>3700</b>	*	*	3700	*	*	4300		KINGSTON RD SOUTH OF OLD COUNTY RD
*	*	6700	*	*	6600	*		NH 121A (MAIN ST) S. OF DUSTON AVE (SB-NB)
<b>6000</b>	*	*	5800	*	*	5600		ELM ST SOUTH OF PALMER AVE
<b>1600</b>	*	*	1600	*	*	950		FORREST ST EAST OF NH 121A
<b>3000</b>	*	*	2700	*	*	2700		POLLARD RD EAST OF CONGRESSIONAL AVENUE
<b>3600</b>	*	*	3500	*	*	3500		SWEET HILL RD WEST OF NH 108
<b>8700</b>	*	*	8800	*	*	8800		NH 121 (ATKINSON DEPOT RD) AT MASS SL
*	4100	*	*	2800	*	*	2700	NH 121A AT MASS SL
*	*	27000	*	22000	*	*	23000	NH 125 AT MASS SL (SB-NB)
<b>5400</b>	*	*	4700	*	*	5300		WENTWORTH AVE WEST OF NH 125
*	*	*	19000	22000	*	*		NH 125 SOUTH OF WENTWORTH AVE
<b>2800</b>	*	*	2200	*	*	2200		CHANDLER AVENUE WEST OF NH 121A
<b>2100</b>	*	*	1800	*	*	1600		WEST PINE ST WEST OF NH 121A
*	1500	*	*	*	1700	*	1600	FORREST ST EAST OF JOHNSON DR (EB-WB)
*	1200	*	*	1300	*	*	1100	CRANE CROSSING RD EAST OF KINGSTON RD
*	1100	*	*	1200	1100	*	1100	SMITH CORNER RD AT NEWTON TL (EB-WB)
<b>14000</b>	*	*	*	11000	*	*	11000	NH 125 SOUTH OF OLD COUNTY RD
<b>3700</b>	*	*	3600	*	*	4100		WESTVILLE RD OVER LITTLE RIVER (EB-WB)
*	*	990	*	*	1700	*		OLD RD EAST OF NH 125 (EB-WB)
<b>1700</b>	*	*	1900	*	*	2000		OLD COUNTY RD WEST OF NH 125
*	2300	*	*	1500	*	*	2000	GARDEN RD OVER LITTLE RIVER

**Table T-4**

## Traffic Volume Decline

Location	Start Year Volume	End Year Volume	% Decline
NH 125 SOUTH OF OLD ROAD	2009 - 19,000	2012 - 19,000	-
NH 125 AT LITTLE RIVER	2010 - 21,000	2014 - 21,000	-
NH 125 SOUTH OF NH 121A	2010 - 14,000	2013 - 13,000	-7.1%
NH 125 AT MASS STATE LINE	2009 - 27,000	2014 - 23,000	-14.8%
NH 125 SOUTH OF OLD COUNTY ROAD	2011 - 11,000	2014 - 11,000	-
NH 121A MASS STATE LINE	2008 - 4,100	2014 - 2,700	-34.1 %



Key Traffic Volumes  
Plaistow, NH  
1 Inch = 2974 Feet  
May 22, 2015



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

www.cai-tech.com  
CAI Technologies

## 2.1.3 Commuting Patterns

**Table T-5** details the commuting patterns of Plaistow residents derived from American Community Survey data. In May of 2015 the Planning Board conducted a community survey. The results of the commuter questions are outlined in **Table T-6**.

**Table T-5**  
**Place of Work for Residents of Plaistow, NH**

Work Place in New Hampshire	# of Plaistow Residents	% of total	Work Place in Massachusetts	# of Plaistow Residents	% of total
Salem	247	12.1%	Haverhill	357	18.1%
Plaistow	828	40.5%	Andover	238	12.1%
Manchester	112	5.5%	Lawrence	136	6.9%
Londonderry	110	5.4%	Other Essex County	482	24.4%
Other Rockingham County	551	27%	Middlesex County	627	31.7%
Other Hillsborough County	63	3.1%	Suffolk County	85	4.3%
Strafford Co.	96	4.6%	Other Massachusetts	17	0.9%
Other NH	38	1.9%	Other States	33	1.7%
<b>Total</b>	<b>2042</b>	<b>100</b>	<b>Total</b>	<b>1975</b>	<b>100</b>

*Source: 2006-2010 American Community Survey 4 Year estimates. The sample size on these estimates is very small for New Hampshire and leads to significant margins of error (MoE).*

**Table T-6**  
**Town of Plaistow Master Plan Survey Results**

Travel Category	Total Number of Commuters Identified	Percentage of Plaistow Resident Commuters
<b>Work outside of Plaistow, travel 0 to 5 miles to work</b>	313	26.3%
<b>Work outside of Plaistow, travel 6 to 10 miles to work</b>	307	25.8%
<b>Work outside of Plaistow, travel 11 to 20 miles to work</b>	320	26.9%
<b>Work outside of Plaistow, travel more than 20 miles to work</b>	306	27.4%
<b>Total</b>	1,276	100

## 2.1.4 Accidents

One of the key items in determining a roadway's sufficiency rating is its safety. In an effort to assess roadway safety, it is useful to gather and analyze accident data. Accident data is collected by local and state police and then provided to the NHDOT.

At present, the NHDOT maintains the database and uses the information in its roadway planning projects. However, the data is not analyzed on a more general basis for local planning purposes to determine high accident areas. A portion of roadway becomes a safety concern if there are a high number of accidents over a given period of time.

The majority of traffic accidents in Plaistow have occurred on Plaistow Road/Route 125 in the southern portion of town near the Massachusetts state border. See Accident Inventory Map below (2007-2014). At the intersection of Chandler Avenue and Plaistow Road/Route 125 a major decrease in accidents has occurred as the result of roadway improvements at that intersection.

The intersections with the most accidents are Plaistow & Walmart: 223 and Plaistow & Market Basket: 169. In addition, Danville Road also had a high rate of accidents, 128, over the ten year time line and may be related to the proximity to both the Middle and High School. These two intersections and roadway should be monitored to assess the causes of these accidents and determine if improvements are necessary. **Table T-7** lists accident locations and the number of accidents that have occurred for each year between 2007 and 2014, and **Table T-7a** lists accident severity for the same study period. The majority of accidents occurring between 2007 and 2014 resulted in property damage only with no injuries.

**Table T-7**  
**Accident Locations\***

Location	2007	2008	2009	2010	2011	2012	2013	2014	Total
DANVILLE RD & GREENOUGH RD	6	3	4	6	4	3	2	2	30
DANVILLE RD	20	8	19	18	10	11	16	21	123
GREENOUGH RD & COTTONWOOD RD	0	0	0	0	3	1	0	0	4
GREENOUGH RD	8	6	11	4	12	8	9	8	66
JESSE GEORGE RD & PLAISTOW RD	0	3	2	3	4	0	1	0	13
NORTH AVE & MAIN ST	9	8	9	4	7	6	5	6	54
NORTH AVE	2	4	0	0	1	2	2	1	12
WENTWORTH AVE	0	2	1	0	2	3	3	3	14
WESTVILLE RD & WHITON RD	0	0	1	0	0	1	0	1	3
WESTVILLE RD	9	13	11	6	14	12	7	14	86
NEWTON RD & SWEET HILL RD	0	3	1	3	5	4	2	3	21
ATKINSON DEPOT RD & WENTWORTH AVE	2	1	1	1	0	3	1	1	10
PLAISTOW RD & CHANDLER AVE	3	0	2	1	1	1	0	3	11
PLAISTOW RD & DANVILLE RD	5	1	4	1	3	2	6	5	27
PLAISTOW RD & EAST RD	5	2	3	5	3	6	3	2	29
PLAISTOW RD & GARDEN RD	1	0	0	0	0	0	0	0	1
PLAISTOW RD & GREAT ELM PLAZA	0	1	2	3	1	3	0	1	11
PLAISTOW RD & HASELTINE ST	1	6	6	4	7	6	15	5	50

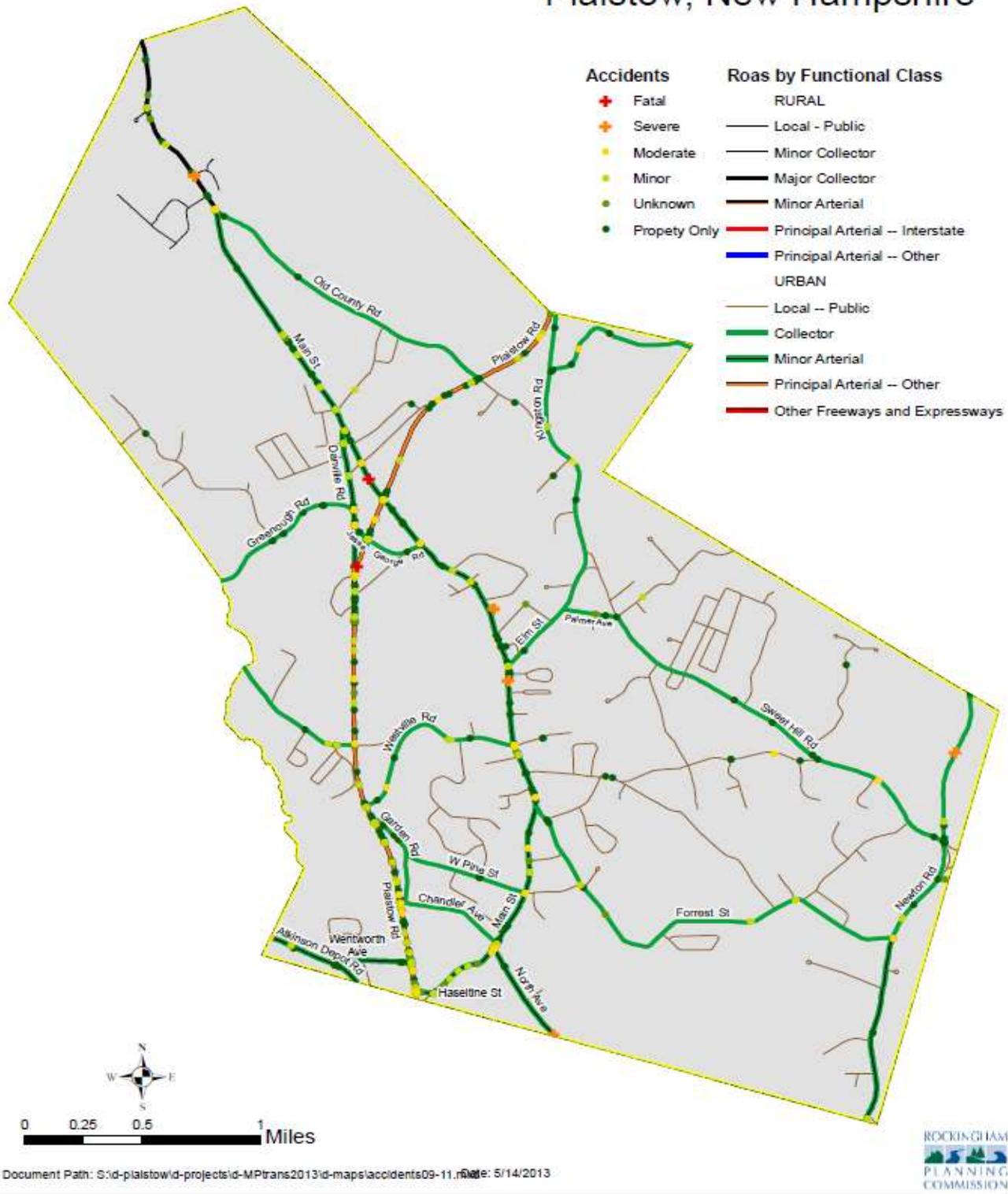
PLAISTOW RD & JESSE GEORGE RD	2	4	1	7	1	0	1	0	16
PLAISTOW RD & JOANNE DR	1	3	2	2	4	0	1	0	13
PLAISTOW RD & KINGSTON RD	0	2	1	2	2	2	0	0	9
PLAISTOW RD & MAIN ST	5	7	7	11	10	5	6	4	55
PLAISTOW RD & MARKET BASKET PLAZA	16	12	23	25	22	25	13	24	160
PLAISTOW RD & OLD COUNTY RD	7	2	2	1	5	1	3	2	23
PLAISTOW RD & OLD RD	1	1	1	0	0	0	1	1	5
PLAISTOW RD & ROSE AVE	0	0	0	1	0	0	0	0	1
PLAISTOW RD & WALMART PLAZA	23	26	24	22	21	27	32	45	220
PLAISTOW RD & WALTON RD	3	0	0	0	0	3	0	0	6
PLAISTOW RD & WENTWORTH AVE	4	4	2	4	6	6	5	4	35
PLAISTOW RD & WESTVILLE RD	5	6	5	3	6	7	3	4	39
MAIN ST & CHANDLER AVE	1	1	3	1	7	6	3	0	22
MAIN ST & CULVER ST	0	1	1	0	0	0	0	1	3
MAIN ST & DANVILLE RD	3	2	4	2	1	3	0	3	18
MAIN ST & DEER HOLLOW RD	1	2	2	3	1	1	1	1	12
MAIN ST & ELM ST	4	0	3	1	1	1	2	0	12
MAIN ST & HASELTINE ST	2	1	2	3	0	2	1	2	13
MAIN ST & NORTH AVE	9	8	9	4	7	6	5	6	54
MAIN ST & OLD COUNTY RD	1	1	3	3	3	2	3	6	22
MAIN ST & POLLARD RD	1	2	3	2	1	2	0	1	12
MAIN ST & WALTON RD	1	2	3	2	1	2	0	1	12
MAIN ST & WEST PINE ST	6	2	2	2	1	3	2	4	22
MAIN ST & WESTVILLE RD	2	5	1	8	4	6	4	3	33

\* Only the intersections that had three or more accidents in any given year were included in this table. Plaistow Rd. & Main Street figures note all accidents that occurred on those roadways that did not occur at an intersection.

**Table T-7a  
Accident Severity**

Severity	2007	2008	2009	2010	2011	2012	2013	2014	Total
Fatality	2	0	1	1	0	1	0	0	5
Incapacitating/Severe Injury	5	3	0	2	3	2	1	0	16
Non-Incapacitating Injury	13	18	14	13	15	14	29	22	138
Possible/Minor Injury	49	28	32	49	30	42	39	44	313
Unknown if Injured	28	16	17	11	10	30	29	28	169
No Injury/Property Damage Only	214	197	227	222	210	549	603	666	2,888

# Accident Inventory 2009-2011 Plaistow, New Hampshire



## 2.1.5 Road Surface Management System (RSMS)<sup>2</sup>

The Plaistow Highway Department manages the maintenance and reconstruction of the roadway system that is under local jurisdiction. In 1998, the Department worked with the University of New Hampshire Technology Transfer Center (UNHT<sup>2</sup>) to conduct a road condition survey and used the Road Surface Management System (RSMS) to categorize the communities 35.7 miles of roadway based upon pavement condition and drainage. Each street was then rated on pavement condition, drainage, traffic volume, and importance. The Highway Department updated this information in 2013. Reports, based on road conditions and costs of road maintenance have been generated and linked to the Geographic Information System (GIS). This comprehensive road analysis allows the community to direct finite road improvement resources to where they are needed most to ensure a consistent level of road maintenance is achieved. The Pavement Management Program Roadway Surface Rating, along with the Pavement Management Program Map below outlines proposed improvements to the town's roadways. The community budgets \$225,000 a year to address these needed improvements. The rating system consists of a range of values scaled from 1 -100 and is broken down into five specific categories:

Rating	Description
1 - 50	Reclamation
50 - 70	Shim/Overlay
70 - 80	Pavement Preservation
80 - 90	Crack Seal
90 - 100	No Improvements Needed

### Components of the RSMS Program

The RSMS contains five components:

**Road Inventory:** The inventory contains essential information for the RSMS management process. Managers of this system divide the road network into sections based on surface condition and changes in geometry. Information is gathered through historical data analysis and a windshield study.

**Road Surface Condition Survey:** RSMS measures road condition in terms of the extent of surface distress and drainage characteristics. The default surface types and distresses were developed for local New England road networks.

**Priority Analysis:** Based on surface condition, the RSMS program categorizes each road section and determines a strategy for its repair. It then calculates a priority value for each road section.

**Repair Selection:** The RSMS program contains information on many specific road repairs. Users can also customize the program to utilize repair strategies that are favored in a particular municipality. RSMS provides a short list of repairs appropriate for each road section. When users select a specific repair, RSMS calculates the cost for that section and the total cost for the network.

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<sup>2</sup> Asset Management Program, Final Report July 2013, BETA

**Planning & Budget Preparation:** Users can plan repairs in single or multiple years by selecting different repairs and analyzing the effect on the total cost. This allows municipalities to create both short and long term budgetary plans which are useful in the development of municipal capital improvement programs. The RSMS software also includes work orders to document completed work and its associated costs.

The Town of Plaistow includes the Road Surface Management System (RSMS) expenses within its Capital Improvement Program.

### 2.1.6 Park and Ride Lots

Plaistow is served by one NHDOT maintained park and ride lot. Located just off NH Route 125 on Westville Road, the lot serves predominantly as a connection between private automobiles and carpools. The lot has a capacity of 275 parking spaces and attendant amenities now include lights and a shelter. Park and Ride lots facilitate multi-modal transportation where people can easily transfer from one mode to another.

### 2.1.7 Main Street Intersections - Level of Service

The Main Street Traffic Calming Study<sup>3</sup> included a Level of Service (LOS) analysis for several Main Street intersections. See Section 3.4 for more details about the traffic calming study.

Traffic engineers use a rating system referred to as Level of Service (LOS) to determine the functional capabilities of intersections. This ranking system is a “quantitative measure of the effect of a number of factors including roadway geometrics, travel speed, travel delay, freedom to maneuver, and safety”. The possible levels are ranked from A through F with an LOS of A indicating free flowing traffic, no safety concerns, and proper roadway geometry and with an LOS of F being characterized as having severe time delays, or poor roadway geometry.

Included in the Traffic Calming Study was a PM peak analysis of eight key intersections along Main Street as shown in **Table T-8**. Except for Forest and West Pine Streets, six of the intersections demonstrate significant operational delays. Addition analysis will be required to justify the need for the installation of signals, but this information provides significant insight into dangerous intersections. The Delay figures noted for both Chandler and North Avenue demonstrate that these two intersections are the most problematic.

**Table T-8**  
Level of Service for Main Street Intersections

Street Name	LOS	Delay	95% Queue Length
Elm Street	F	52.9	7.84
Westville Road	E	36.8	4.52
Pollard Road	E	38.6	3.53
Forest Street	C	19.8	1
East Pine Street	F	86.4	3.81
West Pine Street	C	24.7	2.1
Chandler Avenue*	F	286.2	3.17
North Avenue**	F	317.2	35.8

<sup>3</sup> Main Street Traffic Calming Report, April 2011, NHDOT & Rockingham Planning Commission.

Town of Plaistow  
New Hampshire



Pavement Management  
Program

Roadway Inventory  
Surface Rating and Suggested Repair

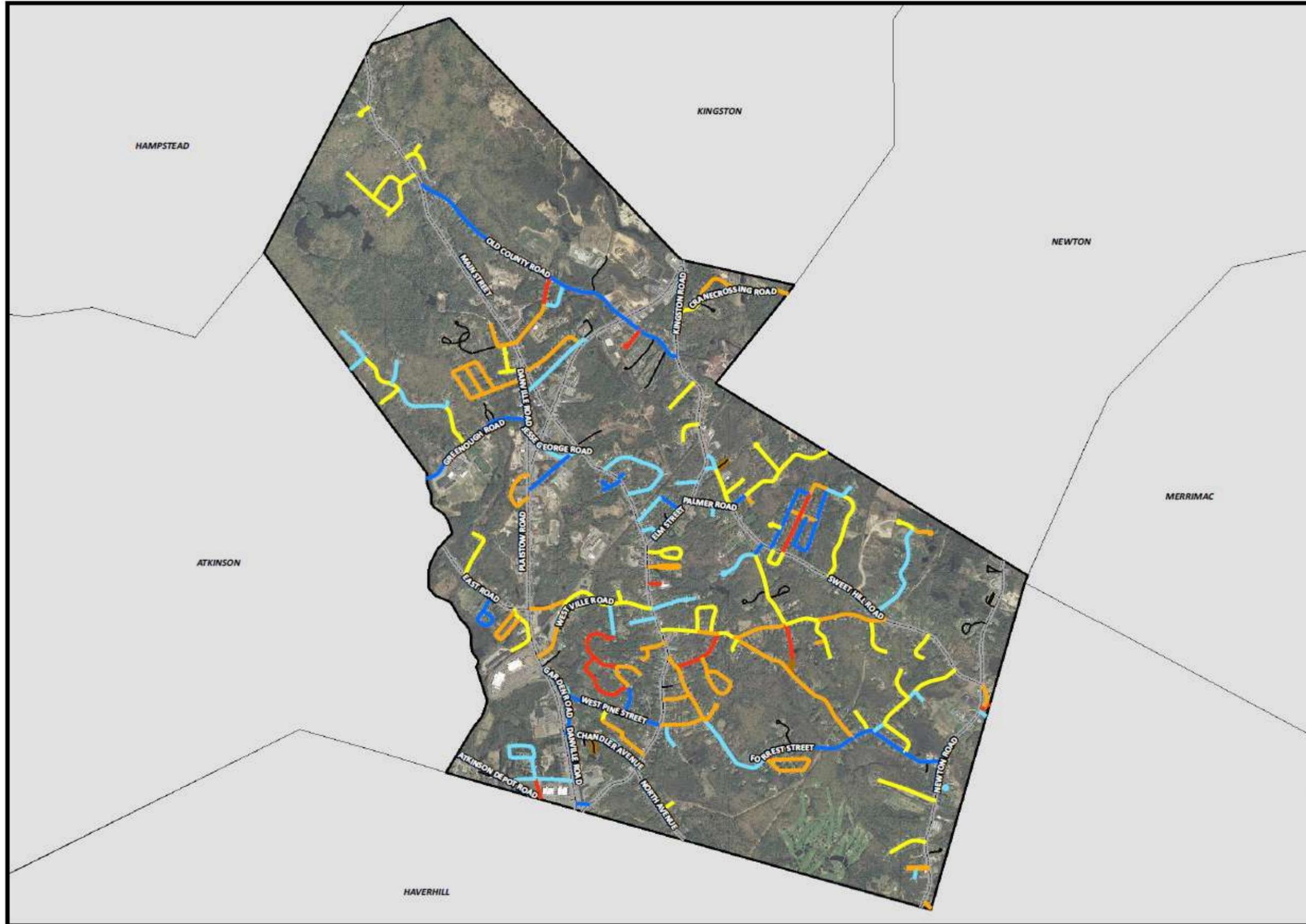
Map Legend

- 0 - 50 Reclamation
- 50 - 70 Shim and Overlay
- 70 - 80 Pavement Preservation
- 80 - 90 Crack Seal
- 90 - 100 Defer
- State
- Private
- Gravel Road



Date:  
October 8, 2014  
Scale: Not To Scale

This map is intended to support the inventory of real property of the Town of Plaistow. Map data should not be interpreted as the actual field survey data. This data should not be used for legal description or conveyance purposes.



## 2.2 Bridges

The NHDOT and the Plaistow’s Highway Department are responsible for bridge maintenance and construction. There are nine bridges in Plaistow. Two of the bridges are under the jurisdiction of the town and the remaining seven are under the jurisdiction of the NHDOT. **Table T-9** lists all of the bridges in the Town of Plaistow along with the year built, their location, last inspection date, sufficiency rating, and condition.

The NHDOT has a statewide bridge inspection program that is based on the National Bridge Inspection Standards System. All bridges are inspected every two to three years and depending upon location, use, and condition they may be inspected on a less formal basis more frequently. Bridge condition is rated on a numerical system from 1-100 where the higher number rating the better the condition of the bridge. From this inspection-rating program, priorities are established for maintenance, repair, and replacement of bridges.

- Structurally Deficient (SD) are those bridges that due to aging and deterioration no longer meet the road standard for which it serves;
- Functionally Obsolete (FO) are those bridges that due to the changing nature of the roadway and the service it provides no longer meets road standards;
- Red List (RL) are those bridges that due to their current conditions require inspection twice a year.

If a bridge is red listed, it receives the highest priority for repair and/or replacement. Currently there are no red listed bridges in the community.

**Table T-9  
Bridge Inventory**

Bridge ID	Year Built	Route	Over	Owner	Last Inspection	Sufficiency Rating	Condition
Plaistow 105/030	2006	NH 121	BMRR, Little River, Road	NHDOT	3/2010	94.3	Not Deficient
106/030	2005	Pet Shop Drive	Little River	NHDOT	3/2010	100.0	Not Deficient
Plaistow 111/062	1992	NH 125	BMRR	NHDOT	3/2010	94.0	Not Deficient
Plaistow 111/106	1900	NH 121A	Little River	NHDOT	3/2010	63.3	Not Applicable
Plaistow 117/051	1954	NH 125	Little River	NHDOT	3/2010	75.0	Not Applicable
Plaistow 118/053	2010	Garden Road	Little River	Municipality	9/2011	80.8	Not Deficient
Plaistow 122/072	1940	Westville Road	Little River	Municipality	9/2011	71.9	Not Applicable
Plaistow 126/133	1930	Kingston Road	Little River	NHDOT	4/2010	87.8	Not Applicable
Plaistow 137/115	2004	Kingston Road	BMRR	NHDOT	4/2010	96.1	Not Deficient

*Source: NHDOT, Not Applicable: Based on Federal Highway definitions, these crossings are not considered bridges.*

## 2.4 Public Transportation

Plaistow has limited access to public transportation; with bus service sporadic and a passenger rail station located in Haverhill. Investment in public transportation expands service and improves access and mobility, and if sustained over time can potentially affect the economy by providing:

- Travel and vehicle ownership cost savings for public transportation passengers and those switching from automobiles, leading to shifts in consumer spending;
- Further direct travel cost savings for businesses and households;
- Business operating cost savings associated with worker wage and reliability effects of reduced congestion;
- Business productivity gained from access to broader labor markets with more diverse skills, enabled by expanded public transit service areas and reduced congestion;
- Additional regional business growth enabled by indirect impacts of business growth on suppliers and induced impacts on spending of worker wages<sup>4</sup>.

### 2.4.1 Bus Service

Currently, the Merrimack Valley Regional Transit Authority (MVRTA) Number 13 bus connects Plaistow (at the State Line Plaza) to rail transit and express bus service in downtown Haverhill. However, MVRTA buses and other schedules are not always coordinated, leaving passengers with unpredictable transfers and wait times. In addition, MVRTA buses only operate to Plaistow's southern border, leaving most residents with long walks, cab rides, or finding other means of reaching the limited public transit service.

### 2.4.2 Rail Services

Plaistow is not served by passenger rail service. MBTA and Amtrak rail service is provided in downtown Haverhill, Massachusetts. A large park-and-ride lot is located approximately 750' from the signalized intersection at Route 125. Amtrak and MBTA service from the Haverhill Station operates frequently and a journey to Boston takes 50 to 71 minutes; the disparity in rail times reflects the impact of express and local service and other schedule service adjustments. Additionally, commuters can opt for rapid transit service by driving to Malden (Malden Center Station), Massachusetts for the MBTA's Orange Line into downtown Boston. All options are significantly more cost effective than driving and paying for garage parking in downtown Boston; however, reaching each mode requires a connecting bus journey or car ride, causing delays and inconvenience for travelers, particularly during rush hour. Additionally, according to the Transportation Research Board, transit passengers are willing to accept longer journey times to avoid transfers.<sup>5</sup>

### 2.4.3 Elderly and Para-transport Services

Currently these services are provided by volunteer and non-profit organizations such as Salem Care Givers and Lamprey Health Care. There is no centralized listing or dispatching for these disparate services.

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<sup>4</sup> Economic Impact of Public Transportation Investment, 2014 Update, American Public Transportation Association.

<sup>5</sup> Plaistow Commuter Rail Extension Study Alternative Analysis Report, March 2015 HDR, Inc.

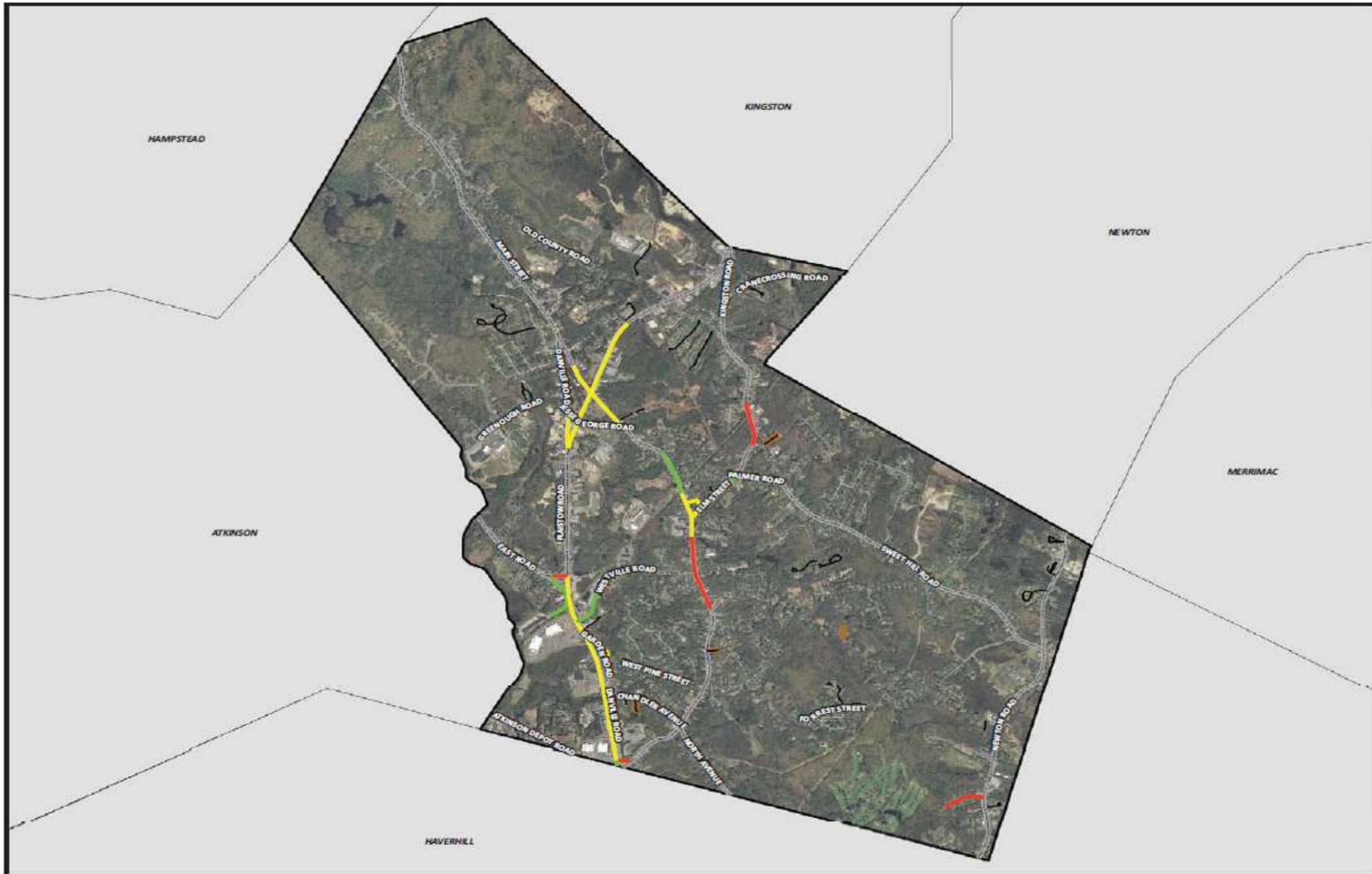
#### **2.4.4 Cooperative Alliance for Regional Transportation (CART)**

CART is a non-profit agency that provides both fixed-route and on-demand transportation services. CART provides rides for all members of the public, but is used primarily by the elderly and disabled populations. Federal funding is obtained from the Federal Transit Agency (FTA) and local funding by assessing participating communities a fee based on population. CART does not service Plaistow but should be considered periodically to see if the service makes sense for Plaistow.

### **2.5 Pedestrian Facilities**

The Town of Plaistow has taken a very proactive approach over the last several years to create a network of sidewalks in the central part of town. Successfully leveraging town funds with federal transportation enhancement grants, the town has established a multi-year program of linking important town facilities with sidewalk infrastructure.

Slowing traffic speeds and reducing accidents on Main Street is a high priority in the community; with improving pedestrian safety highlighted as a major concern at the August 2013 Land Use Summit. Building upon and expanding the existing sidewalk network in the community will increase pedestrian safety and encourage walking. Prioritizing connecting these existing sidewalks should be a priority for future funding and adopting a strategic sidewalk plan, noting locations of existing infrastructure and denoting where new sidewalks should be constructed. See Existing Sidewalk Map below.



**Town of Plaistow  
New Hampshire**



**Asset Management  
Program**

**Sidewalk Inventory**

- Sidewalk Location**
- Even Side
  - Odd Side
  - Both Sides

- Roadway Owner**
- Town
  - State
  - Private
  - Other



**Date:**  
July 18, 2013  
**Scale:** Not To Scale

This map is intended to support the inventory of real property of the Town of Plaistow. Map data should not be interpreted as the actual field survey data. This data should not be used for legal description or conveyance purposes.



## 2.6 Bicycle Travel

The town has limited facilities for bicycle transportation. There are many benefits of using a bicycle as a means of transportation. Bicycles are a non-polluting transportation mode with the potential of alleviating traffic congestion while at the same time improving air quality. It is also an alternative to the automobile.

The State has categorized all state roads into one of three groups for the purposes of discussing bicycle transportation. The categories are as follows:

- Roadways with four foot shoulders or greater;
- Roadways with shoulders less than four feet; and
- Roadways lacking shoulders altogether.

The northern section of Route 125 in Plaistow has shoulders four feet in width or greater and although these shoulders are large, the speeds associated with this section of road increases safety concerns for bicyclists. Along NH 121 and NH 121A there are significant sections of roadway with no shoulders at all making these routes less than preferred for bicycle traffic. The safest travel ways in town are the local roads. Although the shoulder widths are often narrow, the lower speeds pose a reduced threat of auto-bicycle conflict.

## 3.0 Key Issues and Challenges

Plaistow serves as a gateway to NH and as such traffic on NH Route 125 far exceeds the levels that would be expected for a town of 7,700 residents. The rapid population growth experienced in the 1980s and 1990s has subsided and has slightly decreased in the last four to five years. The same slowing of the population growth has also occurred in the neighboring communities. However, as the nation comes out of the recession and the state and local economy improves there will be even more stress on the transportation network and Plaistow needs to be prepared to meet this challenge. Improvements to the road network can be made by updating the physical infrastructure or by updating various policies and regulations.

Transportation infrastructure has a significant impact on the economy of regions, with infrastructure facilitating job access and employer's access to larger employee talent pools. Connectivity between job centers and specialized employment clusters is a key consideration for New Hampshire residents. Currently, residents must rely on expensive and congested auto-journeys or inconvenient transit services to major employment centers. Inconvenient access to jobs places Plaistow and the surrounding communities in a disadvantageous position compared with peer areas in southern New Hampshire and eastern Massachusetts.

Access to jobs is especially important in New England, where unemployment rates vary considerably between metropolitan regions. Despite years of recovery after the 2008-2009 Recession, the unemployment rate varies across the region depending on city, town, and county. This is especially true in Plaistow, where the unemployment rate is 5.1 percent (July 2015), two percent above the New Hampshire state average of 3.7%. Transportation improvements could help stabilize employment

rates by better connecting people to jobs available in other parts of the region, most notably the Boston region.

The Boston regional core – which includes downtown Boston, Cambridge, and Somerville – contains approximately 445,000 jobs. These jobs are easily accessed via commuter rail and MBTA rapid transit; however, due to high parking costs and roadway congestion, jobs in the regional core are not easily accessible by private automobile. Creating a direct connection to the Boston regional core job market will provide residents with vastly increased employment opportunities. Currently, Plaistow residents have relatively easy access to jobs in New Hampshire (645,400 in total) and the northern I-495 belt (252,000 in total) via private automobile; providing a direct transit connection to the Boston regional core will improve Plaistow residents’ access to this significant labor market through a direct transportation link.<sup>6</sup>

## **3.1 Policy and Regulations**

### **3.1.1 NH Route 125 and Access Management**

NH Route 125 is the most prominent piece of transportation infrastructure in the Town of Plaistow. Consequently, Route 125 has a strong influence on transportation patterns for the entire town. Arbitrary, unchecked development along this corridor will result in increased travel times. One of the objectives of this plan is to ensure that the existing levels of service along the NH Route 125 corridor are improved and to keep the corridor from relying solely on traffic signals to control traffic volume. The tools provided below will allow for the proactive management needed to ensure safe, convenient access to and from NH Route 125.

Over the past decade, access management has emerged as an appropriate technique to address the conflicts between through traffic and traffic generated from development. It is a major element of any transportation plan. Access management is the local oversight of all means of vehicular access onto major transportation corridors in order to maintain the safety and efficiency of the thoroughway. For the Town of Plaistow, the access management tools are best suited for NH Route 125, though the effectiveness of access management extends beyond busy transportation corridors. The goal of access management is to limit the number of conflict points (at driveways, medians, and intersections) along a transportation corridor. Such techniques as controlling setbacks, frontages, curb cut distances, requiring cross access between sites and shared driveways represent ways to better manage access on major thoroughfares.

Plaistow adopted an Access Management ordinance in 2002 and has a corresponding Memorandum of Understanding with the NH Department of Transportation (NHDOT) that commits both the NHDOT and Plaistow to abide by the terms of the Access Management ordinance whenever possible.

Although the Access Management ordinance applies specifically to Route 125, the Planning Board has applied the techniques described in the ordinance to other sites regardless of the road where the site has frontage.

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<sup>6</sup> Plaistow Commuter Rail Extension Study Alternative Analysis Report, March 2015 HDR, Inc

### 3.1.2 Regulatory Aspects of Development Along Major Thoroughfares

No state agency has the authority to regulate development along state roadways, or to prohibit access to land abutting state highways. The NHDOT has jurisdiction over access to state highways, but it is limited. NHRSA §236 regulates driveways and other accesses to state highways including the permitting process, sight distance, numbers of permitted driveways, drainage, and maximum geometric standards for commercial driveways. Specifically, NHRSA §236:13 provides towns and cities full control over how private roads or driveways are connected to highways. Furthermore, driveway permits issued by the NHDOT do not override local regulatory requirements.

Without state regulation of such development, only local government can control and development along state highways. Additionally, through Zoning, Subdivision and Site Plan Review Regulations, local governments can manage development and enact access management controls to regulate the placement and design of driveways.

### 3.1.3. Main Street Traffic Calming Study Policy Recommendations

1. **Take Ownership of Main Street from NH DOT:** Transferring ownership of Main Street from NHDOT to the Town of Plaistow would allow the community to immediately restrict truck usage and would allow the implementation of many of the improvements discussed in this document without having to wait for NHDOT design approval.
2. **Allow for additional mixed use development.**
3. **Enforcement:** Increased or more visible law enforcement can work in a few ways to improve the village.
4. **Education:** Public education on travel speeds can be an effective tool to help change the attitude and behavior of drivers.
5. **Utilize a Complete Streets Philosophy for Improving the Village District:** Complete Streets is a philosophy of ensuring that the roadway right-of-way is designed, engineered and operated to enable safe access for all users. Improvements that should be considered are:

**Curb bulbs:** In combination with on-street parking these support pedestrian activity at corners, shorten crossing distances and slow speeds for turning vehicles. They also help to clearly delineate locations where parking is not allowed.

**On-street parking:** Utilize parallel parking on both sides of Main Street and formalize with striping and curb bulbs to eliminate parking too close to corners and driveways.

**Sidewalks:** Wide sidewalks on both sides of Main Street in the Village district would provide space for pedestrians to move and should be at least 5 feet wide in residential areas and 6 feet wide in commercial areas. In areas where outdoor displays, café seating for restaurants, and other active uses of the public space are occurring even wider spaces are required.

**Visible Crosswalks:** Crosswalks should be highly visible and across all intersection approaches. A midblock crossing is recommended at the Pollard School and could be a raised crosswalk, a unique surface, or otherwise well marked to stand out from the surrounding roadway.

**Buffer zones:** Green space between sidewalks and curbing that is wide for landscaping. Providing a buffer between the road and the sidewalk promotes the use of the sidewalk as pedestrians feel safer and more relaxed which generates more use. Buffers can also be comprised of designated parking spaces for motor vehicles.

**Lighting:** Street lighting should be pedestrian scale and the design should fit the character of the village. Priorities for lighting should be at crossing locations, where there are safety concerns, and where adjacent land uses support pedestrian activity.

**Street furniture:** Benches, shelters, bicycle parking, signs/maps, and even artwork all support pedestrian use and should be encouraged within the streetscape.

**Driveways:** The number of driveways should be minimized to reduce pedestrian hazards, provide for longer stretches of continuous sidewalk, and allow for smoother traffic flow along the roadway. Driveway designs should incorporate handicapped accessible crossings and width should be minimized to limit crossing distances.

6. **Lower Speed Limit to 25 through village area:** Combined with changes to the physical lay-out of the roadway, lowering the speed limit will have positive benefits for safety and reduce noise in the village area.
7. **Install Shoulders:** Ensure that Main Street has at least 4 foot wide shoulders, especially in areas without a curbed sidewalk. This will provide a more safe and friendly location for pedestrians to walk as well as provide space for bicycles on the corridor.
8. **Narrow travel lane widths:** Reducing the travel lane width to 11 feet will help to slow traffic. This is especially critical in the Village Center District.

## **3.2 Infrastructure Improvement Methodologies**

Policy and regulation changes cannot fix all the shortcomings in the transportation network. The infrastructure improvement costs are too high for the town to make all the improvements by itself and must rely of regional, state, and federal funds.

### **3.2.1 Transportation Financing Options**

#### **State/Federal**

State Aid Construction Funds provide for improvement of uncompleted sections of state secondary, Class II highways. The ratio of state to town matching funds is based on the assessed valuation of the municipality and varies from a 2 to 1 ratio in small towns to a 1 to 1 ratio in the large municipalities. Application must be made to the Administrator, Bureau of Municipal Highways by May 1<sup>st</sup> of each year, but preliminary discussions about such projects should begin well in advance of this date

(NHRSA §235).

State Aid Reconstruction Funds are available for improvement of completed sections of state secondary, Class II highways when the town or city wishes to advance the priority of construction for special types of work such as improved drainage, riding surface or elimination of sharp curves. The matching ratio is the same as for State Aid Construction Funds and application is made in the same manner (NHRSA §235).

Highway Block Grant Aid Funds are apportioned to all cities and towns on a yearly basis for the construction, reconstruction, and maintenance of Class IV and V highways on the following basis:

Apportionment A: These funds are allocated from an annual apportionment of not less than twelve percent of the total highway revenues collected the preceding fiscal year. The amount distributed is based on one-half mileage and one-half population as the city/town factors bear to the state total.

Apportionment B: These funds are allocated from an annual apportionment of \$400,000; the amount available to towns is based on a formula using equalized valuation and Class V mileage designed to give the greatest benefit to the low valuation towns with high road mileage.

Block Grant Aid payments are made as follows: 30 percent in July; 30 percent in October; 20 percent in January; and 20 percent in April. Unused balances may be carried over to the following municipal fiscal year (NHRSA §235.) The current balance for the Town of Plaistow's Highway Block Grant Aid Fund is \$148,214.

Federal Aid Bridge Replacement Funds are available for replacement or rehabilitation of town bridges over 20 feet in length. Bridge Aid funds may be used for matching these funds. Application is made to the Administrator, Bureau of Municipal Highways in the same manner as aid under the Bridge Aid Program.

Congestion Mitigation Air Quality (CMAQ)

Transportation Alternatives Program (TAP)

Highway Safety Improvement Program (HSIP)

## **Local**

Road Impact Fees are another funding source used by Plaistow for road improvements is road impact fees. These are fees collected from the developer to pay for part of the cost of infrastructure, in particular roads. The recent trend of shifting the burden to the private sector can be attributed to not only reduced federal assistance but also to the realization by municipal officials that new development is not paying its way, resulting in the burden being placed upon the residents of a community instead.

The General Fund may provide funds within the Town's operating budget for routine maintenance of the transportation system. Major capital transportation-related expenses should be allocated in the capital budget.

The Capital Improvement Plan is used to classify projects according to the urgency and need for realization. A time sequence for their implementation is included as part of the plan. Plaistow's current CIP is for the years 2016 to 2021. The CIP is based on information submitted by departments and agencies of the municipalities and takes into account public facility needs. In 2014 the CIP committee recommended establishment of a Transportation Capital Reserve Account to help fund transportation infrastructure projects either by funding small projects entirely or by the capital reserve funds serving as a source of local matching funds for the state and federal programs.

### **3.2.2 Accessing State and Federal Funding Programs**

In order to receive state or federal transportation funds, all transportation infrastructure projects must be included as part of the NHDOT's Ten-Year Plan (TYP). The first step in that process usually consists of submitting a proposal for the regional Long Range Transportation plan that typically has a twenty to twenty five year planning horizon.

#### **3.2.2.1 Long Range Transportation**

Plaistow is part of the Rockingham Metropolitan Planning Organization (MPO) that encompasses all of the Rockingham Planning Commission's member communities from Salem to the west and Portsmouth to the east. Twenty-six of the Commission's twenty seven member communities are located in Rockingham County. There are eleven municipalities in Rockingham County that are not part of the Rockingham Planning Commission or the MPO. The MPO was established through a joint agreement the NH Department of Transportation (DOT), the NH Office of Energy and Planning (NHOEP) and the Rockingham Planning Commission. The MPO prepares regional long range transportation plans on a biennial basis that guides development of the transportation system for 20 to 25 years. The most recent plan was completed in October 2014. In addition to the long-range plan, a four-year Transportation Improvement Plan (TIP) was also completed in October 2014. This plan identifies specific projects for implementation in each of the MPO communities from 2015 through 2018. The first 4 years of the TYP make up the regional TIP and the State TIP (STIP). The STIP is a composite of all the regional TIPs. The Long Range Plan and TIP are prepared in compliance with a federal transportation reauthorization act and the Clean Air Act Amendments of 1990 (CAAA). The current federal reauthorization plan is referred to as Moving Ahead for Progress in the 21<sup>st</sup> Century or MAP-21.

The projects in the TIP and Long Rang Plan were adopted through a cooperative process between the NH DOT, the regional planning commissions and the local communities. The local communities have representation on a Transportation Advisory Committee (TAC) and a Policy Advisory Committee. The plan must address specific issues that are defined in a federal reauthorization act that include: supporting the economic vitality of the region, increasing safety and security, increasing access and mobility options, protecting and enhancing the environment, integrating transportation modes, and emphasizing the maintenance of the existing transportation system. The plan also includes regional transportation goals and strategies for implementation.

The Metropolitan Planning Organization (MPO) has compiled a list of TIP projects and Long Range Transportation projects that are included on the TYP. Projects for Plaistow are identified in **Table T-9**. In order for transportation recommendations to become programmed projects in the TIP, the Town of Plaistow must submit project proposals to the MPO for inclusion in the Long Range Transportation Plan or the Regional Transportation Improvement Program (TIP). The MPO evaluates and ranks all project proposals in the region and forwards the highest-ranking projects to the NHDOT for inclusion

in the STIP.

All projects in the TYP must be both fiscally and air-quality constrained. Although the exact amount of transportation funding is not known over the next 10 years, based on past history reasonable estimates can be made. All of the projects in the TYP must have each have projected costs that in total do not exceed the estimated available funding. The Long Range Plan must also be fiscally constrained, but the criteria for constraints is somewhat relaxed over those used for the TYP. Each project must also have an estimated air-quality impact. Some may be negative, for example, a new signalized intersection typically has a negative impact because cars idle for longer periods of time. In these cases, the safety and traffic flow concerns generally over-ride the negative air-quality impacts. The total sum of air-quality impacts must have either a neutral or positive impact for the MPO area.

### **3.2.2.2 Special State and Federal Funding Programs**

There are several state and federal funding programs that were created to address specific problems such as highway safety, congestion and air quality, trails, and pedestrian/bicycle safety. When projects are submitted to the MPO, the MPO staff will evaluate the project to see if it may qualify for any of the special funding programs. The total amount of dollars put into these programs is very small in comparison to the amounts for highways and bridges; hence the programs are very competitive. These projects are included in the TYP but are typically aggregated by program and hence individual projects are not listed separately.

### **3.2.3 Public Hearings and Legislative Approval for the TYP**

After the TYP has been reviewed by the MPOs, the Governor and Executive Councilors hold public hearings in each of the five Executive Councilor districts. These hearings have become known as the GACIT (Governor And Councilor Intermodal Transportation) hearings. These hearings give the public at large as well as local officials to comment on the TYP and make recommendations for changes if warranted. These hearings typically are held in the fall and once all the public recommendations have been evaluated the TYP is submitted to the NH House and Senate for approval. The legislator's approval typically occurs in the spring of the year following the fall GACIT hearings. The TYP must be approved as submitted or amended and signed by the Governor on or before July 1, which is the start of the State fiscal year.

**Table T-9:  
Transportation Improvement Plan for the Town of Plaistow, NH**

Name/#	Rte./ Street:	Overall Project Cost \$(M)	Location/Scope of Work	Phase*	Fiscal Year	\$ (M)	Funding Category **	Comments
Plaistow 10044G RPC# 6375005	NH 125	6.733	Reconstruct East Road to Old Road (Parent = Plaistow -Kingston 10044B)	C	2016-2017	6.733	NHPP	Specific project breakout from Plaistow-Kingston Project
Plaistow-Kingston 10044E RPC# 6001010	NH 125	14.55	Reconstruct NH 125 from northern limit of Old County Road project (10044D) to southern limit of Hunt Rd/Newton Junction Rd project (10044C), including extension of Kingston Rd	P R C	2018-2019	1.9  12.65	NHPP	In MPO Long Range Transportation Plan. Likely funded via NHPP or STP.
RPC# 6375001	Main St./ NH 121A	.900	Main Street Traffic Calming/safety Improvements	P R C		.150  .750		In MPO Long Range Transportation Plan. Likely funded via CMAQ/TA/SRTS
RPC# 6375004	NH 121A/ North Ave.	1.96	Intersection improvements at North Avenue And NH 121A	P R C		.236  1.6		In MPO Long Range Transportation Plan. Likely funded via STP.
RPC# 6375003	NH 125 Westville Rd	0.810	Signal coordination and control along congested corridor. Includes remote control of signals, network surveillance and monitoring, and emergency routing capabilities Replace/repair Westville Rd bridge, realign Westville road in area of bridge to remove dangerous curves on both sides of the bridge	P R C  P R C	2016-2017	.135  .675		In MPO Long Range Transportation Plan. Likely funded through CMAQ, NHPP, or STP.  State Aid Bridge program is likely source of funds.

Source: Rockingham Planning Commission

\*P: Preliminary Engineering; R: Right-of-Way; C: Construction

\*\* NHPP: National Highway Performance Program; STP-TA: Surface Transportation Program - Transportation Alternatives, CMAQ: Congestion Mitigation & Air Quality; STP: Surface Transportation Program

### **3.3 Regional Air Quality Attainment**

The eastern Massachusetts and southern New Hampshire regions are in attainment/maintenance status for ozone and carbon monoxide levels, according to the United States Environmental Protection Agency (USEPA). Ozone and carbon monoxide levels are significantly influenced by transportation patterns, particularly where commuting by single occupancy vehicles is prevalent. Public transit options, particularly rail, have a proven record of attracting commuters and a positive impact on the regional air quality, by allowing commuters to shorten or eliminate vehicle trips. Public transit may facilitate existing and future commuters to drive less and contribute less to negative regional air quality. Alternatives to the single occupant private auto are being explored to increase mobility in the Greater Boston area without further air quality degradation. Base year 2010 Congestion Maps from the Rockingham Planning Commission, along with projected congestion areas for 2040 are outlined on Map T4 & T5.<sup>7</sup>

### **3.4 Studies**

Several transportation studies have been either completed or are underway with the primary goal of addressing key transportation concerns in the community.

#### **3.4.1 Main Street Traffic Calming Studies**

In April of 2011 the Rockingham Planning Commission completed the Main Street Traffic Calming Study. The scope of the study included all intersections from North Avenue in the south to Danville Road in the north. The intent of the study was to determine ways to enhance the bicycle and pedestrian safety through the Village Center District as well as to give a more rural appearance to the Village Center by improving the transportation environment on the corridor. Main Street (NH 121-A) extends approximately 5 miles through the town connecting from Hampstead in the northwest to the state line with Massachusetts and the City of Haverhill in the south. In 2008 Route 121-A was rerouted to the formal Hazeltine Ave to a signalized intersection at Route 125. The study focused primarily on the approximately 3 mile long portion of the corridor known as South Main Street that lies between the state line, and where the roadway crosses NH 125 and becomes North Main Street.

In addition to the overall goal of enhancing Main Street as a destination within the town, there are some more specific transportation related objectives of the study and areas where recommendations were offered:

1. Reducing vehicle speeds on Main Street
2. Improving the environment for pedestrians and cyclists
3. Redirect heavy vehicles to utilize NH 125 where possible
4. Enhance the aesthetics of the corridor

#### **Issues and Opportunities**

There are a number of traffic problems that occur on Main Street and provide the motivation to make improvements that will further the “New England village” character of the community and create a more pedestrian and bicycle friendly town center for Plaistow. While these problems

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<sup>7</sup> Regional Master Plan, Transportation, January 9, 2015 Rockingham Regional Planning Commission

<sup>8</sup> Main Street Traffic Calming Plan is an Addendum to this Transportation Chapter.

exist, there are also a number of opportunities that can aid the town in implementing changes. These issues and opportunities are outlined below.

**Issue: Truck Traffic on Main Street**

The traffic volume and vehicle classification counts have confirmed the anecdotal evidence that there are significant numbers of trucks utilizing Main Street to avoid the existing signals on Route 125 in both Plaistow and Haverhill. Trucks account for 6-8% of total traffic on Main Street with much heavier northbound volume than southbound. It is expected that since the number of signals will be increasing as NH 125 is reconstructed Main Street will continue to be an attractive route for trucks.

**Issue: Main Street as a shortcut for commuters**

Traffic patterns show that there is a significant use of Main Street during AM and PM peak commuter periods and like the truck traffic, much of it is likely done to avoid congestion and the traffic signals on NH 125. There are also several residential developments that access Main Street and therefore many residents must use Main Street to travel to and from work.

**Issue: Construction on NH 125**

There are concerns that during the reconstruction of NH 125 that will be continuing for a number of years, traffic will shift to Main Street and not go back to NH 125 once construction is complete. This is certainly of great concern during the next few years as construction will be occurring in locations easily circumvented by utilizing Main Street, and depending on how well the ultimate build of NH 125 manages traffic, it may continue to be an issue in the future.

**Issue: Speeding on Main Street**

Anecdotal evidence is that many of the motor vehicles utilizing Main Street are exceeding the posted speed limit and contributing to dangerous conditions along the corridor.

**Opportunity: Community Anchors**

The village district in Plaistow has a vital advantage over many other communities in that the “town center” is already in place and features a number of community anchor facilities that can help to form the basis for village style development on the corridor. Included in this category are the Elementary School, Town Hall, the Town Green, Library, Historical Society, Recreation Fields, Safety Complex, District Court, and the Town Cemetery.

**Opportunity: Main Street is NOT the only Street**

While Main Street carries a significant amount of traffic, it is not the primary route through Plaistow, and that gives the community and NH DOT additional flexibility in how the roadway is designed and traffic is managed.

**Opportunity: Intermodal Center**

The Park and Ride, located on Westville Road close to the signalized intersection at Route 125. It was designed, and has the capacity for, a multi-modal transportation center that can accommodate personal vehicles, bicycles, pedestrians, and various forms of public transportation.

### **3.4.2 Plan NH Design Charrette**

In October 2012 the Town of Plaistow held a Plan NH Design Charrette to further refine the concepts described in the Main Street Calming Study. The scope of the charrette was narrowed

to Main Street from its intersection with Ingalls Terrace to the north and the Historical Society to the south. It also included Elm Street from its intersection with Main Street to the Public Safety Complex.

The charrette was a 2-day event with the first day used to obtain input from Town officials and the general public. The second day was devoted to a preliminary read-out of the information received the first day. A final report gave the final read-out for the charette and included some conceptual designs for high priority areas such as the intersection at Main and Elm Streets, several new and improved sidewalks and crosswalks in the general areas of Town Hall and Pollard School.

### 3.4.3.2 Physical Improvements Recommendations

A number of specific traffic calming measures were recommended in the Report at key intersections, most notably those shown in **Table-10** below:

**Table -10**  
**Main Street Calming Study Recommended Physical Improvements**

<b>Project Location</b>	<b>Funding Source</b>	<b>Project Status</b>
<b>Danville Road &amp; Main Street</b>	Beede Superfund Site funds	Completed - 2013
<b>NH Route 125 &amp; Main Street</b>	Rt. 125 widening project	Completed - 2012
<b>Main Street &amp; Railroad crossing</b>	Unknown	Not started
<b>In front of Town Hall</b>	Unknown	Not started
<b>Elm Street Intersection</b>	Safe Routes To School (SRTS)	In Progress, expect completion by 9/2016
<b>In front of Pollard School</b>	SRTS, Unknown source to construct fixes for all identified concerns	In Progress, partial completion by 9/16
<b>Library &amp; Bittersweet Drive</b>	Unknown	Not started
<b>East &amp; West Pine Street Intersection</b>	Unknown	Not started
<b>North Avenue/ Chandler Ave Intersections</b>	Unknown	Not started
<b>NH 125 &amp; State Line</b>	State Line Plaza redevelopment	Completed – 2008 Note: New signal installed at Hazeltine St and Rt 125; Rt 121-A redirected to Hazeltine

### 3.4.3 Safe Routes to School and Transportation Alternatives (TA) Funding Grants

In December of 2013 Plaistow applied for, and received, a \$239,000 SRTS funding grant. In addition to the SRTS funds, the Plaistow Board of Selectmen committed another \$100,000 to the project for a total of \$339,000. This amount includes preliminary engineering, obtaining the necessary rights-of-way, and construction. The project will improve the intersection at Elm Street and Main Street, construct new sidewalks on Main Street, and improve the location and visibility of crosswalks and Main Street and Elm Street. Design and public input will occur in 2015 and construction will occur in 2016 and be complete by September in time for Pollard school to open for the 2016-2017 school year.

In September of 2014 Plaistow submitted an application for TA funds to build upon the work being done by the SRTS funding. Although the project was not approved for funding, it did score

high enough to be wait listed for funds should some other project withdraw or is not able to continue with construction.

### **3.4.4 Rail Feasibility Funding Grant**

In 2012 the Town received \$8.4 Million of funding through the Congestion Mitigation/Air Quality (CMAQ) program to undertake a feasibility study of expanding commuter rail service to the community. The study conducted by the New Hampshire Department of Transportation with direction provided by a Project Advisory Committee (PAC). The PAC had 1 representative from Plaistow, Atkinson, the MBTA, NNEPRA (the Maine authority responsible for the Downeaster service) and the Rockingham Planning Commission. Haverhill was asked to participate but did not send a representative to the PAC meetings. Plaistow and Atkinson also each had an alternate representative to the PAC. The study examined potential alternatives for a train station and layover facility, and their resultant impacts, including a cost-benefit analysis and ridership projections. The NHDOT contracted with team of design and planning professionals, led by HDR Engineering, to identify possible sites, develop design concepts, and analyze their potential impacts.

The project proposal included moving the current layover facility located in Bradford, MA to Plaistow as well as providing an 835-foot high-level boarding platform and rail station to be essentially co-located with the layover facility. The current layover was designed in the late 1980s and has not been upgraded with any technology improvements since. It has a deserved reputation for being noisy and smelly with locomotives idling all night in cold weather.

Some of the raw data, such as noise levels at various locations in proximity to the top 3 alternative sites, started to be disseminated to the PAC in January 2014 and the general public in February 2015. By February the only outstanding raw data was that pertaining to air quality. This facet of the study was not completed until late March 2015. The study was completed before April 1, 2015. The Board of Selectmen (BOS) placed a warrant article on the March 2015 Town Meeting to place a warrant on a special Town Meeting to see if the voters of Plaistow wanted to continue with the rail project. This was to occur after the study was completed and there was ample time to discuss the study, its results, and the impact the station and layover would have on Plaistow. A group of residents who opposed the rail project placed a citizen's petition on the March 2015 Town Warrant as well. It asked if people were in favor of the project. The results of the warrant articles noted that people did not want the project nor did the public want the BOS to ask the question again after the study could be publicly vetted. The public sentiment in the community was clear, as they did not want to replicate the Bradford (MA) layover facility in the Town of Plaistow.

The noise studies showed that with the distances between the locomotives at the layover and station and the residences and the newer, quieter locomotives that noise would not be a problem. There are also noise mitigation techniques that are impossible to apply to the Bradford facility that would be used in the Plaistow project.

The air quality analysis describes in detail the substances that are measured in such studies and the levels that are currently in the air and the quantities that would be present after the project was completed and operational. Obviously new sources of air pollutants are going to introduce

more pollutants into the atmosphere; however, the small increase is not likely to negatively impact the health and wellbeing of Plaistow residents.

There was also some concern about dealing with the MBTA, but no chance was given to introduce a sample contract that would outline how Plaistow and the NHDOT would deal with the MBTA and possible penalties for non-compliance by all parties. Rhode Island has used a similar technique successfully for approximately 10 years.

The vote taken at the 2015 Town Meeting was without public knowledge of the contents of the study nor a chance to vet its contents in public.

Given Plaistow's ties to the Boston area, both economically and its interlocking road network, transportation mobility challenges facing the region will continue to remain a prominent concern for the area. In addition, the greying of New Hampshire cannot be dismissed. Today's younger generation is gravitating towards walkable communities tied to efficient transportation systems. In many cases this age group is even shedding the use of cars all together. Given these factors the community should remain open minded to review, at some point in the future, adding a commuter rail stop in Plaistow given its unique location along an active rail line. The region and state will continue to grow and Plaistow should be prepared to review all transportation options.

## **4.0 Recommendations**

There are no easy solutions to enhance access to Interstate 495. Relying solely on the existing road network to connect the region will only further add to the areas congestion, spawn additional and expensive road expansion projects and further isolate Plaistow from the greater Boston area. Therefore transit improvements for the Town of Plaistow and surrounding communities should continue to be explored to support economic opportunities and improve mobility for residents and businesses in the Plaistow area. Specific needs that can be addressed through regional transit improvements include:

The following recommendations address the Town of Plaistow's transportation needs and meet the transportation objectives expressed in the beginning of this chapter. These objectives include:

- 1) Reducing impacts of high roadway congestion on average commuting travel time;
- 2) Increasing access to employment opportunities;
- 3) Reducing commuting costs, particularly for commuters to employment centers in the Plaistow to Boston corridor;
- 4) Improving access to transit and resulting mobility improvements;
- 5) Improving regional air quality;
- 6) Supporting economic development and job creation.

1. On an annual basis establish capital projects that should be included in the town's Capital Improvement Program. Such projects would include: roadway maintenance and improvement that are consistent with the Master Plan and alternative transportation mode projects including facilities for bicycles and transit. The Capital Improvement Plan should identify a methodology for prioritizing projects which emphasizes the importance of maintaining the existing roadway system as well as intersection upgrades. Consideration should be given to establishing capital reserve accounts.
2. Design and construct town road projects in a manner that minimizes impacts on water quality and sensitive environmental areas and considers aesthetics.
3. Require new development to incorporate the Design Principles, Traffic Calming Measures, and Best Transportation Practices into construction standards.
4. Require new developments to make off-site road improvements in relation to the impacts associated with the development. Costs associated with such improvements should be in proportion to the benefits derived.
5. Actively participate in the regional transportation planning process and in the update of the regional Long Range Transportation Plan and the Transportation Improvement Plan.
6. Continue to use the Roadway Surface Management System to identify existing traffic hazards and local road conditions in town.
7. Follow the American Association of State Highway and Transportation Officials Minimum Standards to identify and upgrade any major roadways.
8. When reviewing plans for subdivision or site plan review, encourage the interconnection of the developments through the use of sidewalks and interconnecting roads.
9. Continue to plan for pedestrian amenities such as sidewalks and initiate planning for a trail and pathway network that can accommodate walkers, joggers, hikers, and bicycles. After a preliminary plan is formulated, communicate with private landowners in order to determine if they are willing to provide easements.
10. In meetings with the NHDOT officials, suggest potential bicycle paths along existing state routes such as NH Route 108, NH Route 121 and NH Route 121A.
11. Encourage social service transportation providers to coordinate transportation activities and, where possible, to allow non clients to use the service on an as needed basis and for a fee.
12. Continue to monitor traffic accident data at key intersections and roadways to determine if traffic safety improvement are warranted. Recent accident rates at the interaction of Route 125 and Wal-Mart as well as Market Basket should be monitored. In addition, the cause of some many accidents occurring along Danville Road near the schools should be investigated.

13. The recommendations contained in the Main Street Traffic Calming Study and NH Design Charrette should continue to be funded and implemented. In addition, these reports are considered Addendum to the Master Plan Transportation Chapter.
14. Continue to monitor the Level of Service of Main Street intersections to evaluate the need for signalization.

## 4.1 Implementation Recommendations

<b>Recommendation</b>	<b>Timeframe for Review</b>	<b>Implementation Party</b>
<b>1. Annual establishment of CIP projects and capital reserve accounts.</b>	September	Planning Board & Town Departments
<b>2. Design and construction of aesthetically pleasing, environmentally sensitive transportation projects.</b>	On Going	Planning Board
<b>3. Require the incorporation of traffic calming techniques, Best Management Practices, and modern transportation design principles for new development projects.</b>	On Going	Planning Board & Highway Safety Committee
<b>4. Require off-site improvements to offset new roadway impacts to town services. Costs of improvements proportional to benefits derived.</b>	On Going	Planning Board & Highway Safety Committee
<b>5. Actively participate in Regional Transportation Planning processes (Regional Long Range Transportation Plan &amp; Transportation Improvement Program).</b>	Bi-annually	Planning Board & Highway Safety Committee, Board of Selectmen
<b>6. Continue to utilize the Roadway Surface Management System (RSMS) to identify hazards and existing roadway conditions.</b>	Update every three (3) years	Town Manager, Board of Selectmen & Highway Department
<b>7. Follow AASHTO</b>	On Going	Board of Selectmen, Planning

<b>standards to identify and upgrade major roadways</b>		Board & Highway Department
<b>8. Encourage connecting adjoining development sites.</b>	On Going	Planning Board
<b>9. Plan for pedestrian amenities to expand pathway network. Work with private landowners to implement.</b>	On Going	Town Manager, Board of Selectmen and Planning Board
<b>10. Advocate with NHDOT for bicycle paths along NH Rt. 108, 121 &amp; 121A.</b>	On Going	Town Manager, Board of Selectmen and Planning Board
<b>11. Encourage social service transportation providers to coordinate activities.</b>	On Going	Town Manager, Board of Selectmen, Human Services
<b>12. Monitor accidents at key intersections to gage necessary improvements.</b>	On Going	Town Manager, Board of Selectmen, Planning Board, Highway Safety committee & Police Dept.
<b>13. Implement recommendations of Traffic Calming Study and Design Charrette.</b>	On Going	Town Manager, Board of Selectmen
<b>14. Monitor Main Street intersections Level of Service.</b>	On Going	Town Manager, Board of Selectmen and Planning Board, NHDOT, Highway Dept.