



Highway Systems





HIGHWAY SYSTEMS

Introduction

Existing Network

The Montachusett Region is served by several state numbered routes that provide accessible links to all of the region's communities.

Of greatest importance to the area is Route 2, running east-west throughout the entire region. This limited access roadway provides the area with a direct link to Boston in the east and to the western half of the state. Consequently, this highway is a major thoroughfare for the state as well as for the region. The region's major urban communities, Fitchburg, Leominster and Gardner, all border Route 2. The section of Route 2 from Phillipston to Athol in the MRPC Region has been part of an ongoing Safety Improvement Study, project and Task Force to improve the highway between Phillipston and Greenfield. Significant improvements to date include construction of climbing lane and intersection improvements and a truck weigh station in Athol and installation of an innovative centerline treatment called "Qwick Kurb" along 13 miles of highway in Phillipston and Athol.

The completion of I-190 in the early 1980's added a second major limited access highway to the region. This roadway provides direct access to Worcester, I-290 and the Massachusetts Turnpike. Since its opening, traffic on I-190 has increased steadily in Leominster (between 2001 and 2009, the ADT increased approximately 14.9%) and increased steadily in Sterling from 2000-2004 (avg. 25.2% increase) before it began decreasing slightly from 2004 to 2009. This highway has helped to reduce through traffic volumes on Route 12 by providing easier access to the Worcester area.

A second new limited access roadway was added to the region's highway network with the completion of the Route 140 Bypass in Gardner, Westminster and Winchendon. Also constructed in the early 1980's, as an alternative to the existing Route 140 layout, the Route 140 Bypass has enhanced traffic flow and alleviated some of the excess through traffic in Gardner City center. Volumes along Route 140 have grown approximately 83% from 1983/1984-2010 in Gardner, 105% from 1979-2009 in Westminster and 35% in Winchendon from 1988-2010. The MRPC and CMRPC have worked with the communities of Sterling, Princeton, and Westminster on a Route 140 Corridor Profile which has addressed safety concerns and made recommendations for improvements along the roadway from Route 2 south to I-190. A similar effort is currently being undertaken along Route 140 from Route 2 north through Gardner and into Winchendon to Route 12.



Functional Classification

The process by which highways and roads are grouped into classes or systems is known as functional classification. Roads are grouped according to the type of service they are intended to provide. Most travel involves movement through a network of roads; functional classification helps to define the part a roadway plays in serving the flow of trips.

Classification is divided into principal arterials, minor arterials, major collector roads, minor collector roads, and local roads and streets. This classification is further divided into urban and rural areas. In the past, the urban areas were defined as having a population of 1,000 persons per square mile within a given census block. "In 2000, the Census Bureau used the Census Block Group data to designate the urban boundaries by following the Census Bureau maintained road segments called TIGER (Topologically Integrated Geographic Encoding and Referencing database). The Office of Transportation Planning, in cooperation with the regional planning agencies, adjusted the boundaries to follow the Road Inventory street segments, municipal boundaries, railroads, or water bodies." MassDOT. This designed urban area definition was created to minimize confusion for those roadways that extend in and out of urbanized areas and makes the funding of roadway improvements easier.

Within the Montachusett Region, fully urban areas include Fitchburg, Leominster, Gardner, Ayer and Clinton as well as portions of Athol, Templeton, Winchendon, Westminster, Sterling, Lancaster, Lunenburg, Townsend, Shirley, Groton and Harvard. The remaining areas of the Region are designated rural. (For further details, see the "MRPC Urban Areas and Road Functional Classification" map following this chapter)

Based upon previous work done by the MRPC in conjunction with the MassDOT on the functional re-classification of the Region's roadways, the following tables indicate the approximate roadway miles for each functional classification in each of the rural and urban areas.



URBAN and RURAL FUNCTIONAL CLASSIFICATION MILES

(All mileage figures are approximate)

	URBAN						RURAL				
	Interstate	Arterial	Collector	Local	Total		Interstate	Arterial	Collector	Local	Total
Ashburnham					0.00			9.50	22.71	65.63	97.84
Ashby					0.00			6.69	17.05	40.98	64.72
Athol		18.15	8.59	48.07	74.81			1.66	9.89	24.94	36.49
Ayer		10.65	6.07	32.34	49.06						0.00
Clinton		13.39	4.18	34.03	51.60			0.02	0.01		0.03
Fitchburg		43.52	21.88	134.51	199.91						0.00
Gardner		28.49	13.13	73.30	114.92						0.00
Groton		22.73	7.35	56.06	86.14			0.04	3.76	21.05	24.85
Harvard	1.47	1.73	0.54	1.74	5.48			10.89	10.91	50.07	71.87
Hubbardston					0.00			8.31	19.93	56.41	84.65
Lancaster	2.03	10.82	6.19	24.99	44.03			5.59	6.76	13.36	25.71
Leominster	1.70	41.59	18.28	115.43	177.00						0.00
Lunenburg		17.63	7.13	45.93	70.69			1.53	7.58	15.47	24.58
Petersham					0.00			12.47	14.16	52.42	79.05
Phillipston					0.00			2.97	21.14	27.88	51.99
Royalston					0.00				24.73	47.39	72.12
Shirley		7.69	1.80	16.40	25.89			2.48	7.92	12.54	22.94
Sterling	4.45	13.80	12.79	23.59	54.63		2.20	2.76	15.60	31.62	52.18
Templeton		16.99	8.71	43.61	69.31			2.59	12.22	17.46	32.27
Townsend		12.72	3.61	30.49	46.82			4.98	4.35	39.37	48.70
Westminster		17.47	5.74	24.03	47.24			4.46	16.72	40.93	62.11
Winchendon		8.36	6.64	29.55	44.55			8.64	8.13	53.79	70.56
TOTAL	9.65	285.73	132.63	734.07	1162.08		2.20	85.58	223.57	611.31	922.66

Roads that are classified as local streets or minor collectors are not part of the Federal-Aid Highway System and therefore are not eligible for Federal funds.

**TOTAL FUNCTIONAL CLASSIFICATION MILES****Urban and Rural Combined**

(All mileage figures are approximate)

	Interstate	Arterial	Collector	Local	Total
Ashburnham	0.00	9.50	22.71	65.63	97.84
Ashby	0.00	6.69	17.05	40.98	64.72
Athol	0.00	19.81	18.48	73.01	111.30
Ayer	0.00	10.65	6.07	32.34	49.06
Clinton	0.00	13.41	4.19	34.03	51.63
Fitchburg	0.00	43.52	21.88	134.51	199.91
Gardner	0.00	28.49	13.13	73.30	114.92
Groton	0.00	22.77	11.11	77.11	110.99
Harvard	1.47	12.62	11.45	51.81	77.35
Hubbardston	0.00	8.31	19.93	56.41	84.65
Lancaster	2.03	16.41	12.95	38.35	69.74
Leominster	1.70	41.59	18.28	115.43	177.00
Lunenburg	0.00	19.16	14.71	61.40	95.27
Petersham	0.00	12.47	14.16	52.42	79.05
Phillipston	0.00	2.97	21.14	27.88	51.99
Royalston	0.00	0.00	24.73	47.39	72.12
Shirley	0.00	10.17	9.72	28.94	48.83
Sterling	6.65	16.56	28.39	55.21	106.81
Templeton	0.00	19.58	20.93	61.07	101.58
Townsend	0.00	17.70	7.96	69.86	95.52
Westminster	0.00	21.93	22.46	64.96	109.35
Winchendon	0.00	17.00	14.77	83.34	115.11
TOTAL	11.85	371.31	356.20	1345.38	2084.74



Major roadways within the region are classified and listed below.

Route	Functional Classification	Towns
2	Principal Arterial	Harvard, Lancaster, Leominster, Fitchburg, Westminster, Gardner, Templeton, Phillipston, Athol
I-190	Principal Arterial	Leominster, Lancaster, Sterling
I-495	Principal Arterial	Harvard
40	Minor Arterial	Groton
119	Minor Arterial/Major Collector	Groton, Townsend, Ashby, Ashburnham
225	Major Collector	Groton, Shirley, Lunenburg
2A	Minor Arterial/Principal Arterial/Major Collector	Ayer, Shirley, Lunenburg, Fitchburg, Westminster, Gardner, Templeton, Phillipston, Athol
110	Minor Arterial/Major Collector	Ayer, Harvard, Lancaster, Clinton, Sterling
111	Minor Arterial/Major Collector	Harvard, Ayer, Groton
13	Minor Arterial	Townsend, Lunenburg, Leominster
117	Minor Arterial	Lancaster, Leominster
62	Minor Arterial/Major Collector	Clinton, Sterling, Hubbardston
70	Minor Arterial/Major Collector	Clinton, Lancaster
12	Principal Arterial/Minor Arterial	Sterling, Leominster, Fitchburg, Westminster, Ashburnham, Winchendon
140	Principal Arterial/Minor Arterial	Sterling, Westminster, Gardner, Winchendon
31	Minor Arterial/Major Collector	Westminster, Fitchburg, Ashby
101	Urban Minor Arterial/Rural Major Collector	Ashburnham, Gardner, Templeton, Phillipston, Petersham
68	Urban Minor Arterial/Minor Arterial	Hubbardston, Gardner, Templeton, Phillipston, Royalston
202	Minor Collector/Major Collector	Winchendon, Templeton, Phillipston, Athol
32	Minor Arterial/Major Collector	Petersham, Athol, Royalston
122	Minor Arterial	Petersham

Note: Please contact MRPC for more detailed route descriptions

Current Traffic

Traffic volumes are collected through MassDOT requests, MRPC Traffic count program, and site specific projects that the planning commission is working on. These counts may include volume data, classification, speed, and turning movement. The counts that are conducted for MassDOT are always 48 hour counts and include volume and classification data. The MRPC counts are typically 24-48 hour volume data only but will often include additional data if needed.

The following table lists average daily traffic volumes for the continuous count stations located in the region from 1996 to 2009. From this available information, as well as additional information from the MassDOT website, the following patterns can be seen:

1. For the period 1996 to 2009, traffic volumes at the five permanent count stations in the Montachusett region increased between 5.6% - 24.6%.
2. Traffic increased on the area's limited access highway's Route 2 and I-190. In the Montachusett region, Route 2 experienced growth rates from -2.4%, in Harvard, to



24.2%, in Leominster, between the years 1996-2009. Volumes increased 12.7% to 25.7% during the same timeframe on Interstate 190. These increases highlight the importance of these routes to the region's highway network.

3. Traffic volumes on Route 2 in the western portion of the region show a significant increase between the years of 1996-2009. Leominster (24%), Templeton (16%), Phillipston (13.8%), and Fitchburg (12.7%) show the current housing trends moving towards the western part of the region.

MassDOT CONTINUOUS COUNT STATIONS

ID #	ROUTE	CITY/TOWN	LOCATION
4	RTE. 2	ATHOL	EAST OF THE ORANGE T.L.
5	RTE. 12	STERLING	NORTH OF RTE.I-190
34	RTE. 2	LANCASTER	WEST OF RTE. 70
3008	RTE. 2	WESTMINSTER	EAST OF RTE.140
3296	RTE. I-190	LANCASTER	NORTH OF RTE.117

CONTINUOUS COUNT STATIONS - ADT

ID #	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	% Change per year	% Change*
4	9,538	9,915	10,963	10,401	10,196	10,415	10,800	10,967	11,127						2.09%	16.7%
5	7,524	7,719	7,867	8,111	8,274	8,693	8,647	8,969		8,452					1.37%	12.3%
34											47,800			50,498	1.87%	5.6%
3008	34,494	35,572	37,151	39,018	39,362	40,923	42,663	42,168	43,257	42,991					2.73%	24.6%
3296	31,000	32,420	34,668	36,516	37,641	36,548									3.58%	17.9%

(*% Change represents from 1996 (or earliest year) to the most current year available)

In addition to the MassDOT continuous count stations, the MRPC maintains a database for its own count program with count locations that are conducted every four years. This program was modified in 2009 to better meet the needs of the MRPC communities. Each member community is also allowed 5 free count locations per calendar year. These may be volume, classification, speed and/or Turning Movement counts. Approximately 150 counts are conducted per year. For more information regarding specific count locations and the count schedule please contact the MRPC directly.



The following table shows annual growth rates for the frequent count locations based on the count history from 2006-2010.

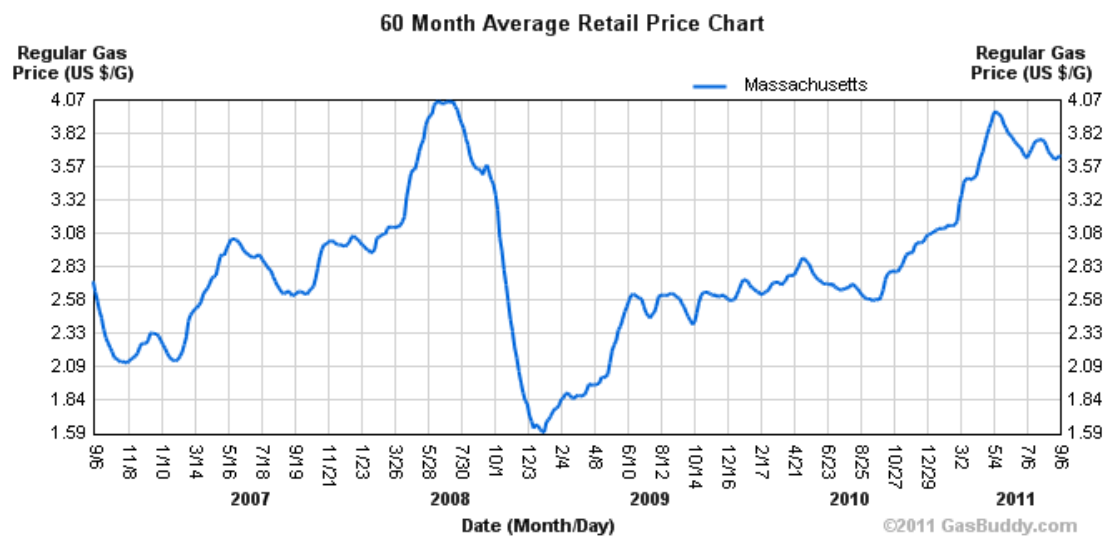
Volume Counts 2006-2010:

Number of Counts: 93

		Annual Growth Rates		
	#	2006	2010	2006-2010
Total:	93	749935	725959	-0.81%
Urban:	41	478081	469255	-0.46%
Rural:	52	271854	256704	-1.42%

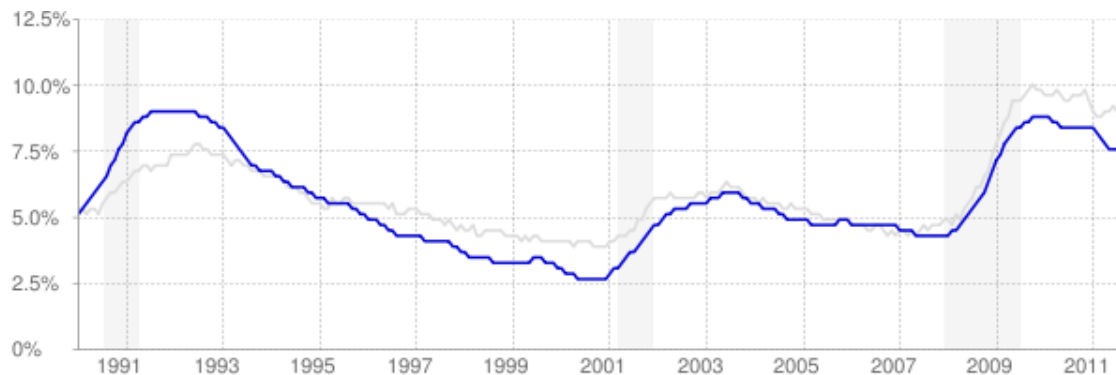
In recent years the traffic volumes have been decreasing steadily. This could be a result of

- A decreasing economy
- Rising gas prices



- higher unemployment rates

Massachusetts Unemployment Rates



- An increase people using public transportation



Classification counts are also conducted on a regular basis. The table below includes data from 13 count stations that included classification data in both 2007 and 2010. These locations had a total increase of .67% truck traffic during this time.

Classification Counts 2007-2010:

Number of Counts: 13

	2007	2010
Total Vehicles	142,567	98,741
Total Trucks	3,556	3,125
% of Trucks	2.49%	3.16%
% Change		0.67%