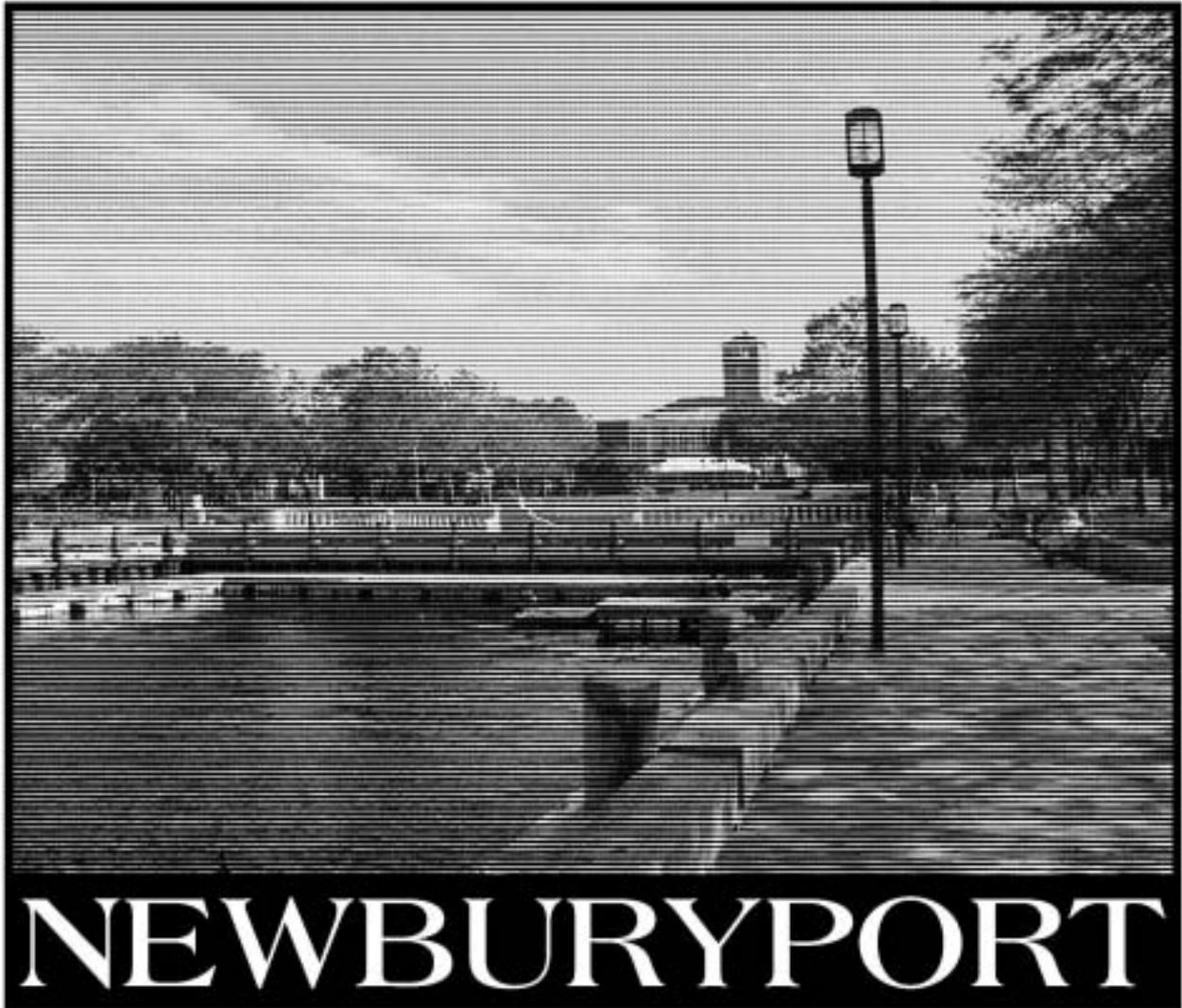


NEWBURYPORT MASTER PLAN
EXISTING CONDITIONS, TRENDS AND CHALLENGES
JANUARY 2001



NEWBURYPORT

Shaping Our Future, Honoring Our Past

City of Newburyport, Massachusetts
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Department of Planning and Development
Nancy T. Colbert, Director

Consulting Assistance By
Taintor & Associates, Inc.

NEWBURYPORT MASTER PLAN

EXISTING CONDITIONS, TRENDS AND CHALLENGES

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COMMUNITY PROFILE

Regional Setting

Newburyport is located in the northeast corner of Massachusetts at the mouth of the Merrimack River. Newburyport and Salisbury share a common harbor located near the mouth of the River. This area represents the northernmost portion of the Massachusetts shoreline.

The Merrimack River forms the northern corporate boundary of the City of Newburyport comprising approximately 7.5 miles of river frontage. Maudslay State Park lies along the westernmost portion of the Newburyport riverfront; the central business district abuts the central portion near Route 1; and the Plum Island State Reservation extends to the eastern end, at the mouth of the River.

The Merrimack River has always played a major role in the development of the City. The River was the resource that initially attracted settlement of this area in the early 1600s. The “Old Port” of Newbury lent itself to boat building due to the sheltered harbor and its natural channels carved by the River’s flow. The River also offered rich fishing grounds abundant with salmon, sturgeon and striped bass. Through the 17th and 18th centuries, the port grew in size and importance, first prominent in shipbuilding and later in commerce.

As the riverfront continued to define the community, Newburyport was divided off from Newbury. Newbury center is less than two miles from downtown Newburyport. High Road, Newbury is similar in character to High Street, Newburyport. The streets are a continuation of one another and host Federal and Colonial period homes. Newbury is more rural in character than Newburyport. The Town green is simple and picturesque. There is very little retail activity in Newbury, with the exception of some small-scattered family businesses such as Tendercrop Farm and Fernald’s Canoes. Both uses suggest a true sense of the community’s ties to agriculture and the waterfront.

Graf Road in Newburyport becomes Scotland Road in Newbury, and serves the industrial districts of both communities. Frontage properties along Scotland Road have a significant amount of open space, with scattered industrial facilities to the north. The south side of Scotland Road is predominantly residential. The Newburyport industrial park is relatively dense; however, some room for expansion remains. Wetlands are prevalent along both Graf Road and Scotland Road.

West Newbury is perhaps the most rural and picturesque community abutting Newburyport. A drive heading west on Route 113 brings visitors into a world of dense tree canopies, stone walls and majestic fields. The major landform dividing Newburyport and West Newbury is the Artichoke River, which serves as a major source of Newburyport’s water supply. Like Newburyport, West Newbury has frontage on the Merrimack River. The shore in Newbury is largely unbuilt, with scattered residential development. The most significant transition point on the shoreline of the Merrimack occurs in Newburyport at the Spofford Avenue chain bridge connecting to Amesbury.

Amesbury lies across the river from Newburyport starting at the Deer Island / Chain Bridge area and extending to the west. Traveling out of Newburyport across the chain bridge one has the option to bear left onto Main Street, Amesbury or head straight to Route 110. Main Street runs along the river and forms part of the landscape as seen from Maudslay State Park. The terrain in Amesbury is much flatter than that of Maudslay. The area is partly wooded, though not thickly, and has numerous openings.

Salisbury abuts Amesbury on the north side of the river and runs east to the ocean. The only direct connection between the downtowns of Newburyport and Salisbury is the Route 1 Gillis Bridge; however, the Chain Bridge is an easy route to western sections of Salisbury. Three islands in the

Merrimack—Eagle, Carr and Ram—located in Salisbury proper. The Salisbury Beach Reservation is located across the river from Newburyport Beach on Plum Island.

Table 1 presents some comparative data for Newburyport and the adjacent communities. The City is both the most populous and the most densely populated of the five communities, and experienced the slowest population growth during the 1990s. However, in spite of its more urban character, Newburyport has a relatively affluent population, with only West Newbury having a higher median family income reported in the 1990 Census.

Table 1: Newburyport and Neighboring Communities

	1998 Population	1990–1998 Population Growth	Population Density (persons per acre)	1989 Median Family Income
Amesbury	16,076	7.2%	1.83	\$44,554
Newbury	6,168	9.7%	0.41	\$47,711
Newburyport	16,808	3.0%	2.94	\$53,012
Salisbury	7,238	5.2%	1.81	\$40,062
West Newbury	4,021	17.5%	0.90	\$60,381

Historic Development Patterns

In the 1600s the Merrimack River abounded in large stocks of salmon, shad, sturgeon, and alewives. Indians traveling through or residing by the basin depended on the fish and wildlife resources of the area. In the spring, following long winter months, the return of Atlantic salmon and American shad provided a time for feasting and celebrations.

The Merrimack River fishery was the basis for the early colonists’ food and commerce. These early settlers pursued the fish at such places as Pawtucket Falls, and the falls at Amoskeag, Hooksett and Penacook. In 1642, the town of Salisbury granted two acres of upland area on Rings Island for a two-year fishing operation. Fish staging for drying fish was constructed on the marsh. In 1644, a “fish house” was constructed at the foot of Federal Street in Newburyport. By the close of the 1600s, both salmon and sturgeon were becoming scarce and by the late 1700s the General Court passed laws to protect these fish.

By 1660, shipbuilding became an established industry in Newburyport. Small fishing and coasting shallops were first built on the Parker River, and by 1652 shipbuilding was underway on the Salisbury side. Toward the close of the century, many ships were built immediately upstream from the central waterfront. To accommodate travel between Salisbury and Newburyport, a ferry landing was built on the central waterfront in the late 1600s.

During the 1700s, the demand for waterfront land increased. At this time, Water Street was laid out and new land grants were made. Waterfront land outside the central area, which had not previously been granted for shipbuilding and wharves, was allotted to the proprietors. In 1764, Newburyport was incorporated as the City of Newburyport.

This era also witnessed the growth of trade and an increase in demand for ships. From 1681 to 1714, approximately 130 vessels were built on the Merrimack. The majority were sloops, ketches, and brigantines of 20 to 50 tons, designed for local or coastal seas. By 1776, 72 vessels were under

construction at one time along the waterfront. At the peak of this phase of the industry, ten shipyards were in use east of the central waterfront.¹

During the American Revolution, two of the first American naval vessels, the Hancock and the Boston, were built at Newburyport. Privateering became a lucrative business and Newburyport became its major home base. Shipyards along the Merrimack were kept busy with the re-outfitting of commercial vessels for use as privateers. In 1790, the first United States Coast Guard vessel was launched in Newburyport.

The shipbuilding industry declined for over 50 years following the American Revolution, but in the 1840s it was revived due to the onset of the Clipper Ship era, and Newburyport actively joined in the production of these ships. Wider trade routes demanded swifter vessels and boatyards on the Merrimack rose to the demand for the Clipper Ships. During this time, most of the commercial enterprises on Water and State Streets were oriented to the boat building trade. The last Clipper Ship constructed in Newburyport was a packet type, the Dreadnought.

Although the years following the American Revolution witnessed a decline in the shipbuilding industry, they also witnessed a boom in mercantile trade. Contemporary accounts depict that there was insufficient room on the wharves for all of the shipping activities, and vessels had to anchor and wait their turn. During this time, Newburyport was serving as the regional trade center to the more rural inland communities. Newburyport was the last landing point for freight heading to Europe.

Many sea captains and merchants became quite wealthy during this period. High Street continued to develop as the central axis through the City. Captains choose to have magnificent Federal style homes built along this route from about 1800-1815. The scale of these homes is very impressive. Later in the century Queen Anne, Italianate and Victorian homes were built.

Newburyport's waterfront in the 1870s was lined with a series of stone and wooden wharves that extended onto the Merrimack River and housed stores, warehouses and storage areas. The advent of the Industrial Revolution witnessed the abandonment of once active shipyards, many of which were sold to mill and factory owners.

Construction of the Newburyport City Railroad in 1872 had a dramatic and lasting effect on the physical landscape of the Merrimack River banks and the function of Newburyport's harbor. For maximum accessibility to incoming vessels, the railroad was laid out along the ends of the wharves and ran parallel to Water Street. Industrial wastes, coal ash and other assorted materials were used to fill in the numerous wharves.

By 1900, the wharf area was synonymous with the wrong side of town. By 1901, the last Newburyport built schooner, the Adelaide Barbour, was launched, marking the end of one of the port's earliest industries. Junk dealers, coal pockets, tenements, saloons, and dilapidated buildings constituted the city's image. The first half of the 20th century witnessed a further decline of the waterfront as its economic importance began to deteriorate.

In the 1960s, urban renewal reached the Newburyport waterfront and downtown area. Downtown Newburyport is one of the few remaining Federal style downtowns in the country. With an increased demand for waterfront access, pedestrian walkways were built along portions of the River, parks were planned and implemented, and recreational uses came into being.²

¹ *Harbor Management Plan*. (Newburyport, MA: City of Newburyport, 1989), p.6.

² *Harbor Management Plan*, 1989, pp.5-7.

Population Characteristics and Trends

Population Growth

Newburyport had relatively stable growth in the 60 years between 1930 and 1990 (see Table 2). Although the City's population declined sharply during the 1950s and then recovered even more dramatically during the 1960s, the general pattern trend has been an average growth rate of between 0.3 percent per year (for the 50-year period beginning in 1940) and 0.8 percent per year (for the 30-year period beginning in 1960).

In August 1999 the Massachusetts Institute of Social and Economic Research (MISER) issued population projections for the Commonwealth through the year 2010. As shown in Table 2 and Figure 1, Newburyport's 2000 population was projected to be 16,656, or about 2.1% higher than in 1990. This represents a slightly lower growth than the trend for the previous five decades, and only one-fourth of the rate for the 1960–1990 period. MISER projected the population to peak at around 16,700 and then to decline slightly to the year 2010. Thus, if these projections are fulfilled, Newburyport's population in 10 years will be essentially the same as it is today.³

Table 2: Population Change, 1930 - 2010

Year	Population	Increase from Previous Decade	10-Year Percent Change	10-Year Annual Growth Rate
1930	15,084			
1940	13,916	-1,168	-7.7%	-0.8%
1950	14,111	195	1.4%	0.1%
1960	12,004	-2,107	-14.9%	-1.6%
1970	15,807	3,803	31.7%	2.8%
1980	15,900	93	0.6%	0.1%
1990	16,317	417	2.6%	0.3%%
1997*	16,526	209		
2000†	16,656	130	2.1%	0.2%
2005†	16,709	53		
2010†	16,685	-24	0.2%	0.0%

* = estimate † = projection

Sources:

1930–1990 – U.S. Department of Commerce, Bureau of the Census

1995– Massachusetts Institute for Social and Economic Research (MISER) estimates, 11/99

2000-2010 – MISER projections, 8/99

³ The actual 1990 and projected 2000 population figures shown in Table 2 are significantly lower than projections made in 199_ by the Merrimack Valley Planning Commission, which placed the City's 1990 population at 17,536, and projected a population of 18,547 in 2000.

Figure 1: Newburyport Population Growth, 1930–2010

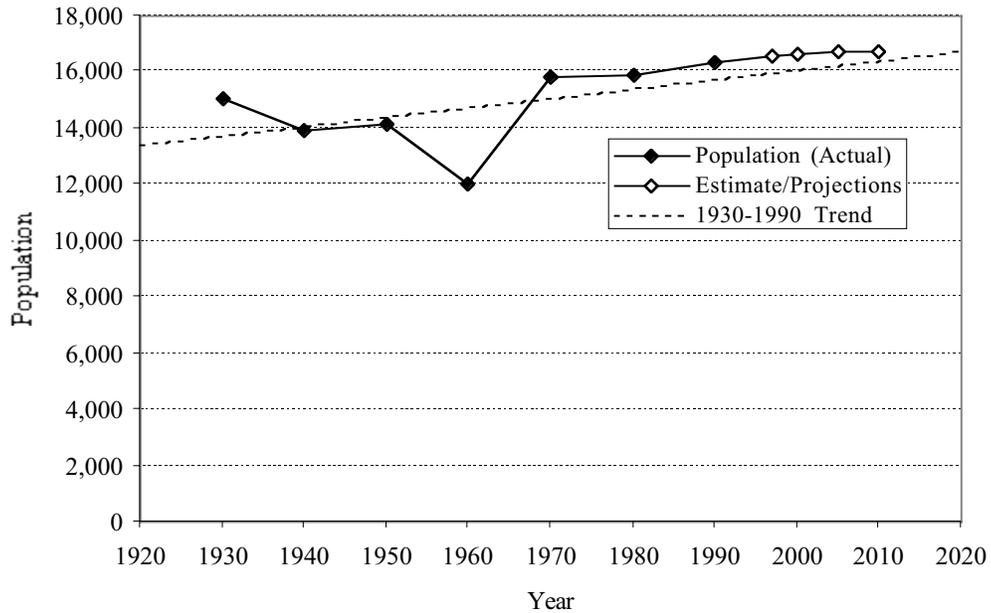


Table 3 presents population trends in the Merrimack Valley between 1980 and 1998, with projections to 2010. These data illustrate that Newburyport has been a slowly-growing community in a rapidly-growing region for the past two decades, and that this trend is projected to continue.

Table 3: Population Change, Merrimack Valley, 1980–2010

	1980	1990	1998	2010	1980–1990 Growth	1990–1998 Growth	1998–2010 Growth
Amesbury	13,971	14,997	16,076	17,661	7.3%	7.2%	9.9%
Andover	26,370	29,151	31,424	35,770	10.5%	7.8%	13.8%
Boxford	5,374	6,266	9,041	9,643	16.6%	44.3%	6.7%
Georgetown	5,687	6,384	7,384	8,717	12.3%	15.7%	18.1%
Groveland	5,040	5,214	5,841	5,809	3.5%	12.0%	-0.5%
Haverhill	46,865	51,418	55,321	62,279	9.7%	7.6%	12.6%
Lawrence	63,175	70,207	69,420	83,726	11.1%	-1.1%	20.6%
Merrimac	4,451	5,166	5,966	6,581	16.1%	15.5%	10.3%
Methuen	36,701	39,990	41,988	47,195	9.0%	5.0%	12.4%
Newbury	4,529	5,623	6,168	7,389	24.2%	9.7%	19.8%
Newburyport	15,900	16,317	16,808	16,685	2.6%	3.0%	-0.7%
North Andover	20,129	22,792	25,605	28,748	13.2%	12.3%	12.3%
Rowley	3,867	4,452	5,343	5,785	15.1%	20.0%	8.3%
Salisbury	5,973	6,882	7,238	7,765	15.2%	5.2%	7.3%
West Newbury	2,861	3,421	4,021	4,601	19.6%	17.5%	14.4%
Merrimack Valley	262,873	290,270	309,642	350,364	10.4%	6.7%	13.2%

Sources: 1980 & 1990, U.S. Census; 1998 & 2010, Merrimack Valley Planning Commission projections

Population Density

In 1992 Newburyport's overall population density was 1,980 persons per square mile, ranking 54th out of the State's 351 cities and towns. Communities with similar densities included:

Table 4: Population Densities, 1992

Community	Population Density (persons per square mile)
Natick	2,045
Maynard	2,000
Whitman	1,996
Holyoke	1,988
NEWBURYPORT	1,980
Milton	1,977
Burlington	1,968
Methuen	1,815
Danvers	1,795
Lexington	1,760

Source: Massachusetts Department of Revenue

Another way to look at population density is in terms of the ratio of population to road miles. A community that has more a larger population in relation to miles of road has a more compact settled area, while a community with a lower ratio of residents to road miles is more spread out. Communities with similar population densities may differ in terms of the population/road ratios, with the higher ratios indicating a more efficient, less sprawling, settlement pattern. In 1994 Newburyport had 268.7 residents per mile of road, ranking 68th in the state. Similar ratios were found in the following communities:

Table 5: Population and Road Mileage, 1994

Community	Population per Mile of Roads
North Andover	264.8
Canton	265.3
Abington	265.7
Milford	268.3
NEWBURYPORT	268.7
Haverhill	270.2
Mansfield	274.1
Whitman	274.7
Methuen	276.6
Plymouth	280.7

Source: Massachusetts Department of Revenue

Although much different in character from Newburyport, Haverhill has an almost identical road-to-resident ratio. Both cities have a compact core with an efficient street system, and a very rural outer fringe with few roads.

Socio-Economic Characteristics

Age Distribution

Table 6 presents the age distribution of the City's population in the last three national censuses, with projections for 2000 and 2010. The general trends during the 1970s and 1980s were a decrease in the number of children and an increase in the number of working-age adults, while the elderly population remained essentially stable. During the 1990s, these trends have continued; but it is anticipated that the elderly population will begin to increase during the coming decade as the large segment of older adults age.

Table 6: Population Age Distribution, 1970–2010

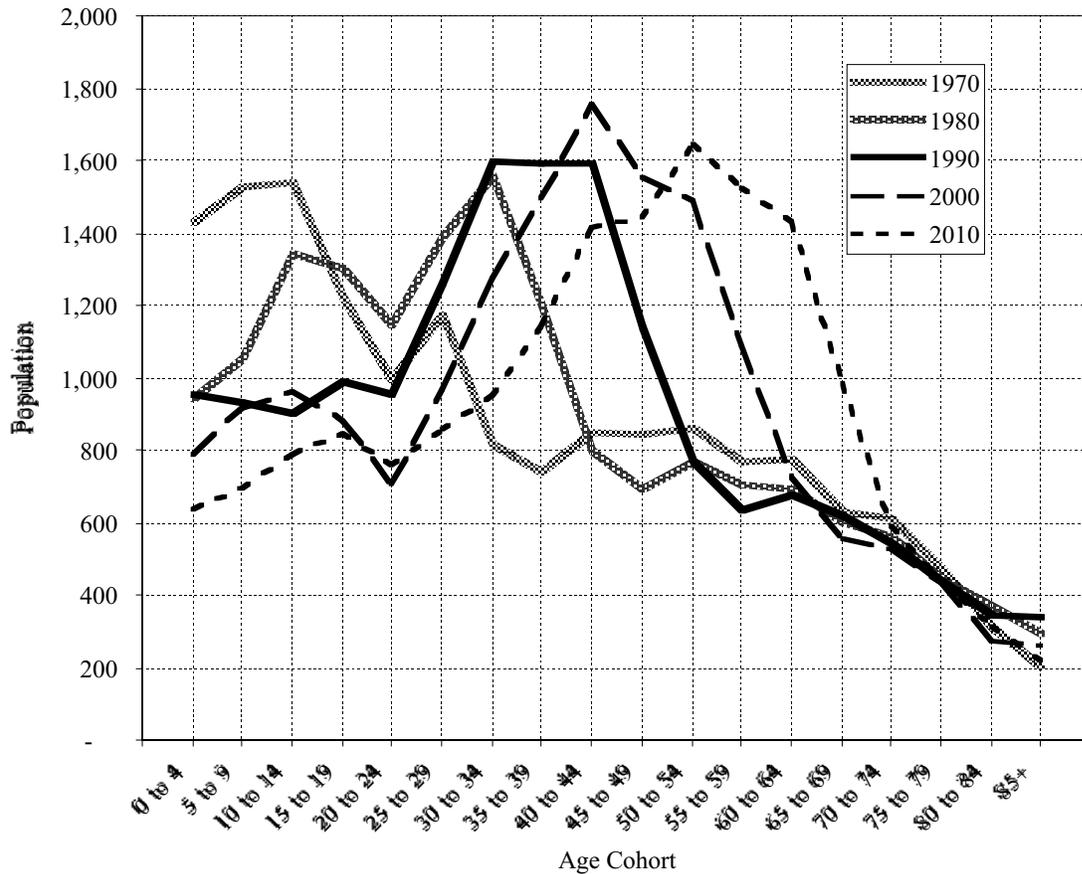
Age Cohort	1970	1980	1990	2000	2010
0 to 4	1,432	945	958	790	640
5 to 9	1,532	1,056	931	916	695
10 to 14	1,541	1,343	905	961	788
15 to 19	1,225	1,304	990	879	847
20 to 24	995	1,147	959	705	757
25 to 29	1,175	1,392	1,264	968	860
30 to 34	820	1,559	1,598	1,275	952
35 to 39	741	1,203	1,596	1,494	1,140
40 to 44	853	800	1,593	1,758	1,416
45 to 49	845	693	1,140	1,556	1,443
50 to 54	863	772	770	1,487	1,646
55 to 59	770	709	636	1,091	1,523
60 to 64	776	697	677	723	1,430
65 to 69	633	604	619	555	988
70 to 74	615	562	547	530	591
75 to 79	473	446	442	434	438
80 to 84	313	372	350	274	313
85+	205	296	342	260	218
Totals	15,807	15,900	16,317	16,656	16,685

Sources: 1970–1990 – U.S. Department of Commerce, Bureau of the Census
2000–2010 – MISER projections, August 1999

Figure 2 presents the above data graphically, and clearly shows the significant changes in Newburyport's age profiles over the past thirty years and for the coming decade. While there has been very little change in the number of older residents during the 1970s, 1980s and 1990s, the number of

children and young adults (up to age 24) has dropped sharply, while the number of adults in the peak working age groups, and especially in the 30–44 group. This combination of more adults and fewer children is also reflected in the City’s declining average household sizes, and in the fact that the number of homes has continued to increase while the overall population has remained essentially stable.

Figure 2: Population Age Distribution, 1970–2010



In 1980 the median age of Newburyport’s residents was 32.4 years. This was identical to Essex County’s median age and slightly higher than the State’s median age of 31.2 years. A significant fact is that Newburyport’s median age is the highest of all Merrimack Valley cities and towns. In 1990 the City’s median age was 36.9 years, more than three years higher than the State median of 33.6 years. In other words, while both the City and the State reflect the national trend of the aging of the population, Newburyport diverged further from the State average during the 1980s, even though the City’s elderly population remained essentially unchanged during the decade.

The broader implications of these changes may be viewed by combining the 5-year age cohorts into five larger age groups: preschool (0–5 years old), school-age (5–19 years), younger adults (20–44 years), older adults (45–64 years), and retirement-age adults (65 years and older). These data are presented in Table 7, Table 8, and Table 9.

Table 7: Population Age Distribution by Major Age Groupings, 1970–2010

Age Group	1970	1980	1990	2000	2010
0 – 4	1,432	945	958	790	640
5 – 19	4,298	3,703	2,826	2,756	2,330
20 – 44	4,584	6,101	7,010	6,200	5,125
45 – 64	3,254	2,871	3,223	4,857	6,042
65 +	2,239	2,280	2,300	2,053	2,548
Total	15,807	15,900	16,317	16,656	16,685

Table 8: Percent of Total Population by Major Age Groupings, 1970–2010

Age Group	1970	1980	1990	2000	2010
0 – 4	9.1%	5.9%	5.9%	4.7%	3.8%
5 – 19	27.2%	23.3%	17.3%	16.5%	14.0%
20 – 44	29.0%	38.4%	43.0%	37.2%	30.7%
45 – 64	20.6%	18.1%	19.8%	29.2%	36.2%
65 +	14.2%	14.3%	14.1%	12.3%	15.3%

Table 9: 10-Year Population Changes by Major Age Groupings, 1970–2010

Age Group	1970-1980	1980-1990	1990-2000	2000-2010
0 – 4	-34.0%	1.4%	-17.5%	-19.0%
5 – 19	-13.8%	-23.7%	-2.5%	-15.5%
20 – 44	33.1%	14.9%	-11.6%	-17.3%
45 – 64	-11.8%	12.3%	50.7%	24.4%
65 +	1.8%	0.9%	-10.7%	24.1%
Total	0.6%	2.6%	2.1%	0.2%

These data reflect the following recent and anticipated changes in the age composition of Newburyport's population:

- ◆ The preschool age group (0–4 years) declined by 487 persons (34 percent) between 1970 and 1980 and then held steady in the following decade. This decline reflects the national trend of lower birth rates during the 1970s and 1980s, and might have been greater were it not for the large number of individuals migrating to the City over the last two decades. This age group represented 9 percent of the population in 1970, 6 percent in 1980, and 6 percent in 1990. The population in this age group is estimated to have declined by 17.5 percent during the 1990s, and is projected to decrease by another 19 percent between 2000 and 2010. By 2010 the preschool age group will be less than half the size that it was in 1970.
- ◆ The school age group (5–19 years) also lost population in the 1970s and 1980s. This age group represented 27 percent of the population in 1970, 26 percent in 1980, and 17 percent in 1990. Like the preschool group, the school age group continues to decrease in size, and in 2010 this segment of the population is projected to be 2,330, compared to 4,298 in 1970.

- ◆ The young adult population (20–44 years) increased significantly during the 1970s and 1980s from 29 percent of the population in 1970 to 38 percent in 1980 and to 43 percent in 1990. However, this segment of the population has peaked and is now decreasing in size: the number of residents in this age group is estimated to have decreased by 12 percent during the 1990s, and will shrink by another 17 percent by 2010, at which time it will represent 31 percent of the City’s total population.
- ◆ The older adult population (45–64 years) decreased during the 1970s but then began increasing in the 1980s. It is estimated that this group has surged during the 1990s, increasing by 50.7% (1,634 residents) between 1990 and 2000; and it is projected that it will grow by another 24.4 percent between 2000 and 2010. This may reflect the increasing attractiveness of Newburyport as a place to live both for affluent “empty-nesters” with established careers and for those approaching retirement.
- ◆ The elderly age group (65 years and over) remained stable during the 1970s and 1980s, representing approximately 14 percent of the population in 1970, 1980 and 1990. This group decreased in size during the 1990s and now accounts for about 12 percent of the City’s total population. However, as a result of the huge increase during the 1990s in the number of residents aged 45 to 64 years old, the number of senior citizens will increase significantly during the next ten years (and will continue to increase in future years).

Thus, it is projected that the numbers of pre-school and school-age children and young adults will decline in both absolute and relative terms during the coming decade, while older adults and senior citizens will comprise a growing proportion of the overall population.

Income

During the 1980s, the entire Merrimack River Valley enjoyed an economic resurgence as measured by family income. Table 10 presents 1979 and 1989 median family income for Massachusetts and for the 15 Merrimack Valley cities and towns. With the exception of Lawrence and Newbury, the median family income in each community rose faster than the median income in the state.

Within this healthy regional context, Newburyport’s experience stands out. Although the City had the slowest population growth rate in the Merrimack Valley, Newburyport registered the greatest percentage increase in median family income. As a result, the City moved from tenth place among Valley communities in 1979 family income, to fifth place in 1989 family income.

Table 10: Median Family Income

	1979	1989	% of State, 1979	% of State, 1989	10-Year Increase
Amesbury	\$19,250	\$44,554	90.3%	100.4%	131.4%
Andover	\$31,152	\$70,757	146.1%	159.5%	127.1%
Boxford	\$35,483	\$83,509	166.4%	188.2%	135.3%
Georgetown	\$23,906	\$50,927	112.1%	114.8%	113.0%
Groveland	\$23,597	\$52,593	110.6%	118.5%	122.9%
Haverhill	\$18,890	\$43,209	88.6%	97.4%	128.7%
Lawrence	\$15,457	\$26,398	72.5%	59.5%	70.8%
Merrimac	\$20,428	\$46,276	95.8%	104.3%	126.5%
Methuen	\$21,486	\$44,907	100.7%	101.2%	109.0%
Newbury	\$24,422	\$47,711	114.5%	107.5%	95.4%
NEWBURYPORT	\$21,017	\$53,012	98.5%	119.5%	152.2%
North Andover	\$25,713	\$61,468	120.6%	138.5%	139.1%
Rowley	\$22,118	\$52,677	103.7%	118.7%	138.2%
Salisbury	\$18,588	\$40,062	87.1%	90.3%	115.5%
West Newbury	\$25,927	\$60,381	121.6%	136.1%	132.9%
Massachusetts	\$21,329	\$44,367			108.0%

Source: Merrimack Valley Planning Commission

Educational Achievement

Newburyport's residents are well-educated in comparison to other communities in the Merrimack Valley and Massachusetts. As detailed in Table 11, in 1990 63.3% of the City's adult residents (aged 25 years and older) had attended or completed college, compared to 48.7% in the Merrimack Valley region and 50.2% in the State as a whole. Educational achievement has increased dramatically since 1970, when only 19.6% of the City's residents over 25 had completed some college. Those who have completed four years or more increased from 8.1% in 1970 to 35.3% in 1990.

Table 11: Educational Achievement

	Newburyport		Merrimack Valley		Massachusetts	
	1980	1990	1980	1990	1980	1990
Did not complete high school	23.5%	14.7%	31.5%	22.8%	27.3%	20.0%
High school only	35.4%	22.0%	36.1%	28.5%	37.0%	29.7%
1-3 years of college	19.6%	28.0%	15.6%	23.4%	15.7%	23.0%
4 or more years of college	21.5%	35.3%	16.8%	25.3%	20.0%	27.2%

Source: Merrimack Valley Planning Commission

Racial Composition

In terms of race and ethnicity Newburyport's population is highly homogeneous (see Table 12). In 1980 and 1990, 99 percent of the City's residents were white and nearly 100 percent were non-Hispanic. There has been a slight decline in the City's minority population since 1970, when non-whites accounted for 1.4 percent of the population.

Table 12: Persons by Race and Hispanic Origin

	1980	1990	2000	2005
White	15,745	16,156	17,018	17,527
Black	78	82	134	171
American Indian & Aleut:	33	17	20	21
Asian & Pacific Islander:	20	44	90	126
Other	24	18	32	43
TOTAL	15,900	16,317	17,294	17,888
Hispanic Origin	55	91	197	283

Sources: 1980 & 1990, U.S. Bureau of the Census; 2000 & 2005, CACI Demographics, Inc.

For comparison, non-white residents made up 3.7 percent of the State's population in 1970, 6.5 percent in 1980, and 10.2 percent in 1990. For the 15 communities in the Merrimack Valley planning region, the percentages were 4.4 percent in 1980 and 11.2 percent in 1990. Thus, Newburyport's population has not reflected regional and statewide demographic changes in this aspect.

Summary

The recent past has been a period of both relative stability and dramatic change for Newburyport's population. During the past several decades, the City has grown more slowly than any of its neighboring communities, yet in some characteristics its population has undergone a major transformation. A new socioeconomic group has been attracted to move to Newburyport: in general, the newcomers are more affluent and somewhat older than those who were living here in the 1970s and 1980s. These differences suggest that the new residents may be more established in their careers and more secure financially, and they therefore have the ability to be selective about the community in which they will live. The fact that they are choosing to live in Newburyport speaks well of the City's amenities and overall quality of life.

LAND USE

Newburyport is characterized by diversity of land uses. The City contains both old and new, high and low density residential areas, scattered and planned industrial uses, downtown, scattered and strip commercial development, agricultural, recreational and open space areas, as well as typical public facilities. In addition, Newburyport also contains special areas or neighborhoods which have unique characteristics and needs.

Land Use Trends

Newburyport contains 6,616 acres or approximately 10.3 square miles of land and water, based upon computer digitization of land areas. A study of land use change and buildout was conducted by the City in 1989. Although a significant amount of growth has occurred in the intervening decade, the analysis is still useful for its summary of growth trends over a nearly forty-year period. The findings of the land use trends analysis are summarized in Table 13 and in the following discussion.

Table 13: Land Use, 1951 – 1989

	1951		1971		CLUA (1989)		Zoning	
	Acres	%	Acres	%	Acres	%	Acres	%
Open/ Agricultural	4,271	64.6	3,429	51.8	3,218	48.6	1,676	25.5
Industrial	71	1.1	304	4.6	488	7.4	1,105	16.7
Commercial	55	0.8	135	2.1	200	3.0	287	4.3
Residential	1,157	17.4	1,345	20.3	1,420	21.5	2,411	36.4
Public	26	0.4	66	1.0	123	1.9	16	0.2
Sub-Total	5,580	84.3	5,279	79.8	5,449	82.4	5,495	83.1
Water	1,036	15.7	1,337	20.2	1,167	17.6	1,121	16.9
Grand Total	6,616	100	6,616	100	6,616	100	6,616	100

Source: *Land Use, Population and Buildout Analysis, 1989*

Of the total 6,616 acres, 33.8% or 2231 acres of land was classified as developed land in 1989. The undeveloped lands comprised 48.6% or 3,218 acres of land with water areas representing 16.9% of the City's area or 1121 acres. In general, this represented a 3.2% decrease in undeveloped land since 1971, with a corresponding increase in developed land of 5.8%. (The 0.7% decrease in water area is presumed to be a result of shifting land mass adjusted by tidal forces, or differences in aerial photographs in terms of the position of the tide at the time the City was photographed.) The Interstate 95 right-of-way comprises 279 acres, with Plum Island and Woodbridge Island comprising 366 acres.

Large increases in both the residential and industrial classifications occurred between 1951 and 1989. Industrial uses increased five percentage points, from only 1.1% of the City's total land area in 1951 to 6.1% in 1989, reflecting the development of the Industrial Park beginning in the 1960s. Residential uses increased by 3.1 percentage points, from 17.4% of total land use to 20.5% over the same period.

Residential

Under current zoning bylaws, a total of 2,411 acres of land was zoned for residential uses in 1989, meaning that, in terms of land area, residential development had reached approximately 59% of its potential total, with approximately 1,420 total acres developed. Virtually all of the undeveloped residential land was located in the western portion of the City, in the Turkey Hill Road area, along the western side of Low St., north of Storey Ave. and along the northwest end of Merrimack St. (Chain Bridge area). More specifically, the land use map identified some 651 acres of single family residential uses in 1989, an increase of 85 acres from 1971. Additionally, 716 acres of 1-6 family residential uses were identified, most of which are defined by Newburyport's historic district. In the eastern portion of the City, the boundary between R1 and R2 was defined at Marlboro St.

Of the areas cited above, the Turkey Hill Road area (north of Hale St.) represented the largest single area of potential development. Although considerable building had already occurred, there remained approximately 140 acres as yet undeveloped. Including residentially zoned land north of Storey Ave., bounded to the east by I-95 and to the north and west by Maudslay State Park added another 75 Acres. Together, these parcels accounted for over 21% of the remaining developable residential land.

The next largest potential for residential development was along the western side of Low Street. The area contiguous to the existing Quail Run development area—bounded to the west by industrial-zoned land and to the northwest by the Russell Terrace/Storey Ave. area—represented approximately 160 acres of potential residential development.

Additional smaller pockets of developable residential land were found along the western end of Merrimack St. along the River as well as near the intersection of Merrimack and Moseley Ave., and west of Spofford St. These parcels totaled approximately 120 acres. An additional parcel existed bounded to the east by Noble St., to the north by Ferry Road, to the west by I-95 and to the south by cemeteries and commercial uses fronting on Storey Ave. This tract, which measures approximately 75 acres, was being developed and also contained the Evergreen Golf Course. This parcel represented significant development potential not because of its size, but because of the possibility of high density, multi-unit development proposed on Woodman Way.

Industrial

In the early 1950s with the loss of a major manufacturing plant, and the continued loss of industry moving south, the City found itself with an unemployment rate in the high teens to low twenties. As a result, the town fathers, business groups, government representatives and citizenry pulled together to form a corporation known as the Newburyport Area Industrial Development Corporation (NAID). This organization conducted a three-year pledge fund drive raising approximately \$200,000 with which it purchased 200 acres of land over a period of years.

The City has a number of scattered industrial buildings or complexes which were constructed in the last century. These industries are located in close proximity to residential areas. The location of these industries in residential areas was not considered inappropriate at the time of their construction. Recently, some of these industrial complexes have either proposed plans or have actually undergone conversion to other uses.

There was also a large potential for development under the industrial classification. Industrially-developed land totaled 304 acres in 1971 and 488 acres in 1988, representing 27.5% and 44.29%, respectively, of total developable industrial land under current zoning regulations. The remaining 617 acres of developable area was limited to the Graf Rd./Parker Rd., Outer Hale St. and Crow Lane sections of the City, out to the Interstate 95 corridor.

Commercial

According to Table 13, 47% of the commercially-zoned land had been developed in 1971 and by 1988 this number had grown to almost 70%. The commercially-zoned areas of the City were considered to be fully developed despite the apparent 87 acres which appeared to remain. This apparent discrepancy stemmed from the previously mentioned variations in the methods of categorization. Specifically, much of the land fronting Merrimack St. and the River is zoned Marine Mixed Use or Marine Dependent; these have been consolidated under commercial uses in the table. CLUA figures are believed to more accurately reflect actual uses, including residential, open and public uses. This area offers little in terms of undeveloped land; however the potential exists for possible conversion or redevelopment and expansion.

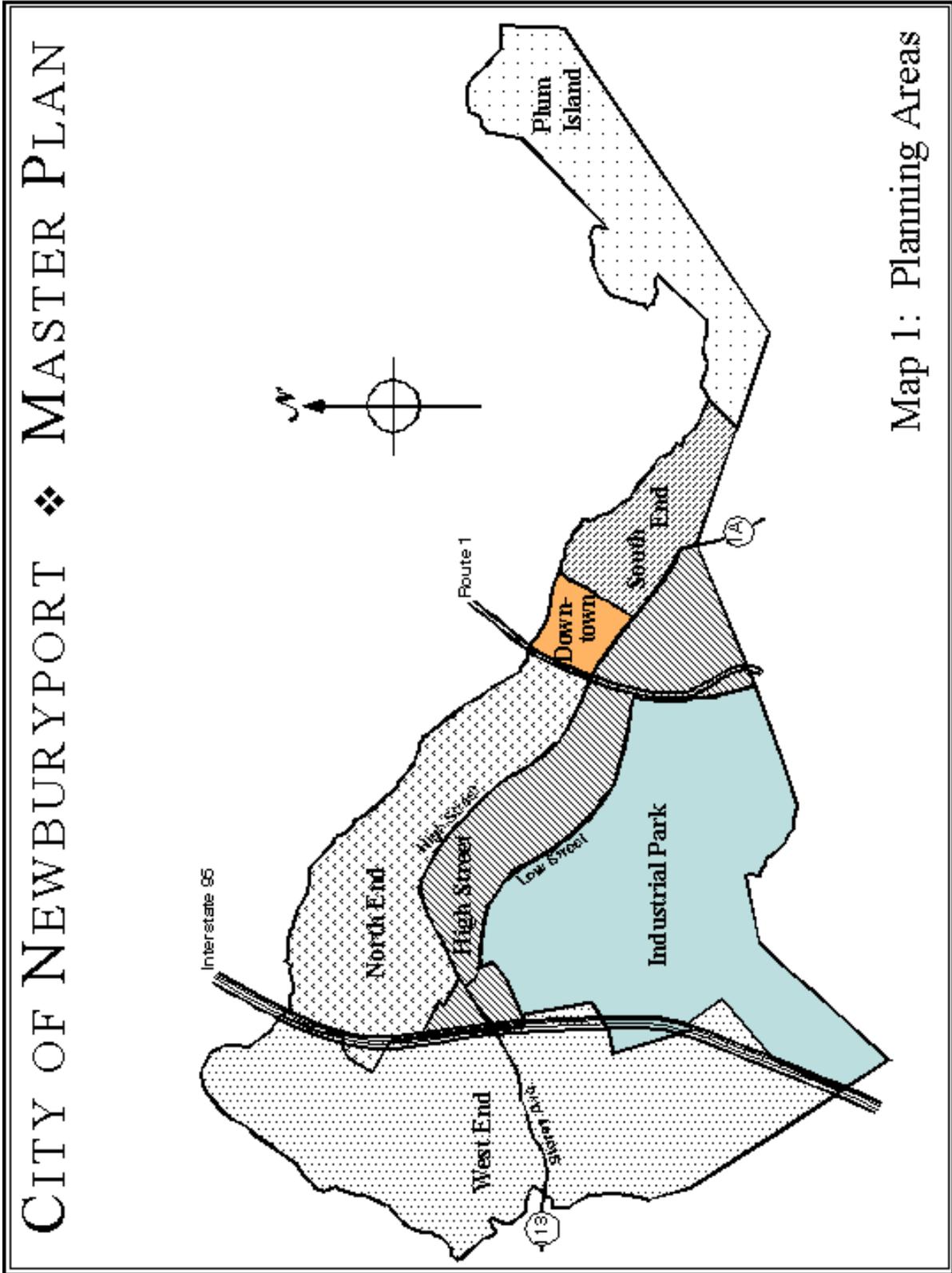
Current Development Status

As part of the Master Plan process, an analysis was conducted of land use and development intensity in the City, using the database maintained by the City's Assessing Department. The database includes a total of 7,606 parcels with a total area of 4,482.95 acres (7.0 square miles). The difference between this total area and the City's total land area of approximately 8.6 square miles consists largely of public roads and streets. A small portion of the difference represents the land area in condominium developments, which was not included in the Assessors database as of this analysis.

In order to facilitate a more detailed analysis of the information in the database, as well as the buildout analysis for which the database provides the basis, seven "planning areas" were defined for the Master Plan, as shown on Map 1. For convenience, the planning areas were based on Assessors map plates. They are generally described as follows:

- ◆ Plum Island: All land east of Ocean Avenue.
- ◆ South End: The area bounded by the Merrimack River on the north, Ocean Avenue on the east, High Street on the south, and Fair Street on the west.
- ◆ Downtown: The area bounded by the Merrimack River on the north, Fair Street on the east, High Street on the south, and Route 1 on the west.
- ◆ North End: The area bounded by the Merrimack River on the north, Route 1 on the east, High Street and Storey Avenue on the south, and Interstate 95 on the west, but excluding the area west of St. Mary's Cemetery..
- ◆ West End: All land west of Interstate 95.
- ◆ High Street: (1) The area bounded by High Street on the north, the Newbury town line on the south, and the railroad right-of-way on the west; (2) the area bounded by High Street and Storey Avenue on the north and Low Street on the south; and (3) both sides of Storey Avenue between St. Mary's Cemetery and Low Street on the east and I-95 on the west.
- ◆ Industrial Park: The area bounded by Low Street on the north, the railroad right-of-way on the east, the Newbury town line on the south, and Interstate 95 on the west.

Map 1: Planning Areas



CITY OF NEWBURYPORT ❖ MASTER PLAN

Map 1: Planning Areas

Table 14 presents summary statistics for the entire database and for each planning area, including total area in parcels, average parcel area, number of dwelling units, average residential density (dwelling units per acre of residential land), total floor area of all structures, and average floor area ratio (as an indicator of overall land use intensity).⁴ These statistics illustrate the range of development intensities in the City.

Table 14: Existing Development Intensity by Planning Area

Planning Area	No. of Parcels	Area (Acres)		Dwelling Units		Floor Area	
		Total	Average	Total	Average Density*	Total	Average FAR**
Plum Island	661	341.81	0.52	534	1.56	1,034,424	0.07
South End	1,401	269.61	0.19	1,739	6.45	4,496,981	0.38
Downtown	662	70.64	0.11	687	9.72	2,699,409	0.88
North End	2,208	670.95	0.30	2,425	3.61	6,645,337	0.23
West End	888	1,264.27	1.42	741	0.59	2,614,507	0.05
High Street	1,337	606.47	0.45	1,314	2.17	4,686,545	0.18
Industrial Park	449	1,259.20	2.80	186	0.15	2,972,019	0.05
Totals	7,606	4,482.95	0.59	7,626		25,149,222	

*Average residential density: dwelling units per acre;

** Average FAR (floor area ratio): total square feet of floor area per acre of land.

Current Land Use Profile

The Assessors database uses the Commonwealth of Massachusetts’ standard land use classification system, which identifies each parcel with a four-digit code. These classifications cannot be used to compare land use patterns between communities because assessing departments interpret and apply the classifications somewhat differently. However, they are useful for characterizing general land use patterns within the City as a whole and for individual neighborhoods.

Table 15 summarizes the data for all parcels in the residential classifications, including vacant land zoned for residential development. The residential classifications comprise 87.5 percent of the City’s parcels but only 38.2 percent of the total area in the parcel database. In part this reflects the much smaller average area of residential parcels compared to other land uses: the average single-family home in Newburyport sits on a lot of about three-tenths of an acre, which is about one-half the average size of all parcels in the City. Also, it should be noted that one-fifth of the residential parcels are condominiums, which are assessed individually, while the land areas for condominium developments are generally not included in the database.

Table 16 presents the same data for parcels in the commercial and industrial classifications (again, this table includes the vacant parcels that are zoned for these types of uses). Finally, Table 17 summarizes the data for the remaining parcels, which include private land used for agricultural, recreational or conservation purposes, as well as land owned by municipal, state or federal governmental entities or charitable institutions such as religious organizations.

⁴ Note that the “Average FAR” column includes all land uses in the planning area; thus, Plum Island and the West End have very low FARs because of the inclusion of the Plum Island Reservation and Maudslay State Park.

Table 15: Existing Residential Parcels

Current Land Use	Land Use Code	No. of Parcels	Area (Acres)		Dwelling Units	
			Total	Average	Total	Average Density
Single Family	1010	3,987	1,155.61	0.29	3,987	3.45
Single Family – Oceanfront	1012	2	0.42	0.21	2	4.79
Single Family - Water	1013	85	72.59	0.85	85	1.17
Condominium	1021	1,371	1.00	0.00	1,371	n/a
Two Family	1040	507	112.63	0.22	1,014	9.00
Three Family	1050	91	24.73	0.27	273	11.04
Accessory Land	1060	22	3.21	0.15	-	-
Multiple Housing on One Parcel	1090	30	21.12	0.70	60	2.84
Aparts-4-8 units	1110	121	31.88	0.26	726	22.77
Apts-8 plus	1120	9	4.88	0.54	108	22.13
Rooming & Boarding House	1210	4	0.46	0.11	-	-
Developable Residential Land	1300	101	52.20	0.52	-	-
Potentially Developable Residential Land	1310	78	169.37	2.17	-	-
Undevelopable Residential Land	1320	250	64.17	0.26	-	-
Total Residential Properties		6,658	1,714.28	0.26	7,626	

Source: Newburyport Assessors database, 1/1/00.

Table 16: Existing Commercial and Industrial Parcels

Current Land Use	Land Use Code	No. of Parcels	Area (Acres)		Floor Area	
			Total	Average	Total	Average FAR
Commercial Land Uses						
Inns, Resorts	3020	5	1.04	0.21	50,908	1.13
Nursing Home	3040	4	14.39	3.60	204,289	0.33
Tanks holding fuel	3100	3	0.87	0.29	24,602	0.65
Bottled Gas	3110	1	1.10	1.10	2,235	0.05
Lumber Yard	3130	2	10.20	5.10	7,060	0.02
Piers, Wharves, Docks	3150	4	5.60	1.40	16,736	0.07
Storage, Warehouses	3160	11	4.28	0.39	36,769	0.20
Facilities providing building materials	3210	1	1.12	1.12	12,489	0.26
Discount Stores	3220	87	22.73	0.26	639,033	0.65
Retail Condominium	3221	30	0.00	0.00	33,962	n/a
Commercial Building	3222	1	0.00	0.00	-	-

Current Land Use	Land Use Code	No. of Parcels	Area (Acres)		Floor Area	
			Total	Average	Total	Average FAR
Shopping Centers/ Malls	3230	6	33.67	5.61	366,244	0.25
Small Retail & Service (<10,000 sq. ft)	3250	1	0.17	0.17	14,906	1.98
Eating & Drinking Estab.	3260	31	13.24	0.43	156,413	0.27
Auto Sales & Services	3300	3	1.03	0.34	8,648	0.19
Auto Repair	3320	5	4.63	0.93	26,096	0.13
Fuel Service Areas	3330	1	0.14	0.14	2,464	0.42
Gasoline Service Stations	3340	7	3.28	0.47	9,802	0.07
Parking Lots	3370	23	9.51	0.41	-	-
Other Motor Vehicles Sales	3380	1	0.18	0.18	-	-
General Office Bldg	3400	41	12.35	0.30	484,957	0.90
Office Condo	3401	72	0.00	0.00	77,948	n/a
Bank	3410	8	1.94	0.24	61,938	0.73
Medical Office Bldg	3420	10	4.12	0.41	64,792	0.36
Day Care Center	3520	2	1.01	0.51	10,870	0.25
Fraternal Organizations	3530	3	1.66	0.55	28,419	0.39
Funeral Homes	3550	3	1.54	0.51	30,450	0.45
Legitimate Theatres	3640	1	0.07	0.07	3,068	0.97
Tennis Clubs	3750	1	5.05	5.05	41,954	0.19
Gymnasiums and Athletic Clubs	3760	1	0.73	0.73	13,399	0.42
Golf Courses	3800	1	36.76	36.76	1,360	0.00
Marinas	3840	12	12.92	1.08	20,053	0.04
Yacht Clubs	3841	2	4.16	2.08	9,214	0.05
Developable Commercial Land	3900	19	18.52	0.97	-	-
Potentially Developable Commercial Land	3910	2	0.39	0.20	-	-
Undevelopable Commercial Land	3920	2	0.64	0.32	-	-
Total Commercial Property		407	229.04	0.56	2,461,078	
<u>Industrial Land Uses</u>						
Buildings for Manufacturing	4000	42	213.82	5.09	1,613,468	0.17
Warehouses to Store Manuf. Products	4010	15	48.74	3.25	374,765	0.18
Office Bldgs. for Manuf	4020	5	19.05	3.81	109,185	0.13
Industrial Condominium	4021	88	0.00	0.00	135,479	n/a
Industrial Building	4022	1	0.00	0.00	2,288	-
Land Used as part of Manufacturing	4030	4	11.24	2.81	-	-
Research & Development Facilities	4040	2	13.95	6.98	70,836	0.12
Electric Power Plants	4220	3	5.26	1.75	3,664	0.02

Current Land Use	Land Use Code	No. of Parcels	Area (Acres)		Floor Area	
			Total	Average	Total	Average FAR
Electric Transmission Right of Way	4230	19	1.45	0.08	-	-
Telephone Exchange Stations	4300	1	0.33	0.33	23,983	1.68
Industrial Developable Land	4400	23	248.42	10.80	-	-
Potentially Developable Industrial Land	4410	18	45.45	2.53	16,800	0.01
Undevelopable Industrial Land	4420	5	6.01	1.20	-	-
Total Industrial Property		226	613.73	2.72	2,350,468	
Total Commercial and Industrial		633	842.77	1.33	4,811,546	

Source: Newburyport Assessors database, 1/1/00.

Table 17: Existing Agricultural, Private Recreational, Public, Charitable and Private Open Land Uses

Current Land Use	Land Use Code	No. of Parcels	Area (Acres)		Floor Area	
			Total	Average	Total	Average FAR
<u>Agricultural Land Uses</u>						
Field Crops (hay, wheat)	7130	3	49.15	16.38	-	-
Orchards (pears, apples)	7140	1	19.47	19.47	-	-
Tillable Forage Cropland	7160	17	390.46	22.97	-	-
Pasture	7180	2	12.31	6.16	-	-
Necessary Ag. Related Land (roads, ponds)	7200	1	4.10	4.10	-	-
Total Agricultural Property		24	475.49	19.81	-	-
<u>Recreation Land Uses</u>						
Nature Study	8030	3	16.32	5.44	-	-
Public Non-Commercial Flying	8130	1	8.61	8.61	-	-
Total Recreational Property		4	24.93	6.23	-	-

Current Land Use	Land Use Code	No. of Parcels	Area (Acres)		Floor Area	
			Total	Average	Total	Average FAR
<u>Public Service Land Uses</u>						
United States Properties	9000	8	23.49	2.94	62,901	0.06
Commonwealth of Mass	9010	26	572.57	22.02	72,767	0.00
Municipalities	9030	116	464.32	4.00	401,304	0.02
Fire	9032	3	2.08	0.69	24,734	0.27
Public School	9033	4	50.78	12.69	351,098	0.16
Town Property	9035	2	0.05	0.03	-	-
Colleges, Schools	9040	1	0.27	0.27	5,729	0.49
Charitable Organizations	9050	6	3.64	0.61	24,147	0.15
Churches, Synagogues and Temples	9060	6	7.80	1.30	71,174	0.21
121A Corporation	9070	5	6.99	1.40	46,120	0.15
Religious	9090	20	33.13	1.66	164,860	0.11
Charitable	9100	7	3.73	0.53	74,865	0.46
Nonprofit	9200	17	86.12	5.07	70,891	0.02
Condominium – Exempt	9210	57	16.52	0.29	-	-
Total Public Properties		278	1,271.48	4.57	1,370,590	
<u>Open Land Uses</u>						
Open Wetlands in Residential Area	2020	8	141.41	17.68	-	-
Non-productive Ag. Land	2110	1	12.60	12.60	-	-
Total Open Land Properties		9	154.01	17.11		
Total Agricultural, Recreation, Public Service and Open		315	1,925.91	6.11	1,370,590	

Source: Newburyport Assessors database, 1/1/00.

Similar summary tables for each planning area are presented in the Appendices.

Assessed Valuations

Table 18 presents the total of assessed valuations in the City and in each planning area, and Table 19 presents the average valuations for land and improvements. The most intensively developed areas of the City—the Downtown and South End planning areas—exhibit the highest land values per acre, while the lower-density West End and Industrial Park areas have the lowest per-acre values. Values *per parcel* vary much less across the City than values *per acre*.

Table 18: Total FY 2000 Assessed Valuation, by Planning Area

Planning Area	Land	Building	Total (Land + Bldg.)
Plum Island	\$43,971,600	\$36,617,900	\$80,589,500
South End	\$84,905,600	\$178,172,100	\$263,077,700
Downtown	\$47,092,400	\$119,785,700	\$166,878,100
North End	\$126,794,800	\$262,004,900	\$388,799,700
West End	\$74,073,200	\$95,283,600	\$169,356,800
High Street	\$82,924,300	\$209,099,700	\$292,024,000
Industrial Park	\$34,840,600	\$106,648,500	\$141,489,100
Totals	\$494,602,500	\$1,007,612,400	\$1,502,214,900

Source: Newburyport Assessors database, 1/1/00.

Table 19: Average FY 2000 Assessed Valuation, by Planning Area

Planning Area	Land (Per Parcel)	Land (Per Acre)	Building
Plum Island	\$66,523	\$128,645	\$55,398
South End	\$60,604	\$314,916	\$127,175
Downtown	\$71,137	\$666,616	\$180,945
North End	\$57,425	\$188,979	\$118,662
West End	\$83,416	\$58,590	\$107,301
High Street	\$62,023	\$136,732	\$156,395
Industrial Park	\$77,596	\$27,669	\$237,524
Totals	\$65,028	\$110,330	

Source: Newburyport Assessors database, 1/1/00.

Current Land Use Plan

Zoning Ordinance

The City of Newburyport first adopted zoning in 1941. Many revisions have occurred since that time to guide growth. The City is currently divided into the following zoning districts:

◆ ***Agricultural and/or Conservation (Ag/C)***

The agricultural/conservation district is intended to serve a dual purpose. It is the City's intent to adhere to the Commonwealth of Massachusetts policy of preserving agricultural land. All existing agricultural land is therefore designated Ag/C when its designation is in keeping with the City's long range plans and those of the owner.

Principles of fiscal responsibility demand that the City utilize the City's presently existing water/sewer systems to their maximum before undertaking the construction of expensive additions to these systems. To this end, vacant lands with soils that have poor to moderate capabilities for supporting on site sewage systems are designated Ag/C.

The Ag/C district has the lowest residential density of districts and is generally served by local streets only. Intensive land uses, uses that would detract from the desired agricultural/open nature of the district and uses which would otherwise interfere with the intent of the zoning ordinance are prohibited.

◆ ***Residential One (R-1)***

The single family district (Residential 1) is composed of those areas designated on the official zoning map, and the uses which would detract from the desired residential character, and uses which would otherwise interfere with the intent of the zoning ordinance are otherwise prohibited.

◆ ***Residential Two (R-2)***

The two family district (Residential 2, like the preceding districts, is generally served by local streets. The predominant land uses are intended to be single and two family homes. Uses that would detract from the desired residential character and uses that would otherwise interfere with the intent of the zoning ordinance are prohibited.

◆ ***Residential Three (R-3)***

The multi family district (Residential 3) is intended to allow multifamily units no greater than six (6) units per structure and generally exceeding densities of ten (10) dwelling units per acre of land. Single and two-family homes are allowed. Those districts, insofar as is possible, are located near or along major streets.

◆ ***Business One (B-1)***

The Business District (B-1) is intended to allow all types of customary business uses oriented towards either pedestrian and/or vehicle traffic. It is further intended that multi-family residential dwellings be allowed whether alone or in combination with business uses under the conditions specified herein. These districts insofar as possible, are located along major streets.

◆ ***Business Two (B-2)***

The Downtown Business District (B-2) is intended to reinforce downtown's role in the focus of activity in Newburyport. Multi-use development is encouraged, such as the combining of residential and business uses. Activities shall be oriented to pedestrian traffic and centralized parking. Business which consume large amounts of land and interrupt pedestrian circulation and shopping patterns, single and two family buildings, or uses which would otherwise interfere with the intent of the zoning ordinance are prohibited.

- ◆ ***Business Three (B-3)***
The Neighborhood Business District (B-3) is intended to provide retail and services in proximity to residential uses in a manner that fosters compatibility and serves as a transitional zone between the business district and residential districts.
- ◆ ***Industrial One (I-1)***
The Industrial District (I-1) allows uses requiring the manufacture, assembly, processing or handling of materials that, because of their generation, noise, appearance, odor, or hazards, would be disruptive to residential and other commercial uses. Commercial uses intended used to service the industrial areas are also permitted.
- ◆ ***Industrial One B (I-1B)***
The I-1B Industrial District was created to allow the development of corporate office headquarters in the City of Newburyport. This zoning allows for a needed use/occupancy which the I-1 zoning district does not allow, specifically, corporate headquarters. The objective is to provide diversification in employment opportunities. Light manufacturing uses similar to those allowed in the I-1 district are also allowed but the location of corporate headquarters type uses is preferred.
- ◆ ***Industrial Two (I-2)***
The I-2 Industrial District zoning district was created to legitimize existing older “pockets of industrial development” within the central city. The intent was to protect these uses allowed by right and not to place them in a non-conforming zoning status. The re-use of these pockets of industries is likely to occur over time and as such non industrial uses are allowed by special permit as further outlined in the zoning ordinance.
- ◆ ***General Acute Care Medical (GACM)***
The General Acute Care Medical District accommodates a general acute care hospital, a medical dental professional building and associated and related uses.
- ◆ ***Waterfront Marine Dependent (WMD)***
The purpose of the Waterfront Marine Dependent district is to protect and enhance the existing marine dependent and marine-related uses located along the waterfront. In addition, the expansion of existing marine uses such as marinas is encouraged and the redevelopment of non-marine uses into marine dependent/related uses is encouraged. This district will allow a certain percentage of an overall development project. Density bonuses may be allowed when public access is provided for (see section XVII of the City Ordinance). Additional intents of this district include the protection and provision of public access and views. Finally, when a project involves residential development, the placement of residential units along the side streets in an overall development project is encouraged in this district.
- ◆ ***Waterfront Mixed Use (WMU)***
The purpose of the Waterfront Mixed Use district is to encourage the development of marine, civic, tourism and cultural land use activities which benefit from the location of the central waterfront and to enhance this area as the civic and cultural center of the city. Structures that are totally residential are not allowed in this district. Additional intents of this district include the protection and provision of access and views.
- ◆ ***Flood Plain District***
The Flood Plain District was established as special district and includes all special flood hazard areas so designated on the Flood Insurance Rate Maps (FIRM) issued by the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program. The maps, as well as the accompanying City of Newburyport Flood Insurance Study, are incorporated in the zoning ordinance by reference.

Zoning Analysis: Phase I – Interview Findings

As part of the Master Plan process, Terry S. Szold, Principal of Community Planning Solutions, interviewed a number of individuals familiar with zoning and development in Newburyport in order to identify issues and concerns relative to the City’s Zoning Ordinance. The following issues were noted in the report:

- ◆ There is a need to better control the scale of residential development in existing neighborhoods, particularly in the South End area but also in new subdivisions in the North End and West End;
- ◆ Existing building setback requirements are appropriate for suburban areas but are inconsistent with the established patterns in older neighborhoods;
- ◆ The existing requirements for off-street parking require review, particularly with respect to the downtown and surrounding urban areas;
- ◆ The provisions for provision and design of open space in cluster residential developments should be reviewed;
- ◆ The existing provisions that allow bonus densities for development of low- and moderate-income housing are not being used, and should be reviewed and perhaps modified to further encourage development of affordable housing;
- ◆ There is a perception that the special permit requirement and the off-street parking regulations may discourage mixed-use development (combining residential and nonresidential uses in the same building), even though the downtown business district is meant to encourage such development;
- ◆ Concerns about regulations prohibiting free-standing signs are being addressed through a proposed amendment to the Zoning Ordinance;
- ◆ As new uses are being considered for the industrial park area (for example, assisted living facilities and sexually oriented businesses), the City should consider the impacts of such uses on the potential for industrial expansion, in terms of both loss of available land for industrial development and potential incompatibilities between land uses;
- ◆ The Master Plan should identify desirable uses for older industrial areas near the waterfront, and the I-2 district regulations should be reviewed to ensure consistency with this vision;
- ◆ The Master Plan should review issues related to desired land uses, public access and intensity of development within the Waterfront Marine Dependent (WMD) and Waterfront Mixed Use (WMU) districts; consider the guidelines and standards incorporated in the proposed Waterfront Overlay District; and recommend appropriate zoning strategies for these areas;
- ◆ Alternatives for expanding both the scope and level of development review in the City should be considered, including the potential for instituting a design review process and/or creating one or more Local Historic Districts (a non-zoning technique).

The complete report on the findings from these interviews is included in Appendix 1. A subsequent report will identify more specific findings based on review of the Ordinance itself, and will match emerging Master Plan goals with specific zoning recommendations.

Buildout Analysis

The amount of residential and nonresidential development is a major determinant of the types and magnitude of services that the City must provide. This section presents the projected “buildout” estimates for Newburyport in terms of housing units, commercial and industrial floor area, and

population. These projections can then be used to examine the potential impacts of growth such as additional demands on public facilities and services.

A *buildout analysis* is an estimate of the maximum amount of development that can theoretically occur under the existing zoning regulations. By itself, the buildout analysis is not a prediction of the amount of development that will actually occur; but an estimate of the level and types of development that the City has stated, through its regulations, that it will accept. Any changes in these regulations will affect the overall buildout of the City.

There are a number of ways in which buildout can be estimated. For the Master Plan, the Assessors database was used as the data source. For each parcel in the database the zoning regulations were used to determine, first, whether the parcel would be used for residential or nonresidential purposes, and, second, how many dwelling units or square feet of nonresidential floor area could be accommodated on the parcel. No environmental data were included in the database; thus, the impact of constraints such as wetlands could not be ascertained. Accordingly, the estimates of buildout resulting from the analysis are presumed to be on the high side.

A separate buildout analysis is being completed by the Merrimack Valley Planning Commission, using a different methodology that is based on air photo interpretation and analysis as well as zoning regulations (see page 32). The MVPC analysis is thus able to incorporate environmental constraint data; however, it does not analyze buildout at the parcel level. Therefore, both analyses should be seen as complementary approaches to estimating Newburyport’s ultimate growth potential.

Residential Buildout

The buildout analysis estimates that the City has the potential for approximately 2,340 dwelling units in addition to the 7,630 existing units, for an ultimate buildout of about 9,970 units. This represents a 31 percent increase over the current housing stock. The North End and the area between High Street and Low Street have the greatest growth potential, together comprising more than half of the total estimated increase.

Table 20: Residential Buildout Summary by Planning Area

Planning Area	Existing Dwelling Units	Buildout Dwelling Units	Change	% Change
Plum Island	534	730	196	37%
South End	1,739	2,020	281	16%
Downtown	687	696	9	1%
North End	2,425	3,033	608	25%
West End	741	1,022	281	38%
High Street	1,314	2,014	700	53%
Industrial Park	186	453	267	144%
Totals	7,626	9,968	2,342	31%

It may be difficult to envision how this much growth is possible, especially in areas that may seem nearly built out already. Table 21 shows that much of the potential buildout is based on more intensive use of land that is already developed to some extent:

- ◆ Development on land that is now vacant represents only 782 new dwelling units, or about one-third of the total new units.

- ◆ About 16 percent of the potential growth (388 dwellings) are possible by creating a subdivision on land that already has one or more homes but has additional land area from which additional lots can be created.
- ◆ The largest potential source of growth, accounting for 1,088 dwelling units (46 percent of the total) is through conversion of existing residential structures to create more units within the structures, or replacement of the existing structures by a new structure containing more units. Examples would include converting a single-family home into a two-family structure, adding more units within an existing apartment building, or removing an existing residence to make way for a larger structure with more units. Within this category, the potential conversion or replacement of existing single-family homes to create multifamily structures represents 667 potential new dwelling units, or 28 percent of the possible increase at buildout.

Table 21: Sources of Potential Residential Buildout

Land Use Change	New Units	% of New Units
Single-Family to Subdivision	328	13.8%
Single-Family to 2-Family	200	8.4%
Single-Family to 3-Family	146	6.2%
Single-Family to Multifamily	667	28.2%
2-Family to Multifamily	28	1.2%
2-Family to 3-Family	9	0.4%
2-Family to Multifamily	107	4.5%
3-Family to Multifamily	36	1.5%
Multifamily to Multifamily	2	0.1%
Multiple Houses to Subdivision	60	2.5%
Vacant to (1) Single-Family	77	3.3%
Vacant to Subdivision	363	15.3%
Vacant to 2-Family	14	0.6%
Vacant to Multifamily	326	13.8%
Other	6	0.3%
Total New Units	2,369	100.0%

Notes: (1) In this table, “vacant” includes agricultural land.

(2) The total number of “new units” is greater than the estimated increase in residential units at buildout, because the buildout analysis also includes conversion of some existing dwelling units to nonresidential use based on zoning.

This breakdown illustrates how some areas with relatively little undeveloped land might absorb so much future growth. For example, about two-thirds of the estimated residential growth in each of the South End, North End, West End and High Street planning areas would come from subdivision of existing single-family lots, or from conversion or replacement of existing single-family dwellings with structures containing two or more units. In contrast, the potential buildout in the Industrial Park planning area is based largely on subdivision of land that is currently either vacant or used for agriculture.

When Will Residential Buildout Occur?

Future housing growth levels will lie within the range of what has occurred in the past, barring unforeseen major economic changes that make Newburyport more or less appealing to residents. Between 1990 and 1999 building permits were issued for 543 housing units in Newburyport. The mean annual growth rate was 54.3 units per year, and the median was 48 units (which occurred in both 1994 and 1996). Excluding an 84-unit multifamily development approved in 1999, the average rate would have been 46 and the median rate would have been 47.

This ten-year period encompasses a range of economic conditions, including the end of the recession and the subsequent resurgence of the housing market. These years may therefore be considered representative of a healthy-long term housing market without being overly biased by years of unusually high growth.

Table 22: Residential Building Permits Issued 1990–1999

Year	Number of Building Permits Issued for Residences
1990	30
1991	26
1992	37
1993	54
1994	48
1995	54
1996	48
1997	45
1998	77
1999	124
Total	543

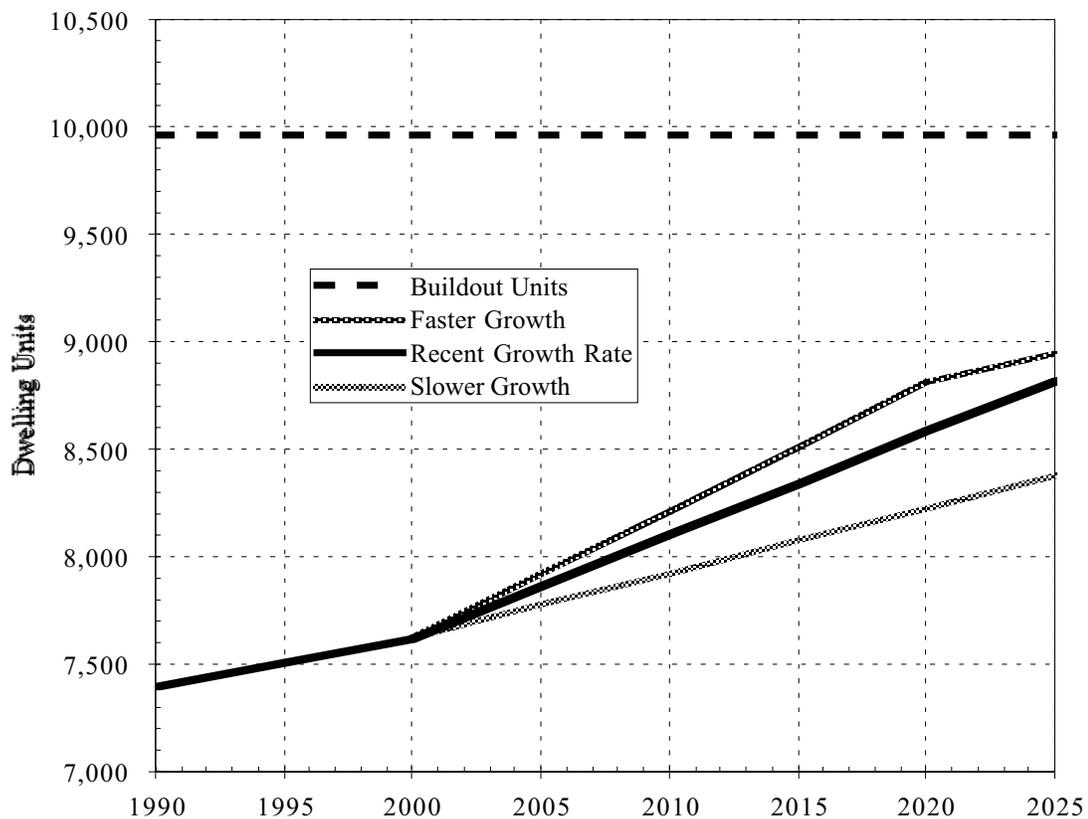
The future rate of residential development will depend on a number of factors such as environmental constraints, owner preferences, market conditions, and technological improvements. The rate will vary depending on the degree of significance each of these factors plays in the future. For the purpose of this analysis, the rate of 48 dwelling units per year (the median rate during the 1990s) is used as the basis for projections. This overall rate is further broken down by structure type. At this rate, Newburyport would not reach residential buildout until about the year 2111; that is, the City would have more than a century of residential growth remaining.

To suggest the likely range of growth rates, “slower growth” and “faster growth” rates were computed by taking the 10th and 90th percentile single-family growth rates for the 1990s and adjusting growth rates for the other structure types accordingly. Table 23 presents the growth rate components used to project residential growth; and Figure 3 presents the resulting growth projections for the next thirty years.

**Table 23: Growth Rates Used in Residential Growth Projections
(Units per Year)**

	Slower Growth	Recent Growth Rate	Faster Growth
Single-Family	24	34	41
Condominium	3	7	9
2- & 3-Family	2	4	5
Multifamily	1	3	4
Total	30	48	59

Figure 3: Projected Residential Growth, 2000–2030



During the last decade, construction of single-family homes has been faster than all other types of dwelling units. Thus, buildout of single-family homes would occur much earlier than multifamily dwellings. As indicated in Table 24, the projected single-family buildout will occur sometime between the years 2022 and 2037, depending on growth rates. At the “faster growth” rate, buildout of single-family homes would occur around the year 2022 (this is reflected in Figure 3 as a change in the slope of the projection curve).

Table 24: Projected Year of Residential Buildout, by Structure Type

	Slower Growth	Recent Growth Rate	Faster Growth
Single-Family	2037	2026	2022
Condominium	2234	2101	2078
2- & 3-Family	2185	2093	2074
Multifamily	2442	2148	2111
Total	2442	2148	2111

Table 24 also illustrates that some of the estimated buildout figures have limited applicability within the twenty-year planning horizon for this Master Plan. The amount of potential multifamily residential growth is so great relative to recent growth rates that growth could continue for more than a century, even though the single-family limit would be reached in less than 40 years. However, the projections for multifamily development (apartments and condominiums) could be dramatically altered by a few large developments. For example, if four new multifamily developments, each containing 80 dwelling units, were constructed during the next decade, the average annual increase in such structures would be 32 units rather than the 10 units (7 condominiums plus 3 apartments) assumed in these projections. If that higher growth rate were maintained, buildout for multifamily units would occur in the year 2036 rather than between 2111 and 2148.

Population Growth

As indicated in Table 2 (page 4) and Figure 1 (page 5), Newburyport's 2010 population has been projected by regional and state agencies to be approximately the same as in 2000, about 16,700. Given recent housing growth rates, this would imply a continued reduction in average household sizes in Newburyport over the coming decade.

A separate population projection was conducted using the residential buildout analysis and recent housing growth rates. In this analysis, it was assumed that average household sizes for all types of dwelling units would stay at their current levels, but that the number of households per housing unit (inversely related to the vacancy rate) would increase by about 2.5 percent, reflecting a tightening of the housing market over time. This assumption was made in order to provide estimates of demands for municipal facilities and services that would be somewhat more conservative than would be derived by assuming no increase in the number of persons per housing unit.

Table 25 presents the resulting estimates of total population in five-year increments, using the three scenarios for housing growth rates. Assuming the continuation of the "recent growth rate," the resulting projections for the City's 2010 population are close to 18,200, increasing to around 19,500 in 2020. The estimated buildout population under these assumptions would be approximately 21,900.

Table 25: Projected Population Growth Based on Housing Growth Trends

	1990	1995	2000	2005	2010	2015	2020
Slower Housing Growth				17,319	17,775	18,232	18,688
Recent Growth Rate	16,301	16,576	16,834	17,521	18,179	18,837	19,494
Faster Housing Growth				17,646	18,430	19,215	19,999

Finally, assuming that average household sizes revert to their 1990 levels, reversing the declines in average household size that occurred during the 1990s, the buildout population would be approximately 23,300, or about 6,470 (38%) more than in 2000.

In summary, the likely ranges of Newburyport's future population are as follows:

Table 26: Future Population Levels Using Various Assumptions About Household Size

Year	Reduction in Household Sizes From 2000 Levels	Continuation of 2000 Average Household Sizes	Return to 1990 Average Household Sizes
2010	16,700	18,200	18,800
2020	17,900	19,500	20,700
Buildout	20,100	21,900	23,300

Nonresidential Buildout

The buildout analysis estimates that Newburyport has the potential to more than double its existing stock of commercial and industrial floor area. However, as Table 27 shows, this nonresidential growth potential is concentrated in only a few areas of the City. Most significantly, more than 86 percent of the estimated growth potential is represented by the Industrial Park area. In this respect, it is important to keep in mind that the database does not contain information on wetlands or other environmental constraints; therefore, it is likely that the actual buildout figures in the Industrial Park planning area will be somewhat smaller than indicated in the table.

Table 27: Nonresidential Buildout Summary by Planning Area

Planning Area	Existing Floor Area	Buildout Floor Area	Change	% Change
Plum Island	0	0	0	–
South End	270,167	285,201	15,034	6%
Downtown	1,292,251	1,401,969	109,718	8%
North End	528,949	711,950	183,001	35%
West End	4,360	4,360	0	0%
High Street	971,998	1,474,368	502,370	52%
Industrial Park	2,195,878	7,318,514	5,122,636	233%
Totals	5,263,603	11,196,362	5,932,759	113%

A significant amount of the estimated nonresidential floor area potential (3.76 million square feet, or 63 percent) would be developed on land that is now either vacant or in agricultural use (see Table 28), with more than 90 percent of this currently open land located in the Industrial Park planning area. In contrast, in the Downtown planning area, three-quarters of the estimated growth potential is based on expansion of existing commercial structures, while vacant land is estimated to support less than 8,000 square feet of new floor area.

Table 28: Sources of Potential Nonresidential Buildout

Current Land Use	Potential Increase in Commercial/Industrial Floor Area	Percent of Total Potential New Floor Area
Vacant	3,292,437	55.3%
Commercial or industrial (expansion)	1,688,597	28.3%
Agriculture	471,911	7.9%
Residential	206,669	5.0%
Religious and charitable organizations	297,781	3.5%
Total potential additional floor area	5,957,395	100.0%
Less: Converted to residential use	- 24,636	
Net Commercial and Industrial Floor Area Increase at Buildout	5,932,759	

No direct data on commercial and industrial growth rates were available. However, it is possible to estimate growth rates based on employment growth. Between 1991 and 1998, employment in Newburyport businesses covered by State unemployment insurance laws increased at a rate of 3.8 percent per year. It is likely that in the coming decades the economy will not maintain the high levels of growth that have been experienced during the current expansion. Let us assume that the rate of employment growth in Newburyport will be 2.0 percent annually,⁵ and that this growth will parallel the growth of the City's commercial and industrial facilities. Based on these assumptions, it is reasonable to estimate that commercial and industrial floor area will grow at a rate of around 100,000 square feet per year.

EOEA/MVPC Buildout Analysis

The Merrimack Valley Planning Commission (MVPC) conducted a separate buildout analysis using a methodology developed by the Massachusetts Executive Office of Environmental Affairs (EOEA). As noted earlier, this buildout analysis was able to incorporate environmental constraints data and therefore results in buildout estimates that are lower than the analysis prepared based solely on assessors parcel data.

To carry out the buildout analysis, digital and hard copy data were collected and digital zoning data were updated. Existing digital data were gathered from a variety of sources including MassGIS, the

⁵ The Merrimack Valley Planning Commission has projected that employment in its 15-community region will increase by 13.45 percent between 1999 and 2010. This represents a 1.15% annual growth rate. It is reasonable to expect that Newburyport, with its available land for development and its excellent highway access, will exceed the region's average growth rate.

City, the Massachusetts Highway Department and federal sources. Zoning, open space, land use, hydrography, environmentally sensitive areas, wetlands, Rivers Protection Act buffers, flood zones, slope, soil orthophotography, rail lines, road networks, and political boundaries were used to varying degrees in the analysis. Additional layers were created that included miscellaneous features determined to be undevelopable, an update of the most recent MacConnell Land Use, and subdivisions that were approved or built since 1990.

The GIS analysis consisted of subtracting layers from each zoning district. The remaining developable land area was then aggregated by zoning category.

To determine the number of future buildable residential lots by zoning district, a formula was developed to ascertain the land requirements of a typical lot in each district. The land requirements include minimum lot size, estimated road area (required frontage multiplied by half the right-of-way), and an additional 10% to cover miscellaneous variables such as odd lot shapes. Environmental limitations, such as the Rivers Protection Act Buffer, were also taken into account.

Commercial and industrial buildable lots were determined using an “effective” floor area ratio. For each commercial and industrial zoning district, the major alternative land uses were examined in relation to height limitations, maximum allowable percent lot coverage and parking requirements. An effective floor area ratio (FAR) for all use categories (e.g. offices, warehouses) in a particular district was developed for analysis purposes. The effective FAR for vacant space within the entire district was estimated by averaging the FARs for the various potential land use types. Limits placed on the total square footage of a building because of required parking spaces and open space requirements were also taken into account.

Finally, a redevelopment analysis was conducted to examine the potential for redevelopment of a selected portion of the community’s downtown. Under this methodology, the total potential floor area for the entire district was calculated, rather than vacant space as prescribed by the standard methodology.

Table 29 presents a summary of the EOEA/MVPC buildout analysis findings. The analysis estimates that at buildout the City will have 7,993 households and 18,800 residents, and 3.3 million square feet of additional commercial and industrial floor area.

Table 29: Summary Buildout Statistics

Buildout Estimates	
Additional residential developable land area	691 acres
Additional dwelling units	866 units
Additional commercial/industrial buildable floor area	3,307,778 sq. ft.
Buildout Impacts	
Additional residents	2,095
Additional school children	309
Additional water demand	405,190 gallons/day
Residential water use	157,106 gallons/day
Commercial/industrial water use	248,084 gallons/day
Additional municipal solid waste	1,075 tons/year
Recyclable solid waste	310 tons/year
Non-recycled solid waste	764 tons/year
New roads	9.47 miles

Table 30 presents the basic estimates from the EOE/MVPC buildout analysis compared to the estimates produced by the analysis conducted for this Master Plan. There are significant discrepancies between the results, which can be attributed to several factors:

- ◆ As noted earlier, the Master Plan buildout analysis included infill and conversion of units, as well as new construction on vacant land. Of the 2,342 total additional units estimated in the buildout analysis, estimated development on vacant land represented only 782 units, while a more intensive use of already developed land or buildings accounted for the remaining 1,560 units. In contrast, the EOE/MVPC analysis estimates only 313 additional dwelling units in the “redevelopment area.” The actual residential buildout will probably be somewhere between these two estimates: that is, there will be some conversion of existing buildings, and some further subdivision of already developed lots, but not to the full extent permitted by zoning.
- ◆ The large differences between the two nonresidential (commercial/industrial) buildout estimates is very likely due primarily to the presence of environmental constraints (primarily wetlands) in the industrial park area. The Industrial 1 and 1B districts account for more than 86 percent of the 5.93 million square feet of growth potential estimated in the Master Plan buildout, and for 92 percent of the 3.31 million square feet estimated in the EOE/MVPC analysis. Excluding the industrial park area, the Master Plan analysis estimates an increase of 816,000 square feet and the EOE/MVPC analysis estimates an increase of 281,000 square feet.

Table 30: Comparison of Buildout Estimates

	EOEA/MVPC	Master Plan
Housing growth	866	2,342
Housing units at buildout	8,942 *	9,968
Population growth	2,095	5,200
Population at buildout	18,800	21,900
Commercial/industrial floor area increase	3.31 million sq. ft.	5.93 million sq. ft.
Commercial/industrial floor area at buildout	8.57 million sq. ft.*	11.20 million sq. ft.

* These estimates are not in the EOEA data files, and are computed based on existing development levels.

HOUSING

Existing Housing Conditions and Trends

Number of Housing Units

The 1990 U.S. Census reported that Newburyport had 7,400 housing units, an increase of 917 (14%) from the 1980 stock of 6,483 units. During the 1990s, building permits were issued for 543 dwelling units. During the same decade, an unknown number of dwelling units were demolished or converted to nonresidential use. Therefore, the current housing stock is believed to be in the range of 7,900 to 7,950 units.

The analysis of current housing conditions and trends relies in large part on the detailed database maintained by the City Assessors department. As noted earlier, this database classifies properties according to structure type, but it is not always clear how many dwelling units are in the structure. An estimate of 7,626 dwelling units in the database was developed using a set of assumptions about the ambiguous categories. This figure is lower than the figure derived from building permit data by between 3.5 and 4.1 percent; but it allows for an analysis of the data by structure type and planning area.

Rate of Housing Development

Over the past two decades, the number of dwelling units in the City has been growing at about 50 units per year, or approximately 7% per decade. Growth during the 1990s has been slightly slower, at about 5% per decade.

Table 31: Residential Growth Rates

	Last 20 Years (1980-1999)	Last 10 Years (1990-1999)
Average (mean)	52.1	45.6
Median	50.5	48.0
Minimum	17	17
Maximum	100	62

Newburyport's population has been growing more slowly than its housing stock. The estimated 1990–2000 growth is about 340 residents, or approximately 2% for the decade. This difference reflects the overall decline in household size that the City shares with the rest of the state and nation.

During the initial community meetings for the Master Plan there has been limited discussion of the residential growth rate as an issue for the City to address. However, a review of the City's recent history indicates that the form and character of new residential development, as well as the ultimate buildout, are more important issues than the growth rate. Measures to control the rate of housing development include annual caps on the number of building permits that can be issued. Such measures may only be imposed for a limited time period (for example, 5 years), during which the City must be developing programs to accommodate normal (market-driven) growth rates. In order to have

impacted the total amount of residential development during the 1990s, Newburyport would have had to have imposed an annual building cap of no more than 45 dwelling units per year.

Housing Structure Types

Newburyport has a diverse housing stock (see Table 32). Just over half of the dwelling units in the City are single-family dwellings; two-family and three-family structures provide 17 percent of the housing stock; and multifamily structures (apartments and condominiums) represent about 30% of all units.

Table 32: Residential Structure Types, 2000

Type of Structure	Parcels	Estimated Dwelling Units	Percent of Total Units
Single Family	4,074	4,074	53.4%
Condominium	1,371	1,371	18.0
Two Family	507	1,014	13.3
Three Family	91	273	3.6
Multiple Housing on One Parcel	30	60	0.8
Aparts-4-8 units	121	726	9.5
Apts-8 plus	9	108	1.4
Rooming & Boarding House	4	-	-
TOTAL	6,207	7,626	100.0%

Source: Newburyport Assessors database, 1/1/00 (parcel data)

According to the 1990 U.S. Census, there were 3,640 single-family detached units in Newburyport. Thus, these units represented approximately 434 of the estimated 500 to 550 new dwelling units constructed during the past decade, or roughly 79 to 87 percent of the decade's residential growth. This suggests that the new residential development is resulting in changes to the makeup of the housing stock, with a higher proportion of single-family homes than in the past.

Table 33 breaks down the City's housing stock by structure type within each planning area.

Table 33: Housing Structure Types, by Planning Area

Planning Area	Single-Family	Condo-minium	Two-Family	Three-Family	Multiple Housing	Apts. 4-8 units	Apts. 8+ units	Estimated Units
Downtown	97	217	43	13	1	33	4	687
High Street	662	374	64	16	9	10	2	1,314
Industrial Park	182	-	2	-	-	-	-	186
North End	1,244	506	184	29	5	33	1	2,425
Plum Island	428	18	31	-	10	1	-	534
South End	728	256	180	33	4	44	2	1,739
West End	733	-	3	-	1	-	-	741
Total Structures	4,074	1,371	507	91	30	121	9	
Estimated Dwelling Units	4,074	1,371	1,014	273	60	726	108	7,626

Source: Newburyport Assessors database, 1/1/00.

Housing Tenure

Newburyport has traditionally had a good mix of housing ownership and rental opportunities. In 1960, 63 percent of the occupied housing units were owner-occupied, and 37 percent were renter-occupied. Since then, many new multifamily as well as single-family dwellings have been constructed. However, a significant proportion of the new multifamily housing has been designed as condominium units rather than as rental apartments; and conversions of older residential structures also include a significant number of condominiums. As a result, by 1990 the proportion of owner-occupied unit had increased to 70 percent, while rental units made up only 30 percent of the City's housing stock. This means that over that 40-year period, the stock of rental housing in the City decreased by approximately 300 units.

Household Size

Over the past several decades Newburyport has participated in the nationwide trend toward smaller family and household sizes, as shown in Table 34. The average number of persons per household dropped from 2.63 in 1980 to 2.37 in 1990, and is estimated to be 2.30 in 2000.

Newburyport also has a smaller average household size than the averages for the region and the State. The average household size in the Merrimack Valley Planning Commission's region was 2.82 in 1980 and 2.71 in 1990. The State's average household size was 3.11 persons in 1970, 2.72 in 1980, and 2.58 in 1990.

Table 34: Changes in Household and Family Size

	1970	1980	1990	2000	2005
Households		5,892	6,754	7,353	7,723
Persons Per Household					
• Newburyport		2.63	2.37	2.30	
• Merrimack Valley		2.82	2.71		
• Massachusetts	3.11	2.72	2.58		
Families			4,173	4,340	4,447
Average Family Size			3.03	2.99	

Sources: 1980–1990, U.S. Census; 2000–2005, CACI Demographics, Inc.

As illustrated in Table 35, average household sizes are larger for owner-occupied dwelling units than for renter-occupied units, and tend to decrease as the number of dwelling units in the structure increases. For example, the average household living in a single-family home in Newburyport was 17 percent larger than the average for all households in the City, while the average household in a three- or four-family dwelling was 19 percent smaller.

Table 35: Occupied Housing Units and Household Size by Structure Type, 1990

Units in Structure	Occupied Housing Units			Persons in Housing Units			Average Household Size (Persons Per Occupied Housing Unit)		
	Owner occupied	Renter occupied	Total	Owner occupied	Renter occupied	Total	Owner occupied	Renter occupied	Total
1, detached	3,088	255	3,343	8,664	636	9,300	2.81	2.49	2.78
1, attached	472	141	613	1,117	362	1,479	2.37	2.57	2.41
2	331	521	852	770	1,190	1,960	2.33	2.28	2.30
3 or 4	116	587	703	255	1,095	1,350	2.20	1.87	1.92
5 to 9	104	460	564	167	699	866	1.61	1.52	1.54
10 to 19	29	93	122	44	138	182	1.52	1.48	1.49
20 to 49	8	179	187	13	336	349	1.62	1.88	1.87
50 or more	1	268	269	1	310	311	1.00	1.16	1.16
Mobile home or trailer	2	1	3	3	1	4	1.50	1.00	1.33
Other	48	50	98	109	88	197	2.27	1.76	2.01
Total	4,199	2,555	6,754	11,143	4,855	15,998	2.65	1.90	2.37

Source: U.S. Bureau of the Census

These differences in household sizes have impacts on the demands that new housing make on City facilities and services, particularly with respect to schools.

Housing Density

The sizes of new homes in Newburyport, as elsewhere in eastern Massachusetts, are increasing. This is particularly noticeable in areas zoned for traditional lot sizes of less than one acre, and is less an issue where large-lot zoning applies.

Table 36: Size and Density of Single-Family Dwellings, by Planning Area

Planning Area	Average Floor Area of Single-Family Homes	Average Floor Area Ratio
Downtown	3,557	1.00
South End	3,192	0.43
Plum Island	1,977	0.34
North End	3,215	0.30
High Street	3,245	0.23
West End	3,502	0.16
Industrial Park	3,762	0.16
City of Newburyport	3,187	0.25

Some Massachusetts communities are beginning to address the issue of “mansionization” through regulations that limit the amount of floor area as a percentage of lot area. However, Newburyport has large homes both in the downtown (where structures historically have been large in proportion to lot area) and in newer, more outlying areas.

Housing Values and Costs

Housing costs are very high in Newburyport because of the City’s amenities and historic character combined with its convenient location on the regional highway and commuter rail systems.

Table 37: Average FY 2000 Assessed Residential Valuations, by Structure Type and Planning Area

Planning Area	Single-Family	Condominium	Two Family
Plum Island	\$133,492	\$126,528	\$184,645
South End	\$188,351	\$125,836	\$189,794
Downtown	\$191,778	\$121,306	\$195,867
North End	\$179,924	\$147,444	\$193,782
West End	\$207,750	–	\$265,267
High Street	\$178,336	\$79,030	\$212,014
Industrial Park	\$212,366	–	\$154,950
City of Newburyport	\$183,729	\$120,335	\$194,556

Source: Newburyport Assessors database

Table 38: FY 2000 Assessed Single-Family Valuations, by Planning Area

Planning Area	\$80K or less	\$81K to \$100K	\$100K to \$125K	\$125K to \$150K	\$150K to \$175K	\$175K to \$200K	\$200K to \$250K	\$250K to \$300K	More than \$300K	Total
Plum Island	14	62	116	86	35	23	28	5	2	371
South End	1	2	54	191	156	97	117	54	43	715
Downtown	-	1	16	19	17	14	15	6	9	97
North End	1	7	78	357	313	201	140	60	71	1,228
West End	-	-	1	149	175	99	115	135	58	732
High Street	2	1	26	205	193	98	83	22	32	662
Industrial Park	-	-	1	13	26	24	89	28	1	182
City	18	73	292	1,020	915	556	587	310	216	3,987

Source: Newburyport Assessors database (Class 1010)

Table 39: Number and Value of Condominium Units, by Planning Area, FY 2000

Planning Area	Condominium Units	Average Assessed Value
North End	506	\$ 147,444
Plum Island	18	\$ 126,528
South End	256	\$ 125,836
Downtown	217	\$ 121,306
High Street	374	\$ 79,030
West End	-	-
Industrial Park	-	-
City of Newburyport	1,371	\$ 120,335

Source: Newburyport Assessors database (Class 1021)

Table 40: FY 2000 Assessed Condominium Valuations, by Planning Area

Planning Area	\$80K or less	\$81K to \$100K	\$100K to \$125K	\$125K to \$150K	\$150K to \$175K	\$175K to \$200K	\$200K to \$250K	\$250K to \$300K	More than \$300K	Total
Plum Island	2	1	6	2	7	-	-	-	-	18
South End	53	31	56	57	28	7	11	9	4	256
Downtown	35	30	61	34	33	18	6	-	-	217
North End	40	50	106	87	117	35	42	24	5	506
West End	-	-	-	-	-	-	-	-	-	-
High Street	264	10	10	20	16	30	13	8	3	374
Industrial Park	-	-	-	-	-	-	-	-	-	-
City	394	122	239	200	201	90	72	41	12	1,371

Source: Newburyport Assessors database (Class 1021)

Table 41: FY 2000 Assessed Two-Family Valuations, by Planning Area

Planning Area	\$80K or less	\$81K to \$100K	\$100K to \$125K	\$125K to \$150K	\$150K to \$175K	\$175K to \$200K	\$200K to \$250K	\$250K to \$300K	More than \$300K	Total
Plum Island	-	-	5	2	9	4	8	1	2	31
South End	-	-	2	25	49	56	31	12	5	180
Downtown	-	-	1	7	9	8	13	4	1	43
North End	-	-	3	24	56	50	31	8	12	184
West End	-	-	-	-	-	-	2	-	1	3
High Street	-	-	1	5	17	16	12	7	6	64
Industrial Park	-	-	-	1	1	-	-	-	-	2
City	-	-	12	64	141	134	97	32	27	507

Source: Newburyport Assessors database (Class 1040)

The average sales price of single-family homes in Newburyport was about \$240,000 in February 2000 and was estimated in October 2000 to be about \$275,000. This latter figure is approximately 1.5 times the average Fiscal Year 2000 assessed valuation for single-family homes in the City. Applying this ratio to the average assessed values within each planning area results in the estimated average sales prices for each area presented in Table 42.

Table 42: Estimated 2000 Average Sales Prices for Single-Family Homes, by Planning Area

Planning Area	Single-Family Homes	Average Assessed Value	Estimated Average Sales Price
Plum Island	371	\$ 133,492	\$ 199,807
South End	715	\$ 188,351	\$ 281,918
Downtown	97	\$ 191,778	\$ 287,047
North End	1,228	\$ 179,924	\$ 269,305
West End	732	\$ 207,750	\$ 310,954
High Street	662	\$ 178,336	\$ 266,928
Industrial Park	182	\$ 212,366	\$ 317,863
City of Newburyport	3,987	\$ 183,729	\$ 275,000

Applying the estimated sales-price/assessed-value ratio to the figures in Table 38 also indicates that there are almost no single-family homes in the City that, if on the market, would sell for less than \$150,000 (91 single-family homes assessed at less than \$100,000), and only 383 homes that might sell for under \$187,500 (assessed value less than \$125,000).

Housing Affordability

The 1996 average sales price of \$130,000 was 4.91 times the average wage paid by Newburyport businesses in the previous year (\$26,476). The 1999 average sales price of \$210,000 was 6.98 times the 1998 average wage of \$30,078. During that three-year period, housing prices increased more than four times as fast as wages.

Rental costs have also risen significantly during the 1990s. The 1990 median rent was \$506. By 1996 the median rent had risen to \$615 for a 1-bedroom apartment and \$800 for a 2-bedroom apartment. The estimated median rent in January 2000 was \$1,550. Thus, during a period in which average wages paid by Newburyport businesses increased by approximately 50%, rents increased by more than 200%.

What is “affordable” housing? A common state and federal guideline is that a household should spend no more than 30 percent of its total income for housing, including utilities. Assume that in a family with children one parent works full-time and the other works half-time. At the average Newburyport wage of \$30,078, the household income would be \$45,117 (1.5 x \$30,078). Using the 30% guideline, this household could reasonably afford a rent of \$1,200 (including utilities). However, the average two-bedroom rent in Newburyport (tracked over the summer of 2000 through advertising) was \$1,180—not including utilities, which are conservatively estimated at \$150 per month. Therefore, the average two-bedroom apartment in Newburyport has a total cost that is 38 percent of this family’s income—well above the “affordable” limit.

The ability for this family to purchase a condominium or house is even more limited. This household could afford to buy a home which costs approximately \$145,000 (with 10% down, 8% interest rate, and paying \$250/month in taxes and insurance). In Newburyport the average sale price of condominium units in 2000 (through August) was \$204,000. Assuming the same 10% down and 8% interest, \$250 taxes and insurance, a household income of \$53,888 would be required to purchase this average-cost condominium unit. During the first eight months of 2000 only 16 homes in Newburyport, all condominiums, sold for under \$150,000 (8% of total sales). No single-family homes

sold for this amount. The average sale price for single family homes through August of this year was \$270,000, requiring an annual household income of \$71,322.

This discrepancy between household incomes and housing costs is often referred to as the “affordability gap” and is measured as the difference between the average sales or rental price for a home and the price that the average household can afford to pay. Newburyport’s “affordability gap” is thus \$125,000 for single-family homes, \$59,000 for condominium units, and \$130 per month for two-bedroom apartments.

Affordable Housing Needs for Lower-Income Residents

In February 1996 the NHA prepared an *Affordable Housing Needs Assessment* to identify the need for certain target populations in the City. These target populations include low- and moderate-income elderly, disabled and families. The study focuses on both rental and homeownership opportunities.

The definition of “low-income” and “moderate-income” households is based on percentages of the area’s median household income, adjusted for family size: “low income” includes those with incomes below 50 percent of the area median, and “moderate income” refers to those with incomes between 50 percent and 80 percent of the median. Table 43 presents the 1996 cut-off points for these and other categories, and the number of Newburyport households in each category, as listed in the NHA’s *Needs Assessment*.

Table 43: Income Limits for Housing Programs in Newburyport, 1996

Category	Relative to Area Median Income	Disabled Under 62		Non-Elderly Families	
		1996 Cutoff	Number of Households	1996 Cutoff	Number of Households
Upper Income	More than 120%	\$61,650	4	\$76,275	2,270
Moderate Income	Less than 80%	\$41,100	114	\$50,850	1,872
Low Income	Less than 50%	\$28,150	113	\$33,300	411
Very Low Income	Less than 35%	\$18,600	226	\$22,600	138

Source: Newburyport Housing Authority, *Affordable Housing Needs Assessment*, February 1996.

Table 44 presents the “affordable” (that is, subsidized) housing resources existing in the City in 1996. These 503 units represent approximately 6.4 percent of the estimated 7,900 dwelling units in the City. Consistent with an emphasis on elderly housing, more than three-quarters of the subsidized housing stock is in studio or one-bedroom apartments.

Table 44: Subsidized Housing Units, 1996

	0BR	1BR	2BR	3BR	4BR	Total	Disabled
James Steam Mill		92	7			99	20
Heritage House		80	20			100	5
Sullivan Building		100				100	13
Horton Terrace		50				50	2
Kelleher Park			24	18		42	2
Milk Street	8					8	8
93 Storey Avenue	8					8	8
Simmons Drive	8					8	8
Section 8		34	41	11	2	84	21
MRVP		3	1			4	3
TOTAL	24	355	93	29	2	503	90

Source: Newburyport Housing Authority, *Affordable Housing Needs Assessment*, February 1996.

As a partial update to these data, the current levels of housing voucher activity in the City are as follows:

Moderate Rehabilitation Voucher Program (MRVP)	3
Section 8 Local Housing Authority Administered	81
Section 8 – State Administered	7
Section 8 Moderate Rehabilitation	0
Total	91

The Commonwealth of Massachusetts has established as a goal that each community provide low- and moderate-income equal to at least ten percent of its total year-round housing stock.⁶ For Newburyport, this would represent a goal of approximately 790 affordable housing units in the year 2000, increasing by another 96 units over the next two decades:

Total housing units in City	7,900 (estimated)
	<u>x 10%</u>
10 percent affordable housing goal	= 790

Units which may be counted toward the State’s 10 percent goal are those which are funded through long-term subsidies under federal or state housing assistance programs, but do not include those for which the subsidy is of a short-term nature or is given directly to the tenant rather than being attached to the dwelling unit. As of January 2001, the unofficial estimate of units with long-term subsidies had

⁶ Under M.G.L. Chapter 40B, this 10 percent standard is used to determine whether a community is adequately addressing regional housing needs. Where this standard is not met, the Zoning Board of Appeals may grant a “comprehensive permit” for certain types of affordable housing developments, overriding most local land use regulations; therefore, it is important to have precise definitions of what is counted. However, such legal precision is unnecessary for the discussion in this Master Plan, which is based on unofficial estimates.

increased to 576, or 7.3 percent of the City’s estimated total number of year-round housing units in 2000. Thus, the City currently falls approximately 214 units short of the 10 percent goal.⁷

The Housing Authority’s *Needs Assessment* estimated the City’s affordable housing needs from a different perspective. The study looked at the percentage of households in Newburyport that were low-income, and applied that percentage to the total number of rental units in the City. According to this analysis, the low-income housing goal would be 790 units, as follows:

Number of low-income households in City	2,090
Total number of households in City	<u>÷ 6,754</u>
Percentage of total population	= 30.94%
Total rental units in City	<u>x 2,553</u>
Affordable units needed to house low-income	790

It is interesting to note that the goal of 790 affordable housing units based on 10 percent of the City’s total housing stock is also arrived at by multiplying the total number of rental units in the City by the percentage of Newburyport households that are low-income. Thus, this goal is not simply a State standard but also has some justification based on Newburyport’s existing demographics.

If the goal of 10 percent of the City’s housing stock (i.e., 790 units based on the 2000 housing stock; 886 units based on the projected 2020 housing stock) is to be met within the 20-year planning period for this Master Plan, the City will need to create or accommodate an additional 471 affordable housing units, or an average of 23 to 24 per year. In other words, in order for the goal to be met by the year 2020, creation or acquisition of affordable housing units will need to represent about one-half of Newburyport’s estimated annual housing growth. Clearly, this would require a significant investment of public funds, as well as a major shift in the pattern of housing development in the City.

Potential Strategies for Addressing Needs

The Housing Authority’s *Needs Assessment* listed several possible strategies for addressing the needs identified in the analysis, as presented in Table 45. Taken together, the housing acquisition and development strategies identified by the NHA would fulfill the City’s affordable housing needs for two years, based on a goal of 23 to 24 units per year.

⁷ Officially, the affordable housing percentage is based on the number of year-round dwelling units as of the most recent U.S. Census: by this measure (i.e., comparing affordable housing units as of 2000 to total year-round units as of 1990), Newburyport is at 8.02 percent. However, it is more useful to use the estimated current total housing stock as a base. Updated figures from the 2000 U.S. Census will start becoming available in the spring of 2001.

Table 45: Possible Strategies for Addressing Lower-Income Housing Needs

Strategy	Number of Units	Target Population
Development of the former DPW site (The Foundry)	20–24	Elderly
Short-term (two-year maximum) tenant-based rental assistance program	?	<ul style="list-style-type: none">• Elderly• Non-Elderly Disabled• Families leaving welfare
Acquisition of existing 1-bedroom multifamily or condominium units for rental	6	Non-Elderly Disabled
State-aided alternative housing program (vouchers)	?	Non-Elderly Disabled
Single-Room Occupancy (SRO) Transitional Housing	?	Non-Elderly Disabled
Housing for persons with AIDS	?	Non-Elderly Disabled
Acquisition of existing 2-, 3- and 4-bedroom multifamily or condominium units for rental	2–14	Families
Development of Hill Street property (Fulton’s Pit) for rental or first-time homebuyer units	10–12	Families
First-time homebuyer program	?	Families
Total units (excluding vouchers and tenant-based rental assistance)	32–50	

Source: Newburyport Housing Authority, *Affordable Housing Needs Assessment*, February 1996.

Housing Assistance Resources

Table 46 lists a number of state and state-administered federal housing assistance programs that are available for projects within the City. Some of these programs provide funding directly to the City for eligible projects, while other require the participation of non-profit or for-profit developers.

Table 46: Housing Assistance Programs

Program Name	Type	Purpose
HOME Initiative	Federal grant	Production of affordable housing units for rent or purchase by low or moderate income households
Local Initiative Program	Technical assistance	Stimulating affordable housing production by allowing local governments to work in partnership with project sponsors
Soft Second Loan Program	State loan	Provides subsidized second mortgage to low and moderate income first-time homebuyers, reducing down payment and interest costs and avoiding the need for private mortgage insurance
Mass. CDBG Housing Development Support Program	Federal grant	Assistance to smaller project-specific affordable housing initiatives
Low Income Housing Tax Credits	Federal tax credits	Construction or acquisition and substantial rehabilitation of low-income family housing, as well as special needs housing and low-income housing preservation
Housing Innovations Fund	State loan	Financing of innovative housing needs such as single room occupancy housing, limited equity cooperatives, and special needs housing
Family Low Income Housing (Chapter 705)	State grant	Provision of housing for low-income families, integrated into existing neighborhood settings
Elderly/Handicapped Low Income Housing (Chapter 667)	State grant	Provision of housing for qualified low-income elderly and handicapped persons
Neighborhood Stabilization Fund	State loan	Support for comprehensive neighborhood redevelopment; preservation and rehabilitation of affordable housing; and creation of affordable homeownership opportunities
McKinney Section 8 Moderate Rehab Single Room Occupancy	Federal rental assistance and services	Provision of rental assistance and services to low-income households
McKinney Shelter + Care	Federal rental assistance and services	Provision of rental assistance and services to low-income homeless individuals and families with disabilities

Source: Department of Housing and Community Development, *DHCD Program Book*, 1998 Edition.

ECONOMIC DEVELOPMENT

Regional Economic Development Context

In 1998 the Merrimack Valley Planning Commission prepared a *Merrimack Valley Comprehensive Economic Development (CED) Strategy*, which was approved by the Economic Development Administration (EDA) of the U.S. Department of Commerce in February 1999. The report was edited to incorporate new federal guidelines and issued in March 1999.

The *CED Strategy* “establishes the economic development, transportation, environmental and community planning direction for the Merrimack Valley Planning Commission (MVPC) Economic Development District,” which consists of the following 15 communities:

Amesbury	Haverhill	Newburyport
Andover	Lawrence	North Andover
Boxford	Merrimac	Rowley
Georgetown	Methuen	Salisbury
Groveland	Newbury	West Newbury

The following overview is excerpted from the CED Strategy’s Executive Summary:

The region’s population grew 10.5% during 1980-1990, more than double the rate of the previous decade, and every community but two exceeded the state’s growth rate of 4.9%. There was a net growth of 13,131 housing units in the decade, but the growth was uneven; there was a sharp increase in housing activity during 1982-1987, and economic boom period for the region and state, and an even sharper decline since 1987 when the recession took hold. The recession depressed the housing market, which began to rebound in 1992. ...

The region’s labor force peaked at 150,423 in 1996, but not before some fluctuation during the late 1980’s and early-to-mid 1990’s. In 1985 the labor force reached 148,500, but that figure soon declined in response to the recession of 1989-1991. The labor force in 1991 was 135,515, a decrease of 9% since 1985. Between 1991 and 1995, the size of the labor force in the region grew by 11%, whereas the state only grew by 2%. Comparison of 1980 and 1990 Census figures show that the labor force has increased 16% overall, compared to a 13% increase in the state’s labor force. The labor force participation rate has increased from 46% to 48%. The disparity between region and state in terms of white-collar workers, more than 5 percentage points in 1980, has narrowed to 1-1/2 points. Blue collar workers have decreased from 35% to 24%, but this remains higher than the state average of 21%. ...

Manufacturing decreased from 37% to 26% of total employment for the region’s residents between 1980 and 1990, and is no longer the major employer of *our residents*; the service sector has increased its share from 26% to 32%, compared to 36% for the state. However, manufacturing still accounts for the largest number of jobs provided *within* the region, 10,355 more jobs than the service sector in 1990. Manufacturing accounted for 32% of all jobs *in the region*, compared to a state average of 18%. The region’s service sector added 10,600 jobs between 1980 and 1990, increasing its share of employment from 16% to 23%, compared to a state average of 29%. But unemployment jumped 1.2 percentage points from 1988 to 1989, and another 2.3 points 1989-1990 to 7½%, compared to 6% for the state. In 1991 it jumped 3 points to 10½%, and 7 communities exceeded the state’s 9%. This slide in employment bottomed out. The unemployment rate fell to 9.2 the following year, and the decline continued through to September 1998 to a low of 5.3 percent. The state’s unemployment in September 1998 was 3.3 percent.

The region's major economic problems are:

- ◆ difficulties in assimilating recently arrived minorities into high-skilled growth industries;
- ◆ unsuitability of existing manufacturing/commercial structures in CBDs, especially old mill space and storefronts, to current needs;
- ◆ stabilization of the declining non-high tech manufacturing base;
- ◆ continued need for public investment in aging infrastructure;
- ◆ uneven patterns of growth and development;
- ◆ short supply of affordable housing;
- ◆ competitive disadvantage of Massachusetts border communities in attracting new business and industry vis-à-vis New Hampshire.

The region's major economic development assets are considered to be the Merrimack River, the region's greatest natural resource, and its human resources, hard-working, skillful and loyal workers. The region's location northwest of metropolitan Boston is equidistant from two major airports, and its surface transportation network are two other assets that need to be publicized and marketed. The region also has ample available modern industrial park sites with water, sewer and highway access and old mill buildings that could provide cheap incubator space for emerging industries. Liabilities include the perceived high costs of conducting business in Massachusetts, the state sales tax relative to New Hampshire, limited regional marketing and promotion of the region's assets, some limitations on water and sewage capacities in smaller communities, a lack of affordable housing and a need for job-training programs to increase minority employment.

...

The three regional economic development goals are:

- I. develop a strong, diversified and sustained regional economy;
- II. achieve a balance between development and protection of the environment; and
- III. develop improved transportation and communication systems.

The first goal encourages diversification of the local economy, and support increased employment opportunities for minorities and the disadvantaged, and the development of work training programs to upgrade regional labor force skills.

The second goal promotes economic development that is consistent with human scale design, environmental protection, sound land use and wise use of natural resources. It also encourages planning and regulation for commercial development so that industrial sites are available when needed and existing structures are rehabilitated to help promote energy conservation, preserve productive agricultural lands and cultural and recreational areas, and encourage a high standard for cost-effective environmental quality for air, water and land resources.

The third goal encourages development and maintenance of modern transportation systems and intermodal transfer structures for the movement of people, goods and services, and the development of appropriate communication systems including the Internet. It seeks further development and use of the Merrimack River and airports, and public and private cooperation in the development and expanded use of communication systems and tools to help the region's increasing technology based economy grow.⁸

⁸ Merrimack Valley Planning Commission, *Merrimack Valley Comprehensive Economic Development Strategy 1998*, March 1999; pages v-vi.

The *CED Strategy* includes an overview of critical industries in the Lower Merrimack Valley, based on a 1996 survey conducted by the Lower Merrimack Valley Regional Employment Board. Table 47 lists ten industry groups that were identified as “critically important to the Valley’s growing economy.” In this table “Key Existing Industries” refers to “those that account for the majority of jobs in the region at present;” while “Key Emerging Industries” are “those currently experiencing or are expected to experience significant growth.”

Table 47: Key Existing and Emerging Industries in the Merrimack Valley

Key Existing Industries	Key Emerging Industries
◆ Telecommunications	◆ Biotechnical
◆ Machine tooling/Metal Fabrication	◆ Telecommunications and Allied Industries
◆ Textiles/Clothing	◆ Environmental Services and Waste Disposal
◆ High-Tech/Electronics/Defense	◆ Plastics/Ceramics
◆ Health Services	◆ Hospitality/Travel and Tourism

Source: MVPC, *Comprehensive Economic Development Strategy*, page 22.

The *CED Strategy* lists objectives, strategies and accomplishments under each of the three economic development goals. It also lists “projects which are needed in the MVPC region to support future economic and community growth. These are divided into (1) priority projects which the Commission will assist, to the extent possible, in securing funding, assisting with administration, and in other ways, and (2) related projects. Two of the 14 priority projects are located in Newburyport, identified as “Hale Street/I-95 Road Improvements” and “Newburyport Area Industrial Development Corp. RLF” [i.e., Revolving Loan Fund]. The related projects category includes the [Lord Timothy Dexter] Industrial Green Industrial Park Access Road Improvements, High Street Industrial Improvements, and Hale Street/I-95 Road Improvements (it is not clear whether this is a separate project from the priority project with the same name).⁹

Regional Economic Forecast

The Merrimack Valley Planning Commission produces economic forecasts using an econometric model developed specifically for the Valley region. These analyses provide additional detail on the region’s economic performance during the 1990s as well as projections for the next decade.

Table 48 presents actual employment by occupation in the region by occupational category for the years 1988 and 1999, and projected change to the year 2010. Administrative support personnel is and will continue to be the largest occupational category, representing approximately 30 percent of the workforce. However, the fastest growing occupations have been professional specialty¹⁰ and service

⁹ *Merrimack Valley Comprehensive Economic Development Strategy*, pages 52-56.

¹⁰ The “professional specialty” category is extremely broad and includes architects, engineers, computer scientists, natural scientists (e.g., chemists and biologists), physicians, dentists, nurses, pharmacists, dieticians, therapists, teachers, counselors, librarians, social scientists, urban planners, social workers, recreation workers, clergy, lawyers, judges, writers, artists, entertainers and professional athletes (among others).

workers¹¹, and these two groups, along with executive/administrative/ managerial and marketing/sales personnel, will be the major sources of new jobs in the region in the coming decade.

Table 48: Employment by Occupation, Merrimack Valley

Occupation	Employment (1,000's)			Percent Change	
	1988	1999	2010	1988-1999	1999-2010
Administrative support, including clerical	29.21	29.08	31.44	-0.45%	8.14%
Professional specialty	19.95	24.64	30.90	23.52%	25.38%
Service	21.39	23.97	27.85	12.06%	16.17%
Executive, administrative & managerial	14.39	15.08	17.40	4.79%	15.35%
Marketing and sales	13.44	13.92	16.02	3.62%	15.08%
Machine setters/operators/tenders	9.22	7.46	7.45	-19.10%	-0.19%
Helpers, laborers & material movers hand	6.39	6.50	7.28	1.72%	11.99%
Technicians & related support	5.81	6.42	7.65	10.59%	19.19%
Mechanics, installers & rep	5.90	6.04	6.80	2.36%	12.55%
Transportation/material moving machine/vehicle operators	5.29	5.60	6.36	6.02%	13.58%
Hand workers, including assembly/fabrication	6.08	4.72	4.92	-22.37%	4.26%
Production, precision	6.14	4.72	4.74	-23.13%	0.53%
Construction trades	3.83	4.14	4.33	8.11%	4.46%
Agriculture, forestry, fishing & related	2.00	2.77	3.08	39.05%	11.10%
Blue collar worker supervisors	2.62	2.30	2.34	-12.23%	1.65%
Plant and system	0.28	0.27	0.29	-3.87%	4.76%
Extract & related workers, including blasters	0.12	0.16	0.18	26.83%	17.31%

Source: Merrimack Valley Planning Commission

Table 49 presents data on employment by industry for 1988 and 1999, with projections to 2010. During the 1990s manufacturing jobs declined by nearly 30 percent while non-manufacturing jobs increased by approximately 17 percent. Overall, regional employment in 1999 was only 2.3 percent above its 1988 level, having recovered from the losses of the 1989-91 recession. MVPC projects stronger economic performance in the coming decade than in the 1990s, with a total increase of more than 21,000 jobs, almost all of them in non-manufacturing industries. Service industries are expected to provide 16,000 jobs, or more than three-quarters of the net job growth for the decade.

¹¹ "Service" occupations includes private household help, police and fire personnel, food preparation and service workers (e.g., cooks, waiters, bartenders, etc.), cleaning and building service workers, and personal service occupations such as barbers, hairdressers, public transportation attendants, family child care providers, and day care workers.

Table 49: Employment by Industry, Merrimack Valley

Occupation	Employment (1,000's)			Percent Change	
	1988	1999	2010	1988-1999	1999-2010
Manufacturing	42.675	30.866	30.377	-27.67%	-1.58%
Durables	31.641	21.449	22.169	-32.21%	3.36%
Non-Durables	11.035	9.417	8.208	-14.66%	-12.84%
Non-Manufacturing	94.229	110.162	130.615	16.91%	18.57%
Mining	0.049	0.159	0.158	224.49%	-0.63%
Construction	8.698	8.639	8.871	-0.68%	2.69%
Transportation/Public Utilities	6.130	6.089	7.07	-0.67%	16.11%
Finance/Insurance/Real Estate	9.086	7.987	8.421	-12.10%	5.43%
Retail Trade	21.589	19.78	21.32	-8.38%	7.79%
Wholesale Trade	6.072	7.452	8.368	22.73%	12.29%
Services	41.614	58.059	74.074	39.52%	27.58%
Agriculture/Forestry/Fishing Services	0.991	1.996	2.334	101.41%	16.93%
Total Government	17.067	16.291	17.612	-4.55%	8.11%
State & Local	12.364	13.308	14.541	7.64%	9.27%
Federal Civilian	4.703	2.983	3.071	-36.57%	2.95%
Federal Military	0	0	0	0	0
Farm	0.274	0.476	0.415	73.72%	-12.82%
Total Employment	154.245	157.795	179.018	2.30%	13.45%
Population	283.474	307.343	330.293	8.42%	7.47%

Source: Merrimack Valley Planning Commission

There is often concern expressed about the replacement of higher-paying manufacturing jobs with lower-paying service jobs. As noted earlier with respect to the occupational categories listed in Table 48, “service” occupations include well-compensated professionals as well as those with more modest wages. Similarly, “service industries” include both high-paying as well as low-paying jobs.¹² Nationally, the average annual wages and salaries paid by industry in 1996 were as follows:

¹² A counter worker at a fast-food restaurant, which is the type of job frequently given as an example of low-paying “service” employment, is actually working in a business classified under “retail trade” rather than services.

Table 50: Annual Wages and Salaries by Industry, United States, 1996

Industry	Annual Wages and Salaries
Agriculture, forestry and fisheries	\$18,870
Mining	\$48,329
Construction	\$31,649
Manufacturing	\$37,165
Transportation	\$32,994
Communication	\$50,716
Electric, gas and sanitary services	\$50,433
Wholesale trade	\$39,256
Retail trade	\$18,821
Finance, insurance and real estate	\$44,629
Services	\$29,935
Government	\$35,300
All domestic industries	\$32,006

Source: U.S. Department of Commerce, *Statistical Abstract of the United States 1998*, page 434 (table no. 691).

Thus, while it is true that service industry wages and salaries are on average lower than manufacturing industry wages and salaries, they are close to the average for all domestic industries and are considerably higher than average wages in retail trade.

Table 51 presents a *location quotient* analysis for employment by industry in the Merrimack Valley planning region. A location quotient measures the relative concentration of employment in an industry in one area (in this case, the Merrimack Valley) compared to that industry's share of employment in a wider region (for example, the county, state or nation). A location quotient greater than one indicates that the industry has a higher share of employment in the study area than in the wider region generally, and may indicate that the region has a particular strength or specialization in that industry. Conversely, a location quotient less than one indicates that the industry provides fewer jobs in the study area than in the wider region.

The Merrimack Valley region has a higher share of its employment in manufacturing industries, and a lower share in non-manufacturing industries, than Essex County or the United States. In 1999 there were 66 percent more manufacturing jobs in the Valley than would be expected on the basis of national averages, and this concentration of jobs is projected to continue over the next decade.

Table 51: Employment Location Quotient Analysis for Merrimack Valley

	Merrimack Valley to Essex Co. Employment Concentrations			Merrimack Valley to USA Employment Concentrations		
	1988	1999	2010	1988	1999	2010
Manufacturing	1.27	1.21	1.34	1.87	1.66	1.67
Durables	1.31	1.27	1.54	2.36	1.96	2.10
Non-Durables	1.15	1.10	0.99	1.18	1.23	1.07
Non-Manufacturing	0.92	0.95	0.95	0.90	0.96	0.97
Mining	0.59	1.22	1.24	0.04	0.22	0.28
Construction	0.99	1.17	1.02	1.06	1.02	1.04
Transportation/Public Utilities	1.19	1.16	1.18	0.86	0.80	0.84
Finance/Insurance/Real Estate	0.95	0.95	0.92	0.74	0.67	0.64
Retail Trade	0.75	0.69	0.72	0.85	0.74	0.75
Wholesale Trade	0.94	1.09	1.28	0.82	1.03	1.07
Services	0.99	1.02	0.98	1.01	1.16	1.14
Agriculture/Forestry/Fishing Serv.	0.61	1.01	0.95	0.64	1.02	1.02
Total Government	0.97	0.99	0.97	0.73	0.75	0.72
State & Local	0.92	0.99	0.97	0.75	0.80	0.78
Federal Civilian	1.70	1.52	1.49	1.32	1.07	1.06
Federal Military	0.00	0.00	0.00	0.00	0.00	0.00
Farm	0.68	1.51	1.53	0.07	0.17	0.17
Total Employment	1.00	1.00	1.00	1.00	1.00	1.00

Source: Merrimack Valley Planning Commission

Finally, Table 52 presents the results of a shift-share analysis of projected growth by industry in the Merrimack Valley in relation to Essex County and the United States. Shift-share analysis compares the rate of change in the study area to the rate of change in a larger reference area (in this case, the county and the nation). Trend ratios are computed as the percent change in employment in the study area to the corresponding percent change in the reference area. They are interpreted as follows:

- ◆ Positive values for the trend ratio mean that the direction of change is the same in both the study area and the reference area (that is, employment in both areas is growing, or employment in both areas is declining);
- ◆ Negative ratios indicate that the change in the study area is in the opposite direction from the reference area (that is, employment in the study area is increasing while it decreases in the reference area, or vice versa);
- ◆ Trend ratio values higher than 1.0 mean that the industry's rate of employment change (whether growing or declining) is faster in the study area than in the reference area;
- ◆ Trend ratios lower than -1.0 mean that the rate of change is faster in the study area than in the reference area, and in the opposite direction (e.g., growth in the study area with decline in the reference area).

Table 52: Employment Shift-Share Analysis

	Percent Changes in Employment, Merrimack Valley		Trend Ratios, Merrimack Valley to Essex County		Trend Ratios, Merrimack Valley to United States	
	1988-1999	1999-2010	1988-1999	1999-2010	1988-1999	1999-2010
Manufacturing	-27.67%	-1.58%	1.15	0.09	7.51	0.51
Durables	-32.21%	3.36%	1.08	-0.17	7.93	-0.78
Non-Durables	-14.66%	-12.84%	1.51	1.31	4.67	8.71
Non-Manufacturing	16.91%	18.57%	1.29	1.62	0.57	1.18
Mining	224.49%	-0.63%	3.94	0.07	-7.02	0.03
Construction	-0.68%	2.69%	0.04	0.29	-0.03	-5.45
Transportation/ Public Utilities	-0.67%	16.11%	-0.30	2.33	-0.03	1.74
Finance/Insurance/ Real Estate	-12.10%	5.43%	1.00	2.92	-0.82	0.62
Retail Trade	-8.38%	7.79%	-28.50	-1.91	-0.35	1.46
Wholesale Trade	22.73%	12.29%	3.72	-1.15	1.56	1.59
Services	39.52%	27.58%	1.11	1.15	0.91	0.98
Agriculture/Forestry/ Fishing Services	101.41%	16.93%	4.50	1.11	2.12	1.03
Total Government	-4.55%	8.11%	0.69	2.85	-0.47	0.75
State & Local	7.64%	9.27%	26.19	2.35	0.41	0.82
Federal Civilian	-36.57%	2.95%	1.27	-1.41	4.59	1.00
Federal Military	0.00%	0.00%	0.00	0.00	0.00	0.00
Farm	73.72%	-12.82%	-3.36	0.64	-6.07	1.00
Total Employment	2.30%	13.45%	0.85	2.26	0.11	1.09
Population	8.42%	7.47%	2.00	4.07	0.74	0.79

Source: Merrimack Valley Planning Commission

The trend analysis results in Table 52 indicate the following:

- ◆ Manufacturing jobs in the Merrimack Valley have been declining faster than in Essex County as a whole, and much faster than in the nation. This situation is expected to continue for non-durables; however, the modest increase in employment project for employment in durables manufacturing will buck the national trend of a continuing decline in employment.
- ◆ Non-manufacturing jobs in the Valley have been growing faster than in the county but more slowly than in the nation. In the coming decade, however, the growth of non-manufacturing employment in the Valley is expected to improve relative to both the county and the nation. The sectors driving this trend are retail and wholesale trade: jobs in these sectors will be created in the Valley approximately 50 percent faster than in the nation, while Essex County is expected to see a net loss of such jobs.
- ◆ Employment growth in the service sector will be at about the same rate as in the nation, though slower than in the county.

Profile of Newburyport's Economy

Tax Base

The distribution of the tax base among land use categories provides an initial glimpse of the City's economic structure. As indicated in Table 53, residential uses account for approximately 80 percent of the total assessed valuation in Newburyport. This is slightly below the norm for Massachusetts communities: for the 329 communities for which FY2000 data were available, the median residential percentage was 86.1 percent and the mean was 83.9 percent. In other words, Newburyport has a somewhat broader tax base than Massachusetts cities and towns generally.

Table 53: Newburyport's Property Tax Base, FY 2000

Classification	Assessed Value	% of Total
Residential	\$1,094,372,067	80.44%
Open Space *	\$207,400	.01%
Commercial	\$143,365,133	10.53%
Industrial	\$97,801,400	7.18%
Personal Property **	\$24,777,285	1.82%
Total	\$1,360,523,285	100.00%

* "Open Space" includes only parcels classified by the Assessors as such, and generally is limited to land that is protected from development. It does not include (a) publicly owned conservation and recreation land or (b) land that is currently vacant but might be developable.
 ** "Personal Property" refers to furnishings, equipment, inventory, etc. used in a business, and thus is part of the commercial and industrial tax base.

Source: Massachusetts Department of Revenue

As Table 54 indicates, Newburyport's total assessed valuation is higher than in all but two neighboring Essex County communities (Gloucester and Haverhill). Furthermore, the nonresidential share of the City's tax base is higher than in all of these communities except Haverhill.

Table 55 presents property tax rates for the same communities for Fiscal Years 1990 and 2000. All of these communities except Gloucester and Haverhill tax residences and businesses at the same rate. Although the City had the area's second lowest overall tax rate increase during the 1990s, the tax rate for commercial and industrial properties in FY2000 remained among the highest in the region, as shown in Figure 4. Although a high tax rate might be seen as a disincentive to economic development, it also reflects the higher level of services and facilities provided by the City in comparison to the smaller surrounding towns.

Table 54: Assessed Value by Community, FY 2000

Municipality	Total Assessed Value in FY 2000	Residential & Open Space as % of Total Assessed Values	C/I/P as % of Total Assessed Values
Amesbury	\$960,985,390	81.7%	18.3%
Essex	\$334,470,400	89.7%	12.1%
Georgetown	\$529,483,999	88.2%	11.8%
Gloucester	\$2,383,834,850	83.8%	16.2%
Groveland	\$369,917,823	90.6%	9.4%
Haverhill	\$2,427,449,736	74.4%	25.6%
Ipswich	\$1,148,032,462	90.3%	9.7%
Merrimac	\$308,030,337	93.0%	7.0%
Newbury	\$571,400,730	94.2%	5.8%
NEWBURYPORT	\$1,360,523,285	80.5%	19.5%
Rowley	\$404,775,930	87.4%	12.6%
Salisbury	\$403,101,500+	74.6%+	25.4%+
West Newbury	\$427,371,660	96.5%	3.5%

Source: Massachusetts Department of Revenue

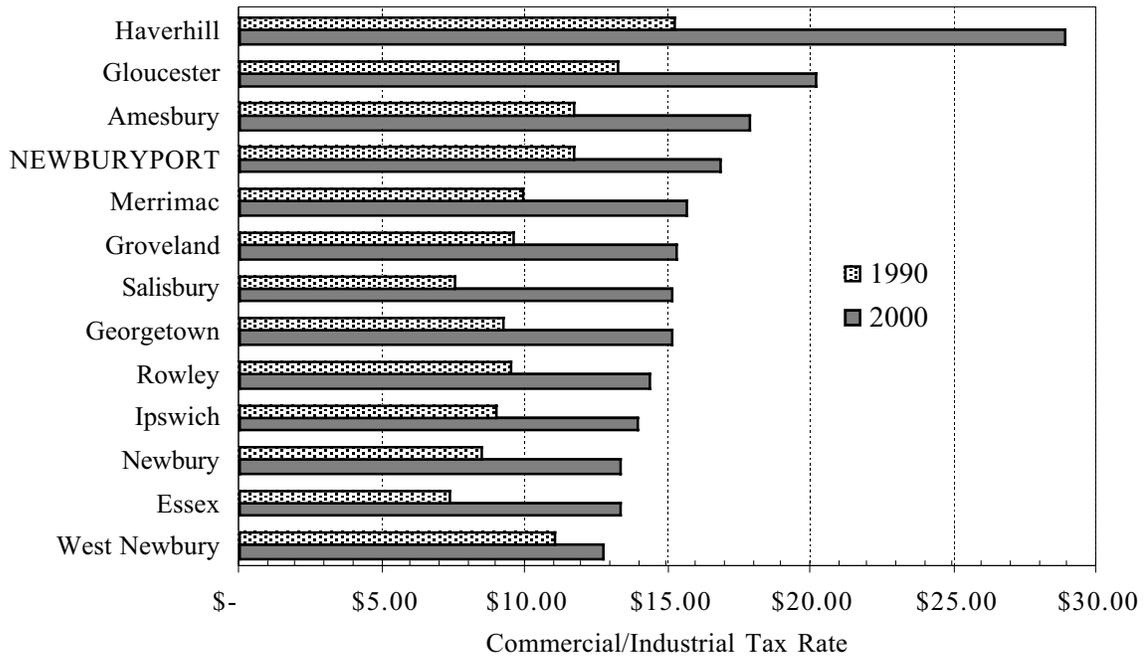
+ Information from FY 1999

Table 55: Property Tax Rates by Community, FY1990 and FY2000

Municipality	1990 Residential Tax Rate	1990 C&I Tax Rate	2000 Residential Tax Rate	2000 C&I Tax Rate	% Change Residential	% Change C&I
Amesbury	11.71	11.71	17.88	17.88	52.7%	52.7%
Essex	7.31	7.31	13.35	13.35	82.1%	82.1%
Georgetown	9.24	9.24	15.14	15.14	63.9%	63.9%
Gloucester	8.86	13.23	14.83	20.14	67.4%	52.2
Groveland	9.58	9.58	15.30	15.30	59.7%	59.7%
Haverhill	9.59	15.22	17.25	28.85	79.9%	89.6
Ipswich	8.99	8.99	13.90	13.90	54.6%	54.6%
Merrimac	9.88	9.88	15.61	15.61	58.0%	58.0%
Newbury	8.47	8.47	13.36	13.36	57.7%	57.7%
NEWBURYPORT	11.72	11.72	16.81	16.81	43.4%	43.4%
Rowley	9.50	9.50	14.32	14.32	50.7%	50.7%
Salisbury	7.54	7.54	15.14*	15.14*	101%	101%
West Newbury	11.00	11.00	12.74	12.74	15.8%	15.8%

* denotes information from 1999

Figure 4: Commercial/Industrial Tax Rates, FY1990 and FY2000



For a property owner, the total tax *bill* is more important than the tax *rate*: a low rate applied to a high valuation might result in a higher annual cost to the property owner than a higher rate applied to a much lower valuation. Because of the wide variability of commercial and industrial properties, there is no easy way to compare nonresidential tax bills among communities; however, a comparison of residential tax bills is possible and may provide some insight into this cost factor. Table 56 presents average tax bills for single-family homes for Fiscal Years 1988 and 1998. Newburyport's average FY1988 tax bill ranked in the top 25 percent of Massachusetts communities, and within the region was higher than all the comparison communities except West Newbury, Gloucester and Ipswich . (Haverhill, with the area's highest commercial and industrial tax rate, used the split rate to lower residential tax rates and bills; but Gloucester's residential tax bill was high even with a split tax rate.) By FY1998 Newburyport's average residential tax bill had dropped somewhat relative to the State and region, but remained in the top quarter of communities statewide.

Table 56: Average Single Family Tax Bills by Community, FY1988 & FY1998

Municipality	Average Tax Bill, FY 1988	Rank in State, FY 1988*	Average Tax Bill, FY 1998	Rank in State, FY 1998**
Amesbury	\$1,521	91	\$2,813	80
Essex	\$1,381	128	\$2,740	89
Georgetown	\$1,496	95	\$2,814	79
Gloucester	\$1,890	51	\$2,797	84
Groveland	\$1,402	122	\$2,553	106
Haverhill	\$1,211	165	\$2,131	167
Ipswich	\$1,642	71	\$2,825	78
Merrimac	\$1,327	141	\$2,394	119
Newbury	\$1,208	167	\$2,484	112
NEWBURYPORT	\$1,622	72	\$2,781	86
Rowley	\$1,427	117	\$2,642	96
Salisbury	\$894+	256+	\$1,768	245
West Newbury	\$2,319	32	\$3,630	36

Source: Massachusetts Department of Revenue

* out of 293 municipalities reported

** out of 340 municipalities reported

+ information from 1989

Employment and Wages

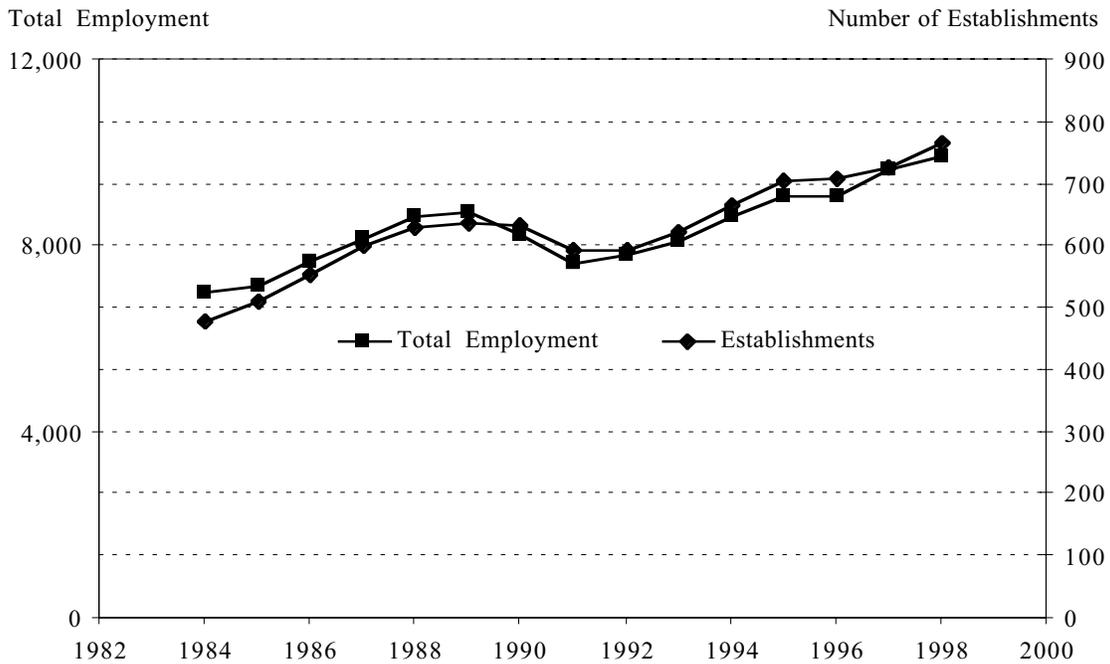
Table 57 and Figure 5 present data on the number of establishments and total employment in Newburyport from 1984 through 1998. The figure clearly shows the growth period in the late 1980s, followed by the 1989-1991 recession and then the recovery during the 1990s. Overall, employment grew by 41.5 percent during this period, and by 21.7 percent from 1987 through 1998, a period comparable to the 1988-1999 period during which employment in the Merrimack Valley grew by only 2.3 percent (see Table 49); thus, the City of Newburyport far outperformed the region in employment growth.

Table 57: Wages, Establishments and Total Employment in Newburyport, 1984–1998

Year	Total Annual Payroll	Average Annual Wage	Number of Establishments	Total Employment
1984	\$100,867,700	\$14,360	480	7,024
1985	\$110,751,600	\$15,524	510	7,134
1986	\$127,009,703	\$16,580	555	7,660
1987	\$145,409,906	\$17,806	603	8,166
1988	\$167,896,297	\$19,448	630	8,633
1989	\$177,934,940	\$20,349	639	8,744
1990	\$175,958,540	\$21,313	632	8,256
1991	\$169,025,824	\$22,101	595	7,648
1992	\$182,154,434	\$23,281	595	7,824
1993	\$193,387,463	\$23,854	623	8,107
1994	\$214,511,297	\$24,868	665	8,626
1995	\$239,767,032	\$26,476	706	9,056
1996	\$252,545,141	\$27,835	711	9,073
1997	\$280,350,000	\$29,082	729	9,640
1998	\$298,979,000	\$30,078	768	9,940

Source: Massachusetts Department of Employment and Training

Figure 5: Establishments and Total Employment in Newburyport, 1984–1998



The data are broken down by sector in Table 58, Figure 6 and Table 59. What is most evident from the data is the significant growth in the service sector, in which employment grew by 72.7 percent over the 14-year period, compared to only 10.1 percent growth in manufacturing employment. As a result, the service sector is now the largest employment sector in the City, representing more than one-third of all jobs.

The modest growth rate of manufacturing employment is nonetheless significant: Newburyport retained its manufacturing jobs and even increased them by 6.4 percent over a ten-year period while the Merrimack Valley region experienced a loss of 27.7 percent of manufacturing jobs over a comparable period. The City also exhibited strength in its third largest sector, wholesale and retail trade: while the region lost 1.5 percent of its jobs in this sector, retail and wholesale trade employment in Newburyport increased by 15.1 percent.

In sum, Newburyport's local economy showed remarkable strength during the 1990s as the region recovered from the recession. This economic growth has been felt in all sectors, but the dramatic increase in the size of the service sector indicates a shift in the City's economic base: between 1984 and 1998 service sector jobs increased from 27.5 percent of total employment to 33.5 percent, while manufacturing jobs decreased from 32.4 percent to 25.2 percent.

Table 58: Employment by Sector in Newburyport, 1984-1998

Year	Government	Agriculture, Forestry & Fishing	Construction	Manufacturing	Transportation, Communication, Utilities	Wholesale/ Retail	Finance, Insurance & Real Estate	Services
1984	626	18	153	2,275	152	1,606	266	1,929
1985	641	15	165	2,093	168	1,830	280	1,944
1986	643	15	161	2,460	167	1,926	302	1,984
1987	663	12	178	2,489	264	2,106	309	2,146
1988	662	12	205	2,595	326	2,229	322	2,282
1989	635	11	150	2,593	293	2,364	321	2,377
1990	636	9	119	2,348	320	2,331	275	2,218
1991	609	6	86	1,972	396	2,188	268	2,123
1992	667	8	117	2,004	352	2,187	290	2,199
1993	678	15	124	1,987	360	2,247	306	2,390
1994	690	20	128	2,086	354	2,321	319	2,708
1995	694	15	211	2,204	301	2,426	332	2,873
1996	729	19	161	2,335	249	2,258	364	2,958
1997	742	20	179	2,472	261	2,276	369	3,321
1998	782	23	231	2,505	275	2,423	370	3,331

Source: Massachusetts Department of Employment and Training

Figure 6: Employment Growth by Sector in Newburyport, 1984–1998

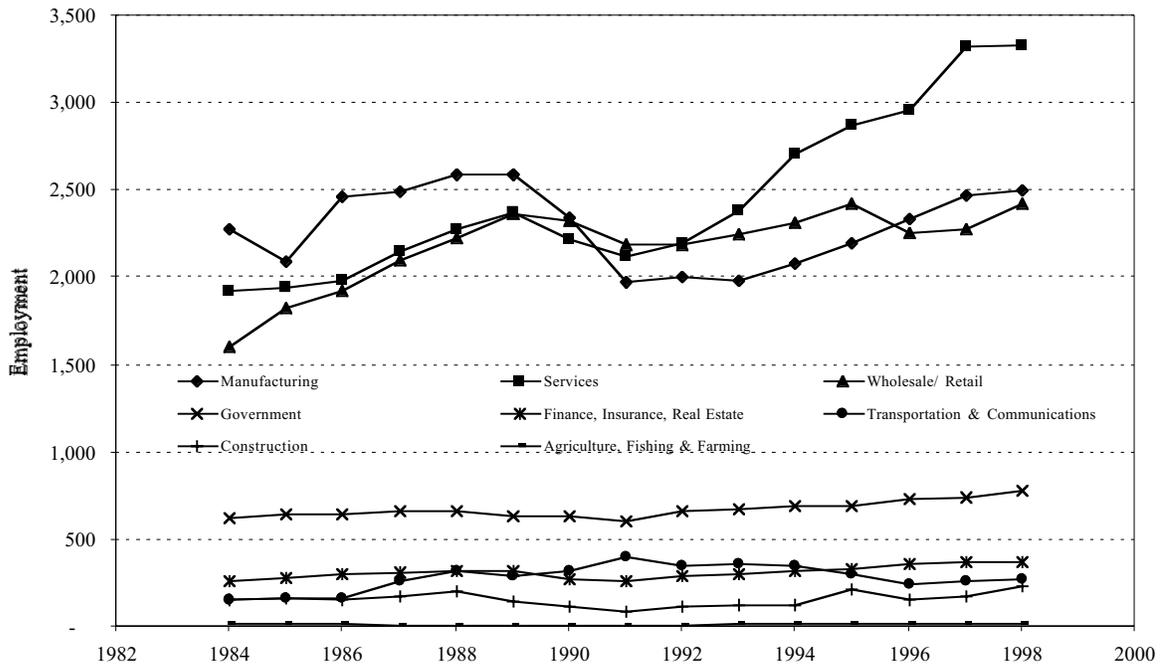


Table 59: Employment Change by Sector in Newburyport, 1984–1998

	Employment				Average Annual Change			Total Change 1984-1998
	1984	1989	1994	1998	1984-1989	1989-1994	1994-1998	
Government	626	635	690	782	0.3%	1.7%	3.2%	+24.9%
Agriculture	18	11	20	23	-9.4%	12.7%	3.6%	+27.8%
Construction	153	150	128	231	-0.4%	-3.1%	15.9%	+51.0%
Manufacturing	2,275	2,593	2,086	2,505	2.7%	-4.3%	4.7%	+10.1%
Transportation, Communication & Utilities	152	293	354	275	14.0%	3.9%	-6.1%	+80.9%
Wholesale/ Retail	1,606	2364	2,321	2,423	8.0%	-0.4%	1.1%	+50.9%
Finance, Insurance, Real Estate	266	321	319	370	3.8%	-0.1%	3.8%	+39.1%
Services	1,929	2,377	2,708	3,331	4.3%	2.6%	5.3%	+72.7%
Total Employment	7,024	8,744	8,626	9,940	4.5%	-0.3%	3.6%	+41.5%

Source: Massachusetts Department of Employment and Training

Profile of Existing Businesses

A database of existing businesses and government offices in Newburyport was provided by American Business Information, Inc. This database is more comprehensive than the information available from the Massachusetts Division of Employment and Training (reported in Table 57 through Table 59), because it includes businesses that are not subject to the unemployment compensation laws such as sole proprietorships; thus, the total number of establishments listed in the ABI database is 1,372, compared to 768 businesses for which data is reported by DET. The database lists all establishments with a Newburyport address; identifies the primary Standard Industrial Classification (SIC) code as well as any secondary SIC codes; and includes information on the size of the firm in terms of both employment and annual sales volume.

Table 60 summarizes the information from the ABI database in terms of major industry groups. Approximately half of the establishments in the City are in the service sector, and 40 percent of the service businesses are in health, legal, or educational services.

Table 60: Newburyport Businesses by Major Industry Group

SIC Code	Major Industry Groups	Number of Establishments
	AGRICULTURE, FORESTRY & FISHING	
7	Agricultural services	16
	CONSTRUCTION	
15	General contractors and operative builders	27
16	Heavy construction, except building	3
17	Special trade contractors	44
	MANUFACTURING	
20	Food and kindred products	1
24	Lumber and wood products	1
26	Paper and allied products	1
27	Printing and publishing	19
28	Chemicals and allied products	6
30	Rubber and misc. plastics products	7
32	Stone, clay and glass products	4
33	Primary metal industries	2
34	Fabricated metal products	10
35	Industrial machinery and equipment	16
36	Electronic and other equipment	8
37	Transportation equipment	1
38	Instruments and related products	3
39	Miscellaneous manufacturing industries	3
	TRANSPORTATION & PUBLIC UTILITIES	
41	Local and interurban passenger transit	8
42	Trucking and warehousing	7
43	United States Postal Service	1
44	Water transportation	16
47	Transportation services	11

SIC Code	Major Industry Groups	Number of Establishments
48	Communication	1
	WHOLESALE TRADE	
50	Durable goods	44
51	Nondurable goods	17
	RETAIL TRADE	
52	Building materials and garden supplies	11
53	General merchandise stores	3
54	Food stores	26
55	Automotive dealers & service stations	17
56	Apparel and accessory stores	29
57	Furniture and home furnishings stores	33
58	Eating and drinking places	62
59	Miscellaneous retail	108
	FINANCE, INSURANCE AND REAL ESTATE	
60	Depository institutions	13
61	Nondepository institutions	5
62	Security and commodity brokers	20
63	Insurance carriers	2
64	Insurance agents, brokers and service	17
65	Real estate	44
	SERVICES	
70	Hotels and other lodging places	6
72	Personal services	78
73	Business services	64
75	Auto repair, services, and parking	15
76	Miscellaneous repair services	16
78	Motion pictures (incl. video rental)	5
79	Amusement and recreation services	21
80	Health services	189
81	Legal services	60
82	Educational services	22
83	Social services	74
84	Museums, botanical & zoological gardens	3
86	Membership organizations	33
87	Engineering and management services	74
89	Miscellaneous services	7
	PUBLIC ADMINISTRATION	
91	Executive offices	15
92	Public order and safety (police, fire, courts, etc.)	9
93	Administration of public health programs	3

SIC Code	Major Industry Groups	Number of Establishments
94	Administration of social, human resource and income maintenance programs	2
95	Land, mineral, wildlife and forest conservation	1
96	Administration of general economic programs	1
97	National security	3
99	Miscellaneous public administration	4
Grand Total		1,372

Source: American Business Information, Inc.

Table 61 summarizes the database by sales volume and Table 62 provides a summary by number of employees. Small businesses make up the majority of all Newburyport businesses: two-thirds have fewer than 5 employees, and 44 percent generate less than \$500,00 in annual sales.

Table 61: Summary of Newburyport Businesses by Sales Volume

Sales Volume	Businesses	Percent
Less than \$500,000	553	44.4%
\$500,000 – \$1 Million	336	27.0%
\$1 Million – \$2.5 Million	195	15.7%
\$2.5 Million – \$5 Million	69	5.5%
\$5 Million – \$10 Million	45	3.6%
\$10 Million – \$20 Million	23	1.8%
\$20 Million – \$50 Million	16	1.3%
\$50 Million – \$100 Million	3	0.2%
\$100 Million – \$500 Million	5	0.4%
Total	1,245	100.0%

Source: American Business Information, Inc.

Table 62: Summary of Newburyport Businesses by Number of Employees

Number of Employees	Businesses	Percent
1 – 4	909	66.8%
5 – 9	218	16.0%
10 – 19	109	8.0%
20 – 49	78	5.7%
50 – 99	28	2.1%
100 – 249	17	1.2%
250 – 499	1	0.1%
500 – 999	0	0.0%
1000 – 4999	1	0.1%
Total	1,361	100.0%

Source: American Business Information, Inc.

Consumer Spending

Table 63 presents estimates of consumer spending in several produce/service categories, for Newburyport and for the four neighboring towns. The population base for the surrounding towns is almost twice Newburyport's population (estimated combined 2000 population of 34,037, compared to 17,492 for the City), and the median household income is slightly higher (\$50,357 for the towns, compared with \$48,416 for the City). Nevertheless, residents of the City tend to spend more annually in every category than do residents of the other towns. Furthermore, residents of both Newburyport and the surrounding towns spend more on average than do residents of the nation as a whole, as indicated by the "spending potential" columns. This reflects the fact that Newburyport is the center of an affluent area with ample spending potential to support a wide range of retail and service establishments. Note that this growth potential is based on the local population only, and does not include growth in businesses based on tourism and visitation from outside the immediate area.

Table 63: 2000 Consumer Spending Summary

	Newburyport			Salisbury, Amesbury, Newbury, and West Newbury		
	Total (\$000)	Average Spent	Spending Potential	Total (\$000)	Average Spent	Spending Potential
Apparel	\$9,136	\$1,546	115	\$15,002	\$1,467	109
Auto Aftermarket	\$2,798	\$679	108	\$4,766	\$653	104
Auto Loans	\$10,293	\$4,010	102	\$18,858	\$3,986	101
Electronics	\$1,684	\$497	102	\$2,876	\$490	101
Health Insurance	\$6,768	\$1,375	107	\$11,492	\$1,360	106
Home Loans	\$28,951	\$8,662	113	\$46,196	\$7,819	102
Home Improvement	\$8,835	\$2,246	100	\$14,789	\$2,212	99
Household Furnishings	\$4,731	\$996	107	\$7,840	\$949	102
Investments	\$2,581	\$14,698	116	\$3,662	\$13,081	103
Pets & Supplies	\$481	\$314	107	\$836	\$309	105
Restaurants	\$7,692	\$1,227	112	\$12,551	\$1,156	105
Sporting Goods	\$843	\$678	105	\$1,449	\$667	103
Travel	\$4,175	\$1,991	110	\$6,424	\$1,806	100

Source: CACI Demographics, Inc.

The Spending Potential Index (SPI) represents the amount spent for a product or service relative to a national average of 100. The SPI is household-based.

As the populations of the City and neighboring towns continue to grow, the potential for economic expansion in businesses serving the local population will continue to increase. Given sufficient space for new businesses and expansions, Newburyport should be able to equal or exceed the ten-year growth rates for retail and service sector employment projected for the Merrimack Valley region as a whole—7.8 percent and 27.9 percent, respectively (see Table 49).

Prospects for the Future

The Merrimack Valley Planning Commission forecasts the addition of 21,200 new jobs (a 13 percent increase) between 1999 and 2010, with continuing strong growth in services (27.6% growth), wholesale trade (12.3%) and retail trade (7.8%). Newburyport is well positioned to benefit from growth in all three sectors. The City has a strong and growing service sector, led by Anna Jaques Hospital, Newburyport's largest employer; a vibrant central business district serving an affluent local population and a thriving tourism sector; and available land in the industrial park area to provide for expansion in office, industrial and warehousing activities.

NATURAL AND CULTURAL RESOURCES

Regional Context

Newburyport is situated in the seaboard lowland physical region of Massachusetts, at the mouth of the Merrimack River, the largest river in eastern Massachusetts. Barrier beaches on both sides of the river mouth (Salisbury Beach and Plum Island) shelter expansive tidal marsh areas that provide important wildlife habitat. The “Great Marsh” covers over 20,000 acres along the northern Massachusetts coast from West Gloucester to the New Hampshire border, making it the largest contiguous acreage of salt marsh north of Long Island, New York.¹³

To the south of the City, in the towns of Groveland, West Newbury, Newbury and Rowley, a number of state and federal wildlife areas form an open space network along the Parker River from inland areas to the ocean. These include the Parker River National Wildlife Refuge, and the Crane Pond, Downfall, Kents Island, and Mill Creek Wildlife Management Areas.

Newburyport is located in the Essex National Heritage Area, a 34-community, 500-square-mile region designated by the United States Congress in recognition of its “unique geographical characteristics and the people who used them to make a living.”¹⁴ The Custom House Maritime Museum serves as a Visitors Center for the National Heritage Area.

Natural Resources¹⁵

Climate

Newburyport lies within the northern temperate climate zone. The region experiences pleasant summers, moderately cold winters and frequent, though not excessive, rainfall. New England’s prevailing winds blow in a westerly direction, northwesterly in the winter and southwesterly in summer. Being a coastal community, Newburyport’s micro-climate is significantly affected and moderated by variable ocean breezes. Day-to-day weather changes are possible as wind direction shifts from cooler northern areas to the warmer southern regions.

Newburyport’s average summer temperature is 73.8 degrees F. Summer temperatures, however, fluctuate greatly around the mean with readings ranging from the low 60s to the high 90s. The regional growing season, defined as the period in which temperatures remain above 32 degrees F., averages 177 days. Winter temperatures average 28 degrees F., again with significant variation around the mean.

Precipitation in this area has historically been abundant and dependable, with heaviest amounts occurring during the months of November and January. Total precipitation is 46.14 inches.

¹³Eight Towns and the Bay (8T&B) web site, <http://www.thecompass.org/8TB/pages/News9904Marsh.html>, accessed 11/25/00.

¹⁴“Essex National Heritage Area: From the North Shore to the Merrimack Valley,” (brochure: undated).

¹⁵Much of the information in this section is drawn from the City’s 1999 Open Space and Recreation Plan.

Topography

Newburyport's historic center developed along a low ridge between the Merrimack River and the Little River. The land rises from sea level along the Merrimack River shoreline to the south side of High Street, with elevations reaching approximately 90 feet (27 meters) at Newburyport High School, Old Hill Burial Ground and March's Hill; and about 100 feet (30 meters) in the vicinity of Anna Jaques Hospital. Maximum elevations are 155 feet.

South of Low Street the land drops into a relatively flat expanse drained by the Little River and bisected by Hale Street. In this area, elevations generally range between 10 feet (3 meters) and 40 feet (12 meters), rising in a few locations to more than 50 feet (15 meters).

The topographic relief is more pronounced in the West End. Several hills rise steeply from the Merrimack and Artichoke Rivers: a hill in Maudslay State Park off Curzon Mill Road is close to 160 feet (48 meters) high; and Turkey Hill, in the southwest corner of the City, rises steeply from the Upper Artichoke River to about 120 feet (36 meters).

To the east of Marlboro Street and on the portion of Plum Island within Newburyport, elevations are generally below 20 feet (6 meters), including significant areas encompassed by tidal marsh.

The City is shown on the United States Geological Survey 7.5 x 15 minute quadrangle map titled "Newburyport, Massachusetts–New Hampshire" (42070-G7-TM-025; 1:25000 scale; 1987).

Soils¹⁶

Soils have a profound effect on the type of activity and development that can take place. Since Newburyport is located on coastal lowlands, deposits of marine sand, silt and clay abound. Soils range from low marsh deposits of mucky, fibrous peat, to generally poorly drained deposits of non-stone, heavy clay and silty material, for better drainage of glacial tills. Windblown and alluvial deposits of sand occur and appear as dunes along the coast and in the highland area bordering the Merrimack River. The soil areas best suited for development have already been utilized in Newburyport. Some of the poorer soils, noticeable in the West End particularly, are experiencing development pressures.

More than forty soil types are found in the City of Newburyport. These are grouped into six (6) major soil associations, as listed in Table 64.

Table 64: Major Soil Associations in the City of Newburyport

Soil Association	Acres	Percent
1. Merrimac–Agawam–Hinckley	2,220	39
2. Paxton–Broadbrook–Woodbridge	700	12
3. Scantic–Biddeford	1,400	25
4. Hollis–Buxton	460	8
5. Tidal marsh–dune sand–made land	612	11
6. Suffield–Buxton	308	5
TOTAL	5,700	100%

¹⁶ Source: 1999 Open Space and Recreation Plan, citing *Soils and Their Interpretations for Various Land Uses: City of Newburyport, Massachusetts* (USDA Soil Conservation Service).

The characteristics of these soil association are described as follows:

1. Merrimac–Agawam–Hinckley Association

Well-drained and drouthy soils formed in thick deposits of sand or sand and gravel.

This soil association occupies about 39 percent of the City. It occurs as one area reaching from the Merrimack River in the northwestern part of the city to the tidal marshes in the eastern part. The landscape consists of stream terraces, outwash plains, kames and eskers. Slope gradients are mostly 0 to 8 percent on the plains and terraces, but range to 35 percent or more on the marginal escarpments of the terraces and the kames and eskers. Merrimac soils occupy about 60 percent of this general soil area, Agawam about 10 percent. The remainder consists mainly of other soils formed in sand and gravel with poorer internal drainage, each occupying less than 7 percent of the area.

The soils dominating this association have rapid or very rapid permeability. They can absorb sewage effluent readily when not saturated, but the rapidly permeable substratum may result in contamination of shallow wells located near sewage disposal systems. Most of this area has slight limitations for septic tank sewage disposal systems, but steep slopes in some areas impose severe limitations for this use. Most of this general soil area has slight limitations for high-density residential, commercial, or industrial uses, and for sanitary landfill areas using the trench method. Good sources of sand and gravel are available in most of this area.

2. Paxton–Broadbrook–Woodbridge Association

Deep, well-drained and moderately well-drained, stony soils formed in compact glacial till or in an aeolian mantle underlain by compact glacial till.

This soil association occupies about 12 percent of the city. It occurs as three areas in the western part of the city. The topography consists of rounded hills that have smooth, gently sloping tops and steeper sides. About 40 percent of this general soil area is Paxton, about 15 percent is Woodbridge soils. The remainder consists of other soils in glacial till and soils in deposits of silts and clays, each occupying less than 8 percent of the general soil area.

These soils have slight limitations for woodlands and many recreational uses. On less sloping areas there are slight limitations for agriculture. There are moderate limitations for home sites where communal sewer systems are available. The slowly permeable hardpan in these soils severely limits the downward movement of water and, at times, causes the upper soil layers to become saturated. Septic tank sewage disposal systems do not function properly under these conditions. Water moving laterally through the soil above the hardpan layers may cause wet cellars and unstable banks where deep cuts are made. Stones and boulders within the soil and the steepness of the gradient on the sides of hills add to the cost of site development.

3. Scantic-Biddeford Association

Poorly-drained and very poorly-drained soils formed in silts and clays.

This general soil area occupies about 25 percent of the city. It occurs in the southwestern part of the city. Topography consists of old lake plains, old marine plains, and the intervalles between areas of upland soils. These areas contain islands of well-drained and moderately well-drained soils. Soils in this general soil area are nearly level or gently undulating. Slope gradients are mostly 0 to 5 percent but range to 15 percent on some of the included islands, and 25 percent on margin escarpments.

There is very little woody vegetation in these soils. The vegetation consists mostly of moisture-tolerant grasses, except on the moderately well-drained and well-drained soils.

The Scantic soils occupy about 55 percent of this general soil area and the Biddeford about 25 percent. The remainder consists mainly of well-drained and moderately well-drained soils each of which occupies less than 5 percent of the area.

This general soil area has slight limitations for some kinds of wildlife and recreational uses. Most of the areas provide good wetland wildlife habitat or can be readily developed for this use.

This general soil area has severe limitations for high-density residential, commercial or industrial uses because of wetness. Nearly all of this area is difficult to drain for such uses.

4. Hollis–Buxton Association

Shallow to bedrock soils developed in a thin layer of glacial till with frequent bedrock outcroppings and moderately well-drained soils formed in thick deposits of silts and clays.

This general soil area occupies about 8 percent of the city. It occurs as several small areas in the southwestern part of the city. The topography consists of small irregular hills or knolls that rise 10 to 40 feet above the surrounding terrains. The higher elevations are generally shallow to bedrock soils with frequent bedrock outcroppings. The intervals between the knolls contain the deeper soils formed in silty materials that are underlain by silts and clays. Some of these intervals are wet most of the year. Slope gradients are generally 3 to 20 percent but range from 0 to 30 percent. About 80 percent of this general soil area is Hollis and about 10 percent is Buxton soils. The remainder consists mainly of small areas of wetter soils formed in silts and clays.

Most of this general soil area has moderate limitations for woodland and many kinds of recreation. The shallow depth-to- bedrock and the seasonal high-water-table, severely limit the use of this area for high-density residential, commercial, or industrial purposes where individual septic tank sewage disposal systems must be installed. Limitations may be moderate in some areas if communal sewers are available.

5. Tidal Marsh–Dune Sand–Made Land Association

Very poorly- drained organic deposits and silts and clays subject to regular tidal flooding; drouth, deep deposits or recently deposited sand; and areas filled by man with stones, ashes, soil materials and other refuse and debris.

The Tidal Marsh soil material ranges from soft, plastic silts and clays to matted fibrous organic deposits. These are dissected by tidal streams and man-made drainage ditches and are subject to regular tidal flooding.

The Dune Sand land type consists of highly quartzite sands along the ocean shore. This land is continually being changed in shape and size by wind action and by wave action during extremely high storm tides. Some areas are partially stabilized by beach grass and other hardy shrubs while others are devoid of vegetation.

The Made Land consists of areas filled with earth and/or other kinds of materials (including trash), or is so altered that it cannot be identified as a soil. Areas filled with organic debris and/or trash can be very unstable for long periods of time as there may be considerable settling of material as the trash decomposes. There are severe limitations in this general soil area for most land uses. There are moderate limitations on areas of Tidal marsh for development of wetland wildlife habitat. For the Dune sand and Made land soil types, limitations can only be determined by an onsite investigation.

6. Suffield–Buxton Association

Well-drained and moderately well-drained soils formed in thick deposits of silts and clays.

This general soil area occupies about 5 percent of the city. It occurs as a narrow band along the southwesterly side of the ridge on which the city is located. The topography is gently sloping to moderately steep. About 45 percent of this general soil area is Suffield and about 25 percent is Buxton. The remainder consists mainly of sandy and gravelly soils, each occupying less than 7 percent of the area. The general soil area has slight limitations for woodlands and many kinds of recreational uses. There are moderate limitations for use as home sites or industrial sites when communal sewer systems are available. There are severe limitations for high-density residential, commercial, or industrial sites where on-site sewage disposal by septic tank sewage disposal systems must be used. The slow permeability severely restricts the downward movement of water and, at times, causes the soil to become saturated. Septic tank sewage disposal systems do not function effectively under these conditions. Surface runoff and water moving laterally through the upper layers of these soils may cause wet cellars and difficulty in bank stabilization where deep cuts are made.

Surface Water

Newburyport is known for its connection to the water. The Atlantic Ocean lies on the far side of the Plum Island barrier beach. The Merrimack River, the largest river in eastern Massachusetts, drains into the ocean and is the primary flowing body of water in the City. Two short streams connect to the river between the Newbury line and Joppa Flats.

The Artichoke River is the only major body of water that flows into the Merrimack within City limits. Another smaller tributary enters the Merrimack between the Artichoke and the Maudslay State Park point. The Artichoke serves as a public drinking water supply for Newburyport and West Newbury.

The Little River runs in the south end of the City. This river begins with two arms that start near Hale Street. The western arm has a feed in at Crow Lane and drains two small ponds.

Newburyport harbor is set in a nearly landlocked estuary. Longshore currents have built up huge sandbars along Plum Island and Salisbury Beach, which protect the harbor but unfortunately crowd the channels. The estuary has a shallow depth of less than ten feet during mean low water and the River is characterized by a swift current (in excess of 3 knots on an ebb tide) and a high flushing rate (56%).

The Frog Pond lies at the center of the Bartlet Mall near downtown. A pond in Oak Hill cemetery has a stream that flows into Newbury. A small pond is located in the industrial park west of Graf Road. Another pond lies in the southwest corner of the City at the Newbury and West Newbury lines. There is a pond on water department land behind the Moseley Woods Park. Four small ponds are situated near a Merrimack shoreline point just west of Interstate 95.

Floodplains

When a water body, such as a river, stream or lake, can no longer accommodate increased discharge from heavy rains or snow melts, the excess water flows onto the land adjacent to these surface water areas. "Floodplains" are those land areas that are likely to flood during a storm event, and are classified according to the average frequency of flooding. Thus, the "100-year floodplain" is that area of land that will be flooded, on average, once in every 100 years; that is, it has a one percent chance of being flooded in any year.

Development in floodplains is regulated in order to reduce threats to health and safety and damage to property. Unregulated development in floodplains can increase flooding, resulting in potential property damage. In addition, water contamination from flood-damaged sewage or septic systems and debris (including inadequately anchored buildings or structures) swept downstream from flooded

properties can result in hazards to persons and property downstream. These materials can then cause more severe effects of flooding downstream as they block and obstruct culverts and bridges.

Floodplains are delineated on the basis of topographical, hydrological and development characteristics of the particular area. In Newburyport, flood hazard areas have been mapped by the Federal Emergency Management Agency, and include coastal flood hazard areas as well as the floodplains of rivers and other bodies of fresh water. The flood hazard areas are designated as follows:

- Zone A Areas of the 100-year flood where base flood elevations and flood hazard areas have been determined.
- Zone B Areas between the limits of the 100-year flood and the 500-year flood; or certain areas subject to 100-year flooding with average depths less than one foot; or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
- Zone C Areas of minimal flooding.
- Zone V Areas of 100-year coastal flood with velocity; base flood elevations and flood hazard factors determined.

100-year floodplains (Zone A) have been delineated along the Merrimack River, the Artichoke River and Reservoir. In addition, a “V” zone has been delineated along the Merrimack River, behind the “A” zone, from the Route 1 bridge to the end of the Plum Island Turnpike.

The 500-year floodplain (Zone B) is of less concern than the 100-year floodplain, and is not regulated for development. Numerous B and C zones lie behind designated A zones in certain areas. B zones are located near Interstate 95 and also run from 500 feet beyond the three roads intersection to Piper’s Landing. Two nearby high points are designated Zone C. A B zone runs from Jefferson Street to Charles Street.

The end of Plum Island and the beach are designated as Zone V (coastal flood hazard). High points of Plum Island are labeled B and C zones.

Wetlands

Wetlands, including marshes, swamps and bogs, serve a number of vital roles in both the natural and built environments. First, wetlands are highly productive systems and provide important habitat for many species of wildlife. They also act as “sponges,” absorbing and detaining surface waters. In this latter role, wetlands are critical to maintaining the quantity of water supplies by maintaining relatively stable groundwater levels and preventing downstream damage from flooding. They also protect water quality by filtering out pollutants and thereby reducing the contamination of streams, lakes and groundwater.

Because of the important roles played by wetlands, it is essential that they be protected. Activities which replace wetlands with impervious surfaces result in increased runoff rates, reduced flood storage, and elevated peak flows, leading to greater damage from storms. Filling of wetlands also reduces wildlife habitat and plant diversity, and can increase contamination of streams, rivers and ponds due to reduced filtration of pollutants.

Wetlands can be defined in terms of vegetative cover or in terms of soil characteristics. As noted in the discussion of soil associations, the “Scantic–Biddeford” soil association occupies about 1,400 acres, or about 25 percent of the City’s area, primarily in the southwestern part of the City.

The Wetlands Protection Act (M.G.L. Ch. 131, sec. 40) defines wetlands in terms of vegetative cover, and regulates dredging, filling or altering areas within 100 feet of such wetlands. USGS topographic maps delineate large wetlands areas based on vegetative cover, and the Newburyport quadrangle indicates a wetlands area near the source of the Little River's north branch (southeast of the Russell Terrace neighborhood) and a smaller area where Hale Street crosses another branch of the Little River. Another wetlands area occurs along the Merrimack River about 1/3 mile east of the Chain Bridge. It is said that much of the Industrial Park area, in a relatively flat valley drained by the Little River, was originally wetlands, but no wetlands are indicated in this area on the USGS map. Isolated small wetlands occur at many places along the rivers and streams in the City, but do not exist as large systems and must be identified at the site level.

Salt marshes are protected under M.G.L. Chapter 131, Section 105. As noted earlier, the area between Newburyport proper and Plum Island is part of the "Great Marsh," the largest contiguous salt marsh area north of Long Island. While the City boundary places most of this system outside of Newburyport, three sections are within the City: the area between the Plum Island Airport and the Merrimack River, Woodbridge Island, and both sides of the west Plum Island finger.

Groundwater

Aquifer recharge areas (watershed zones) were mapped in 1997 by the Merrimack Valley Planning Commission. Under Massachusetts regulations, there are five categories of recharge areas, designated as Zones A, B, C, I and II. These mapped areas designate where rainfall and underground water travel to reach a municipal well or Class A surface water source, as defined in 314CMR 4.05(3)(a). Newburyport's water supply sources are the Artichoke Reservoir at the City's western boundary and the two water department wells off Spring Lane between Interstate 95 and Maudslay State Park.

Zone A includes land between the surface water source and the upper boundary of the bank of a class A surface water source, and the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body. This zone is found around the Artichoke Reservoir, the Indian Hill Reservoir in West Newbury, and their tributaries.

Zone B includes the land area within a 1/2 mile of the upper boundary of a class A surface water source, or edge of the watershed, whichever is less. However, zone B shall always include the land area within a 400 foot lateral from the upper boundary of the bank of the class A surface water source. This area extends from Indian Hill and Moulton Street to Route 113, Interstate 95 and back.

Zone C includes the land area not designated as zone A or zone B within the watershed of a class A water source. This area extends east and west of zone B past Interstate 95 into Newbury and past Middle and Chase Streets into West Newbury.

Zone I is the land area within a 400 foot radius from the municipal well shaft. The City has two wells located off Spring Lane.

Zone II encompasses the area of an aquifer which contributes to the water of a municipal well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield with no recharge from precipitation), as defined in 310 CMR 22.00. This area shall be considered to be a 1/2-mile radius from well shaft until such time that the zone II has been delineated by an approved hydrologist. Zone II begins at the Storey Avenue, High Street and Ferry Road intersection and continues almost to the end of Pine Hill Road.

Vegetation

Common wildflowers in Newburyport include the following:

Aster
Beach Plums
False Heather
Glasswort

Goldenrod
Honeysuckle
Purple Loosestrife

The Merrimack River contains a variety of plant life. Six species of green algae, two red algae, six brown algae and twelve species of vascular plants have been cataloged in the river. Plant life is of primary importance in the food chain. Fish and shellfish alike feed on the algae and decayed plant bodies. Additionally, plants also provide shelter and protection for the fish and function as nurseries for many species. The species that is of the greatest importance in terms of constraining development of the waterfront is the vascular plant, salt water cord grass (*spartina alterniflora*). Within the corporate limits, there is a vast supply of this cord grass most notably east of the Chain Bridge and east of the American Yacht Club. There are thousands of acres of *spartina alterniflora* within the Merrimack and Parker River estuary systems.

Wildlife

The Merrimack River estuary is heavily utilized by all species of waterfowl. There are about 7,000 to 8,000 ducks present at the peak periods in fall and early winter that feed on seed clams. Nesting and migratory waterfowl are frequently observed in the lowland fresh and salt-water marshes bordering the rivers. Idle fields and areas remaining open provide ideal conditions for upland game. Pheasant, rabbit, grouse, and songbirds are fairly abundant in these areas. The following animals are regularly observed in Newburyport.

AMPHIBIANS

Frogs

Gray Treefrog
Pickerel Frog
Wood Frog

Salamanders

Red Backed Salamander
Spotted Salamander

Toads

American Toad

BIRDS

American Black Duck
Blue Herons
Blue Jay
Brown Thrasher
Canadian Geese
Catbirds
Chickadee
Cormorants
Crows
Grosbeak
Hawks
Horned Larks

Lapland Longspurs
Northern Harriers
Piping Plovers
Purple Martins
Ring Necked Pheasants
Robins
Rock Dove
Ruffed Grouse
Saw-Whet Owl
Short-Eared Owl
Snow Buntings
Snowy Egrets

Snowy Owls
Sparrow
Swallow
Starling
Thrush
Tree Swallows
Warbler
Woodcock
Wood Ducks
Woodpecker
Wren

MAMMALS

Carnivores

Coydogs
Coyotes
Fox
Raccoon
Skunk

Lagamorphs

Weasel

Marsupials

Opossum

Rodents

Insectivores

Bats
Moles
Shrews

Chipmunk

Field Mice

Eastern Cottontail

Muskrat

Porcupine

Rats

Red Squirrel

Woodchuck

Gray Squirrel

REPTILES

Snakes

Black Racer
Brown Snake
Garter Snake
Milk Snake

Turtles

Wood Turtle

Anadromous Fish in the Merrimack River

According to records kept by Charles Ramsey of Amesbury, it was not uncommon to catch 60 to 100 salmon a day in the lower Merrimack during the late 18th century. By 1805, however, a catch of ten salmon per day was considered exceptional. The construction of impassable dams, which blocked migratory pathways, prevented them from reaching important spawning grounds. Likewise, the industries that began to locate along the water dumped huge volumes of waste into the River. No catches were recorded in the 1850s. In five decades men had destroyed what nature had maintained for perhaps thousands of years.

Efforts to reintroduce and restore a self-sustaining salmon population during the period of 1886 through 1896 met with initial success. Fish passage facilities were constructed at formerly impassable dams, juvenile salmon were released into the River by the tens of thousands, and many adult salmon returned to the Merrimack to reproduce. However, this endeavor eventually failed due to a number of factors including over fishing, water pollution, ineffective fish passage facilities and construction of new additional dams.

Anadromous fish restoration efforts commenced in 1969 when the state fishery agencies of Massachusetts and New Hampshire, the United States Fish and Wildlife Service and the National Marine Fisheries Service mutually agreed to support an anadromous fisheries restoration and management program. The objectives of that agreement were two-fold: "to strive for the realization of the full potential of the anadromous and resident fishery resources of the River in order to provide the public with high quality sport fishing opportunities and, to assist in providing for the long term needs of the human population for food through development and management of the commercial fishery resources." The United States Forest Service formally joined the effort in 1982.

Today, the Merrimack River provides spawning and nursery habitat for a number of anadromous fish separates including: alewife, American shad, Atlantic salmon, Atlantic sturgeon, blueback herring, rainbow smelt, sea lamprey and white perch. Although two other anadromous species, shortnose sturgeon (endangered species) and stripe bass are found in the Merrimack, evidence of their spawning

has not been documented. American eels, a catadromous species, are quite abundant in the Merrimack Basin and have been commercially fished in recent years.

Although the restoration program is progressing quite well, it will be a number of years before the goal of full restoration is achieved. Fish passage facilities constructed by the dam owners at the Essex Dam in Lawrence, the Pawtucket Dam in Lowell and the Amoskeag Dam in Manchester, New Hampshire allow fish access to spawning areas further up river. All other mainstem dams and the dams on many tributaries are included in a fish passage plan that will lead to full utilization of available spawning habitats.

The annual anadromous fish runs in the Merrimack River occur primarily during the period from mid-March to the end of June. As a result, activities that generate excessive turbidity should be scheduled so as not to coincide with these fish runs.

Areas of Special Resource Concern and Sensitivity

Newburyport has numerous hazardous waste sites listed with the Massachusetts Department of Environmental Protection (DEP)—the Towle Mill Complex and Circle Finishing are of particular note. The Towle Mill complex on Merrimac Street once housed a silversmith operation and has been in a cleanup process for several years. A water filtration system is in constant operation. The owner has been unable to sell the property due to severe environmental issues and decided to convert the building into offices and cap the rear of the site with pavement to serve as parking. This site is immediately adjacent to Cashman Park so site mitigation is of great significance. Circle Finishing on Route 1 at the Newbury / Newburyport line became a contaminated site as a result of a fire several years ago. DEP cleaned up the site and placed a lien on the property for more than it is worth. The site now sits abandoned and still requires additional clean up. The route for the planned Newburyport Bikeway is proposed to be adjacent to the site.

The City operates a recycling and leaf disposal facility on the south side of Hale Street. While there are stockpiles of recycled materials and composting operations, this site does not generate leachate. A capped landfill closed over ten years ago is located across the street. Today refuse collected in the City is disposed of outside city limits.

The Parker River National Wildlife Refuge was established to protect marine vegetation and wildlife indigenous to the barrier beach. The refuge beach is closed for much of the spring and summer to protect the nesting activities of the piping plover. Many other endangered species migrate through the refuge.

Erosion and Sedimentation

There is some evidence of beach erosion taking place on Plum Island during coastal storms. Jetties are located at the mouth of Newburyport Harbor. Erosion is taking place in Cashman Park between the boat ramp and River's Edge Condominiums. Hillsides without vegetation are subject to soil loss. The Bartlet Mall and Maudslay State Park are experiencing erosion on pedestrian circulation paths. The parking lot in Woodman Park is eroding. The surface in each of these cases is coarse sand and gravel.

Sedimentation contributes to blocking the mouth of Newburyport Harbor. The Army Corps of Engineers regularly dredges the mouth to maintain the federal navigation channel. The Newburyport Conservation Commission encourages grass swales to filter sedimentation out of storm water before discharging into ditches.

The impact of development upon the environment is regularly prevented or mitigated in the City. The Conservation Commission is charged with overseeing proposed alterations of sensitive areas. The

majority of the Commission's work focuses on the Plum Island barrier beach, the Merrimack River shoreline and other potential wetland impacts. The Commission has developed standard orders of conditions for projects in the local environments. Projects before the Commission relate to new structures, altering existing structures, roadway projects and landscaping elements. Applicants are discouraged from altering the natural sedimentation flows of the barrier beach. The City's Zoning Ordinance addresses building in Flood Zones.

Merrimack River Water Quality

In 1981, the State's Department of Environmental Quality Engineering and the Merrimack Valley Planning Commission conducted a sanitary survey of the Merrimack River. The study evaluated the lower three miles of the 6.7 mile Merrimack River estuary extending from the U.S. Route 1 Gillis Bridge to the mouth of the Merrimack River. The survey revealed that domestic and industrial pollution of the River during the first decades of the 20th century resulted in the closure of the flats in 1925. Since then, the City's clam flats have only been intermittently opened. The survey also identified thirty-six potential and nine definite sources of pollution. Of the nine definite sources, most were located along Merrimack and Water Streets in Newburyport and Route 1 in Salisbury.

The economic loss due to pollution of the tidal flats has been substantial. The 1981 sanitary survey calculated that the combined area of the six flats examined—Plum Island Sound, Salisbury Flat, Northeast Sands, Old Point Flat and most of Ball's Flat—equaled 285 acres. The area contains 40,000 bushels of legal sized clams, which when extrapolated over the flats in the estuary, would produce a yield in excess of 122,400 bushels. In 1981, this equated to a market value of 3.7 million dollars. The Joppa and Port Arthur Flats, which are more expansive than the others, were not surveyed. More recently, tests by the Commonwealth's Department of Environmental Quality Engineering have indicated a decrease in levels of contamination. However, until more dramatic measures are taken to abate the pollution of the flats, the economic benefit of this resource will not be realized.

Cultural Resources

Cultural resources are those aspects of the environment that reflect the activities and contributions of the human inhabitants of a community or region. They include many elements: historic districts, buildings and structures; scenic roads and landscapes; important institutions; landmarks; village and urban streetscapes; and similar elements. Together with an area's natural resources, these cultural resources define the area's unique or special character.

Historic Resources

Newburyport is widely recognized for its historic center, including the renovated brick buildings of its central business district and the surrounding North End and South End neighborhoods. The City has the second largest National Register historic district in the Commonwealth (however, no Local Historic District has been established in the City).

The City prepared an Historic Preservation Plan in 1991. The recommendations contained in this document should be reviewed and incorporated, as appropriate, into the Master Plan.

The Essex National Heritage Area has designated three "trails" connecting sites linked to particular themes in the region's historic development: Early Settlement, Maritime, and Industrial. Newburyport's Custom House Maritime Museum serves as a Visitors Center for the ENHA, and the Newburyport Historic District is identified as a highlight of each trail.

Scenic Resources

In addition to structures and districts that can be identified as *historic* because of their association with Newburyport's development, with a particular individual, or with a broad national or regional trend or movement, there are other aspects of Newburyport's cultural environment that deserve recognition because of their contribution to a special sense of place in the City. These *scenic* resources are the result of careful or traditional human intervention in the landscape, and include urban streetscapes, scenic roads, and scenic vistas.

Scenic resources in Newburyport include:

- ◆ Views of the Merrimack River (along the entire riverfront)
- ◆ Waterfront Park
- ◆ Bartlet Mall / Frog Pond / Old Hill Burial Ground
- ◆ High Street (designated as a scenic road)
- ◆ Maudslay Park – farm vistas along Hoyt's Lane, and field and forest views from Pine Hill Road and Curzon Mill Road
- ◆ Farm and field views into Newburyport from Scotland Road in Newbury
- ◆ Plum Island Airport (Newburyport and Newbury)
- ◆ Joppa Park and Water Street views
- ◆ Atkinson Common

Some of these areas are also recognized as historic resources, but few are protected from development impacts.

Artists, Craftspersons, and Cultural Organizations

In addition to those aspects of Newburyport's cultural resources that are linked to elements of the built environment, the City also has a thriving community of artists and craftspeople that is extremely important to the quality of life for residents. This community includes significant institutions such as the Firehouse performing arts center and the Maritime Museum, as well as numerous individuals and small businesses, particularly in the central business district.

The growing popularity and success of Newburyport has brought with it financial pressures that threaten the continued diversity of its arts community. There is a concern that high costs of housing and studio space could hurt the arts community in Newburyport, driving individual artists and craftspeople out of the City to nearby lower-cost communities. Also, there is a recognized need for additional capital support for some of the larger institutions, such as the Maritime Museum.

OPEN SPACE AND RECREATION

The City completed an updated Open Space and Recreation Plan in 1999. This Plan includes an extensive parks system inventory listing each City, State and private park in Newburyport. In addition to location, owner, and zoning, the inventory report includes the history and description of each site, assessments of existing conditions and major site issues, and planned actions and/or recommendations. The last section features both short term and long term recommendations. In addition, a universal accessibility study was completed covering all City-owned parks.

The 1999 Open Space and Recreation Plan contains detailed discussions of open space and natural resource issues, needs, and priorities, and serves as the basis for this chapter as well as much of the Natural and Cultural Resources chapter.

Open Space and Recreation Resources and Facilities

Newburyport contains a wide array of public and private conservation and recreation lands. Some of these areas are permanently protected as open space, while others are not protected from eventual development or conversion to other uses. Protected open space includes parcels owned by the City and under the jurisdiction of the Conservation Commission or Water Department (or other parcels owned by the City where state or federal funds were provided to purchase or improve a property for conservation or recreation purposes); by one of the state’s conservation agencies; or by a nonprofit land trust.

Land owned by other public agencies is not considered protected, nor are privately-owned parcels that participate in the State’s preferential tax assessment programs, i.e., Chapter 61 (forest), 61A (agricultural) and 61B (private recreation).

Parks Inventory

Table 65 presents a summary of the City’s public open space areas, drawn from the Open Space and Recreation Plan.

Table 65: Newburyport Parks

Name	Address/Map/Lot	Acres	Owner
Atkinson Common & Pioneer League*	High Street	21.0	City (Trust manag.)
Atwood Park	Atwood Street	0.7	City
Bartlet Mall/Washington Park*	High/Greenleaf/Pond	7.3	City
Brown Square	Pleasant Street	0.6	City
Cashman Park*	Merrimac Street	12.4	City
City Forest*	Hale Street	47.0	City
Cushing Park / Ayer’s Playground	Kent Street	2.0	City
Hale Park*	Water Street	2.0	Private
Inn Street Mall*	Merrimac/Pleasant	0.5	City
Jason Sawyer Memorial Playground*	Northern Boulevard	0.25	State (City manag.)
Joppa Park at the Seawall	Water Street	0.5	City

Name	Address/Map/Lot	Acres	Owner
Joppa Flats Wildlife Center & Sanctuary	Plum Island Tpke.	54.1	Massachusetts Audubon Soc.
March's Hill	High Street	17.5	City
Market Landing*	Merrimac Street	4.1	Waterfront Trust
Market Square*	Market Square	0.2	City
Maudslay State Park*	Curzon's Mill Road	480.0	State
Moseley Woods*	Spofford Street	18.0	City (Trust manag.)
Newburyport Beach (Plum Island)*	Northern Boulevard	52.0	State (City manag.)
Perkins Playground	Beacon Avenue	10.1	City
Tracy Park*	Pleasant Street	0.15	City
Woodman Park	Crow Lane	10.4	City
Total		740.8	

* = protected according to Executive Office of Environmental Affairs guidelines

School Department Property

The Newburyport Public School system consists of 2,472 students housed in three elementary schools, a middle school and a high school.

Table 66: School Properties

Name	Address/Map/Lot	Acres
Newburyport High School	241 High Street	13.0
Rupert Nock Middle School	70 Low Street	19.2
Bresnahan Elementary School	333 High Street	15.0
Brown Elementary School	Milk Street	1.3
Kelley Elementary School	High Street	0.8
Total		49.3

Water and Sewer Department Property

The Water Department has extensive holdings in prominent locations. A large portion of the Department's property is located around the Artichoke Reservoir, which is a short walk from the City Forest on Hale Street. Another significant area is around the City's two wells off Spring Lane adjacent to the Merrimack River. A parcel off Ferry Road that protected a former well serves as a nice backdrop to Moseley Woods.

Sewer Department holdings only amount to 3 percent of Water Department holdings. These parcels are generally not useful in the open space network. The proposed Newburyport Bikeway will pass between the Merrimack River and the Wastewater Treatment Facility.

Table 67: Water Department Properties*

Name	Acres
Turkey Hill Protection of Water Supply	3.5
Plummer Spring Road	6.7
Plummer Spring Road	16.1
Plummer Spring Road	2.6
Artichoke	13.6
Artichoke	4.6
Artichoke River	3.5
Artichoke River Island	0.7
Noble Street	33.0
Coffin Court	2.0
March's Hill Water Tower	2.3
Rawson Avenue Water Tank	0.18
378 Merrimac Street Drain	0.18
237 Storey Avenue	3.4
Ferry Road Former Well	16.3
Spring Lane Pump Station	34.8
Spring Lane Pump Station	33.0
Total	176.5

* = protected according to Executive Office of Environmental Affairs guidelines

Table 68: Sewer Department Properties

Name	Address/Map/Lot	Acres
Wastewater Treatment Facility	151 Water Street	3.4
Pumping Station	417 Merrimac Street	0.11
Pumping Station	Low Street	0.15
Pumping Station	Hale Street	0.23
Pumping Station	12 Laurel Road	0.44
Pumping Station	4R Laurel Road	1.1
Total		5.43

Easements/Walkways

Table 69: Easements and Walkways

Name	Owner
Proposed Bikeway	MBTA, B&M, Mass Electric (City Operated)
Essex Street (behind #25 State Street)	Unknown
Essex Street (behind #47 State Street)	Unknown
Charter Street (behind #61 State Street)	Unknown
Tremont Street (between #15 & #17)	Unknown
17 Beck Street (behind #9-13 Beck)	Unknown

Other City-Owned Properties

The City owns several undeveloped traffic islands of a quarter to one-half acre. Given the suburban nature of the City, these locations are of little potential use in the open space network. Parcels on Plum Island owned by the City range from four to six thousand square feet. These parcels should be further explored for their potential use as waterfront access points. A number of former clam hut parcels along Water Street are also held by the City; however, they range from only 120 to 1350 square feet.

Table 70: Other City-Owned Property

Name	Address/Map/Lot	Acres
17 Beck Street		0.09
Ferry Road Traffic Island		0.23
2 Ferry Road Fork		0.22
Moulton Square Traffic Island		0.50
15 I Street	PI	0.11
Old Point Road	PI	0.13
Old Point Road	PI	0.09
Old Point Road	PI	0.13
Queen Street	PI	0.13
Martha Street	PI	0.09
Iris Street	PI	0.11
237 Water Street		0.06
Water Street	30 10	0.004
Water Street	30 11	0.01
Water Street	30 12	0.003
Water Street	30 13	0.03
Water Street	30 14	0.004
Water Street	30 17	0.02
Water Street		0.15
Water Street	30 2	0.05
Total		1.86

Cemeteries

Cemeteries are a largely unrecognized recreational resource. A number of local burial areas date back to the early 1700s. They are often good locations for picnics, dog walking, experiencing nature and reminiscing. The City of Newburyport owns two of the seven cemeteries in the City.

Table 71: Cemeteries

Name	Acres	Owner
Oak Hill Cemetery	34.4	Private
Highland Cemetery	12.4	City
including 10 Hill St	0.22	City
St. Mary's Cemetery	23.7	Private
St. Paul's Church Yard	0.1	Private
Belleville Cemetery	13.0	Private
Sawyer Hill Cemetery	3.2	Trust
abutting property	2.0	City
Old Hill Burial Ground incl. Veteran's Cem.	5.3	City
Total	94.32	

Privately Owned Natural and Conservation Land

There are many significant privately owned parcels that add to the Newburyport character. The State of Massachusetts has established an open space tax incentive program known as Chapter 61, 61A and 61B. A property owner meeting certain acreage and use requirements willing to record a lien of his property may receive a reduced tax assessment. There are both Chapter 61A (agricultural/horticultural) and 61B (private recreation) properties in the City, but no Chapter 61 parcels (forest).

Chapter 61A qualifications include 5 acres "actively devoted" to an agricultural/horticultural use with gross sales of at least \$500. Land must have been under the proposed use category for two prior years. There are 457.26 acres of Chapter 61A land in the City (see Table 72), of which 68 percent is classified as tillable forage cropland.

Private recreation lands under Chapter 61B require 5 acres and a natural, wild, open, landscaped or recreational use. There are 24.93 acres of Chapter 61B land in Newburyport. Two-thirds of this land (on Curzon Mill Road) is designated as a nature study area and the remainder (on Plum Island Turnpike) is for public non-commercial flying.

Table 72: Chapter 61A and 61B Properties in Newburyport

Assessor's Code	Description	Acres	Percent
7000	Chapter 61A—Agricultural		
7120	Truck Crops—Vegetables	40.00	8.7
7130	Field Crops—Hay & Wheat	18.00	3.9
7140	Orchards	4.00	0.9
7160	Tillable Forage Crops	309.46	67.7
7180	Pasture	53.08	11.6
7190	Nurseries	26.08	5.7
7200	Necessary Related Land	6.64	1.5
Sub-Total		457.26	100%
8000	Chapter 61B—Private Recreation		
8030	Nature Study	16.32	65.5
8130	Public Non-Comm. Flying	8.61	34.5
Sub-Total		24.93	100%
Total Participating Acreage		482.19	

Summary of Open Space

All significant agricultural land in the City is listed under Chapter 61A. Significant public forest land—including the City Forest, Moseley Pines, March's Hill, Maudslay State Park and water department property—have been discussed previously.

Private holdings of forest land is very limited. The Cook family recently sold a 15.17 acre forested parcel on Merrimac Street and Moseley Avenue which is now proposed to be divided into 42 lots. The Chegade & Hortein family owns 21.2 forested acres on the Merrimack River off Spring Lane.

There are numerous lots on Plum Island that are wet or too small to build on. Woodbridge Island, owned by DEM, is too wet to build on. Many wet areas between Interstate 95 and Low Street south of Crow Lane are not buildable.

The City possesses many more private recreation areas than are included under Chapter 61B. A list of commercial and semi-public recreation facilities follows this discussion. Newburyport has no agricultural land incentive areas.

The Anna Jacques Hospital property is insignificant in the open space network. Most of the land is devoted to the building and parking. There are no other major institutional property owners in the City.

A significant amount of property remains available for development in the industrial park.

Commercial and Semi-Public Recreational Facilities

In addition to the parks and other open space areas in the City, Newburyport contains a variety of developed facilities and commercial establishments relating to recreation, including a swimming pool, skating rink, racquet and golf clubs, dance and gymnastics facilities, health clubs, sporting goods stores and boating facilities.

Table 73: Commercial and Semi-Public Recreational Facilities

YWCA & Community Swimming Pool	13 Market Street
Salvation Army Corps Community Center	40 Water Street
Henry Graf, Jr. Ice Skating Rink (DEM)	28 Low Street
Racquet Club of Newburyport Ltd.	178 Low Street
Evergreen Valley Golf Club	20 Boyd Drive
The Dance Place	12 Federal Street
Gymnastics:	
A New Height Academy	6 Merrill Street
Clipper City Gymnastics	84 State Street
Health Clubs & Gymnasiums:	
Eunice D. James Studio	31 Pleasant Street, #6
The Fitness Factory	75 Merrimac Street
The Gym	50 Parker Street
Sporting Goods Stores:	
Hyman's Pennyworth's	45 Storey Avenue
Riverside Cycle	50 Water Street
Yankee Runner	49 Pleasant Street
Marine Equipment & Supplies:	
Hudson's Outboard	38 Merrimac Street
Rowe Marine Supply	54 Merrimac Street
US 1 Auto Marine	84 Newburyport Turnpike
Marinas:	
Carr Island Marina	386 Merrimac Street
Merri-mar Yacht Basin	364 Merrimac Street
Ferry Landing Marine	346R Merrimac Street
The Boatworks at Newburyport	300 Merrimac Street
River's Edge Marina	126 Merrimac Street
Michael's Harborside	Tournament Wharf
Windward Yacht Club	58R Merrimac Street
Hilton's Fishing Dock	54R Merrimac Street
Boat Clubs:	
North End Boat Club	Manson Avenue
American Yacht Club	117R Water Street

Newburyport Harbor has a 540 boat capacity at various commercial slips. There are eight private marinas and two private boat clubs located along the Merrimack River in Newburyport. Most of the existing marinas are servicing larger sized boats (25 feet and over). There are limited marina opportunities for the smaller classed boats.

In the past, Newburyport's various marinas had full marine service facilities with full-time employees of the marinas performing the various engine, painting and mechanical type of work. Today, due to the high costs of running a marina, there is no large marine service operation on the River in Newburyport. Several marinas provide limited marine services; but large jobs, such as a big engine overhaul, or complicated radar/loran installations usually require a specialist.

Analysis of Open Space and Recreation Needs

Summary of Resource Protection Needs

Newburyport has 1,068.5 acres of parks, school department, water department, sewer department, other city owned land and cemeteries. Seventy-seven percent or 821.4 acres are protected according to the Department of Environmental Management definition. In addition to these lands are private natural and conservation land, and commercial and semi-public recreation facilities. There are 457.26 agricultural acres in Chapter 61A and 24.93 private recreation acres in Chapter 61B. Most landowners with qualifying parcels choose to participate in these programs. There are a total of over 1,550 acres of open space in the above categories. Roadway buffers, salt marshes, wetlands, surface water, small private land parcels, land planned for development and yard areas make significant contributions to overall resources.

A greenway necklace should link open space in the City. Currently, High Street serves as a tree-lined vehicular and pedestrian spine linking central elements of the City's suburban fabric, with March's Hill at the east end and Atkinson Common to the west. Bartlet Mall, the City's oldest formal exterior space, lies in the middle. Plum Island Turnpike connects the mainland with the island. Soft brown salt marshes and the river border the road. At the western end of High Street, Ferry Road connects to Pine Hill Road, Curzon's Mill Road and Hoyt's Lane which provide a lush path through the forest. Water and Merrimac Streets connect several parks and help form linkage along the waterfront, however they are not pedestrian or cyclist friendly. There is little connection to parklands in the west end. A new path between Woodman Park and Goldsmith Drive brings access to the park from recent housing developments.

The major water department holdings abut or are in very close proximity to parks. The combination of the Moseley Pines parcel and water department land provides a link between Merrimac Street and Ferry Road. Water department properties on Spring Lane are not far from the Ferry Road site. March's Hill and the water department property behind it complement each other. Holdings in the Artichoke Reservoir and Plummer Spring Road areas are a short walk down Hale Street from the City Forest.

Wildlife circulate along two main corridors in the City. The waterfront is part of a major bird migration route. Fish and other sea creatures swim and spawn in the river. The City's West End is the most rural and has a significant mammal population. Maudslay State Park, the City Forest and Chapter 61A lands provide space for animals to roam. West Newbury and Newbury are more rural than Newburyport and consequently have larger areas for animals to move in. Maudslay is self contained, bordered by the Merrimack River, Artichoke River, Interstate 95 and Route 113. Some species cross Route 113 and the Artichoke. Wildlife movement in the West End is being broken up by new residential development.

Summary of Community's Needs

Adequacy of Existing Parks and Recreation Facilities

The City is fortunate to have a significant amount of parkland. The City has 644.9 protected acres and 740.8 total acres of park space. Typically communities should have one acre of park for every 100 people. Since Newburyport has 16,600 people the optimum amount of park acreage would be 166 acres. The optimum acreage figure is surpassed without including the 480 acre Maudslay State Park. If only protected parks are included after deducting the Maudslay acreage there are 164.9 acres remaining, just below the optimum level.

In the Parks Commission survey, respondents rated the adequacy of the City's public parks and recreation facilities city-wide and in their neighborhood. Sixty percent of those responding found the adequacy of city-wide facilities to be excellent or good. The adequacy of neighborhood facilities was rated slightly lower with 49 percent rating nearby parks excellent or good. Individuals may have a higher standard for parks in their neighborhood because they use them the most frequently.

The only area of the City in which residents rated their own neighborhood parks and recreation adequacy significantly lower than other neighborhoods was the area east of State Street in mainland Newburyport. Residents of the area west of Interstate 95 rated their park system slightly less than how other neighborhoods rated their systems. Both neighborhoods could use a greater concentration of parkland; however, neither is without park resources. Each location has a neighborhood park of at least 10 acres. The area east of State Street is home to Atwood Park, March's Hill, Joppa Park at the Seawall, Hale Park and Perkins Playground. Residents of this area do not have to walk more than a quarter mile to a park or a half mile at most to a sizable one. The West End houses Woodman Park, City Forest and Maudslay State Park. The City Forest needs to be developed for passive recreational uses, Maudslay serves a regional demand, and Woodman needs to be completed beyond the current phase one construction to better serve the emerging development in this area.

While many respondents to the Parks Commission survey felt that the City has adequate parks and recreation facilities, there is a recognition among those directly involved in organized sports activities that there is a shortage of playing fields. Representatives of the local youth soccer organization noted that there are not enough facilities available to allow even one field to be rested for one season, and Fuller Field had to be taken out of service because its condition was becoming dangerous. There is thus a need to create additional playing fields, and to reserve space for these fields as existing open space areas are developed.

Needs for Additional Recreational Opportunities

Residents were asked to make recommendations for new recreational opportunities for the City to provide. Biking was rated first followed by children's playgrounds, organized teen activities, tennis, organized children's activities, swimming and skating. Residents asked for opportunities that were generally different than their current most important recreation activities. Important present activities included: walking or hiking, children's playgrounds, football or soccer, private passive activities, outdoor socializing, baseball/softball and downhill skiing. Children's playgrounds are the only activity that appears on both lists. The City does not provide organized teen activities outside the schools. Many tennis courts in the City parks are in disrepair or have been paved with bituminous concrete. Organized children's activities take place during the summer months in conjunction with the YWCA. The seasons for outdoor swimming and skating are limited. The majority of activities resident deem important can take place in the parks system today. Football and baseball/softball require adequate field space and limited equipment, however residents are not clamoring for more of these facilities. Downhill skiing may take place on rare occasions in the parks, but residents go to resorts for this activity.

Accessibility of Existing Facilities

Existing park facilities do not adequately provide for universal access. While a several City parks are accessible, no park is completely ADA compliant. In most cases parks require curb cuts, hard/smooth paths and benches with arms. Some facilities require handicapped parking and slope modifications. Parks in the downtown area are generally more compliant than less heavily used neighborhood parks. Much of the elderly population in Newburyport resides in the downtown area at the Sullivan Building or the James Steam Mill. The City needs to utilize greater resources in assisting the less mobile population.

SERVICES AND FACILITIES

Water Supply

Water Supply System

A *Water System Study* was prepared for the Newburyport Water Department by Whitman & Howard, Inc., in May 1991. The purpose of the study was to develop an improvement program, through the year 2010, needed to maintain adequate water supply and system pressure at service locations and to provide fire protection for the customers. The following description of the water supply system is based on the Whitman & Howard study.

Newburyport's water supply system consists of the following elements:

- ◆ Upper and Lower Artichoke River Basin Impoundments
- ◆ Artichoke Pumping Station
- ◆ Spring Land Water Treatment Plant
- ◆ Well No. 1
- ◆ Well No. 2
- ◆ Bartlett Springs
- ◆ Main Pumping Station

The Upper and Lower Artichoke Reservoirs (constructed during 1930s) impound a combined 310 million gallons of water. Southwest (upstream) of Upper Artichoke Reservoir is the Indian Hill Reservoir (constructed in early 1980s).

The Artichoke Pumping Station transfers water from the reservoirs to the Spring Lane Water Treatment Plant (WTP). It has two centrifugal pumps, each rated for 2800 gallons per minute. However, because of discharge hydraulic restrictions, the Station can only pump about 1,900 gpm with one pump and about 2,000 gpm with both pumps.

The Spring Lane Water Treatment Plant treats the surface water supply, using coagulation (alum), flocculation, sedimentation, rapid sand filtration, and pH adjustment (sodium hydroxide). The plant's design capacity is 4.28 mgd, and its peak hydraulic capacity is reported to be 7.14 mgd.

The City operates three groundwater supplies from the same aquifer:

- ◆ Well No. 1 (1950) is 50 feet deep. Its original capacity was 700 gpm, and its current capacity is 500 gpm. Using a 16 hr/day pumping period, this well can supply 0.48 mgd.
- ◆ Well No. 2 (1959) had an original capacity of 700 gpm, and its current capacity is 530 gpm. Using a 16 hr/day pumping period, the well can supply 0.51 mgd.
- ◆ Bartlett Springs consists of a series of infiltration galleries between the WTP dewatering lagoons and the main pumping station. City has slowly been abandoning these galleries by filling them.

The main pumping station has 3 pumps, with rated capacities of 2300 gpm, 1500 gpm, and 2600 gpm. However, reported hydraulic restrictions prevent the pumps from reaching their rated capacities. Water treatment at the pumping station includes chemical feed systems for disinfection and fluoridation, as well as chlorination.

Water Demand Trends and Projections

The Newburyport Water Department supplies water to the City of Newburyport and to the Old Town Water District in Newbury, and also sells water wholesale to West Newbury. Table 74 presents average and maximum daily demands for the period from 1979 through 1990. The 1991 *Water System Study* projected that in 2010 total average daily demand would be 3.25 million gallons per day (MGD) and total maximum daily demand would be 5.0 MGD.

Table 74: Public Water Demand Levels, 1979–1990

Year	Average Day (mgd)	Maximum Day (mgd)	Maximum Day to Average Day Ratio
1979	2.23	2.93	1.31
1980	2.24	3.22	1.44
1981	1.97	2.87	1.46
1982	1.93	2.48	1.28
1983	2.15	2.88	1.34
1984	2.21	3.17	1.43
1985	2.40	3.81	1.59
1986	2.28	3.41	1.50
1987	2.34	3.62	1.55
1988	2.16	3.81	1.76
1989	2.15	3.27	1.52
1990	N/A	4.06	N/A
Average			1.47

Source: Whitman & Howard, Inc., *Water System Study: Newburyport Water Department*, May 1991

The components of average daily demand for 1981 through 1989 are presented in Table 75. The following points were noted in the 1991 *Water System Study*:

- ◆ Residential meters grew from about 40% to about 48% of total demand over the nine-year period. Most of the future growth in the service area will be in residential zones, based on housing construction data and zoning maps.
- ◆ Commercial/industrial was the second largest component, growing from about 33% to 37% of the total.
- ◆ Municipal uses (including schools, municipal buildings, wastewater treatment facility, post office, Frog Pond, water treatment plant, and cemeteries) averaged between 7 and 10 percent of total.
- ◆ Agricultural use was a minor component but doubled during the 1980s.
- ◆ West Newbury accounted for 5 to 8 percent of total, but may be considerably less in the future. (The West Newbury Water Department constructed supply facilities in the Town of West Newbury in 1991.)
- ◆ The “Unaccounted For” category includes hydrant usage (fire fighting, street sweeping, water main flushing, sewer flushing, hydrant testing, unauthorized use and construction usage), system leakage (standpipe overflows, standpipe leakage, main breaks, main leakage, service leakage,

hydrant leakage, and active blow-offs), and accounting errors (customer meters slippage, master meters over-registration, data processing errors, and errors in estimated billing). The share of total demand represented by this category dropped from 11.7 percent of average daily demand in 1981 to 2.8 percent in 1989.

Table 75: Components of Average Day Demand (mgd), 1981–1989

Year	Residential	Agricultural	Commercial/ Industrial	Municipal	West Newbury	Unaccounted For
1981	.85	.02	.67	N/A	.17	.26
1982	.83	.02	.65	N/A	.16	.26
1983	.90	.02	.69	.15	.16	.23
1984	.97	.02	.71	.15	.15	.20
1985	1.08	.02	.79	.19	.19	.13
1986	1.00	.02	.80	.17	.15	.13
1987	1.09	.03	.84	.21	.16	.19
1988	1.06	.04	.79	.21	.16	.06
1989	1.06	.04	.79	.21	.16	.04

Source: Whitman & Howard, Inc., *Water System Study: Newburyport Water Department*, May 1991

By combining the above information on residential and nonresidential usage with data on Newburyport's population levels and the number of employees in Newburyport businesses, it is possible to get a sense of trends in water usage *rates*, e.g., residential water demand per capita, and nonresidential demand per employee. This is useful for estimating future growth in demand based on projected residential and commercial growth. Table 76 presents this analysis, and indicates that residential usage rates increased by more than 20 percent during the 1980s, from 53 to 65 gallons per person per day. In contrast, nonresidential demand rates peaked briefly in 1985, but otherwise showed an overall pattern of decline: demand per employee in 1989 was 8 percent lower than in 1983.

Table 76: Residential and Nonresidential Water Consumption Rates, 1981–1989

Year	Population (estimated)	Residential Usage (mgd)	Demand per Capita (gal./day)	DET Covered Employment	Nonresidential Usage (mgd)	Demand per Employee (gal./day)
1981	15,942	0.85	53.32	5,603	N/A	N/A
1982	15,983	0.83	51.93	6,453	N/A	N/A
1983	16,025	0.90	56.16	6,624	0.86	129.83
1984	16,067	0.97	60.37	7,025	0.88	125.27
1985	16,109	1.08	67.05	7,136	1.00	140.13
1986	16,150	1.00	61.92	7,658	0.99	129.28
1987	16,192	1.09	67.32	8,167	1.08	132.24
1988	16,234	1.06	65.30	8,633	1.04	120.47
1989	16,275	1.06	65.13	8,744	1.04	118.94

Adequacy of Existing Water Supply

The 1991 *Water Supply Study* presented the following data and projections regarding supply and demand:

Table 77: Existing Water Supply System Capacity and Projected Demand

Impoundment or Groundwater Supply	Reported Safe Yield (mgd)
Artichoke River Basin Impoundments	1.70
Well No. 1	0.48
Well No. 2	<u>0.51</u>
Total Safe Yield	2.69
Year 2010 Average Day Demand	<u>3.25</u>
Deficit	-0.56

Bartlett Springs was not included in this analysis because City was in the process of abandoning the springs and the aquifer has a reported total safe yield of 1.0 mgd (that is, only 0.09 mgd above the combined safe yield of the two wells). Subsequently, a 1998 study by Metcalf & Eddy reported a firm yield of 1.85 mgd for the Artichoke River Basin impoundments (Indian Hill, Upper Artichoke, and Lower Artichoke Reservoirs), bringing the total safe yield to 2.84 mgd.¹⁷

In January 2000, the consulting firm Fay, Spofford & Thorndike, Inc., prepared a report entitled *Plum Island Water Supply Evaluation* for the Board of Water Commissioners. The report reviewed previous reports and correspondence relating to the water system, evaluated the capacity of the system to accommodate the proposed additional flows resulting from an extension to Plum Island, and presented estimates of capital and operating costs. The report projected that average day demands would grow as follows:

Table 78: Projected Water Demand, 1998–2020

Year	Without Plum Island		With Plum Island	
	Average Day Demand	Maximum Day Demand	Average Day Demand	Maximum Day Demand
1998	2.20 mgd	N/A	2.64 mgd	N/A
2010	2.58 mgd	4.39 mgd	3.02 mgd	5.27 mgd
2020	2.89 mgd	4.91 mgd	3.33 mgd	5.79 mgd

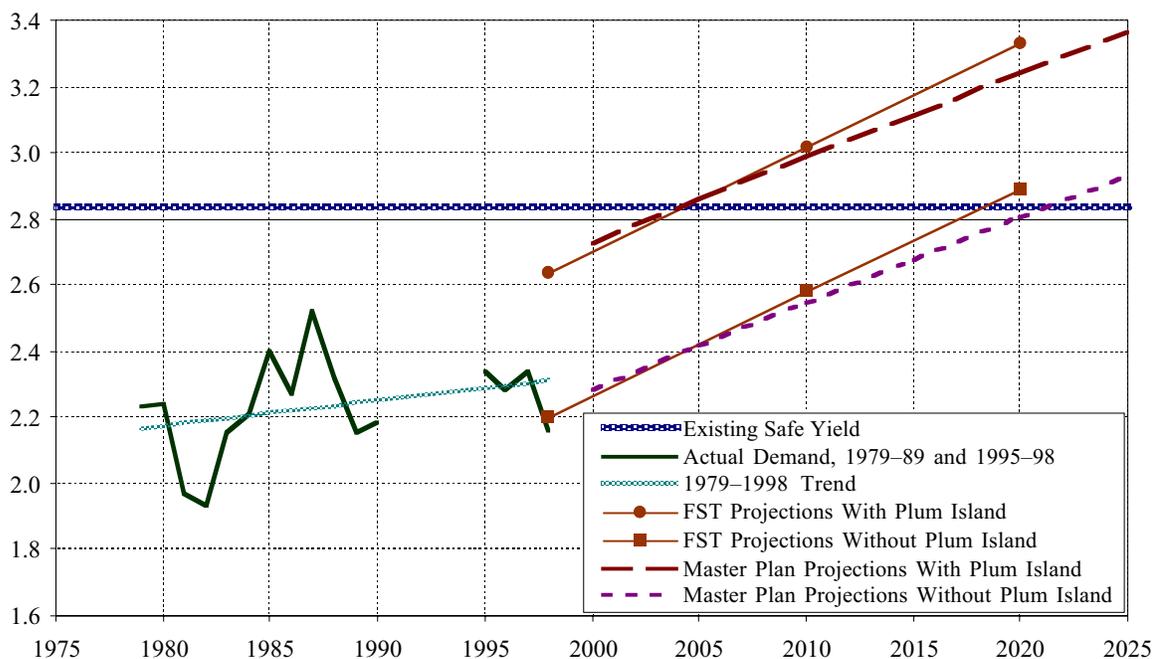
Source: Fay, Spofford & Thorndike, Inc., *Plum Island Water Supply Evaluation*, January 2000; p. 16.

Based on these projections, Fay, Spofford & Thorndike concluded that the water system's existing safe yield of 2.84 mgd would be exceeded in 2018 without the addition of Plum Island, and by 2004 with Plum Island's additional demand.

Figure 7 presents these projections graphically, as well as showing the recent growth in demand over the past two decades. The chart also includes separate projections based on the somewhat lower growth rates for housing, population and employment incorporated into the Master Plan.

¹⁷ Cited in Fay, Spofford & Thorndike, Inc., *Plum Island Water Supply Evaluation* (January 2000), p. 10.

Figure 7: Average Daily Demand for Water (Millions of Gallons Per Day)



Sources: 1979-89 – Whitman & Howard, *Water System Study*, May 1991.
 1995-98 – City of Newburyport, Annual Reports (1994-95 through 1998-99).
 1998 estimate and 2010/2020 projections – Fay, Spofford & Thorndike, *Plum Island Water Supply Evaluation*, January 2000.
 Master Plan projections – Whiteman & Taintor analysis based on estimated housing and employment growth rates.

Potential Improvements to Water Supply Capacity

There are several potential measures that the City might take to increase the capacity of the water supply system. The 1991 Whitman & Howard report recommended dredging the Upper Artichoke Reservoir to increase the impoundments' combined safe yield from 1.7 mgd to 2.6 mgd (i.e., an increase of 0.9 mgd). The W&H report also recommended increasing the pumping capacity of the Artichoke pumping station from 1900 gpm to 2970 gpm (4.28 mgd). The report noted that this would require replacing the 400 ft of 12-inch unlined raw water main at Spring Lane WTP and possibly changing of impellers in the Artichoke pump station pumps.

The 1998 Firm Yield Study by Metcalf & Eddy did not address the issue of dredging in the reservoirs. Instead, it stated that the yield of the reservoir system could be increased by using the lower intake of the Indian Hill Reservoir, and by pumping water from the lower reservoirs up to the Indian Hill Reservoir. M&E stated that it would be technically possible to increase the reservoirs' yield from 1.84 mgd to 2.16 mgd, but that the maximum yield available given existing constraints would be 2.049 mgd (that is, an increase of approximately 0.21 mgd).

Finally, although previous studies had discounted the use of Bartlett Springs to augment the water supply, the January 2000 report by Fay, Spofford & Thorndike, Inc., recommended that this source should be considered, as it could potentially add 0.5 mgd to the City's water supply.

Storage Facilities

There are two storage facilities within the water system:

- ◆ Rawson Hill Standpipe has a total capacity of 2,040,000 gallons.
- ◆ Marches Hill Elevated Tank has a capacity of 500,000 gallons, but is in poor condition.

The 1991 Whitman & Howard study evaluated the adequacy of the storage facilities and determined that the needed storage was beginning to exceed capacity. As shown in Table 79, the storage deficit was projected to increase to approximately 400,000 gallons by the year 2010.

Table 79: Needed Available Active Public Water Supply Storage

Storage Factors	1990	2010
Fire Volume	630,000	630,000
Hourly Fluctuation Volume	827,500	1,000,000
Emergency Volume	<u>385,500</u>	<u>542,000</u>
Total Needed Available Active Storage	1,843,000	2,172,000
Total Existing Available Active Storage	<u>1,775,000</u>	<u>1,775,000</u>
Deficit of Available Active Storage	68,000	397,000

To address this projected deficit, Whitman & Howard recommended that the Marches Hill elevated tank be abandoned and replaced with a 120-foot tall, 46-foot diameter, 1.5 million gallon standpipe. This would replace the existing 500,000 gallon tank and provide an additional 400,000 gallons for the projected 2010 deficit.

Transmission and Distribution Facilities

The available water is moved through the City via *transmission* piping and *distribution* piping. In terms of transmission, the City is all within one pressure zone. The largest diameter main is the 16-inch diameter cement-lined main from the main pumping station to the Rawson Hill standpipe. There is no true transmission piping between the Rawson Hill standpipe and the Marches Hill tank.

The distribution system was reinforced during the 1980s. Piping in the downtown area is tightly networked and produces adequate flows and pressures in the older areas of the City.

The 1991 Whitman & Howard study identified two deficiencies through a computer hydraulic simulation network model:

- ◆ Necessary fire flow coincidental with year 2010 maximum day system demand; and
- ◆ Peak hour system demand in the year 2010.

The report recommended that the City aggressively replace undersized, unlined piping; clean and line existing larger diameter unlined pipe; and cross-connect the 16-inch water transmission main with the distribution system at all intersections along its length. This would create a stronger transmission and distribution system by reinforcing both systems.

Wastewater Collection and Treatment

The Newburyport Wastewater Department operates approximately sixty-five miles of sewer mains, fifteen lift station and a 3.4 million gallon per day (MGD) secondary activated sludge treatment plant located at 157 Water Street, referred to as the Wastewater Treatment Facility (WWTF). Currently, the entire City east of Interstate 95, except for Plum Island, is serviced by a municipal wastewater pumping and collection system. Approximately 90% of the City west of I-95 is serviced by a municipal wastewater pumping and collection system, with the remaining 10% either currently being sewered or to be sewered in the near future.¹⁸ As per the Sewer Use Ordinance, all future developments are to supply their own wastewater collection and pumping facilities.

Figure 8 presents the annual average volumes of water demand and wastewater treatment in the City from 1995 through 1999, and Figure 9 presents the same information on a monthly basis. Since 1997 both the total water demand and the total wastewater generation have decreased markedly.

**Figure 8: Annual Average Water Demand and Wastewater Treatment, 1995–1999
(million gallons per day)**

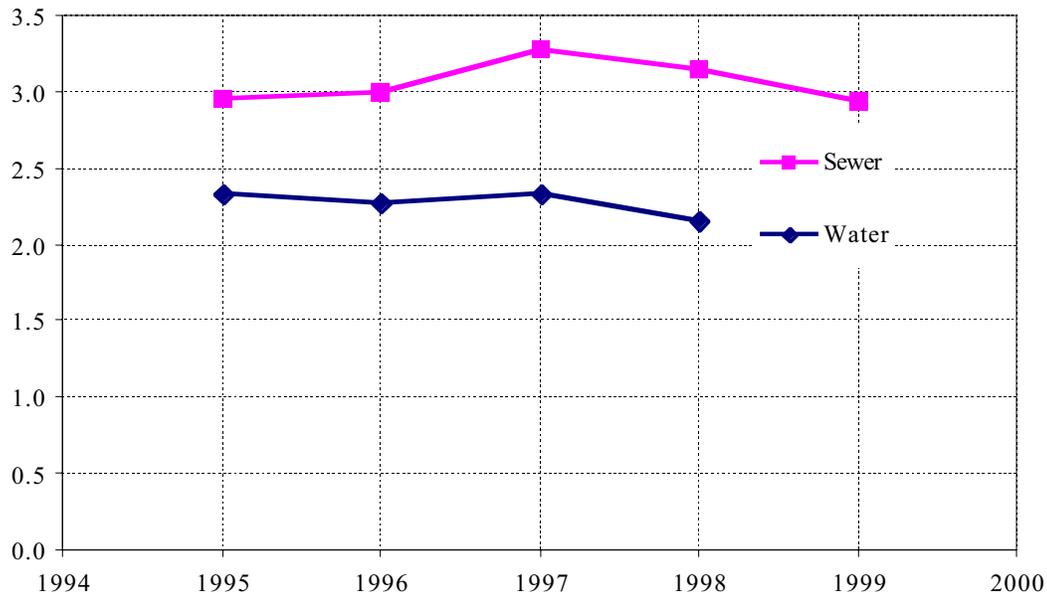


Figure 10 plots the ratio of wastewater treated to water consumed, based on average daily flows. On average, the volume of wastewater water going into the treatment facility is about 50 percent greater than the volume of water supplied by the Water Department. This indicates a high level of inflow and infiltration (I/I) into the system. Moreover, the recent trend has been for this ratio to increase: from mid-1995 through 1998 the ratio increased by 15 percent. The ratio tends to decrease during the summer, when water demand is at its highest, because more water is used for outdoor purposes, such as watering lawns and gardens, during the summer, and this water does not go into the wastewater system (during the first half of 1999 the ratio decreased to its 1995 level, which could reflect either lower I/I or higher than normal outdoor water usage).

¹⁸ Memorandum from the City of Newburyport Sewer Department, cited in 1999 Open Space and Recreation Plan.

**Figure 9: Monthly Average Daily Water Demand and Wastewater Treated, 1995–1999
(million gallons per day)**

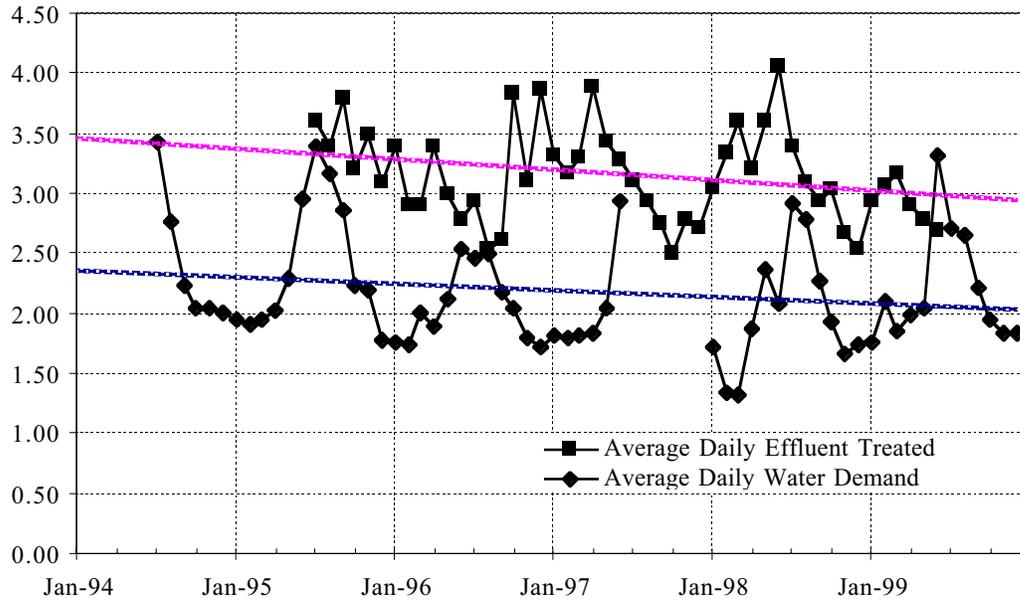
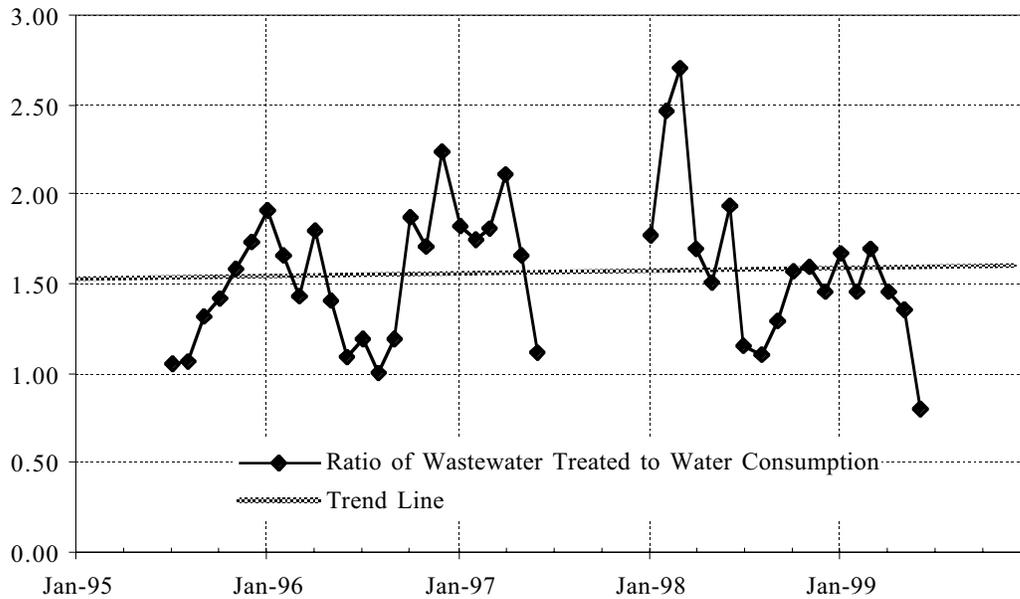


Figure 10: Ratio of Wastewater Treated to Water Consumption, 1995–1999



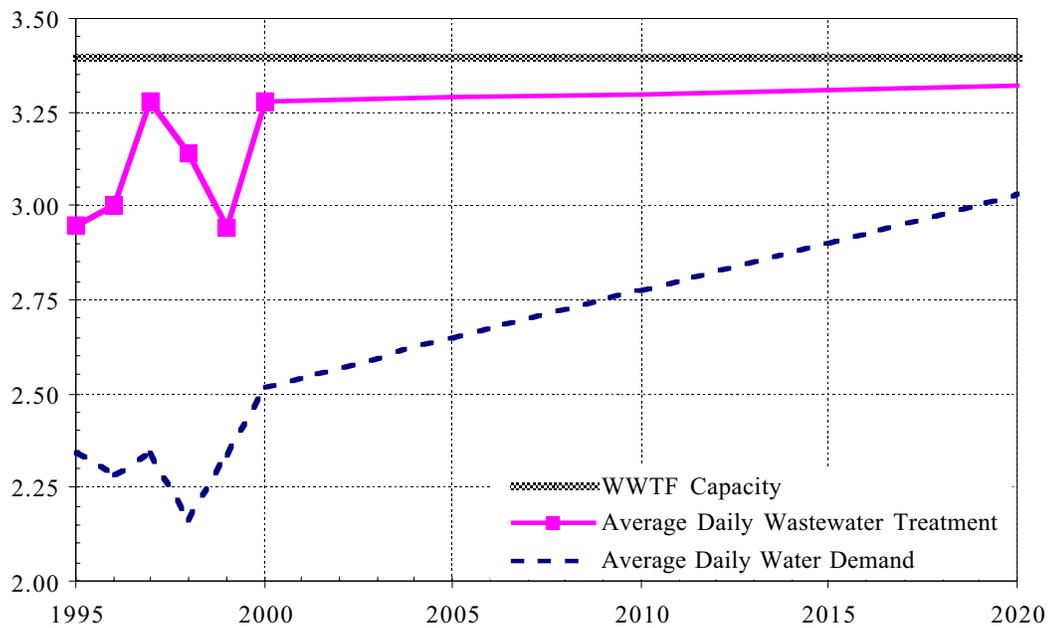
The projections of wastewater generation with the extension of these utilities to Plum Island are based on the assumption that a significant portion of the existing infiltration and inflow can be eliminated, thereby freeing up additional capacity to serve the new users and the new growth within the existing service areas. Table 80 and Figure 11 present projected water demand and wastewater flow over the next two decades. The projections are based on projected population growth in the City and use existing multipliers of water consumption for residential and commercial use. In addition, the projections assume an immediate I&I reduction of 50,000 gallons per day as well as an ongoing I/I program that

saves an additional 10,000 gpd each year, so that by 2020 a total of 250,000 gpd of I/I will have been removed from the system. This aggressive program would keep wastewater generation below the existing capacity of the treatment facility even as water demand increases by more than 20 percent. If this were accomplished, the ratio of wastewater treated to water consumed in 2020 would be 1.09.

Table 80: Projected Water Demand and Wastewater Flow, 2000–2020

Year	Average Daily Water Demand (mgd)	Average Daily Wastewater Treatment (mgd)			
		Existing Service Area Trend	Plum Island	Cumulative I/I Reduction	Net Flow to WWTF
1995	2.34				2.95
1996	2.28				3.00
1997	2.34				3.28
1998	2.16				3.14
1999	2.34				2.94
2000	2.51	3.10	0.23	-0.05	3.28
2005	2.65	3.16	0.23	-0.10	3.29
2010	2.78	3.22	0.23	-0.15	3.30
2015	2.90	3.28	0.23	-0.20	3.31
2020	3.03	3.34	0.23	-0.25	3.32
20-yr Δ	20.6%				1.2%

Figure 11: Projected Water Demand and Wastewater Flow, 2000–2020 (million gallons per day)

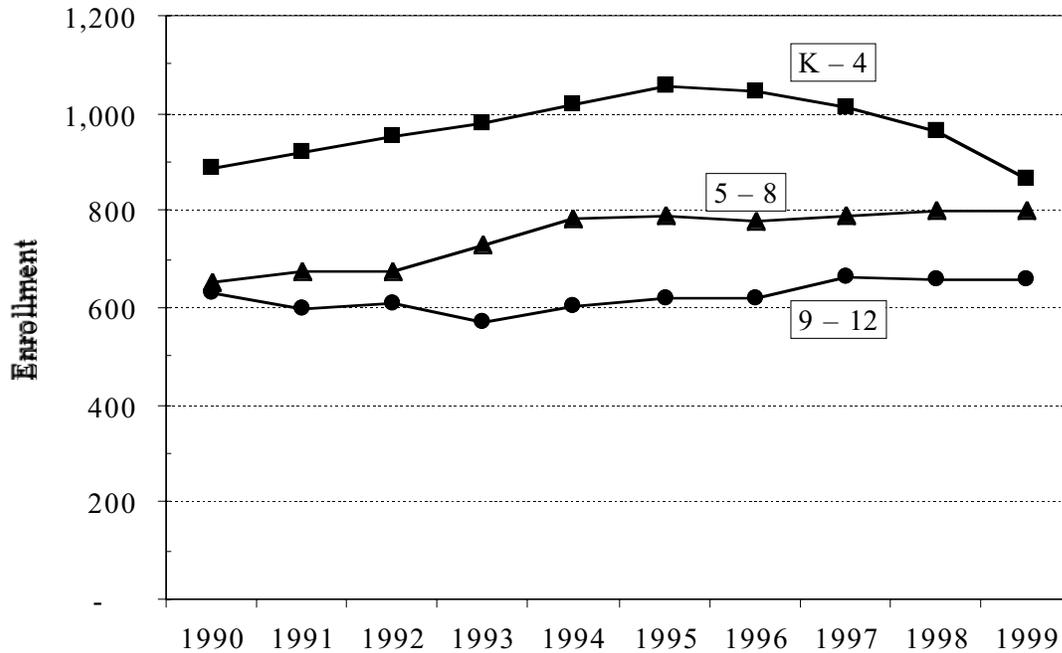


Schools

School Enrollment Projections

School enrollments during the 1990s are presented in Figure 12. Elementary school enrollments peaked in 1995 and declined for the remainder to the decade, while middle and high school enrollments grew slowly over the period.

Figure 12: School Enrollment, 1990–1999



Current enrollments are as follows:

Elementary Schools		
Francis T. Bresnahan Elementary School	515	
George W. Brown Elementary School	250	
Elbridge G. Kelley Elementary School	<u>120</u>	
Elementary School Total		885
Rupert A. Nock Middle School		
Grades 7–8	415	
Grades 5–6 (“Nock North”)	<u>385</u>	
Middle School Total		800
Newburyport High School		<u>704</u>
Total Enrollment		2,389

As shown in Table 6 (page 7), Figure 2 (page 8) and Table 7 (page 9), the forecast is for Newburyport’s school-age population to continue declining during this decade, decreasing by 15 percent from 2,756 in 2000 to 2,330 in 2010. Moreover, the Massachusetts Institute of Social and Economic Research expects the pre-school population to decrease by 19 percent over the same period, from 790 to 640.

However, these projections also assume essentially no growth in the overall population of the City, with a projected 2010 population of 16,685, compared to the estimate of 16,656 in 2000. Given the strong housing market in the City, the potential for new housing growth as indicated by the build-out analysis, and the improved accessibility resulting from the MBTA Commuter Rail extension, it is prudent to take a more conservative approach to projecting population growth for the purpose of anticipating capital facility needs.

Therefore, school-attending population projections were made based on assumptions about housing unit growth and household size and composition. The assumptions were that the recent housing unit growth rate of 48 new dwelling units per year would continue, and that the recent ratios of school-attending children to total households would also not change. That is, the projections do not assume that household size will continue to decline (as the MISER projections appear to assume), but neither do they reflect any increase in average household size based on construction of new, larger homes in the City.

Table 81 presents the multipliers used in the enrollment projections. The overall ratios, shown in the last column of Table 81, were computed by dividing the 1999 enrollments by grade by the estimated number of total households. The ratios were then adjusted for type of dwelling unit (single-family, condominium, 2- and 3-family, and multifamily) according to the relative household sizes for each type from the 1990 Census.

Table 81: 1999 Estimated School-Attending Children per Household

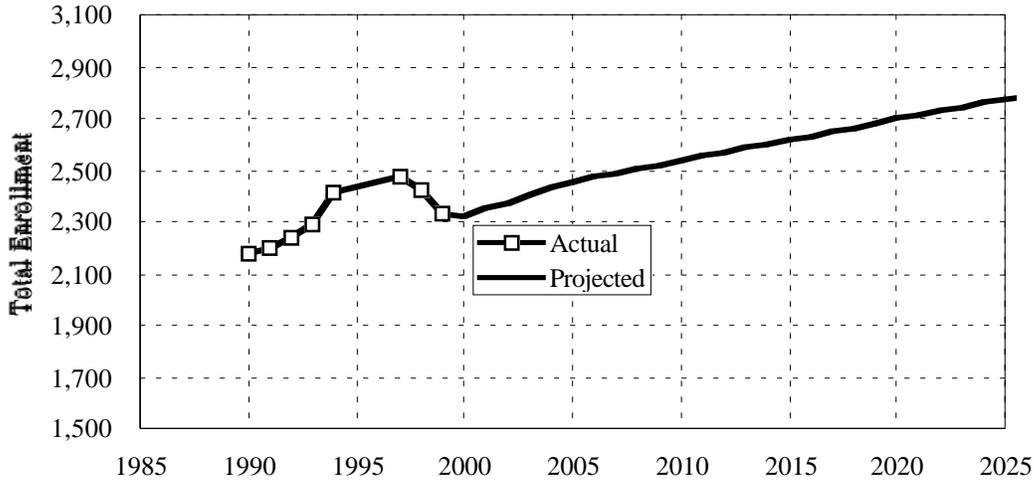
Grade Level	Single-Family	Condominium	2- & 3-Family	Multifamily	Total
K-4	0.1368	0.1186	0.1047	0.0755	0.1213
5-8	0.1265	0.1097	0.0968	0.0699	0.1122
9-12	0.1042	0.0903	0.0797	0.0575	0.0923
All Grades	0.3675	0.3187	0.2812	0.2029	0.3258

Table 82 presents the resulting projected enrollments by grade level, and Figure 13 shows the total enrollment projections. Obviously, the results are very different from the MISER projections, with 2,537 school-attending children in 2010, rather than 2,330 total school-age children as projected by MISER.

Table 82: Actual and Projected Enrollments by Grade Level

	1990	1995	2000	2005	2010	2015	2020	2025
K-4	887	868	864	915	944	974	1,003	1,032
5-8	654	803	799	846	874	901	928	955
9-12	633	661	658	697	719	742	764	786
All Grades	2,174	2,332	2,321	2,458	2,537	2,617	2,695	2,773

Figure 13: Projected Total School Enrollment



School Improvement Program

A *Feasibility Study for Newburyport Public Schools* was prepared by The Office of Michael Rosenfeld, Inc., Architects, in 1995 (?). This report addressed the entire school system, including:

- ◆ Bresnahan Elementary School (K–4)
- ◆ Brown Elementary School (K–4)
- ◆ Kelley Elementary School (K–4)
- ◆ Rupert A. Nock Middle School (5–8)
- ◆ Newburyport High School (9–12)

The study process included architectural and educational assessments of the five schools, and preparation of site and floor plans documenting existing conditions. The following discussions summarize the findings of the report.

Elementary Schools

The study found that all three elementary schools were overpopulated. As of October 1995, total enrollment in the Bresnahan School was nearly twice its capacity according to state standards. The Brown School was at 130 to 140 percent of capacity. The Kelley School was determined to have no capacity according to the standards, because its 0.3-acre site is below the minimum required for outdoor play areas.

Table 83: Elementary School Capacities and Enrollments

School	Built	Site	Capacity	Enrollment (Oct. 1995)
Bresnahan	1957	17.53 ac.	312–333	610
Brown	1923	1.1 ac.	208–222	289
Kelley	1871	0.3 ac.	None!	166
Total				1,065

Source: Feasibility Study for Newburyport Public Schools

To address existing space and facility deficits, ten options were identified, ranging from one to four elementary schools. Subsequently, the one- and four-school options were eliminated, and ultimately the School Committee voted to pursue a three-school strategy, as follows:

- ◆ Build a new school in the West End
- ◆ Renovate and add to the Bresnahan School
- ◆ Build a new school in the South End

This approach would result in a system-wide increase of 11 classrooms to accommodate the projected 1,100 student population. Four of the classrooms will be planned at the new school in the West End. The remaining seven will be divided between the Bresnahan and the new school in the South End.

The Kelley School was recommended for closure due to its age, the heavy timber construction, the lack of educational, administrative and core spaces, and the lack of land for playgrounds, parking and expansion. The report noted that “Properties not used for school purposes can be sold or reused for municipal purposes, including but not limited to parks, teen and senior centers, housing, etc.,” but did not make any specific recommendation for reuse of the Kelley School.

Table 84 presents the class size guidelines used in developing the recommendations, and Table 85 summarizes the report’s findings and recommendations.

Table 84: Class Size Guidelines

Grade	Minimum Class Size	Maximum Class Size
K	18	20
1	20	22
2–4	22	23

Source: Feasibility Study for Newburyport Public Schools

Table 85: Elementary School Recommendations from Feasibility Study

School	Enrollment (Oct. 1995)	Projected Enrollment	Existing Capacity	Planned Capacity
Kelley	166		None!	–
Brown	289		208–222	–
Bresnahan	610		312–333	416–444
New West			–	416–444
New South			–	312–333
Total	1,065	1,100	520–555	1144–1221

Source: Feasibility Study for Newburyport Public Schools

The estimated cost breakdown for the elementary school program adopted by the School Committee are presented in Table 86. Note that these costs do not include site acquisition costs.

Table 86: Estimated Costs of Recommended Elementary School Program

Renovation Cost:	\$4,290,750
New Construction:	\$18,983,955
Total Cost:	\$23,274,715
Reimbursement:	\$15,826,806
Cost to City:	\$7,447,927

Middle School

The Nock Middle School, constructed in 1970, is the newest school in the system. Located on a 19.6-acre site, the Middle School contains 30 regular classrooms, plus special classrooms and shared areas.

The school is generally in good condition. Classrooms and core spaces meet current SGESS requirements¹⁹ for the existing and projected enrollment, but do not meet the School Committee’s goals for interdisciplinary education and the use of technology. In particular, the team-teaching approach requires flexible room configurations.

The recommended program is to modify the floor plan of the two-story classroom portion of the building to accommodate 4 teams of 5 classroom spaces on each floor (including “team core” rooms for each cluster). At a range of 20–25 students per classroom, the Middle School could handle an enrollment of 800–1000 students. The projected enrollment for the school is between 868 and 888 students.

The 1995 estimated costs for upgrade and reorganization of the Middle School are as follows:

Table 87: Estimated Costs of Recommended Middle School Program

Upgrade	\$1,602,508
Technology	\$851,145
Reorganization	\$4,202,397
Total Cost	\$6,656,050
Reimbursement @ 68%	\$4,526,114
Net Cost to City	\$2,129,936

High School

The High School sits at a visible and prominent location on High Street. The building and location are historic, and include the historic Memorial Stadium built by the Works Progress Administration. The original 95,811 square foot structure was built in 1937. In 1963, a 42,219 square foot addition brought the total area of the building to 138,030 GSF on three floors.

Most classrooms in the High School are undersized (500-750 square feet, vs. state guideline of 750-850 square feet). The Feasibility Study recommended complete renovation of the main structure, plus replacement of the 1963 west wing, resulting in a total floor area of approximately 190,000 square feet.

The School Committee selected the program detailed in Table 88, designed to accommodate the projected enrollment of 810 students.

¹⁹ Mass. Dept. of Education Chapter 645, “Regulations Governing the School Building Assistance Act.”

Table 88: Estimated Costs of Recommended High School Program

	Area (GSF)	Cost per sf	Total Cost (1995)
Upgrade	66,191	\$79.00	\$5,229,089
Renovation	29,620	\$105.00	3,110,100
New Construction	84,570	\$165.00	13,954,050
Total Cost	180,381		\$22,293,239
Reimbursement			15,159,403
Net Cost to City			\$7,133,836

Summary of Recommended Program

The program adopted by the School Committee based on the OMR report was designed for the following enrollment levels:

Elementary	1,144 – 1,221
Middle	868
High	810
Total	2,822 – 2,899

The total cost of this program was estimated in 1995 as follows:

Total cost:	\$53,624,004
State reimbursement:	36,464,323
Purchase of land/property:	\$1,350,000
Net cost to city:	\$18,509,681

Current Status of School Improvement Program

The renovation of the High School is currently under way. Rather than the \$22 million project estimated in 1995, the current project has a total estimated cost of \$34 million. During the summer of 2000, the High School moved to the Nock Middle School, while the fifth and sixth grades moved to “Nock North,” a former middle school in Salisbury.

There is the possibility of constructing a new West End school on a site recently acquired by the City in the Cherry Hill subdivision.

Library

The Newburyport Public Library, housed in an historic 18th century Federalist mansion on State Street, was the home of Nathaniel Tracy, a wealthy merchant, shipbuilder, and major financier of the American Revolution. During its distinguished history, our current public library building was a hotel, a “bowling saloon,” and a dentist’s office. In 1865, the building was purchased by private citizens who transferred ownership to the City of Newburyport for use as a public library. The Newburyport Public Library opened to the public on January 1, 1866.

The Library is currently undergoing a complete renovation and expansion. The total project cost of \$7.65 million is being funded in part through a \$6.8 million debt exclusion approved by the voters in 1997. Total costs to the City have been reduced as a result of a \$2.2 million Massachusetts Public Library Construction Grant, and \$1 million in private funds raised by the Friends of the Library. During construction, the Library is occupying temporary space at 112 Parker Street in the industrial park.

TRAFFIC AND CIRCULATION

Regional Transportation System

Newburyport is well located on the regional network. Interstate 95 crosses in a north-south direction in the western part of the City, and provides access at interchanges on Storey Avenue (Route 113) and at Scotland Road in Newbury. Interstate 495 begins at I-95 in Salisbury, a short distance north of Newburyport, and access from the City to I-495 is via Route 110 in Amesbury.

U.S. Route 1 parallels I-95, crossing the City just west of the central business district, and serves as a major connector to Newbury and Salisbury. Prior to the construction of Interstate 95, Route 1 was the primary route for travel between Boston and Seacoast New Hampshire or Maine. Route 1 is not only an important regional route, but also an historic one: built in 1804 as a stagecoach route, the Newburyport Turnpike is an unusually straight road, deviating only 83 feet from a straight line over 35 miles of length. Other elements of the regional road network are Route 113 (Storey Avenue / High Street) and Route 1A (State Street / High Street).

Newburyport is served by MBTA Commuter Rail with a station on Parker Road near the Newburyport/Newbury line (see below under “Public Transportation”). Currently, the Newburyport station is the terminus of the line; but a proposal to extend the line to New Hampshire is being studied.

Local Street System

Newburyport’s local streets provide excellent accessibility throughout the City. The city has a number of collector routes serving both through traffic and local access.

- ◆ *Storey Avenue / High Street (Route 113)* follows the north side of the ridge on which the City originally developed. Daily traffic volumes are around 20,000 vehicles per day (vpd), and have been increasing at an annual rate of approximately 1.5 to 1.7 percent.
- ◆ *Merrimac Street / Water Street / Plum Island Turnpike* follows the Merrimack River and is generally parallel to High Street. Merrimac Street provides access to Amesbury and Interstate 495 to the west, and carries volumes of 15,000 vpd west of Route 1 and 21,000 vpd east of Route 1. Water Street carries around 10,000 vpd and provides access to the Plum Island Turnpike.
- ◆ *Low Street / Pond Street* parallels High Street and provides an alternate route between the Interstate 95 interchange on Storey Avenue and the central business district, as well as access to the Industrial Park area. Traffic volumes in 1992 were around 11,000 vpd.
- ◆ *Parker Street / Graf Road* provides access to the City from the Interstate 95 interchange at Scotland Road in Newbury, as well as providing access to the Industrial Park and MBTA Commuter Rail station from U.S. 1 and the downtown area.
- ◆ *State Street* has two distinct identities. To the north of High Street it serves as the main street for the central business district, carrying around 9,000 vehicles per day in two lanes of one-way traffic. South of High Street, State Street provides a link between the Route 1 traffic circle and the City’s South End neighborhood, and carries around 6,000 vehicles per day.

In its older neighborhoods—north of High Street and east of Broad Street—the City’s street network is a traditional urban grid, providing efficient land utilization and many routes for access and traffic dispersion. In contrast, some West End neighborhoods have been developed with contemporary suburban street networks, with fewer interconnections and more loops and cul-de-sacs.

Traffic Volumes and Trends

Limited data on traffic volumes are available. The primary source of traffic data is the annual counting program by Merrimack Valley Planning Commission. Table 89 presents data from the annual counting program, and Table 90 summarizes the average annual growth rates for several locations for which multiple counts are available. In general, traffic volumes dropped during the early 1990s, coincident with the recession, and then increased again as the economy rebounded. Over the decade, however, volumes grew at an average rate of between 1.5 and 2.8 percent per year, with a few exceptions.

Table 89: Average Daily Traffic Flows, 1989–1997

Location	1989	1990	1991	1992	1993	1994	1995	1996	1997
N. Atkinson St., east of Low St.	1,230			986			1,282	1,417	
Rte. 113/Storey Ave at West Newbury line			9,130		8,373				
Rte. 113/Storey Ave, west of Low St.		19,370				20,734			
Rte. 113/High St., northwest of Winter St	16,990				19,364				19,477
Rte. 113/Storey Ave, east of Low St.				19,939					
Rte. 113/High St., east of Rawson Ave.		17,270	18,122	17,900	18,292	20,478	19,877	17,105	20,344
Rte. 1A/High St., southeast of Summer St.				15,195					
Rte. 1A/High St., southeast of Federal St.			10,486						
Rte. 1 at Salisbury line	12,780	14,680	13,674	11,943	13,568	15,513	15,211	14,922	15,280
Rte. 1 north of Newbury line						11,378			
Federal St., northeast of High St.				2,882					
Fruit St., northeast of High St.			2,095					1,976	
Graf Rd., south of Low St.						8,288			
Green St., north of Rte. 113		5,490	4,681	4,739				4,849	
Hale St., west of Low St.	2,600	2,970			3,399				
Kent St., northeast of High St.			2,012					2,386	
Low St., west of Rte. 1				11,227					
Low St., south of Rte. 113	8,320	7,740				8,526			
Marlboro St., northeast of High St.		1,650							

Location	1989	1990	1991	1992	1993	1994	1995	1996	1997
Merrimac St., east of Summer St.		18,300							
Merrimac St., east of Moseley St.		6,340				7,570			
Merrimac St., west of Kent St.	11,370		12,711						14,385
Moseley Ave., south of Harding Ave.	3,420				4,077				3,769
Parker St., west of State St.								5,270	
Parker St., east of Graf Rd.									5,235
Pleasant St., northwest of State St.			2,338						
Pond St., east of Rte. 1			4,334						
State St., south of Liberty St.		7,340				7,915			
State St., northeast of High St.	6,090				6,453				8,779
State St., northeast of Parker St.			10,025					5,851	
Toppans Ln., south of Highland St.			2,427		3,024				4,463
Turkey Hill Rd., south of Rte. 113								3,060	
Water St., east of Federal St.				9,363					
Water St., west of Central St.		12,590				10,188			
Merrimac St., east of Rte. 1									21,763
Merrimac St., west of Rte. 1									15,177
Summer St., south of Merrimac St.									4,039
Winter St., east of Rte. 1									3,416
Winter St., north of Merrimac St.									7,413
Merrimac St., east of Green St.									17,438
Green St., south of Merrimac St.									5,249
Green St., south of Pleasant St.									4,425
Pleasant St., east of Green St.									4,571

Source: Merrimac Valley Planning Commission

Table 90: Annual Growth Rates for Average Daily Traffic

Location	No. of Counts	Time Period	Growth Rate
Rte. 113/High St., northwest of Winter St	3	1989–1997	1.715%
Rte. 113/High St., east of Rawson Ave.	8	1990–1997	1.542%
Rte. 1 at Salisbury line	9	1989–1997	2.081%
Green St., north of Rte. 113	4	1990–1996	-1.104%
Merrimac St., west of Kent St.	3	1989–1997	2.778%
State St., south of Liberty St.	2	1990–1994	1.908%
State St., northeast of High St.	3	1989–1997	4.676%
State St., northeast of Parker St.	2	1991–1996	-10.210%
Toppans Ln., south of Highland St.	3	1991–1997	10.617%

For example, Figure 14 shows volumes at two locations, High Street east of Rawson Avenue, and Route 1 at the Salisbury town line. Although there was much fluctuation, High Street experienced an average growth rate of 1.54 percent between 1990 and 1997, and Route 1 had a growth rate of 1.89 percent over the same period.

Figure 14: Growth in Average Daily Traffic, High Street and Route 1

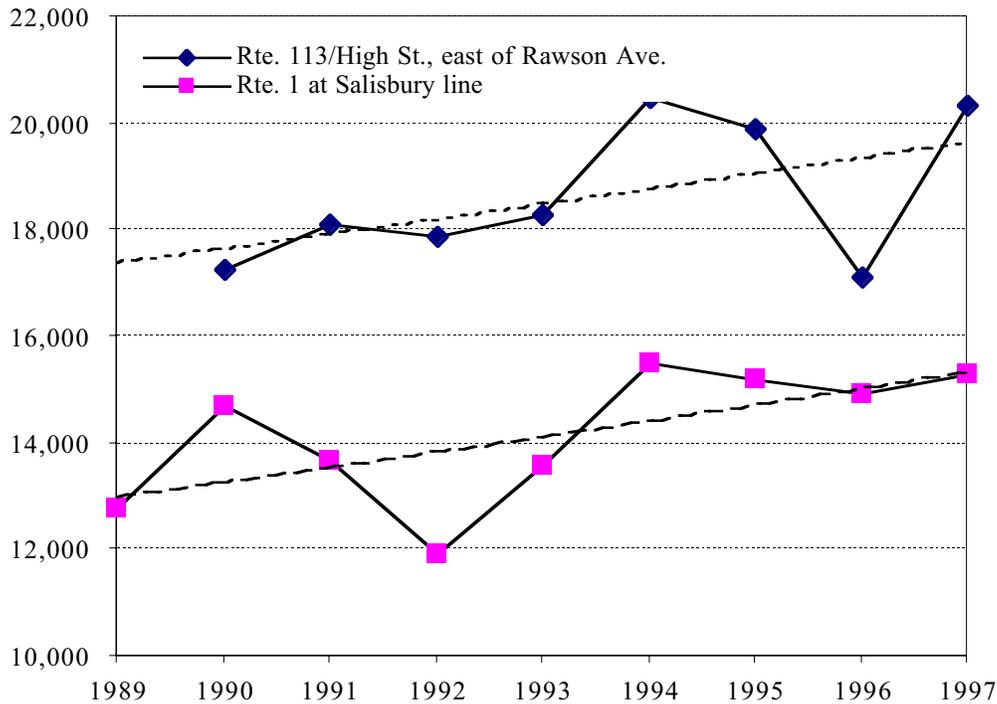
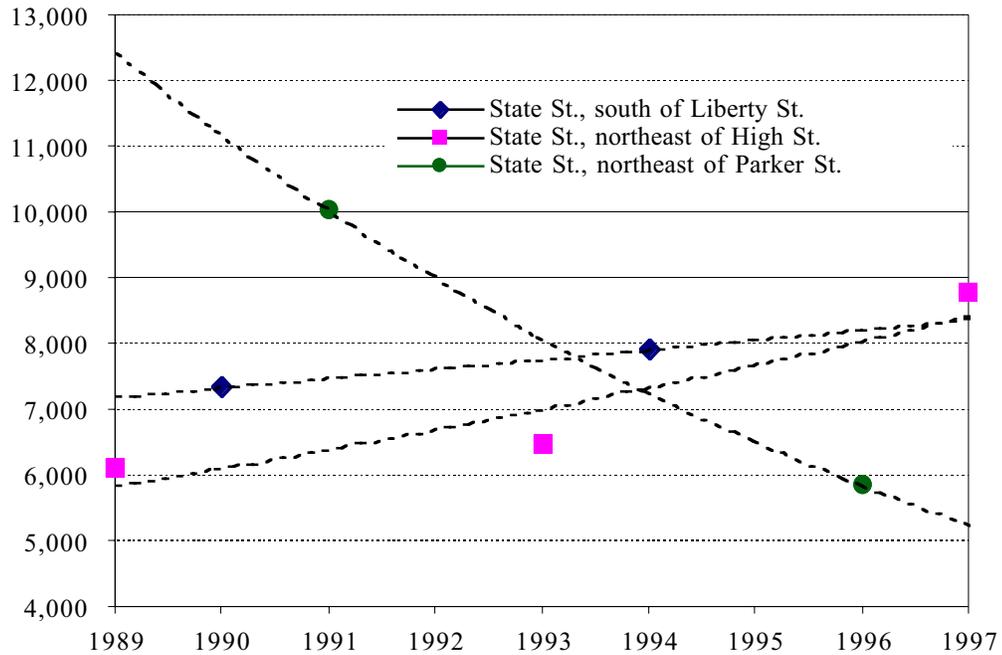


Figure 15 shows similar data for three locations on State Street, for which fewer counts are available than for Routes 113 and 1. Although the total volumes are lower, it appears that traffic growth in the central business district has been relatively faster than on High Street and Route 1, with rates between 2 and 5 percent. However, volumes on the segment of State Street adjacent to the Route 1 traffic circle decreased sharply (10.2 percent) between 1991 and 1996.

Figure 15: Growth in Average Daily Traffic, State Street



The data from the annual counting program can be supplemented with information from special studies, such as highway improvement plans and environmental impact studies. An example of such a study is the *Functional Design Report, Reconstruction of High Street, Newburyport, Massachusetts*, prepared in February 1998 by Highway & Traffic Signal Design, Inc., for the Massachusetts Highway Department. In order to determine appropriate design standards for High Street, the consulting firm projected 1997 daily traffic volumes 20 years forward, to the year 2017. The projected 2017 Design Year volumes were developed by applying a 0.4 percent per year traffic growth rate, which was the average growth rate for the preceding decade based on data from various MHD permanent count stations in District 4. The resulting projections are presented in Table 91.

As noted earlier, between 1989 and 1997 traffic on High Street grew at an annual rate of between 1.5 and 1.7 percent, well above the 0.4 percent rate used to project traffic growth to 2017. That period included the recession of the early 1990s. Furthermore, Newburyport's population is projected to grow at a rate of between 0.5 and 0.9 percent, and vehicle ownership per capita is on the rise (as discussed below). Therefore, the District 4 growth rate of 0.4 percent may well be a low estimate for Newburyport.

Table 91: Existing and Projected Average Month Traffic Volumes

Location	Average Daily Traffic		1997 Peak Hour Volume	
	1997	2017	Peak Hour	Vehicles /Hour
Storey Ave. south of High St.	20,600	22,300	AM PM	1,373 1,853
Ferry Rd. west of Storey Ave.	1,900	2,000	AM PM	138 135
Moseley Ave. north of High St.	4,200	4,600	AM PM	358 350
High St. east of Moseley Ave.	24,800	26,800	AM PM	1,650 2,050
High St. west of Toppan's Lane	21,400	23,200	AM PM	1,396 1,769
Toppan's Lane south of High St.	4,900	4,900	AM PM	572 501
High St. between Court St. & Green St.	16,400	17,800	AM PM	1,163 1,370
High St. west of Marlboro St.	8,900	9,900	AM PM	650 778
Marlboro St. north of High St.	2,400	2,600	AM PM	191 221
High St. east of Marlboro St.	8,400	9,100	AM PM	631 746

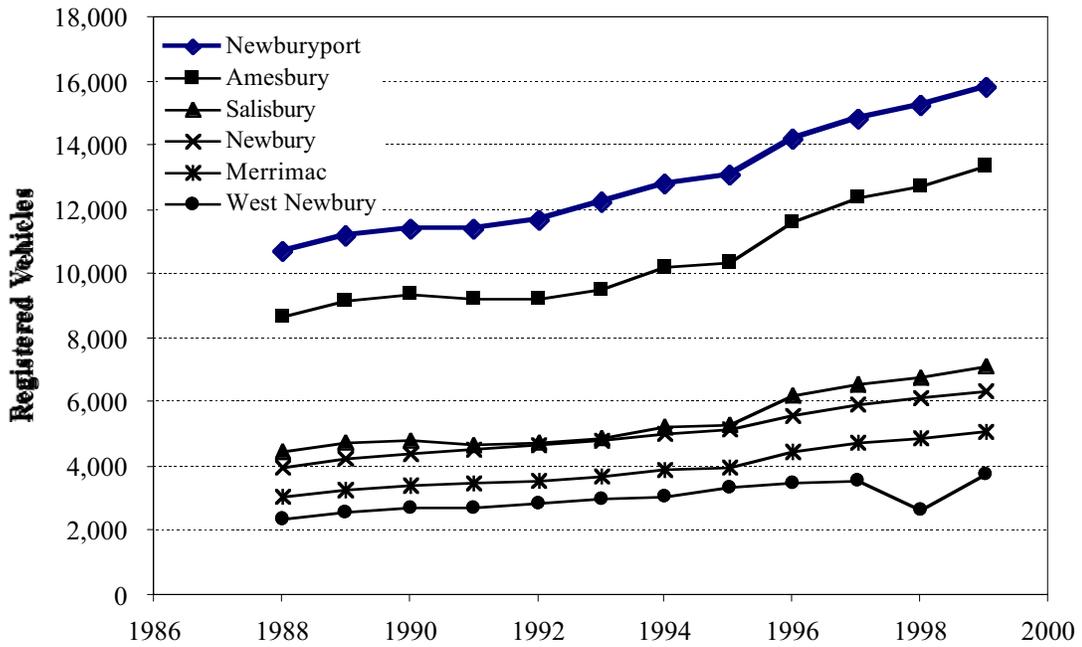
Source: Highway & Traffic Signal Design, Inc., *Functional Design Report, Reconstruction of High Street, Newburyport, Massachusetts*, Prepared for Massachusetts Highway Department, February 1998; Tables 3 & 5.

Vehicle Ownership Trends

Between 1988 and 1999 the number of automobiles, light trucks (including pickup trucks and sport utility vehicles) and luxury cars registered as garaged in Newburyport increased by more than 5,100, or 48 percent. As shown in Figure 16, the percentage growth in each of the surrounding towns was higher, reflecting the faster housing and population growth in these towns.

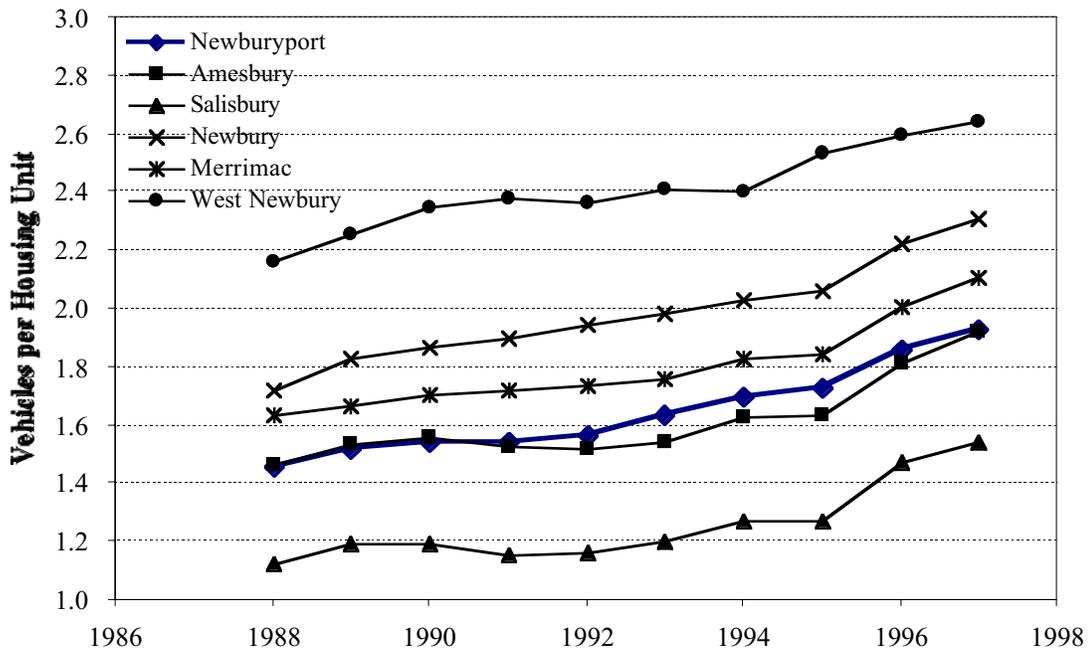
Figure 17 presents the number of passenger vehicles and light trucks in relation to the number of housing units in each community. Between 1988 and 1987 the number of vehicles in Newburyport grew by 39 percent while the number of dwelling units increased by only 5 percent (the population grew even more slowly during this period). This is reflected in the ratio of vehicles to housing units, which was 1.46 in 1988 and 1.93 in 1997.

Figure 16: Registered Automobiles, Light Trucks and Luxury Cars, 1988–1999



Source: Massachusetts Department of Revenue

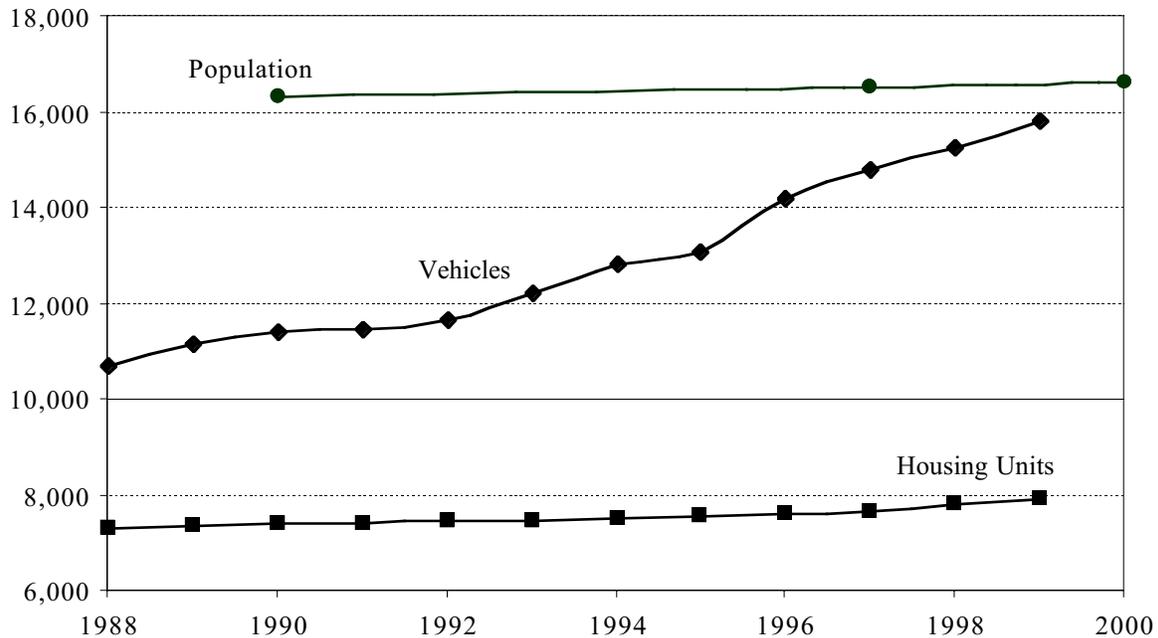
Figure 17: Vehicles per Housing Unit, 1988–1997



Sources: Housing units – building permit data from Merrimack Valley Planning Comm.; Registered passenger vehicles (including light trucks and luxury cars) – Massachusetts Department of Revenue

Figure 18 displays this information for Newburyport, showing population levels as well as housing units and registered passenger vehicles. This chart clearly shows that it is neither the number of new households nor population growth which is the major cause of parking congestion in Newburyport's older neighborhoods. Rather, it is the increase in automobile ownership by residents of the existing dwellings that has created the parking problems on neighborhood streets. Even if no additional housing had been built during the decade, there would still have been 32 percent more cars on Newburyport's streets in 1997 than in 1988.

Figure 18: Housing Units, Population and Passenger Vehicle, 1988–2000



Sources: Housing units – building permit data from Newburyport Building Department; Registered passenger vehicles (automobiles, light trucks and luxury cars) – Massachusetts Department of Revenue.

This trend has been exacerbated by the growing proportion of larger vehicles such as sport utility vehicles: excluding the light truck category (which includes SUV's), the number of automobiles registered in Newburyport increased by only 19 percent between 1988 and 1999, still a significant increment but far less than the 48 percent increase in all passenger vehicles.

Congested Intersections

Two sources provided information on level of service at intersections in the City: the *Functional Design Report* for High Street (February 1998) and the *Downtown Waterfront Area Traffic Study* (February 1999) both prepared by Highway & Traffic Signal Design, Inc. "Level of service" is a qualitative measure describing the operational conditions of a roadway link or intersection. Facilities are rated from "A" to "F", with LOS A being the best and LOS F the worst (commonly described as "failure"). Level of service is usually computed for one or more peak hours (for example, the peak evening commuting hour, or the peak Saturday shopping hour).

Table 92 summarizes the results of the LOS analyses from the two reports. All calculations were based on 1997 traffic volumes and turning movements.

Table 92: Intersection Levels of Service, 1997

Intersection	AM Peak	Midday Peak	PM Peak
Merrimac St. and Route 1 (NB ramps)		B	F
Merrimac St. and Route 1 (SB ramps)		C	F
Merrimac St. and Green St.		F	
Merrimac St./Water St. and State St.		A	A
State St., Essex St. and Pleasant St.		A	A
Pleasant St. and Green St.		A	
High St. and Fruit St.			A
High St. and Federal St.			F
Merrimac St. and Fair St.			A
Merrimac St. and Federal St.			A

Sources: Highway & Traffic Signal Design, Inc., *Functional Design Report, Reconstruction of High Street*, February 1998; and *Downtown Waterfront Area Traffic Study*, February 1999.

The consultants have made the following recommendations to address existing intersection deficiencies:

- ◆ Install traffic signals on Merrimac Street at both the southbound and the northbound ramps of Route 1;
- ◆ Upgrade the existing signal at the intersection of Merrimac Street and Green Street.

High Accident Locations

As part of the *Functional Design Report* for High Street, engineering consultants Highway & Traffic Signal Design, Inc., reviewed accident reports for the period from January 1992 through December 1996. A total of 268 accidents were reported at intersections along High Street. The location with the highest frequency of accidents was the intersection of High Street with Storey Avenue, Moseley Avenue and Ferry Road, which had an average of 5.5 accidents per year. The remaining intersections experienced 4.5 accidents per year or less. Generally, intersections with fewer than five accidents per year do not indicate safety problems.

Parking

Off-street and on-street parking supply and congestion are frequently cited concerns for the central business district and surrounding areas. In particular, the parking issue is at the heart of debates concerning planning and future use of the two remaining parcels owned by the Newburyport Redevelopment Authority (NRA). These parcels are located on the waterfront, flanking the Waterfront Park, and currently provide a total of 490 off-street spaces for public parking. The NRA would like to complete the disposition of these lots, but residents and businesses are opposed to removing them from the parking supply until replacement spaces are available.

The downtown parking situation has been the subject of at least three studies in the past five years, as well as two years of work by the City's Parking and Traffic Committee and a feasibility study for a

downtown parking garage. These reports have come to varying conclusions about the severity of the parking issue, but agree that there is a need to prevent any net loss in the total number of parking spaces.

In 1996, a report entitled *Newburyport Central Business District Parking Analysis and Recommendations* was published by the Economic Development Action Committee of the Greater Newburyport Chamber of Commerce and Industry. This report compared the existing off-street parking supply to demand, and then estimated the impacts of several planned and prospective development projects. The report concluded that there was an existing deficit of 684 spaces, which would increase to 1248 spaces if the NRA lots were developed. However, as noted in a review of the report prepared in 1999 (see next page), existing on-street parking spaces were excluded from the analysis, and the assumptions used in calculating demand were very conservative; therefore, the estimates of existing and future deficits are likely to be significantly inflated.

To address the concerns about loss of existing parking spaces, the City received funding under the 1996 Transportation Bond Bill for construction of a municipal parking garage on the site of the Green Street municipal parking lot. Currently, this plan is under review, with some downtown interests preferring keep the Green Street lot as it is and to build the garage instead on a different site further from the retail district.

Meanwhile, construction of an Inn and Conference Center has been proposed for the NRA's East Lot, with additional parking spaces reserved for the development in the NRA's West Lot. In September 1998, a *Downtown Parking Study* was prepared for the City Improvement Society and Newburyport Waterfront Trust in order to address concerns about the parking impacts of the proposed development. The study was designed to provide answers to four questions:

- ◆ How many parkers would be displaced daily from the existing NRA East and West lots by the proposed Inn and Conference Center?
- ◆ Who are these parkers and why do they park in the NRA East and West lots?
- ◆ Are there suitable replacement parking spaces available in the downtown for the displaced parkers?
- ◆ Where would the displaced parkers go?

The study characterized the parking supply in the downtown area as follows:

There are an estimated 3,763 parking spaces located within the boundaries of the study area. Of these, approximately 1,970—or 54 % of the total—are available for use by the general public. Importantly, the majority (54%) of these public spaces are located on-street or curbside, many of them in the residential neighborhoods that abut the downtown retail district. Also significant is the fact that virtually all of the off-street public lots are concentrated along the Waterfront where they enjoy ready access from the two major streets that serve the downtown—i.e., Merrimac and Water Street traveling east to west and Green Street running south from High Street. The private off-street lots that exist in the study area are scattered throughout the downtown, and are all relatively small in size because they service only the customers, employees, residents or tenants generated by their associated land use.²⁰

²⁰ David J. Friend, *Downtown Parking Study*, prepared for the City Improvement Society/Newburyport Waterfront Trust, September 1998; p. 9.

The study resulted in the following findings:

- ◆ There is a high level of occupancy of public parking spaces during the period of highest demand: 70 percent of all public spaces, and 90 percent of the spaces within the heart of the commercial district.
- ◆ The proposed Inn and Conference Center would eliminate 430 parking spaces now used by the general public (300 spaces in the NRA East Lot, 40 spaces in lots adjacent to the East Lot, and 90 spaces in the NRA West Lot), or almost 50 percent of the total supply of off-street public parking.
- ◆ Based on peak period occupancy counts, the project would displace 270 parked vehicles during the weekday afternoon peak period (180 from the East Lot and 90 from the West Lot), and 315 vehicles during the evening peak period.
- ◆ An estimated 50 percent of the vehicles displaced from the East Lot and 30 percent of the vehicles displaced from the West Lot, or approximately 165 vehicles at the peak hour, represent short-term (less than two hours) parkers who go downtown to shop and enjoy the waterfront. The remainder (about 105 vehicles) are parked for more than two hours, primarily by employees of downtown businesses.
- ◆ “Roughly 180 of the parkers displaced by the Inn and Conference Center during a typical peak period will look for available short-term parking spaces in the study area, while the remaining 90 parkers will want to park in spaces that allow longer-term parking.”²¹

The report argues that the loss of the 430 spaces would have serious negative impacts on the downtown and surrounding residential neighborhoods:

- ◆ “increased walking distances [to replacement spaces] will discourage many from visiting the downtown;”
- ◆ “traffic congestion on downtown streets—and most importantly in the residential neighborhoods—will worsen as displaced parkers ‘cruise’ local streets looking for an available on-street space closest to their destination;”
- ◆ “More important than the 270 vehicles to be displaced, construction of the proposed Inn and Conference Center will displace approximately 1,400 people on a typical day”²²

The report also raises the possibility that “the annual economic losses associated with this parking-induced reduction in the existing customer base may well be greater than the tax contributions and spending power of the new customer base generated by the Inn and Conference Center.” In summary, the author of the report concludes that the construction of the Inn and Conference Center would create great harm to the downtown and waterfront, solely on the basis of the lost public parking spaces.

In November 1999, the findings of the 1996 and 1998 reports were reviewed in connection with planning for the proposed parking structure.²³ This review generally concurs with key findings of the 1998 report: i.e., there is “a current balance between parking supply and demand;” but the loss of parking spaces in the NRA waterfront lots “could create an immediate shortfall of approximately 430 spaces.” The 1999 report further estimates that additional development in the central business district could increase total demand by 5 to 10 percent, resulting in a total shortfall of about 473 spaces. The

²¹ Ibid., p. 28.

²² Ibid., pp. 31-32.

²³ Letter from Hayden-Wegman Consulting Engineers to Nancy T. Colbert re: Newburyport Structured Parking, November 16, 1999.

report recommends, therefore, that the City plan for the creation of between 450 and 500 additional parking spaces located within 300 feet of Merrimack Street/Water Street.

Clearly, parking is an issue that must be addressed in connection with any major land use changes in the central business district. In particular, it is important to decide on a location for the parking garage and move forward with design and construction, so that residents and business owners will know what additional spaces will be available and, therefore, how much land on the waterfront can be shifted to more desirable and appropriate land uses.

Public Transportation

Transit, commuter and intercity rail and bus services serve Newburyport. Table 93 presents a summary of these services, including estimates of their capacities in both trips per day and seats per day. This is followed by descriptions of the schedules and equipment used in each of these services.

Table 93: Existing Public Transportation Services

Service/Destination	Carrier	Days	#Trips/day (one-way)	#Seats/day (one-way)
<u>Transit</u>				
Haverhill	MVRTA	Weekdays	10	400
		Saturday	7	280
Amesbury	MVRTA	Weekdays	12	456
		Saturday	9	342
Railroad Shuttle	MVRTA	Weekdays	8	304
		Saturday	5	190
<u>Commuter & Intercity Rail</u>				
Boston	MBTA	Weekdays	13	8,281
		Saturday	6	3,822
		Sunday	6	3,822
<u>Commuter & Intercity Bus</u>				
Boston (downtown)	Coach Co.	Weekdays	9	459
Boston (Logan)	C&J Trailways	Daily	13	611
Boston (downtown)	C&J Trailways	Weekdays	13	611
		Saturday	7	329
		Sunday	7	329
Boston (downtown)	Vermont Transit	Daily	1	49

Service/Destination	Carrier	Days	#Trips/day (one-way)	#Seats/day (one-way)
Portsmouth	C&J Trailways	Weekdays	26	1,222
		Saturday	20	940
		Sunday	20	940
Portsmouth/Portland	Vermont Transit	Daily	1	49

Source: Research by Ed Ramsdell, Public Facilities and Transportation Task Force.

Transit

The Merrimack Valley Regional Transit Authority (MVRTA) operates three routes on a 6 day-per-week basis.

- ◆ Rte. 51 Newburyport – Haverhill (Equipment RTS & New Flyer Transit Coaches)
 - Ten weekday trips operate in each direction between Newburyport and Haverhill between approximately 6AM and 6PM
 - Seven Saturday trips are operated between approximately 10AM and 6PM
 - ◆ Rte. 52 Newburyport – Amesbury (DuponTrolley trolley replica vehicles)
 - Twelve weekday trips operate in each direction between Newburyport and Amesbury between approximately 6:45AM and 6:30PM
 - Nine Saturday trips are operated between approximately 8AM and 5:15PM
 - ◆ Rte. 52 Newburyport – Railroad Station (DuponTrolley trolley replica vehicles)*
 - Approximately eight weekday trips operate in each direction between Newburyport and the Railroad Station between approximately 7AM and 6:45PM
 - Five Saturday trips are operated between approximately 8AM and 5:15PM
- *Note: Service levels are estimated as this service is being rescheduled to coordinate with trains

Commuter and Intercity Rail

The Massachusetts Bay Transportation Authority operates a route between the Newburyport railroad station and Boston's North Station serving intermediate points on a 7 day-per-week basis (equipment: locomotive and 5 or 6 car consist)

- ◆ Weekdays 13 trips depart Newburyport between approximately 5:30AM and 10:45PM
- ◆ Saturdays and Sundays 6 trips depart Newburyport between approximately 8:45AM and 9:00PM

Commuter and Intercity Bus

The Coach Company operates a commuter route between Newburyport and Boston on a weekday basis (equipment: MCI or Prevost motor coaches).

- ◆ Weekdays 7 trips depart from the Custom House, stopping at the High School and the bus terminal, to Boston between approximately 5:50AM and 8:00AM, two additional trips originating in Hampton, NH stop only at the bus terminal

- ◆ No Saturday or Sunday service is operated

C & J Trailways operates a commuter and intercity route between Newburyport and Boston (separate service to downtown and Logan Airport) on a 7 day-per-week basis. (equipment: MCI motor coaches)

- ◆ Daily service of 13 trips from Newburyport bus terminal and Logan Airport between approximately 5:30AM and 9:30PM
- ◆ Weekday service of 13 trips from the Newburyport bus terminal to downtown Boston between approximately 6:00AM and 9:30PM (the last trip operates via Logan)
- ◆ Saturday and Sunday service of 7 trips from the Newburyport bus terminal to downtown Boston between approximately 8:30AM and 9:30PM (the last trip operates via Logan)
- ◆ The reverse service of the above trips operates from Newburyport to Portsmouth with some schedules continuing on to Durham, NH

Vermont Transit Lines operates one daily trip to Portland, ME at 12:50PM and a trip to Boston at 6:25PM from the Newburyport bus terminal (equipment: MCI or VanHool motor coaches)

Bicycle and Pedestrian Circulation

Sidewalks

Newburyport is a very walkable City, particularly in its traditional urban neighborhoods. However, there is concern about sidewalk maintenance, lighting and directional signage for visitors. There is now a regular line item in the City budget for replacing sidewalks (\$30,000 per year), and sidewalks will be replaced beginning with those in the worst condition. While asphalt is used for replacing sidewalks because of the cost differential, the City will also work in partnership with neighborhood residents who want to reconstruct their sidewalks in brick.

Outside of the downtown area, there is a need to improve safety and comfort for pedestrians. It is very difficult to get across some of the busy streets such as High Street and Route 1. A particular problem is the difficulty of getting to the Commuter Rail station without driving, as there are no sidewalks connecting neighborhoods to the station.

Bicycling

Because of high traffic volumes and relatively narrow streets, Newburyport is not very conducive to bicycling. In particular, children cannot safely bicycle between the schools and the major parks and playgrounds. This is also an issue relative to regional bicycling: the entrances into the City (for example, the Chain Bridge) tend to be dangerous areas for cyclists.

Plans for the Newburyport Bikeway are underway. The proposed path follows the existing railroad right-of-way in a loop around the city. The western arm of the path runs north from the MBTA Commuter Rail station on Boston Way parallel to Route 1 crossing Parker Street, Low Street and High Street. At Washington Street riders will be able to proceed north to an overlook above the Merrimack River. The bikeway will continue east on Washington Street, cross over Route 1, and then head north on Market Street. Riders will cross Merrimack Street, head north on a right-of-way to the River, and then follow easements to be obtained from property owners between Route 1 and the NRA west lot. The former Newburyport City Branch Railroad continues the bikeway at the Custom House property adjacent to the waterfront. The path follows the River to Joppa Park where it intersects Water Street. The trail follows Water Street one block east to Harrison Street. The path heads south on Harrison Street and rejoins the track at Purchase Street. The path proceeds south through the south

end neighborhood crossing Hancock and Chestnut Streets. The path passes under High Street at March's Hill and then proceeds into Newbury where it crosses Parker Street. It is anticipated that the path will be routed under the new Route 1 bridge in Newbury and then meet the origin point at the rail station.

The Border to Boston bike path proposed by the North Shore Bikeways Coalition will intersect the Newburyport Bikeway. Border to Boston begins in Salisbury and crosses the Merrimack River on the Route 1 bridge. The path joins the Newburyport Bikeway at Washington Street, follows it to the rail station and continues west of the rail station, entering Newbury and follows the Massachusetts Electric right-of-way to Danvers. From Danvers the path will follow roads into Boston.

Trails

The Merrimack Valley Planning Commission is assisting communities, including Newburyport, in planning off-road trails, both land and water. Community maps are being prepared for on-road routes to link major traffic generators—such as public buildings, schools, recreations areas, and publicly accessible open space—along roads with shoulders and/or sidewalks.

Off-road trails are being mapped with funding from the Massachusetts Department of Environmental Management. To begin with, MVPC is carrying out a pilot program to map a limited number of municipally-owned off-road trails in each community. DEM has also contract with the Appalachian Mountain Club for a statewide trail mapping effort, focusing on trails with a regional impact (i.e., serving more than one community). In the Newburyport area, the state's priorities are the Bay Circuit Trail, the Merrimack River Trail, and the Border to Boston Trail (which is part of the East Coast Greenway).

KEY ISSUES AND CHALLENGES

The previous chapters have documented some of the major trends that are impacting the City of Newburyport. Briefly, these include the following:

- ◆ The City is experiencing a moderate rate of residential development, accompanied by smaller household sizes.
- ◆ New residents moving into the City are changing the socioeconomic profile of the City. Unlike many suburban communities which are experiencing a large component of young families with children, many of Newburyport’s in-migrants are affluent “empty-nesters”. During the planning period of the Master Plan, this trend will have positive implications for the City’s fiscal condition, but will tend to further reduce the diversity of the population.
- ◆ The new residential development is consuming open space. Although the total amount of development is not large, the loss of even small amounts of open space are noticeable in a City as densely developed as Newburyport. This is causing a change in the way residents are thinking about growth, whether residential or nonresidential.
- ◆ A strong regional economy, positive local demographics, and a stable tourism sector will support continued economic development in Newburyport, should the City desire it.
- ◆ The rate of automobile ownership in the City is increasing significantly, with the result that housing development brings increased pressure on neighborhoods.

This chapter outlines the key issues and challenges facing the City as it plans for the next two decades of growth and change. These issues tend to cross boundaries between topic areas: for example, the future of the central waterfront area is a land use question, but the potential uses and impacts affect the City in several ways—existing parking spaces may be replaced (Transportation), the Waterfront Park may be expanded (Open Space and Recreation), and the central business district may be supported or harmed by what takes place on the NRA lots (Economic Development). Therefore, the following discussion identifies the key Master Plan topic areas associated with each issue, but does not treat these topic areas in isolation from each other.

The short list of issues presented in this chapter is not intended to be exhaustive, but rather to highlight areas where differing objectives need to be weighed and balanced, or where the issues cross lines between different subject areas.

The Central Riverfront

Master Plan Elements:

- ◆ Land Use
- ◆ Economic Development
- ◆ Open Space and Recreation
- ◆ Transportation

Without question, the most important land use challenge facing the City is the future of the downtown riverfront and its relationship to the central business district. The riverfront currently provides abundant long-term parking for visitors, shoppers and businesses. Some residents believe that continuation of this use is essential to the vitality of the downtown and will preserve the expansive river views to which they have become accustomed. Others envision an eventual expansion of the Waterfront Park, once alternative off-street parking facilities have been created.

There are other alternatives for the central riverfront that could combine some level of development with open space and/or parking facilities. Development of a new building along the street frontage, similar in scale to the mixed-use building opposite the Firehouse, could reestablish the streetscape as well as provide a source of revenues for preserving the rest of the area for parking and/or open space.

On a somewhat larger scale, the appearance and functioning of the entire downtown riverfront between Route 1 and Joppa Park should be examined. The “Downtown Waterfront District Design Guidelines” developed in 1997 provide a solid basis for such an examination.

The disposition and permanent use of the NRA East and West Lots has been the subject of debate for many years. The Master Plan must address this issue and recommend short-term and long-term policies as well as a timeline for implementation.

The Industrial Park

Master Plan Elements:

- ◆ Land Use
- ◆ Economic Development
- ◆ Natural and Cultural Resources
- ◆ Open Space and Recreation
- ◆ Transportation

For at least three decades the area bordering Interstate 95 on the west and the Town of Newbury on the south has been designated for industrial use. During the 1990s the City reaffirmed this designation when it created the new Industrial 1B zoning district; and efforts are underway to provide improved access along the route of the former I-95 roadway, in order to accommodate industrial park traffic while reducing existing traffic impacts on nearby residential neighborhoods. Continued growth in the industrial park area has been encouraged in order to maintain a balance between residential and nonresidential development, to provide jobs for area residents, and to provide a growing source of property tax revenues to support the increasing demands on school, library and other services caused by population growth.

In the course of community meetings about land use, economic development, and open space, some residents urged that the City re-examine this policy. The reasons advanced in support of such a change included protection of water quality in the Little River (and, by extension, environmental and ecological protection in the Parker River National Wildlife Refuge); preservation of open space for passive recreation; and concern that business expansion cannot be maintained in the face of regional labor shortages. There were also questions about the extent to which existing natural features and current environmental regulations would limit any future development in this area, which is bisected by the Little River and contains numerous areas of wetlands and floodplains.

An important decision that must be addressed in the Master Plan, therefore, is whether to continue adherence to past land use policies in this area, or to modify or reverse them. Should existing vacant land and farmland at the periphery of the existing Industrial Park be reserved for future economic expansion, rezoned to allow residential growth, or purchased to provide additional permanent open space for the residents of the City?

With good planning, this area can serve multiple objectives. Areas currently protected through the Wetlands Protection Act and/or other environmental regulations should be mapped and compared to the existing industrial zoning. A trail proposed by the Parker River Clean Water Association, running 3.5 miles along the Little River from Storey Avenue to the MBTA station, could help integrate open space, recreation, and natural resource protection objectives while enhancing the quality and attractiveness of the industrial park.

Residential Subdivisions

Master Plan Elements:

- ◆ Land Use
- ◆ Housing
- ◆ Open Space and Recreation

With its outstanding natural resources, its vibrant and historic central business district, and its excellent highway and rail access, Newburyport has become an extremely attractive community in which to live. Developers are building subdivisions with large houses designed for the upper-income families who can afford them. Residents have expressed two concerns about these new subdivisions. First, the new homes in these developments sometimes appear to be sited and designed without consideration for their context: for example, the characteristically close and consistent relationship of houses to the street is ignored. The second concern has to do with the loss of open space as these subdivisions are developed. These developments will consume the remaining large open spaces, and will thus transform the character of the surrounding areas.

At least two mechanisms are potentially available to address these issues. At community meetings, residents have spoken out strongly in favor of a residential design review procedure that would provide more opportunity for public input into the design of subdivisions and new homes. The next phase of the Master Plan will consider the feasibility of implementing some type of residential design review in the zoning ordinance.

To address the concern about the loss of open space, the City already has in place provisions to encourage “cluster residential subdivisions,” which allow a greater density on one portion of a tract of land in exchange for permanently reserving the balance of the land as open space. The permanent open space may be used for conservation or recreation purposes, and may either be publicly accessible or reserved for the residents of the subdivision. The existing cluster development standards should be reviewed and enhanced if necessary, and developers should be strongly encouraged to use this approach where possible and appropriate. The City should also consider including incentives for developers to provide affordable housing within cluster subdivisions. Finally, the City should identify key open space linkages and sensitive resources, so that preferred open space areas can be identified before a development proposal gets to the review stage.

Infill Development in Older Neighborhoods

Master Plan Elements:

- ◆ Land Use
- ◆ Housing
- ◆ Transportation

Newburyport’s attractive location and amenities have made it extremely desirable as a residential community not only for suburbanites moving to new subdivisions in the western part of the City, but also (and perhaps even more so) for those seeking an urban living environment in the older neighborhoods of the South End and North End. However, some of these new immigrants want more living space than is provided by the existing housing stock, and they therefore purchase an existing building and either expand it or replace it with a larger structure. In other cases, lots that exceed the minimum zoning requirement are being used more intensively, either through conversions of single-family homes to multiple dwelling units, or through division of the lot and construction of a new dwelling.

The cumulative result of all these individual actions is an increase in residential density. Some residents believe that this is becoming a serious issue that threatens the character of these neighbor-

hoods. There is also a concern about the loss of historic resources as older structures are removed to make way for larger ones. Finally, increased rates of vehicle ownership by existing and new residents alike means that neighborhood streets are increasingly congested.

To address these concerns, residents have suggested a number of strategies for the City to consider. These include creation of one or more Local Historic Districts to protect significant neighborhoods or groups of structures; adoption of a demolition delay ordinance to allow for public review before significant buildings are demolished; and adoption of an ordinance to address the so-called “monster home” phenomenon, in which new structures that are greatly out of scale with their surroundings are inserted into a neighborhood. The Master Plan should provide appropriate recommendations regarding these and related strategies.

Affordable Housing

Master Plan Elements:

- ◆ Land Use
- ◆ Housing

The City of Newburyport has experienced a rapid revitalization over the past 30 years. Formerly dilapidated and low-rent areas of the City have been revitalized through substantial rehabilitation, and housing values in these neighborhoods have increased significantly. Rents, which had dropped substantially during the recession of the late 1980s and early 1990s, have regained, with a 15 percent increase just from April 1995 through January 1996. Few opportunities exist for first-time homebuyers. With few starter homes under \$150,000, many city natives have been forced to move to neighboring communities in search of affordable housing opportunities.

The affluent individuals and families who are moving into Newburyport are bringing new investment and energy into the community. However, if those of more modest means can no longer afford to live in the City, Newburyport will lose much of the economic diversity and generational continuity that have made it such a vital community.

As the analysis in the Housing chapter indicates, providing a meaningful response to the housing affordability problem will take a significant level of effort—and funding. It is therefore important for the Master Plan to recommend feasible affordable housing objectives and to lay out a long-range strategy for reaching these objectives.

The Merrimack Riverfront

Master Plan Elements:

- ◆ Land Use
- ◆ Natural and Cultural Resources
- ◆ Open Space and Recreation
- ◆ Services and Facilities

Beyond the specific questions about the future of the downtown waterfront, residents are concerned about access along the entire length of the Merrimack River, from Maudslay State Park to the Plum Island Reservation. The concept of continuous linear access to the riverfront has been raised: in other words, extending the concept of the downtown boardwalk east toward Plum Island and west past Cashman Park. Given that much of the land is already developed for private uses, achieving this objective may be difficult and expensive. However, where new development or redevelopment is proposed the City can work incrementally toward this end through the Chapter 91 process, which

regulates development on filled tidelands; and the City is in fact already working in this direction. The Master Plan should formalize this by enunciating an overall concept for the riverfront.

In this regard, residents have suggested that the City consider relocation of two major utility facilities along the River—the Massachusetts Electric transformer facility and the City’s Wastewater Treatment Facility. Both of these date from a period when the riverfront was primarily an industrial area, and they are now anomalies as residents look to the River as an open space and recreation amenity. In contrast, the Waterfront Park is an example of the type of amenity that can be created from “brownfield” sites.

Moving either of these facilities and restoring the existing sites would entail huge costs (it has been suggested that simply replacing the WWTF in its existing location would cost \$30 to \$40 million); and it is not readily apparent where they could be moved to. However, over time both systems may need substantial investment for upgrading or replacement—for example, the WWTF has little remaining excess capacity. The process of creating a new Master Plan for the City is an appropriate time to consider the future of these sites.

Preservation of Newburyport’s Historic Character

Master Plan Elements:

- ◆ Land Use
- ◆ Housing
- ◆ Transportation

Newburyport has earned a justly deserved reputation for the City’s commitment to preserving its historic character, yet there are in fact few regulatory controls to enforce this commitment: in fact, some aspects of the City’s Zoning Ordinance actually prohibit development that conforms to historic relationships between buildings and streets. As property values in the traditional urban neighborhoods rise, there is more pressure to renovate, expand and/or replace existing structures, and residents are increasingly concerned about the impact that this is having on the integrity of these neighborhoods.

Several potential strategies are available to address these concerns. First, the *Zoning Ordinance* should be amended to promote building setbacks and other features that are consistent with the established neighborhood character. A *Design Review* ordinance would supplement the mandatory dimensional regulations and site plan review provisions, allowing for review of building design elements in relation to recommended guidelines and/or required standards. Creation of one or more *Local Historic Districts* would provide strict design review using standards developed by local residents and based on the district’s existing architecture.

With respect to the public realm—streets, sidewalks, lighting, utilities, trees—*design standards* could be developed to guide municipal departments in design, construction and maintenance. The design standards document created by Sasaki Associates for the downtown waterfront area is a good example of this approach.

These are just some of the approaches that the City might take to strengthen its management of historic resources and community character. The Master Plan should enunciate which of these approaches are most appropriate for Newburyport and where in the City each strategy should be implemented.

Commuter Rail Extension / Restoration

Master Plan Elements:

- ◆ Land Use
- ◆ Economic Development
- ◆ Transportation

Newburyport has gained greatly from the restoration of passenger rail service to Boston. This has enhanced the City's attractiveness to new residents, with the resulting increase in property values and neighborhood reinvestment. Communities to the north are interested in receiving the same benefits and are studying the feasibility of extending the commuter rail line to Portsmouth, with stops in Salisbury, Seabrook, Hampton and North Hampton.²⁴

In some aspects, the extension of rail service would be beneficial to Newburyport. Being the last station on the line means that commuters from the north are attracted to the City, adding to traffic in the early morning and early evening hours. Providing commuter rail facilities in Salisbury and New Hampshire could divert some of these commuters and thereby slow the growth of peak-hour traffic in the city. In addition, extension of the commuter rail line could support local economic development by enhancing the ability of Newburyport businesses to attract workers.

However, the proposed commuter rail extension would also mean the loss of an existing open space corridor (currently planned for a bicycle trail), as well as noise impacts in some neighborhoods that have not experienced rail traffic in many years. Thus, the question facing the City is how to reconcile support for the social and environmental benefits of an expanded regional public transportation system with the local objectives of new recreational corridors and reduced impacts on neighborhoods.

Master Plan Implementation

The final issue relates to monitoring progress on the Master Plan's recommendations and ensuring that public and private actions support the Plan. Many communities establish a Master Plan Oversight Committee to review the actions of departments or officials responsible for implementing sections of the Plan. Other communities assign the responsibility for initiating actions to a Master Plan Implementation Committee. During the community meetings the suggestion was made to charge the Planning Director with the preparation of an annual "State of the Master Plan" report to the City.

A complementary action is to ensure that there is an entity responsible for implementing a specific element of the Master Plan. It has been suggested that the City should create a permanent Open Space Committee to monitor the status of Chapter 61/61A land, apply for grants to purchase open space, and advise municipal agencies such as the Planning Board on actions that could affect the quality and quantity of protected open space in Newburyport. This approach could also serve other Master Plan elements as well.

²⁴ Rockingham Planning Commission, *Commuter Rail Service to Coastal New Hampshire: A Feasibility Study for the Hampton Branch*, approved by the Seacoast Metropolitan Planning Organization Policy Committee, 30 June 1999.

SOURCES AND ACKNOWLEDGEMENTS

The material in this document is drawn from a variety of sources, including published reports of federal, state, regional and local agencies. Data sources include:

- ◆ U.S. Census
- ◆ City of Newburyport, *City Officers and Annual Reports*, for the years 1994-95 through 1998-99.
- ◆ Newburyport Assessors Department parcel database
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The following individuals provided additional information for this document through personal interviews and follow-up research:

- ◆ City of Newburyport: Mayor Lisa Mead, Nancy Colbert (Planning & Development), Daniel Lynch (Public Works)
- ◆ Newburyport School Department:
- ◆ Newburyport Redevelopment Authority: Mary Lou Supple, Chair
- ◆ Greater Newburyport Chamber of Commerce: William Piercey
 - ◆ Merrimack Valley Planning Commission: Alan Macintosh, Jerrard Whitten, Jonathon Corso, Anthony Komorniak, Kristen Divris
 - ◆ Merrimack Valley Economic Development Council: Robert Halpin, Executive Director

Finally, the Master Plan Steering Committee and Task Forces have provided valuable input, both directly and through their sponsorship and facilitation of six community meetings.

APPENDIX 1:
ZONING ANALYSIS & RECOMMENDATIONS,
PHASE I – INTERVIEW FINDINGS

Terry S. Szold, Community Planning Solutions

APPENDIX 2:
PARCEL DATA ANALYSIS SPREADSHEETS