

IV. EXISTING TRANSPORTATION SYSTEM

Regional Highway System

The region's 15 cities and towns are extremely well served by an excellent highway network with over 1,400 miles of roadway. Interstate highways 93, 95 and 495 traverse the region, providing vehicular access north, south and west. Both I-93 and I-495 link the region with Boston. I-93 extends north to Salem, Manchester and Concord, New Hampshire. I-495 is a circumferential roadway that crosses every major highway in eastern Massachusetts, including the Massachusetts Turnpike running west to New York State, and I-95 that passes through every major east coast city from Maine to Florida. At least one of these three interstates passes through 14 of the region's 15 communities. Map 1 on the following page shows the primary routes within the region.

While the interstate highways serve the highest numbers of vehicles, state-numbered arterial routes are the most extensive. U.S. Route 1 and Routes 1A, 28, 97, 110, 113, 114, 125, 133, and 213 are of vital importance because they link the major activity centers of each community with other communities within the region. In addition, local roads, which make up approximately 62% of the region's highway network, are important to local communities because they serve as access to residences and businesses. Table IV-1 below shows the miles of road by functional classification for each community in the region as identified in the MassHighway 2005 Road Inventory File.

**Table IV -1
Merrimack Valley Region Roadway Miles
By Functional Classification Type**

Community	Local	Interstate	Principal Arterial	Rural Minor/ Urban Principal Arterial	Urban Minor Arterial/Rural Major Collector	Urban/Rural Minor Collector	Total
Amesbury	41	10	0	4	14	14	83
Andover	148	27	0	23	25	27	250
Boxford	72	10	0	2	24	1	109
Georgetown	43	7	3	5	9	3	70
Groveland	26	0	0	4	7	6	44
Haverhill	181	16	7	13	39	25	281
Lawrence	96	5	2	7	27	9	146
Merrimac	31	5	0	0	5	9	50
Methuen	155	13	10	9	32	19	238
Newbury	38	5	0	5	23	0	70
Newburyport	52	6	0	10	11	4	83
North Andover	98	1	12	4	9	22	146
Rowley	30	1	0	8	9	2	50
Salisbury	27	6	0	0	20	9	62
West Newbury	32	2	0	5	14	1	53
TOTAL	1,072	114	34	99	266	149	1,736

Virtually all the roads in the Merrimack Valley region are administered by either the Massachusetts Highway Department or the local community in which the road is located.

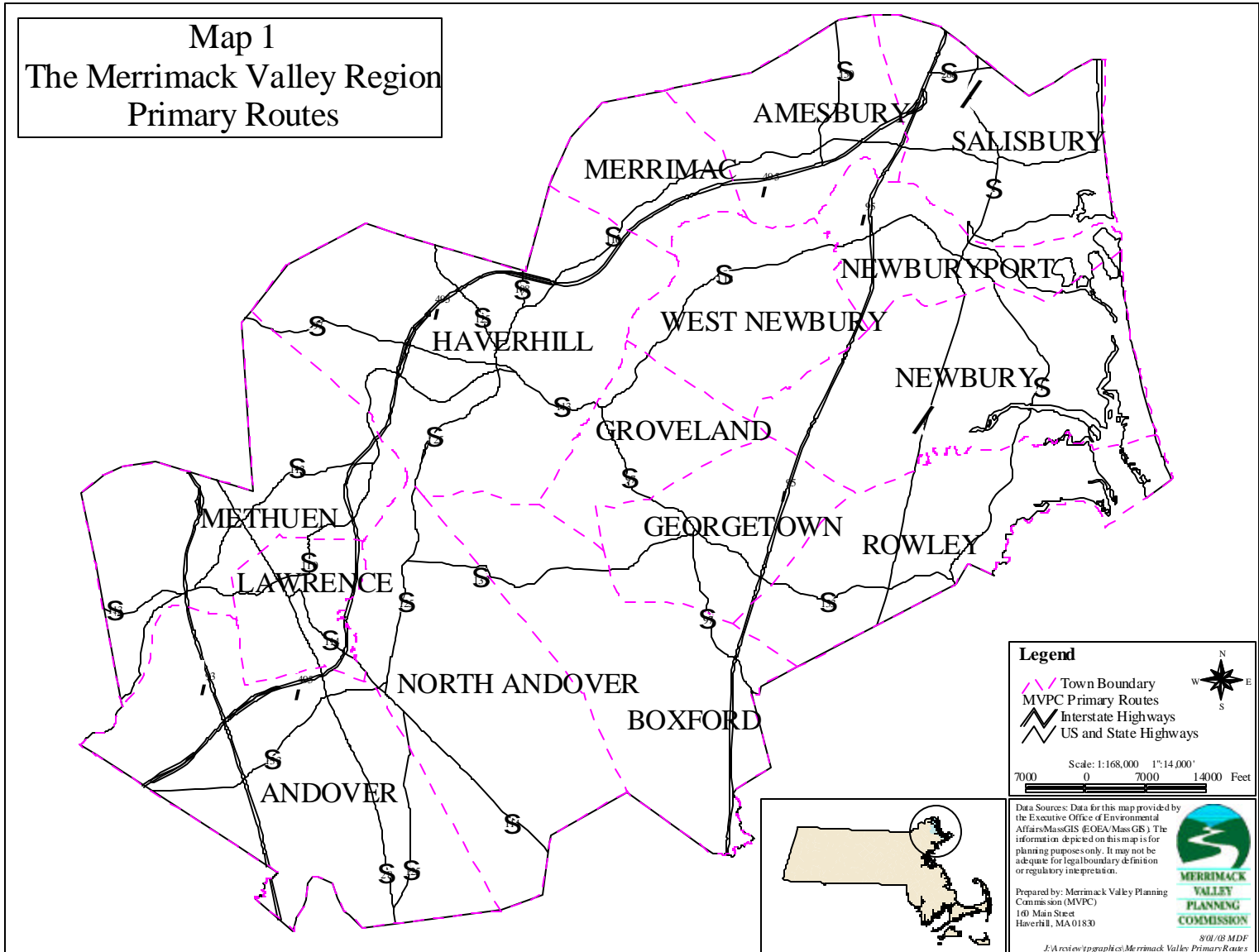
While individual communities often make minor improvements to the federal-aid roadway network in the region, the federal government and/or MHD fund almost all major highway improvements.

JOURNEY TO WORK TRENDS IN THE MERRIMACK VALLEY REGION

During the late summer of 2003, the U.S. Bureau of the Census released information on journey to work flows for communities in Massachusetts that was gathered as part of the 2000 Census. This information consisted of town-level journey to work flows for both those persons living in the region, as well as for those persons that travel to work in Merrimack Valley communities. This information was obtained through the so-called “long form” of the Census, which is sent to approximately one in six households.

Using this data, along with data obtained from the 1990 Census, an analysis was done to summarize the changes in overall Journey to Work movement of people in and around the Merrimack Valley region. It should be noted that the following data do not include all employment located in the Merrimack Valley region, as the number of people working out of their homes is not considered. The results of this analysis are summarized below.

Map 1
The Merrimack Valley Region
Primary Routes



Journey to Work Data for Merrimack Valley Residents

Table IV-2 provides Census data on Merrimack Valley resident's journey to work flows to selected areas between 1990 and 2000. As shown in Table IV-2, the total number of Merrimack Valley residents traveling to work increased 12.4% between 1990 and 2000, from 130,672 workers to 146,923 workers. This is slightly greater than the 10.5% increase in the region's population from 288,280 persons to 318,556 persons over the same period (2000 US Census). Again, it should be noted that this information pertains to work trips only. The 2001 National Personal Transportation Survey estimates that trips made to/from work constitute approximately 16% of the total number of trips made by the typical household.

**Table IV-2
Merrimack Valley Region Residents
Work Zone Destination**

<u>Region</u>	<u>1990</u>	<u>(%)</u>	<u>2000</u>	<u>(%)</u>	<u>Change</u>	<u>(%)</u>
MVPC	78,743	60.3%	77,849	52.99%	-894	-1.14%
Southern NH	4,377	3.3%	5,599	3.81%	1,222	27.92%
Boston	7,026	5.4%	9,134	6.22%	2,108	30.00%
Greater Boston	7,155	5.5%	10,499	7.15%	3,344	46.74%
Route 128	13,293	10.2%	16,393	11.16%	3,100	23.32%
Route 495	715	0.5%	658	0.45%	-57	-7.97%
NMCOG Region	7,233	5.5%	8,506	5.79%	1,273	17.60%
Cape Ann	2,481	1.9%	4,144	2.82%	1,663	67.03%
Central NH	1,231	0.9%	2,511	1.71%	1,280	103.98%
Southern Edge	4,356	3.3%	5,276	3.59%	920	21.12%
Others	4,062	3.1%	6,354	4.32%	2,292	56.43%
	130,672		146,923		16,251	12.44%

Table IV-2 also indicates that the overall percentage of Merrimack Valley residents that traveled to work within the Merrimack Valley region dropped by 1.1% between 1990 and 2000, while the percentage commuting to all other areas except Route 495 increased. Also of note is that the number of Merrimack Valley residents traveling to Central NH more than doubled (104% increase) and that the overall percentage of residents that live and work in the Valley declined from 60.3% in 1990 to 52.1% in 2000.

Journey to Work Data for Jobs Located in Merrimack Valley

Table IV-3 shows the zones of origin of those workers traveling to work in the Merrimack Valley. The number of Merrimack Valley jobs people traveled to also grew, from 124,015 in 1990 to 138,068 in 2000, an 11.3% increase. Census data shows that most of this growth took place in the communities located in the eastern half of the Valley, with additional employment growth taking place in Andover and Haverhill.

**Table IV-3
Merrimack Valley Employment
Zone of Origin**

Region	1990	(%)	2000	(%)	Change	(%)
MVPC	78,743	63.5%	77,849	56.38%	-894	-1.14%
Southern NH	17,232	13.9%	14,799	10.72%	-2,433	-14.12%
Boston	710	0.6%	1,527	1.11%	817	115.07%
Greater Boston	3,579	2.9%	9,354	6.77%	5,775	161.36%
Route 128	3,946	3.2%	5,702	4.13%	1,756	44.50%
Route 495	145	0.1%	849	0.61%	704	485.52%
NMCOG Region	6,767	5.5%	8,709	6.31%	1,942	28.70%
Cape Ann	1,233	1.0%	2,400	1.74%	1,167	94.65%
Central NH	3,573	2.9%	5,837	4.23%	2,264	63.36%
Southern Edge	1,469	1.2%	2,691	1.95%	1,222	83.19%
Others	6,618	5.3%	8,351	6.05%	1,733	26.19%
	124,015		138,068		14,053	11.33%

With the exception of Southern New Hampshire, there were significant increases in the percentage of persons traveling to work located in Merrimack Valley from all regions, with the Route 495 region being most striking at 485.5%.

Given the growth in both the number of workers living in the Merrimack Valley region and traveling to work, and the number of jobs located in Merrimack Valley that people are traveling to, it is interesting to note that the number of people residing and working in the Valley stayed nearly level, declining by only 1.1 percent during the 1990 – 2000 period.

Table IV-4 illustrates the 2000 commuting patterns of Merrimack Valley residents to the 15 cities and towns within the region. In 1990, 61.2 percent of the 133,955 commuters living in the Valley remained in the region for their work. The City of Lawrence was the workplace destination of the greatest number of the region's commuters (over 17,000), followed by Andover and Haverhill. Lawrence also was home to the greatest number of commuters that stayed within the region and the City of Newburyport had the greatest percentage of intra-town commuters (people who live and work in the same community). By comparison, only 53% of the region's 146,943 commuters remained in the Valley for their work in 2000, a drop of over eight percent. Lawrence continued to be the workplace destination of the greatest number of the region's commuters (14,357), a marked reduction from the 1990 figure.

Table IV-5 illustrates the commuting patterns of Merrimack Valley residents *beyond* the region. Over 50,000 residents of the Valley (38.8 percent) commuted outside the region in 1990. That figure grew markedly by 2000 as 69,074 residents commuted outside the region. The largest work City destination for Valley residents in 1990 was Boston. Over 7,000 commuted into Boston (5.2 % of all commuters). In 2000, 9,124 Valley residents (6.2% of all commuters) worked in Boston. Many residents commute to one of several towns to the south and west in the Route 128 corridor.

Bridges

A list of the 234 federal-aid eligible bridges in the Merrimack Valley Region can be found in Appendix _. Where available, this list includes the Massachusetts Highway Department's rating of the structure (next to last column of the chart). This "AASHTO" rating system is based on a scale of 1 to 100 with 100 being the best. Ratings are based on age, structural soundness, traffic volumes, and other factors. As a general rule of thumb, bridges with AASHTO ratings of less than 50 are considered likely candidates for rehabilitation or reconstruction. Maps in Appendix D show the bridge locations in each community.

A structurally deficient bridge is one that has been restricted to light vehicles only, is closed or requires immediate rehabilitation to remain open. A deficient bridge is not necessarily unsafe or one that requires special posting for speed or weight limitations. It does require significant maintenance, rehabilitation, or sometimes replacement. Some of these bridges are posted and may require trucks over a certain weight to take a longer route.

The USDOT defines a functionally obsolete bridge as one on which the deck geometry, load-carrying capacity, vertical and horizontal clearance, or approach roadway alignment no longer meets the usual criteria for the system of which the bridge is a part.

The latest listing of Merrimack Valley bridges that was prepared by the MassHighway Department earlier this year identifies 11 structurally deficient bridges. Many of these bridges are programmed on the region's TIP for replacement or appear on the state's bridge repair list. Each of these bridges is identified below along with a brief description of its status.

1. ***Bates Bridge (Haverhill/Groveland)***: Design work on a replacement bridge to be built just downstream from the existing structure is complete. Project appears in the region's FY 2007-2010 TIP.
2. ***Rocks Village Bridge (Haverhill)***: Design work on improvements to the bridge is proceeding. Project appears in the region's FY 2007-2010 TIP and is scheduled to begin construction in 2008.
3. ***Amesbury Street over Merrimack River (Lawrence)***: This project does not appear on MassHighway's Bridge List or in the Merrimack Valley MPO's FY 2007-2010 TIP.
4. ***Broadway over Merrimack River (Lawrence)***: Project for improvements to this structure was approved by the Project Review Committee in March 2006.

5. ***East Haverhill Street over the Spicket River (Lawrence):*** Project to replace bridge appears on the state's federal aid bridge list. 100% Design Plans for the project are now being completed.
6. ***Canal Street Bridge over the Spicket River (Lawrence):*** Design work on this new bridge, to be built just upstream from the existing structure, is now being completed. The project includes the creation of a new signalized intersection of Canal, Marston and Prospect Streets.
7. ***Lowell Street Bridge over B&M Railroad (Lawrence):*** MassHighway has begun preliminary design work on a project to improve this structure.
8. ***Route 28 over Route 213 (Methuen):*** Project to replace this bridge appears in the region's FY 2007-2010 TIP and is scheduled to be advertised for construction in 2007.
9. ***Hampshire Road over the Spicket River (Methuen):*** This bridge suffers from a bridge scouring issue on one of the abutments. MassHighway will address this issue through one of its District-wide bridge contracts.
10. ***Hay Street Bridge over the Little River (Newbury):*** Construction has begun on a new bridge at this location.
11. ***Route 1A Bridge over the Parker River (Newbury):*** Reconstruction of this bridge is set to begin in 2007. The project was advertised for construction in November 2005 and a notice to proceed for construction was issued in November 2006.

In addition to the 234 federal aid eligible bridges in the region, there are 149 "short bridges" and culverts. Short Bridges have spans (i.e. the space between abutments) that are less than 20 feet and the culverts have a span of less than nine feet. These structures are not eligible to receive federal transportation fund for maintenance or repair. Most are owned and maintained by the municipalities in the region.

**Table IV-4
Commuting Patterns Within The MVPC Region in 2000**

TOWN OF RESIDENCE	WORKPLACE (TOWN)															TOTAL IN REGION	TOTAL OF ALL
	Amesbury	Andover	Boxford	Georgetown	Groveland	Haverhill	Lawrence	Merrimac	Methuen	Newbury	Newburyport	North Andover	Rowley	Salisbury	West Newbury		
Amesbury	1985	314	20	47	10	300	253	104	104	41	1156	161	74	199	60	4,828	8,421
% of total	23.6%	3.7%	0.2%	0.6%	0.1%	3.6%	3.0%	1.2%	1.2%	0.5%	13.7%	1.9%	0.9%	2.4%	0.7%	57.3%	
Andover	16	4152	7	49		281	642	9	310	9	65	684		22	10	6,256	15,013
% of total	0.1%	27.7%	0.0%	0.3%	0.0%	1.9%	4.3%	0.1%	2.1%	0.1%	0.4%	4.6%	0.0%	0.1%	0.1%	41.7%	
Boxford	5	180	506	29		108	58		46		15	162	20			1,129	3,854
% of total	0.1%	4.7%	13.1%	0.8%	0.0%	2.8%	1.5%	0.0%	1.2%	0.0%	0.4%	4.2%	0.5%	0.0%	0.0%	29.3%	
Georgetown	10	104	60	665	29	153	62	21	15	32	123	94	62	12		1,442	3,783
% of total	0.3%	2.7%	1.6%	17.6%	0.8%	4.0%	1.6%	0.6%	0.4%	0.8%	3.3%	2.5%	1.6%	0.3%	0.0%	38.1%	
Groveland	39	182	17	57	327	504	76	40	85	16	90	137	17		60	1,647	3,104
% of total	1.3%	5.9%	0.5%	1.8%	10.5%	16.2%	2.4%	1.3%	2.7%	0.5%	2.9%	4.4%	0.5%		1.9%	53.1%	
Haverhill	297	2217	125	344	175	8680	1516	127	732	48	522	2197	59	108	96	17,243	29,241
% of total	1.0%	7.6%	0.4%	1.2%	0.6%	29.7%	5.2%	0.4%	2.5%	0.2%	1.8%	7.5%	0.2%	0.4%	0.3%	59.0%	
Lawrence	126	2401	23	35	48	833	8083	8	1898	46	101	1343	24	13	21	15,003	24,826
% of total	0.5%	9.7%	0.1%	0.1%	0.2%	3.4%	32.6%	0.0%	7.6%	0.2%	0.4%	5.4%	0.1%	0.1%	0.1%	60.4%	
Merrimac	179	147		13	30	396	69	436	86	8	280	189	10	31	80	1,954	3,334
% of total	5.4%	4.4%	0.0%	0.4%	0.9%	11.9%	2.1%	13.1%	2.6%	0.2%	8.4%	5.7%	0.3%	0.9%	2.4%	58.6%	
Methuen	54	2176		41	53	778	2290	20	3893	22	158	1388	19	55		10,947	20,471
% of total	0.3%	10.6%	0.0%	0.2%	0.3%	3.8%	11.2%	0.1%	19.0%	0.1%	0.8%	6.8%	0.1%	0.3%	0.0%	53.5%	
Newbury	40	133		15		103	37		23	613	699	66	65	70	24	1,888	3,476
% of total	1.2%	3.8%	0.0%	0.4%	0.0%	3.0%	1.1%	0.0%	0.7%	17.6%	20.1%	1.9%	1.9%	2.0%	0.7%	54.3%	
Newburyport	309	241	23	49		263	261	42	102	163	3034	211	82	201	81	5,062	9,186
% of total	3.4%	2.6%	0.3%	0.5%	0.0%	2.9%	2.8%	0.5%	1.1%	1.8%	33.0%	2.3%	0.9%	2.2%	0.9%	55.1%	
North Andover	12	1337	35	15	9	345	880	12	240	22	94	3214	5	15		6,235	13,152
% of total	0.1%	10.2%	0.3%	0.1%	0.1%	2.6%	6.7%	0.1%	1.8%	0.2%	0.7%	24.4%	0.0%	0.1%	0.0%	47.4%	
Rowley	33	42		17		22	22	5	24	70	185		500	64	20	1,004	2,955
% of total	1.1%	1.4%	0.0%	0.6%	0.0%	0.7%	0.7%	0.2%	0.8%	2.4%	6.3%	0.0%	16.9%	2.2%	0.7%	34.0%	
Salisbury	209	114		22	10	160	81	43	64	64	634	59	81	567		2,108	3,950
% of total	5.3%	2.9%	0.0%	0.6%	0.3%	4.1%	2.1%	1.1%	1.6%	1.6%	16.1%	1.5%	2.1%	14.4%	0.0%	53.4%	
West Newbury	44	65	12	49	14	161	27	45	33	19	246	74	12	19	283	1,103	2,157
% of total	2.0%	3.0%	0.6%	2.3%	0.6%	7.5%	1.3%	2.1%	1.5%	0.9%	11.4%	3.4%	0.6%	0.9%	13.1%	51.1%	
REGION TOTAL	3358	13805	828	1447	705	13087	14357	912	7655	1173	7402	9979	1030	1376	735	77,849	146,923
% of total	2.3%	9.4%	0.6%	1.0%	0.5%	8.9%	9.8%	0.6%	5.2%	0.8%	5.0%	6.8%	0.7%	0.9%	0.5%	53.0%	
% of Region	4.31%	17.73%	1.06%	1.86%	0.91%	16.81%	18.44%	1.17%	9.83%	1.51%	9.51%	12.82%	1.32%	1.77%	0.94%	100.00%	na

Source: 2000 U.S. Bureau of the Census, Journey-to-Work Statistics

**Table IV-5
Commuting Patterns Beyond The MVPC Region in 2000**

TOWN OF RESIDENCE	WORKPLACE (TOWN)															TOTAL OUT OF REGION	TOTAL OF ALL
	Boston	Salem NH	Wilmington	Danvers	Peabody	Lowell	Beverly	Woburn	Lynn	Cambridge	Burlington	Tewksbury	Salem MA	All others out of region			
Amesbury	324	55	40	375	140	63	166	76	152	73	47	74	74	1,934	3,593	8,421	
% of total	3.85%	0.65%	0.48%	4.45%	1.66%	0.75%	1.97%	0.90%	1.81%	0.87%	0.56%	0.88%	0.88%	22.97%	42.67%		
Andover	1610	172	425	104	176	406	106	349	94	562	398	231	103	4,021	8,757	15,013	
% of total	10.72%	1.15%	2.83%	0.69%	1.17%	2.70%	0.71%	2.32%	0.63%	3.74%	2.65%	1.54%	0.69%	26.78%	58.33%		
Boxford	653	6	34	111	154	21	105	86	157	110	59	19	58	1,152	2,725	3,854	
% of total	16.94%	0.16%	0.88%	2.88%	4.00%	0.54%	2.72%	2.23%	4.07%	2.85%	1.53%	0.49%	1.50%	29.89%	70.71%		
Georgetown	407	0	28	157	214	25	94	29	80	95	93	25	94	1,000	2,341	3,783	
% of total	10.76%	0.00%	0.74%	4.15%	5.66%	0.66%	2.48%	0.77%	2.11%	2.51%	2.46%	0.66%	2.48%	26.43%	61.88%		
Groveland	307	33	74	172	44	22	158	31	61	26	23	18	50	438	1,457	3,104	
% of total	9.89%	1.06%	2.38%	5.54%	1.42%	0.71%	5.09%	1.00%	1.97%	0.84%	0.74%	0.58%	1.61%	14.11%	46.94%		
Haverhill	1239	708	611	571	539	469	386	367	318	248	257	432	312	5,541	11,998	29,241	
% of total	4.24%	2.42%	2.09%	1.95%	1.84%	1.60%	1.32%	1.26%	1.09%	0.85%	0.88%	1.48%	1.07%	18.95%	41.03%		
Lawrence	793	706	641	331	383	499	222	497	342	137	219	400	242	4,411	9,823	24,826	
% of total	3.19%	2.84%	2.58%	1.33%	1.54%	2.01%	0.89%	2.00%	1.38%	0.55%	0.88%	1.61%	0.97%	17.77%	39.57%		
Merrimac	139	102	32	81	54	35	44	40	59	18	0	54	5	717	1,380	3,334	
% of total	4.17%	3.06%	0.96%	2.43%	1.62%	1.05%	1.32%	1.20%	1.77%	0.54%	0.00%	1.62%	0.15%	21.51%	41.39%		
Methuen	981	1019	538	149	234	681	229	342	248	188	307	324	0	4,284	9,524	20,471	
% of total	4.79%	4.98%	2.63%	0.73%	1.14%	3.33%	1.12%	1.67%	1.21%	0.92%	1.50%	1.58%	0.00%	20.93%	46.52%		
Newbury	276	9	29	127	138	7	114	8	70	26	20	23	9	732	1,588	3,476	
% of total	7.94%	0.26%	0.83%	3.65%	3.97%	0.20%	3.28%	0.23%	2.01%	0.75%	0.58%	0.66%	0.26%	21.06%	45.68%		
Newburyport	674	27	70	166	255	79	220	126	233	98	90	37	136	1,913	4,124	9,186	
% of total	7.34%	0.29%	0.76%	1.81%	2.78%	0.86%	2.39%	1.37%	2.54%	1.07%	0.98%	0.40%	1.48%	20.83%	44.89%		
North Andover	1124	239	446	248	216	236	93	152	113	195	37	157	105	3,556	6,917	13,152	
% of total	8.55%	1.82%	3.39%	1.89%	1.64%	1.79%	0.71%	1.16%	0.86%	1.48%	0.28%	1.19%	0.80%	27.04%	52.59%		
Rowley	244	29	9	114	143	0	197	30	120	87	15	7	54	902	1,951	2,955	
% of total	8.26%	0.98%	0.30%	3.86%	4.84%	0.00%	6.67%	1.02%	4.06%	2.94%	0.51%	0.24%	1.83%	30.52%	66.02%		
Salisbury	210	24	24	72	105	73	76	49	79	36	8	27	70	989	1,842	3,950	
% of total	5.32%	0.61%	0.61%	1.82%	2.66%	1.85%	1.92%	1.24%	2.00%	0.91%	0.20%	0.68%	1.77%	25.04%	46.63%		
West Newbury	153	25	12	87	61	15	27	42	13	30	47	13	28	501	1,054	2,157	
% of total	7.09%	1.16%	0.56%	4.03%	2.83%	0.70%	1.25%	1.95%	0.60%	1.39%	2.18%	0.60%	1.30%	23.23%	48.86%		
REGION TOTAL	9134	3154	3013	2865	2856	2631	2237	2224	2139	1929	1620	1841	1340	32,091	69,074	146,923	
% of all commuters	6.22%	2.15%	2.05%	1.95%	1.94%	1.79%	1.52%	1.51%	1.46%	1.31%	1.10%	1.25%	0.91%	21.84%	47.01%		
% of beyond - region commuters	17.59%	6.07%	5.80%	5.52%	5.50%	5.07%	4.31%	4.28%	4.12%	3.71%	3.12%	3.54%	2.58%	61.79%	100.00%	na	

Source: 2000 U.S. Bureau of the Census, Journey-to Work Statistics

Environmental Justice

The term Environmental Justice within the context of transportation planning is taken to mean that the positive benefits of transportation systems should be distributed fairly and that the adverse impacts of transportation services and investments should not disproportionately affect low-income and minority communities. The federal government has ordered that all transportation planning agencies address environmental justice in their transportation planning efforts. In recent years there has been increased interest around the country regarding how well the MPOs are addressing this requirement.

The legal foundation for the concept of environmental justice is based on Title VI of the Civil Rights Act of 1964, which states:

No person in the United States shall, on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Since the passage of the Civil Rights Act, a number of additional laws, policies, and regulations have been enacted to further assure nondiscrimination and to protect low income and minority persons from unequal treatment in federal programs. For example, in 1994 the link between environmental impacts and nondiscrimination was further clarified in Presidential Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), which states:

Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.

This Executive Order requires federal agencies to actively assure that federal agencies and entities receiving federal funds comply with an array of laws, regulations, and policies that mandate the consideration and practice of environmental justice.

In addition to Executive Order 12898, the passage of the Transportation Equity Act for the 21st Century (TEA-21) and the subsequent release in 1999 of a Joint Federal Highway Administration/Federal Transit Administration Memorandum Implementing Title VI Requirements in Metropolitan and Statewide Planning are milestone events that direct MPOs to consider Environmental Justice Issues in the Transportation Planning process.

In recognition of these federal Environmental Justice requirements and the presence of a large minority population in the region, the Merrimack Valley Planning Commission commissioned a report from Community Design Partnership (CDP) to develop recommendations on how the Merrimack Valley MPO can more effectively meet its Title VI obligations. The project included the following elements that were designed to help meet federal transportation planning requirements for Environmental Justice analyses:

- ? identification and testing of public outreach methods
- ? survey of community members about transportation needs and use
- ? identification and invitation of community based representatives, service agencies and other organizations to sponsor focus groups to identify key transportation issues affecting low income and minority communities
- ? a preliminary analysis of transportation services and expenditures to evaluate whether low income and minority communities are receiving a fair share of public transportation in comparison to other communities in the region
- ? recommendations on actions and programs to insure an effective Environmental Justice program that complies with Title VI and related directives.

Results from the study, **ENVIRONMENTAL JUSTICE IN THE MERRIMACK VALLEY TRANSPORTATION PLANNING PROCESS**, are summarized briefly below. However, it should be noted that a primary recommendation of the study is that the MPO examine each of the following issues and analyses completed in this summary study in greater detail as elements of a revised Environmental Justice outreach and evaluation program are implemented in the region.

Low Income and Minority Populations

Table IV-6 below includes data on the low income and minority populations in the region that were identified in the CDP report based on the definitions contained in the 2000 U.S. Census. One of the recommendations of the CDP report is that the MPO work with the to develop specific definitions of low-income and minority populations. This table clearly shows that a significant proportion of the region's minority and low-income residents live in the city of Lawrence with sizable number also present in Methuen and Haverhill.

**Table IV-6
Minority and Low-Income Populations in the MVPC Region
2000 Census**

Town	Total Population	Racial Minority Pop.	Percent Racial Minority	Latino Pop.	Percent Latino	Individuals Below Poverty Line	Percent Below Poverty Line
Amesbury	16,450	462	2.8	156	0.9	951	5.9
Andover	31,247	2,626	8.4	567	0.9	1,205	3.9
Boxford	7,921	208	2.6	67	0.8	108	1.4
Georgetown	7,377	109	1.5	47	0.6	309	4.2
Groveland	6,038	97	1.6	28	0.5	269	4.5
Haverhill	58,969	6,091	10.3	5,174	8.8	5,243	9.1
Lawrence	72,043	36,999	51.4	43,019	59.7	17,217	24.3
Merrimac	6,138	106	1.7	55	0.9	165	2.7
Methuen	43,789	4,663	10.6	4,221	9.6	3,201	7.4
Newbury	6,717	113	1.7	61	0.9	208	3.1
Newburyport	17,189	325	1.9	151	0.9	877	5.2
North Andover	27,202	1,721	6.3	541	2.0	739	2.9
Rowley	5,500	89	1.6	47	0.9	224	4.1
Salisbury	7,827	192	2.5	92	1.2	526	6.8
West Newbury	4,149	63	1.5	27	0.7	156	3.8
TOTAL	318,556	53,864	16.9	54,253	17.0	31,398	9.8

Low Income and Minority Travel Needs

As part of the study, CDP performed a range of public outreach activities in an effort to identify the transportation needs of the minority and low-income populations that were identified as part of the study. Outreach mechanisms included the creation of an Environmental Justice Advisory Group, holding transportation focus group meetings in Lawrence, Haverhill and Methuen, conducting a transportation survey that was distributed to local neighborhood groups, social service agencies and in local Spanish language newspapers, and holding a public meeting on Environmental Justice.

Key transportation findings reported through these various outreach efforts include:

- ? Need for more frequent bus service and longer service hours, including service on Sunday.
- ? Wider distribution of transit information in more locations throughout the community
- ? Post all signs and provide public information materials in Spanish as well as English.
- ? Shorter and more direct bus routes.
- ? Weekend neighborhood vanpools, perhaps in collaboration with supermarkets or shopping centers, to provide access to essential locations.
- ? Taxi voucher system for emergency trips.

Evaluation of Transit System Impacts

The study found that the MVRTA bus routes are clearly focused to serve the parts of the region that are most densely populated including the vast majority of the region's minority and low-income populations. The equipment is rotated throughout the system, so that no routes are more likely to be served by older vehicles than others. In the focus groups there were no complaints from bus users about overcrowding, lack of air conditioning, or other aspects of riding conditions. On the basis of the distribution of routes, overcrowding, and vehicle condition, minority and low-income persons in the region are not underserved, nor do they receive disproportionate adverse impacts from public transportation projects.

Similarly, the study also found that the Authority's demand response and special transportation services, such as the Job Access/Reverse Commute program show no adverse impacts on the region's low-income and minority populations.

Evaluation of Highway System Impacts

A preliminary analysis of the highway capital expenditures identified in the draft 2006 Regional Transportation Plan showed that the low income and minority communities in the Valley were not being neglected. In addition, an analysis of congested roadways in the region and an examination of the condition of bridges revealed that these communities were not more likely to possess substandard facilities than their more affluent neighbors.

Recommendations for Greater Public Involvement

A primary goal of the Environmental Justice Study was to identify the steps that the MPO needed to take in order to develop an effective Environmental Justice program. Such a program will require the following elements:

- ? A definition of Environmental Justice and criteria that MVPC will use to define the relevant populations. The definition and criteria should be periodically reviewed for confirmation or adjustment within the context of the public involvement process.
- ? Identification of performance measures and standards and minimum levels of access and mobility suitable to the MVPC context.
- ? A program of data collection and analysis on the transportation experience and needs of the low-income and minority population in the region. Currently this population is concentrated in the City of Lawrence, the Methuen Arlington District, and several census tracts in downtown Haverhill
- ? Enhancement and improvement in the overall public involvement program.
- ? A program of efforts to pursue meaningful participation by low-income and minority persons in the transportation planning process.

Public Transportation

The Merrimack Valley region receives a wide array of public transportation services from various sources, including public and private entities. At the forefront of the region's public transportation system is the Merrimack Valley Regional Transit Authority (MVRTA), which is the sole administrator of the region's local bus system. The MVRTA offers fixed route, demand response, and special employment transportation services to the fifteen communities within the Merrimack Valley Planning Commission's region (see Map). Additionally, the MVRTA operates a commuter bus service between the Merrimack Valley and the Boston metropolitan area.

The Massachusetts Bay Transportation Authority (MBTA), based in Boston, supplements the MVRTA bus system by providing commuter rail services to the region. Seven stations along two commuter rail lines are located in the Merrimack Valley.

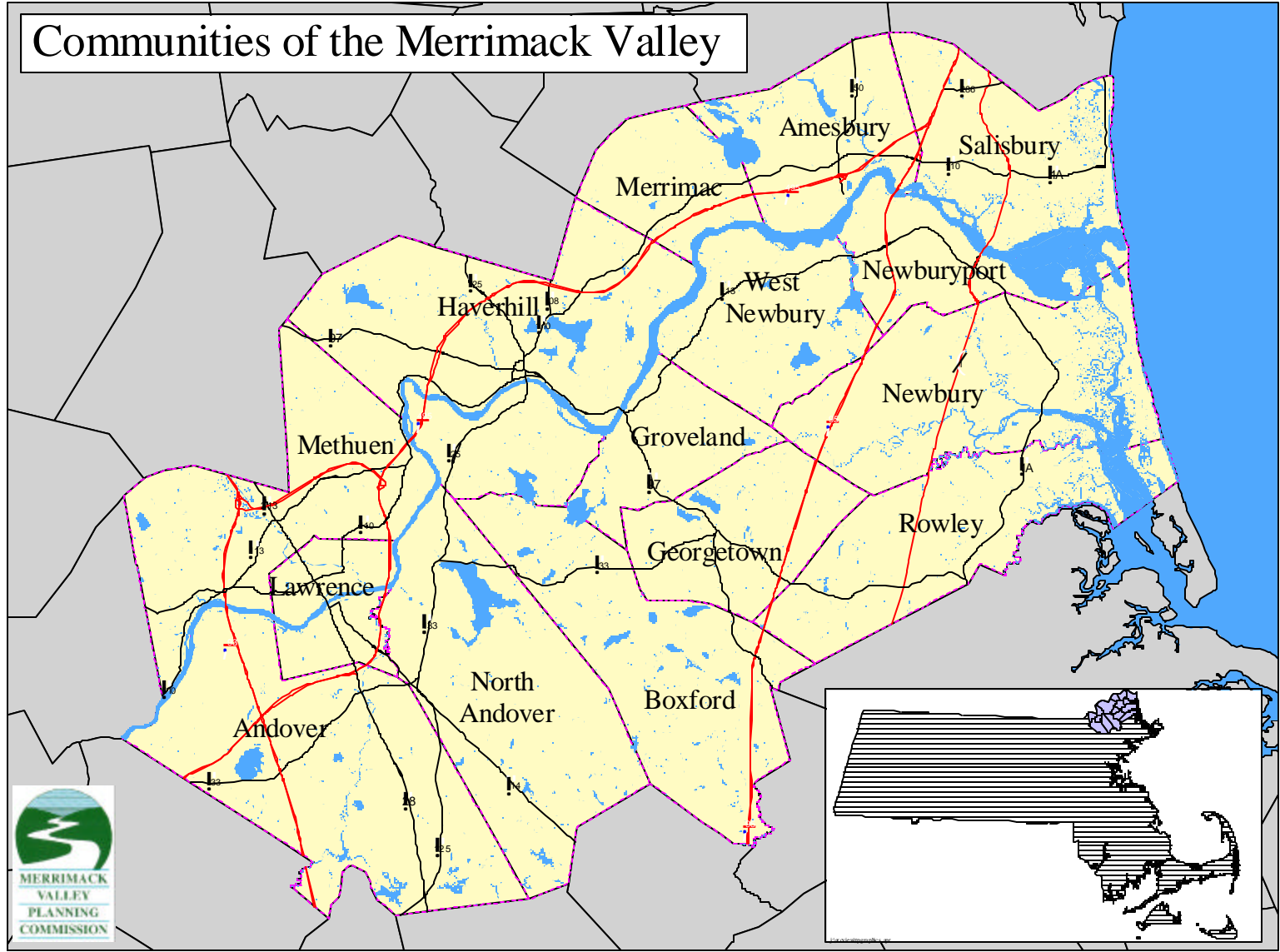
AMTRAK (officially known as the National Railroad Passenger Corporation) offers "Downeaster" passenger rail service between Boston, Massachusetts and Portland, Maine. With a stop in downtown Haverhill, the Downeaster further connects the Merrimack Valley to the greater New England region and beyond.

The Merrimack Valley Regional Transit Authority

The Merrimack Valley Regional Transit Authority (MVRTA) is the primary provider of public transportation in the Merrimack Valley region. The MVRTA was established on October 11, 1974 to provide local fixed route bus service within the greater Lawrence and Haverhill areas. Since its inception, the MVRTA has expanded its operations to include numerous local fixed bus routes, intercity bus service, commuter bus service, special employment shuttle services, transit shuttle services (Call & Commute), advance request transit services (Ring & Ride), and demand response transportation services to the region's elderly and disabled populations (EZ Trans).

The MVRTA service district corresponds to the region overseen by the Merrimack Valley Planning Commission, which consists of the following fifteen towns and cities: Amesbury, Andover, Boxford, Georgetown, Groveland, Haverhill, Lawrence, Merrimac, Methuen, Newbury, Newburyport, North Andover, Rowley, Salisbury, and West Newbury. However, not all of the communities choose to receive services from the MVRTA. Two communities, Newbury and Rowley, do not receive any direct services from the MVRTA although Georgetown residents can use their Ring and Ride service to access Rowley Commuter Rail Station.

Communities of the Merrimack Valley



Fixed Route Bus System

The MVRTA provides year-round local fixed route bus service to the communities of Amesbury, Andover, Haverhill, Lawrence, Merrimac, Methuen, Newburyport, and North Andover. Seasonal service to Salisbury Beach and Hampton Beach is provided during July and August. In addition, the MVRTA operates various intercity fixed routes and one bus route (Route 41) beyond the region that operates between Lawrence and Lowell.

The fixed route bus service operates on a Monday through Saturday schedule, with no service provided on Sundays or on holidays. The hours of operation vary by type of route and location. Lawrence-based routes typically begin operation at 5:00 AM on weekdays with service ending at 8:00 PM. Saturday bus service in Lawrence begins at 7:00 AM and operates until 7:00 PM. Haverhill-based routes begin operation at 5:30 AM on weekdays and shut down at 6:30 PM. Saturday Service in Haverhill begins at 8:00 AM and runs until 5:00. The frequency of service also varies by route, with all Lawrence-based routes operating every 25 minutes in peak hours on weekdays and every 45 minutes on Saturdays, and Haverhill-based routes operating every 60 minutes on weekdays and every 80 minutes on Saturdays. The shorter bus headways on Saturdays for Lawrence-based routes were initiated by the MVRTA on November 5, 2005 and weekday headways were changed on April 3, 2006 in response to requests from bus users for expanded weekend service. Table IV-7 below shows the hours of operation and headways of the major fixed routes in the MVRTA system.

**Table IV-7
MVRTA Fixed Route Operating Characteristics**

Route	Weekday Hours	Weekday Frequency	Saturday Hours	Saturday Frequency
Route 01	5:00 AM-8:00 PM	25 Peak; 45 Off Peak*	7:00 AM-7:00 PM	45
Haverhill-Based	5:30 AM-6:30 PM	60	8:20 AM-5:00 PM	80
Lawrence-Based	5:00 AM-8:00 PM	25 Peak; 45 Off Peak	7:00 AM-7:00 PM	45
Route 41	5:00 AM-8:00 PM	25 Peak; 45 Off Peak	7:00 AM-6:30 PM	45
Route 51	5:20 AM-7:25 PM	60	8:55 AM-6:00 PM	90
Route 72	5:50 AM Outbound; 3:25 PM Inbound	N/A	Not Operated	N/A
Route 73	5:50; 6:35 AM to/ 3:10; 4:10 PM From Lucent 5:55; 7:00 AM to/ 3:20; 4:20 PM from IRS Raytheon	N/A	Not Operated	N/A
Route 83	8:15; 10:45 AM to Hampton 1:50; 4:20 PM from Hampton	N/A	same as weekday	N/A

Peak Period: 5:00 AM – 9:00 AM; 2:00 PM – 6:00 PM
Off Peak Period: 9:00 AM – 2:00 PM; 6:00 PM – 8:00 PM

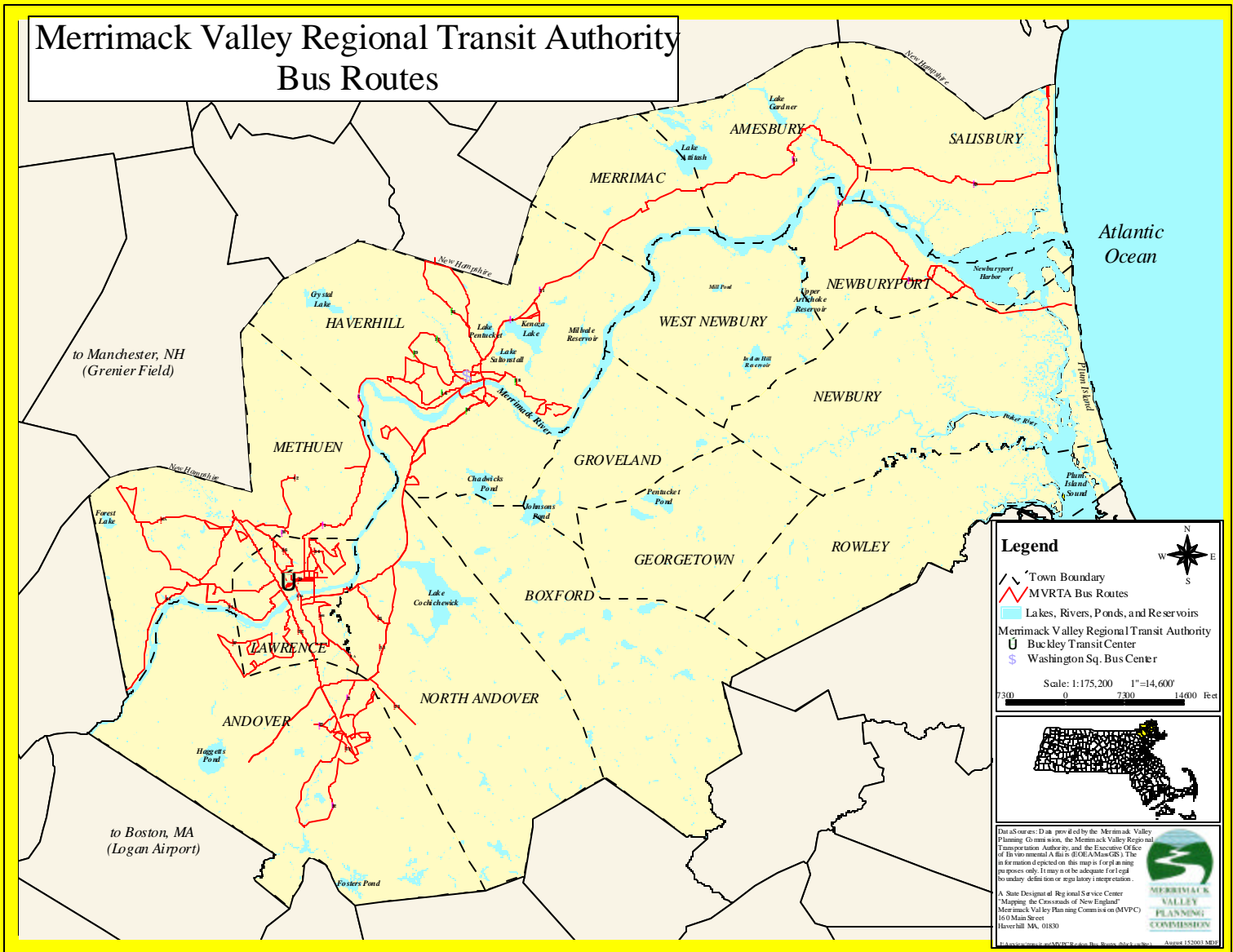
Existing Service Areas

The MVRTA operates the fixed route bus system in nine Merrimack Valley communities, however the system predominantly serves the region's two largest communities, Lawrence and Haverhill (see MVRTA bus system map).

In Lawrence, all MVRTA buses originate at the Buckley Transportation Center, which is centrally located in the downtown section of the city. Ten local fixed routes operate within the greater Lawrence area serving major shopping centers, hospitals and medical facilities, city government offices, schools, the McGovern Transportation Center and residential apartment complexes. Additionally, intercity routes operate between Lawrence and Haverhill (Route 01 with transfer to Route 51), Lawrence and Lowell (Route 41), and Lawrence and Salisbury Beach as well as Hampton Beach (Route 83) during the summer months.

In Haverhill, all MVRTA buses originate at the Washington Square Transit Station, which is located in the downtown section of the city. Six local fixed routes operate within the city of Haverhill serving MBTA commuter rail stations, shopping plazas, social service agencies, and the public library. Additionally, intercity routes operate between Haverhill and Lawrence (Route 01), Haverhill and Newburyport (Route 51), and Haverhill and Salisbury Beach (Route 83) during the summer months.

Merrimack Valley Regional Transit Authority Bus Routes



In addition to the extensive fixed route bus service provided to the greater Lawrence and Haverhill areas, the MVRTA operates special employment shuttle service (Routes 72 and 73), transit shuttle service (Call & Commute) to the Lowell Junction area, advance request transit service (Ring & Ride) in Andover, Boxford, Georgetown, Groveland, Salisbury, West Methuen, and West Newbury and special transportation services for the elderly and disabled (EZ Trans).

Fixed Route Bus System: MVRTA Ridership

Chart IV-1 below shows the MVRTA’s fixed route system ridership totals for fiscal years 2000-2006. It should be noted that there have been a number of changes to the fixed route bus system during the period.

**Chart IV-1
MVRTA Ridership Data**

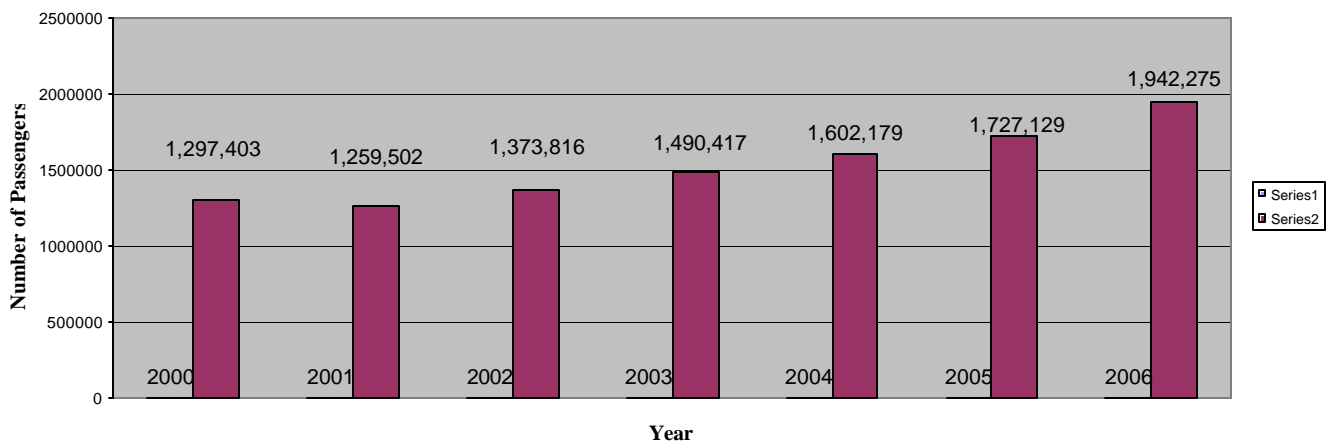


Chart IV-1 above shows that ridership on the fixed route bus system has grown steadily since FY 2000. Between FY 2001 and FY 2006, fixed route ridership has increased by 54.2% overall and approximately 9% annually.

Although the fixed route bus system is made up of numerous local and intercity routes, and special employment shuttles, two routes collectively account for one-quarter of the system’s total annual ridership. Route 01, which travels between Haverhill, Methuen, and Lawrence, and Route 41, which operates between Lawrence and Lowell, have traditionally been the two most heavily used routes on the fixed route system. In 2000, these routes accounted for 24.4% of the total annual ridership. By 2003, this number had increased to 27.25% and in FY 2006 was about the same at 26.72%. Ridership figures for the MVRTA fixed route system may be found in Table IV-8.

Route 39 B (Phillips Street) in Lawrence carries the most passengers among the Lawrence-based local bus routes, with 178,848 people having ridden this route in FY 2006. This constitutes almost 17% of Lawrence based ridership. Among the Haverhill-based local routes, Route 15 (Hilldale Avenue) and Route 13 (Main Street) are the most heavily traveled bus routes, carrying over almost 40% of all Haverhill based local ridership in 2006.

**Table IV-8
MVRTA Fixed Route Bus Ridership by Route, Fiscal Years 2000-2006**

Route #	FY-00	FY-01	FY-02	FY-03	FY-04	FY-05	FY-06
01 Law/Necco	184,111	173,611	199,357	225,158	263,223	270,284	301,143
13 Main St. N.A.	36,329	35,031	36,830	37,000	40,388	42,622	42,933
14 Wardhill	17,823	17,135	15,893	17,913	19,493	24,944	26,284
15 Hildale Avenue	33,812	35,088	38,174	46,345	35,801	42,239	47,773
16 Washington St.	26,019	28,454	30,754	35,677	26,694	30,062	32,967
18 Riverside	30,375	29,747	30,057	28,497	28,201	31,735	33,911
19 Summer Street	19,236	19,279	21,128	19,728	18,279	17,526	17,384
21 Andover Shuttle	30,473	27,503	24,570	22,377	22,458	28,293	28,119
22 Ballardvale	10,768	9,984	7,584	0	0	0	0
29 Lawrence Intown	12,391	9,829	11,405	0	0	0	0
32 Andover	76,033	72,672	84,188	89,906	96,991	108,604	117,279
33 North Andover	36,063	33,063	40,280	35,938	48,444	53,044	54,610
34 Prospect Hill	46,018	46,778	57,469	72,544	97,693	99,830	116,808
35 Water Street	51,032	47,056	56,325	59,165	54,544	66,859	95,808
36 Holy Family	50,345	47,758	53,499	57,984	61,027	61,987	73,874
37 Beacon Street	70,269	69,309	85,299	102,246	122,843	122,976	143,321
38 Hampshire Street	40,774	39,962	46,905	51,874	55,507	59,608	71,550
39A Colonial Heights	83,440	77,472	73,209	75,231	84,042	87,168	101,458
39B Philips Street	90,357	83,223	96,848	130,176	130,986	159,444	176,848
40 Methuen Square	53,114	50,656	58,962	72,705	80,419	88,086	98,574
41 Law/Lowell	144,963	146,605	163,472	180,988	189,856	200,121	217,864
42 The Loop/W. Methuen	10,657	9,982	6,822	0	0		0
51 Hav/Newburyport	60,513	69,324	98,513	107,325	113,534	119,135	130,863
52 Amesbury/Newburyport	17,052	16,940	8,398	0	0		0
53 Commuter Rail Shuttle	4,018	4,464	5,581	9,679	0		0
Haverhill Employment	17,383	15,406	8,445	3,650	2,674	3,117	2,239
Lawrence Employment	16,333	14,330	6,968	5,343	5,276	5,027	6,172
83 Beach Bus	4,527	4,471	4,506	2,968	3,806	4,418	4,493
84 Liberty Tree Mall	6,436	4,955	2,375	0	0		0
New Balance Shuttle	0	0	0	0	0		0
TOTALS	1,280,664	1,240,087	1,373,816	1,490,417	1,602,179	1,727,129	1,942,275
76A River Road	10,644	8,748					
76B River Road	1,732	6,329					
River Road Employment	4,230	4,338					
33A	133	0					
TOTAL FY 00 AND FY 01	1,297,403	1,259,502					

Data from Merrimack Valley Regional Transit Authority, 2006

Fixed Route Bus System: Transit Service Changes

Since the adoption of the 2003 Regional Transportation Plan, the MVRTA has instituted various changes to the fixed route bus system. These service changes are listed below:

Expanded Saturday Day Service began November 5th, 2005 for all Lawrence based buses that depart The Buckley Transportation Center in Lawrence. Buses run every 45 minutes (prior to this change they ran every 80 minutes). With this change buses also started service earlier in the morning and ended later at night – from 7:00 am to 7:00 pm

Expanded Weekday Peak Day Service began April 3rd 2006 for all Lawrence-based buses that depart The Buckley Transportation Center in Lawrence. Buses run every 25 minutes from:
5:00 am - 9:00 am and 2:00 pm - 6:00 pm. Between 9:00 am - 2:00 pm and 6:00 pm - 8:00 pm buses depart The Buckley Transportation Center every 45 Minutes. With this change buses also started service earlier in the morning and ended later at night -from 5:00 am to 8:00 pm

Route 18 - Resumed former routing so that the bus services the Hale Hospital using a different driveway.

Route 21 - No longer services Foxhill Road. The bus also has new times on its first Inbound trip. The times were changed so that the bus will pass the commuter rail station near Andover Commons prior to the 7:42 train.

Route 33 - Discontinued the stop at Merrimack College – ending at Chickering Road and now services McGovern Transportation Center and the Riverwalk

Route 41 – Made minor routing change in the area of Hunt Falls bridge and began to service the LRTA’s new Robert B. Kennedy Transfer Center

Route 51 – Made minor route change at Anna Jacques Hospital with buses no longer boarding passengers on Highland Ave.

Boston Commuter Bus – Expanded Service

Effective October 24th 2005 the Boston Commuter Bus began to offer expanded service with an additional inbound trip in the morning into Boston and an additional outbound trip in the afternoon returning to the Merrimack Valley. Prior to this there were only 2 morning and 2 afternoon trips.

Capital Improvements

The most important transit capital improvement completed since the adoption of the 2003 Regional Transportation Plan was the completion of the McGovern Transportation Center in Lawrence. This facility, which houses the Lawrence Commuter Rail Station, opened in December 2005 at the corner of Merrimack and South Union Street. The McGovern Center includes, a 850 space parking garage that serves commuter rail and MVRTA bus users as well as commercial and residential tenants of the Wood Mills and Ayer Mills, which are located adjacent to the facility. The Center also includes a police substation, public facility room, and retail space. Long-term plans call for the center to serve as a stop for bus services that would run to Logan and Boston/Manchester airports. Work on this project also included making substantial track and signal improvements to the Haverhill Main Line from Plaistow, New Hampshire to Andover Street in Lawrence.

In Haverhill, \$7.3 million in funding was earmarked in SAFETEA-LU for the design and construction of an Intermodal Transit parking facility in the downtown area near Haverhill Commuter Rail Station. A key element in this project would be the creation of an expanded a transit center downtown that provide both commuter bus and commuter rail service. To initiate this project, the Merrimack Valley Regional Transit Authority has undertaken a Preliminary Engineering study for this new facility. One of the key elements of this study will be the selection of a preferred station site. The study will also consider the feasibility of moving the MVRTA Bus Station in Washington Square to the new facility. Construction of the planned improvements to the Washington Square Bus Station has been put on hold pending the results of this Preliminary Engineering study.

The MVRTA has also continued work on the design of its new transportation facility in Amesbury, which will be situated off of Railroad Street just east of the Market Square Rotary. This new station will serve the MVRTA's fixed route buses as well as the commuter bus service operated by the Coach Company between the Merrimack Valley and Boston. It will also house the Amesbury Council on Aging. It is anticipated that design and permitting work on this facility will be completed in 2007 and that construction will finish in early 2009.

Commuter Bus Service

On January 6, 2003, the MVTRA took over the Boston commuter bus route when Trombly Bus Lines decided to discontinue the daily service. This decision was made in recognition that there are a sizeable number of people using the service; there is a need to provide bus service along the congested Interstate Route 93 (I-93) corridor into Boston that is not focused on the North Station area; and there is room in this market to attract additional riders to the service.

This weekday (Monday through Friday) service between Lawrence, Andover and Boston picks up passengers at seven stops in Methuen, Lawrence and Andover before traveling into the Boston metropolitan region. Inbound service begins at the Methuen Park and Ride Lot off Pelham Street with additional stops at the McGovern Transportation Center then to Bowdoin Street, Mt. Vernon Street, Shawsheen Square in Andover, the Andover Center Parking Lot, and the Faith Lutheran Church Park and Ride Lot. The service makes three stops within the

City of Boston including Government Center, the State Transportation Building, and at the corner of Essex and Lincoln Streets.

The bus service makes three daily inbound (toward Boston) trips with the first bus leaving the Pelham Street Park and Ride Lot in Methuen at 5:45 AM, the second bus departing at 6:15 AM and the final bus leaving at 6:45. The travel time for the entire route is approximately one hour and forty-five minutes. Similarly, the bus service makes two daily outbound (toward Lawrence) trips with the first bus leaving Boston at 4:40 PM, the second bus departing at 5:10 PM and the final bus leaving at 5:40. The travel time for the entire route is approximately one hour and forty-five minutes. The fare (one-way) is \$5.00, and \$4.50 for senior citizens. An additional 10-ride pass is sold for \$40.00.

Special Employment Shuttle Service (Routes 72 and 73)

The MVRTA operates limited special employment fixed route service, providing employees of various companies with a shuttle service between the major transportation hubs in Haverhill and Lawrence, and their places of employment. Every weekday morning and afternoon, shuttles operate between the Washington Square Transit Station in Haverhill (Route 72) and the Ward Hill Industrial Park (Haverhill), Lucent Technology (North Andover), and Raytheon and the Internal Revenue Service (Andover). Similarly, shuttles operate between the Buckley Transportation Center in Lawrence (Route 73) and Lucent Technology, while another shuttle travels to Raytheon and the Internal Revenue Service. This shuttle service is very limited, with only one shuttle run in each direction during the peak traffic hours on Route 72, and two runs in each direction during the peak traffic hours on Route 73.

Transit Shuttle Service (Call & Commute)

The MVRTA, in conjunction with the Town of Andover and the Junction Transportation Management Organization (JTMO), provides a transit shuttle service to the employees of the Gillette Company, Wyeth BioPharma, and JE Merit Constructors, Inc. who live in the communities of Andover, Lawrence, Methuen, and North Andover, and to employees of JTMO member companies in Andover and Wilmington who ride the MBTA commuter rail to the Ballardvale station.

This weekday door-to-door shared ride shuttle service, called Call & Commute, is provided in the Andover, Lawrence, Methuen, and North Andover areas on a first-come, first-served basis between the hours of 6:00 AM and 9:00 AM, and 3:00 PM and 6:00 PM. Riders must call for reservations at least one day in advance. The fare (one-way) is \$2.00.

Additionally, a shared ride shuttle service is provided to employees of Junction TMO member companies in Andover and Wilmington who ride the MBTA commuter rail to the Ballardvale station. The shuttle transfers rail passengers at limited, scheduled times between the Ballardvale rail station and the Gillette Company and Wyeth BioPharma. The fare is \$2.00, however both the Gillette Company and Wyeth BioPharma fully subsidize this transit service for their employees.

Advance Request Transit Service (Ring & Ride)

Ring & Ride is a door-to-door public transit service provided, upon request, to residents in specified MVRTA service districts. Presently, the MVRTA provides Ring & Ride service to a number of areas in the region. These include Boxford, Georgetown, Groveland, Salisbury and West Newbury along with The Loop and West Methuen (formerly Route 42) and Downtown Andover (formerly Route 22).

Table IV-9 below shows the eligibility, fare, days and hours of operation and destinations served for the Ring and Ride services. For all services, riders must call for reservations at least 24 hours in advance.

**Table IV-9
MVRTA Ring and Ride Service**

Ring and Ride Service	Eligible Users	Hours of Operation*	Full Fare	Destination Served
Andover (Route 22)	All residents	6AM-6PM M-F	\$2.00 each way	Various locations in Andover
Boxford	All residents	5AM-7PM M-F; 9AM-6PM Sat	\$2.00 each way	Boxford, North Andover, Haverhill, Georgetown, Holy Family Hospital, Anna Jacques Hospital in Newburyport, Lawrence General Hospital; Amesbury Dialysis Center
Georgetown	All residents	5AM-7PM M-F; 9AM-6PM Sat	\$2.00 each way	Georgetown, Haverhill, Rowley Commuter Rail Station; Anna Jacques Hospital in Newburyport, Lawrence General Hospital
Groveland	Residents 60 yrs of age or older	5AM-7PM M-F; 9AM-6PM Sat	\$2.00 each way	Groveland, Haverhill, Newburyport, Lawrence General Hospital; Amesbury Dialysis Center
Methuen (Route 42)	All residents	6AM-6PM M-F; 9AM-6PM Sat	\$2.00 each way	Various locations in Methuen
Salisbury	All residents	5AM-7PM M-F; 9AM-6PM Sat	\$2.00 each way	Salisbury, Amesbury, Newburyport
West Newbury	All residents	5AM-7PM M-F; 9AM-6PM Sat	\$2.00 each way	West Newbury, Amesbury, Newburyport, Groveland, Haverhill, Holy Family Hospital in Methuen, Anna Jacques Hospital in Newburyport, Lawrence General Hospital; Amesbury Dialysis Center
* No Service on Sundays or Holidays				

Special Transportation Services for the Elderly and Disabled (EZ Trans)

EZ Trans is a paratransit service provided to the region's elderly and disabled populations. The Americans with Disabilities Act (ADA) of 1990 established a standard by which all public transit agencies that provide fixed route bus and rail service must also provide comparable paratransit or special transportation services to people with disabilities who are unable to utilize the existing conventional services. This complementary service must be provided within a three-quarter of a mile radius (1.2 kilometers) on either side of a fixed rail or bus route.

Paratransit service is considered demand responsive, which is "non-fixed route service utilizing vans or buses with passengers boarding and alighting at pre-arranged times at any

location within the system’s service area.” Paratransit services consist of a variety of transportation alternatives and are intended to bridge the gap between economical conventional public transit services and more costly private transportation service providers. Paratransit includes such services as shuttle buses between senior citizen centers and shopping malls, vanpool trips to grocery stores, and taxi rides to medical appointments, among others.

The MVRTA provides EZ Trans as a door-to-door shared ride service to the region’s elderly (age 60 or older) and disabled (ADA eligible) populations in the communities of Amesbury, Andover, Haverhill, Lawrence, Merrimac, Methuen, Newburyport, and North Andover. Riders must call for reservations at least 24 to 48 hours in advance, depending upon ADA eligibility. The ADA eligible fare (one-way) is \$2.00, with an additional 10-ride pass sold for \$20.00 and a 20-ride pass sold for \$40.00. The non-ADA eligible fare ranges from \$3.00 to \$9.00 depending upon origin and destination. The non-ADA fare schedule is as follows:

**Table IV-10
MVRTA Non-ADA EZ Trans Fares**

Origin	Destination							
	Haverhill	Lawrence	Methuen	Andover	North Andover	Amesbury	Newburyport	Merrimac
Haverhill	\$3.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$3.00
Lawrence	\$5.00	\$3.00	\$3.00	\$3.00	\$3.00	\$9.00	\$9.00	\$5.00
Methuen	\$5.00	\$3.00	\$3.00	\$3.00	\$3.00	\$9.00	\$9.00	\$9.00
Andover	\$5.00	\$3.00	\$3.00	\$3.00	\$3.00	\$9.00	\$9.00	\$5.00
N. Andover	\$5.00	\$3.00	\$3.00	\$3.00	\$3.00	\$9.00	\$9.00	\$5.00
Amesbury	\$5.00	\$9.00	\$9.00	\$9.00	\$9.00	\$3.00	\$3.00	\$5.00
Newburyport	\$5.00	\$9.00	\$9.00	\$9.00	\$9.00	\$3.00	\$3.00	\$5.00
Merrimac	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$3.00

Similar to the ADA eligible fare, additional 10-ride passes are sold for \$20.00 and 20-ride passes are sold for \$40.00.

Eligibility to use the EZ Trans service must be certified by the MVRTA Office of Special Services. Eligibility is strictly based on ADA criteria regarding physical or cognitive impairments that prevent access to fixed route rail and bus service. Additionally, elderly people, defined as persons who are 60 years of age or older, are eligible to utilize the EZ Trans service.

The EZ Trans service is administered by the MVRTA using its own fleet of lift-equipped vehicles. Additionally, the MVRTA contracts with Andover Livery, a private transportation service provider in the Merrimack Valley, who provides EZ Trans service in the event that MVRTA vehicles are unavailable. Over the past few years, the MVRTA has also partnered with Assist Medical Transportation.

In addition to EZ Trans and its contracted private transportation service providers, the transportation needs of the elderly and disabled populations are supplemented by services provided by local Councils on Aging, Northern Essex Elder Transport (NEET), and various private wheelchair ride transporters.

The Massachusetts Bay Transportation Authority

The Massachusetts Bay Transportation Authority (MBTA), which is the regional transit operating agency for the Boston metropolitan area, provides commuter rail services to the Merrimack Valley region. The MBTA operates two commuter rail lines, the Newburyport Line and the Haverhill Line, with seven stations located within the Merrimack Valley. The commuter rail service is provided by the Massachusetts Bay Commuter Rail Company under contract to the MBTA.

Each community in the Merrimack Valley region is a member of the MBTA and receives an annual assessment for the services that the MBTA provides. However, any assessment that a Merrimack Valley community pays to the MVRTA for transit services provided may be credited against the MBTA assessment amount.

Commuter Rail Background

The MBTA commuter rail service operates on the tracks that were formerly owned by the Boston and Maine (B&M) Railroad. The tracks branch into two major routes: the Eastern Route and the Western Route.

Eastern Route

The Eastern Route runs north-south through the Salisbury region of the Merrimack Valley to Boston. Passenger service for communities located north of the Merrimack River was discontinued in 1965. Poor ridership, equipment shortages and funding problems led to the termination of commuter rail service from Newburyport and Rowley in 1976. During the 1980s, freight and commuter service along the Eastern Route was also plagued by bridge fires in Beverly and near North Station and a shortage of rolling stock.

After years of underutilization, the MBTA decided to reinstate commuter rail service to Rowley and Newburyport. This decision was based upon various studies conducted by the MBTA and MVPC, which provided definitive information suggesting that the potential ridership would be profitable as well as a necessary element for future traffic mitigation.

The MBTA upgraded the affected tracks and stations along the Eastern Route and officially restored commuter rail service between Boston and Newburyport in October 1998. The tracks located north of Newburyport, however, have been abandoned by the MBTA and no rail service operates on the section of tracks between Newburyport, Massachusetts and North Hampton, New Hampshire. However, state and local officials in New Hampshire have initiated efforts to extend the commuter rail service north of Newburyport to Portsmouth and perhaps even into southern Maine. At the same time, the right of way in Newburyport and Salisbury has been identified for use as part of the Border to Boston Bike Trail. Both the City of Newburyport and the Town of Salisbury have secured 99-year leases for their segments of the right of way from the MBTA and have been moving forward with planning and design efforts to build joint use trails. However, one of the provisions of these lease agreements is that the MBTA has the option to reinstitute rail service along the right of way should such a service be deemed necessary.

Western Route

The Western Route runs north-south from the Haverhill region of the Merrimack Valley to Boston, as well as north to New Hampshire and Maine and west to western New England, New York, and beyond. The portion of the Western Route within the Merrimack Valley roughly parallels the Interstate Route 93 (I-93) corridor. This active branch of the system has been used for passenger rail service and major freight transport. Due to the Western Route's proximity to I-93, and the growing traffic congestion within the I-93 corridor, extended commuter rail service into New Hampshire has been proposed along this route. (Route I-93 Corridor Study, MVPC).

Commuter Rail Service to the Merrimack Valley along the Western Route was not operated between 1976 and 1979 as area communities opted not to pay the higher local assessments to the MBTA for the service. Service along the Western Route in the region was reinstated in 1979, with stops in Haverhill, Lawrence and Andover. However, the renewed service no longer stopped in North Andover as it had before the interruption of service.

Through the mid 1970's, the entire length of the Western Route was double-tracked. A long section of one of the tracks was removed at that time leaving single-trackage between Reading and Andover. This long section of single track has created significant capacity problems/scheduling difficulties for both the MBTA and Guilford. The Western Route is the primary freight rail route between Boston and eastern New Hampshire/Maine. This heavy demand for freight service along this route has resulted in reduced commuter rail service being operated north of Reading, where the double-tracked section ends. The Merrimack Valley MPO's Route I-93 Corridor Traffic Study recommended that the missing track be replaced between Reading and Andover in order to improve the commuter rail service to the region.

Manchester and Lawrence (M&L) Branch

The Manchester and Lawrence branch of the Western Route line connects Lawrence and Salem, New Hampshire via Methuen and carries a small amount of freight to business in Lawrence. This branch continues north into New Hampshire and roughly parallels Route 93. Guilford Transportation abandoned the section of track between Milepost 1.4 in Lawrence and Milepost 4.65 in Salem, New Hampshire in 2001. Segments of the track in Salem, New Hampshire have been removed. In 1984, MVPC investigated the feasibility of instituting commuter rail service along this branch between Methuen and Boston. This study determined that instituting this service would not be cost effective. However, with the growing traffic congestion along the Route 93 corridor in both the MVPC region and southern New Hampshire, citizens and officials from both states have shown renewed interest in using this line for commuter rail service. In 1999, the MBTA developed some preliminary construction and operating cost estimates for such a service as well as some ridership projections. These cost figures and ridership projections were refined as part of MVPC's I-93 Corridor Traffic Study, which looked at a number of options for reinstating passenger rail service in the corridor. These included providing direct commuter rail service between Boston and Manchester, operating a commuter rail shuttle service between Manchester and Lawrence Commuter Rail Station, and offering light-rail shuttle service that would utilize the M&L Branch from the state line to Lawrence station. NHDOT proposed this last option as part of

the expansion of I-93 between the state line and Exit 5 just south of Manchester. The service would begin in Manchester and continue south along the I-93 corridor. At the state line, the light rail service would join the M&L Branch near Route 213 where it would then continue to the McGovern Transportation Center to meet existing commuter rail service to Boston.

In July of 2006, the NHDOT, in cooperation with the Executive Office of Transportation, began work on the Route I-93 Corridor Transit Investment Study. This study is intended to identify what transit investments are needed and feasible to accommodate future travel demand within the I-93 corridor, and determine when and how those investments should be implemented. One of the options that will be examined as part of this study will be the institution of passenger service along the M&L Branch. Local officials in Massachusetts have also expressed interest in evaluating the potential of providing commuter rail service into Boston.

Commuter Rail Service

The MBTA provides service from seven commuter rail stations along two different rail lines within the Merrimack Valley. The Newburyport Line operates on the Eastern Route, while the Haverhill Line runs on the Western Route.

The Newburyport Line is a 27.7 mile branch that operates between Boston's North Station and Newburyport. This branch has eleven stops, two of which are located within the Merrimack Valley. The Rowley and Newburyport stations are the northernmost stops on the line, with Newburyport as the terminus of the route.

Presently, there are no MVRTA fixed route buses that serve the Rowley station, although Georgetown residents can use their Ring and Ride service to access the station. Newburyport station is served by MVRTA Route 51.

During the weekdays, the MBTA operates 12 trains between Newburyport and Boston's North Station. The first inbound train (toward Boston) departs Newburyport at 5:27 AM, while the last inbound train departs at 8:41 PM. One additional train departs Newburyport Station at 10:45 PM and terminates at Beverly Depot where riders can catch the 11:20 PM inbound train for Boston. The first outbound train (toward Newburyport) departs Boston's North Station at 6:30 AM and arrives at 7:29 AM, while the last direct train departs at 9:30 PM. However, riders may take the 10:40 train from North Station to Beverly and then catch the 11:30 PM train from Beverly that arrives in Newburyport at 11:58 PM.

On Saturdays and Sundays, 12 trains travel between Newburyport and Boston. The first inbound train departs Newburyport at 8:48 AM and the last train departs at 9:00 PM. The first outbound train departs Boston's North Station at 9:30 AM and the last train departs at 10:15 PM. The travel time for the entire route is approximately one hour.

The Haverhill Line is a 32.9 mile segment of the old B&M Western Route that runs between Boston's North Station and Haverhill. This segment of the line has fourteen stops, five of which are located in the Merrimack Valley. There are two stations in Andover (Ballardvale and Andover), one in Lawrence, and two stops in Haverhill (Bradford and Haverhill), with Haverhill serving as the terminus of the line.

Presently, various MVRTA bus routes service the five commuter rail stations on the Haverhill Line. The Ballardvale station is served by the Andover Ring and Ride (formerly Route 22), while the Andover station is served by routes 21 and 32. In Lawrence, routes 39A and 39B have bus stops nearby the rail station although they do not directly feed into the station. Finally, the Bradford station is served by Route 14, while Routes 01, 14 and 16 serve the Haverhill station, with the Route 83 Salisbury Beach/Hampton Beach bus stopping at the rail station during the summer months.

During the weekdays, the MBTA operates 13 inbound trains between Haverhill and Boston's North Station, with one additional train running into Boston from Andover and Ballardvale stations. The first inbound train (toward Boston) departs Haverhill at 5:31 AM, while the last inbound train departs at 10:21 PM. The first outbound train (toward Haverhill) departs Boston's North Station at 7:19 AM, while the last train departs at 11:59 PM. As with the inbound service, twelve trains run outbound from North Station to Boston and there is one additional train that runs from Boston to Ballardvale and Andover stations.

On Saturdays and Sundays, 12 trains travel between Haverhill and Boston. The first inbound train departs Haverhill at 7:15 AM and the last train departs at 10:15 PM. The first outbound train departs Boston's North Station at 8:45 AM and the last train departs at 11:30 PM. The travel time for the entire route is approximately one hour.

Commuter Rail Parking

All MBTA commuter rail stations within the Merrimack Valley provide economical (parking rate per day is \$2.00) and handicap accessible commuter parking. The following table shows the capacity, the number of parking spaces used and available, and the average weekday utilization rates of each parking lot at commuter rail stations within the Merrimack Valley.

**Table IV-11
Parking Space Utilization Rates at Commuter
Rail Stations Located Within the Merrimack Valley, 2006**

Station (Commuter Line)	Capacity	Used	Available	Utilization Rate %
Andover (Haverhill)	152	152	0	100.0
Ballardvale (Haverhill)	120	129	0	107.5
Bradford (Haverhill)	303	126	176	41.6
Haverhill (Haverhill)	159	155	4	97.5
Lawrence (Haverhill)	849	296	553	34.9
Newburyport (Newburyport)	801	347	454	43.3
Rowley (Newburyport)	282	49	233	17.4

Table IV-11 above shows that three of the commuter rail parking lots are operating at or over capacity, while four are severely underutilized. The Ballardvale commuter rail lot has the highest average weekday utilization rate (107.5%, with 9 cars parking illegally). Andover Station showed that 100% of all spaces were being used. Similarly, Haverhill Station is operating virtually at capacity with 155 of the 159 spaces being occupied.

Conversely, the Rowley commuter rail lot is severely underutilized, with an average weekday utilization rate of 17.4%. The Bradford Commuter Rail Station remains one of the underutilized lots in the region. The station is located in an isolated area on a street that is not well traveled. Access to the station is difficult because of capacity and sight distance problems that exist at the intersection of Railroad Avenue and South Elm Street. In addition, cars have been vandalized, broken into, or stolen from this lot. Also contributing to the lack of usage at this lot has been the closing of the Comeau Bridge over the Merrimack River, which provides almost direct access to the downtown area from the station. Lawrence Station, which opened late in 2005, is operating under capacity, but it should be noted that the number of cars parking at the facility is virtually double what it was in 2003 when the station was located further east on Merrimack Street.

Commuter Rail Fare Structure

The MBTA commuter rail fare structure is comprised of standard, and interzone, fares. Standard fares are based on the distance one travels to, or from, Boston. The commuter rail stations are grouped according to zones with a corresponding fare attached to each zone. For example, the Haverhill commuter rail station is located in fare zone 7, therefore a one way commuter rail ticket from Haverhill to Boston would cost \$7.75 (see Table IV-12 below). The following table shows the standard fares for each zone.

**Table IV-12
Commuter Rail Fare Structure: Standard Fares and Zones**

Fare Zone	Fares (\$)		
	One Way	Twelve Ride	Monthly
1A	1.70	20.40	59.00
1	4.25	51.00	135.00
2	4.75	57.00	151.00
3	5.25	63.00	163.00
4	5.75	69.00	186.00
5	6.25	75.00	210.00
6	6.75	81.00	223.00
7	7.25	87.00	235.00
8	7.75	93.00	250.00

Data from Massachusetts Bay Transportation Authority website: <http://www.mbta.com/>, February 2007

Interzone fares are based on the number of zones one travels through between the origin and destination of their trip. Interzone fares are charged to commuters who do not travel into, or out of, Boston (Zones 1A and 1B), but typically travel between the suburbs of Boston.

**Table IV-13
Commuter Rail Fare Structure: Interzone Fares and Zones**

Number of Zones Through Which Traveled	Fares (\$)	
	One Way	Monthly
1	2.00	65.00
2	2.25	77.00
3	2.50	89.00
4	2.75	101.00
5	3.00	113.00
6	3.50	125.00
7	4.00	137.00
8	4.50	149.00

Data from Massachusetts Bay Transportation Authority website: <http://www.mbta.com/>, February 2007

Based on the MBTA fare structure, commuter rail fares vary depending upon where one travels within the Merrimack Valley, where one originates on a trip into Boston, or one's destination on a trip from Boston. The table below indicates the commuter rail stations within the Merrimack Valley, the fare structure zone in which each rail station is located, and the fare for travel between the specified rail station and Boston.

**Table IV-14
Fares Between Boston and
Commuter Rail Stations Within the Merrimack Valley**

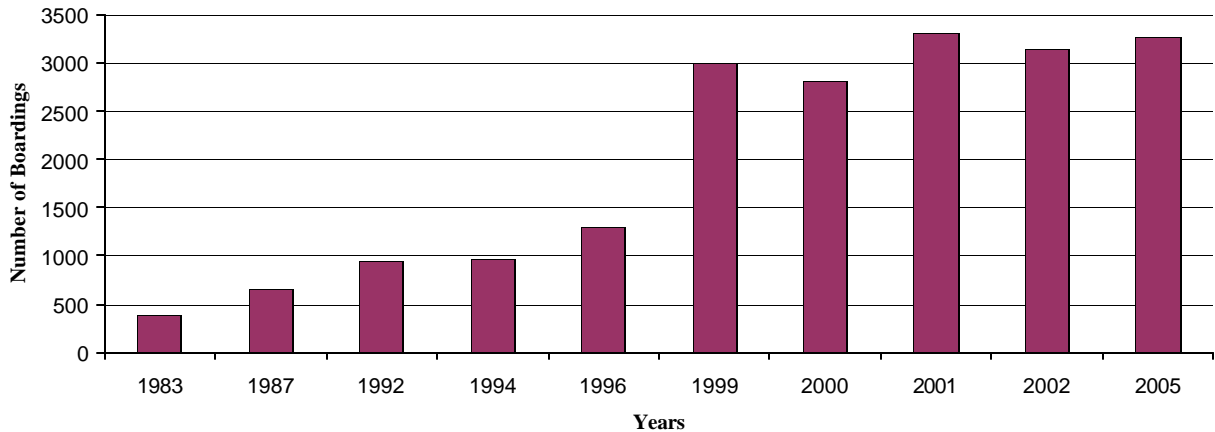
Station (Commuter Line)	Fares (\$)			
	Zone	One Way	Twelve Ride	Monthly
Andover (Haverhill)	5	6.25	75.00	210.00
Ballardvale (Haverhill)	4	5.75	69.00	186.00
Bradford (Haverhill)	8	7.75	93.00	250.00
Haverhill (Haverhill)	8	7.75	93.00	250.00
Lawrence (Haverhill)	6	6.75	81.00	223.00
Newburyport (Newburyport)	8	7.75	93.00	250.00
Rowley (Newburyport)	7	7.25	87.00	235.00

Data from Massachusetts Bay Transportation Authority website: <http://www.mbta.com/>, February 2007

Commuter Rail Ridership

Overall, commuter rail ridership in the Merrimack Valley has grown significantly over the last 23 years (see Chart 2). The growth in ridership is attributable to a number of factors. The MBTA has made a large investment to upgrade the existing track and rolling stock. The MBTA and the MVRTA have worked together to dedicate significant funds to improve the commuter rail stations located within the Merrimack Valley. The improvements made to the Haverhill, Bradford and Lawrence commuter rail stations in recent years are evidence of this. Commuter rail service to the region has improved, with the number of trains that operate between Boston and the Merrimack Valley increasing. The reinstatement of service from Newburyport and Rowley in 1998 resulted in the marked jump in ridership shown between 1996 and 1999. And, there was growth in the number of people who live in the Merrimack Valley and commute to work in Boston during this period.

Chart IV-2 Merrimack Valley Commuter Rail Ridership 1983-2006



However, ridership has shown limited growth over the last 6 years (see Table IV-14). The 1999-2005 increase in boardings per day was only a 9.3%. Table IV-15 shows the approximate weekday inbound (toward Boston) boardings by station for the years 1999 through 2005.

**Table IV-15
Approximate Weekday Inbound Boardings By Station, 1999-2006**

Commuter Rail Station	Number of Boardings Per Day							
	1999	2000	2001	2002	2003	2004	2005	2006
Haverhill	346	311	490	537	507		669	
Bradford	464	409	461	337	324		369	
Lawrence	462	436	593	515	524		606	
Andover	519	573	651	617	638		673	
Ballardvale	257	251	296	300	303		198	
Hav. Line Tot.	2,048	1,980	2,491	2,306	2,296		2,515	
Newburyport	838	719	652	697	N/A		624	
Rowley	108	115	156	135	156		135	
Nbprt. Line Tot.	946	834	808	832	N/A		759	
Total Boardings	2,994	2,814	3,299	3,138	----		3,274	

Data from Massachusetts Bay Transportation Authority commuter rail ridership audits, 1999-2006

Commuter Rail Issues

Although improvements have been made to the commuter rail system and ridership has grown in recent years, two major issues continue to hinder further expansion of the system.

As noted above in the description of the Western Route, the issue of double tracking, which allows two trains traveling in opposite directions to pass each other at the same time, has been

of foremost concern. Areas of the system, specifically south of Lawrence on the Haverhill Line, contain sections of single track. Trains operating on single track must wait for the train running in the opposite direction to pass before proceeding on the same track. This wait time increases total travel time. Additionally, single tracking does not allow for scheduling flexibility and restricts train capacity resulting in fewer trains operating the full length of a rail line. The lack of capacity was cited as a critical shortcoming to improving rail service in the Valley in the Merrimack Valley Planning Commission's Draft I-93 Corridor Study.

Evidence of the impact that the limited commuter rail service is having on the region can be observed at the region's commuter rail lots. While most commuter rail parking lots on the MBTA system are at or over capacity, more than half of the lots in the MVPC region are sparsely used. The number of trains serving both Newburyport and Haverhill is less than is offered on the other lines in the MBTA commuter rail network.

The second issue is that crowding on MBTA trains continues to be a concern throughout the system. Many riders must stand either inbound in the morning or outbound in the afternoon. The lack of rolling stock in the system limits ridership during peak periods.

AMTRAK

Boston to Portland AMTRAK Passenger Rail Service

The National Railroad Passenger Corporation, more commonly known as AMTRAK, provides passenger rail service through the Merrimack Valley region. Northern New England Passenger Rail Authority (NNEPRA) serves as the managing firm for this service. After years of planning during the 1990's, the Maine Department of Transportation in conjunction with AMTRAK made capital improvements to the Western Route of the Boston & Maine Railroad (B&M) in preparation for interstate passenger rail service between Boston, Massachusetts and Portland, Maine. This high-speed train, called the Downeaster, originates at Boston's North Station with stops in Massachusetts (Anderson Transportation Center in Woburn, Downtown Haverhill), New Hampshire (Exeter, Dover, Durham-UNH), and Maine (Wells, Saco, Old Orchard Beach) before terminating at Portland's Transportation Center.

Downeaster service began operations in December 2001. The service carried 291,794 passengers in 2002 with strong ridership in evidence during the first eight months of that year. However, ridership began to decline in the fall of 2002 and continued to decline during 2003, 2004 and early 2005. Ridership in 2004 had slipped to 248,571 passengers. Ridership began to increase in May 2005 and ridership for the year rose to 293,653, virtually back to 2002 levels. Much of this increase was in response to the increased price of gasoline, while some was the result of the reduction in running time between Portland and Boston from two hours and forty-five minutes to two hours and thirty minutes. Ridership figures for the first half of 2006 show approximately a 25% increase from the same period in 2005.

Ridership audit data showed that 1,100 persons boarded the Downeaster in Haverhill during July 2006. Two thirds of these people traveled between Haverhill and Boston while approximately one-third traveled between Haverhill and Portland, Maine.

Other Transportation Providers

Many private transportation service providers operate within the Merrimack Valley, greatly supplementing the services provided by the MVRTA and the MBTA. A listing of these providers is shown below.

Airport Services

A Private Ride	Amesbury,MA	Liberty Car Service	Lawrence,MA
Four Star Limousine	Amesbury,MA	A Glenview Limousine	Methuen,MA
All American Limo	Andover, MA	Celebrity Limousine Ltd	Methuen,MA
A Le Mark Limousine Svc	Andover,MA	Chanard Limousine Svc	Newburyport,MA
Andover Livery Cab Co Inc	Andover,MA	Ludwig's Limousine Svc	Newburyport,MA
J & J Shuttle Svc Inc	Andover,MA	Walkey's Livery Inc	Newburyport,MA
Shawsheen Livery	Andover,MA	Angel Flight of New England	North Andover,MA
Country Carriage	Boxford,MA	Black Tie Limousine	North Andover,MA
Black Tie Limousine Inc	Bradford,MA	Airport Connection	Plaistow,NH
A Family Cab	Haverhill,MA	Plaistow Taxi	Plaistow,NH
Baystate Limousine	Haverhill,MA	New England Shuttle	Salem,NH
Courtesy Cab	Haverhill,MA	Stateline Taxi	Salem,NH
Executive Ride	Haverhill,MA	Ambassador Limousine	Salisbury,MA
Robert Michael Limousine Svc	Haverhill,MA	Cassidy's Limousine Service	Salisbury,MA
B & M Transportation	Lawrence,MA	Chanard Limousine Svc	Salisbury,MA
JK Express Transportation, Inc.	Lawrence,MA	Four Star Airport Trnsprtn	Salisbury,MA
Yellow Cab	Lawrence,MA	Moonlight Limousine Co	Salisbury,MA
Yellow Transportation	Lawrence,MA		

Elderly and Disabled Services

Northern Essex Elder Transport (NEET)	Amesbury,MA
Health-Tech Ambulance Service	Andover,MA
American Medical Response Company	Haverhill,MA
Central Wheelchair & Van	Haverhill,MA
Haverhill Human Services Department	Haverhill,MA
Haverhill Veterans Services	Haverhill,MA
Trinity Emergency and Healthcare Transport	Haverhill,MA
Valley East Ambulance Service	Haverhill,MA
American Medical Response Company	Lawrence,MA
Assist Incorporated	Lawrence,MA
Class Incorporated	Lawrence,MA
EMT Corporation	Lawrence,MA
Guardian Transportation	Lawrence,MA
American Medical Response Company	Newburyport,MA
ABC Bus Company	North Andover,MA
Laidlaw Education Services	North Andover,MA
Councils on Aging	Various cities and towns

Limousine Companies

Carriage Town Limo	Amesbury,MA	Celebrity Limousine Limited	Methuen,MA
Four Star Limousine	Amesbury,MA	Tara Limousines	Newbury,MA
Andover Limousine Service	Andover,MA	A Seacoast Limousine Service	Newburyport,MA
Classic Travel & Limousine	Andover,MA	Ambassador Designated Limo	Newburyport,MA
Doran's Livery & Courier Service	Andover,MA	Ambassador Limousine	Newburyport,MA
Park Avenue Limousine Service	Andover,MA	Chanard Limousine Service	Newburyport,MA
American Cab & Coach	Groveland,MA	Ocean Shore Limousine	Newburyport,MA
A Classique Chariot Limousine	Haverhill,MA	Tara Limousine Service	Newburyport,MA
A Family Cab	Haverhill,MA	Walkey's Livery Inc	Newburyport,MA
Baystate Limousine Service	Haverhill,MA	A British Limousine Service	North Andover,MA
Elegante Limousine Service	Haverhill,MA	A-1 Airport Service	North Andover,MA
Robert Michael Limousine Service	Haverhill,MA	Airport Shuttle	North Andover,MA
Global Transportation	Lawrence,MA	Cars Taxi	Salisbury,MA
Yellow Transportation Company	Lawrence,MA	Cassidy's Limousine Service	Salisbury,MA
Sunset Limousine	Merrimac,MA	Moonlight Limousine Company	Salisbury,MA
Atlantic Coast Limousine Service	Methuen,MA	Scott's Shuttle Service	Salisbury,MA

Taxi Companies

Ist Choice Livery	Amesbury,MA	Lawrence Blue Cab Inc	Lawrence,MA
Andover Cab Company	Andover,MA	Lawrence Cab Co Inc	Lawrence,MA
Andover Livery Cab Co Inc	Andover,MA	Liberty Cab Svc	Lawrence,MA
Shawsheen Livery Door-to-Door Transportation	Andover,MA	Mega Transportation	Lawrence,MA
Takeout Taxi	Andover,MA	Merrimack Taxi Co	Lawrence,MA
Town Taxi	Andover,MA	Merrimack Transportation	Lawrence,MA
A Family Cab	Haverhill,MA	Rodriguez Express	Lawrence,MA
A Family Cab	Haverhill,MA	Townline Transportation Inc.	Lawrence,MA
Bee's Taxi Cab Company	Haverhill,MA	Valley Transportation Diamond	Lawrence,MA
Courtesy Cab	Haverhill,MA	Yellow Cab	Lawrence,MA
Courtesy Cab	Haverhill,MA	Methuen Livery Corporation	Methuen,MA
Caribbean Taxi	Lawrence,MA	Riverside Transportation	Methuen,MA
Continental Taxi	Lawrence,MA	Town Taxi of Methuen	Methuen,MA
Corporation Express Inc	Lawrence,MA	A American Mini Cab	Newburyport,
Diamond Taxi	Lawrence,MA	Clipper Coach	Newburyport,
First Class	Lawrence,MA	Walkey's Livery Inc	Newburyport,
Galaxie Taxi	Lawrence,MA	Seneca Group Inc	Rowley,MA
Galaxy Taxi Service	Lawrence,MA	Cars Taxi	Salisbury,MA
Go Transportation	Lawrence,MA	Port Taxi	Salisbury,MA
High Class Taxi In Lawrence	Lawrence,MA		

Other Transportation Providers – Bus

Coppola, Inc.	Haverhill,MA
Lawrence Interstate Transportation Incorporated	Lawrence, MA
Peter Bus Line	Lawrence, MA
Caribe Tours	Lawrence,MA
First Choice Transit Inc	Lawrence,MA
New Dimensions Transportation	Lawrence,MA
Safety Transportation	Lawrence,MA
Townline Transportation Inc.	Lawrence,MA
Salter School Transportation	Newbury,MA

Intermodal Transportation

Commuter Park -and-Ride

The Valley's park-and-ride lots are the most visible examples of intermodal transportation facilities in the Valley. These lots offer Valley residents places where they may meet in order to carpool, vanpool, take a bus, or train to their places of employment. There are five official park-and-ride lots located near major highways in the region. Lots are located near I-93 in Andover and Methuen and near I-95 in Georgetown and Newburyport. The park-and-ride lots in Methuen, Haverhill, Newburyport and Georgetown also offer fixed route bus services to Boston. In addition to fixed route service, MassRides vans have been observed using the Newburyport park-and-ride facility. There are also 7 park-and-ride lots at commuter rail stations in the region. The MBTA Haverhill commuter rail line to Boston has stations and parking lots in Haverhill, Bradford, Lawrence, Andover and Ballardvale within the MVMPO region. The Newburyport commuter rail line has stations and parking lots in Newburyport and Rowley within the region. More information about the location and usage of the commuter rail lots can be found in the MBTA Commuter Rail Parking section of this report.

A survey of the usage of the five park-and-ride lots was conducted by the MVPC in September 2004 and at these five lots in November 2006.

The Newburyport park-and-ride lot is located just east of the on-ramp from Storey Avenue (Route 113) to I-95 northbound. This lot is the largest park and ride lot in the region with a capacity of approximately 489 cars. MHD expanded it in 1998 to accommodate the numerous vehicles that were parking illegally. During a September 2004 survey of this site, MVPC staff observed that the lot was operating at over 100% of capacity with seventeen vehicles parked in unmarked spaces. The November 2006 survey found that 576 cars were using the lot, well in excess of capacity.

A second, more extensive survey of this lot was performed by MVPC in October 2006 as it assisted the Executive Office of Transportation in reviewing use of the facility by long-term parkers. Data was collected for one week at the lot and found that long-term parkers were using a significant percentage of the spaces in the lot. Staff also noted the extensive use of valet parking at the lot to increase capacity. The Coach Company (Coachco.com) and C & J Trailways (CJTrailways.com) provide bus service to the site.

The Georgetown municipal park-and-ride lot is located directly off of Route 133 just east (100 yards) of Georgetown Center. The lot connects to both Route 133 on the north and Library Street on the south. Its east and west borders are neighboring private residences. The lot has a capacity of one hundred (100) cars. Seventy-seven (77) cars were using the lot during the 2004 survey and 37 cars were there during the November 2006 survey. The Coach Company (Coachco.com) provides commuter service to Boston from this location. The bus schedules can be found in Appendix E.

The park and ride site in Andover is located in the northwest corner of the I-93/Dascomb Road interchange. The lot is bordered by Frontage Road to the west, the Frontage Road on-ramp to I-93 SB to the north, I-93 to the east, and Dascomb Road to the south. Access to the site is from Frontage Road northbound. This lot has a capacity of seventy-five (75) cars. The

lot was well over capacity in both 2004 and 2006, with 13 cars parked in unmarked places, and 15 cars parked on the grass and dirt on the edge of the lot for a total of 103 cars parked in 2006. There is currently no bus service from this site. In 2006, MassHighway proposed doubling the size of this facility through an expansion that would be built off the north end of the existing lot.

A shopping plaza (Riversedge Plaza) with excess parking serves as a designated park-and-ride lot in Haverhill off of Routes 97/113 near the Groveland Bridge. The Coach Company (Coachco.com) offers bus service to Boston from this site. This site is very underutilized because of a number of factors. The parking lot is in poor condition and there is no identification of spaces for use by park and ride users. There are no signs on Water Street or elsewhere in Haverhill or Bradford guiding people to this location. Finally, while bus service is offered from this location, it is limited.

The Methuen Park and Ride lot was constructed in 2000 using Congestion Mitigation and Air Quality funds. The Methuen park-and-ride lot is located on Pelham Street just east of the I-93. The lot has capacity of approximately 180 cars. 92 cars were using the lot at the time of the survey, or approximately 51% of capacity. This lot is primarily intended to serve the commuter population that uses nearby Route I-93 to travel to Greater Boston and the businesses along Route 128. The MVRTA (MVRTA.com) provides bus service from this lot along with three stops in Lawrence and three stops in Andover along Route 28 to several destinations in the City of Boston. It is interesting to note that the usage observed at this lot in November 2006 was exactly the same as was noted in 2003.

The high demand for parking at the Dascomb Road and Newburyport lots has prompted EOT to initiate projects to expand both facilities. Project Initiation Forms for these projects were filed in October 2006. In addition, the magnitude of the demand in Newburyport, coupled with the lack of park and ride opportunities along Route I-95 north of Boston led EOT to initiate a project to build a new park and ride lot in Georgetown just west of Exit 55.

Mass Transportation with Other Modes

The Merrimack Valley Regional Transit Authority bus service routes include many of the commuter rail stops and park-and-ride lots in the region, although the bus schedules are not specifically designed to coincide with train and commuter bus arrivals/departures. The Haverhill commuter rail station is about one quarter mile from the Haverhill MVRTA bus station, which is the hub of bus service in Haverhill, as well as connections to Lawrence, Newburyport, and Lowell. MVRTA Routes 1 (Lawrence-Methuen-Haverhill), 14 (Ward Hill/Bradford), and 16 (Washington Square/Westgate Plaza) can be flagged to stop near the downtown Haverhill commuter rail station. Route 14 (Bradford/Ward Hill) offers service to the Bradford commuter rail station, by request. The new McGovern Transportation Center in Lawrence is at the intersection of South Union and Merrimack Streets. Routes 33 (North Andover) 39B (North Andover Mall/Phillips Street) service this location. Route 21 (Andover Shuttle) travels by the Andover commuter rail station, and Route 32 (Andover) from Lawrence is within one half mile from the Andover commuter rail station. In addition to the MVRTA interfaces with the train, numerous cab companies in Lawrence and Haverhill make it a general practice to have a cab at the station when trains arrive from Boston.

MVRTA bus routes also travel near or by three park-and-ride lots that have bus service to Boston. Route 51 (Haverhill-Merrimac-Amesbury-Newburyport) stops at Port Plaza, within one half mile of the Newburyport Park-and-Ride lot. Route 40 (Methuen Square) and Route 42 (Ring & Ride Holy Family, The Loop, Methuen Plaza, Methuen Square, Merrimack Plaza) travel by the Pelham Street Park-and-Ride lot in Methuen. The Ring & Ride route offers curb-to-curb service that requires you to call 24 hours in advance for bus service along the scheduled route. Route 18 (Riverside) stops at Rivers Edge Plaza in Haverhill that also has bus service to Boston.

Interregional Transportation Providers

Private transportation providers in the Merrimack Valley deliver additional services in the region to augment those offered by the MVRTA and MBTA. Interregional transportation services are offered by the MVRTA and a number of private bus and van companies. Schedules can be found in Appendix E.

Local transit companies also offer services that are primarily focused on Boston. Commuter bus service between the Merrimack Valley and Boston is an important component in the region's transportation system. Private providers and the MVRTA operate service from the Greater Newburyport, Greater Haverhill, and Greater Lawrence areas to various locations in Boston, including the Financial District, Copley Square, and Logan Airport.

The Coach Company (Coachco.com) of Merrimac, Massachusetts operates daily commuter bus service between the central and eastern sections of the Valley and Boston. This company serves the Merrimack Valley communities of Amesbury, Boxford, Georgetown, Groveland, Haverhill, Newburyport, and Newbury.

Service from the central Merrimack Valley region (Haverhill, Groveland, Georgetown, and Boxford) is provided through two morning inbound buses that take passengers downtown and to Logan Airport. Two evening buses carry passengers back to the region from Boston. The Coach Company Bus service operates between 6:20 am and 6:48 pm, when the last evening bus from Boston pulls into Rivers Edge Plaza in Haverhill.

The Coach Company (Coachco.com) provides much more frequent service to Boston from the eastern Merrimack Valley region (Newburyport and Amesbury). Eight inbound trips and nine round trips are offered on weekdays at the Newburyport Park and Ride. Additional stops are made at the Customs House in downtown Newburyport and at the High School for selected trips. Bus service from downtown Amesbury (Friend Street Parking Lot) is provided through two inbound trips to Boston in the morning and four outbound trips from Boston arriving in the evening. Schedules can be found in Appendix _.

C & J Trailways (CJTrailways.com) of Portsmouth, New Hampshire operates special services from the Newburyport Park and Ride Lot to downtown Boston and to Logan International Airport. C&J operates 21 inbound and 21 outbound trips between Newburyport and Logan Airport daily (except Thanksgiving and Christmas). It also offers 22 inbound trips to and 20 outbound trips from downtown Boston (South Station) during the week. C&J also offers weekend and holiday service between the Newburyport Park and Ride Lot and South Station, with 21 round trips on these days.

MassRides, a private non-profit organization, administers vanpools from Andover, Haverhill, Methuen, Newburyport, and Salisbury to employment sites outside the region. In addition, MassRides will work with employers to develop programs that include vanpooling, preferential parking, transit, teleworking, flexible work hour programs, and other cost-saving programs.

Transportation Management Associations

Merrimack Valley Transportation Management Association (TMA)

The Merrimack Valley TMA serves more than 85 employers, commercial and retail developers, and residential complexes in the upper Merrimack Valley communities of Andover, Lawrence, Methuen, and North Andover. The TMA advocates for transit and infrastructure improvements that promote access, reduce congestion, and improve air quality in the Greater Lawrence area. The TMA has worked to implement new vanpools, promote rider sharing, bicycling to work and telecommuting.

Lowell Junction Transportation Management Organization

Since the early 1990s, Wyeth BioPharma (formerly Genetics Institute) and The Gillette Company have worked with local Chambers of Commerce, the MVRTA and public officials to reduce traffic congestion, improve air quality, advocate for local road improvements in the Lowell Junction area, and increase commuting alternatives for company employees.

In October of 2000, the Junction Transportation Management Organization, Inc. (TMO) was incorporated as a consensus-oriented, nonprofit organization of employers, public sector representatives and business associations working together to address transportation issues in the Ballardvale St./Lowell Junction area of Andover and Wilmington.

The TMO has developed a range of commuter services for the employers in the Lowell Junction area including the Emergency Ride Home program, shuttle service to Ballardvale Commuter Rail Station, ridesharing/ride matching, preferred parking, on-site food services, showers, fitness centers, bike racks, ATMs, and pickup and delivery laundry services. The TMO has eight regular corporate members and five ex-officio members.

Rail with Other Modes

In order to serve areas that are not adjacent to its rail lines, the B&M has introduced Intermodal facilities. A public rail siding has been provided in Lawrence and is used by several companies as a break-of-bulk point to transfer their goods to trucks.

Merrimack Valley Regional Bicycle Pedestrian and Water Trail Transportation

Introduction

Passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 marked a turning point in the planning and programming of transportation projects in this country. This legislation shifted the federal transportation funding emphasis from building new roadways to promoting development of an intermodal transportation system that includes not only the automobile, but mass transit, the movement of freight, and alternative modes of transportation as well including walking and bicycling. This focus has been continued in the Transportation Equity Act for the 21st Century (TEA21), the successor to ISTEA, which was passed by Congress in 1998, and in the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), which was passed by the Congress in 2005.

The Merrimack Valley MPO encourages the promotion of safe bicycling and walking as viable transportation modes because they are healthy, non-polluting forms of transportation that do not consume limited natural resources. As a comprehensive planning agency and transportation planning staff for the Merrimack Valley MPO, MVPC is uniquely suited to plan and coordinate the development of on-road and off-road bicycle and pedestrian trails across the region. Staff has recognized that a regional vision for varied efforts of alternative transportation modes is imperative, and we must contribute to the coordination and planning of all trails within the Merrimack Valley.

The purpose of this bicycle and pedestrian section is to provide an overview of the regional context for the bicycle and pedestrian planning efforts in the region. It is the intent of MVPC that this section of the plan contributes to the following goals.

- Create an environment in which bicycling and walking are attractive alternatives to motor vehicle transportation.
- Encourage organizations with the appropriate authority and interest to improve traffic safety education and enforcement.
- To the extent feasible, establish a continuous, coordinated non-motorized transportation network.
- Increase the use of bicycling and walking as means of transportation by providing a range of facilities geared toward different types of cyclists.
- Increase walking as a means of transportation by providing a range of facilities geared toward pedestrians of varying abilities.
- Integrate safe bicycle and pedestrian access into the design and review process of sites, buildings and transportation facilities at the local, regional and state levels.
- Promote public awareness and acceptance of bicycling and walking as a transportation mode for all destination-oriented trips.

- Reduce the number of bicycle and pedestrian accidents, injuries and fatalities, particularly those that involve motorists.

Replacing motor vehicle trips with walking and bicycling trips offers a number of benefits to the region's transportation system and environment. Reducing the number of auto trips benefits the environment by reducing "cold start" trips that have a disproportionately high adverse impact on the region's air quality. It also benefits the transportation system by reducing congestion on the region's already crowded highway network, thereby facilitating the transport of both goods and people in the Valley. In addition, the increased levels of exercise that result from biking and walking can reduce the risks of heart disease and stroke, while improving overall health and thereby contributing to the reduction of health care costs. Finally, bicycling and walking can have a strong economic influence on the region. The former Essex County area has been designated a National Heritage District by the Congress because of its rich early industrial and seafaring history as well as its abundance of early American architecture. The Merrimack Valley region, which lies in the northern half of what was Essex County, contains many of this District's scenic and historic destinations, most of which are best accessed and enjoyed by foot or on bicycle. Development of bicycle and pedestrian trails to access the many scenic and historic sites in the region will lead to increased tourism in the region.

Definitions

The American Association of State Highway and Transportation Officials (AASHTO) revised the "Guide for the Development of Bicycle Facilities" in 1999. Within this guide is a list of definitions for bicycle facilities, which are excellent tools for distinguishing between the different types of bicycle and pedestrian facilities. In addition, the Federal Highway Administration (FHWA) has many useful documents that refer to and define numerous types of bicycle and pedestrian facilities. MVPC encourages communities to utilize these definitions in their own planning processes, and in developing community bylaws, rules and regulations. By doing so, communities across the region will maintain more consistent efforts toward the development of different bicycle and pedestrian facilities. It would also contribute to eliminating the confusion that arises due to differing notions of facility definitions between different entities. Listed below is a list of the FHWA and the AASHTO definitions for bicycle and pedestrian facilities, and some pertinent transportation terms.

NOTE: Chapter 90E: Section 1 of the Massachusetts General Laws lists eight definitions pertaining to "bikeways." Three of these definitions warrant listing here as they differ substantially from the above definitions, and are indicated by an asterisk.

BICYCLE – Every vehicle propelled solely by human power upon which any person may ride, having two tandem wheels, except scooters and similar devices. The term "bicycle" for this publication also includes three- and four-wheeled human-powered vehicles, but not tricycles for children.

*BICYCLE – A two-wheel nonmotor-powered vehicle.

BICYCLE FACILITIES – A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically designated for bicycle use.

*BICYCLE PARKING FACILITY – Any facility for the temporary storage of bicycles, which allows the frame and both wheels of the bicycle to be locked so as to minimize the risk of theft and vandalism.

BICYCLE LANE or BIKE LANE – A portion of a roadway, which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

BICYCLE PATH or BIKE PATH – See SHARED USE PATH.

*BIKE PATH – A route for the exclusive use of bicycles separated by grade or other physical barrier from motor traffic.

BICYCLE ROUTE SYSTEM – A system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route markers, with or without specific bicycle route numbers. Bike routes should establish a continuous routing, but may be a combination of any and all types of bikeways.

BIKEWAY – A generic term for any road, street, path or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

CONTINUOUS PASSAGE – An unobstructed way of pedestrian passage or travel that connects pedestrian areas, elements, and facilities to accessible routes on adjacent sites.

HIGHWAY – A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

ISLAND – A pedestrian refuge within the right-of-way and traffic lanes of a highway or street; also used as loading stops for light rail or buses.

PATH or PATHWAY – A track or route along which people are intended to travel.

PEDESTRIAN – A person who travels on foot or who uses assistive devices, such as a wheelchair, for mobility.

RAIL-TRAIL – A shared use path, either paved or unpaved, built within the right-of-way of an existing or former railroad.

RIGHT OF WAY – The right of one vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian.

RIGHT-OF-WAY – A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

ROADWAY – The portion of the highway, including shoulders, intended for vehicular use.

RUMBLE STRIPS – A textured or grooved pavement sometimes used on or along shoulders of highways to alert motorists who stray onto the shoulder.

SHARED ROADWAY – A roadway, which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or road with paved shoulders.

SHARED USE PATH – A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users.

SHOULDER – The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of sub-base, base and surface courses.

SIDEWALK – The portion of a street or highway right-of-way designed for preferential or exclusive use by pedestrians.

SIGNED SHARED ROADWAY (SIGNED BIKE ROUTE) – A shared roadway, which has been designated by signing as a preferred route for bicycle use.

TRAIL – A path of travel for recreation and/or transportation within a park, natural environment, or designated corridor that is not classified as a highway, road, or street.

TRAVELED WAY – The portion of the roadway for the movement of vehicles, *exclusive* of shoulders.

UNPAVED PATH – Paths not surfaced with asphalt or Portland cement concrete.

Local Subdivision Rules and Regulation Review

Rules and regulations that govern the subdivision of land in Merrimack Valley communities are meant to protect the safety and welfare of the communities' residents, by regulating the design and construction of ways within the subdivision. Model subdivision rules and regulations should include provisions that account for bicyclists and pedestrians during the design, construction and inspection processes.

MVPC has completed a preliminary review of all communities' subdivision rules and regulations for the purpose of understanding the different degrees of bicycle and pedestrian accommodation within the region. Appendix B depicts a table showing the extent to which communities' have included bicycle and pedestrian definitions within their respective subdivision rules and regulations.

Major Trip Generators

During 2000, MVPC performed an evaluation of bicycle and pedestrian facilities at both local and regional major trip generators (i.e., locations at which substantially more traffic is present). The evaluation mainly encompassed transit facilities and public buildings, and was chosen because each represents a potential short trip for an individual within their community, or integrates other transportation systems. "Facility Survey Forms" were completed for each location, and noted the presence and status of bicycle and pedestrian facilities, lighting, signage, security, motor vehicle capacity and usage, and any additional general condition issues.

MVPC realizes that the public may also bicycle and/or walk to additional trip generators such as businesses and schools. MVPC has determined the number of these locales present within the region, but their vast numbers limit staff from performing full bicycle and pedestrian accommodation assessments.

The Regional Bicycle System

Introduction

According to the U.S DOT, and the FHWA, it has been made increasingly clear that the federal policy goal for bicycling is to accommodate current use and to encourage increased use, while enhancing safety. It is also clear that the state of Massachusetts includes provisions under MGL CH 87 to accommodate bicycles in all projects at the 25% design level, and notes "bicycle lanes and shoulder bikeways are encouraged and should be considered early in the design process."

To truly accommodate the bicyclist in the Merrimack Valley, an important concept that must be recognized is "institutionalization;" a term according to the National Bicycling and Walking Study that refers to the "ongoing process of integrating bicycle (and pedestrian) considerations into national, regional, State, and local planning, design, construction, and operations activities...the most effective way to foster advances of bicycling (and walking) considerations into the routine working of all levels of government agencies or, in certain cases, the private sector."

Bicyclist Types

Bicycle transportation planning often uses the concept of the "design cyclist" to plan for the different needs of different types of cyclists. This "design cyclist" concept generally separates cyclists into three categories, which include:

Group A – Advanced Bicyclists: Experienced riders that operate under most traffic conditions, prefer direct access to destinations, operate at maximum speed, and are best served by utilizing sufficient operating space on the roadway or shoulder so that neither the cyclist nor motor vehicle operator needs to change position when passing. (The Bicycle Federation of America estimates that <5 percent of bicyclists qualify as Group A)

Group B – Basic Bicyclists: Casual or new adult and teenage riders who prefer comfortable access to destinations through low-speed, low traffic-volume streets, or well-defined separation of bicycles from motor vehicles through bike lanes or bike paths.

Group C – Children: Pre-teen riders who, along with their parents, prefer low-speed, low traffic-volume streets, or well-defined separation of bicycles from motor vehicles through bike lanes or bike paths that provide access to key destinations surrounding residential areas including schools, recreation facilities, or other residential areas.

RECOMMENDATIONS

It is MVPC’s goal to increase the use of bicycles by providing a range of facilities for different types of cyclists. Communities should take into consideration all categories of cyclists when planning a roadway, bridge, or development project.

Liability Issues

Many municipalities are legitimately concerned that providing bicycle facilities may increase the community’s potential liability. The liability for a bicycle facility is the same as for any other municipal facility and should be approached by following the current design standards and through maintaining the roadways and bicycle facilities. The APA report #459 on Bicycle Facility Planning identifies nine specifics of infrastructure design that may lead to liability:

1. Designating a sidewalk as a bikeway,
2. Inadequate curve radii,
3. Lack of maintenance,
4. Lack of warning signs,
5. Misuse of bike route signs,
6. Poor handling of bicycle lanes with right-turning vehicular lanes,
7. Sight obstructions,
8. Steep downgrade slopes; and
9. Too narrow a bike path.

RECOMMENDATIONS

Communities must comprehensively evaluate the type of facility that will be constructed in an area based on the local conditions, ridership demand, costs and feasibility. The AASHTO “Guide for the Development of Bicycle Facilities” is an excellent tool that can assist communities in the selection and design of bicycle facilities using a wide range of conditions.

Bicycle Parking

Bicycle parking facilities are generally grouped into two classes, short term and long term. The type of parking facility provided at any location should be dependent upon those that will use it. Shoppers, customers and recreational visitors normally have short term parking needs (approximately ½ - 2 hours) that necessitate a facility which will lock bicycle frames and both wheels, but does not provide accessory/component security or weather protection (unless covered). This type of facility is mainly considered for decentralized parking where the bicycle is visible and convenient to the building’s entrance. Employees and commuters

normally have long term parking needs (approximately 6-10 hours) that necessitate a facility, which will provide complete security and weather protection. This type of facility is mainly considered in situations where bicycles are left unattended for long periods of time.

RECOMMENDATIONS

There are now many types of bicycle parking facilities available for purchase and/or lease from a wide array of vendors. Communities must carefully consider their bicycle parking needs and choose the most appropriate type depending upon users, space availability, security, access, ease of use, possible interference with pedestrians and aesthetic value.

Education and Bicycle Patrol Programs

Education of both the bicyclist and the motorist is an important component of any effective bicycle/pedestrian plan. Both groups must understand Massachusetts' laws as they pertain to bicyclists and motorists regarding each other's rights and responsibilities on roadways. The Massachusetts Statewide Bicycle Transportation Plan identifies various bicyclists' and motorists' needs for effective education. It also provides many recommendations for supporting those educational needs ranging from helmet law promotions to adult safety training.

MVPC believes that one of the most important facets of education includes bicyclist law enforcement since successful and safe bicycling communities require enforcement of the laws and regulations in place to reduce conflicts between bicyclists, pedestrians and motorists. In particular, police on bicycles have proven very effective in this regard, and further legitimize bicycling as a valuable mode of transportation.

State Numbered Route Assessment (by community)

Under the MVPC's 2001 Bicycle and Pedestrian Plan, the Commission performed an initial evaluation of the region with regard to on-road bicycle accommodations. The initial evaluation began with a general assessment of roadway shoulder presence and sidewalk existence on the numbered routes throughout the region (e.g., Routes 1, 1A, 28, 97, 110, 113, 114, 125, 133, 150 and 286). Numbered routes were chosen for assessment because they are the fastest and most direct routes across the region for both motor vehicles and bicyclists. The results from the initial numbered route assessment are below.

Shoulder = roadway shoulder is present

SW1 = sidewalk is present on one side of the roadway only

SW2 = sidewalk is present on both sides of the roadway

AMESBURY

Route 110

- From the Merrimac line to ca. 350' southwest of Route 150 (shoulder and SW1).
- From ca. 350' southwest of Route 150 to Route 150 (SW1).

- From Route 150, east to ‘unnamed road’ (shoulder and SW1).
- From the ‘unnamed road’, east to Main Street (shoulder).
- From Main Street, east to Macy Terrace (shoulder and SW2).
- From Macy Terrace, east, to east side of I-495 (shoulder and SW1).
- From I-495 to Elm Street/Clark’s Road intersection (shoulder).

Route 150

- From the N.H. line, south to Stuart Street (shoulder).
- From Stuart Street, south to Auznan Street (shoulder and SW2).
- From Auznan Street, south to Route 110 (SW2).
- From Route 110, south to south side of I-495 (none).
- From south side of I-495 to Beacon Street (shoulder).

ANDOVER

Route 28

- From the North Reading line to approximately 1200’ north of Route 125 (shoulder and SW2).
- From ca. 1200’ north of Route 125 to Hidden Road (shoulder).
- From Hidden Road, north to Wheeler Street (none).
- From Wheeler Street, north to Central Street (shoulder and SW2).
- From Central Street, north on North Main Street to Lawrence line (SW2).

Route 125

- From the North Reading line, north to the North Andover line (shoulder).

Route 133

- From the Tewksbury line, east to Rasmussen Circle (shoulder and SW1).
- From Rasmussen Circle, east to I-93 (SW1).
- From I-93, east to Beacon Street on the north and/or Oriole Drive on the south (shoulder and SW1).
- From Beacon Street/Oriole Drive to Canterbury Street (SW1).
- From Canterbury Street to Route 28 (shoulder and SW1).
- From Route 28 to Stirling Street (shoulder and SW2).
- From Stirling Street, to approximately 600’ east (shoulder and SW1).
- From ca. 600’ east of Stirling Street to the North Andover line (shoulder).

BOXFORD

Route 97

- From the Georgetown line, southeast to the Ipswich line (shoulder).

Route 133

- From the Georgetown line, west to the North Andover line (shoulder).

GEORGETOWN

Route 97

- Boxford line, north to Route 133/Central Street (shoulder).
- Central Street is a combination street where Routes 97 and 133 are one (shoulder and SW1).
- From North Street, north to Weston Avenue (shoulder and SW2).
- From Weston Avenue, north to the Groveland line (shoulder and SW1).

Route 133

- Boxford line, east to approximately 350' east of Bailey Lane (shoulder).
- From 350' east of Bailey Lane to Central Street (SW1).
- From Central Street to Tenney Street on the northeast side (shoulder and SW1).
- From Tenney Street, southeast to Rowley line (shoulder).

GROVELAND

Route 97

- From the Georgetown line, north to Anne Street (shoulder and SW1).
- Anne Street to Abbott Street (SW1).
- Abbott Street, north to unnamed road on west side north of Highland Avenue (shoulder and SW1).
- Unnamed road on west side, north of Highland Avenue to Gardner Street (SW1).
- Gardner Street to Groveland Bridge (SW1).
- Groveland Bridge (SW2).

Route 113

- West Newbury line to approximately 700' west of Marjorie Street (shoulder and SW1).
- From 700' west of Marjorie Street to ca. 350' west of King Street (SW1).
- From 350' west of King Street to the Groveland Bridge (shoulder and SW1).

HAVERHILL

Route 97

- From the Methuen line, east to approximately 600' east of Computer Drive (shoulder).
- From 600' east of Computer Drive, east to Dupre Avenue on the north side and/or Blaisdell Street on the south side (shoulder and SW1).
- From Dupre/Blaisdell, southeast to Essex Street (shoulder and SW2).
- From Essex Street, south on Main Street, east on Ginty Boulevard to Water Street (SW2).

Route 97/113

- From the fork of Ginty Boulevard and Water Street, southeast down Water Street to Riverside Avenue (SW2).
- From Riverside Avenue, east to Nettleton Avenue on the south side (shoulder and SW2).

- From Nettleton Avenue, east to Groveland Street (shoulder).
- From Groveland Street to the Groveland Bridge (SW2).

Route 108

- From the N.H. line, south to Route 110 (shoulder).

Route 110

- From the fork of Water Street and Ginty Boulevard, north on Mill Street to Maplewood Terrace (shoulder and SW1).
- From Maplewood Terrace, north to Arlington Place (SW2).
- From Arlington Place, north to Newton Road/Route 108 (shoulder and SW1).
- From Newton Road/Route 108, northeast to unnamed/unpaved road (shoulder).
- From unnamed/unpaved road to I-495 (none).
- From I-495, northeast to Merrimac line (shoulder).

Route 110/113

- From the Methuen line, east to Alpha Street on the north side (SW1).
- From Alpha Street, east to Cheever Street (shoulder and SW1).
- From Cheever Street, east to the fork of Water Street and Ginty Boulevard (SW2).

Route 121

- From Route 125 to Cushing Avenue (shoulder and SW1).
- From Cushing Avenue to the N.H. line (shoulder and SW1).

Route 125

- From the North Andover line, north to Cross Road on the west side and/or Old Boston Road on the east side (SW1).
- From Cross/Old Boston Roads to Oxford Avenue (none).
- From Oxford Avenue, northeast to Kensington Avenue on the south side and/or South Cogswell Avenue on the north side (shoulder).
- From Kensington/South Cogswell Avenues, northeast to Fernwood Avenue (shoulder and SW2).
- From Fernwood Avenue, north to I-495 (SW2).
- From I-495 to the N.H. line (shoulder and SW2).

LAWRENCE

Route 28

- From the Andover line, north to the Methuen line (SW2).

Route 110

- From the Methuen line on the western side of Lawrence, to the Methuen line on the northern side of Lawrence (SW2).

Route 114

- From the North Andover line, northwest to Grafton Street (shoulder).
- From Grafton Street to Dorchester Street (shoulder and SW2).
- From Dorchester Street to Andover Street (shoulder).
- From Andover Street, north to the Merrimack River (SW2).

MERRIMAC

Route 110

- From the Haverhill line to approximately 163' west of Greenleaf Park on the northwest side and/or Mountain View Avenue on the southeast side (shoulder and SW1).
- From ca. 163' west of Greenleaf and Mountain View, east to Currier Avenue (shoulder).
- From Currier Avenue, northeast to Church Street (SW2).
- From Church Street to approximately 1300' east of Prospect Hill (shoulder and SW2).
- From ca. 1300' east of Prospect Hill to ca. 163' east of Emery Street (shoulder and SW1).
- From ca. 163' east of Emery Street to the Amesbury line (shoulder).

METHUEN

Route 28

- From the N.H. line, south to the Lawrence line (SW2).

Route 110

- From the Dracut line, northeast to Albert Street (shoulder and SW1).
- From Albert Street to the west side of I-93 (SW1).
- From the west side of I-93 to the east side of I-93 (SW1).
- From the east side of I-93 to the fork of Lowell Street/Route 113 and Haverhill Street/Route 110 (shoulder).
- From the fork of Lowell Street/Route 113 and Haverhill Street/Route 110 to Forest Street (SW1).
- From Forest Street, southeast to Glen Forest Lane (shoulder and SW1).
- From Glen Forest Lane, southeast to the Lawrence line (SW2).
- From the Lawrence line, northeast on Swan Street to Merrimac Street (SW2).
- From Merrimac Street to Myona Street (shoulder and SW2).
- From Myona Street to Ames Street (SW2).
- From Ames Street to Route 113/Pleasant Valley Street (SW1).

Route 110/113

- From the Haverhill line to the fork of Merrimac Street/Route 113 and Pleasant Valley Street/Route 110 (SW1).

•

Route 113

- From the Dracut line, east to Route 110 (shoulder).
- From Route 110 to Green Street (shoulder and SW1).

- From Green Street to Sampson Street on the southeast side and/or Lupine Road on the northwest side (SW2).
- From Sampson and Lupine, north to Woodburn Drive (SW1).
- From Woodburn Drive, north to Summer Street (SW2).
- From Summer Street, east to Stillwater Street (SW1).
- From Stillwater Street to Howe Street on the north side and/or Jackson Street/Prospect Street on the south side (none).
- From Howe/Jackson/Prospect Streets to the Loop Entrance Road (shoulder).
- From the Loop Entrance Road, east to Oak Street (SW1).
- From Oak Street, east to Route 110/113 (shoulder and SW1).

Route 213

- Bicycle/Pedestrian access is not allowed on this numbered route.

NEWBURY

Route 1

- From the Rowley line, north to approximately 1150' north of Hanover Street (shoulder).
- From ca. 1150' north of Hanover Street to the Newburyport line (SW1).

Route 1A

- From the Rowley line, north to Graham Avenue (shoulder and SW1).
- From Graham Avenue, north to the Newburyport line (SW1).

NEWBURYPORT

Route 1

- From the Newbury line to Merrimack Street (shoulder).
- From Merrimack Street to the Salisbury line (shoulder and SW1).

Route 113

- From the West Newbury line to Story Brook Road on the south side (shoulder).
- From Story Brook Road to the west side of I-95 (SW2).
- From the west side of I-95 to the fork of Moseley Avenue and Storey Avenue/Route 113 (shoulder).
- From the fork of Moseley Avenue and Storey Avenue/Route 113 to State Street (SW1).
- From State Street to the Newbury line (SW2).

NORTH ANDOVER

Route 114

- From the Middleton line, north to Route 125 (shoulder).
- From Route 125, north to the Lawrence line (shoulder and SW1).

Route 125

- From the Andover line, northeast to Route 114 (shoulder).
- From Route 114, northeast to Peters Street on the west side and/or Andover Street on the east side (shoulder and SW1).
- From Peters and/or Andover Street, northeast to Village Green Drive (shoulder).
- From Village Green Drive, northeast to Farrwood Street (shoulder and SW1).
- From Farrwood Street, northeast to Beacon Hill Boulevard (shoulder).
- From Beacon Hill Boulevard, northeast to Main Street (none).
- From Main Street, northeast to Park Street (shoulder).
- From Park Street, northeast to Pleasant Street (none).
- From Pleasant Street to the Haverhill line (shoulder).

Route 133

- Begins at the Andover line on Peters Street and follows Route 125 up to Great Pond Road where Route 133 splits from Route 125 (assessment for length is same as Route 125).
- From the west end of Great Pond Road to the Boxford line (shoulder).

ROWLEY

Route 1

- From the Ipswich line to the Newbury line (shoulder).

Route 1A

- From the Ipswich line to Independent Street (shoulder and SW1).
- From Independent Street to Summer Street (SW1).
- From Summer Street to Hammond Street (SW2).
- From Hammond Street to Warehouse Lane (shoulder and SW1).
- From Warehouse Lane to the Newbury line (shoulder).

Route 133

- From the Georgetown line to Route 1A (shoulder).

SALISBURY

Route 1

- From the Newburyport line/Merrimack River, north to Route 1A (shoulder).
- From Route 1A to the fork of Lafayette Road and Seabrook Road (shoulder and SW1).
- From the fork of Lafayette Road and Seabrook Road to the N.H. line (shoulder).

Route 1A

- From Route 1, east to Ferry Road (shoulder and SW2).
- From Ferry Road to approximately 800' east of Dock Lane (shoulder and SW1).
- From ca. 800' east of Dock Lane, along Beach Road until it forks (shoulder).
- Beach Road fork, east to North End Boulevard, and north to the N.H. line (shoulder and SW1).

Route 110

- From the Amesbury line, east to the east end of Mudnock Road (shoulder and SW1).
- From the east end of Mudnock Road to Route 1 (shoulder).

WEST NEWBURY

Route 113

- From the Groveland line, northeast to Baileys Lane (shoulder and SW1).
- From Baileys Lane, east to Coffin Street (shoulder).
- From Coffin Street to approximately 2,438' east (none).
- From ca. 2,438' east of Coffin Street to the Newburyport line (shoulder).

Potential Bicycle Routes

To plan and implement a truly regional bicycle and pedestrian network, individual communities within the region must first accommodate bicyclists and pedestrians. The 15 community maps developed for the initial numbered route assessment also provides information beyond roadway shoulder presence and sidewalk availability. Additional information includes publicly accessible open space parcels, public and private schools, libraries, city or town halls, post offices, courthouses, transit facilities and employment centers with >250 employees. This information is important in distinguishing the roadways that would allow bicyclists and pedestrians to safely and efficiently travel from one point to another within their community.

A second assessment was also completed in which MVPC reviewed additional trip generators (or major points of interest) within each community, and developed a list of on-road routes to be considered for bicycle travel within each community. A comparison of those routes and previously designated bicycle routes was then undertaken.

- Bike Routes Identified in 1986 Massachusetts Bicycle Map = routes and alternative routes taken from the 1986 Massachusetts Bicycle Map developed by the Bureau of Transportation Planning and Development, coordinated by CTPS, and designed and produced by the MAPC.
- ❖ Bike Routes Recommended for Further Study = routes MVPC recommends should be further studied to determine the current status and future feasibility as part of a safe and effective on-road bicycling network (both at a community and regional level).

AMESBURY

Additional Trip Generators (Major Points of Interest)

- Walkable, European Village downtown area
- Powow Riverwalk and Bikeway

- The Powow River
 - The Merrimack River
 - Lake Attitash
 - Lake Gardner
 - The Playhouse, Inc.
 - Bartlett Museum
 - Carriage Museum
 - Lowell Boat Shop
 - New City Arts Foundation
 - Salisbury Point Railroad
 - Whittier Home
 - Amesbury Cultural Council
 - Recreational Areas (677 Acres for active recreation and open space) include:
 - 400 Acre Woodsom Farm
 - Battis Farm
 - Camp Kent
 - Town Forest property
 - Town Parks (547 Acres)
 - Conservation Land (34 Acres)
-
- *Route 150, from the NH line south to Pleasant Valley Road.*
 - *South Hampton Road, from the NH line to Route 150.*
 - *Pleasant Valley Road, to Merrimac Street, to Main Street, to Evans Street to the Newburyport City line.*
-
- ❖ *Route 110, From western Merrimac town line east to the Salisbury town line.*
 - ❖ *Lake Attitash Road, off Route 110, around the lake until it turns into Lions Mouth Road, which continues to a large conservation area, public school and recreation areas.*
 - ❖ *Lions Mouth Road to Friend Street continues north to the town hall.*
 - ❖ *Friend Street, south on Highland Street continuing to Route 150.*
 - ❖ *Whitehall Road, permits access to Lake Gardner, recreation and conservation land (off Route 150 and extends to NH line).*
 - ❖ *South Hampton Road, permits access to Lake Gardner, recreation and conservation land (off Route 150 and extends to NH line).*
 - ❖ *Pleasant Valley Road, to Merrimac Street to Main Street.*

ANDOVER

Additional Trip Generators (Major Points of Interest)

- Addison Gallery of American Art at the Phillips Academy
- Robert S. Peabody Museum of Archaeology at the Phillips Academy
- J. Everett Collins Center for the Performing Arts
- Two Colleges (Merrimack College and the MA. School of Law)
- State Registered Historic Districts: (over 200 historic sites)

- Academy Hill
 - Andover Multiple Resource Area (7 districts)
 - Andover Village Industrial District
 - Ballardvale
 - Central Street
 - Main Street-Locke Street
 - Shawsheen Village
 - West Parish Center
 - Churches (19)
 - Old Town Hall
 - Andover Theatre Company
 - Merrimack Jr. Theatre
 - Kaleidoscope (Creative Learning for Children Inc.)
 - Art in the Park (fall outdoor fine art exhibit)
 - Crafts in the Park (Mother's Day crafts sale in Central Park)
 - Handsprings (spring artisan sale)
-
- ❑ River Road, northeast from the Tewksbury line, to southeast along Chandler Road, to south on Ledge Road, to northeast on Mount Vernon Street, to southeast on North Street, to Beacon Street, to east on Shawsheen Street, to south on Route 28, to northeast on Hillside Road to the North Andover line. **OR**
 - ❑ South on Route 28 to northeast on Hillside Road, to southeast on Salem Street to the North Andover line. **OR**
 - ❑ Southeast on Salem Street, to south on Jenkins Road to the North Reading line. **OR**
 - ❑ Southeast on Salem Street, to north on Boston Street to the North Andover line. **OR**
 - ❑ South on Route 28, to southwest on Porter Road, to south on Woburn Street to the Wilmington line. **OR**
 - ❑ Southwest on Porter Road, to west on Andover Street, to southwest on Tewksbury Street to the Tewksbury line.
 - ❑ (Shawsheen Road does not appear to connect to Route 28 according to the RIF map).
-
- ❖ *Route 133*, from the North Andover line, west to the Tewksbury line.
 - ❖ *Route 28*, from the Lawrence line, south to the North Reading line.
 - ❖ *Route 125*, from the North Andover line, south to the North Reading/Wilmington line.
 - ❖ *River Road*, from the Tewksbury line, east to the Lawrence line.
 - ❖ From River Road, south on *Boutwell Road*, east on *Pleasant Street*, south on *Haggett's Pond Road* to Route 133.
 - ❖ *Dascomb Road*, from the Tewksbury line, northeast to *Andover Street*, east to *Essex Street* to Route 125.
 - ❖ From River Road, south on *Chandler Road*, south on *Ledge Road*, south on *Greenwood Road*, south on *Lovejoy Road* to Dascomb Road.
 - ❖ From Greenwood Road, southeast on *Gleason Street*, southeast on *High Plain Road*, cross over Route 133 and continue southeast along *Shawsheen Road* to *Andover Street*.
 - ❖ From Lawrence line, south on Greenwood Road.
 - ❖ From Lawrence line, south on *Beacon Street* to Route 133.
 - ❖ From Dascomb Road, southeast on *Chick Road*, to south on Andover Street, cross over rail line and Shawsheen River, continue east on Andover Street to south on *Woburn Street*, to east on *Ballardvale Road* to Route 28.

- ❖ *Wildwood Road*, east, to southeast on *Salem Street* to the North Andover line/*Middleton Street*.
- ❖ From Route 28, southeast on *Salem Street* to Route 125 to southeast on *Gray Road* to the North Andover line/*Gray Street*.

BOXFORD

Additional Trip Generators (Major Points of Interest)

- Two Historic Districts: One each in East and Howe Village
 - Historic Document Center
 - Doll House Museum
 - Extensive Trail and Open Space Network
-
- ❑ Washington Street from the Groveland line, south to Silver Mine Road.
 - ❑ West on Silver Mine Road, to south on Main Street and then southwest on Glendale Road to the North Andover line. **OR**
 - ❑ West on Silver Mine Road, to south on Main Street, to Middleton Road to the Middleton line. **OR**
 - ❑ West on Silver Mine Road, to south on Main Street, to Topsfield Road to Topsfield line.
 - ❑ Bare Hill Road to Depot Road, north on Georgetown Road, northwest on Ipswich Road, and north on Baldpate Road to the Georgetown line.
-
- ❖ *Route 133*, from the North Andover line to the Georgetown line.
 - ❖ *Main Street*, south from the *Haverhill line/Kingsbury Avenue* to Route 133.
 - ❖ *Route 97*, from the Georgetown line, southeast on *Killam Hill Road* to the Topsfield line.
 - ❖ *Lawrence Road*, southeast from the *North Andover line/Boxford Street* until it meets with *Brookview Road* to Main Street.
 - ❖ *Brookview Road*, northeast from the *North Andover line/Lacy Street*, until it meets with *Lawrence Road* to Main Street.
 - ❖ *Main Street*, southeast from Route 133, north on *Middleton Road*, south on *Elm Street*, southeast on *Topsfield Road* to the Topsfield line.
 - ❖ *Middleton Road*, south from Main Street to the Middleton line.
 - ❖ *Washington Street*, south from the Groveland line to Route 133.
 - ❖ *Ipswich Road*, east from the *North Andover/Dale Street*, east past Main Street, southeast on *Pond Street*, southeast on *Bare Hill Road* to the Topsfield line.
 - ❖ *Georgetown Road*, south from the Georgetown line.
 - ❖ *Lily Pond Road*, southwest from the *Haverhill line/Barker Street Ext.*, west on *Barker Road* to the North Andover line.
 - ❖ *Lake Shore Road*, northeast from Main Street to the *Groveland line/Center Street*.
 - ❖ *Baldpate Road*, from the Ipswich line, north to the *Georgetown line/Baldpate Road/Nelson Street*.
 - ❖ *Rowley Road*, northeast from Route 97 to the *Rowley line/Boxford Street*.

GEORGETOWN

Additional Trip Generators (Major Points of Interest)

- Working Farms
 - Camp Dennison
 - Community Beach
 - Forested Land
 - Village (downtown) Center
 - Rock Pond
 - Pentucket Pond
 - Historic Homes
 - Historic Site: Schoolhouse #3
 - Various Conservation/Recreation Areas
 - Parker River
 - Brooks (5)
-
- Nelson Street, northeast from the Boxford line to north on Elm Street to East Main Street (The map shows a road connecting East Main Street to North Street, but this road does not exist).
 - North Street, northeast from the North Street/Jewett Street junction to the Newbury line.
 - Thurlow Street, southeast from North Street, east on Jewett Street, to southeast on Jewett Street West to the Rowley line.
-
- ❖ *Route 97, from the Groveland line, south to the Boxford line/Killam Hill Road.*
 - ❖ *Route 133, from the Boxford line/Willow Road, east along Andover Street, north on Central Street, southeast on Main Street to the Rowley line.*
 - ❖ *Pond Street, south from the Groveland line/Seven Star Road to North Street.*
 - ❖ *Thurlow Street, southeast from the Groveland line/Byfield Road to Jewett Street.*
 - ❖ *Library Street, from Route 97 to Route 133.*
 - ❖ *West Street, southeast from the Groveland line/Uptack Street to Route 133.*
 - ❖ *Baldpate Road, north from the Boxford line/Baldpate Road, east on Route 133, north on Bailey Lane to Route 97.*
 - ❖ *Nelson Street, northeast from the Boxford line/Baldpate Road, across Route 97, southeast on East Street, east on Pingree Farm Road to the Rowley line.*
 - ❖ *Prospect Street, from Route 97/West Main Street, east to Pond Street, south on Pond Street to northeast on North Street to the Newbury line.*
 - ❖ *Jewett Street, east from North Street, east on Jackman Street to the Newbury line/Elm Street.*
 - ❖ *Tenney Street, northeast from Route 133/E. Main Street, north on Tenney Street to Jewett Street West, to the Rowley line/Wethersfield Road.*
 - ❖ *Warren Street, south from Jackman Street to Jewett Street West.*
 - ❖ *Jewett Street West/Jewett Street, from Jewett Street/Jackman Street, southeast on Jewett Street to Tenney Street.*

GROVELAND

Additional Trip Generators (Major Points of Interest)

- Merrimack River
 - Parker River
 - Four Ponds:
 - Johnson's Pond
 - Crane Pond
 - Meadow Pond
 - New Mill Pond
 - Three Historic Sites:
 - First Period Buildings of Eastern MA
 - Joseph Hardy House
 - George Hopkinson House
 - Various Conservation/Recreation Land
- Route 113, southwest from the West Newbury line to the Groveland Bridge/Haverhill line.
- Washington Street, from the Boxford line, north on Gardner Street, north on Route 97 to the Groveland Bridge/Haverhill line.
- ❖ *Route 97, from the Haverhill line/Groveland Bridge south to the Georgetown line.*
- ❖ *Route 113, from the West Newbury line, southwest to Route 97.*
- ❖ *Main Street, northeast from the Haverhill line/Lawrence Road to Gardner Street to Route 97.*
- ❖ *Washington Street, north from the Boxford line/Washington Street to Main Street.*
- ❖ *Center Street, northeast from the Boxford line/Lake Shore Road to the West Newbury line.*
- ❖ *Gardner Street, east from Route 97, southeast on Garrison Street, east on Governors Road to Seven Star Road.*
- ❖ *Balch Avenue, south from Main Street/Route 113 to Governors Road.*
- ❖ *Rollins Road, south from Governors Road, past Center Street, south on Bear Hill Road to J.B. Little Road.*
- ❖ *Seven Star Road, from the Georgetown line, north to Broad Street to Main Street/Route 113.*
- ❖ *J.B. Little Road, from the West Newbury line to Seven Star Road to Bear Hill Road to the Byfield Road triangle.*
- ❖ *Byfield Road, from the Georgetown line to Seven Star Road to Bear Hill Road to the J.B. Little Road triangle.*
- ❖ *Uptack Street, from Washington Street, southeast to the Georgetown line.*

HAVERHILL

Additional Trip Generators (Major Points of Interest)

- Bradford area
- Three Historic Districts (Bradford Common, Rocks Village and Washington Street)

- Buttonwoods Museum
 - Northeast Cultural Arts Center
 - Scotland Hill Children's Theatre
 - Whittier Chamber Orchestra
 - Winnikenni Foundation
 - Numerous Religious Venues
 - Birthplace/Home of poet, abolitionist and newspaper editor John Greenleaf Whittier
 - Revitalized business district (includes one of the finest Queen Anne style industrial streetscapes in America)
 - Numerous community agencies and volunteer organizations
 - Public open space and passive recreation land (1,187 Acres including watersheds)
 - Public active recreation land (498 Acres including school facilities)
 - Private open space land (247 Acres)
 - Quasi-public/private active recreation land (490 Acres)
 - Nine cemeteries
- ❑ North Street, from NH line heading south, east on Gile Street to Route 108 to the NH line.
 - ❑ Route 108, to Route 110 following Kenoza Street to East Broadway to Groveland Street to the Groveland Bridge. **OR**
 - ❑ East Broadway, north to County Bridge Road, to Merrimac Road to the Merrimac line.
OR
 - ❑ Main Street to the West Newbury line.
 - ❑ Route 97/113 from Groveland line to Methuen line.
 - ❑ Route 110/113 from Groveland line to Methuen line.
- ❖ *Route 110*, Merrimac line to Amesbury Road/110 to Kenoza Street/110 (around Kenoza Lake), south to Kenoza Avenue/110 to Route 125.
 - ❖ *Route 125* to downtown Haverhill.
 - ❖ *Water Street/Route 97/113* to Groveland line.
 - ❖ *River Street/Route 110/113* west to Methuen line.
 - ❖ *Route 97*, northwest to Methuen line.
 - ❖ *Route 125*, NH line, south through Bradford to North Andover line.
 - ❖ *South Prospect Street*, south to *Kingsbury Avenue* to Boxford line (leads directly to Route 133 in Boxford).
 - ❖ *Lily Pond Road/Boxford* line, northeast on *Barker Street Extension*, north on *Boxford Road*, northeast on *South Cross Road*, northeast on *Lawrence Road* to the Groveland line/Main Street.

LAWRENCE

Additional Trip Generators (Major Points of Interest)

- Mill Buildings
- Ethnic Areas
- Merrimack River
- Spicket River

- Shawsheen River
- Stevens Pond
- Museums:
 - Immigrant City Archives
 - Essex Art Center
 - Lawrence's Factory Stores & Outlets
- Open Space and Recreation Areas (215 Acres):
 - Campagnone Common
 - Lawrence Riverfront State Park
 - Lawrence Heritage State Park
 - Den Rock Park
 - Law Stadium
 - Mt. Vernon Park
 - O'Connell Park
 - Storrow Park (AKA Leo Murgia Playstead)
 - O'Neill Park
- Lawrence Community Boating (Bashara Boat House on Eaton Street)
- Ayer Mill Clock Tower
- Great Stone Dam
- Tower Hill Water Tower
- Churches (over 35)
- Farmers Markets
- Eight (8) Historic Districts (20 sites):
 - American Woolen Mill Historic District
 - Arlington-Basswood Historic District
 - Mills Historic District
 - Downtown Lawrence Historic District
 - Mechanics Block Historic District
 - Prospect Hill Historic District
- Route 110, from the Methuen line, west or east to the Methuen line.
- Lawrence Street, south from the Methuen line, to east on Market Street, to southeast on Loring Street to the North Andover line.

❖ **Route 110, Methuen line, south on Jackson Street, west on Haverhill Street to the Methuen line.**

- ❖ *Route 28, the Methuen line to the Andover line.*
- ❖ *From Route 28, southwest on Mt. Vernon Street to the Andover line/Greenwood Road.*
- ❖ *From Route 28, west along Andover Street to the Andover line/River Road.*
- ❖ *From Andover Street, south on Eaton/Beacon Street (?) to the Andover line/Beacon Street.*
- ❖ *From Merrimack Street/Methuen line, south on Marston Street, west on Canal Street, south across the South Union Street Bridge, east on Market Street, south on Shawsheen Road, south on Crawford Street, west on North Parish Road, south on Osgood Street to Route 114.*
- ❖ *Route 114, from the North Andover line, northwest to Andover Street, west on Andover Street to Route 28.*

- ❖ *Currant Hill Road*, from the *Methuen line/Railroad Street*, south to *May Street* to Route 110.

MERRIMAC

Additional Trip Generators (Major Points of Interest)

- Merrimack Port
 - Over 3,000 Acres of Forest Land
 - Two Town Forests
 - Jay McClaren Memorial Trail
 - Indian Head Park on Lake Attitash
 - Cobblers Brook
 - George P. Stevens Field
 - Historical District
 - Senior Center
- River Road, from the Haverhill City line, east to Tannery Lane continuing to the Amesbury Town line.
- ❖ *Route 110*, from the Amesbury line west to the Haverhill line.
 - ❖ *Liberty Street* (may be a good connection from route 110 to the bike/multi-use path).
 - ❖ *Woodland Street* to *Winter Street* to *Highland Street* to *Brush Hill Road*, south down *Battis Road* to *Birch Meadow Road* continuing to Route 110 (makes complete circle around large recreation area).
 - ❖ *Broad Street*, from Route 110 south to River Road.
 - ❖ *River Road*, from the Haverhill line east to the Amesbury line.

METHUEN

Additional Trip Generators (Major Points of Interest)

- Riverwalk Park (links several town parks, historic buildings and the downtown)
- Methuen Memorial Music Hall
- Six historic districts
- Two Churches
- Charles Tenney Estate
- Searles Castle
- “The Loop” (entertainment and retail complex off Pleasant Valley Street)
- Arts and Cultural Affairs Commission
- Historic District Commission
- Riverside Park
- Town Forest/Forest Lake recreation area (48 Acre lake and 82 Acres of hiking and X-country ski trails)
- Conservation/Passive Recreation Land (330.31 Acres)

- Active Recreational Land (223.23 Acres)
 - Quasi-Public/Non-Profit Land (465.39 Acres)
 - Chapter 61A Land (744.46 Acres)
 - Chapter 61B Land (191 Acres)
- Route 110 from the Dracut line, through Lawrence, northeast to Route 110/113 to the Haverhill line.
 - Route 28 from the N.H. line, south to Lawrence Street, south to the Lawrence line.
- ❖ *Route 110/113*, Haverhill line until 110 and 113 break from each other.
 - ❖ *Route 110*, from break with route 113 south to Lawrence line, through Lawrence to Methuen.
 - ❖ *Route 97*, Haverhill line to *Atkinson Street* heading south to west on *North Street*, to south on *Hampstead* to *Howe Street* until *Route 113*, continuing south on *Jackson Street* until *Route 110* to Lawrence line.
 - ❖ *Route 110*, from the Lawrence line until it meets with *Route 113* (just around Route 93) where it splits – *Route 110* follows *Lowell Street* into *Lowell Boulevard* along the Merrimack River to the Dracut line.
 - ❖ *Route 113*, from split west of Route 93 along *North Lowell Street* to the Dracut line.
 - ❖ *Route 110/113*, from split on east side of Methuen – *Route 113* follows the north side of Methuen to the downtown, west on *Pelham Street* to north on *Pelham Street* to *Hampshire Road*.
 - ❖ *Pelham Street*, south on *Forest Street* to *Hill Street* to *Route 113*.
 - ❖ *Route 28*, the NH line to the Lawrence line (*only access over the Merrimack River).

NEWBURY

Additional Trip Generators (Major Points of Interest)

- Plum Island
 - Parker River
 - Mill River
 - Little River
 - High Road Uplands (Old Town Hill & Little Old Town Hill)
 - Downfall Area
 - Southwestern Uplands
 - Four (4) Museums:
 - Coffin House
 - Spencer-Pierce-Little House
 - Swett-Ilsley House
 - Pole-Little House
 - Historic Sites (118 – including homesteads, crossings, mills, farms, cemeteries, etc...)
- Scotland Road, southwest from the Newburyport line, to South Street, to Main Street to the Georgetown line.
 - Route 1A, south from the Newburyport line to the Rowley line.

- ❑ Rolfe's Lane, northeast from Route 1A, to Ocean Avenue/Newburyport line.
- ❑ Plum Island Turnpike to Plum Island.
- ❑ Sunset Drive and Island Road on Plum Island.

- ❖ *Route 1*, from the Rowley line to the Newburyport line.
- ❖ *Route 1A*, from the Rowley line to the Newburyport line.
- ❖ *Coleman Road*, northwest from the *Rowley line/Glen Street*.
- ❖ *Elm Street*, east from the *Georgetown line/Jackman Street* to Route 1.
- ❖ *Main Street*, northeast from the *Georgetown line/North Street* to the West Newbury line.
- ❖ *Moody Street*, from Main Street, north to the West Newbury line.
- ❖ *Forest Street*, from Main Street, north on *West Street*, northwest on *River Street*, north on Forest Street to the West Newbury line.
- ❖ *Central Street*, from Main Street, south to *Elm Street*.
- ❖ *Orchard Street*, east from Central Street, northeast on *Middle Road* to *Route 1/Hanover Street*, east to Route 1A, northeast on *Rolfe's Lane* to the Newburyport line.
- ❖ *Newman Road*, northwest from Route 1A to Hay Street.
- ❖ *Hay Street*, from Route 1A, west to Newman Road, continuing northwest, west on *Boston Street* past Route 1 to Middle Road.
- ❖ *Middle Road*, from Elm Street, north past Maple Street.
- ❖ *Highfield Road*, north, from Middle Road past Scotland Road to the *Newburyport line/Parker Street*
- ❖ *Scotland Road*, west, from *Highfield Road* to the *West Newbury line/South Street*.
- ❖ *Plum Island Turnpike*, east, from the Newburyport line to Plum Island, south along *Sunset Drive* (Implemented by the Community in 2005).

NEWBURYPORT

Additional Trip Generators (Major Points of Interest)

- Merrimack River
- Parker River
- Little River
- Artichoke River
- Atlantic Ocean
- Cushing House Museum
- Old Hill Burying Ground & Oak Hill Cemetery
- Firehouse Center for the Performing and Visual Arts
- Maudsley Arts Center
- The Sam Sargent Gallery
- Chameleon
- Downtown Business District
- Henry Graf Jr. Skating Rink

- ❑ Route 113, east from the West Newbury line, to north on Boardman Street, to east on Water Street to the Plum Island Turnpike to the Parker River National Wildlife Refuge.
OR
- ❑ Route 113, east from State Street to the Newbury line.

- ❑ State Street, north from Water Street, west on High Street, to west on Pond Street, to west on Low Street, to south on Graf Road, continuing south on Parker Street to the Newbury line.
- ❑ Ocean Avenue, southwest from Water Street to Rolfe's Lane/Newbury line.
- ❖ *Route 1*, from the Newbury line to the Salisbury line.
- ❖ *Route 1A*, from the *Newbury line/High Road*, northwest on *High Street/Route 113* to *State Street*.
- ❖ *Pond Street*, west from High Street/State Street intersection to *Low Street*.
- ❖ From the *Newbury line/Highfield Road*, north on *Parker Street*, north on *Graf Road* to *Low Street*.
- ❖ From the *Newbury line/Rolfes Lane*, northeast on *Ocean Avenue* to the *Plum Island Turnpike*.
- ❖ Plum Island Turnpike, from Ocean Avenue, east to the Newbury line (Implemented by City in 2005).
- ❖ *Spofford Street*, from the *Amesbury line/Evans Street*, over the *Chain Bridge* to the Newburyport line.
- ❖ *Ferry Road*, from Spofford Street, west on Ferry Road, south on *Pine Hill Road* to *Curzon Mill Road*.
- ❖ *Route 113/Storey Avenue*, from the West Newbury line, east on Route 113/Storey Avenue to *Turkey Hill Road*.
- ❖ Turkey Hill Road, southwest to the *West Newbury line/Turkey Hill Road*.
- ❖ Route 113/Storey Avenue, east from *Low Street*, north on *Nobel Street*, northwest on *Ferry Road*.
- ❖ *Federal Street*, north from High Street, west on *Water Street* to *Perry Wharf/Parking Area*.
- ❖ *Hale Street*, from *Turkey Hill Road* east to *Low Street*.
- ❖ *Curzon Mill Road*, east from the *West Newbury line/Emery Lane* to *Pine Hill Road*.
- ❖ *Hoyts Lane*, from *Curzon Mill Road*, south to *Storey Avenue*.
- ❖ *North Atkinson Street*, north from Low Street to west on Route 113, north on *Ashland Street* to *Merrimack Street*.
- ❖ *Toppans Lane*, from *Low Street/Hale Street intersection*, north to Route 113, north on *Broad Street* to *Merrimack Street*, to *Caldwells Court* into *Cashman Park*.
- ❖ *Merrimack Street*, from *Ashland Street*, west to *Spofford Street*.
- ❖ *Plummer Spring Road*, from *Hale Street*, west to the *West Newbury line/Middle Street*.

NORTH ANDOVER

Additional Trip Generators (Major Points of Interest)

- Lawrence Municipal Airport
- Merrimack River
- Shawsheen River
- Museums:
 - American Textile History Museum
 - North Andover Historical Society Museum
 - Stevens-Coolidge Place

- Stevens Estate
- Historic Districts (Four) / (17 sites):
 - Machine Shop Village Historic District
 - North Andover Center Historic District
 - North Andover Historic District
 - Taverns Acres Historic District
- Open Space and Recreation (>3,527 Acres)
 - ❑ Mass Avenue, southeast from the Lawrence line, to Johnson Street, to Salem Street, to northeast on Dale Street to the Boxford line.
 - ❑ Milk Street, west from Salem Street, to south on Chestnut Street to the Andover line.
 - ❑ Winter Street, south from the Boxford line, to south on Salem Street to the Middleton line.
 - OR
 - ❑ Winter Street, south from the Boxford line, to southwest on Farnum Street, to west on Brook Street, to south on Boston Street to the Andover line.
 - ❑ Campbell Road, southwest from Salem Street, north on Berry, to southwest on Berry through Harold Parker State Forest to the North Reading line.
 - ❑ Unnamed Road, from Boston Street, southeast to the North Reading line through Harold Parker State Forest.
(RIF file does not show Hillside Road connecting across Route 114)
- ❖ *Route 114*, from the Lawrence line to the Middleton line.
- ❖ *Route 125*, from the Andover line, northeast to *Route 114/125*, north to *Route 125/133*, north to the Haverhill line/Route 125.
- ❖ *Route 133*, from the Route 125/133 split, east on *Great Pond Road/Route 133* to the Boxford line.
- ❖ *Gray Street*, east from the *Andover line/Gray Road*, north on *Boston Street* to Route 114.
- ❖ *Middleton Street*, southeast from the *Andover line/Salem Street*, northeast on *Harold Parker Road* to Route 114.
- ❖ Middleton Street to Middleton line.
- ❖ Route 133/Great Pond Road, northwest on *Pleasant Street*, north on *Stevens Street*, north on *Osgood Street* to Route 125/133 (circling Lake Cochichewick).
- ❖ *Massachusetts Avenue*, southeast from *Loring Street* to the Lawrence line.
- ❖ *Sullivan Street*, from *Gray Street*, east to Route 114.
- ❖ Massachusetts Avenue, south on *Salem Street*, southeast on Salem Street into *Boxford Street* to the *Boxford line/Lawrence Road*.
- ❖ *Winter Street*, south from Great Pond Road, west on *Forest Street* to Boxford Street.
- ❖ *Dale Street*, west from Winter Street, west on *Appleton Street* to Salem Street.
- ❖ *Chestnut Street*, northeast from Route 114, east on *Rea Street*, southeast on *Abbott Street*.
- ❖ *Sharpners Pond Road*, northeast from Route 114, north on Forest Street, east on *Lacy Street* to the *Boxford line/Brookview Road*.
- ❖ Salem Street, south from Boxford Street to Sharpners Pond Road.
- ❖ *Ashland Street*, south to *Waverly Road* to Massachusetts Avenue.
- ❖ Ashland Street, south to *Main Street* to Route 125/133.
- ❖ *Dale Street*, to *Boxford line/Ipswich Road*.
- ❖ *Barker Street*, southwest from Boxford line/Barker Road, to Route 125/133.

ROWLEY

Additional Trip Generators (Major Points of Interest)

- Parker River National Wildlife Refuge
 - Mill River
 - Rowley River
 - “Turning Place” now called Rowley Town Common
 - Bradstreet Farm
 - Town Center Area Historic District
 - Glen Mills Area
 - Historic Structures (>180)
 - Open Space and Recreation
-
- Route 1A, from the Ipswich line north to the Newbury line
 - Route 133/Haverhill Street, from the Ipswich line, northwest to Daniels Road, to Dodge Road, to Long Hill Road to the Georgetown line.
-
- ❖ *Route 133, from the Georgetown line/East Main Street, east on Haverhill Street to Route 1A.*
 - ❖ *Pingree Farm Road, northeast from the Georgetown line/Pingree Farm Road to Route 133.*
 - ❖ *Wethersfield Street, east from the Georgetown line/Jewett Street West, to Bennett Hill Road to Central Street.*
 - ❖ *Route 1A, from the Ipswich line to the Newbury line.*
 - ❖ *Route 1, from the Ipswich line to the Newbury line.*
 - ❖ *Central Street, from Route 1, southeast to Church Street to Route 1A.*
 - ❖ *Cross Street, east from Central Street to Jellson Road, to Railroad Avenue to Ovset Point Road/Commuter Rail Station.*
 - ❖ *Boxford Road, from Route 133, south along Boxford Street to the Boxford line/Rowley Road.*
 - ❖ *Hillside Street, northeast from Wethersfield Street, northwest on Glen Street to the Newbury line/Coleman Road.*
 - ❖ *Stackyard Road, from Route 1A/Main Street, east to Nelson Island/Parker River National Wildlife Refuge.*
 - ❖ *Newbury Road, south from Boxford Road to the Ipswich line/Newbury Road.*
 - ❖ *Dodge Road, from Route 133, north to Long Hill Road to Wethersfield Street.*

SALISBURY

Additional Trip Generators (Major Points of Interest)

- Salisbury State Beach Reservation (521 Acres)
- Historic town center i.e., Salisbury Square
- Ring’s Island Museum
- Salisbury’s Historical Society Museum

- The Pike School; a restored 1882 one-room schoolhouse
 - Old Burying Ground
 - Municipal Park (contains 12 acres devoted to baseball, softball, basketball, tennis and general recreation)
 - Island Sanctuaries (two of which account for 130 Acres and used for birding, hiking and nature study – other islands are accessible by canoe, Barnes Island Trail)
 - Agricultural Land with Cultural Significance (Pettengill Farm, Bartlett’s Farm and Mudnock Farm)
 - Merrimack River (mouth of the Merrimack River is one of the top ten best bird-watching sites in North America)
- Route 1, north from the Newburyport line, east on Route 1A, north Route 1A to the NH line.
- ❖ Route 1A, Beach Road (Project being proposed by Town).
 - ❖ Route 1A, North End Boulevard.
 - ❖ Route 110, heading from Salisbury Square west into Amesbury.
 - ❖ Route 1, from Newburyport north to Seabrook, NH.
 - ❖ Dock Lane (to recreation land).
 - ❖ Sandhill Road (to recreation land).
 - ❖ *Rail line R.O.W would generate the same effect as Route 1.

WEST NEWBURY

Additional Trip Generators (Major Points of Interest)

- Mill Pond
 - Little Crane Pond
 - Merrimack River
 - Indian River
 - Artichoke River
 - Museums:
 - Hills House
 - Historic District (1):
 - Training Field
 - Rocks Village Bridge
 - Churches (3)
 - Open Space and Recreation (3,601 Acres or 38%)
- Route 113, east from the Groveland line to the Newburyport line.
- Church Street, north from Route 113 to the Rocks Village Bridge/Haverhill line.
- ❖ *Route 113*, from the Newburyport line, west to the Groveland line.
 - ❖ *Emery’s Lane*, from the *Newburyport line/Curzon Mill Road*, south to Route 113.
 - ❖ *Middle Street*, from the *Newburyport line/Plummer Spring Road*, west to the *Groveland line/Center Street*.

- ❖ *Turkey Hill Street*, from the *Newburyport line/Turkey Hill Road*, south to *Rogers Street*.
- ❖ *Crane Neck Street*, from the *Newbury line/Forest Street*, to Route 113.
- ❖ *Ash Street*, from the *Moody Street/Newbury line*, north to *Maple Street*, north to Route 113.
- ❖ *South Street*, from the *Newbury line/Main Street*, east along South Street to the *Newbury line/Scotland Road*.
- ❖ *Rogers Street*, northwest from *Turkey Hill Street*, west on *Garden Street*, north on *Indian Hill Street*, west on *Cherry Hill Street*, south on *Usleys Hill Road*, to south to *Moulton Street*.
- ❖ *Garden Street*, from Route 113/Main Street, south past Middle Street, past Rogers Street to *Indian Hill Street*.
- ❖ From Route 113/Main Street, north on *Coffin Street*, west on *River Road* to the *Bridge* to the Haverhill line.
- ❖ From the *Rocks Village Bridge/Haverhill line*, south on *Church Street* to south on *Prospect Street* to Route 113.

The Regional Pedestrian System

Introduction

Walking, the most basic form of transportation, is key to a multimodal transportation plan. Virtually every trip made by an individual, including those by motor vehicle, involve walking. It is essential for transit use, contributes to personal health, enhances economic development and benefits the environment.

Walking and any walkway network is a largely local issue in Massachusetts because roadways are predominantly under local jurisdiction. Yet, when the pedestrian environments within individual communities are combined with additional modes of transportation, walking clearly becomes a regional issue.

Pedestrian Characteristics & Problems

Pedestrians can be grouped into five categories, all having different characteristics that make them vulnerable to motor-related injury or death.

1. Children and pre-teens
 - Do not understand, or feel invincible towards danger
 - Are impulsive and unpredictable
 - Have limited peripheral vision, sound sourcing
 - Have poor gap and/or speed assessment
 - Have limited experience or training
 - Play in roadways and driveways
 - Walk behind cars that are backing up
2. Teenagers
 - Walk longer distances
 - Walk in riskier places
 - Walk during evening and night hours
 - Feel invincible
 - Are willing to take chances, peer pressure
 - Act unpredictably
 - Walk unsafe routes to school
 - May use alcohol and other substances
3. Elderly
 - Walk for exercise
 - May walk because they no longer drive
 - Tend to walk at a slower pace than any other pedestrian
 - May have impaired vision
 - May have impaired ability to judge distances, gap/speed assessment
 - Walk in the roadway when sidewalks are not present
 - May have impaired hearing
4. Everyday Pedestrians (commuters, exercisers, mothers)

- May be distracted because they are focused on other things, not their surroundings (May be listening to music)
- (Commuters and exercisers) Are most frequently on roadways early in the morning and in the evening – the busiest motoring times of the day
- (Commuters and exercisers) Can be impatient at crosswalks because they are late or are trying to keep their heart rate up
- (Exercisers) Walk or run longer distances than most pedestrians
- (Commuters) Are concentrated in urban areas where there tends to be more traffic
- Are less likely to walking late at night

5. Physically Impaired Pedestrians

- Their physical disability may require more crossing time at traffic signals
- Pedestrians in wheelchairs or on motorized scooters are shorter and hard for motorists to see
- Physical disability may impair vision, decreasing the ability to judge distance and gap/speed assessment, or impair hearing
- They may be walking because they are unable to drive

Traffic Calming

There are different types of accidents that commonly include pedestrians. One way to reduce these conflicts involves effectively retrofitting roadways to make them safer and more comfortable for all users of the roadway, including pedestrians. Traffic calming is a combination of mainly physical devices on roadways that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for nonmotorized street users. In general, most traffic calming projects are a result of residents concern over traffic conditions in neighborhoods, speeding, congestion, perceived or actual incidences of road rage, and political reactions. It is extremely important that devices are properly selected and placed so that they accomplish the objective of slowing traffic and/or guiding cars to arterial or collector roadways.

There are several different device types for calming traffic. Some such as humps, slowpoints, chicanes, raised intersections, curb extensions, and traffic circles slow or reduce motor vehicle speeds. Others such as cul-de-sac streets, entrance treatments, and diagonal diverters can divert traffic from an area. It should be realized that devices alone would not solve all traffic problems. Realistic, detailed planning and public participation/education are very important components of a successful traffic-calming program.

Rail Trails

Rail trails, also known as multi-use trails, “linear parks,” and greenways, are corridors that have been secured for public use and transformed into multifaceted trails for hiking, bicycling, horseback-riding, and cross country skiing among other uses. Rail trails are specifically noted as such because they are developed using inactive or abandoned right-of-way corridors from the nation’s railroad network.

There are 68.03 miles of rail line corridors throughout the Merrimack Valley region. Of these, 29.57 miles are active lines running through the communities of Andover, Haverhill, Lawrence, Methuen, Newbury, Newburyport, North Andover, and Rowley. There are 38.46 miles of inactive corridors present in the communities of Amesbury, Boxford, Georgetown, Groveland, Haverhill, Merrimac, Newbury, Newburyport, North Andover, and Salisbury. Of the 38.46 inactive miles, four of the region's communities (Amesbury, Newburyport, North Andover and Salisbury) have initiated projects to turn their abandoned rail corridors into trails. The City of Amesbury has completed one section of its Powow Riverwalk and is about to begin work on a second segment of the project. In addition, the Town of Merrimac, has successfully developed an unpaved rail trail. Known as the McClaren Trail, the right-of-way was purchased by a town resident in the 1970s and donated to the community. It extends from the downtown area in Merrimac to the New Hampshire border where it connects to a trail in Newton. The McClaren Trail has been planned to connect areas of open space within the community that include the Town Forest, Perkins Conservation Area and the Marshview Trail.

Border to Boston Bike Trail

This proposed trail would cross the region from north to south and be part of the larger East Coast Greenway project, which is intended to provide a largely off-road route for pedestrians and bicyclists to use between Maine and Florida. In the MVPC region, the trail would follow the abandoned rail lines in Salisbury, Newburyport, Newbury, Georgetown and Boxford and run from the Salisbury/Seabrook, NH town line to the Boxford/Topsfield town line. The proposed would extend south to downtown Danvers. Sections of the trail would, however, divert from the rail lines to avoid the construction of costly crossings of Route I-95 and to minimize possible conflicts with incompatible land use in areas traversed by the abandoned rail lines.

Planning for this route began as a grassroots effort by local bicyclists in the early 1990s. Individual communities along the proposed route have taken steps over the years to develop their sections of the trails. Both Newburyport and Salisbury have developed MassHighway-approved projects to construct sections of the trail in their community.

Additional funding for the design and construction of the trail was included in SAFETEA-LU, the federal transportation funding authorization bill that was passed by the Congress and signed by President Bush in August 2005.

Early in 2006, the Essex National Heritage Commission and the National Parks Service formed the Border to Boston Ad Hoc Committee to further coordinate efforts to access the funding contained in SAFETEA-LU and build the trail. During 2006, the Ad Hoc Committee, working with the assistance of the Merrimack Valley Planning Commission and the Metropolitan Area Planning Council, has been developing a draft Implementation Plan for the proposed trail. When completed, the draft Implementation Plan will outline the transportation need for the project, review the status of current efforts by communities to develop their sections of the trail, identify the steps that need to be taken to complete the trail, contain an estimate of the total cost of the project.

MVPC has and will continue to provide technical assistance to communities that undergo rail trail development. Assistance may include, but will not be limited to developing appropriate

RFPs, reviewing proposals and potential consultants, and serving as a liaison between community officials and the chosen consulting firms.

RECOMMENDATIONS

MVPC supports the preservation of inactive rail line corridors through the development of rail trails as they strengthen alternative modes of transportation throughout the region while enhancing the surrounding environment. Communities interested in converting abandoned rail corridors to trails should first assess their community's recreation and transportation needs, and perhaps most importantly, the resident's support for such a project. Planning, design and construction are obvious next steps but what cannot be stressed enough is the fact that lack of support within a community can and will stop these particular types of projects. A good reference for groups that would like to pursue a rail trail is "Trails For The Twenty-First Century – Planning, Design, and Management Manual for Multi-Use Trails," by the Rails-to-Trails Conservancy. The manual is currently out of publication but MVPC will provide it on a loan basis to member communities.

The Off-Road Trail System

The Merrimack Valley region contains over 26,670 acres of publicly accessible open space. Some of these lands are owned by private organizations such as Essex County Greenbelt Association (ECGA) and The Trustees of Reservations (TTOR), while others are owned by state agencies such as the Department of Environmental Management (DEM) and the Division of Fisheries and Wildlife (DFW). There is yet another group of lands that are municipally owned, and MVPC has made the mapping of these areas a high priority.

Over the years, MVPC has worked with local communities to map off-road, publicly accessible, municipally-owned trails with a global positioning system (GPS), which provides accuracy within a meter. The program is designed to assist communities in recognizing and developing their own off-road trail systems at one consistent scale using Geographic Information System (GIS) technology, while embracing an intercommunity approach. MVPC staff started the program through a series of integrated tasks:

1. Compilation of existing recreational trails maps and literature through contact with local communities' trails committees, planning boards/staff, conservation commissions and state forest personnel.
2. Development of an "Advisory Group" that is comprised of local communities' trails committee members, town or city staff, conservation commissioners or members, independent organization representatives and interested local citizens. The responsibilities of the Advisory group include;
 - ◆ Review of compiled materials,
 - ◆ Suggestions for map development,
 - ◆ Leading hikes for in-field data collection; and
 - ◆ Quality control of map development.

3. Mapping of recreational trail systems using Global Positioning Systems (GPS) in field, GIS technology and existing community trail maps. Features may include trail type, access points, canoe or boat access, handicap accessibility, camping, public facilities, trail use, hunting areas, fishing areas, historical points, swimming areas, signage, motor vehicle parking and scenic vistas.
4. Outreach methods to access the map products include WebPages on the MVPC website, and MVPC staff presentations of project and product at local trail committee meetings.

MVPC has completed the mapping of many trails throughout its region's communities, which include:

Amesbury:	Town Forest; Powow Riverwalk; Powow River Conservation Area
Andover:	Bay Circuit Trail; Goldsmith Woodlands
Boxford:	Wildcat Conservation Area/Alpers's Woodlot Trail; Barker Road Connection; Camp Denison
Georgetown:	Lufkin's Brook Conservation Area; Crane Pond Wildlife Management Area; Camp Denison
Groveland:	Craven/Nichols; Veasey Memorial Park
Haverhill:	Winnikenni Park; Crystal Gorge; Crystal Point; Tattersall Farm; Wheeler Woods (proposed); Meadow Brook Conservation Area; Pear Tree Lane Trail
Lawrence:	Costello Park
Merrimac:	Merrimac Town Forest Area; Marshview Trail; McClaren Trail
Methuen:	Methuen Uplands Area; Methuen Town Forest Area
Newbury:	Great Meadow Farm Area; Spencer Peirce Little Farm/Bay Circuit
Trail	
Newburyport:	Moseley Woods; Maudslay State Park; Spencer-Peirce Little Farm
North Andover:	Bruin Hill Conservation Area; Barker Road Connection
Rowley:	Prospect Hill Conservation Area
Salisbury:	Salisbury Rail Trail
West Newbury:	Mill Pond Recreation Area; Riverbend Conservation Area; Craven/Nichols

MVPC staff continues to work with the advisory committee volunteers to implement a protocol for additional volunteer mapping efforts throughout the region. Coordinated by MVPC staff, many individuals who possess their own GPS unit conduct field mapping of additional trails in chosen areas, which are then added to the regional database by MVPC's GIS staff. MVPC staff has worked with the Off Road Trail Mapping Committee to develop a data collection handbook for volunteers to use in collecting this data in a consistent, comprehensive manner.

This off-road trail information is important in the development of a comprehensive bicycle and pedestrian plan as it provides alternatives to on-road systems. As mapping information is

obtained and distributed, MVPC staff will be able to link off-road trail systems together and identify potential links between protected open spaces that may provide continuous passage throughout the region. MVPC will also identify the appropriate on-road systems that allow access to the off-road network.

Regional Trails

A number of important regional off road trails exist or have been proposed for pedestrian use in the Valley. These are summarized below:

Merrimack River Trail

The Merrimack River trail is envisioned as a largely off-road trail that will extend from the Canadian Border to the mouth of the river in Newburyport. Many pieces of the trail are in place and the Merrimack River Watershed Council published a guidebook. The main sections in place in the Valley include Moseley Woods and Maudslay State Park in Newburyport from Moseley Woods (near the Chain Bridge) to and through Maudslay State Park.

Shawsheen River Greenway

This proposed walking trail would follow the Shawsheen River through Andover, Lawrence and North Andover and eventually link to the Merrimack River Trail.

Bay Circuit Trail

First conceived of in the 1920's, the Bay Circuit trail is envisioned as an outer "emerald necklace," linking parks, open spaces and waterways from Plum Island to Kingston Bay. The Bay Circuit Trail begins at the northern end of Plum Island in Newburyport and continues west to the Spencer-Peirce Little Farm in Newbury and through the Valley communities of Rowley, Georgetown, Boxford, North Andover and Andover. It should be noted that there are some sections of the trail in the region that have been designated as being "temporary" while the Bay Circuit Alliance, the non-profit group working to complete the trail, pursues efforts to secure off-road passage. One such area in the Merrimack Valley is the so-called "Rowley Gap" in Newbury and Rowley. In 1998, the Merrimack Valley Planning Commission studied alternative means of providing an off-road route for this northern section of the Bay Circuit Trail

Water Trails

The Merrimack Valley region is uniquely blessed with a number of water resources. These include the Merrimack River, Shawsheen River, Ipswich River, Little River, Powow River, Parker River, Spicket River as well as a number of smaller waterways.

In addition, the eastern Valley communities of Salisbury, Newburyport, Newbury and Rowley are home to a large section of The Great Marsh, the largest continuous stretch of Salt Marsh in New England. The network of waterways, beaches, parks and wildlife refuges make it an outstanding location to enjoy boating and hiking.

Many of these resources are best viewed by traveling along the waterways themselves. To facilitate this, the Merrimack Valley MPO has become involved developing a network of water trails in the region. Working through the Eight Towns and the Bay Program, MVPC has identified 23 access points to waterways in the five MVPC communities in the Eight Towns and the Bay region as well as 14 water trails and 8 points of interest. The guide includes logistical information about the boat access points including photographs and availability of parking. Eventually this information will be available on line. In addition, the Town of Salisbury has proposed establishing a docking point for small boats and kayaks to use to gain access to the Merrimack River.

This Water trails planning effort will be expanded in the coming years and focus on the waterways in the central and western sections of the Valley.

Regional Air Transportation

Introduction

Conventional air-passenger and/or air-cargo transportation services are only available outside the Merrimack Valley region. While the Merrimack Valley Region does host a single municipal airport, Lawrence Municipal Airport, it is not certified for passenger airline operations and it has not developed an active cargo operation. Between the municipal airport and a number of other private airports, seaplane bases and heliports, most air travel in the Valley is for personal and recreational purposes.

The fact that travel outside of the region is required to access air-passenger and air-cargo facilities does not mean that these airports are not an important part of the Merrimack Valley's overall transportation system. In fact, these facilities, and the ability to access them efficiently, are very important elements in the overall economic success of the region.

The region's air facilities are shown in Table IV-16 below. Three (3) of the airports, Lawrence Municipal, Goddard and Plum Island, as well as one (1) of the seaplane bases, Merrimack Valley, have been designated in the Massachusetts Aeronautics Commission's 1989 Airport System Plan as part of the statewide airport system. The purpose of the statewide airport system is to ensure that all areas of the Commonwealth are accessible by air.

Table IV-16
Air Transportation Facilities Within The Merrimack Valley

Facility Name	ID	Location	Ownership	Facility Use
Lawrence Municipal Airport	LWM	Lawrence	Public	Public
Goddard Airport	04MA	Haverhill	Private	Private
Plum Island Airport	2B2	Newburyport	Private	Public
Meadowbrook Airport	6MA2	Amesbury	Private	Private
Long Hill Orchard Heliport	1MA7	West Newbury	Private	Private
Merrimack Valley Seaplane Base	MA2	Methuen	Private	Public
Grandview Farm Heliport	60MA	Rowley	Private	Private
Hat Factory Heliport	MA35	Amesbury	Private	Private
Lake Gardner Seaplane Base	6MA0	Amesbury	Private	Private
Merrimack Valley Hospital	n/a	Haverhill	Private	Medical
Holy Family Hospital Heliport	18MA	Methuen	Private	Medical
Lawrence General Hospital Heliport	16MA	Lawrence	Private	Medical
Anna Jaques Hospital Heliport	MA98	Newburyport	Private	Medical
Compaq Andover Heliport	01MA	Andover	Private	Corporate

Source: www.airnav.com

In addition to the region's air facilities, other regionally significant airports are shown in Table IV-176. These are Logan International, Hanscom Field, Manchester – Boston Regional Airport and Pease International Airport.

**Table IV-17
Regionally Significant Passenger/Cargo Airports**

Airport Name	ID	Location	Ownership	Facility Use
Gen. Edward Logan International Airport	BOS	East Boston	Public	Public
Laurence G. Hanscom Field Airport	BED	Bedford	Public	Public
Manchester – Boston Regional Airport	MHT	Manchester, NH	Public	Public
Portsmouth International Airport	PSM	Portsmouth, NH	Public	Public

Source: www.airnav.com

As shown in Table IV-18 below, the citizens of the Merrimack Valley region are very fortunate to reside equally distant from four airports with commercial air passenger service. Logan, Manchester, Pease, and Hanscom airports are all approximately 33 to 34 miles from the geographical center of population within the Merrimack Valley, which translates to a drive time of between 39 and 41 minutes, during periods of non-congested traffic flow on the highways (i.e. outside commuter peak periods). For direct, long-haul domestic and international air travel (greater than 1,500 miles), however, Logan is still the lone airport to travel from for this region.

**Table IV-18
Driving Time and Distance from the Merrimack Valley Region to Airports**

Airport	Driving Time (mins.)	Driving Distance (miles)
Logan	40	33
Manchester	41	34
Pease	39	34
Hanscom	40	33

Merrimack Valley Region Airports

Lawrence Municipal Airport (LWM)

Introduction

The Lawrence Municipal Airport (LWM) was established in 1934 after the City of Lawrence successfully purchased 312 acres of land from the Town of North Andover for the development of the airport. The development of runways began in January of the same year. By 1946, LWM had assumed its general configuration. Since that time there have been multiple capital projects undertaken to maintain and improve the facilities in order to continue to accommodate growing levels of air traffic and larger/heavier airplanes.

LWM is owned and operated by the City of Lawrence through its Airport Commission. The Commission consists of nine members, each appointed for 3-year terms (staggered). Commissioners oversee the annual operations and budgeting for the Airport.

Major Facilities

A two-runway system serves as the airport’s backbone. The first, runway 05/23, is approximately 5,000 ft. in length. The second, runway 14/32, is approximately 3,900 ft. in length. For a full description of the runway features of both 05/23 and 14/32 see Table IV-19 below.

**Table IV-19
Lawrence Municipal Airport Runways 05/23 & 14/32**

	Runway 05/23		Runway 14/32	
	Dimensions	5,000 x 150 ft.	Dimensions	3,901 x 100 ft.
	Surface	Asphalt, good condition	Surface	Asphalt, fair condition
	Runway edge lights	High intensity	Runway edge lights	Medium intensity
		Runway 05	Runway 23	Runway 14
Markings	Precision instrument	Precision instrument	Basic	Basic
Markings condition	Fair	Fair	Good	Fair
Instrument approach	ILS			
Obstructions	Trees	Trees	Trees	Trees

Source: www.airnav.com

The current terminal at the LWM is reached via the main entrance off Sutton Street, consisting of a single story building with approximately 4,000 square feet. The building was first constructed in 1958. The terminal serves multiple purposes including the administrative office, ticketing and office space for commercial operator(s), snack bar and waiting area.

The LWM houses an air traffic control tower, just east of the terminal. The tower was constructed in the 1970s on land leased by the FAA, who is the owner and operator. Operational staff is present at the tower from 7 a.m. – 10 p.m., seven (7) days a week.

Other facilities supporting the LWM operation include associated taxiways, airport navigational aids and landing systems, terminal aprons/ramps, hangar space and tie-downs, maintenance equipment, fueling, rescue and parking facilities.

Access to/from the Merrimack Valley - Location/Parking Facilities/Transportation Alternatives

Located in North Andover, the LWM’s service area consists primarily of the Merrimack Valley region. Access to the LWM is provided via three points. The access road to the main terminal is located off Sutton Street in North Andover. The junction of Sutton and Osgood (Rte. 125/133) Streets is approximately 250 feet due east of the main access road. Access to the North Apron is provided via Holt Road off Osgood St. (Rte. 125).

The Lawrence Municipal Airport lacks direct access from I-495, the nearest interstate, but is served by two State highways, Rte. 125 from the north and south, and Route 133 from the east. Interstate 495 passes the airport from a point directly across the Merrimack River in Lawrence. The nearest exit, exit 44 (Sutton St.), requires travel through the local streets of North Andover rather than direct access to the airport. The two State highways that serve the airport are both well-traveled routes that traverse the region. Route 125 originates in New Hampshire, traveling through the region from Haverhill in the north, passing to the east/northeast of the airport, on to its junction with I-93 in Wilmington, just southwest of the Andover/Wilmington town lines. Route 133 traverses the region from east to west, splitting off Rte. 1A in Rowley, intersecting I-95 in Georgetown, combining with Rte. 125 (Osgood St.) just to the northeast of the airport, and then continuing on through Andover to its junction with I-93.

Adjacent to the terminal, a single parking lot with approximately 80 spaces is available. This lot, and the terminal, is accessed via Sutton Street. The primary means of travel to and from the LWM is by private automobile. There are no taxi services or rental cars available on the airport grounds, although both can be arranged to meet individuals on the grounds. The airport is not served by public transit (MVRTA). The nearest MVRTA route (Rte. 33) stops at the North Andover Town Hall & Senior Center at the intersection of Sutton and Main Streets, approximately one (1) mile from the airport terminal, which is not typically considered a walkable distance.

Airport Operations (Commercial/Private)

Currently, there is no regularly scheduled passenger service operating from Lawrence Airport. Virtually all air traffic at the airport is for private or corporate air travel.

LWM can accommodate a full range of aircraft from single and multi-engine planes to smaller jets and helicopters. Most medium sized commercial aircraft can be accommodated at LWM, but are limited in operations and cannot be fully loaded at takeoff. The largest aircraft that has been accommodated at the LWM is the Boeing 737. The most typical aircraft currently operating out of the airport is the Gulfstream 4. As of the spring of 2006, the airport has a base of 234 planes and helicopters. The airport accommodates 225 operations/day.

Commercial operators located at LWM include Angel Flight (medical transportation), Eagle East Aviation (flight training, scenic rides, aerial photos, maintenance & storage), Experimental Aircraft Association Chapter #106 (aircraft kit building and training), Falcon Air (fixed-base operator: maintenance, repair, servicing and parts), Four Star Aviation (flight training, sales, banner towing, charters, maintenance/repair, refueling/servicing & storage) Northeast Executive Jet Service (corporate maintenance, repair, refueling, servicing and executive charters) and North Shore Helicopters (flight training, tours and aircraft rental). In addition, there are five hangar associations accounting for over 60 hangars.

Other Airports within the Region

In addition to the Lawrence Municipal Airport, 13 other air facilities are located within the MVPC region. These are all private facilities ranging from airports to helipads, handling

small/light aircraft for the purposes of medical, corporate, personal and recreational use. Table IV-20 lists these facilities, along with some of their important characteristics.

**Table IV-20
Privately Owned Merrimack Valley Airports**

Facility Name	ID	Location	Daily Operations	Runway Surface	Aircraft based at Field (#)
Goddard Airport	04MA	Haverhill	n/a	Turf	1
Plum Island Airport	2B2	Newburyport	38	Asphalt	10
Meadowbrook Airport	6MA2	Amesbury	n/a	Turf	7
Long Hill Orchard Heliport	1MA7	West Newbury	n/a	Asphalt	n/a
Merrimack Valley Seaplane Base	MA2	Methuen	82	Water	1
Lake Gardner Seaplane Base	6MA0	Amesbury	n/a	Water	n/a
Grandview Farm Heliport	60MA	Rowley	n/a	Turf	n/a
Hat Factory Heliport	MA35	Amesbury	n/a	Turf	n/a
Merrimack Valley Hospital	n/a	Haverhill	n/a	Asphalt	n/a
Holy Family Hospital Heliport	18MA	Methuen	n/a	Concrete	n/a
Lawrence General Hospital Heliport	16MA	Lawrence	n/a	Asphalt	n/a
Anna Jaques Hospital Heliport	MA98	Newburyport	n/a	Concrete	n/a
Compaq Andover Heliport	01MA	Andover	n/a	Turf	n/a

Source: www.airnav.com

The Massachusetts Aeronautics Commission has identified Goddard Airport, Plum Island Airport and Merrimack Valley Seaplane Base as part of the statewide airport system.

The most active of these privately-owned airports is the Merrimack Valley Sea Plane Base in Methuen, with an average of 82 operations per day. General aviation accounts for virtually all (99%) of the operations at this location. Plum Island Airport has the greatest number of base aircraft (10), but this number has dropped in recent years as has the number of daily operations.

Of the four major hospitals in the region, Merrimack Valley, Holy Family, Lawrence General and Anna Jaques, each has a heliport capable of receiving emergency life-flight helicopters.

Logan International Airport (BOS)

Introduction

Logan International Airport (Logan) is the primary aviation facility in the New England region. Logan International Airport is owned and operated by the Massachusetts Port Authority (Massport). Massport is an independent public authority, first enabled by the Massachusetts legislature in 1959. The Massport mission is to develop, promote and manage the airports, seaport and transportation infrastructure under its control to enable Massachusetts and New England to compete successfully in the global marketplace.

In 1956, Boston's airport was renamed the Lieutenant General Edward Lawrence Logan Airport by the state legislature, to honor the late Spanish-American war veteran who served in the Massachusetts legislature. Expanding considerably from its original size, the airport now encompasses approximately 2,400 acres, with 7 miles of runway, 14 miles of taxiway, and 237 acres of concrete and asphalt apron. The airport annually serves more than 23 million passengers and handles over 800 million pounds of cargo and mail.

Logan serves as New England's major airport, functioning as the primary gateway for international and domestic, long-haul passengers. Secondary commercial passenger airports for Logan include, Manchester – Boston Regional Airport in New Hampshire, T.F. Green in Warwick (south of Providence), RI, and Hanscom Field in Bedford, MA. Massport assists in marketing these airports in attempts for regionalization of New England air passenger traffic and to ease the burden endured at Logan for handling congested passenger traffic.

Access to/from the Merrimack Valley - Location/Parking Facilities/Transportation Alternatives

Located in East Boston, Logan's service area includes the entire Merrimack Valley region. Near the heart of Boston, travel to Logan from the Merrimack Valley is primarily via I-93 or I-95. From the western part of the Merrimack Valley region, southbound travel on I-93 to Exit 24 (Logan Airport/Callahan Tunnel) takes travelers directly to the northern entrance to Logan. From the eastern part of the region, southbound travel on I-95 to Route 1 (south), Route 60 (east) and Route 1A (south) also takes travelers directly to the northern entrance to Logan. The airport is 36 miles from Newburyport, 32 miles from Lawrence, 26 miles from Andover, and 39 miles from Haverhill.

Once at Logan, a variety of parking alternatives is available on-site. A listing can be found below.

**Table IV-21
Logan International Airport Parking Facilities**

Location	Serves Terminals	24-hr. Shuttle Service	ADA Accessible	Shelter	Rates		
					1st Hour	Daily	Weekly
Central Parking	A, B, C, D, E				\$5.00	\$22.00	None
Economy							
Lot 1	A, B, C, D, E	Yes (10 min.)	Yes	Yes	n/a	\$16.00	\$80.00
Lot 2	A, B, C, D, E	Yes (10 min.)	Yes	Yes	n/a	\$16.00	\$80.00
Terminal A – short term	A	n/a	Yes	n/a	2 hr. maximum (meters only)		
Terminal B – short & long term	B	n/a	Yes	n/a	\$5.00	\$24.00	None

Source: Massport

In addition to on-site parking, numerous private park and fly lots are in operation within a short shuttle ride from Logan. Often these lots can offer lower rates for long-term parking. Another alternative for Valley residents is to park outside of Boston. Logan Express bus service out of park and ride lots located at Woburn (Anderson Regional Transportation Center) and Peabody (Route 1 southbound, south of Lowell Street) is also available. From Peabody, buses depart every hour and from Woburn, buses depart every half-hour on weekdays, and headways vary between half-hour and hourly on weekends. Parking is between \$7 and \$8 per day at the lots, and the bus fares are between \$8 and \$9 one-way or \$14 and \$16 round-trip.

Internally within Logan, Massport shuttle buses offer free service between each of the five terminals, the two economy parking lots and the new MBTA Blue line Airport station (subway). Headways vary between eight to twelve minutes and service is available between 4:00 am and 1:00 am daily to and from the subway station and 24 hours a day to and from the satellite parking lots. All shuttle buses are wheelchair-lift equipped. The buses are all fueled by Compressed Natural Gas, as part of Massport’s commitment to a Clean Air initiative.

Rental car services are available from eight national companies. The eight agencies currently located at the airport include Alamo, Avis, Budget, Dollar, Enterprise, Hertz, National and Thrifty. Complimentary shuttle buses are provided by each rental car company for transporting passengers to and from the terminals and rental car sites.

In addition to rental cars being available on site, hundreds of different bus, limousine, van and taxi operators also offer service to and from the airport. From the Merrimack Valley, these include the Coach Company, C&J Trailways, and Flight Line, Inc. The Coach Company is an over-the-road bus service that serves Logan Airport as part of its morning inbound trips to Boston. Service is provided from the Newburyport Park and Ride lot as well as from other stops in Newburyport and Amesbury. The Coach Company also provides morning inbound service to Logan from Haverhill, Groveland, Georgetown, and Boxford. Coach Company service to the airport is generally between 6:00 AM and 8:00 AM and one-way fare is \$17. Limousine stands are located at terminals A, B, C, and E of the airport.

C&J Trailways is also an over-the-road bus service with direct service between Logan and the Newburyport Park and Ride lot at the intersection of Rte. 113 and I-95. From the park and ride lot, on weekdays, there is one bus departure at 3:30 AM, and from then on departures every hour on the half-hour until 11:30 PM. One way and round-trip fares to and from Newburyport are \$19 and \$34, respectively. Flight Line, Inc. offers 24 hour, seven day per week service on a curb-to-curb basis. It also offers shared van service arriving at Logan on every hour. Numerous other private operators also provide transportation to and from the Merrimack Valley and Logan on request.

Access to Logan via public transit service is provided by the MBTA. For travelers from the Valley, Commuter rail service on either the Newburyport/Rockport or the Haverhill lines is available to North Station. Once at North Station, a transfer to the subway system's Green line (to Government Center) and transfer to the Blue line (to Wonderland) take you to Airport station. The MBTA's newly renovated Blue Line Airport station is located at the northern entrance to Logan and is served directly by free Massport shuttles. Once on the MBTA subway system, connections with both North and South stations are made relatively easily. Numerous connections with the MBTA bus system are also available, either directly from Logan or indirectly through the subway system.

Commercial Air Passenger Carriers

In the autumn of 2006, Logan had 34 commercial air-passenger carriers as well as charter operators. For a list of the commercial air passenger carriers please see Table IV-22 below.

**Table IV-22
Commercial Air Passenger Airlines at Logan**

Aer Lingus	American Eagle	Delta Air Lines	KLM	United
Air Canada	America West	Delta Connection	Lufthansa	United Express
Air France	British Airways	Delta Con/Com Air	Midwest	US Airways Shut.
Air Tran	Cape Air	Delta Shuttle	Northwest	US Airways
Alaska Airlines	Cayman Airways	Finnair	Quantas	US Airways Exp.
Alitalia	Charters	Icelandair	Swiss	Virgin Atlantic
American	Continental	JetBlue	TACA	

Source: Massport

Table IV- 23 on the following page shows Annual Passenger Counts at Logan airport for 2001-2005. The data shows that after declining in the two years after 9/11, passenger traffic has been increasing steadily. This is despite the growth in traffic at T.F Green Airport in Rhode Island and Manchester – Boston Regional Airport.

**Table IV-23
2001 – 2005 Annual Passenger Counts at Logan Airport**

Passengers	2001	2002	2003	2004	2005	Change from 2001 to 2005
Domestic						
Jet	17,762,375	16,553,311	16,735,196	19,197,340	20,060,081	12.94%
Reg./Commuter	2,262,655	2,136,015	2,099,730	2,583,252	2,637,396	16.56%
Charter	45,009	36,096	55,153	49,702	31,311	-30.43%
	20,070,039	18,725,422	18,890,079	21,830,294	22,728,788	13.25%
International						
Europe/Mid East	2,661,471	2,469,822	2,435,997	2,590,225	2,629,823	-1.19%
Canada	733,559	670,457	564,018	622,098	682,904	-6.91%
Caribbean	905,962	728,992	786,574	911,757	845,863	-6.63%
Asia/Pacific	258	0	0	0	0	-100.00%
Central/South America	0	2,696	29,398	77,558	78,515	N/A
Subtotal	4,301,250	3,882,257	3,815,987	4,201,638	4,237,105	-1.49%
Gen. Aviation	103,641	88,462	85,103	110,554	122,012	17.73%
Total Deplaning	12,251,210	11,351,462	11,385,919	13,068,326	13,549,974	10.60%
Total Enplaning	12,223,720	11,344,679	11,405,250	13,074,190	13,537,931	10.75%
Total	24,474,930	22,696,141	22,791,169	26,142,516	27,087,905	10.68%

Source: Massport

Logan Airport is the primary international gateway to and from New England. Logan has the distinct advantage over other American airports by virtue of its geographic location in being at least 200 miles closer to European airports.

All-Cargo/Cargo-Passenger Carriers

Logan is New England's largest cargo airport, handling over 440,000 tons of air cargo. International cargo and combination cargo/passenger airlines serving Logan can be found in Table IV-24 on the following page.

**Table IV-24
International Cargo and Combination Cargo/Passenger
Airlines At Logan**

Destination	Airline 1	Airline 2	Airline 3	Airline 4
Amsterdam	Northwest (1)			
Athens, Greece	Olympic (2/7)			
Bermuda	Delta (1)	American (1)		
Brussels, Belgium	Swisscargo (1)			
Dublin, Ireland	Aer Lingus (1 2/7)			
Frankfurt, Germany	Lufthansa (1)			
London, England	Virgin Atlantic (1)	American (2)	British Airways (3)	United (1)
Montego Bay, Jamaica	Air Jamaica (5/7)			
Paris, France	Air France (2)	American (1)		
Ponta Delgada, Azores	SATA (2/7)			
Reykjavik, Iceland	Icelandair (1)			
Milan, Italy	Alitalia (1)			
Shannon, Ireland	Aer Lingus (1)			
Zurich, Switzerland	Swisscargo (1 3/7)			
Halifax, Canada	Air Nova (4)			
Montreal, Canada	Air Canada (5)			
Ottawa, Canada	Air Nova (3)			
Toronto, Canada	Air Canada (9)			
Vancouver, Canada	Air Canada (1)			

Source: Massport
(x) = number of daily flights.

Hanscom Field Airport (BED)

Introduction

Hanscom Field Airport (Hanscom) is New England's busiest general aviation airport. Local aviation has been active at Hanscom since the roughly 500 acres that make up the facility was first purchased in 1940. Both the U.S. Army Air Corps and the Air Force called it home over the years, but since 1974, it has been under the ownership and maintenance of the Commonwealth, by Massport. The Air Force does still maintain a presence (Hanscom Air Force Base) adjacent to the civilian run Hanscom Field Airport. As noted earlier, Hanscom is owned and operated by the Massachusetts Port Authority.

Hanscom is listed in the NPIAS as a reliever airport (general aviation) for Logan International Airport in Boston. The airport is certified by the FAA under FAR Part 139 (limited), and commuter service has recently been proposed for the facility. Hanscom is set up and can accommodate international operations, as a customs landing rights airport. The Massachusetts Aeronautics Commission (MAC) has included Hanscom in the state's Airport System Plan.

Airport Operations (private, commercial and military)

Hanscom is the primary general aviation reliever airport for Logan International Airport. The proximity to the Route 95/128 high-tech corridor and urban Boston are important factors in

Hanscom's successful growth as a general aviation facility. Pan Am Clipper Connection provides service to Portsmouth, Elmira, New York, Baltimore, and Orlando-Sanford Airport in Florida. Linaire operates service to Nantucket and Teterboro Airport in New Jersey outside of New York City. Linear also operates charter service from the airport.

As of the spring of 2006, the airport had a base of 411 aircraft. Of these aircraft, 273 were single engine, 69 multi-engine, 55 jet and 14 helicopters. While the overall number of planes based at Hanscom is roughly the same as it was in 2003, the number of single engine craft has dropped and the number of all other aircraft has increased. Daily operations at Hanscom (spring 2006) were reported to average 320 flights per day.

There are currently two full-service fixed base operators (FBOs) who can accommodate most needs of business and recreational travelers at Hanscom. The airport's fixed based operators, which offer corporate jet service, include: Jet Aviation and Signature Flight Support (formerly Mercury Air Center). Both offer, fuel, parking, hangars, a passenger terminal and lounge, charters, aircraft maintenance, catering, car rentals, public telephone, pilot lounge/snooze room, and restrooms.

Additional commercial operators located at Hanscom include Aviation Electronics, Inc. (avionics service), East Coast Aero Club (flight school/flight training, aircraft rentals, pilot supplies), East Coast Aero Tech (flight school/flight training), East Coast Aviation (aircraft maintenance, avionics service, aviation accessories, aircraft sales/leasing/brokerage) and Executive Flyers Aviation (flight school/flight training, aircraft rentals).

Access to/from the Merrimack Valley - Location/Parking Facilities/Transportation Alternatives

Located in Bedford, Concord and Lincoln, Hanscom Field's service area includes the entire Merrimack Valley Region. Travel to Hanscom from the Merrimack Valley is prevalently via I-93 and I-95. From the eastern part of the region, southbound travel on I-95 (which merges with Route 128 in Peabody) to Route 2A west (Exit 30B) takes travelers directly to the main airport access road, Hanscom Drive. From the western part of the region, travelers would take the same route after exiting off I-93 southbound onto I-95 (Route 128) south in Reading. The airport is 43 miles from Newburyport, 37 miles from Haverhill, 30 miles from Lawrence and 24 miles from Andover.

The primary means of travel to and from Hanscom is by private automobile. The main parking facility is adjacent to the main civil air terminal. There are approximately 465 parking spaces available.

There are no taxi services available on the airport grounds, although taxis can be arranged to meet individuals on the ground. Hertz and Avis car rental agencies have a counter within the terminal and 40 parking spaces reserved for each of their vehicles within the terminal parking lot. The fixed base operators, Jet Aviation and Signature Flight Support, both offer car rental services. Traveling from the Merrimack Valley, travel arrangements can be made via rental car agencies, private limousine, van and taxi operators. There are no scheduled private transit (bus) services to Hanscom from the Valley. Corporate Limo offers private limousine service to and from the airport for the business traveler.

The MBTA does offer public transit (bus) service to Hanscom, originating from the Alewife MBTA subway station on the red line (MBTA bus route 76).

Manchester – Boston Regional Airport (MHT)

Introduction

Since the adoption of the Merrimack Valley MPO's 2003 Regional Transportation Plan, this airport renamed itself "Manchester – Boston Regional Airport" in recognition of its role in serving passenger and cargo traffic in the Greater Boston area. The slogan used by the Manchester Airport Authority states that it is "New England's most convenient airport." It is the third largest air cargo airport in New England. The State of Massachusetts has identified Manchester Airport as a primary "reliever" airport, along with Worcester and Rhode Island's T.F. Green, for the congested Logan International Airport in Boston.

Manchester Airport is owned by the City of Manchester, NH and operated under the auspices of the Manchester Airport Authority, a Division of the City's Department of Aviation. The Authority is made up of seven (7) members, each appointed by the mayor and city aldermen, to serve a three-year term. Five members of the Authority are to be from Manchester, while the remaining two members are to be from the neighboring town of Londonderry. The Authority is empowered to consult, advise and make policy recommendations to the department heads, city aldermen and mayor.

Access to/from the Merrimack Valley - Location/Parking Facilities/Transportation Alternatives

The Manchester Airport Authority considers the Merrimack Valley region to be in their Secondary Service Area (Primary area includes Hillsborough, Merrimack and Rockingham counties). The airport is 26 miles from Methuen, 28 miles from Lawrence, 34 miles from Andover, 34 miles from Haverhill, and 48 miles from Newburyport.

Access to Manchester-Boston Airport is provided via Airport Road, off Brown Avenue in Manchester. Airport Road is approximately one mile south of Exit 2 on I-293/Rte. 101. The airport currently lacks direct access to/from either I-93 or I-293, the two closest interstates. Brown Avenue is a local road that merges 4 lanes into 2 lanes in a 2-way street just south of I-293. It receives heavy traffic and is in good to fair condition. Once inside the airport (on Airport Road) directions to all services are well marked with relatively new signs. Access from the Merrimack Valley region is achieved the easiest via I-93, connecting with I-293 north/Rte. 101 west at Exit 6.

Located within close proximity to the passenger terminal are 7,900 hourly, daily, long-term and economy parking spaces. A free shuttle bus serves the economy parking lots and a new 520 foot long covered pedestrian walkway with moving sidewalks connects the new six-level 4,800-space parking garage with the terminal. It should be noted that the 800 parking spaces in the first level of the garage are dedicated to rental vehicles. All parking areas are well lit and regularly patrolled by airport security. Rates are provided below in Table IV-25.

**Table IV-25
Manchester-Boston Regional Airport Parking Lots and Rates**

	Lot-A (Hourly)	Lot-B (Hourly)	Garage (long-term)	Lots -C/D/E/F/G/H (Economy)
Location	Across from the Passenger Terminal	Adjacent to the Terminal	In front of the Terminal	Off Ammon Drive
Shuttle	No	No	No	Yes
Cost	\$2/hr.	\$2/hr.	\$15/day to \$70/week	\$8/day

Source: Manchester Airport Authority

Rental car services are available from nine companies. The six agencies currently located at the airport include Thrifty Car Rental, Dollar Rent-a-Car, Avis, Budget, Hertz, Enterprise, Alamo, US Save and National. Over 300 different bus, limousine, van and taxi operators offer service to the airport. Vermont Transit has recently begun providing connections to the airport. Traveling from the Merrimack Valley, travel arrangements are available via rental car agencies, private bus, limousine, van, and taxi operators. There are no scheduled private or public transit (bus) services to Manchester Airport from the Valley.

As stated above, an internal airport shuttle services the economy parking areas and the passenger terminal. Shuttles operate continuously at 10-minute headways, looping out to pick-up/drop passengers at the long-term parking lots. The Manchester Transit Authority serves the airport with both fixed-route and demand response (elderly/disabled) public transit services.

In addition, Manchester-Boston Regional Airport has recently instituted shuttle bus service between the facility and Sullivan Square MBTA Station in Charlestown, with a stop at the Anderson Regional Transportation Center in Woburn. Service from Manchester departs every two hours on the hour while service from Sullivan Square Station departs every two hours on the half-hour. The service operates 24 hours/day and is free to passengers with tickets for flights from Manchester-Boston. Parking at the Anderson Transportation Center for persons traveling to Manchester is \$11/day and \$66/week.

Commercial Air Passenger Carriers

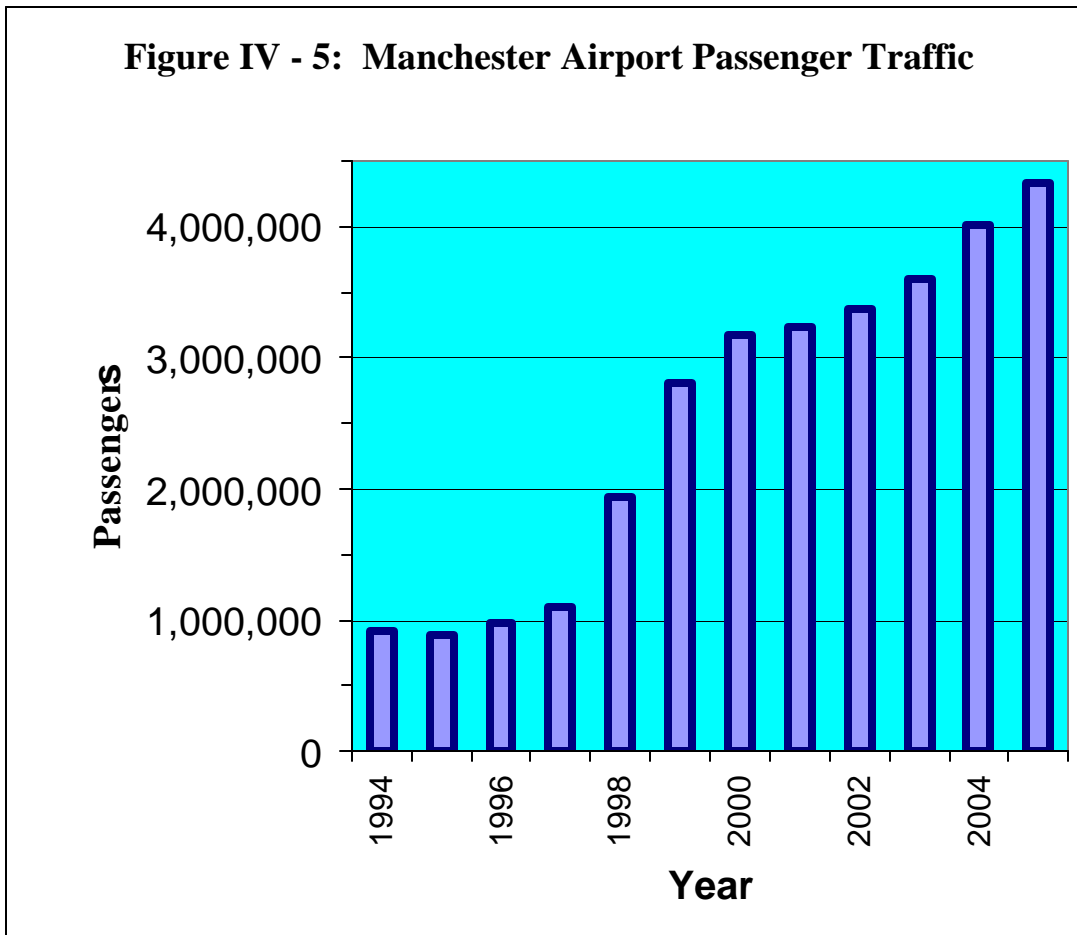
As of November 2006, the Manchester Airport had 11 commercial air passenger carriers. In addition, an unknown number of commercial air passenger charter operators were also located at the airport. For a breakdown of the carriers, connections, and flights operated per day please see Table IV-26 below. From Manchester, there are approximately 19 daily departures of passengers aboard regional jets and approximately 44 daily departures aboard the larger jets between approximately 5:30 in the morning and 7:30 at night. The largest air passenger planes currently serving Manchester are the Boeing 757-200 aircraft, capable of holding 182 passengers, and the Airbus 321 aircraft, capable of holding 185 to 199 passengers, depending on the class configuration.

**Table IV-26
Manchester Airport Commercial Air Passenger Carriers**

Commercial Passenger Carriers	Direct Service To/From Destinations & Hubs (FAA Airport Code)
Air Canada	Toronto - Pearson (YYZ)
Charter	Various
Continental Airlines	Newark (EWR)
Continental Express	Cleveland(CLE)
	Newark (EWR)
Continental Connection	Albanv (ALB)
Delta Airlines	Atlanta (ATL)
	Cincinnati (CVG)
Delta Connection (Comair)	Atlanta (ATL)
	Cincinnati (CVG)
	New York Citv - JFK (JFK)
Northwest Airlines	Detroit (DTW)
	Minneapolis (MSP)
Southwest Airlines	Baltimore.-Washington(BWI)
	Orlando (MCO)
	Philadelphia (PHL)
	Chicago-Midway (MDW)
	Las Vegas (LSV)
	Tampa (TPA)
United Airlines	Chicago-O'Hare(ORD)('(ORD)
United Express	Washington, DC-Dulles (IAD)
US Airways	CharlotteCLT
	Chicago-O'Hare (ORD)
	Philadelphia (PHL)
	Pittsburgh (PIT)
US Air Express	New York Citv - Laguardia (LGA)
	New York Citv - Laguardia (LGA)
	Philadelphia (PHL)
	Pittsburgh (PIT)
	Washington-Reagan National (DCA)

Source: Manchester Airport Authority and various airlines. IATA = International Air Transport Association.

Between 1997 and 2005 total annual passenger enplanements and deplanements at Manchester Airport grew by almost 400%. Figure IV-5 presents a chart of the passenger growth at Manchester Airport. The impact of the new airlines and connections in mid-1998 was readily apparent.



Source: Manchester – Boston Regional Airport Authority, 1994-2005.

Continued passenger growth at Manchester is in part likely due to the more frequent use by the airlines of the smaller regional jets, which have a passenger capacity of 30 to 50. These smaller jets provide fast and comfortable passenger travel from a smaller market airport, like Manchester, to an airline’s hub airport. The regional jets of Continental Express serve Continental’s hub airports of Cleveland and Newark. Comair’s regional jets serve Delta’s hub airports of Atlanta, Laganardia, and Cincinnati. United Express’ regional jets serve United’s Washington, DC Dulles airport hub and US Air Express’ serve US Air’s hub airports of Philadelphia and Pittsburgh. Manchester and other new regional airports like it cater to these jets by providing the newer, smaller and/or adjustable jetways that allow passengers to board the airplanes directly from the terminal.

All-Cargo/Cargo-Passenger Carriers

Six major cargo airlines serve Manchester - Boston: UPS, FedEx, DHL, Wiggins Airways, Mountain Air Cargo and Telford Aviation. Combination cargo/passenger airlines include: US Airways, COMAIR Delta Connection, and Continental, United, Business Express, Northwest, and Southwest Airlines. The airport handled over 150,000,000 pounds in 2005.

Portsmouth International Airport at Pease (PSM)

Introduction

Portsmouth International Airport at Pease (PSM) occupies the site that was Pease Air Force Base and was originally Portsmouth Airport. Portsmouth Airport had originally been utilized by the U.S. Navy during World War II and was seen as a prime location for a strategic bomber base during the Cold War. Officially opened as the Pease Air Force Base in 1957, it operated as a Strategic Air Command Base, receiving B-47s and B-52s of the 100th Bombardment Wing. When the Cold War drew to a close, it made the Carlucci Commission's Base Realignment and Closure List in 1988, and was subsequently closed in 1991.

Pease International Tradeport Airport opened for civilian use in 1991 with one fixed-base operator offering service to general aviation. In 1992, it became a FAA certified airport under FAR Part 139 (airline operations-passenger).

Daily airport operations are overseen by the Pease Development Authority Airport Management Department. In turn, the Pease Development Authority (PDA) oversees the Airport Management Department. The PDA is made up of a seven-member board appointed by the State of New Hampshire (4 appointees), the City of Portsmouth and the Town of Newington (3 appointees). The PDA was created by enactment of New Hampshire law in 1990 to implement the Pease Air Force Base Redevelopment Plan, which included the continued operation of the airport.

Access to/from the Merrimack Valley - Location/Parking Facilities/Transportation Alternatives

Located on a peninsula on Great Bay in Portsmouth and Newington, access to Portsmouth Regional Airport at Pease is most easily achieved via I-95 north from the Merrimack Valley. The airport is 42 miles from Andover, 39 miles from Lawrence, 30 miles from Haverhill, and 23 miles from Newburyport.

Access is provided via Pease Boulevard, off Exit 1 of NH Route 4/Spaulding Turnpike. Exit 1, a diamond interchange, is approximately two (2) miles from the split at I-95. It was reconstructed as a part of the Pease Redevelopment Plan. While the airport currently lacks direct access from I-95, a new south access road is currently under construction at the junction of NH Rte. 33 and I-95. This will offer more direct and convenient access off I-95 for Merrimack Valley residents and businesses. Once inside the Tradeport, directions to all services are well marked with relatively new signs.

Located within close proximity to the passenger terminal are approximately 900 long-term parking spaces in lots that can be accessed by driveways from Exeter Avenue. The main long-term lot that contains approximately 700 parking spaces is well-lit and is connected to the terminal by a 500-foot long asphalt path, which is also well-lit. A 200-space parking lot is located on the other side of Exeter Avenue. Approximately 55 short-term (no overnight) parking spaces are available directly in front of their terminal. All parking is free at

Portsmouth International Airport at Pease. Budget and National are the two rental car operators located at the airport.

The Cooperative Alliance for Seacoast Transportation (COAST), the regional public transit operator, serves Portsmouth International Airport at Pease via hourly shuttle service that operates between Market Square in Portsmouth and the Fox Run Mall. Passengers must tell the driver that they want to stop at the airport,

C&J Trailways, is at the Portsmouth Transportation Center located at the south entrance to the Tradeport. Bus service to Pease is available on C&J Trailways from the Newburyport park and ride lot.

Airport Operations

Through its use as a military airbase, Pease was built to accommodate virtually any aircraft manufactured. Daily operations at Pease average 82 per day. Aircraft based at the field in the fall of 2003 totaled 113. Of the 114 aircraft, 53 are single engine aircraft, 10 are military, 23 are multiengine, 25 are jet, and three (3) are helicopters.

There are currently two (2) passenger carriers operating from the airport. Allegiant Air provides one direct flight, four days/week to Orlando/Sanford Airport. Pan Am Connection flies directly to Bedford, MA, where connections can be made to Trenton, Orlando/Sanford Airport, Baltimore/Washington International Airport and to Elmira, New York.