

# Housing the Commonwealth's School-Age Children

*The Implications of Multi-Family Housing Development for Municipal and  
School Expenditures*

August 2003

Prepared for:

Citizens' Housing and Planning Association

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## Introduction

Not long ago, one of this report's co-authors conducted a public meeting in a small, desirable town on the North Shore. Our firm canvassed a variety of planning topics, from open space and riverfronts to traffic, affordable housing and the community's tax base. Several residents expressed concern about the impact of a large multi-family development on their schools. When asked to estimate the number of children a 200-unit rental development might bring into town, participants replied spontaneously: "200!" Needless to say, they questioned our sanity when we said the number might be as low as 12 or as high as 75.

It would be easy for us to argue that new multi-family developments do not generate many school children because often, the statement is accurate and verifiable. In most of the communities we have worked in, from cities to rural areas in Western Massachusetts, we find much lower numbers of school-age children in new townhouses and multi-family units than in single-family homes. However, there are noteworthy exceptions. This report seeks to illuminate factors that make multi-family developments more or less attractive to families with children and provides some commentary on the fiscal and public policy implications of higher-density housing.

We were commissioned to design and conduct an independent research project. Toward that end, we approached our work with the neutrality required to ask critical questions, and sometimes we disagreed internally. In the end, we arrived at the same conclusions because the data we obtained are compelling and persuasive. Though many of our findings are common sense, we accept that some readers will dispute them and others will challenge our methodology. We have been open about the project's methodological weaknesses because we want users of this report to understand its limitations.

On a going-forward basis, we are less concerned about statistical arguments than about the climate in which housing policy is debated in city and town halls, at the State House, and by proponents and critics of housing development. As planners and policy analysts, we care about the health and vitality of communities. Since most of our clients are units of local government, we are keenly aware of the fiscal problems that exist in many municipalities, large and small. Throughout our work on this project, city and town planners shared their frustrations about the extent to which public school impacts have overtaken the discourse on local development policy. Resistance toward housing in general, and multi-family housing in particular, is a recurring issue in community planning today. While the popularity of assisted living facilities and "over-55" housing often reflects a genuine desire to retain a town's elderly population, it also speaks to the challenge that many communities face as they struggle to meet demands for municipal and school services. Stated bluntly, homes for senior citizens do not generate school-age children.

Housing plays a crucial role in shaping the visual and social character of cities and towns, yet today, most residents think their communities already have too many homes. Concerned about losing open space and financing the cost of public schools, citizens and town officials seek ways to curtail housing development, but in many cases the techniques they choose bring unintended consequences. In community meetings across the state, residents often say they want "growth management" and "smart growth" land use policies, but when asked to describe what they mean, typically the image they have in mind is simply, "no growth."

This report does not argue that residential development has a positive fiscal impact on cities and towns. Our experience in planning and public policy persuades us that often, housing produces more cost than

revenue – but not always, even homes that are meant for families with children. Housing generates a considerable amount of local government revenue and in the state's wealthiest communities, housing generates nearly all of the revenue used to pay for local government services. However, housing also generates costs: schools, culture, recreation, public safety, public works, solid waste disposal and so forth. Homes designed for families typically generate higher costs than homes designed for one- or two-person households, yet very valuable homes may produce enough revenue to pay for the services used by their occupants.

Our conclusions will please few readers. We find that most of the Commonwealth's new multi-family developments have generated little if any impact on public schools because with rare exception, they were designed to be childproof. One- and two-bedroom apartment developments are in vogue not because they meet the most pressing housing needs but rather, because they address fiscal objections from cities and towns. In the housing hierarchy, low-income families with school-age children appear to be the least well served of all households. The state's housing, education finance and local aid policies need realignment. If communities that build more housing units are to receive incentive state aid, they should not be rewarded for building homes that deny housing choice to low-income families.

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## Findings, Conclusions & Policy Issues

In most cases, multi-family developments built since 1990 have not contributed significantly to the rise in school enrollments that occurred in many communities across the state. New single-family homes and in some towns, a high rate of turnover in older single-family homes, generated a majority of the state's school enrollment growth. Older multi-family developments with apartments sized for family occupancy continue to house many children, in part because they offer one of the few choices available to lower-income families.

Compared to rates of population and school enrollment growth, local government expenditures for education and community services increased at significantly higher rates overall over the past decade. Many communities incurred additional long-term debt, mainly for three types of public investment: school construction, expansion and modernization projects, water and sewer projects, and acquisitions of land for conservation or municipal purposes. Across the Commonwealth, general fund expenditures for education, public safety, debt service, and employee health insurance increased faster than expenditures for other local government functions. These trends were fueled not only by new growth, but also state-local policies and community preferences. Given the characteristics of households in new multi-family developments and the limited number of multi-family units that were permitted and built during the 1990s, it is very unlikely that new multi-family housing has produced a negative fiscal impact on cities and towns.

### Statewide perspective

- About 576,000 families in Massachusetts have school-age children. They represent 23.6% of all 2,444,588 households statewide, and 36.3% of all 1,587,537 families.<sup>1</sup>
- A majority of the state's families with school children – 70% – are homeowners and 30%, renters.<sup>2</sup>
- As a percentage of households by tenure, families with school-age children comprise 26.2% of all homeowners and 18.5% of all renters. However, as a percentage of families by tenure, families with school-age children comprise 34.2% of family homeowners and 40.2% of family renters.
- Of the state's 2,443,580 occupied housing units, three- or four-bedroom units comprise 75% of all owner-occupied dwellings and 23% of all renter-occupied dwellings.<sup>3</sup>
- In 1990, 9.1% of all homes in Massachusetts were vacant. Housing units available for rent made up 30% of all vacancies and on average, they contained 4 rooms per unit. At the time, multi-family housing units comprised 20.3% of the statewide housing inventory, occupied or vacant, yet 23.7% of all vacancies across the state were in multi-family developments. Considering multi-family developments only, the vacancy rate was 10.8% – higher than the vacancy rate for all housing units.<sup>4</sup>
- By 2000, the vacancy rate statewide had dropped to 6.8% and only 20% were apartments for rent. The average size of a vacant apartment in 2000: 4 rooms. Meanwhile, multi-family housing as a percentage of all homes had declined to 19.6% of the statewide housing inventory and only 17% of all vacancies. Considering multi-family developments only, the vacancy rate plummeted to 5.9%, – lower than the vacancy rate for all housing units.<sup>5</sup>
- During the 1990s, the Commonwealth's housing inventory increased by 149,278 units, or 6%, of which 95% are single-family homes. Among renter-occupied housing units statewide, nearly 50% pre-date 1950.<sup>6</sup>

- Between 1990-2000, the highest rates of overall household growth occurred in Nantucket, Dukes, Barnstable and Plymouth Counties and the lowest rates, in Berkshire, Hampden, Suffolk and Franklin Counties. Considering family households, Plymouth, Dukes, Hampden and Worcester Counties currently have the highest percentages of families with school-age children and Barnstable, Middlesex, Berkshire and Nantucket Counties, the lowest.<sup>7</sup>
- Married-couple families comprise 77% of Bay State families and single-parent families, 23%. Plymouth, Berkshire, Hampden and Worcester Counties have the largest average number of school children per married-couple family – ranging from 1.73 to 1.69 – and Dukes, Nantucket, Bristol and Barnstable Counties have the lowest, from 1.55 to 1.65. In contrast, the largest average number of school children in single-parent families occurs in Hampden, Essex, Suffolk and Dukes Counties, from 1.66 to 1.60, and the lowest, in Nantucket, Hampshire, Barnstable and Norfolk Counties, from 1.41 to 1.50.<sup>8</sup>
- Considering family homeowners, Dukes, Nantucket, Plymouth and Worcester Counties have the highest percentages of families with school children and Barnstable, Suffolk, Berkshire and Hampden Counties, the lowest.<sup>9</sup>
- Considering family renters, Hampden, Plymouth, Berkshire and Franklin Counties have the highest percentages of families with school children and Nantucket, Norfolk, Middlesex and Suffolk Counties, the lowest.<sup>10</sup>
- As a percentage of all housing units, the proportion of multi-family units is highest in Suffolk, Norfolk, Middlesex and Hampden Counties and lowest in Nantucket, Dukes, Barnstable and Plymouth Counties.<sup>11</sup>

### Housing, families and school-age children<sup>12</sup>

- Compared to single-family homes, new multi-family developments almost always house fewer school-age children per dwelling unit.
- The probability that multi-family developments will generate school children is influenced by several factors, including:
  - The number and percentage of dwelling units sized for family households. In virtually all cases, developments that offer three- or four-bedroom units generate more school children per unit than developments limited to one- and two-bedroom units.
  - The reputation of a community's public schools. In most cases, multi-family developments in suburbs with prestigious school systems house more school-age children than communities with average or less competitive schools. The same usually holds true for single-family homes.
  - Scale, density and location. Large, high-density multi-family developments appear to be less attractive to families with children than low-rise, moderately dense developments with fewer units per building. Developments that offer yards, walkways and common open space typically house more children. In addition, developments located near schools or established residential areas – developments that connect logically to adjoining neighborhoods and the larger community – usually have more children than developments that are isolated, by location or design, or occupy sites near offensive land uses.



- Composition, age and character of existing housing stock. In communities with relatively high percentages of two-, three- or four-unit homes in traditional neighborhoods, new multi-family developments seem to attract fewer families with school-age children.
- Units for low- and moderate-income households. Multi-family housing developed exclusively or primarily as affordable to low- and moderate-income families generates more children than a development with 25% low- and moderate-income units, i.e., the minimum required for a comprehensive permit development.
- In high-growth communities, large multi-family developments that include three- or four-bedroom units accelerate the need for new or expanded community facilities, notably schools.
- Regardless of scale, new multi-family developments with one- and two-bedroom units almost always generate enough revenue to pay for the services used by their residents. Often, they generate surplus revenue.
- New multi-family developments often attract renters who already live in the community. Like homeowners, renters need and look for opportunities to move up to higher-quality housing. The scale, character and location of a new development, coupled with the cost to live there, will influence the extent to which it generates children from in-town moves.

### Estimating the fiscal impact of new growth

The authors of this report have conducted fiscal impact studies for many years. As a sequel to The Fiscal Impact of New Housing Development in Massachusetts: A Critical Analysis, prepared for CHAPA by the U-Mass Donohue Institute (March 2003), we examined development, revenue and expenditure trends in the 41 communities with multi-family developments in our case studies. Our purpose was to determine whether substituting unique local data for obsolete population multipliers would improve the reliability of a commonly used fiscal impact model known as the per capita multiplier method.<sup>13</sup>

The UMDI report concluded that for most communities, per capita multipliers produce a distorted fiscal impact forecast and they should not be relied upon to estimate the costs or revenue associated with housing development. Since we had access to a considerable amount of data that UMDI did not, we conducted a refined test of the per capita multiplier model in our case study communities. Like the UMDI study, we constructed forecasts under FY 1990 conditions and compared them to FY 2000 actual outcomes. Unlike the UMDI study, we derived population multipliers for each community by household type and tenure, using 1990 Census data and the more useful data sets that can be obtained from Census 2000. In addition, we accounted for cost growth that could be attributed to new commercial and industrial development in order to isolate and measure general fund costs that relate directly to households. Our findings:

- In 16 out of 41 communities (39%), school expenditures in FY 2000 were within 5% of the amount estimated by the model, using integrated school costs as the basis of comparison. Though the Department of Education's integrated school cost formula captures amounts that cities and towns typically budget as municipal costs – health insurance and other employee benefits, liability insurance, and in some communities, grounds and building maintenance – it does not include debt service for school construction projects. In all but two cases with significant differences between the model's forecast of FY 2000 school costs and FY 2000 actual expenditures, the error was an underestimate.

- In only 8 of 41 communities (19.5%), municipal expenditures in FY 2000 were within 5% of the amount estimated by the model. Seven of the 8 communities had stable or comparatively low 1990-2000 population growth rates. Owing to the way municipal and school expenditures are reported on a statewide basis, “municipal” includes all debt service, including debt for school construction.
- In virtually every community for which the model generated a significant underestimate of municipal cost growth, new schools were built or existing schools were substantially remodeled or expanded during the 1990s. We verified this by consulting with local officials and reviewing state aid “cherry sheets” along with the School Building Assistance Bureau’s waiting list for reimbursements. However, school construction projects alone do not explain the discrepancy because many towns with significant overestimates also built new schools over the past decade.<sup>14</sup>
- In about half of the communities for which the model generated a significant overestimate of municipal costs, services previously financed out of the general fund were converted to special revenue or enterprise fund operations during the 1990s, notably water and sewer. This change effectively removed revenue and expenditures from the general fund, thereby making 1990-based municipal cost multipliers for population and households irrelevant. Households were still paying water bills, but their payments were no longer counted as general fund revenue and the community’s cost to provide water was no longer tracked as a general fund expenditure.
- During the recession, all but two of the communities with a significant overestimate of municipal costs experienced a sharp decline in commercial or industrial property values that did not recover until FY 2000 or later.<sup>15</sup>
- Most of the communities for which the model generated a reasonably accurate forecast of school costs have a town manager-board of selectmen form of government, and a few have mayor-council forms of government. The same can be said for only three of the communities with significant under- or over-estimates.
- Although it may seem counterintuitive, about two-thirds of the communities for which the model generated a significant underestimate of school cost growth had very low rates of school enrollment growth or a decline in enrollments during the 1990s. School finance data from the Department of Education suggest that most of these communities had been spending well below their “foundation budgets” in FY1993 but were spending amounts equal to or greater than their foundation budgets by FY 2001.<sup>16</sup>
- Population and household growth rates are not useful indicators of expenditure growth. In most cases, the model generated a fairly accurate forecast of future school costs in the fastest-growing communities.

### Pitting fiscal impact against housing policy

The fiscal impacts of new multi-family housing clearly hinge on whether developments include units sized for family occupancy. Our case studies and federal census data are consistent in this regard: in most multi-family developments, whether condominiums or apartments, a majority of the residents do not have school-age children. The case studies underscore that newer developments are particularly “child proof” because most of them are limited to one- and two-bedroom units. Even those with three-bedroom units have so few that the average number of children per unit remains well below that of single-family homes. Presumably to reduce local opposition, developers have been limiting their proposals to small units and when they include three-bedroom units at all, the percentage is insignificant

in relation to the larger project. In addition, market rents are often so high that they effectively limit the number of family households with children. This applies equally to developments created with comprehensive permits and local zoning approvals.

At issue is whether strategies to control fiscal impact – that is, strategies to limit the number of school children – run contrary to the housing needs of Bay State families. Across the Commonwealth, 26.2% of all homeowners have school-age children. Families constitute 76.4% of the state's homeowners and naturally, the percentage of family homeowners with school-age children is higher than that of homeowners overall: 34.2%. The situation among renters is quite different. Only 46% of all renter households are families, yet 40.2% of renter families have school-age children. Since a larger proportion of renters are non-family households, i.e., a one-person household or two unrelated individuals, it makes sense that rental production would favor small housing units. However, excluding three- or four-bedroom units from multi-family developments reduces housing choice for renter families.

In April 2000, there were 178,406 vacant housing units in Massachusetts or 6.8% of the state's entire housing inventory, down from 9.1% in 1990. Census 2000 data show that multi-family apartments and condominiums comprised 19.6% of all housing units in the state but only 17% of the vacancies, while single-family homes made up 52.4% of the inventory and 56.2% of the vacancies. Nearly 55% of the state's vacant units were vacation or seasonal homes, in fact vacation homes increased by 8% during the 1990s. The rate of vacation home growth in some resort-area markets surpassed the rate of total housing unit growth, suggesting that upon resale, established year-round homes had been captured by the demand for seasonal housing. In absolute terms, Dukes County gained more seasonal units than any other part of the state. However, the highest rates of seasonal home growth occurred not in traditional tourism centers but rather, in three Eastern Massachusetts counties: Middlesex, Suffolk and Norfolk.<sup>17</sup>

The state's 8.9% growth in households clearly created more demand for homes. Between 1990-2000, the number of units available for rent declined by 47% and the number of units for sale, by 34%. Suffolk, Middlesex and Essex Counties experienced the largest absolute decline in vacant rental units, but every region of the Commonwealth was affected by the surge in demand for rental housing – except Berkshire County, which lost population for the third successive decade and had 104 more units for rent in 2000 than had been on the market in 1990. Significantly, most of Berkshire County's vacant apartments are in Central and North County, areas that also have some of the state's highest rates of rental housing cost burden.

As the economy rebounded, not only did housing starts increase but also, the intensity of homebuyer demand pressed units that were previously renter-occupied into the market of units for sale. By 2000, the number of renter-occupied housing units statewide had grown by 19,755 while owner-occupancies increased by 176,715 units: a ratio of 8.9 owner-occupied units for every one renter-occupied unit. The increase in rental occupancies is deceptive, however. Family renters felt the impact more than others. Together, a production pipeline comprised mainly of one- and two-bedroom apartments and the conversion of older units from rental to ownership resulted in a 17,064-unit reduction in renter-occupied, two- or three-bedroom housing units and a 20,505-unit increase in the number of renter-occupied one-bedroom units. Suffolk County absorbed most of the demand for larger rental units, for nearly 70% of the state's growth in three- or four-bedroom, renter-occupied units occurred in Boston, Chelsea and Revere. The largest absolute decline in renter-occupied, three-bedroom units occurred in Middlesex and Hampden Counties. Setting aside cost and looking strictly at housing suitability – that is, unit size in relation to household size and composition – homeowners with children have far more choices than renters with children. Statewide, the number of owner-occupied housing units with three or more bedrooms is five times higher than the number of renter-occupied units with three-or more

bedrooms, yet homeowners with children under 18 exceed renters with children under 18 by a ratio of 2.09. For every homeowner with children, there are 2.2 housing units with three or more bedrooms but for renters with children, there are .09.<sup>18</sup>

### Understanding school operating and capital costs

Since the size and composition of households largely determine the costs associated with new residential development, homes built for families are expensive to serve. Similarly, the types of businesses that occupy a community's commercial or industrial zones largely determine the costs associated with non-residential development. Population growth does not always lead to higher municipal service costs, but school enrollment growth directly affects school building capacity. Most cities and towns built new schools or expanded and modernized older schools during the 1990s. The conditions that prompted so many school construction projects vary by community. For example, towns with high rates of housing and school enrollment growth clearly had no choice but to invest in capital improvements. Still, above-average school enrollment growth rates occurred even in communities with very low rates of residential development, usually because a large percentage of older homes were sold and new families replaced empty nesters. Towns with low rates of school enrollment growth also modernized older school buildings, and some communities that had closed school buildings during the 1980s suddenly found themselves with more children than they could accommodate in their scaled-back facilities.

Our case study data corroborate a concern voiced by many local officials: between the capital costs triggered by school enrollment growth and the higher operating costs associated with new schools, homes built for families create a marginal cost impact that typical per-capita or per-pupil multipliers belie. In the limited number of communities for which had detailed historic fiscal data, the marginal cost factor accelerated the rate of per-pupil spending growth by 1.15-1.19. While measuring marginal cost impacts is a complex exercise, it is far more difficult to discern the long-term impacts of residential development. Long-term impacts can be seen in towns with low rates of housing growth and high rates of population growth, a phenomenon that occurs as older homes recycle in the marketplace.

Excluding municipalities that ended the 1990s with a reduction in total housing units (mainly cities), the average rate of housing unit growth per community was 11.8%. Several with lower housing growth rates nonetheless absorbed higher-than-average rates of population growth: Acton, Haverhill, Dover, Falmouth, Monterey, Upton, Ludlow, Weston, Plymouth, Wayland, West Boylston, Bourne, Hamilton, Barnstable, Chelsea, Yarmouth, Salisbury and Cummington. The explanations vary, but none of these communities absorbed a large increase in multi-family units except Chelsea. Despite their differences, all of these communities share at least one attribute: they experienced a large turnover in owner-occupied homes during the 1990s, and some also experienced a significant reduction in vacant units.<sup>19</sup> As older homes were sold to incoming families, the school operating cost impact was very similar to that of new housing units. However, the fiscal consequences differed significantly because the taxable value of older housing units is almost always less than the taxable value of new homes.

Communities that worry about the fiscal impact of large multi-family housing developments may be justified if the developments are built to house families with children, but most of the state's new apartment and condominium developments are built to exclude them. Undeniably, a large multi-family development with three-bedroom units will most likely produce more children overall than a single-family subdivision on the same parcel of land, resulting in a comparatively higher marginal cost impact. In one of our case study communities, a 230-unit multi-family development was built in 1979 on a site that was zoned to produce about 75 single-family homes. Owing to its size, condition, value and

location, the development ranks among the top ten taxpayers in the community. Since 30% of the units contain three or four bedrooms, the development generates a large number of school children compared to most multi-family developments: .66 per unit.

Even with the higher average multiplier for school-age children in single-family homes, the number of children generated by single-family development in that location would have been about 55% of the number of children in the multi-family development. Anecdotally, we understand from local officials that the multi-family units have housed about the same number of children for 20 years. They had a negligible impact on the community's school enrollment growth rate during the 1990s, but new single-family home development that occurred during the 1980s and early 1990s had an enormous impact – far more than housing unit re-sales. The average household size among homeowners that moved into the community between 1990-1994 is above the third quartile for the state as a whole.<sup>20</sup>

### Separating development-induced costs from policy-induced costs

The costs of local government increase not only in response to new growth, but also because voter preferences change over time. Some of the Commonwealth's most rapidly growing towns have experienced major demographic change as new, higher-income families moved into the community. As new voters gain a voice, they do exactly what town meeting voters have done for many generations: they organize. They want better schools and can afford to pay for them, and they want their new hometown to preserve the image that attracted them to it in the first place. Debt issuances for new schools, libraries, conservation land acquisitions, and other public purposes are clearly routine business for local governments, yet not every community can afford the same level of investment. When the cost to live in a city or town becomes too high, older residents leave. It takes little effort to see how this pattern has affected a number of towns that have grown rapidly since the early 1980s, for high-ranking average single-family tax bills strongly correlate with low percentages of elderly households. Moreover, the state rank for median household income has changed noticeably for several communities since 1980, all high-growth towns and suburbs. Some examples include Bolton, which ranked 35 out of 351 cities and towns for median household income in 1980 and 10 in 2000; Southborough, 32 in 1980, 9 in 2000; Westford, 30 in 1980, 12 in 2000; West Newbury, 49 in 1980, 20 in 2000; Hopkinton, 63 in 1980, 23 in 2000; and Boxborough, 72 in 1980, 28 in 2000.<sup>21</sup>

In addition to the influence of demographic change on local expenditures, ideas about the meaning of high-quality schools have matured in ways that affect the cost of public schools even in communities with very little enrollment growth. Smaller elementary school class sizes, the deployment of teacher aides in kindergarten and early primary classrooms, technology, and state-of-the-art cultural facilities exemplify some of the changes in educational policy and practice that have increased the cost of public education regardless of school population growth. Moreover, public schools have found it increasingly difficult to attract and retain highly skilled math and science teachers because private companies pay higher wages. As a result, teacher salaries have increased at rates that sometimes attract criticism, yet public schools nationally have been under tremendous pressure to improve. In response to demands for greater accountability, schools spend more today on professional development and curriculum supervision than they did 20 years ago. They also spend more on special education per student. These kinds of cost increases have little to do with new residential development or school enrollment growth, but they have everything to do with educational policy exercised at the state and local level. As long as communities shoulder most of the cost of providing public schools, two outcomes seem all but guaranteed: they will resist new housing, and the Commonwealth's schools will be unequal just as the distribution of low-income housing remains unequal.

## END NOTES

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<sup>1</sup> Bureau of the Census, Census 2000, Summary File 3, Table P6.

<sup>2</sup> Table HCT1.

<sup>3</sup> Table H42.

<sup>4</sup> 1990 Census, Summary File 3.

<sup>5</sup> Census 2000, Summary File 3.

<sup>6</sup> Census 2000, Summary File 3, Tables H1, HCT, H34.

<sup>7</sup> Census 2000, Summary File 3, Tables P6, P18; 1990 Census, Summary File 3, Table P3.

<sup>8</sup> Census 2000, Summary File 3, Tables P6, P18.

<sup>9</sup> Census 2000, Summary File 3, Table HCT1.

<sup>10</sup> Ibid.

<sup>11</sup> Census 2000, Summary File 3, Table H32.

<sup>12</sup> See Case Studies.

<sup>13</sup> Robert W. Burchell and David Liskin, The Fiscal Impact Handbook (1987). See 25-44 passim.

<sup>14</sup> Mass. Department of Education (DOE), School Building Assistance Bureau; Mass. Department of Revenue (DOR), Municipal Data Bank [online database] Cherry Sheets in EXCEL format.

<sup>15</sup> DOR Municipal Data Bank [online database], Assessed Valuation 1990-2000, in EXCEL format.

<sup>16</sup> DOE, Report of the Foundation Budget Review Commission (June 2001), Table 5, in HTML format [table5.htm], INTERNET at <<http://www.state.ma.us/legis/reports/foundation.htm>> [originally accessed October 2001].

<sup>17</sup> 1990 Census of Population and Housing, Summary File 1, Table H8; Census 2000, Summary File 3, Table H8.

<sup>18</sup> Census 2000, Summary File 3, Tables H42, HCT1

<sup>19</sup> Appendix

<sup>20</sup> Appendix

<sup>21</sup> Census 2000, Boston Globe May 22, 2000; data sorted and ranked by author.

## Methodology

This report is based on case studies of multi-family housing in 41 cities and towns, most of which are located in Eastern and Central Massachusetts. The communities differ by population size and characteristics, growth history, regional setting, tax base, type of school system, age and composition of housing stock, and the economic position of households. Since they are not representative of all cities and towns in the Commonwealth, our case studies must be used with caution. In fact, we intentionally excluded certain types of communities when we developed our selection criteria. For example, we eliminated resort towns and communities with a large population of college students because both of these conditions involve unique housing issues that exceed the scope of our project. Moreover, it made sense to focus on moderate- to high-growth areas of the state because they are most directly affected by the impacts of new development.

### Case Study Communities

We used the following criteria to sort the state's 351 cities and towns and select a group of communities for inclusion in this study:

- Regional location.
- Historic rates of population and housing unit growth.
- Composition of housing stock.
- State ranks: median household income and equalized valuation per capita.
- Percent of renter-occupied housing units.
- "Kind of Community" classification assigned by the Department of Revenue.
- Rate of school enrollment growth.
- Age of multi-family housing.
- Our own familiarity with particular communities.

Since we intended to study multi-family housing in 25 communities, we began by selecting a priority group of 25 and a secondary group of 20. This assured that we would have an adequate sample to draw from in case some communities declined to participate in the project. Ultimately, we included the 41 communities listed below because we received enough data to expand our initial list.

Acton	Canton	Mansfield	Quincy
Andover	Charlton	Marlborough	Reading
Attleboro	Fall River	Marshfield	Salem
Barnstable	Franklin	Mashpee	Scituate
Bedford	Holbrook	Melrose	Shrewsbury
Belmont	Hull	North Andover	Ware
Blackstone	Leominster	Northborough	Westborough
Boxborough	Lexington	Norwood	Weymouth
Brockton	Lynn	Palmer	Wilbraham
Burlington	Malden	Peabody	Wilmington
			Winchester

## Research Questions

We designed our research project to address four questions:

1. What factors affect the probability that new multi-family developments will attract and house families with school-age children?
2. To what extent have multi-family developments contributed to increases in school operating and capital expenditures?
3. To what extent can readily available data sources be used to estimate the costs of new growth?
4. Per capita multipliers provide a relatively simple way to forecast the fiscal impacts of new development, yet often they produce inaccurate results. Under what conditions can per capita multipliers support a reasonably precise impact analysis?

## Sources of Data

The data presented in this report were obtained from several sources, including:

- Owners and managers of multi-family developments. For 14 of the case studies, we received multi-family occupancy data from owners and managers of rental property.
- City and town planners, school officials, and municipal managers or elected officials. For the remaining 27 case studies, we received reports of school-age children from local or regional school districts, usually but not always with the assistance of city or town planning offices, town managers or selectmen.
- Bureau of the Census. For all 41 case studies, we collected, compiled and analyzed a wide assortment of federal census data in order to place each multi-family development in a local and regional context. We also derived population, household and age multipliers from a cross-tabulation of several data sets so that we could test the per capital multiplier method of estimating fiscal impacts of new growth.
- Massachusetts Department of Revenue, Municipal Data Bank. We collected, compiled and analyzed general fund expenditure, revenue, state aid, assessed valuation and growth statistics for all 41 communities. Our purpose was two-fold: first, to apply the multipliers we derived from census data to a sample of communities and second, to evaluate the use of readily available data sets in fiscal impact studies. In some cases, we compiled municipal finance statistics for all 351 cities and towns so we could make meaningful comparisons between the case-study communities and statewide trends.
- Massachusetts Department of Education. We obtained school finance and historic school enrollment data for all 41 communities and their school districts. For a limited sample of communities, we tested the accuracy of state data sets by consulting with local or regional school officials or by obtaining data from town reports or school department web sites.
- Department of Housing and Community Development, MassHousing, and the U.S. Department of Housing and Urban Development. After establishing an initial case study list, we obtained information about the size, age, location and percentage of affordable units in multi-family developments in each community.
- MassGIS, ESRI, and the Geography Network. We collected and organized statewide and local GIS data layers in order to map a series of comparison statistics. Our purpose was to determine whether



any spatial relationships exist that would help to explain different impacts of multi-family developments in our case study communities and across regions.

### Approach

From the outset, we sought to construct a profile of new or recently built multi-family developments around the state, working with a variety of interested parties: developers, property managers, local officials, school authorities and state agencies. Unless otherwise noted in the text of our case studies, “multi-family” housing includes residential structures of five or more units. Although we focused on housing built since 1990 and generally tried to limit the selection of properties to developments with 5+-unit buildings, in some cases the samples do not conform neatly to these criteria. Several developments for which we received data are more than 20 years old, but the reality is that many communities in Massachusetts do not have any new multi-family housing. While we did not expect to evaluate older rental or condominium developments, their inclusion in the study proved invaluable. As this report attests, older multi-family developments usually house more school children than new developments. At least three factors seem to explain the difference:

- Most of the older developments we examined were built under policies that favored production of low- and moderate-income housing units only. Today, comprehensive permit developments in small towns and suburbs typically include the 25% low- or moderate-income units required for listing on the Subsidized Housing Inventory and the remaining 75% are priced for market occupancy. In most cases, the higher the percentage of low- and moderate-income units, the more likely it is that multi-family units will house families with children – if the development includes units sized for family occupancy.
- Most of the older developments have a relatively high percentage of three-bedroom units and some of them offer four-bedroom units. In contrast, multi-family developments built today include few if any three-bedroom units and four-bedroom units are rare.
- Usually, the market-rate units in new developments are more expensive than the market-rate units in older developments. As a result, families that do not qualify for low- and moderate-income housing but cannot afford to rent new market units have no choice but to search elsewhere for a home they can afford. Sometimes they locate affordably priced market units in an older multi-family development, and often they rent apartments in two-, three- or four-family homes that pre-date local zoning bylaws. We found this to be true in several of the communities we studied.

In a majority of cases, we obtained data for new developments from the owners or property managers. We designed a form for this purpose in order to standardize our data sets, and all but two of the reporting organizations used it to respond (Appendix A). In addition, data for some of the older developments also came from property managers. All of the data received from cities and towns were supplied on a second form (Appendix B). Recognizing that property managers and local officials would have access to different types of data, we had to pose questions appropriate to each audience. For example, we knew that since property managers would most likely report data from their rent rolls, we could request a count of school-age children by the number of one-, two- or three-bedroom apartments in a development. While school departments would not be able to report students by size of housing unit, they could tell us how many elementary, middle and high school students live at a particular address by checking their bus rosters or extracting the information from a system-wide enrollment database. It fell to us to verify the number of units by bedroom size so we could make reasonable comparisons between developer- and school-supplied data. This task was fairly easy for HUD- or

MassHousing-assisted developments, but very difficult for others. Often, local assessors did not have the information in an easily retrievable format.

Our work would have been simplified by limiting the study to data supplied by property managers. We made a conscious choice to do otherwise. First, research projects should never be limited to one data source. Second, local officials have a perspective on housing that differs from that of developers, owners or managers of residential property. We needed both perspectives. Third, it made no sense to conduct an extensive series of case studies without consulting knowledgeable people in the communities. By seeking input from many individuals, we created a risk that the data would be so uneven or inconsistently formatted that it would be difficult to draw meaningful inferences. At the same time, the project gave interested people a chance to participate. While a few towns declined, in most cases we received tremendous cooperation. The school department in one of our communities does not have any database technology, yet the staff willingly spent three days researching paper records to provide us with the data we requested. In another case, we erroneously listed an elderly housing development on a data request form. The school department called us not only to point out the mistake, but also to suggest other multi-family developments we could consider. Overall, the municipal and school officials we consulted were genuinely interested in our work and the questions we wanted to answer.

As we collected case study data, we also proceeded with parallel components of the project. Census 2000 provides a number of detailed demographic tables that previous census releases did not include, notably the cross-tabulated tables in Summary File 3. We downloaded all Summary File 3 data tables for the communities on our case study list and in some cases, for all communities in the Commonwealth. Many of the statistics gleaned from this process appear in Appendix C. The new data sets became instrumental to our project because they allowed us to place case study statistics in a broader context. For example, when we obtained school-age children data for some large multi-family developments in Malden, we questioned the results because the average number of children per unit is unusually low. Using Geographic Information System (GIS) software, we created thematic maps with Census 2000 data and found that the neighborhoods in which these developments are located have small percentages of families with school children. The adjacent neighborhoods have much higher percentages of families and a higher proportion of school-age children. They also have housing inventories dominated by two-, three- and four-to-eight unit buildings, not large-scale apartment developments.

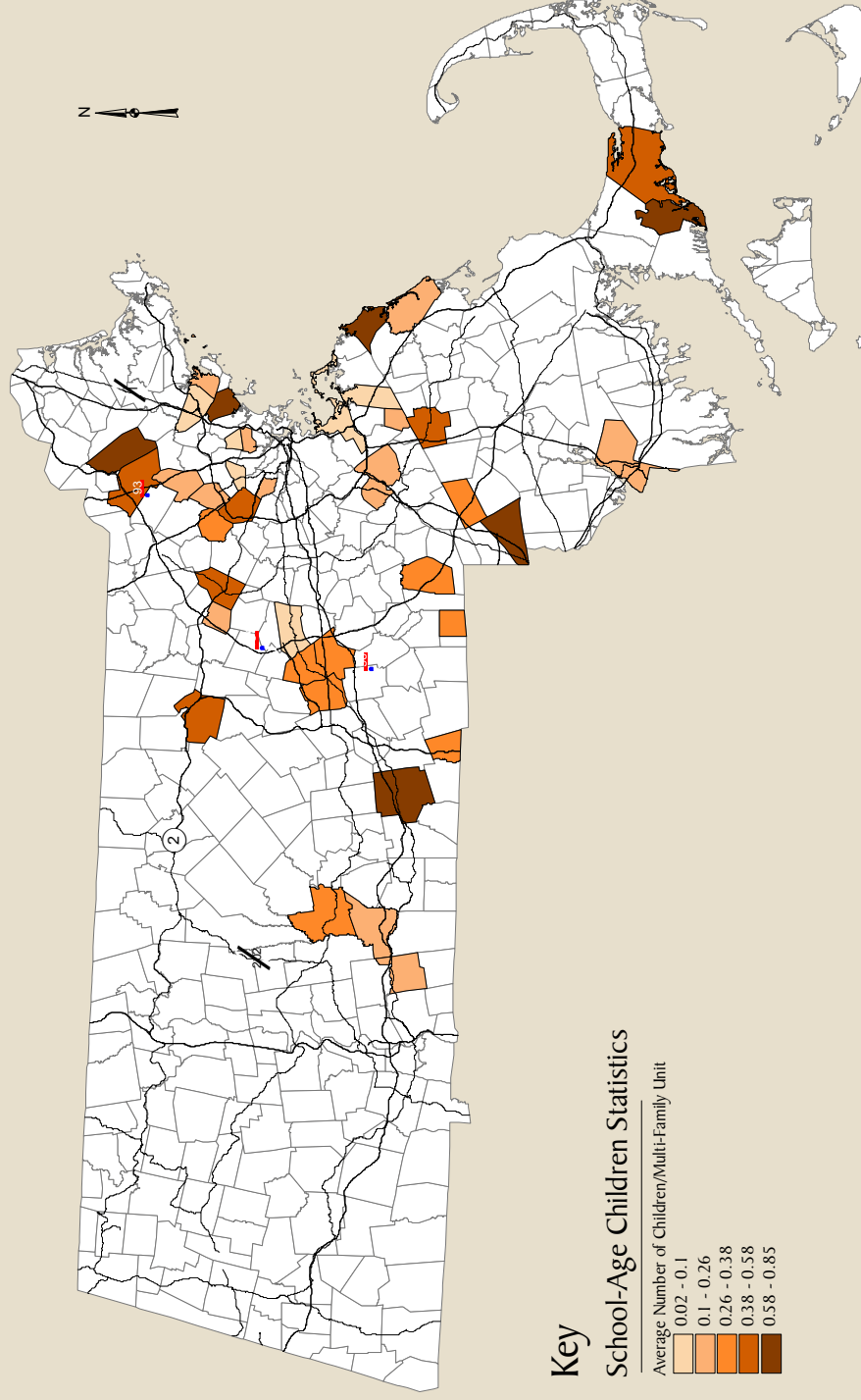
At the same time, we collected and organized several sources of data so we could test the reliability of per capita multipliers in estimating the fiscal impacts of development. Since several of the communities in our case study group experienced high rates of population and housing unit growth during the 1990s, we wanted to determine whether per capita multipliers, uniquely derived for each community, would have produced an accurate forecast if local officials had used them in FY 1990 to estimate their fiscal condition in FY 2000. For this part of our research, we created a workbook template that automatically calculates most of the steps required for a per capita multiplier study, following the model laid out by Robert W. Burchell in *The Fiscal Impact Handbook* (1987). The workbook contains two linked worksheets: one with fields for data entry and calculations, and the second for adjusting costs by an inflation index. Recognizing that per capita multiplier studies often ignore a crucial first step in the model – estimating expenditures generated by non-residential development – we designed our template to calculate and deduct those expenditures in order to arrive at net general fund expenditures attributable to residential development. None of this would have been possible without the wealth of municipal finance data maintained by the Department of Revenue or the per-pupil cost reports published annually by the Department of Education.

Housing the Commonwealth's  
School-Age Children

## The Case Studies

Acton	Holbrook	Palmer
Andover	Hull	Peabody
Attleboro	Leominster	Quincy
Barnstable	Lexington	Reading
Bedford	Lynn	Salem
Belmont	Malden	Scituate
Blackstone	Mansfield	Shrewsbury
Boxborough	Marlborough	Ware
Brockton	Marshfield	Westborough
Burlington	Mashpee	Weymouth
Canton	Melrose	Wilbraham
Charlton	North Andover	Wilmington
Fall River	Northborough	Winchester
Franklin	Norwood	

# Housing the Commonwealth's School-Age Children



## Key

### School-Age Children Statistics

Average Number of Children/Multi-Family Unit

- 0.02 - 0.1
- 0.1 - 0.26
- 0.26 - 0.38
- 0.38 - 0.58
- 0.58 - 0.85

# Reading the Case Studies

## A “How-to” Guide

The 41 case studies appear in the following regional configurations:

North Region	South Shore-Cape	Central-Western Massachusetts
Andover	Barnstable	Blackstone
Burlington	Brockton	Charlton
Lynn	Canton	Leominster
Malden	Holbrook	Northborough
Melrose	Hull	Palmer
North Andover	Marshfield	Shrewsbury
Peabody	Mashpee	Ware
Reading	Quincy	Westborough
Salem	Scituate	Wilbraham
Wilmington	Weymouth	
Winchester		
Southeastern Massachusetts	Boston Suburbs-West	
Attleboro	Acton	
Fall River	Bedford	
Franklin	Belmont	
Mansfield	Boxborough	
Norwood	Lexington	
	Marlborough	

We report each region in two formats: an introductory narrative that focuses on one community, and one-page data summaries for the other communities. The narratives provide more detail, and their

Population	28,587
<u>Total Housing Units</u>	11,945
% Single-Family	51.4%
% Multi-Family	24.2%
<u>K-12 Enrollments</u>	
1990	3,312
2000	3,539
% Change	6.9%
<u>Expenditures (2000)</u>	\$75,205,291
Schools (Integrated)	\$27,875,999
% Change 1990-2000	39.4%
Town-Residential	\$28,500,330
Town-Nonresidential	\$18,828,962
<u>Per Capita Multiplier Test (1990-2000)</u>	
Schools +/- %	-0.7%
Residential +/- %	-9.3%

purpose is to orient readers to the issues we considered and the data sets we used in this project. All charts of multi-family statistics have been color-coded to distinguish case studies based on one development from case studies that include several multi-family properties, as shown on the next page.

The one-page summaries also include a statistical table such as that shown on the left. The table presents basic local data and reports the results of each per capita multiplier analysis. In this example, the community's K-12 enrollment increased 6.9% during the 1990s and its school expenditures, not including school debt, by nearly 40%. Using statistics derived from federal census data for this particular town, we determined that if local officials had used the per capita multiplier fiscal impact method in 1990 to forecast the cost impacts of new development, assuming growth rates that actually

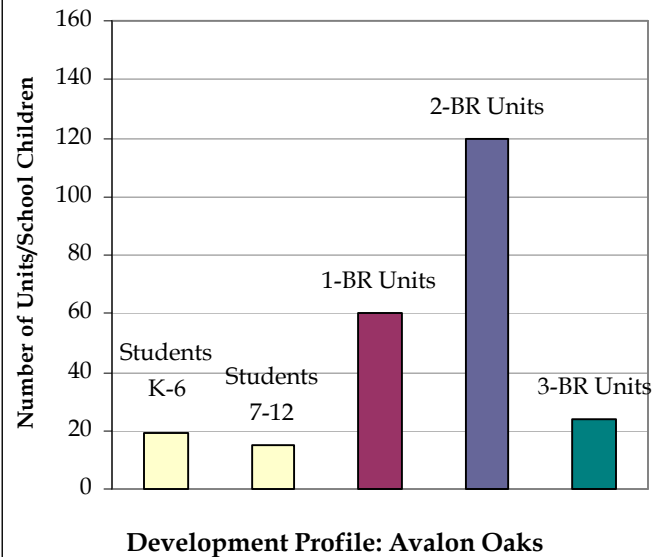
occurred between 1990-2000, they would have underestimated the increase in school expenditures by -.7% and in residential service expenditures, by 9.3%. We found that often, an underestimate of residential service costs was a reflection of debt service assumed during the 1990s – typically, but not always, for school construction projects. Unfortunately, on-line data sets do not separate school and other municipal debt service and this prevented us from assigning school-related debt to the total cost of public education. However, a review of Cherry Sheets and School Business Assistance Bureau (SBAB) disbursements allowed us to verify anecdotally, though not statistically, cases in which a distorted forecast of future residential service costs may be due to school construction projects completed or bonded during the 1990s.

The Wilmington chart (right) is an example of bar charts that summarize data for one multi-family case study, in this case a new rental development owned by Avalon Bay. Similarly, the Burlington chart (lower right) reports data for five developments, i.e., a case study comprised of several data sets. For single-development case studies like Wilmington's, we report the average number of children per unit at the top of each chart. However, it is misleading to report an average number of children per unit for aggregate data, so in Burlington's case and others like it, we constructed a two-axis chart that shows the total number of school children and the average number of children per unit in each development.

Finally, all 41 case studies include a collection of Census 2000 statistics and cross-tabulations in a summary table entitled "Household and Housing Unit Profile." The federal census data provide a comparative framework for interpreting each multi-family case study.

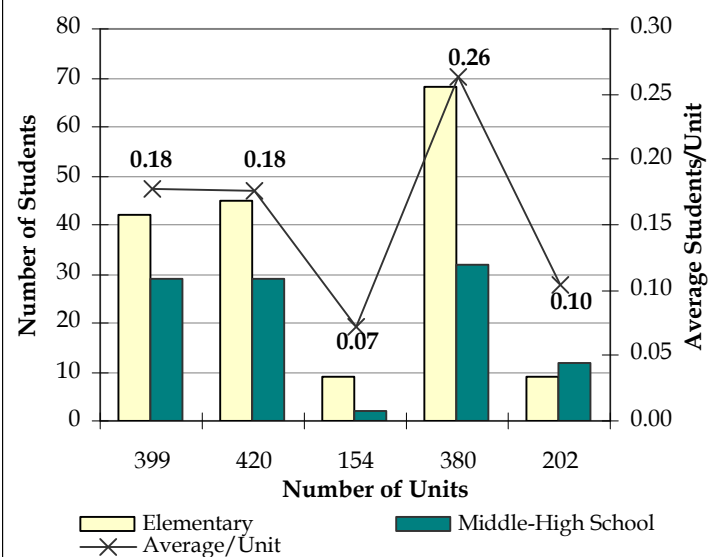
**Multi-Family Housing Sample: Wilmington**

(204 Apartments, 34 Children, .17 Children/Unit)



**Multi-Family Housing Sample: Burlington**

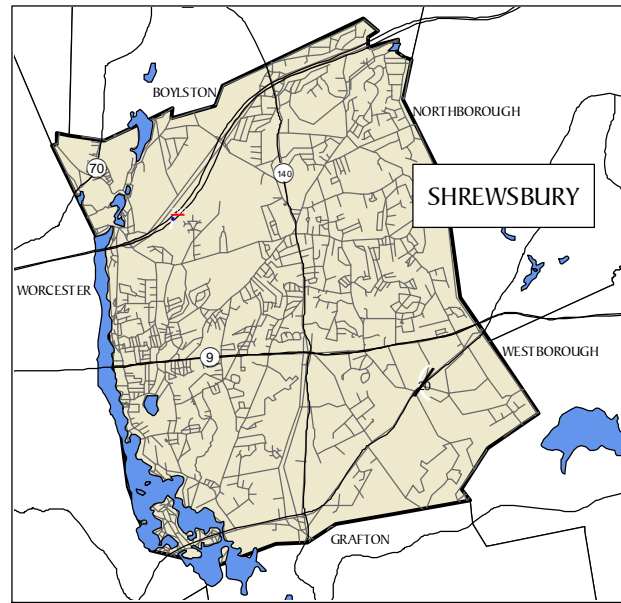
(5 Rental Properties, 1,555 Units, 277 Children)



## Shrewsbury

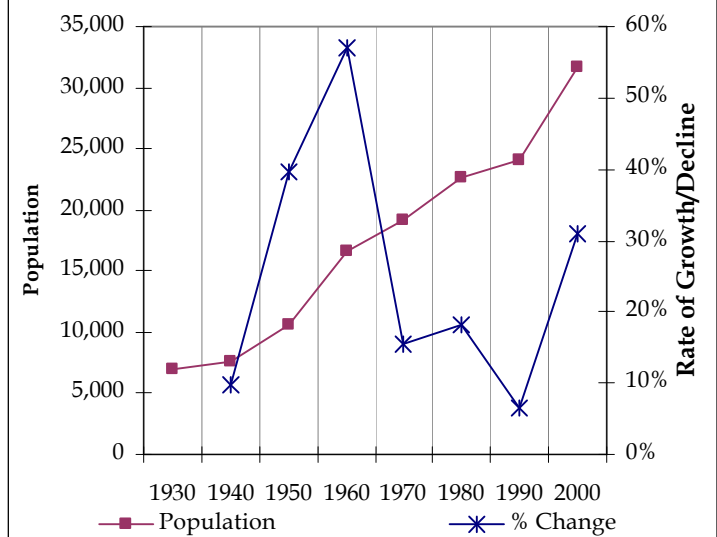
**Population and Housing.** Located between Worcester and I-495, Shrewsbury is on the western edge of a rapidly growing region. The 2,641 homes that were built in Shrewsbury during the 1990s translate into a 26.3% increase in housing units – the 25<sup>th</sup> highest growth rate of all cities and towns in the Commonwealth. Fig. 1 shows that the town's population also grew rapidly (31%), yet a more significant change occurred in the number of households living in Shrewsbury: a 32.9% increase.<sup>1</sup> As a result, Shrewsbury built a new elementary school in 1995 and by the end of the decade, voters had approved not only a new, \$55.5 million state-of-the-art high school, but also major renovations to convert the former high school into a second middle school. Together, these three school projects resulted in a total long-term debt obligation of \$101 million. The town also issued bonds for open space, a new senior center, town hall renovations, water and sewer system upgrades, and a fiber-optics system for its CATV enterprise in order to compete for new industrial development.<sup>2</sup>

That 38% of Shrewsbury's 12,696 units were built in the past 20 years helps to explain the town's dramatic increase in town and school spending along with the revenue it receives to pay for these services. General fund expenditures increased by more than 75% between 1990-2000, a majority of it for schools. In fact, integrated education costs – the school budget, school-related debt service and the school department's proportional share of fixed costs like employee health insurance – nearly doubled over the course of the decade.<sup>3</sup> New growth combined with turnover in older housing stock brought about many changes in Shrewsbury in a relatively short period of time. The changes include not only a 52% increase in the town's under-18 population, but also growth among one-person households and in-migration of affluent families. The median income of householders between 35-44 years of age – those most likely to have school-age children – is 1.25 times the median household income for the town as a whole.<sup>4</sup> Census 2000 data show that 56% of the town's homeowners moved into their present house after 1990, and 86% of the town's total population is attributable to 70% of its households: families.



Data Sources: MassGIS, Census TIGER.

**Fig. 1. Shrewsbury Population: 1930-2000**  
(Source: MISER)



Shrewsbury is unusual among suburban communities because its zoning allows a broad mix of housing. About 27% of Shrewsbury's housing stock is renter-occupied.<sup>5</sup> Multi-family dwellings constitute 17% of the town's newest homes, or 498 units of which 95% are apartments or rented condominiums. Less than 18% of Shrewsbury's 3,332 renters live in single-family homes while 23.2% rent apartments in multi-family buildings.<sup>6</sup> Its entire inventory of multi-family rental housing includes about 3,400 units, 7% restricted to elderly or disabled tenants.<sup>7</sup> In contrast, 5% of its owner-occupied units are multi-family units (357), only 25 built 1990-2000. At the end of the 1990s, condominiums sold for \$129,000 in Shrewsbury and inched upward by 14% as of 2002.<sup>8</sup>

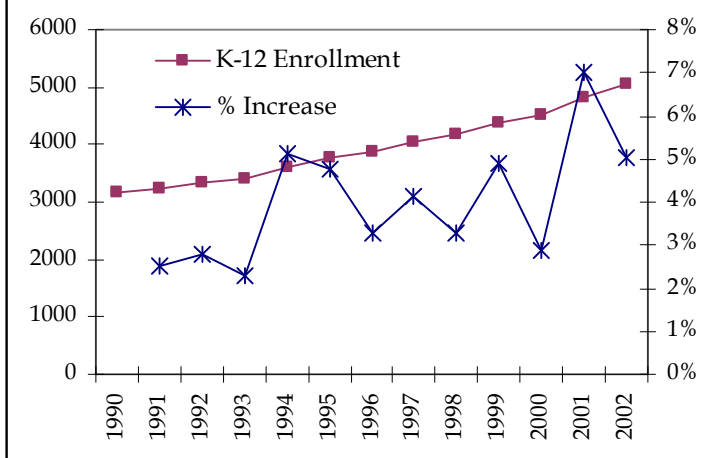
**School Enrollments.** Shrewsbury's pride in its public school system is evident in the condition of school buildings, competitive teacher salaries and the high marks residents gave to the school department during master plan visioning forums three years ago. Despite a 21% decline in school enrollments between 1980-1989, Shrewsbury began to absorb new students at a pace that far surpassed the statewide experience after 1990. By the end of the decade, Shrewsbury's K-12 enrollments had increased by 42.2%.<sup>9</sup> The vast majority of Shrewsbury's school population growth occurred because of new

single-family home construction and a modest turnover in owner-occupied housing units. Shrewsbury apparently absorbed homeowners at a considerably faster pace than the town produced new homes for sale: for every house built and sold in Shrewsbury during the 1990s, the town gained 2.19 households, mainly because of older home sales.<sup>10</sup> The average size of Shrewsbury's households is highest among homeowners who moved into their present house 6-10 years ago. Among residential uses, detached and attached single-family homes generate the largest households, a condition that applies to both owner- and renter-occupants. However, detached and attached single-family homes constitute 93% of all owner-occupied units in Shrewsbury and only 17% of all renter-occupied units.

**Housing and Children.** Last year, local officials conducted an informal survey to determine how many school children were living in Shrewsbury's apartment and condominium developments. The developments range in size from 24 to 302 apartments and two to 378 condominiums, for a total of 2,660 housing units. The study identified 481 students, for an average of .26 children/apartment and .18 children/condominium unit. Together, these children constituted 10% of the town's total K-12 enrollment (4,828) for the 2001-2002 school year. Sample statistics for 14 of the 31 developments appear in Fig. 3 (next page). For Arbor Commons, an AvalonBay development, the town's data are very similar to the results of a study carried out by the developer two years ago. Considering all occupied housing units in Shrewsbury, 14% of the town's renters and 27.5% of its homeowners have school-age children.

**Fig. 2: Shrewsbury Enrollments: 1990-2002**

(Department of Education)





### Fiscal Impact of Residential Development.

During the 1990s, residential development contributed between 74-95% of Shrewsbury's new-growth value and most years, new-growth tax revenue as a percentage of the previous year's levy exceeded the statewide average.<sup>11</sup>

Population, housing and fiscal data all reinforce that Shrewsbury is a high-growth suburb. The town's 42.2% school enrollment increase (1990-2000) far surpasses that

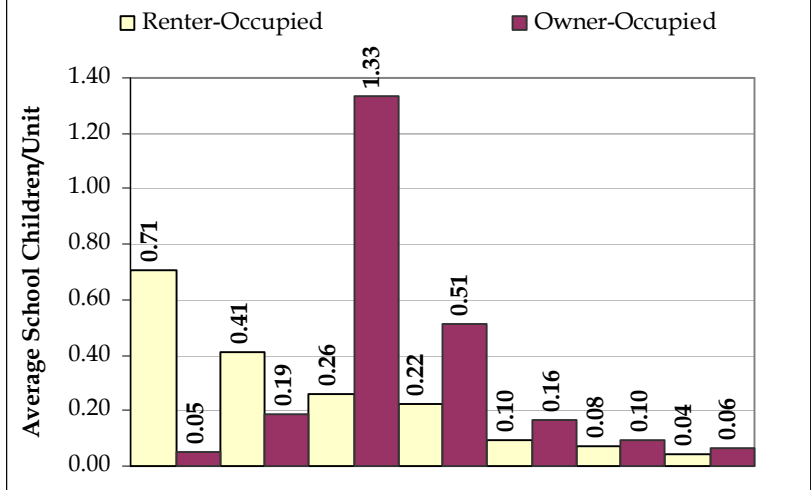
of most cities and towns in the Commonwealth. In turn, school population growth qualified Shrewsbury for considerably more state aid as the decade progressed, such that by 2000, state aid revenue had increased at a faster rate than other revenue sources, notably the tax levy.<sup>12</sup> Had the town relied on the per capita multiplier method in 1990 to estimate the fiscal impact of future development, assuming a ten-year growth rate equal to what actually occurred by 2000, Shrewsbury would have overestimated its FY 2000 municipal and school costs by 8.5-9%, as shown in Fig. 4.

Shrewsbury has a fairly substantial commercial and industrial base. Each year, about 6% of the town's general fund expenditures are attributable to non-residential development. However, business and industrial taxpayers generate

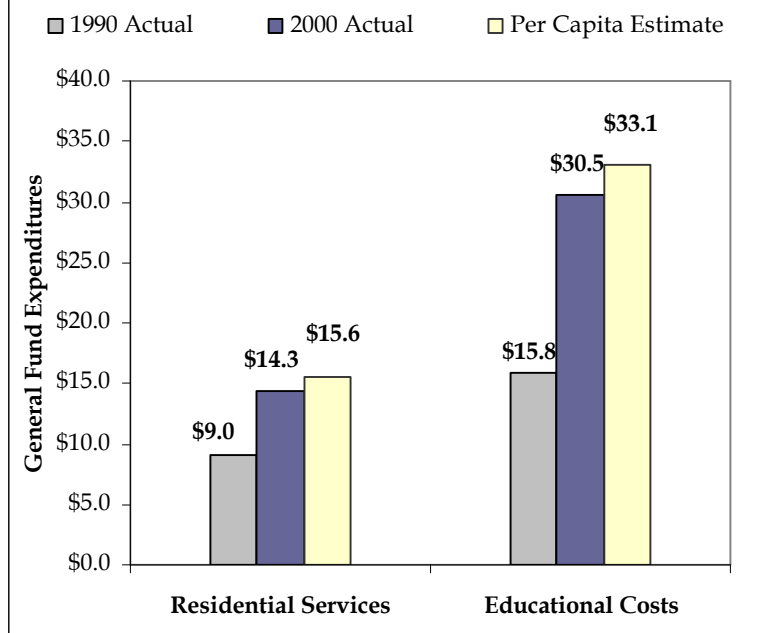
\$1.00 for every \$.54 the town spends to serve them, and Shrewsbury uses the surplus to help pay for residential services, including the schools.<sup>13</sup> While non-residential expenditures increased by approximately 24% during the 1990s, residential services increased by 59% and total school expenditures by 92.3%, yet the town's cost per student increased by only 22%.<sup>14</sup> To the extent that school enrollment growth triggered more school spending, other factors contributed as well. Across the Commonwealth, net school spending as a percentage of the Education Reform Act (ERA) foundation budget rose from 95%

**Fig. 3: School Children in Multi-Family Housing**

(Sample: 14 Developments, 2,247 units, 418 children)



**Fig. 4. Test of Per Capita Multiplier Forecast**



to 114.7% between 1993-2001, but in Shrewsbury, net school spending was 95.02% of the state's foundation budget in 1993 and 119% by 2001.<sup>15</sup> Presumably local policies and preferences also influenced Shrewsbury's education cost growth, for as the town gained new families, it also gained residents with somewhat higher incomes and a direct stake in the quality of their town's school system.

**Summary.** Recent single-family home development, a significant turnover of older housing stock and young children who reached school age after their families moved into town during the late 1980s all contributed to Shrewsbury's dramatic school enrollment growth during the 1990s. On a per-unit basis, multi-family rental housing appears to have generated few school students and in Shrewsbury, condominiums seem to attract young childless couples and empty nesters more than families with children. Since 1990, both school and non-school expenditures have increased significantly, mainly for resident services. Over the past decade, Shrewsbury's residential service costs increased at approximately the same rate per capita (21.1%) as school costs increased per pupil (21.7%). Even though Shrewsbury's average single-family tax bill increased during the same period, it declined in relation to the state median, from 113% in FY 1990 to 104% in FY 2000.

### Households and Housing Unit Profile: Shrewsbury

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.81	1.83	1-detached	2.94	2.23
1 Year	2.96	1.79	1-attached	2.01	2.74
2-5 Years	3.07	1.90	2	2.16	1.80
6-10 Years	3.29	1.81	3-4	1.82	1.99
11-20 Years	2.91	1.81	5-9	1.50	1.77
21-30 Years	2.35	1.48	10+	1.49	1.68
30+ Years	1.81	1.89	Other	1.77	0.90

% Households by Age of Householder	Owner-Occupied	Renter-Occupied	Number of Households by Household Type	Owner-Occupied	Renter-Occupied
15-24	0.7%	7.2%	Households	9,034	3,332
25-34	13.3%	27.4%	Families	7,261	1,418
34-44	28.7%	19.4%	With School-Age Children	2,487	468
45-54	20.8%	15.4%	% Households	27.5%	14.0%
55-64	13.9%	6.9%			
65-74	11.6%	10.1%			
75+	10.9%	13.7%			

Source: Bureau of the Census, Census 2000, Summary File 3, Tables H14, H32, H33, HCT1, HCT9. Cross-tabulations and statistics by author.

## END NOTES

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<sup>1</sup> Bureau of the Census, 1990 Census of Population and Housing, Summary File 1, Table DP-1, Census 2000, Summary File 3, Tables P1, P10: Massachusetts, Town of Shrewsbury.

<sup>2</sup> Judith A. Barrett and John Connery, The Fiscal Implications of Growth and Change: Shrewsbury (2001), 4-7.

<sup>3</sup> Massachusetts Department of Education, "Per Pupil Cost Reports," 1990, 1995-2000, in EXCEL format, INTERNET at <<http://www.mass.gov/doe>> [accessed June 2001, February 2002].

<sup>4</sup> Census 2000, Summary File 3, Table P-56.

<sup>5</sup> Census 2000, Summary File 3, Table H34.

<sup>6</sup> Census 2000, Summary File 3, Tables H32, HCT5.

<sup>7</sup> Census 2000, Summary File 3, Tables H8, H31, H32.

<sup>8</sup> Census 2000, Summary File 3, Table HCT6; Banker and Tradesman, "Free Market Statistics," in HTML format, available on the INTERNET at <<http://rers.thewarrengroup.com/townstats>> [accessed 20 March 2003].

<sup>9</sup> Massachusetts Department of Education, "Long-Term Trends in School Enrollments," Shrewsbury Public Schools, in HTML format, [accessed 24 March 2003].

<sup>10</sup> Census 2000, Summary File 3, Tables H36, H38, HCT1-HCT3; Banker and Tradesman, "Free Market Statistics."

<sup>11</sup> Massachusetts Department of Revenue, Municipal Data Bank, "New Growth Revenue," 1990-2000, in EXCEL format, INTERNET at <<http://www.mass.gov/dor/dls>> [accessed January 2000].

<sup>12</sup> Massachusetts Department of Revenue, Municipal Data Bank, "Revenues by Source," 1990-2000, in EXCEL format, [accessed January 2000].

<sup>13</sup> Barrett and Connery, Fiscal Implications, Table 20B.

<sup>14</sup> Massachusetts Department of Education, "Per Pupil Cost Reports," 1990, 2000.

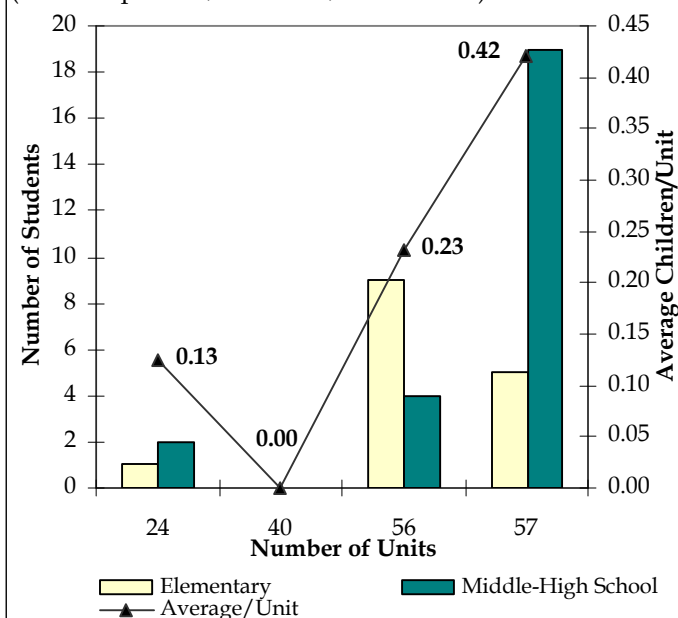
<sup>15</sup> Massachusetts Department of Education, Report of the Foundation Budget Review Commission (June 2001), Table 5, in HTML format [table5.htm], INTERNET at <<http://www.state.ma.us/legis/reports/foundation.htm>> [originally accessed October 2001].

## Northborough

Population (2000)	14,013
Total Housing Units	5,002
% Single-Family	81.4%
% Multi-Family	14.1%
K-12 Enrollments	
1990	1,483
2000	2,040
% Change	37.6%
Expenditures (2000)	
Integrated School Costs	\$19,519,739
% Change 1990-2000	74.5%
Municipal-Residential	\$4,751,917
Municipal-Nonresidential	\$1,537,863
Accuracy of Per Capita Multiplier Forecast	
Schools +/-	-1.8%
Residential +/-%	30.6%

### Multi-Family Housing Sample: Northborough

(4 Developments, 177 Units, 40 Children)



### Households and Housing Unit Profile: Northborough

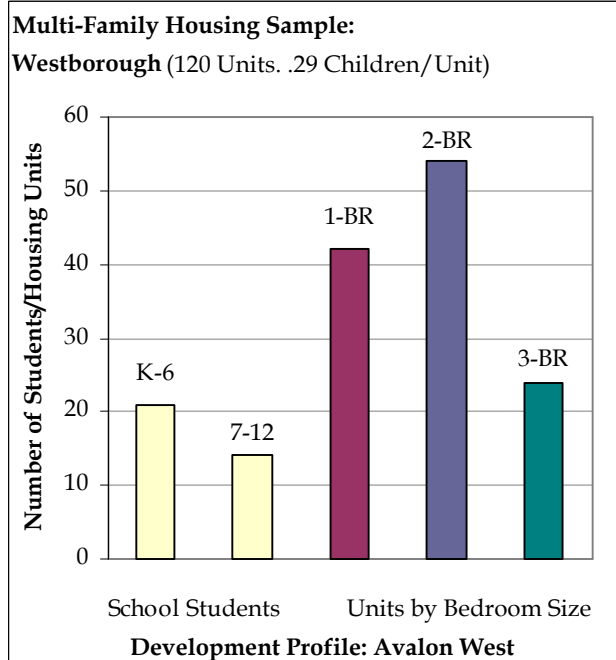
Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.98	2.05	1-detached	3.05	2.77
1 Year	2.79	2.16	1-attached	2.28	2.36
2-5 Years	3.06	2.22	2	1.85	2.19
6-10 Years	3.38	1.75	3-4	2.00	1.48
11-20 Years	3.29	1.52	5-9	0.00	1.29
21-30 Years	2.70	1.21	10+	1.49	1.94
30+ Years	2.19	2.10	Other	N/A	5.13

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	5.8%	Households	4,127	779
25-34	9.5%	33.1%	Families	3,544	357
34-44	32.1%	22.2%	With School-Age Children	1,460	150
45-54	26.4%	13.2%	% Households	35.4%	19.3%
55-64	15.5%	6.7%			
65-74	10.1%	8.9%			
75+	6.0%	10.1%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Westborough

Population (2000)	17,997
<u>Total Housing Units</u>	6,773
% Single-Family	55.6%
% Multi-Family	30.7%
<u>K-12 Enrollments</u>	
1990	2,022
2000	3,209
% Change	58.7%
<u>Expenditures (2000)</u>	42,321,248
Integrated School Costs	25,561,529
% Change 1990-2000	101.8%
Municipal-Residential	15,925,869
Municipal-Nonresidential	833,850
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	2.4%
Residential +/- %	17.9%



### Households and Housing Unit Profile: Westborough

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.72	2.15	1-detached	2.87	2.48
1 Year	2.69	2.22	1-attached	2.16	2.70
2-5 Years	2.92	2.29	2	2.55	2.05
6-10 Years	3.08	2.06	3-4	2.22	2.24
11-20 Years	3.15	1.63	5-9	1.85	2.37
21-30 Years	2.55	1.80	10+	1.89	1.93
30+ Years	1.86	1.49	Other	1.81	1.75

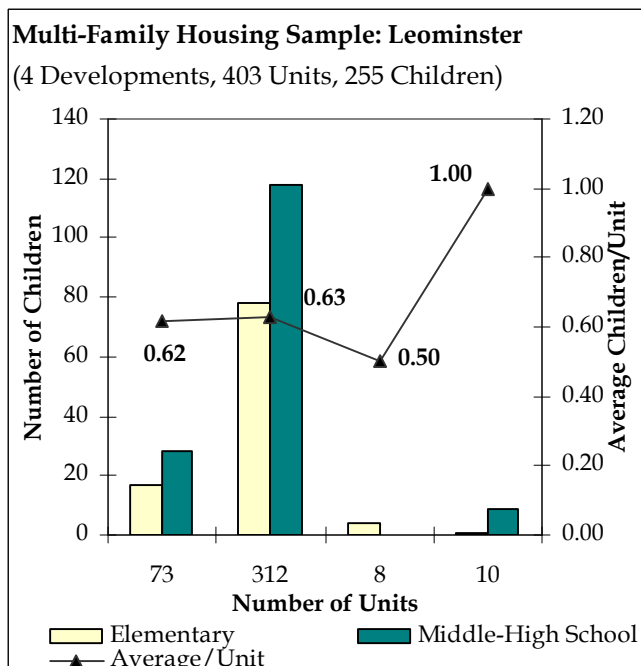
  

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.8%	9.1%	Households	9,531	6,960
25-34	13.3%	29.4%	Families	7,528	3,434
34-44	22.8%	21.4%	With School-Age Children	2,567	1,542
45-54	23.9%	13.0%	% Households	26.9%	22.2%
55-64	12.7%	7.8%			
65-74	14.2%	6.4%			
75+	12.3%	12.8%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Leominster

Population (2000)	41,303
<u>Total Housing Units</u>	16,976
% Single-Family	46.8%
% Multi-Family	25.4%
<u>K-12 Enrollments</u>	
1990	4,690
2000	6,218
% Change	32.6%
<u>Expenditures (2000)</u>	\$63,061,958
Integrated School Costs	\$43,274,963
% Change 1990-2000	103.9%
Municipal-Residential	\$14,753,572
Municipal-Nonresidential	\$5,033,423
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	3.5%
Residential +/- %	2.4%



### Households and Housing Unit Profile: Leominster

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.72	2.15	1-detached	2.87	2.48
1 Year	2.69	2.22	1-attached	2.16	2.70
2-5 Years	2.92	2.29	2	2.55	2.05
6-10 Years	3.08	2.06	3-4	2.22	2.24
11-20 Years	3.15	1.63	5-9	1.85	2.37
21-30 Years	2.55	1.80	10+	1.89	1.93
30+ Years	1.86	1.49	Other	1.81	1.75

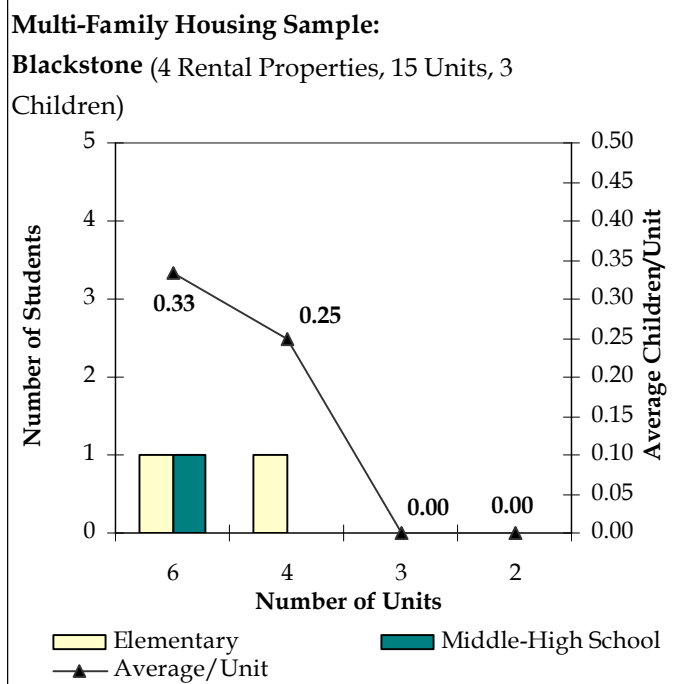
  

% Householders by Age	<u>Average Household Size</u>		Household Type	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
15-24	0.8%	9.1%	Households	9,531	6,960
25-34	13.3%	29.4%	Families	7,528	3,434
34-44	22.8%	21.4%	With School-Age Children	2,567	1,542
45-54	23.9%	13.0%	% Households	26.9%	22.2%
55-64	12.7%	7.8%			
65-74	14.2%	6.4%			
75+	12.3%	12.8%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Blackstone

Population (2000)	8,804
Total Housing Units	3,331
% Single-Family	46.8%
% Multi-Family	25.4%
<u>K-12 Enrollments</u>	
1990	1,500
2000	1,838
% Change	22.5%
<u>Expenditures (2000)</u>	\$8,287,250
Integrated School Costs	\$4,632,066
% Change 1990-2000	84.5%
Municipal-Residential	\$3,655,184
Municipal-Nonresidential	\$358,070
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-28.5%
Residential +/- %	-2.4%



### Households and Housing Unit Profile: Blackstone

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.00	2.04	1-detached	3.06	2.59
1 Year	2.89	2.12	1-attached	2.89	3.63
2-5 Years	3.19	2.10	2	2.88	2.44
6-10 Years	3.08	1.95	3-4	3.07	1.65
11-20 Years	3.48	2.37	5-9	1.13	1.78
21-30 Years	2.81	1.22	10+	1.69	0.89
30+ Years	2.05	1.55	Other	4.20	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.0%	9.1%	Households	2,261	974
25-34	12.5%	26.2%	Families	1,886	456
34-44	28.7%	22.5%	With School-Age Children	864	186
45-54	27.6%	16.0%	% Households	38.2%	19.1%
55-64	12.6%	2.9%			
65-74	9.2%	9.1%			
75+	9.5%	14.2%			

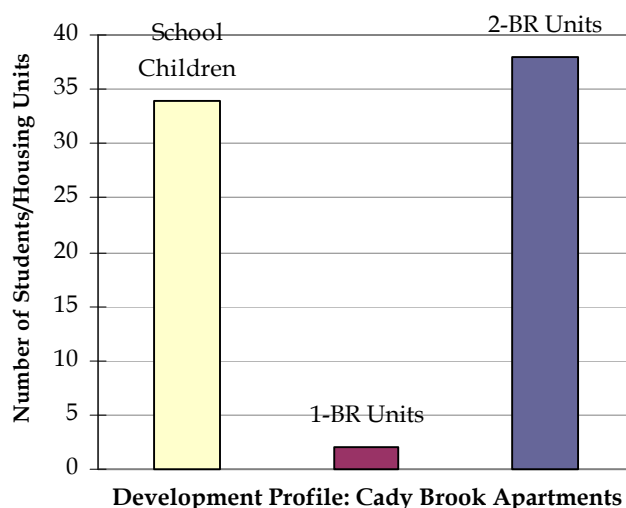
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Charlton

Population (2000)	8,804
<u>Total Housing Units</u>	4,008
% Single-Family	78.5%
% Multi-Family	4.2%
<u>K-12 Enrollments</u>	
1990	1,866
2000	2,430
% Change	30.2%
<u>Expenditures (2000)</u>	\$10,846,643
Integrated School Costs	\$6,015,274
% Change 1990-2000	84.5%
Municipal-Residential	\$4,681,273
Municipal-Nonresidential	\$150,096
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-12.4%
Residential +/- %	-19.6%

### Multi-Family Housing Sample:

**Charlton** (40 Units, .85 Children/Unit)



### Households and Housing Unit Profile: Charlton

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.09	2.11	1-detached	3.15	2.93
1 Year	3.38	2.46	1-attached	2.54	1.89
2-5 Years	3.42	2.06	2	2.35	2.25
6-10 Years	3.29	1.43	3-4	1.45	1.95
11-20 Years	3.25	1.96	5-9	3.25	1.74
21-30 Years	2.49	1.06	10+	N/A	0.85
30+ Years	2.28	3.00	Other	2.27	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	6.6%	Households	3,137	651
25-34	15.1%	34.9%	Families	2,644	396
34-44	30.4%	23.7%	With School-Age Children	1,194	138
45-54	29.2%	16.3%	% Households	38.1%	21.2%
55-64	10.7%	8.0%			
65-74	9.2%	8.0%			
75+	4.9%	2.6%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

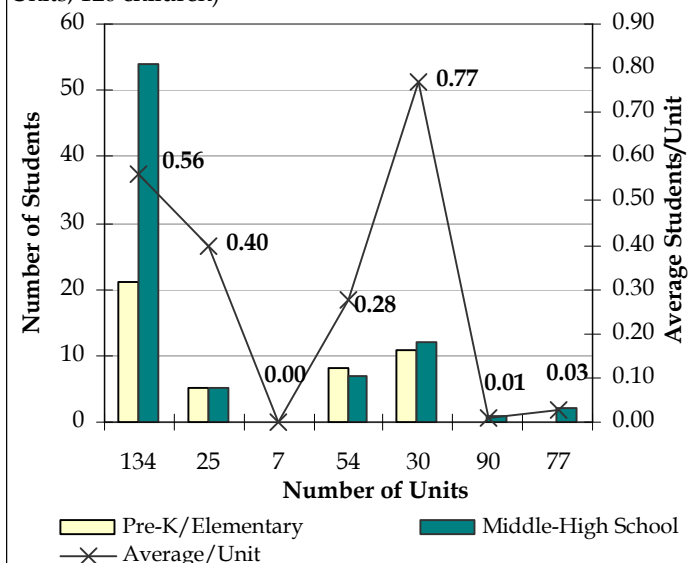


## Webster

Population (2000)	16,415
<u>Total Housing Units</u>	7,554
% Single-Family	43.5%
% Multi-Family	17.1%
<u>K-12 Enrollments</u>	
1990	1,893
2000	2,034
% Change	7.4%
<u>Expenditures (2000)</u>	\$21,952,345
Integrated School Costs	\$14,907,007
% Change 1990-2000	59.5%
Municipal-Residential	\$5,429,770
Municipal-Nonresidential	\$1,615,568
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-6.6%
Residential +/- %	36.7%

### Multi-Family Housing Sample: Webster

(5 Rental, 2 Condominium Developments; 417 Units, 126 children)



### Households and Housing Unit Profile: Webster

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.57	2.06	1-detached	2.73	2.22
1 Year	2.55	2.20	1-attached	2.82	1.73
2-5 Years	3.15	2.15	2	1.99	2.22
6-10 Years	3.23	2.29	3-4	2.04	2.19
11-20 Years	2.84	1.80	5-9	2.29	1.83
21-30 Years	2.26	1.31	10+	1.68	1.81
30+ Years	1.65	1.36	Other	1.97	1.67

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.7%	8.7%	Households	3,740	3,165
25-34	10.8%	23.4%	Families	2,673	1,600
34-44	21.6%	21.8%	With School-Age Children	888	593
45-54	21.4%	11.5%	% Households	23.7%	18.7%
55-64	13.7%	10.1%			
65-74	13.9%	9.1%			
75+	18.0%	15.3%			

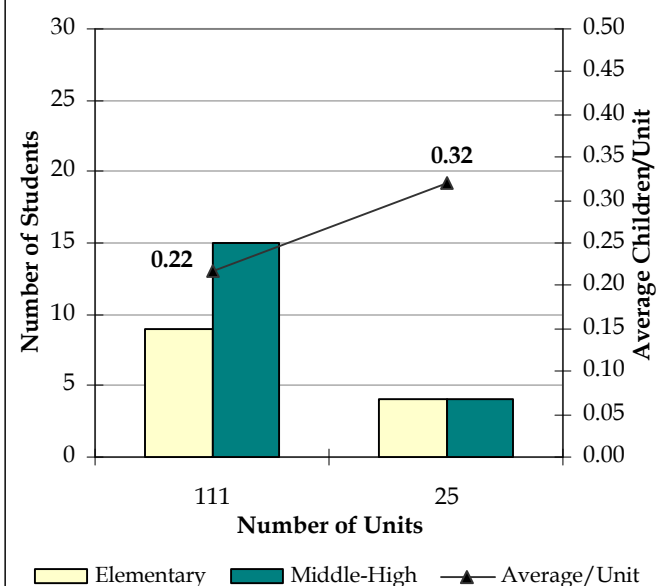
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Ware

Population (2000)	9,707
<u>Total Housing Units</u>	4,336
% Single-Family	55.8%
% Multi-Family	6.7%
<u>K-12 Enrollments</u>	
1990	1,300
2000	1,398
% Change	7.5%
<u>Expenditures (2000)</u>	\$19,673,120
Integrated School Costs	\$11,539,271
% Change 1990-2000	88.8%
Municipal-Residential	\$6,400,871
Municipal-Nonresidential	\$1,732,978
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-30.1%
Residential +/- %	-35.0%

**Multi-Family Housing Sample: Ware**

(2 Developments, 136 Units, 32 Children)

**Households and Housing Unit Profile: Ware**

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.47	2.29	1-detached	2.62	2.65
1 Year	2.84	2.36	1-attached	2.35	2.77
2-5 Years	2.61	2.58	2	1.89	2.26
6-10 Years	2.65	2.02	3-4	0.75	2.26
11-20 Years	3.16	2.14	5-9	N/A	2.63
21-30 Years	1.93	1.64	10+	N/A	1.38
30+ Years	1.91	1.37	Other	1.90	2.34

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.5%	13.5%	Households	2,643	1,385
25-34	13.1%	24.7%	Families	1,932	672
34-44	24.8%	19.1%	With School-Age Children	684	315
45-54	20.0%	15.7%	% Households	25.9%	22.7%
55-64	18.7%	5.6%			
65-74	11.2%	7.3%			
75+	11.7%	14.2%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Palmer

Population (2000)	12,497
Total Housing Units	5,402
% Single-Family	56.0%
% Multi-Family	10.3%
<u>K-12 Enrollments</u>	
1990	1,753
2000	2,236
% Change	27.6%
<u>Expenditures (2000)</u>	\$24,484,680
Integrated School Costs	\$15,677,435
% Change 1990-2000	100.2%
Municipal-Residential	\$6,571,744
Municipal-Nonresidential	\$2,235,501
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-18.1%
Residential +/- %	-27.8%

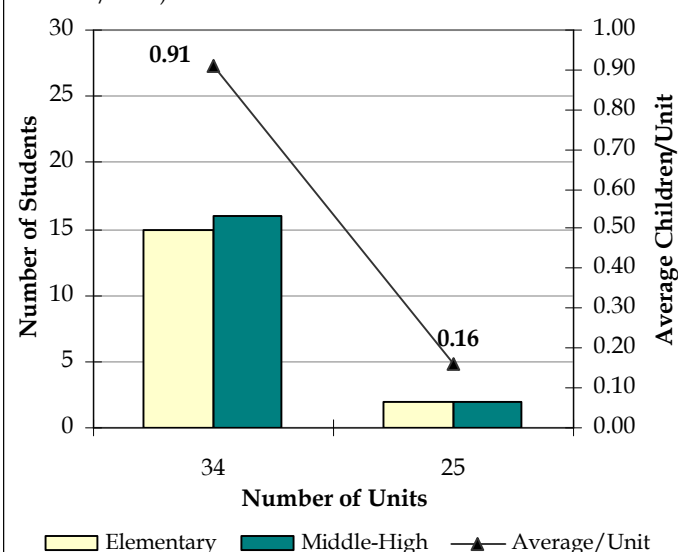
### Multi-Family Housing Sample: Palmer

(2 Developments: (A) 1 Elderly/Family Mix, 102

Elderly, 34 Family Units, 31 Children, .91

Children/Unit; (B) 25 Units, 4 Children, .16

Children/Unit.)



### Households and Housing Unit Profile: Palmer

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.71	1.95	1-detached	2.88	2.91
1 Year	2.88	1.89	1-attached	2.51	N/A
2-5 Years	2.95	2.15	2	2.10	2.28
6-10 Years	3.23	1.80	3-4	1.98	1.72
11-20 Years	2.94	1.63	5-9	1.75	1.69
21-30 Years	2.53	1.92	10+	N/A	1.44
30+ Years	1.99	1.71	Other	1.75	1.65

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.0%	8.8%	Households	3,331	1,747
25-34	11.1%	24.4%	Families	2,547	818
34-44	24.9%	22.0%	With School-Age Children	998	358
45-54	23.1%	17.5%	% Households	30.0%	20.5%
55-64	16.1%	11.0%			
65-74	11.4%	5.5%			
75+	13.3%	10.8%			

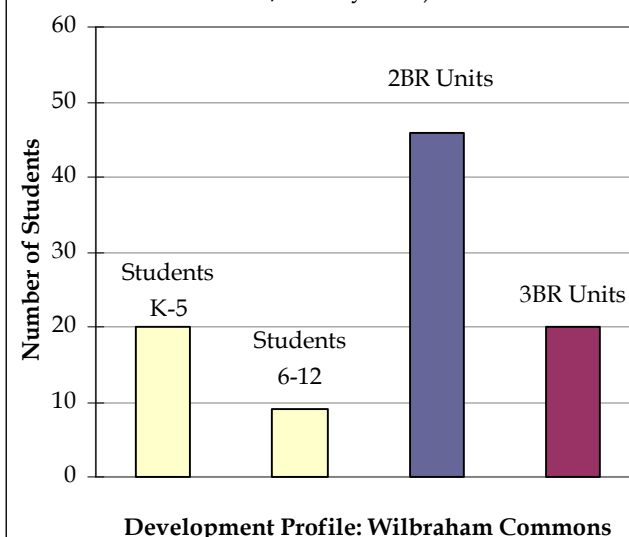
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Wilbraham

Population (2000)	13,473
<u>Total Housing Units</u>	5,048
% Single-Family	88.3%
% Multi-Family	5.0%
<u>K-12 Enrollments</u>	
1990	2,189
2000	2,800
% Change	27.9%
<u>Expenditures (2000)</u>	\$19,755,134
Integrated School Costs	\$11,739,232
% Change 1990-2000	33.0%
Municipal-Residential	\$6,867,960
Municipal-Nonresidential	\$1,147,942
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	31.7%
Residential +/- %	-2.4%

### Multi-Family Housing Sample: Wilbraham

(102 Elderly Units, 34 Family Units, 29 Children, .85 Children/Family Unit)



### Households and Housing Unit Profile: Wilbraham

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.78	2.11	1-detached	2.83	2.68
1 Year	3.08	1.75	1-attached	1.97	3.17
2-5 Years	3.37	1.97	2	2.57	2.65
6-10 Years	3.47	2.83	3-4	1.72	1.60
11-20 Years	2.86	2.89	5-9	1.44	1.82
21-30 Years	2.25	3.36	10+	2.03	1.29
30+ Years	1.87	1.19	Other	N/A	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.0%	0.0%	Households	4,371	520
25-34	6.4%	12.3%	Families	3,676	263
34-44	24.5%	34.0%	With School-Age Children	1,402	152
45-54	24.5%	11.7%	% Households	32.1%	29.2%
55-64	19.2%	5.2%			
65-74	13.5%	10.6%			
75+	11.9%	26.2%			

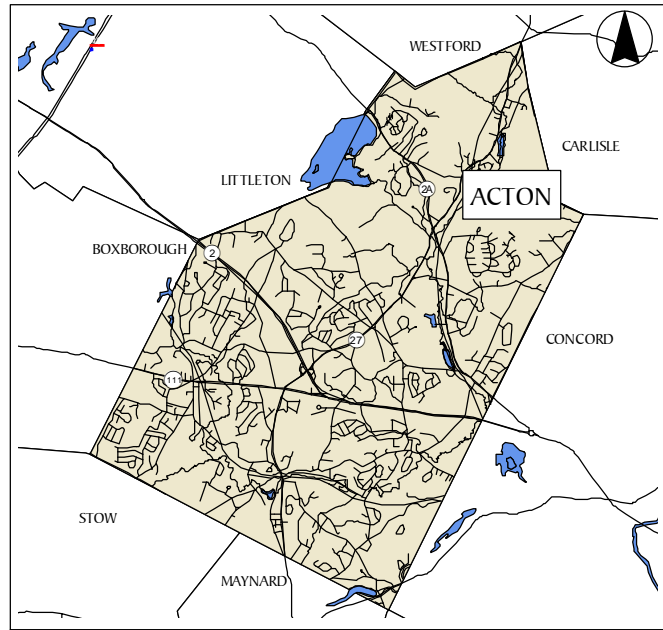
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Acton

**Population and Housing.** Located west of Boston between Routes 128 and I-495, Acton is a prestigious suburb known for its fine schools and progressive local government. The town's setting, desirability and available land mean that Acton is poised to grow, although its transformation from a rural to suburban community occurred decades ago after Route 2 was completed in 1950 (see Fig. 1). During the 1990s, Acton's population increased by 13.8%: more than double the state's growth rate but lower than that of many communities nearby, notably Boxborough, which ranks sixth in the Commonwealth for percent change in population between 1990-2000. In the same period, the number of households in Acton increased at a faster rate than the number of housing units, 13.6% to 11.4%. Nearly 75% of the town's household growth is attributable to new families.<sup>1</sup>

Acton's 7,680 housing units are comprised mainly of single-family homes, but nearly 30% are multi-family units, most developed during the 1970s. Approximately 11% of all housing units in Acton were built between 1990-2000.<sup>2</sup> Multi-family or single-family condominium units constitute about 6.7% of the town's newest homes and most are renter-occupied.<sup>3</sup> Of the 1,795 renter households in Acton today, 70% live in multi-family buildings and about 10%, in single-family homes. Since 1990, the number of renter-occupied housing units in Acton has declined by 7.8%, largely because condominiums and single-family residences occupied by tenants a decade ago have shifted toward homeownership. Six percent of the town's homeowners occupy units in multi-family structures and 8%, townhouses.<sup>4</sup> Compared to Acton's high-priced single-family home inventory, multi-family condominiums offer a fairly affordable path to homeownership. However, the median condominium sale price in Acton increased 64% between 1999-2001, from \$119,000 to \$195,000 (see endnote).<sup>5</sup>

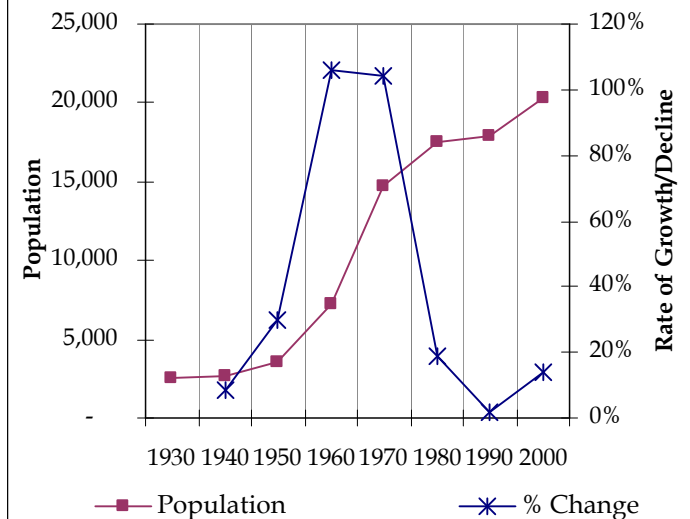
**School Enrollments.** Acton operates a local school system for grades K-6 and joins neighboring Boxborough in a regional school district for grades 7-12. Growth in both communities over the past 10 years has resulted in school enrollment impacts across all grade levels, as shown in Fig. 2. For example,



Data Sources: MassGIS, Census TIGER.

**Fig. 1. Population Change, Acton: 1930-2000**

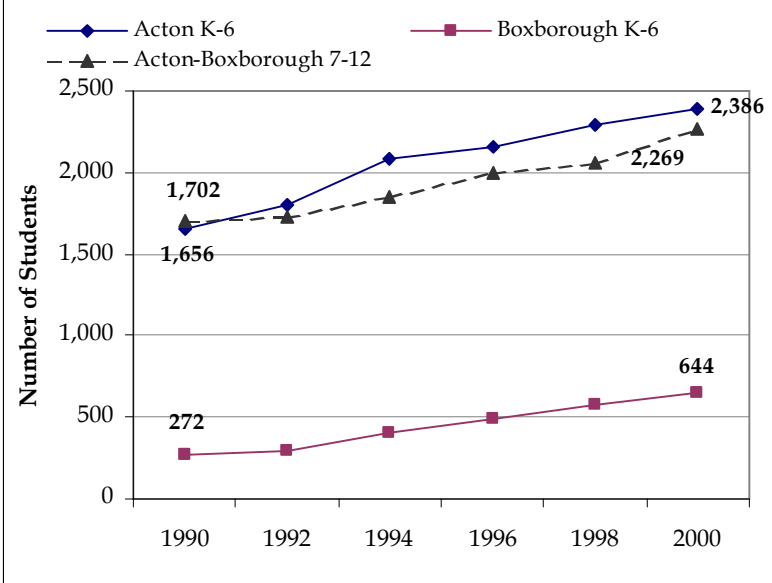
(Source: MISER)



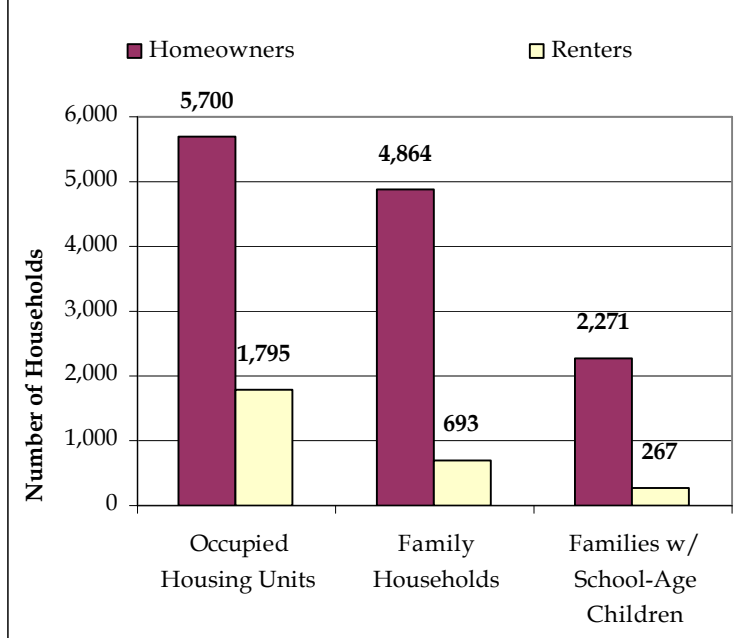
Boxborough's elementary school absorbed a staggering 137% increase in K-6 enrollments between 1990-2000 (see also, Boxborough Profile). Acton's K-12 school enrollment of 2,985 in 1990 swelled to 3,509 in 1995. By 2000, an estimated 4,150 children from Acton were enrolled in local or regional schools.<sup>6</sup> Virtually all of Acton's school population growth stems from occupancy of new and recycled single-family homes because they house most of the town's family households.

Since Acton's housing is so expensive, its new households are largely "buy-up" homebuyers who move into town with established families, including pre-school and school-age children. This trend can be seen in the "Household and Housing Units Profile (last page). While Acton's largest households purchased their present home 8-10 years ago, even the average household size for new move-ins is 2.69. The size of renter households varies less by years in residence than by type of housing unit. The largest renter households often live in older two-family homes and investor-owned townhouses. In contrast, the town's multi-family developments have strikingly small households. One-person households occupy more than half of all rental units in Acton.<sup>7</sup>

**Fig. 2. School Enrollment Trends, 1990-2000**



**Fig. 3. Families with Children by Tenure**



**Housing and Children.** In Acton, large multi-family developments have tended to attract non-family households for whom single-family homes are unattractive or unaffordable. The prevalence of small renter households in Acton seems inescapably connected to the character of the housing stock itself: more than 82% of Acton's renter-occupied housing units are one- or two-bedroom apartments or leased condominiums.<sup>8</sup> Although 85% of the town's homeowners are families, Fig. 3 shows that the incidence of families in rental housing is very low, 38.6%, and only 19% of all renter households (267) have school-age children. Like homeowners, family tenants prefer one- or two-family homes to more

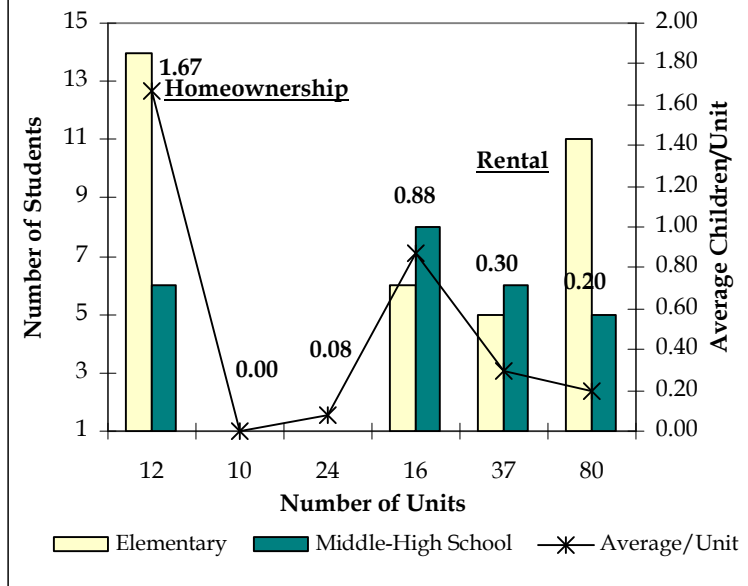
densely developed housing. Local data suggest that as household size increases, Acton families are somewhat more likely to purchase or rent single-family homes or units in small developments (Fig. 4). However, renters looking for one- or two-family homes in Acton have few choices.<sup>9</sup> Even though Acton has a comparatively large multi-family housing inventory, its low vacancy rate of 2.8% underscores the demand for rental housing among non-family and family households, regardless of income.<sup>10</sup>

#### Fiscal Impact of Residential

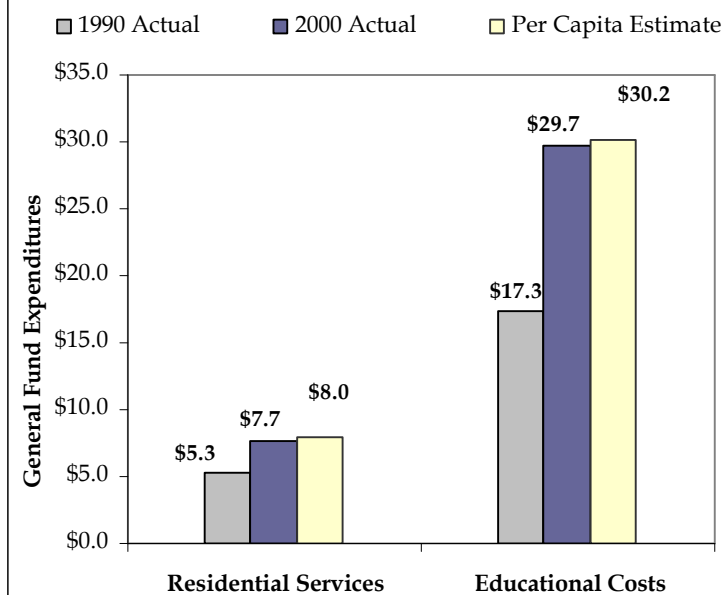
**Development.** If Acton had conducted a fiscal impact study in 1990 and assumed population and school enrollment growth equal to what actually occurred by 2000, officials would have been able to forecast FY 2000 municipal and education costs with reasonable precision. Fig. 5 shows that a ten-year per capita multiplier study overestimates the town's actual experience by only 3.9% for municipal services and 1.6% for public schools. The utility of per capita multipliers in Acton reflects at least three conditions: a relatively stable 20-year growth history, the town's seemingly conservative debt and reserve policies, and limited reliance on state aid. Household wealth is also a factor, however. Each year, Acton voters raise their property taxes at or very close to the maximum allowed under Proposition 2 ½. When non-residential property values fell during the 1990s, homeowners made up the lost revenue. New growth and appreciation in the value of older homes have spawned greater reliance on residential property taxes, which rose from 76% to 85% of the total tax levy between 1990-2000. In the same period, expenditures per capita and per pupil grew at a slightly lower rate than growth in total expenditures for town and school services.<sup>11</sup>

**Fig. 4. School Children in Townhouse & Multi-Family Housing Units**

(6 developments; 99 units, 47 children)



**Fig. 5. Test of Per Capita Multiplier Forecast**



Most Acton households have incomes that exceed regional norms. Their preferences largely determine what the town spends on community services. In Acton, the median household income among homeowners (76% of households) is \$106,639 and among families with children under 18 (59% of households), it is \$115,560.<sup>12</sup> Acton's FY02 average single-family home value ranked 36 out of 351 cities and towns and its average tax bill was 2.3 times the state median. These conditions are not new. For example, its state rank for household income has remained almost constant: 21 in 2000, 23 in 1990, and 26 in 1980.<sup>13</sup> Married-couple families have comprised 60-65% of all households in Acton since 1980, and one-person households, 20-21%. The town's attractiveness to families correlates with its 71% increase in school expenditures over the past 10 years. When Education Reform went into effect in 1993, Acton was already spending 108% of the state's foundation budget; by 2001, local spending had risen to 112% of the foundation budget.<sup>14</sup>

**Summary.** During the 1990s, 98.6% of all new owner-occupied units and 90% of all housing units purchased in Acton were single-family residences. These data reflect Acton's appeal to family homebuyers and its land use policies. On a per-unit basis, multi-family rental units, townhouses and condominiums have generated very few children. Acton's rental housing attracts more young citizens and couples than seniors, in part because of pricing. The town has only 144 subsidized apartments, or about 8% of its entire rental inventory.

### Households and Housing Unit Profile: Acton

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.00	1.73	1-detached	3.20	2.10
1 Year	2.69	1.90	1-attached	2.22	2.40
2-5 Years	3.22	1.75	2	1.99	2.57
6-10 Years	3.47	1.48	3-4	2.11	1.66
11-20 Years	3.11	1.39	5-9	1.92	1.78
21-30 Years	2.50	1.48	10+ units	1.79	1.56
30+ Years	2.15	1.61	Other	2.00	3.00

% Households by Age of Householder	Owner-Occupied	Renter-Occupied	Number of Households by Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	7.4%	Households	5,700	1,795
25-34	8.0%	31.4%	Families	4,864	693
34-44	28.8%	28.1%	With School-Age Children	2,271	267
45-54	31.0%	16.2%	% Households	39.8%	14.9%
55-64	17.5%	6.0%			
65-74	10.2%	5.4%			
75+	4.2%	5.6%			

**Source:** Bureau of the Census, Census 2000, Summary File 3, Tables H14, H32, H33, HCT1, HCT9. Cross-tabulations and statistics by author.



## END NOTES

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<sup>1</sup> Bureau of the Census, 1990 Census of Population and Housing, Table P0, Census 2000, Summary File 3, Table P10.

<sup>2</sup> Census 2000, Summary File 3, Table H34.

<sup>3</sup> Census 2000, Summary File 3, Table HCT-6.

<sup>4</sup> Census 2000, Summary File 3, Tables H32, HCT5.

<sup>5</sup> Census 2000, Summary File 3, Table HCT6; Banker and Tradesman, "Free Market Statistics," in HTML format, available on the INTERNET at <<http://rers.thewarrengroup.com/townstats>> [accessed 20 March 2003]. Note: local officials report that the increase in condominium sale prices is misleading. According to the Planning Department, many of the town's new single-family homes are condominiums because they are served by shared septic systems or wastewater treatment plants. The homes sell in the same price range as regular market homes, sometimes as high as \$1 million upon resale.

<sup>6</sup> Massachusetts Department of Education, "Long-Term Trends in School Enrollments," Acton Public Schools and Acton-Boxborough Regional School District, in HTML format, INTERNET at <<http://www.mass.gov/doi>> [accessed 24 March 2003]. See also, Town of Acton Master Plan Update (December 1998).

<sup>7</sup> Census 2000, Summary File 3, Tables HCT2, HCT3 and HCT6.

<sup>8</sup> Census 2000, Summary File 3, Table H42.

<sup>9</sup> Census 2000, Table H32.

<sup>10</sup> Census 2000, Tables H17, HCT1, HCT9.

<sup>11</sup> Massachusetts Department of Revenue, Municipal Data Bank, "Excess Levy Capacity," "Assessed Valuation," "Tax Levy by Class," "Revenues by Source," "Long-Term Debt," "General Fund Expenditures," and "New Growth Revenue," all 1990-2000, in EXCEL format, INTERNET at <<http://www.mass.gov/dor/dls>> [accessed January-April 2000, March 2001]. Statistics calculated by author.

<sup>12</sup> Census 2000, Summary File 3, Tables PCT39, HCT12.

<sup>13</sup> Census 2000, Boston Globe 22 May 2002, citing press kit distributed by Census Bureau for release of Summary File 3. State ranks calculated by author.

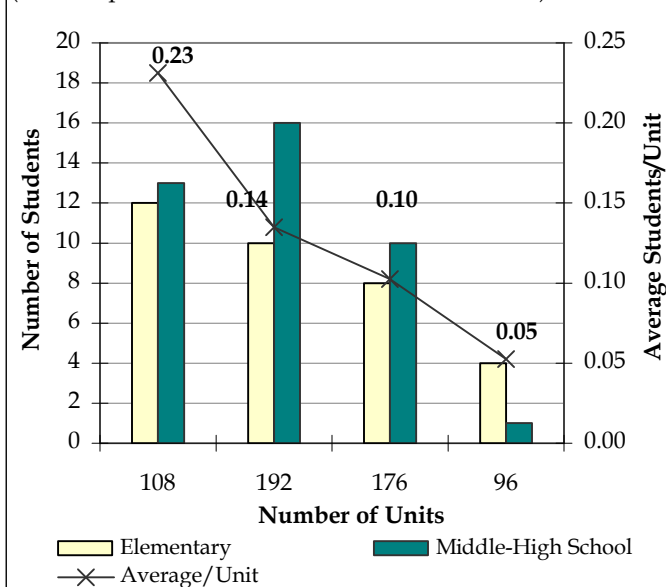
<sup>14</sup> Massachusetts Department of Education, Report of the Foundation Budget Review Commission (June 2001), Table 5, in HTML format [table5.htm], INTERNET at <<http://www.state.ma.us/legis/reports/foundation.htm>> [originally accessed October 2001].

## Boxborough

Population (2000)	4,868
Total Housing Units	1,906
% Single-Family	56.7%
% Multi-Family	35.5%
<u>K-12 Enrollments</u>	
1990	556
2000	1,092
% Change	96.3%
<u>Expenditures (2000)</u>	
Integrated School Costs	\$7,430,800
% Change 1990-2000	150.1%
Municipal-Residential	\$2,431,993
Municipal-Nonresidential	\$855,555
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	3.4%
Residential +/- %	-13.7%

### Multi-Family Housing Sample: Boxborough

(4 developments, 572 condominiums, 74 students)



### Households and Housing Unit Profile: Boxborough

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.01	1.71	1-detached	3.38	2.57
1 Year	2.47	1.67	1-attached	2.19	2.73
2-5 Years	3.43	1.68	2	N/A	1.00
6-10 Years	3.83	1.70	3-4	2.62	1.39
11-20 Years	2.25	2.13	5-9	0.92	1.65
21-30 Years	2.31	2.33	10+	1.49	1.55
30+ Years	2.21	N/A	Other	N/A	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.9%	5.9%	Households	1,307	546
25-34	7.2%	38.1%	Families	1,044	221
34-44	38.6%	29.1%	With School-Age Children	458	96
45-54	29.3%	15.8%	% Households	35.0%	17.6%
55-64	14.9%	8.6%			
65-74	5.8%	0.0%			
75+	3.2%	2.6%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

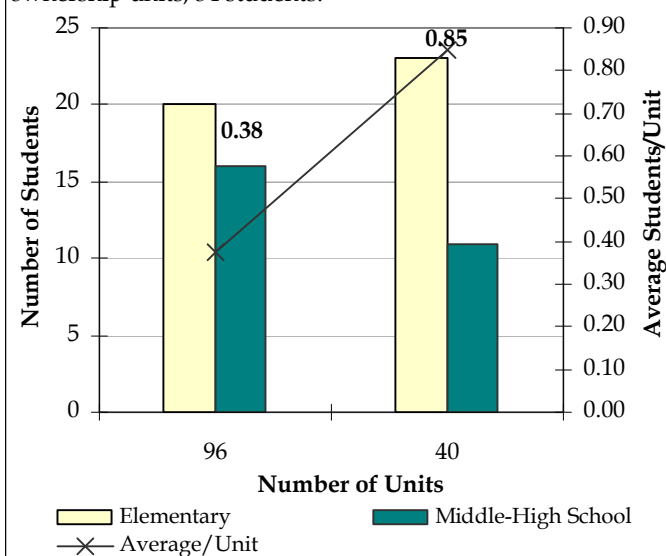
Author's Note: see also, Appendix D, Town of Boxborough Demographic Study (2001).

## Bedford

Population (2000)	12,595
Total Housing Units	4,708
% Single-Family	73.5%
% Multi-Family	7.0%
<u>K-12 Enrollments</u>	
1990	1,741
2000	2,086
% Change	19.8%
<u>Expenditures (2000)</u>	\$40,454,134
Integrated School Costs	\$20,348,085
% Change 1990-2000	65.3%
Municipal-Residential	\$15,796,189
Municipal-Nonresidential	\$4,309,860
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-4.4%
Residential +/- %	-30.7%

### Multi-Family Housing Sample: Bedford

(2 developments: 96 rental units, 36 students, 40 ownership units, 34 students.



### Households and Housing Unit Profile: Bedford

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.72	2.12	1-detached	2.78	3.47
1 Year	2.80	2.07	1-attached	2.01	2.05
2-5 Years	2.59	2.35	2	2.40	2.28
6-10 Years	3.47	1.61	3-4	2.00	1.58
11-20 Years	2.84	2.16	5-9	2.94	2.09
21-30 Years	2.48	1.70	10+	1.40	1.63
30+ Years	2.26	3.00	Other	2.51	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.2%	3.7%	Households	3,706	915
25-34	6.9%	21.1%	Families	3,042	396
34-44	23.8%	22.6%	With School-Age Children	976	204
45-54	25.8%	16.6%	% Households	26.3%	22.3%
55-64	19.6%	3.7%			
65-74	14.0%	8.5%			
75+	9.8%	23.7%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

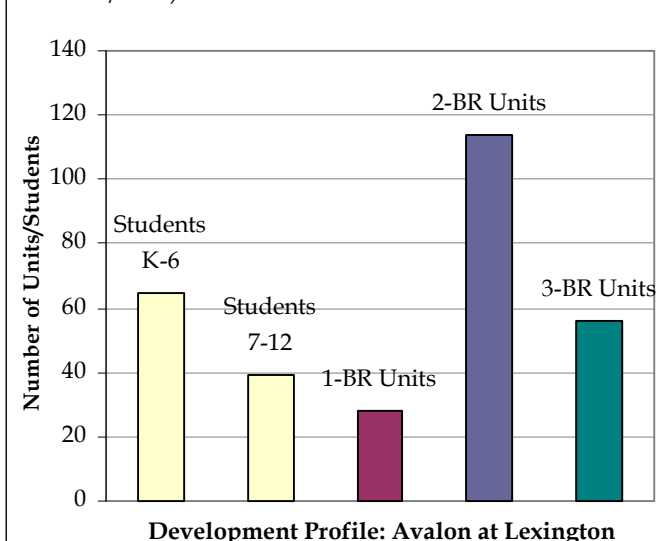
## Lexington

Population (2000)	30,355
<u>Total Housing Units</u>	11,333
% Single-Family	79.7%
% Multi-Family	9.5%
<u>K-12 Enrollments</u>	
1990	4,387
2000	5,809
% Change	32.4%
<u>Expenditures (2000)</u>	\$72,193,697
Integrated School Costs	\$49,980,162
% Change 1990-2000	70.9%
Municipal-Residential	\$21,275,542
Municipal-Nonresidential	\$937,993
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	2.8%
Residential +/- %	40.6%

### Multi-Family Housing Sample: Lexington

(198 Apartments, 104 Children, .58

Children/Unit)



### Households and Housing Unit Profile: Lexington

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.77	2.16	1-detached	2.84	2.75
1 Year	3.20	2.56	1-attached	2.00	2.76
2-5 Years	3.42	2.30	2	2.62	1.76
6-10 Years	3.34	1.63	3-4	2.46	1.47
11-20 Years	2.90	1.43	5-9	2.07	1.84
21-30 Years	2.30	1.73	10+	1.37	2.10
30+ Years	1.95	2.06	Other	N/A	N/A

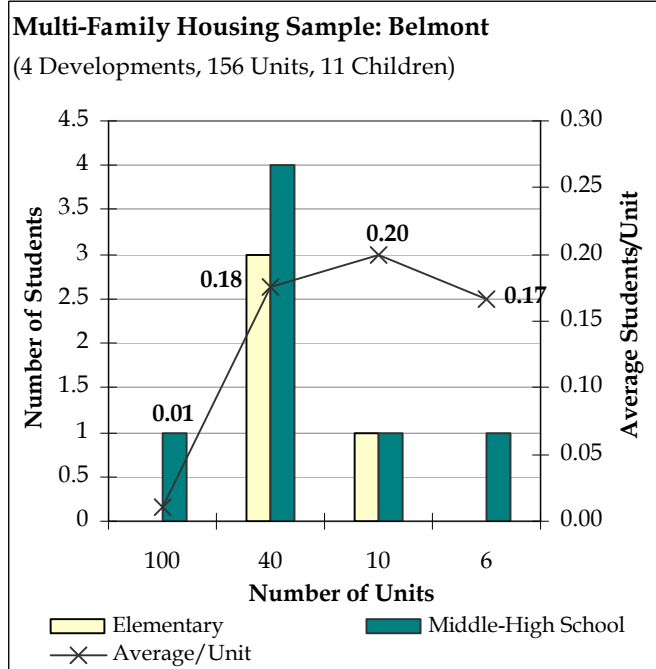
  

% Householders by Age	<u>Average Household Size</u>		Household Type	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
15-24	0.2%	1.8%	Households	9,166	1,944
25-34	4.1%	15.9%	Families	7,474	987
34-44	19.5%	31.0%	With School-Age Children	2,913	470
45-54	27.5%	13.6%	% Households	31.8%	24.2%
55-64	19.8%	4.1%			
65-74	15.0%	8.1%			
75+	13.8%	25.5%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Belmont

Population (2000)	24,194
Total Housing Units	9,980
% Single-Family	46.6%
% Multi-Family	6.2%
<u>K-12 Enrollments</u>	
1990	2,825
2000	3,608
% Change	27.7%
<u>Expenditures (2000)</u>	\$55,298,478
Integrated School Costs	\$26,740,003
% Change 1990-2000	58.4%
Municipal-Residential	\$27,963,815
Municipal-Nonresidential	\$594,660
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	5.8%
Residential +/- %	-4.7%



### Households and Housing Unit Profile: Belmont

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.74	2.01	1-detached	2.86	2.90
1 Year	3.09	2.20	1-attached	2.43	2.59
2-5 Years	3.31	2.10	2	2.46	2.05
6-10 Years	3.26	1.94	3-4	2.19	1.91
11-20 Years	3.06	1.74	5-9	1.05	1.70
21-30 Years	2.32	1.59	10+	1.47	1.43
30+ Years	2.03	1.37	Other	4.17	N/A
% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.0%	3.8%	Households	5,924	3,808
25-34	4.6%	29.9%	Families	4,681	1,841
34-44	18.5%	25.3%	With School-Age Children	1,697	663
45-54	24.9%	15.1%	% Households	28.6%	17.4%
55-64	20.2%	7.9%			
65-74	15.6%	6.8%			
75+	16.2%	11.3%			

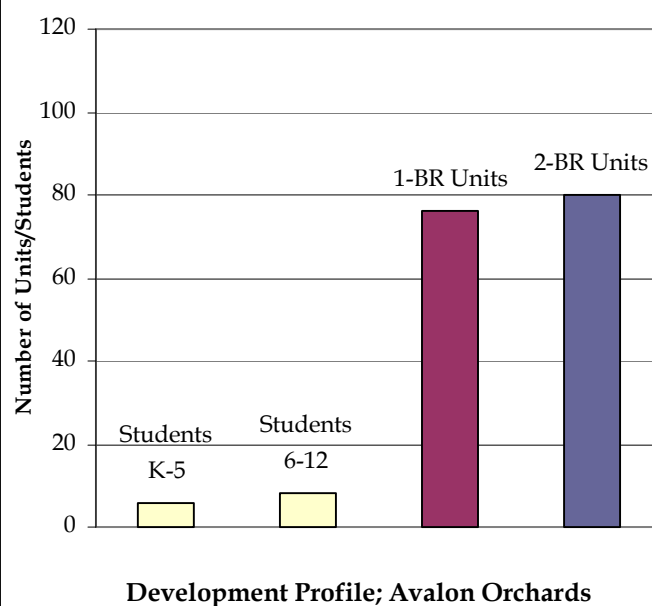
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Marlborough

Population (2000)	36,255
<u>Total Housing Units</u>	14,903
% Single-Family	48.5%
% Multi-Family	27.3%
<u>K-12 Enrollments</u>	
1990	3,642
2000	4,579
% Change	25.7%
<u>Expenditures (2000)</u>	\$62,993,900
Integrated School Costs	\$40,879,943
% Change 1990-2000	99.2%
Municipal-Residential	\$20,750,354
Municipal-Nonresidential	\$1,363,603
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-18.0%
Residential +/- %	31.6%

### Multi-Family Housing Sample: Marlborough

(156 Apartments, 14 Children, .09 Children/Unit)



### Households and Housing Unit Profile: Marlborough

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.73	2.05	1-detached	2.96	2.46
1 Year	2.85	2.05	1-attached	1.80	2.53
2-5 Years	2.94	2.10	2	2.49	2.33
6-10 Years	3.02	2.25	3-4	2.20	2.16
11-20 Years	2.83	1.55	5-9	2.29	2.06
21-30 Years	2.70	1.74	10+	1.73	1.85
30+ Years	2.03	1.51	Other	1.52	2.47

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	8.3%	Households	8,847	5,654
25-34	11.5%	32.8%	Families	6,771	2,602
34-44	26.2%	25.4%	With School-Age Children	2,198	970
45-54	23.4%	11.5%	% Households	24.8%	17.2%
55-64	16.1%	6.1%			
65-74	13.4%	6.0%			
75+	9.0%	9.9%			

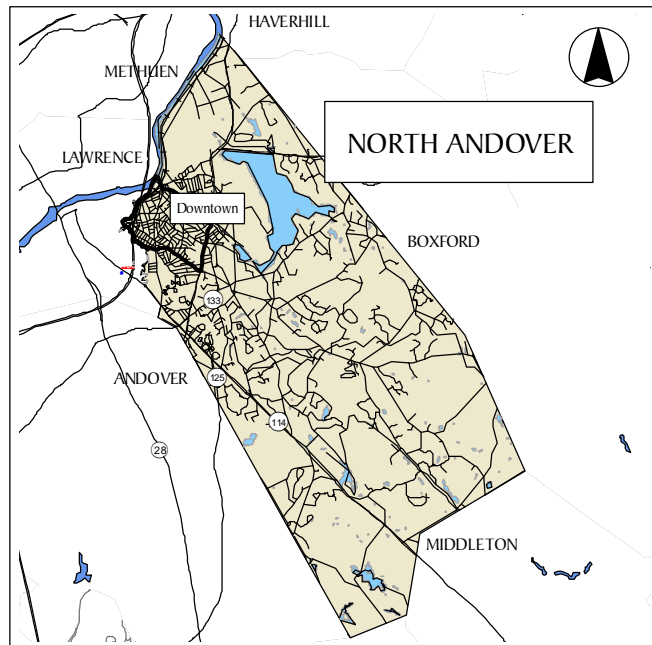
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## North Andover

**Population and Housing.** Location, available land, prestige and a wide range of homes make North Andover appealing to many Merrimack Valley homebuyers. North Andover is unusual for the diversity of its housing stock and its varied patterns of neighborhood development. The town's population of 27,202 is comprised mainly of families, and for the most part they are homeowners. About 5% of North Andover's population also includes students living at Merrimack College. Though North Andover is not the most rapidly growing town in its region, it has gained new households and housing units faster than most communities nearby for the past 40 years. Its declining population growth rate between 1970-1990 belies the amount of new residential development that occurred in the same period, including a large inventory of multi-family homes. During the 1990s, North Andover's population and housing growth rates substantially exceeded statewide averages. Today, the town's population density of 1,019.9 persons per square mile (mi<sup>2</sup>) is about equal to that of neighboring Andover.

Approximately 14% of North Andover's housing stock was built between 1990-2000.<sup>1</sup> A majority of its new housing units, 86%, are owner-occupied while 14% are renter-occupied, and about 24% are multi-family units, primarily condominiums.<sup>2</sup>

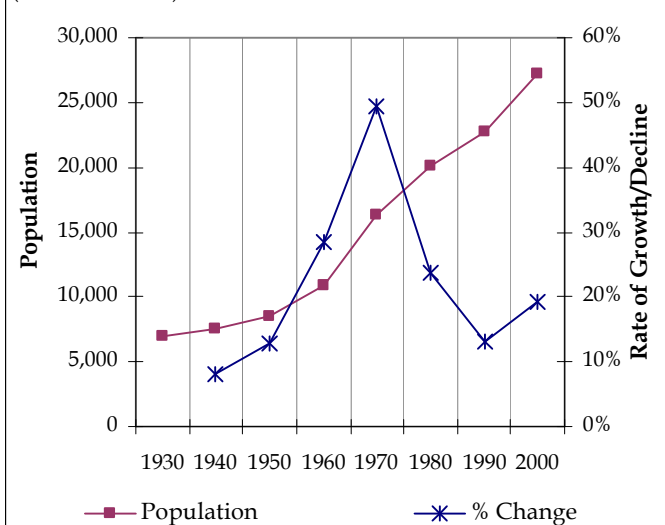
Except for comprehensive permits approved in the past 12-15 months, however, North Andover's last multi-family construction permits were issued in the early- to mid-1990s. Most North Andover renters live in multi-family units and duplexes while less than 10% occupy single-family homes,<sup>3</sup> yet the number of single-family homes occupied by tenants has more than doubled since 1990.<sup>4</sup> North Andover's entire multi-family housing inventory includes about 2,279 units, most of which are renter-occupied. Nearly half of all renters in North Andover are one-person households, a condition that partially reflects the town's higher-than-average percent of elderly households, though less than 20% of its multi-family rental units are age- or disability-restricted.



Data Sources: MassGIS, Census TIGER.

**Fig. 1. Population Change: 1930-2000**

(Source: MISER)



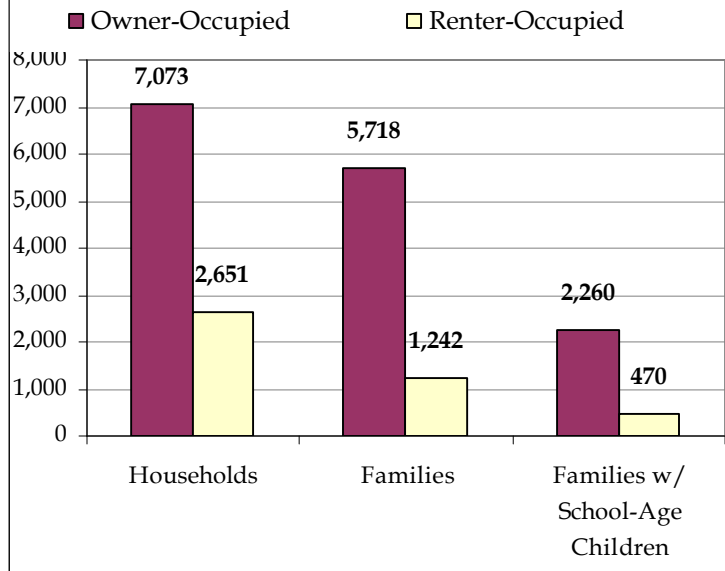
Families also seek rental opportunities in North Andover, but the percentage of families with children in North Andover's rental stock is slightly lower than in many suburbs. North Andover renters with larger households tend to live in single- or two-family homes, as suggested by the Households and Housing Unit Profile at the end of this section. Similarly, homeowners with school children are far more likely to occupy single-family homes, yet townhouses and multi-family condominiums in many of the town's planned developments have also attracted family households. In North Andover, multi-family condominiums seem to house fewer school-age children than pre-schoolers, however.<sup>5</sup>

**School Enrollments.** North Andover's decline in school-age population was reversed in Fiscal Year 1991, when K-12 enrollments increased by 3.2% to a total of 3,453 students. A decade later, North Andover was educating 821 more students and it had invested heavily in school construction and modernization projects.<sup>6</sup> Nearly 60% of the debt that voters exempted from Proposition 2 ½ during the 1990s pertained to three school projects: a new elementary school, a new high school and conversion of the existing high school to a new, larger middle school.<sup>7</sup> The town's 1990-2000 school enrollment increase of 24% is above average for the state as a whole.<sup>8</sup>

**Housing and Children.** Given the composition of North Andover's housing stock, most of the town's school enrollment growth appears to have been driven by new single-family home construction and to a lesser extent, by turnover in owner-occupied housing units.<sup>9</sup> Family rental housing generates a smaller but fairly consistent stream of school children, as evidenced not only by data collected for this study but also by recent federal census statistics.

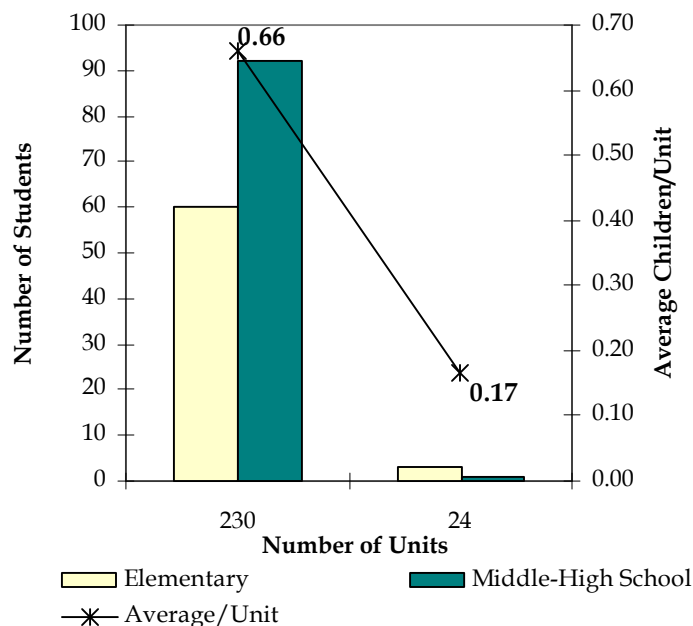
**Fig. 2: Families with Children by Tenure**

(Source: Census Bureau)



**Fig. 3: School Children in Multi-Family Housing**

(Sample: 2 developments; 254 units, 156 children)

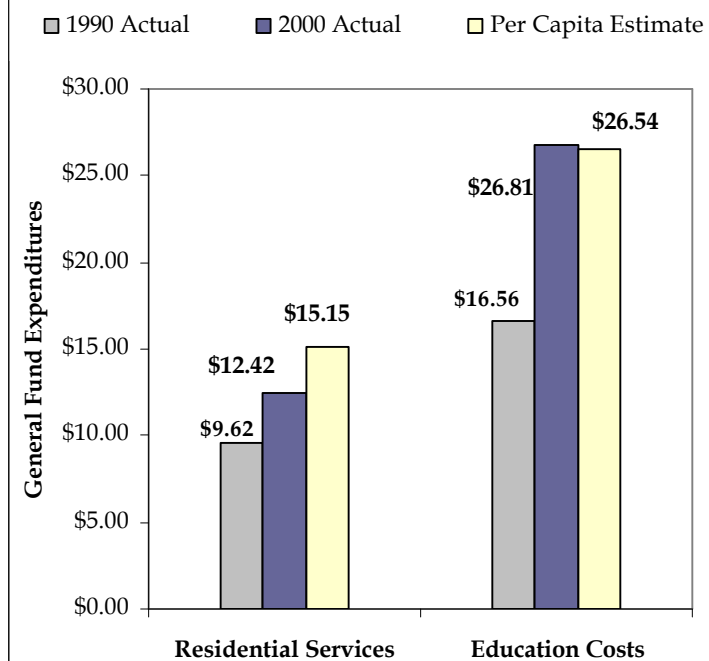




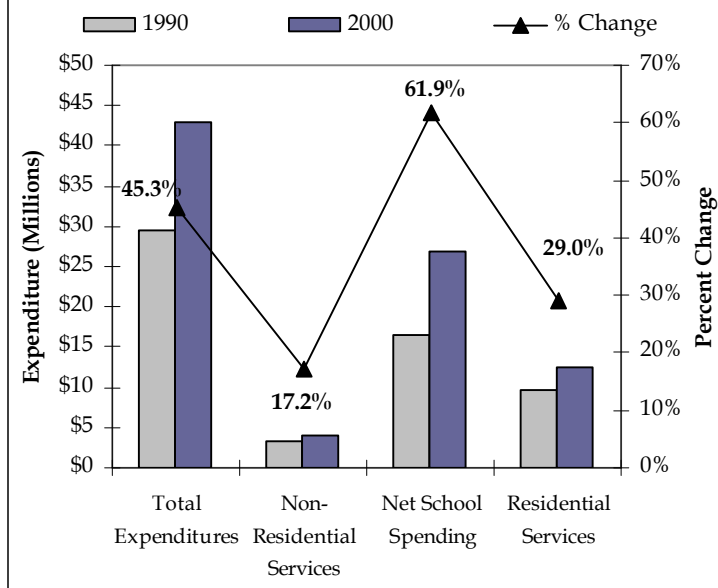
Town-wide, 2,260 homeowners and 470 renters have school-age children (Fig. 2). Many families that rent in North Andover live in one of the town's largest multi-family developments, the 230-unit Wood Ridge Homes, which currently houses 152 children in grades K-12, or .66 school students/unit (Fig. 3). Built c. 1979, Wood Ridge Homes is unusual among suburban multi-family developments because it includes a number of four-bedroom units. In fact, 30% of the units at Wood Ridge Homes are three- or four-bedroom apartments.<sup>10</sup> Not surprisingly, the development attracts families: it was built to accommodate them. On the other end of the spectrum, a small, 24-unit first-time homebuyer development in North Andover is home to only four school children, three in the elementary grades.<sup>11</sup>

**Fiscal Impact of Residential Development.** Fig. 4 shows that if North Andover officials had used the per capita multiplier method in 1990 to estimate the fiscal impact of future development, assuming a ten-year growth rate equal to what occurred by 2000, they would have accurately predicted the town's FY 2000 education costs and significantly overestimated municipal service costs. In North Andover's case, the overestimate stems in part from an accounting system change that separated water revenues and expenditures from the general fund in the mid-1990s, but it also captures a decade-long pattern of receding investment in non-school services. Between 1990-2000, North Andover's total general fund expenditures – not including water and sewer enterprise funds – rose by 45.3% (Fig. 5). Like most communities, its rate of spending growth escalated after the recession. By FY 2000, the town was spending \$1.24 in general fund revenue for every \$1.00 it spent in FY 1995, but for schools alone, the increase amounted to \$1.36 in FY 2000 for every dollar spent in FY 1995. Most of North Andover's recent budget growth occurred in three areas:

**Fig. 4. Test of Per Capita Multiplier Forecast**



**Fig. 5. Actual Change in Municipal & School Expenditures, 1990-2000**



public schools, fixed costs (employee benefits), and debt service for school construction and various public works projects.<sup>12</sup> North Andover is one of many higher-growth suburbs that have scaled back municipal expenditures in order to provide quality public schools. When Education Reform went into effect, North Andover's net school spending was only 92.87% of the state's foundation budget (1993) but by 2001, it had increased to 113.04%.<sup>13</sup>

**Summary.** New single-family home construction supplied the primary source of school population growth in North Andover during the 1990s. Whether owner- or renter-occupied, multi-family housing generated fewer children overall, but one of the town's rental developments houses a comparatively large number of children and according to local officials, this has been the case since the development's initial rent-up period more than 20 years ago. Over the past decade, education spending increased by 60.2%, surpassing the rate of growth in total general fund spending, 45.3%. On a per capita basis, the cost of residential services in North Andover – including town services and public schools – rose by 25.5%. A 97% increase in state aid, mainly Chapter 70 funds, helped the town absorb some of its additional education costs, but by the end of the decade, North Andover homeowners were paying considerably higher property tax bills. Between 1990-2000, the average single-family tax bill in North Andover shifted from 1.46 to 1.62 times the statewide median. Despite the amount of new development that had occurred in North Andover, the town's residential assessed valuation was only 10.3% higher in FY2000 than in FY 1990 and its commercial and industrial valuations remained below pre-recession levels.<sup>14</sup>

### Households and Housing Unit Profile: North Andover

Years in Residence	Average Household Size			Average Household Size	
	Owner-Occupied	Renter-Occupied	Units in Structure	Owner-Occupied	Renter-Occupied
Town Average	2.87	1.90	1-detached	3.09	2.60
1 Year	2.94	2.12	1-attached	2.55	2.84
2-5 Years	3.05	1.85	2	2.88	2.29
6-10 Years	3.34	2.04	3-4	2.36	1.60
11-20 Years	3.12	1.71	5-9	1.81	1.71
21-30 Years	2.42	1.29	10+	1.36	1.67
30+ Years	1.93	1.10	Other	2.62	N/A

% Households by Age of Householder	Owner-Occupied	Renter-Occupied	Number of Households by Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	2.8%	Households	7,073	2,651
25-34	8.0%	20.8%	Families	5,718	1,242
34-44	30.1%	20.6%	With School-Age Children	2,260	470
45-54	26.7%	15.2%	% Households	32.0%	17.7%
55-64	13.7%	10.3%			
65-74	11.2%	10.9%			
75+	9.9%	19.4%			

**Source:** Bureau of the Census, Census 2000, Summary File 3, Tables H14, H32, H33, HCT1, HCT9. Cross-tabulations and statistics by author.

## END NOTES

<sup>1</sup> Bureau of the Census, 1990 Census of Population and Housing, Summary File 1, Table DP-1, Census 2000, Summary File 3, Tables P1, P10: Massachusetts, Town of North Andover.

<sup>2</sup> Census 2000, Summary File 3, Table H34.

<sup>3</sup> Census 2000, Summary File 3, Tables H32, HCT5.

<sup>4</sup> 1990 Census of Population and Housing, Summary File 3, Table H022; Census 2000, Summary File 3, Table H32.

<sup>5</sup> Census 2000, Summary File 3, Table HCT6; Banker and Tradesman, "Free Market Statistics," in HTML format, available on the INTERNET at <<http://rers.thewarrengroup.com/townstats>>, cited 20 March 2003.

<sup>6</sup> Massachusetts Department of Education, "Long-Term Trends in School Enrollments," North Andover Public Schools, in HTML format, INTERNET at <<http://www.mass.gov/does>>, cited 24 March 2003.

<sup>7</sup> Massachusetts Department of Revenue, Municipal Data Bank [online database], "Debt Exclusion Votes, 1982-Present," in EXCEL format [DebtEx.xls], INTERNET at <<http://www.mass.gov/dls>> [updated May 2003], cited 25 May 2003.

<sup>8</sup> Massachusetts Department of Education, "Foundation Enrollments: 1993-1999," in EXCEL format [foundenapp.xls], INTERNET at <<http://www.mass.gov/does>> [accessed February 20, 2001].

<sup>9</sup> Census 2000, Summary File 3, Tables H36, H38, HCT1-HCT3; Banker and Tradesman, "Free Market Statistics."

<sup>10</sup> MassHousing, 2003.

<sup>11</sup> Census 2000, Tables H17, HCT1, HCT9.

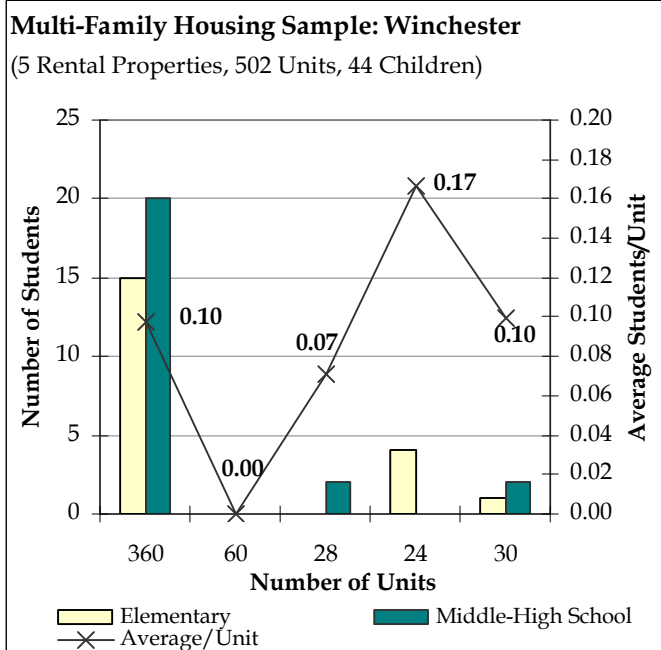
<sup>12</sup> Massachusetts Department of Revenue, Municipal Data Bank [online database], "General Fund Expenditures," in EXCEL format [Expfd90.xls, Expfd00.xls], INTERNET at <<http://www.mass.gov/dls>> cited 21 June 2002.

<sup>13</sup> Massachusetts Department of Education, Report of the Foundation Budget Review Commission (June 2001), Table 5, in HTML format [table5.htm], INTERNET at <<http://www.state.ma.us/legis/reports/foundation.htm>>, cited October 2001.

<sup>14</sup> Massachusetts Department of Revenue, Municipal Data Bank [online database], "Assessed Values," in EXCEL format [Asva90.xls, Asva00.xls], INTERNET at <<http://www.mass.gov/dls>> cited 22 December 2000.

## Winchester

Population (2000)	20,810
Total Housing Units	7,908
% Single-Family	70.4%
% Multi-Family	10.8%
K-12 Enrollments	
1990	2,810
2000	3,285
% Change	16.9%
Expenditures (2000)	\$49,049,689
Integrated School Costs	\$25,781,099
% Change 1990-2000	59.4%
Municipal-Residential	\$22,455,319
Municipal-Nonresidential	\$813,272
Accuracy of Per Capita Multiplier Forecast	
Schools +/- %	-4.5%
Residential +/- %	-3.7%



### Households and Housing Unit Profile: Winchester

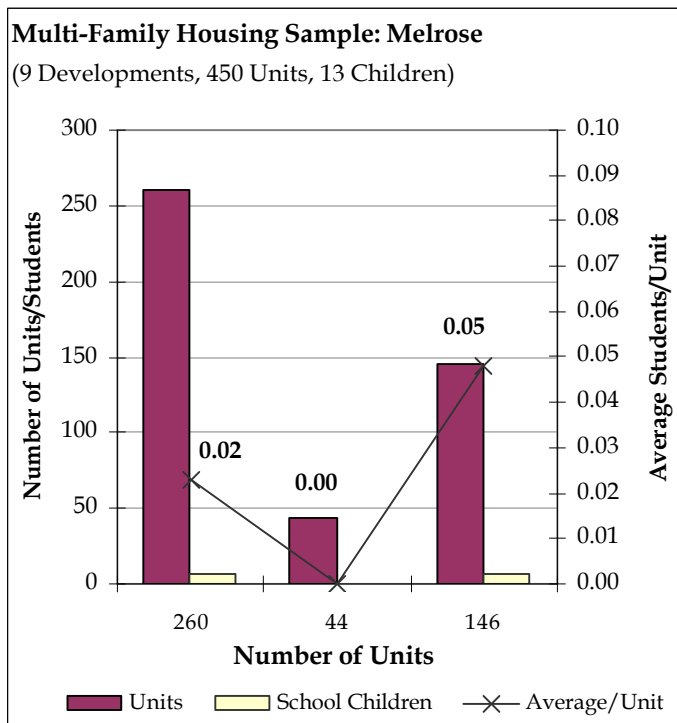
Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.77	2.16	1-detached	2.90	2.94
1 Year	2.92	2.17	1-attached	2.25	3.21
2-5 Years	3.11	2.32	2	2.31	2.52
6-10 Years	3.42	1.73	3-4	1.90	2.32
11-20 Years	2.90	2.11	5-9	1.17	1.23
21-30 Years	2.37	1.31	10+	1.26	1.34
30+ Years	2.00	2.81	Other	2.89	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.1%	1.4%	Households	6,205	1,510
25-34	7.2%	23.5%	Families	5,161	653
34-44	22.9%	27.7%	With School-Age Children	1,809	293
45-54	22.8%	10.2%	% Households	29.2%	19.4%
55-64	19.2%	8.9%			
65-74	15.1%	8.9%			
75+	12.7%	19.5%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Melrose

Population (2000)	27,134
Total Housing Units	11,248
% Single-Family	57.1%
% Multi-Family	21.8%
<u>K-12 Enrollments</u>	
1990	3,822
2000	3,497
% Change	-8.5%
<u>Expenditures (2000)</u>	\$51,637,327
Integrated School Costs	\$26,063,988
% Change 1990-2000	37.1%
Municipal-Residential	\$24,719,098
Municipal-Nonresidential	\$26,063,988
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-11.7%
Residential +/- %	-23.4%



### Households and Housing Unit Profile: Melrose

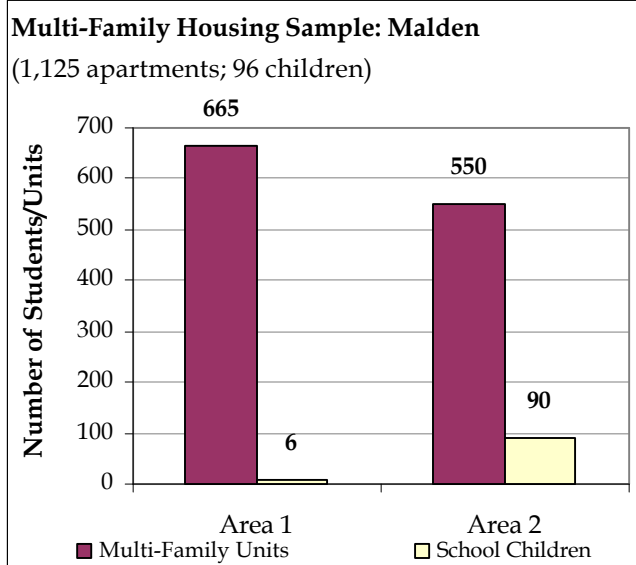
Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
City Average	2.76	1.79	1-detached	2.87	2.26
1 Year	2.44	1.98	1-attached	1.65	2.75
2-5 Years	2.90	1.72	2	2.62	2.34
6-10 Years	3.31	1.91	3-4	2.29	2.17
11-20 Years	3.25	1.71	5-9	1.13	1.50
21-30 Years	2.66	1.43	10+	1.58	1.37
30+ Years	2.12	1.65	Other	3.78	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.2%	2.7%	Households	7,365	3,617
25-34	9.9%	27.1%	Families	5,737	1,365
34-44	24.6%	21.0%	With School-Age Children	1,740	375
45-54	22.8%	10.9%	% Households	23.6%	10.4%
55-64	15.6%	9.0%			
65-74	12.3%	10.6%			
75+	14.5%	18.7%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

# Malden

Population (2000)	56,340
Total Housing Units	23,634
% Single-Family	25.5%
% Multi-Family	30.1%
<u>K-12 Enrollments</u>	
1990	5,405
2000	5,685
% Change	5.2%
<u>Expenditures (2000)</u>	\$106,682,594
Integrated School Costs	\$51,929,913
% Change 1990-2000	65.7%
Municipal-Residential	\$44,673,437
Municipal-Nonresidential	\$10,079,244
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-13.1%
Residential +/- %	-6.6%



## Households and Housing Unit Profile: Malden

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
City Average	2.87	2.08	1-detached	3.04	2.82
1 Year	3.04	2.03	1-attached	2.31	3.09
2-5 Years	3.01	2.13	2	2.96	2.40
6-10 Years	3.54	2.47	3-4	2.71	2.32
11-20 Years	3.05	1.95	5-9	1.26	2.07
21-30 Years	2.82	1.43	10+	1.49	1.62
30+ Years	2.16	1.46	Other	1.68	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.6%	5.3%	Households	9,970	13,039
25-34	12.1%	32.7%	Families	7,580	6,052
34-44	22.0%	19.3%	With School-Age Children	2,096	1,934
45-54	23.6%	13.4%	% Households	21.0%	14.8%
55-64	17.4%	8.7%			
65-74	13.2%	9.1%			
75+	11.2%	11.4%			

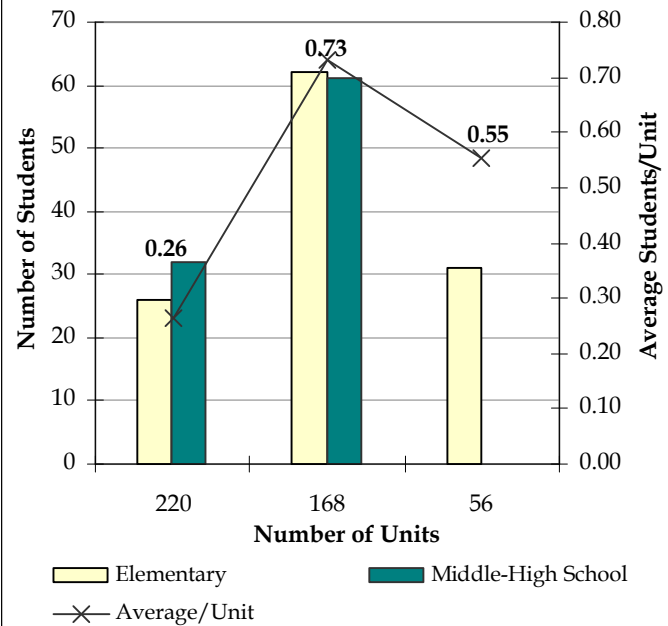
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Andover

Population (2000)	31,247
Total Housing Units	11,590
% Single-Family	73.1%
% Multi-Family	16.6%
<u>K-12 Enrollments</u>	
1990	4,698
2000	5,808
% Change	23.6%
<u>Expenditures (2000)</u>	\$77,721,661
Integrated School Costs	\$43,127,558
% Change 1990-2000	73.1%
Municipal-Residential	\$27,548,445
Municipal-Nonresidential	\$7,045,658
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-9.2%
Residential +/- %	7.1%

### Multi-Family Housing Sample: Andover

(3 Developments, 444 Units, 212 Children)



### Households and Housing Unit Profile: Andover

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.98	1.85	1-detached	3.09	2.67
1 Year	2.86	1.84	1-attached	2.86	2.55
2-5 Years	3.41	1.83	2	1.99	2.38
6-10 Years	3.71	2.08	3-4	1.55	1.84
11-20 Years	3.11	1.52	5-9	1.76	1.81
21-30 Years	2.41	1.53	10+	1.65	1.41
30+ Years	1.94	3.00	Other	2.67	1.00

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.2%	3.4%	Households	8,891	2,414
25-34	7.7%	26.7%	Families	7,506	1,046
34-44	27.1%	22.3%	With School-Age Children	3,116	466
45-54	26.7%	15.5%	% Households	35.0%	19.3%
55-64	18.5%	8.2%			
65-74	12.5%	6.5%			
75+	7.3%	17.3%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

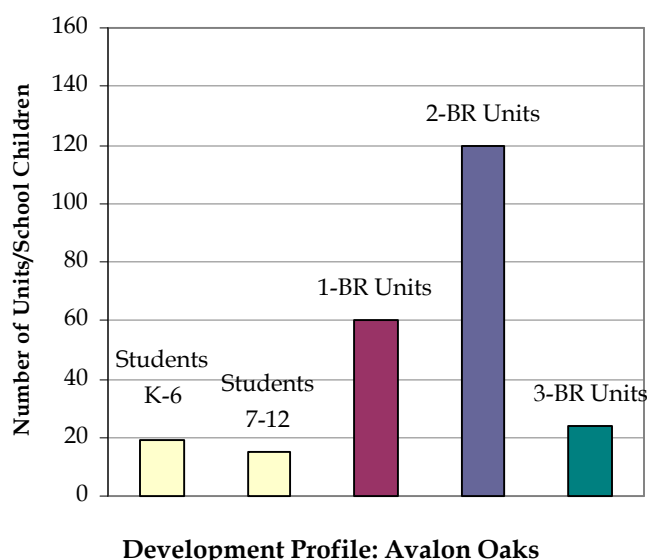
## Wilmington

Population (2000)	21,363
<u>Total Housing Units</u>	7,158
% Single-Family	89.0%
% Multi-Family	4.1%
<u>K-12 Enrollments</u>	
1990	2,758
2000	3,578
% Change	29.7%
<u>Expenditures (2000)</u>	\$43,509,617
Integrated School Costs	\$26,238,133
% Change 1990-2000	30.2%
Municipal-Residential	\$12,150,760
Municipal-Nonresidential	\$5,120,724
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	19.6%
Residential +/- %	28.8%

### Multi-Family Housing Sample: Wilmington

(204 Apartments, 34 Children, .17

Children/Unit)



### Households and Housing Unit Profile: Wilmington

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.03	2.72	1-detached	3.03	3.46
1 Year	2.66	2.49	1-attached	2.86	3.27
2-5 Years	3.35	2.97	2	3.69	3.45
6-10 Years	3.53	3.23	3-4	N/A	1.32
11-20 Years	3.53	2.82	5-9	N/A	1.47
21-30 Years	2.76	3.55	10+	N/A	2.11
30+ Years	2.18	1.32	Other	4.33	N/A

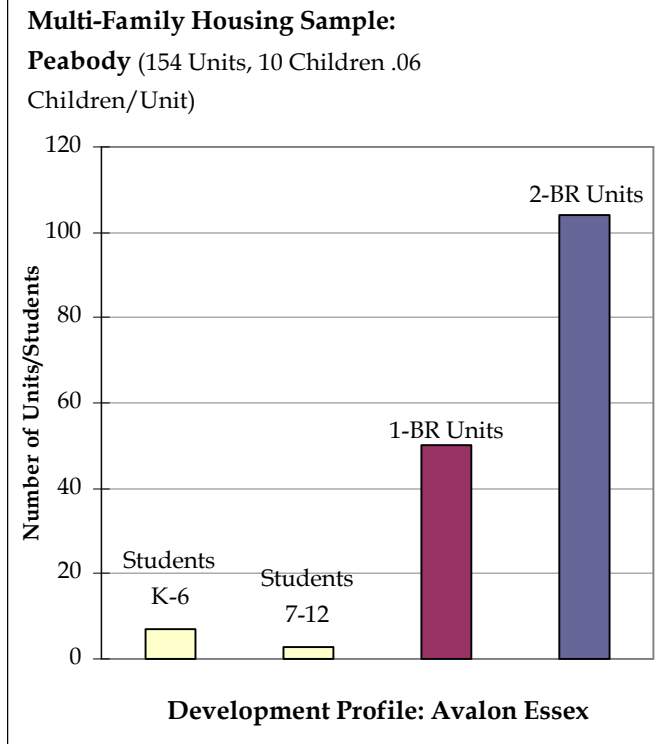
% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.1%	3.8%	Households	6,349	678
25-34	13.8%	26.0%	Families	5,443	395
34-44	28.6%	32.2%	With School-Age Children	2,117	166
45-54	22.7%	9.9%	% Households	33.3%	24.5%
55-64	15.6%	7.8%			
65-74	11.9%	9.0%			
75+	7.2%	11.4%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.



## Peabody

Population (2000)	48,129
<u>Total Housing Units</u>	18,898
% Single-Family	58.0%
% Multi-Family	15.7%
<u>K-12 Enrollments</u>	
1990	5,679
2000	6,695
% Change	17.9%
<u>Expenditures (2000)</u>	\$94,253,268
Integrated School Costs	\$48,550,176
% Change 1990-2000	79.6%
Municipal-Residential	\$44,313,859
Municipal-Nonresidential	\$1,389,233
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-13.6%
Residential +/- %	8.5%



### Households and Housing Unit Profile: Peabody

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
City Average	2.78	1.98	1-detached	2.96	2.49
1 Year	2.57	2.07	1-attached	2.08	2.09
2-5 Years	2.99	2.12	2	2.84	2.36
6-10 Years	3.30	1.84	3-4	2.69	2.21
11-20 Years	3.18	1.92	5-9	2.13	1.73
21-30 Years	2.57	1.48	10+	1.48	1.47
30+ Years	2.22	1.41	Other	1.92	2.20

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.7%	5.5%	Households	13,231	5,350
25-34	8.4%	21.0%	Families	10,478	2,524
34-44	22.1%	23.3%	With School-Age Children	3,337	929
45-54	23.9%	12.4%	% Households	25.2%	17.4%
55-64	17.1%	7.9%			
65-74	15.6%	10.6%			
75+	12.1%	19.3%			

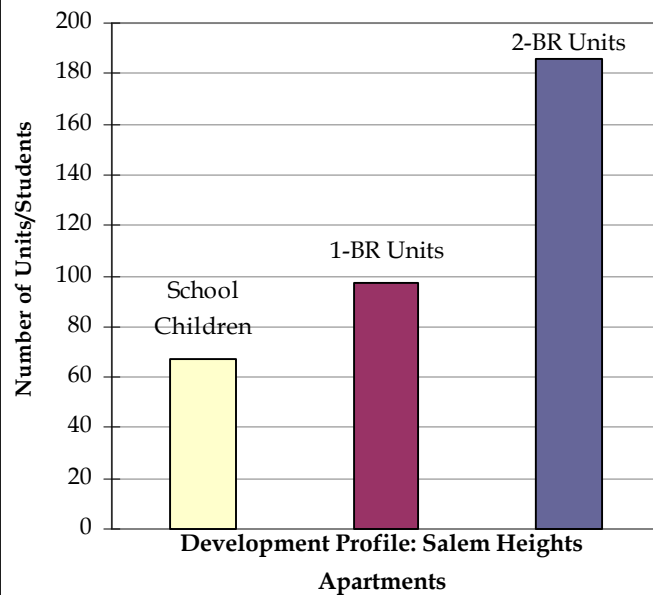
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Salem

Population (2000)	40,407
<u>Total Housing Units</u>	18,175
% Single-Family	27.0%
% Multi-Family	26.1%
<u>K-12 Enrollments</u>	
1990	4,088
2000	5,056
% Change	23.7%
<u>Expenditures (2000)</u>	\$76,825,146
Integrated School Costs	\$40,738,036
% Change 1990-2000	96.5%
Municipal-Residential	\$33,283,688
Municipal-Nonresidential	\$2,803,422
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-17.6%
Residential +/- %	8.7%

### Multi-Family Housing Sample: Salem

(283 Units, 67 Children, .24 Children/Unit)



### Households and Housing Unit Profile: Salem

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
City Average	2.50	2.00	1-detached	2.72	2.81
1 Year	2.28	1.94	1-attached	2.20	2.34
2-5 Years	2.53	2.07	2	2.66	2.27
6-10 Years	2.83	2.17	3-4	2.15	2.11
11-20 Years	2.83	1.77	5-9	1.67	1.88
21-30 Years	2.57	1.83	10+	1.52	1.60
30+ Years	2.12	1.63	Other	N/A	N/A

% Householders by Age	<u>Average Household Size</u>		Household Type	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
15-24	0.7%	8.1%	Households	8,594	8,898
25-34	10.9%	28.6%	Families	5,945	3,823
34-44	21.3%	22.7%	With School-Age Children	1,558	1,519
45-54	22.0%	15.0%	% Households	18.1%	17.1%
55-64	15.8%	8.4%			
65-74	14.7%	6.5%			
75+	14.6%	10.7%			

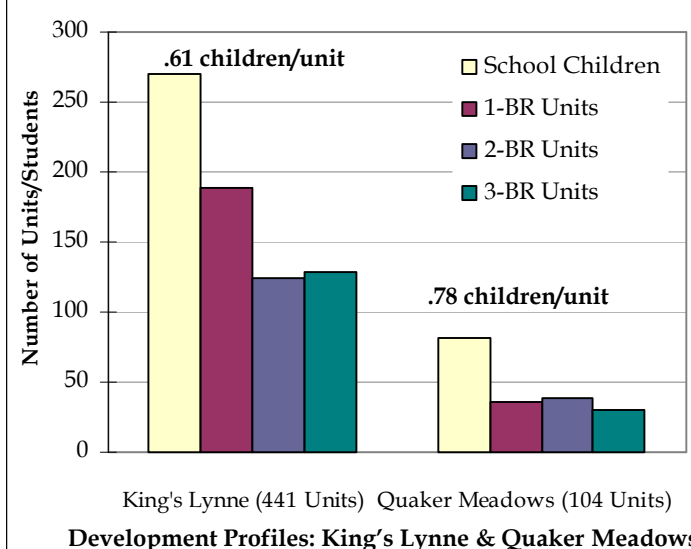
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

# Lynn

Population (2000)	89,050
Total Housing Units	34,690
% Single-Family	33.6%
% Multi-Family	29.1%
<u>K-12 Enrollments</u>	
1990	11,638
2000	15,069
% Change	29.5%
<u>Expenditures (2000)</u>	\$188,301,036
Integrated School Costs	\$106,464,801
% Change 1990-2000	111.1%
Municipal-Residential	\$77,231,776
Municipal-Nonresidential	\$4,604,459
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-18.9%
Residential +/- %	2.2%

## Multi-Family Housing Sample: Lynn

(2 Developments, 545 Units, 351 Children)



## Households and Housing Unit Profile: Lynn

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
City Average	2.91	2.37	1-detached	2.89	2.97
1 Year	3.34	2.48	1-attached	3.01	3.05
2-5 Years	3.33	2.54	2	3.31	2.61
6-10 Years	3.30	2.34	3-4	3.02	2.92
11-20 Years	3.07	1.72	5-9	3.00	2.75
21-30 Years	2.59	1.90	10+	1.59	1.67
30+ Years	2.15	1.90	Other	4.00	2.33

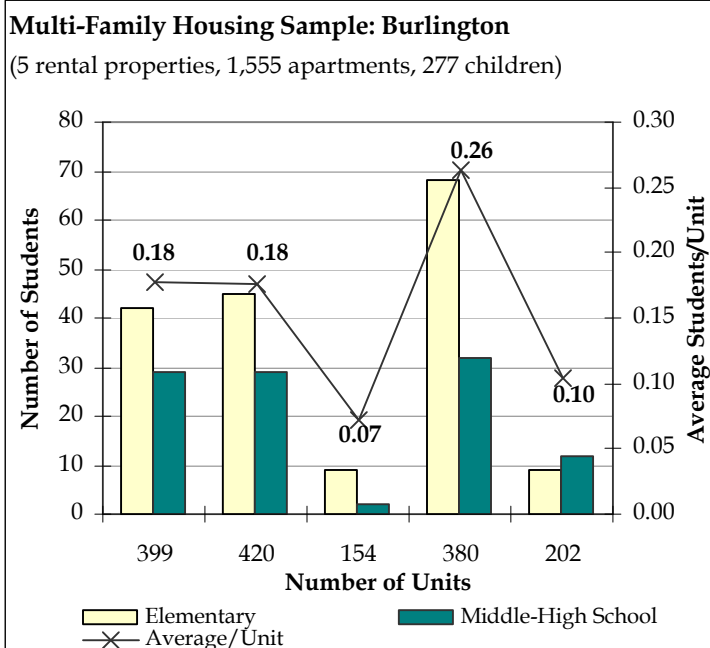
  

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Average Household Size	
				Owner-Occupied	Renter-Occupied
15-24	1.0%	7.3%	Households	15,315	18,248
25-34	11.5%	22.9%	Families	11,226	9,900
34-44	22.6%	24.5%	With School-Age Children	3,789	4,706
45-54	23.5%	15.7%	% Households	24.7%	25.8%
55-64	15.0%	10.0%			
65-74	13.7%	9.0%			
75+	12.8%	10.6%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Burlington

Population (2000)	22,876
<u>Total Housing Units</u>	8,445
% Single-Family	76.8%
% Multi-Family	18.0%
<u>K-12 Enrollments</u>	
1990	3,419
2000	3,478
% Change	1.7%
<u>Expenditures (2000)</u>	\$60,035,582
Integrated School Costs	\$30,297,135
% Change 1990-2000	50.8%
Municipal-Residential	\$19,068,447
Municipal-Nonresidential	\$10,670,000
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-11.1%
Residential +/- %	-14.7%



### Households and Housing Unit Profile: Burlington

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.90	2.18	1-detached	2.95	2.97
1 Year	2.63	1.99	1-attached	1.82	3.09
2-5 Years	2.96	2.14	2	5.19	2.95
6-10 Years	3.51	2.72	3-4	3.50	2.15
11-20 Years	3.51	2.43	5-9	1.81	1.94
21-30 Years	2.86	3.38	10+	1.01	2.01
30+ Years	2.23	1.94	Other	N/A	3.00

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.6%	5.5%	Households	6,591	1,698
25-34	9.5%	36.6%	Families	5,542	874
34-44	23.1%	26.5%	With School-Age Children	1,747	261
45-54	23.0%	9.5%	% Households	26.5%	15.4%
55-64	18.6%	6.5%			
65-74	16.4%	5.6%			
75+	8.8%	9.7%			

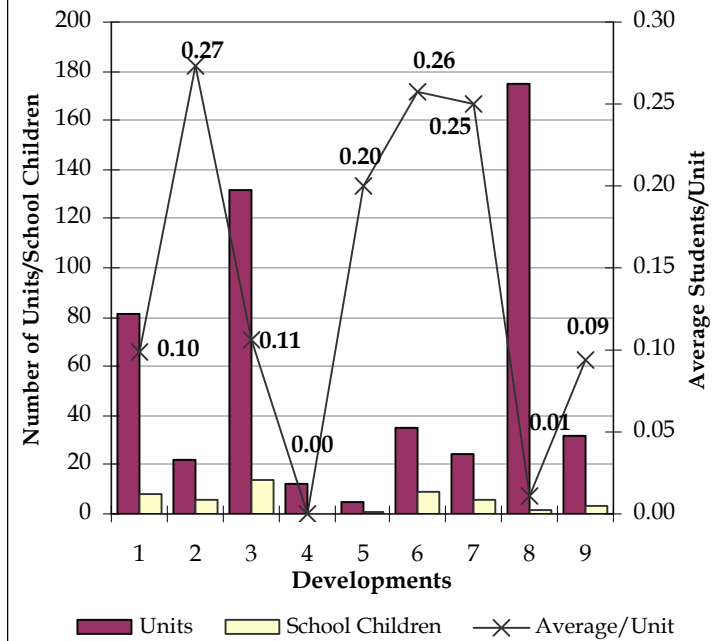
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Reading

Population (2000)	23,708
Total Housing Units	8,823
% Single-Family	74.3%
% Multi-Family	13.6%
<u>K-12 Enrollments</u>	
1990	3,567
2000	4,193
% Change	17.5%
<u>Expenditures (2000)</u>	\$47,287,594
Integrated School Costs	\$28,488,290
% Change 1990-2000	68.8%
Municipal-Residential	\$18,369,449
Municipal-Nonresidential	\$429,855
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-8.3%
Residential +/- %	4.3%

### Multi-Family Housing Sample: Reading

(9 developments, 518 condominiums, 59 students)



### Households and Housing Unit Profile: Reading

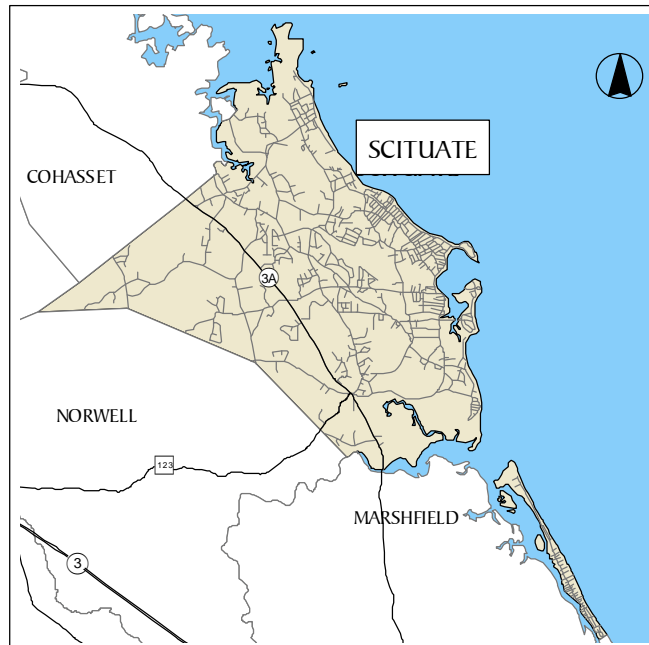
Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.91	1.76	1-detached	3.01	2.15
1 Year	2.81	1.89	1-attached	2.55	1.45
2-5 Years	3.14	1.80	2	3.13	2.45
6-10 Years	3.47	1.78	3-4	1.82	1.87
11-20 Years	3.24	1.41	5-9	1.56	1.39
21-30 Years	2.64	1.58	10+	1.51	1.40
30+ Years	2.05	1.61	Other	2.00	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.2%	3.1%	Households	7,161	1,527
25-34	10.6%	24.7%	Families	5,882	589
34-44	25.7%	21.4%	With School-Age Children	2,075	133
45-54	24.8%	8.7%	% Households	29.0%	8.7%
55-64	14.4%	9.6%			
65-74	13.4%	9.4%			
75+	10.8%	23.2%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Scituate

**Population and Housing.** Scituate's Census 2000 population of 17,863 represents a ten-year increase of 6.4% (Fig. 1). Although its population growth rate narrowly exceeds the state's 5.5%, Scituate gained households (11%) and housing units (10.1%) at a faster pace than the state as a whole.<sup>1</sup> Like most suburbs, Scituate is primarily a single-family home community. Unlike most suburbs, however, Scituate attracts vacation homebuyers and 10.5% of its housing inventory is comprised of seasonal residences. In fact, the number of vacation and seasonal homes in Scituate increased by 9.1% during the 1990s – a growth rate nearly equal to that of all housing units.<sup>2</sup>

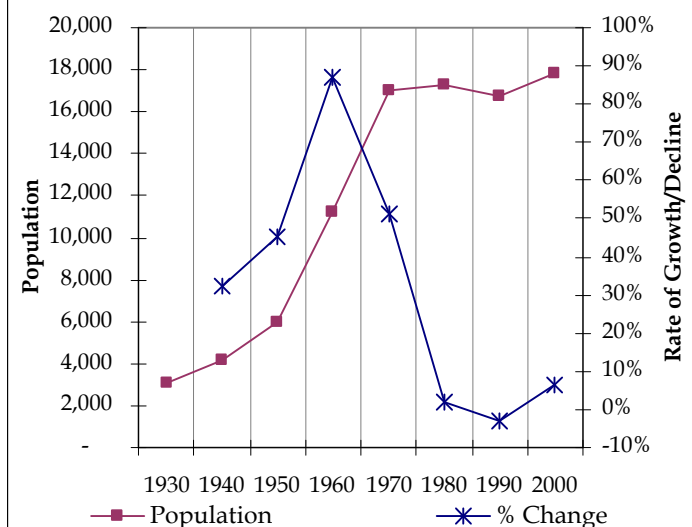


Data Sources: MassGIS, MassHighway.

About 8% of Scituate's 7,685 housing units were developed during the past decade: 89% occupied by homeowners and 11% by renters.<sup>3</sup> Multi-family dwellings – in structures of five or more units – constitute 9.8% of the town's newest homes, or 62 units, about one-third of which are renter-occupied. Of all 1,138 renters living in Scituate today, nearly half occupy single-family residences while 23.2% rent apartments in multi-family buildings.<sup>4</sup> Scituate's entire inventory of multi-family rental housing includes about 300 units, 65% restricted to elderly or disabled tenants.<sup>5</sup> In contrast, its small inventory of owner-occupied multi-family units (78) are fairly new, with more than half built during the same period.<sup>6</sup> They are also quite expensive. At the end of the 1990s, condominiums sold for \$250,000-\$290,000 in Scituate, reaching a median sale price of \$411,000 by 2002.<sup>7</sup>

**Fig. 1. Population Change, Scituate: 1930-2000**

(Source: MISER)



**School Enrollments.** In October 1990, the Scituate School Department recorded its first K-12 enrollment growth in more than ten years. By the new millennium, Scituate's public school enrollments had increased 20.2% after declining by more than 31% throughout the 1980s.<sup>8</sup> Together, federal census data and housing market statistics indicate that a substantial majority of Scituate's school population growth stems from new single-family home construction and a relatively high rate of turnover in owner-occupied housing units. In a pattern found in several South Shore communities, Scituate apparently absorbed homeowners at a considerably faster pace than the town produced new

homes for sale: for every house built and sold during the 1990s, 6.68 owner-occupant households moved into town, mainly because of older home sales.<sup>9</sup> As the Households and Housing Unit Profile shows (last page), the average size of Scituate households is highest among those who moved into their present home 4-8 years ago, a condition that applies equally to owners and renters. However, recently developed multi-family homes

appear to generate very few school-age children. Sample data from the Scituate School Department suggests that the number of school students living in owner-occupied townhouse or multi-family condominiums ranges from no children to about .25/unit.

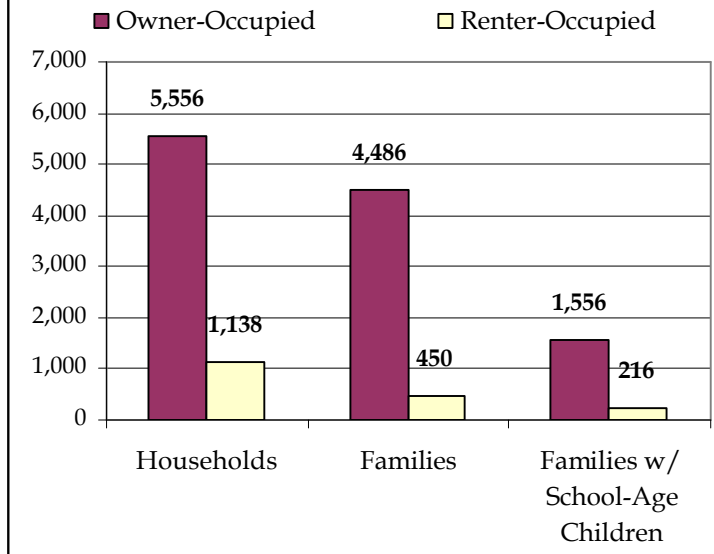
**Housing and Children.** Since so little multi-family housing has been built recently in Scituate, it is difficult to measure the impact of new rental development on school enrollments. Town-wide, only 19% of all renter households have school-age children (Fig. 2), a condition that could be explained by the sizeable percentage of age-restricted multi-family units, but most renters in Scituate do not live in multi-family housing. Rather, they lease single-family homes, duplexes, and units in three- or four-unit buildings, most of which pre-date 1950.<sup>10</sup> The town's largest family rental development, an older, subsidized community of 64 apartments, currently houses 45 children in grades K-12, i.e., .70 children/unit (Fig. 3). Significantly, one- and two-person renter households are far more prevalent than elderly renter households in Scituate: for every elderly renter, the town has 3.1 non-elderly households of one or two people. In addition, homeowners of

childbearing age outpace renters in the same age group by 4:1. Demand for rental housing at all income levels, among family and non-family households, helps to explain Scituate's very low rental vacancy rate of 2.2%.<sup>11</sup>

**Fiscal Impact of Residential Development.** Scituate's 1990-2000 school enrollment increase of 20% is on the high end of the average range for the state as a whole. Had the town relied on the per capita

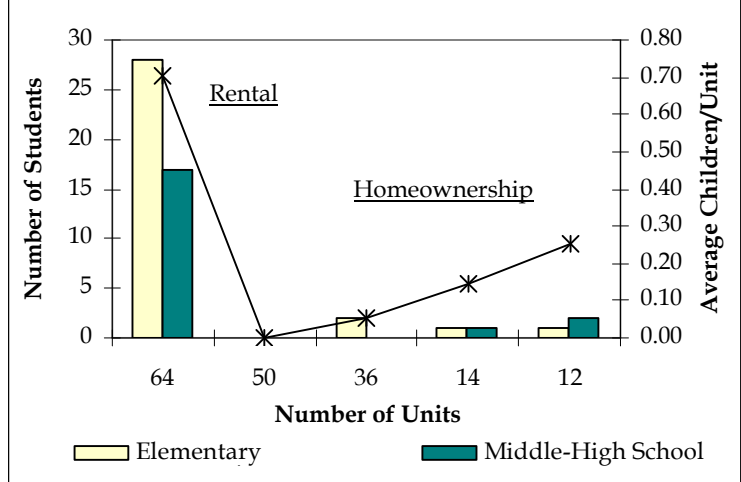
**Fig. 2: Families with Children by Tenure**

(Source: Census Bureau)



**Fig. 3: School Children in Multi-Family Housing**

(Sample: 5 developments; 176 units, 52 children)



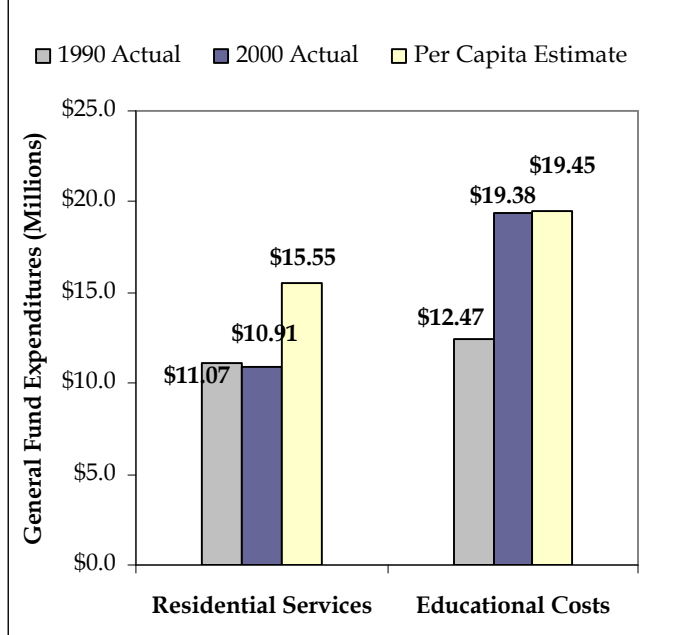
multiplier method in 1990 to estimate the fiscal impact of future development, assuming a ten-year growth rate equal to what actually occurred by 2000, Scituate would have made a reasonably accurate forecast of its FY 2000 education costs. Fig. 4 suggests that the same method would have overestimated growth in municipal service costs by 42.6%, but at the end of the 1990s, Scituate converted its water, sewer and transfer station operations to enterprise funds, effectively reducing the general fund budget for public works by approximately \$1 million.<sup>12</sup> The overestimate may also reflect Scituate's relatively high per capita cost of local government services in 1990, a condition rooted in the town's population loss of about 550 people between 1980-1990 (Fig. 1). As the town gained people again during the 1990s, its expenditures most likely did not grow at the same rate per capita.

In addition, Scituate's year-round homeowners are largely middle-class people whose properties constitute 76% of all taxable parcels in Scituate.<sup>13</sup> Their median income of \$78,690 has a direct impact on what the town can afford to spend for resident services: not only schools, but also police, fire, cultural facilities and health programs.<sup>14</sup>

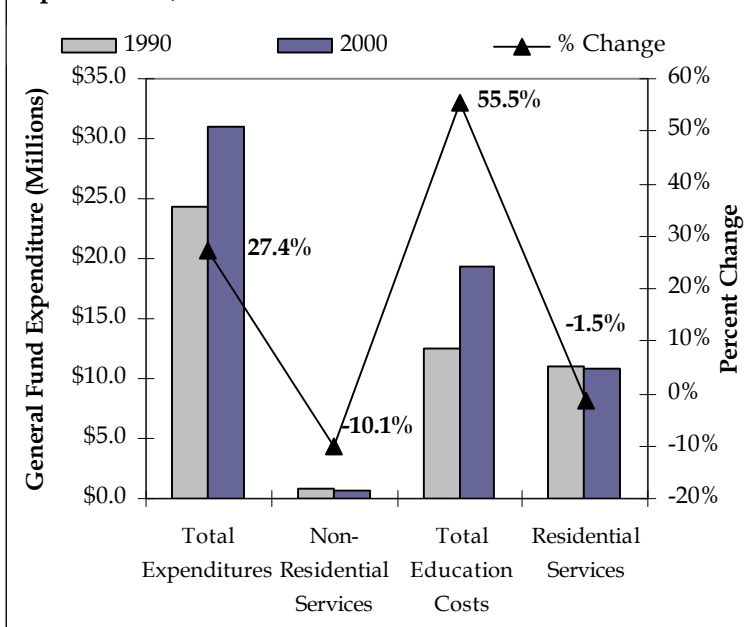
Household growth and demographic change in Scituate led to a significant increase in wealthier households between 1990-2000, but the town's state rank for median income has dropped from 44 in 1980 to 67 in 2000.<sup>15</sup> Although state aid to Scituate increased 40.7% during the 1990s, as a percentage of all local revenue it declined from 16% in 1990 to 12.7% in 2000. Own-source revenue for general fund costs – mainly the residential tax levy – increased by 57%.<sup>16</sup>

Fig. 5 suggests that over time, Scituate curtailed its general fund expenditures for town services in order to finance the cost of public schools. In Scituate's case, the rate of education spending appears to

**Fig. 4. Test of Per Capita Multiplier Forecast**



**Fig. 5. Actual Change in Municipal & School Expenditures, 1990-2000**





be driven not by expensive local preferences but rather, by a decision to maintain level-service school programs as the town's school-age population gradually increased. Statewide, net school spending as a percentage of the Education Reform Act (ERA) foundation budget rose from 95% to 114.7% between 1993-2001, but in Scituate, net school spending was already 101% of the state's foundation budget in 1993 and rose incrementally to 108% by 2001.<sup>17</sup>

**Summary.** Single-family homes – new or recycled, owner- or renter-occupied – supplied the primary source of school population growth in Scituate during the 1990s. On a per-unit basis, multi-family housing generated relatively few children and higher-end townhouses and condominium units generated almost none. In Scituate, subsidized rental housing also generates school children, mainly elementary school students. The town's only mixed-income housing, a 12-unit HOP development with four affordable units, is home to a small number of children, .25/unit. Over the past decade, education spending increased by 55%, a rate higher than that of overall general fund spending, 27%, while general fund expenditures for other residential services declined 1.5%. On a per capita basis, Scituate's total cost of residential services – including town services and public schools – increased by a modest 20.9%. Throughout, the town's average single-family home bill remained about 1.41 times the median for the state as a whole.

### Households and Housing Unit Profile: Scituate

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.07	2.73	1-detached	2.84	1.87
1 Year	2.33	3.62	1-attached	2.14	2.37
2-5 Years	4.45	3.08	2	2.34	1.38
6-10 Years	4.33	3.18	3-4	N/A	1.64
11-20 Years	3.52	0.78	5-9	1.44	1.36
21-30 Years	2.13	1.17	10-19	1.77	1.86
30+ Years	1.18	1.32	Other	4.42	N/A

% Households by Age of Householder	Owner-Occupied	Renter-Occupied	Number of Households by Household Type	Owner-Occupied	Renter-Occupied
15-24	0.0%	0.9%	Households	5,556	1,138
25-34	6.8%	20.5%	Families	4,486	450
34-44	25.2%	24.8%	With School-Age Children	1,556	216
45-54	23.6%	21.5%	% Households	28.0%	19.0%
55-64	19.0%	7.8%			
65-74	16.3%	9.4%			
75+	9.0%	15.1%			

Source: Bureau of the Census, Census 2000, Summary File 3, Tables H14, H32, H33, HCT1, HCT9. Cross-tabulations and statistics by author.

## END NOTES

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<sup>1</sup> Bureau of the Census, 1990 Census of Population and Housing, Summary File 1, Table DP-1, Census 2000, Summary File 3, Tables P1, P10: Massachusetts, Town of Scituate.

<sup>2</sup> Census 2000, Summary File 3, Table H8; Massachusetts Institute for Social and Economic Research (MISER), "Massachusetts Housing Characteristics: State, Counties, Cities and Towns, 1990 STF-1," in EXCEL [rpt91-10.xls] INTERNET at <<http://www.umass.edu/miser/dataop/data.htm>> [originally accessed October 1997].

<sup>3</sup> Census 2000, Summary File 3, Table H34.

<sup>4</sup> Census 2000, Summary File 3, Tables H32, HCT5.

<sup>5</sup> Census 2000, Summary File 3, Tables H8, H31, H32; Town of Scituate Affordable Housing Plan, Table H-9 (16 September 2002).

<sup>6</sup> Bureau of the Census, Building Permits

<sup>7</sup> Census 2000, Summary File 3, Table HCT6; Banker and Tradesman, "Free Market Statistics," in HTML format, available on the INTERNET at <<http://rers.thewarrengroup.com/townstats>> [accessed 20 March 2003].

<sup>8</sup> Massachusetts Department of Education, "Long-Term Trends in School Enrollments," Scituate Public Schools, in HTML format, INTERNET at <<http://www.mass.gov/doe>> [accessed 24 March 2003].

<sup>9</sup> Census 2000, Summary File 3, Tables H36, H38, HCT1-HCT3; Banker and Tradesman, "Free Market Statistics."

<sup>10</sup> Census 2000, Table H32.

<sup>11</sup> Census 2000, Tables H17, HCT1, HCT9.

<sup>12</sup> Massachusetts Department of Revenue (DOR), Municipal Data Bank, "General Fund Expenditures," in EXCEL format [exp90.xls, exp00.xls], INTERNET at <<http://www.mass.gov/dor/dls>> [accessed 1998, 2001]. Author's Note. According to DOR, Scituate's public work expenditures totaled \$3.05 million in FY 1990 and in FY 2000, after the enterprise funds were established, \$2.02 million. Enterprise fund dates supplied by Laura Harbottle, Scituate Town Planner, April 2003.

<sup>13</sup> DOR, Municipal Data Bank, "Parcels by Use Class," in EXCEL format [prcl87-99.xls, prcl00.xls].

<sup>14</sup> Note: \$78,690 is the median household income for Scituate homeowners. The town's median household income overall, \$70,868, includes homeowners and renters. Statewide income ranks are based on the median household income of all households in each city and town.

<sup>15</sup> Census 2000, Boston Globe. State ranks calculated by author.

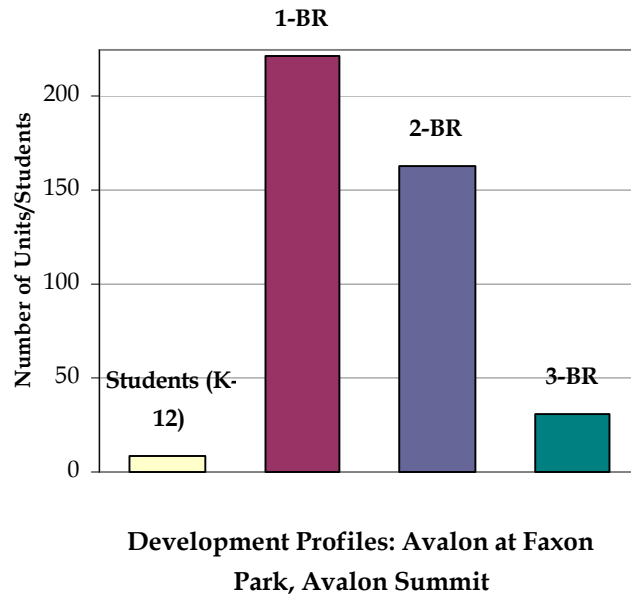
<sup>16</sup> Municipal Data Bank, "Revenues by Source." Enterprise fund note.

<sup>17</sup> Massachusetts Department of Education, Report of the Foundation Budget Review Commission (June 2001), Table 5, in HTML format [table5.htm], INTERNET at <<http://www.state.ma.us/legis/reports/foundation.htm>> [originally accessed October 2001].

## Quincy

Population (2000)	88,025
<u>Total Housing Units</u>	40,093
% Single-Family	35.6%
% Multi-Family	34.0%
<u>K-12 Enrollments</u>	
1990	7,787
2000	9,099
% Change	16.8%
<u>Expenditures (2000)</u>	\$175,549,071
Integrated Schools Costs	\$68,537,656
% Change 1990-2000	52.8%
Municipal-Residential	\$102,773,871
Municipal-Nonresidential	\$4,237,544
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	1.1%
Residential +/- %	0.7%

**Multi-Family Housing Sample: Quincy**  
(2 Developments: 416 Apartments, 9 Children)



### Households and Housing Unit Profile: Quincy

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
City Average	2.22	2.00	1-detached	2.87	2.39
1 Year	2.67	1.79	1-attached	2.39	2.53
2-5 Years	2.52	1.80	2	2.57	2.18
6-10 Years	2.92	1.85	3-4	2.48	1.97
11-20 Years	3.15	1.74	5-9	2.01	1.51
21-30 Years	3.05	1.72	10+	1.77	1.49
30+ Years	2.56	1.55	Other	5.33	5.70

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.7%	6.8%	Households	19,081	19,802
25-34	11.1%	31.5%	Families	13,083	7,515
34-44	19.8%	19.0%	With School-Age Children	3,756	2,103
45-54	22.5%	12.2%	% Households	19.7%	10.6%
55-64	16.1%	8.5%			
65-74	15.6%	8.5%			
75+	14.2%	13.5%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

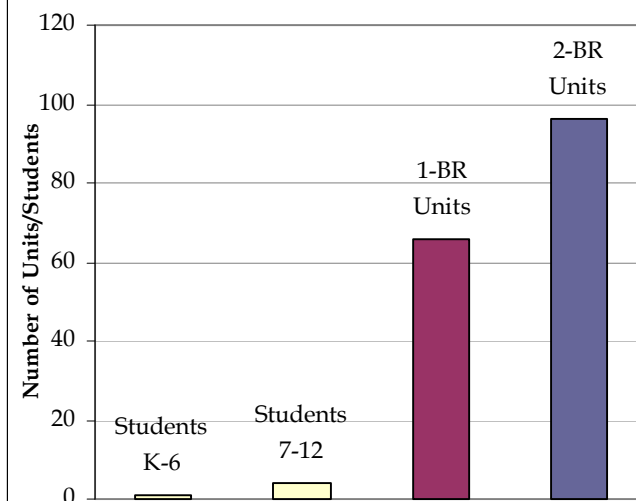
## Hull

Population (2000)	11,050
Total Housing Units	5,366
% Single-Family	72.3%
% Multi-Family	14.3%
<u>K-12 Enrollments</u>	
1990	1,463
2000	1,438
% Change	-1.7%
<u>Expenditures (2000)</u>	\$21,935,501
Schools (Integrated)	\$13,224,805
% Change 1990-2000	50.6%
Municipal-Residential	\$8,502,329
Municipal-Nonresidential	\$208,367
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-31.4%
Residential +/- %	36.4%

### Multi-Family Housing Sample: Hull

(162 Apartments, 5 Children, .03

Children/Unit)



Development Profile: Avalon Estates

### Households and Housing Unit Profile: Hull

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.44	2.05	1-detached	2.67	2.89
1 Year	2.54	2.17	1-attached	2.20	1.94
2-5 Years	2.03	1.95	2	2.19	1.96
6-10 Years	2.52	2.79	3-4	3.50	1.66
11-20 Years	2.94	2.04	5-9	1.36	1.44
21-30 Years	3.15	2.17	10+	1.64	1.65
30+ Years	2.40	1.49	Other	N/A	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.0%	2.8%	Households	3,283	1,239
25-34	8.0%	18.4%	Families	2,178	669
34-44	23.3%	24.9%	With School-Age Children	627	301
45-54	27.5%	17.1%	% Households	19.1%	24.3%
55-64	19.3%	21.2%			
65-74	13.2%	6.5%			
75+	8.7%	9.1%			

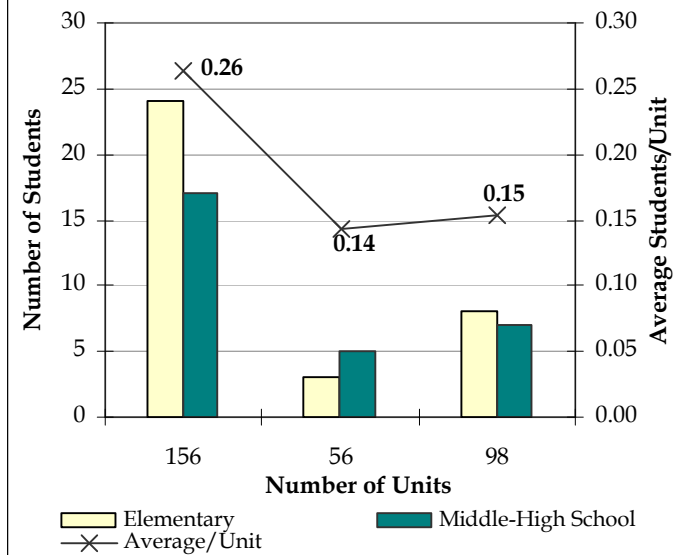
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

# Canton

Population (2000)	20,775
<u>Total Housing Units</u>	8,163
% Single-Family	63.8%
% Multi-Family	22.8%
<u>K-12 Enrollments</u>	
1990	2,453
2000	2,867
% Change	16.9%
<u>Expenditures (2000)</u>	\$41,421,827
Integrated School Costs	\$21,915,761
% Change 1990-2000	54.7%
Municipal-Residential	\$18,411,972
Municipal-Nonresidential	\$1,094,094
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-0.6%
Residential +/- %	-20.8%

## Multi-Family Housing Sample: Canton

(3 rental properties, 310 apartments, 64 children)



## Households and Housing Unit Profile: Canton

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.78	1.91	1-detached	2.99	2.74
1 Year	2.40	1.93	1-attached	1.99	2.53
2-5 Years	3.01	2.07	2	2.39	2.18
6-10 Years	3.27	1.96	3-4	1.62	1.86
11-20 Years	3.02	1.55	5-9	1.44	1.62
21-30 Years	2.81	1.13	10+	1.41	1.67
30+ Years	2.05	1.29	Other	N/A	N/A

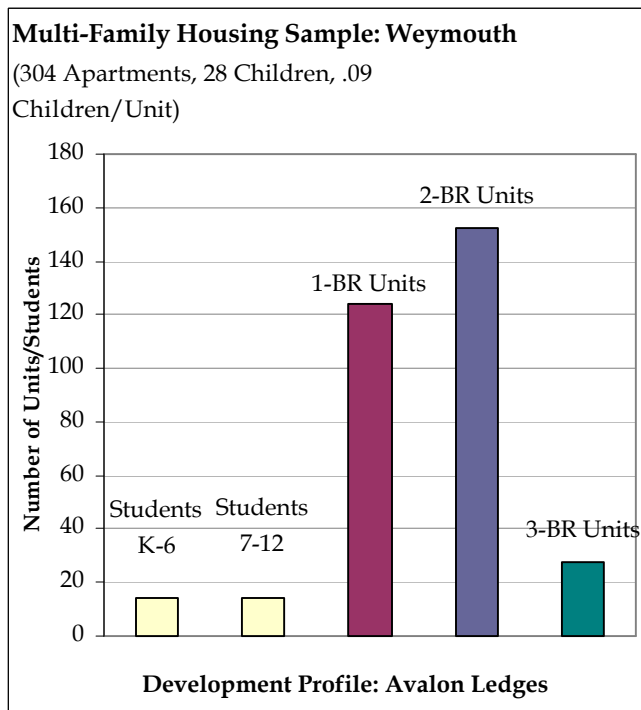
  

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.2%	4.5%	Households	5,902	2,050
25-34	9.7%	24.0%	Families	4,630	927
34-44	24.5%	18.8%	With School-Age Children	1,537	262
45-54	23.3%	14.7%	% Households	26.0%	12.8%
55-64	16.8%	5.7%			
65-74	13.7%	11.9%			
75+	11.7%	20.4%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Weymouth

Population (2000)	53,988
Total Housing Units	22,573
% Single-Family	58.7%
% Multi-Family	28.1%
<b>K-12 Enrollments</b>	
1990	6,742
2000	6,973
% Change	3.4%
<b>Expenditures (2000)</b>	
Integrated School Costs	\$81,562,112
% Change 1990-2000	\$47,137,053
Municipal-Residential	47.4%
Municipal-Nonresidential	\$32,558,231
	\$1,866,828
<b>Accuracy of Per Capita Multiplier Forecast</b>	
Schools +/- %	-7.5%
Residential +/- %	11.4%



### Households and Housing Unit Profile: Weymouth

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.42	2.07	1-detached	2.84	2.48
1 Year	2.68	1.88	1-attached	2.30	2.79
2-5 Years	2.41	1.91	2	2.35	2.06
6-10 Years	2.82	1.91	3-4	1.87	2.07
11-20 Years	3.02	2.02	5-9	1.67	1.91
21-30 Years	3.19	1.49	10+	N/A	1.65
30+ Years	2.72	1.63	Other	N/A	1.71

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	5.9%	Households	14,834	7,194
25-34	10.8%	28.6%	Families	10,863	3,147
34-44	21.7%	20.4%	With School-Age Children	3,351	1,156
45-54	22.1%	13.3%	% Households	22.6%	16.1%
55-64	17.7%	9.2%			
65-74	14.8%	10.6%			
75+	12.6%	11.9%			

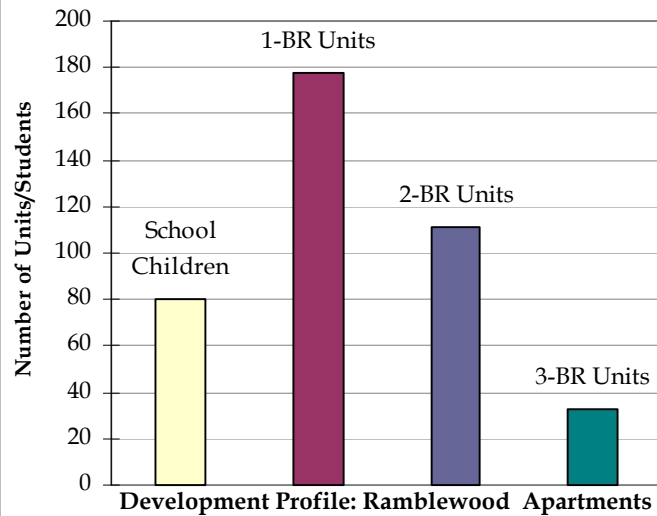
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

# Holbrook

Population (2000)	10,751
<u>Total Housing Units</u>	4,162
% Single-Family	72.0%
% Multi-Family	13.2%
<u>K-12 Enrollments</u>	
1990	1,400
2000	1,433
% Change	2.4%
<u>Expenditures (2000)</u>	\$19,847,140
Integrated School Costs	\$11,189,286
% Change 1990-2000	27.5%
Municipal-Residential	\$8,089,868
Municipal-Nonresidential	\$567,986
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	5.7%
Residential +/- %	-19.8%

## Multi-Family Housing Sample:

**Holbrook** (308 Units, .26 Children/Unit)



## Households and Housing Unit Profile: Holbrook

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.76	2.16	1-detached	2.83	3.21
1 Year	3.13	2.09	1-attached	3.48	2.85
2-5 Years	3.12	2.18	2	2.14	3.03
6-10 Years	3.09	2.34	3-4	2.33	2.18
11-20 Years	2.91	1.56	5-9	0.95	1.39
21-30 Years	2.64	3.41	10+	1.69	1.48
30+ Years	2.31	N/A	Other	1.61	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.6%	2.1%	Households	3,118	963
25-34	10.0%	24.8%	Families	2,407	487
34-44	22.7%	20.4%	With School-Age Children	772	186
45-54	21.6%	13.2%	% Households	24.8%	19.3%
55-64	14.0%	11.5%			
65-74	17.7%	14.2%			
75+	13.4%	13.8%			

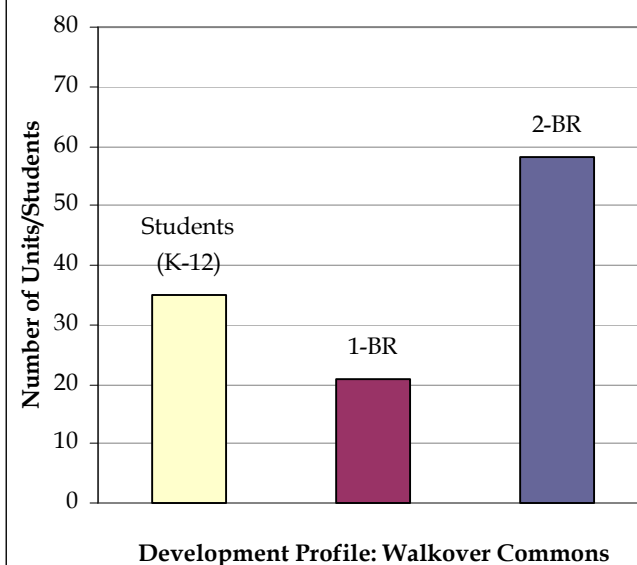
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

# Brockton

Population (2000)	94,304
<u>Total Housing Units</u>	34,837
% Single-Family	46.6%
% Multi-Family	21.8%
<u>K-12 Enrollments</u>	
1990	14,738
2000	16,869
% Change	14.5%
<u>Expenditures (2000)</u>	\$197,507,437
Integrated School Costs	\$134,138,109
% Change 1990-2000	108.3%
Municipal-Residential	\$59,445,501
Municipal-Nonresidential	\$3,923,826
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-27.9%
Residential +/- %	11.2%

## Multi-Family Housing Sample: Brockton

(79 Units, 35 Children, .44 Children/Unit)



## Households and Housing Unit Profile: Brockton

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.74	2.12	1-detached	3.03	2.79
1 Year	3.03	2.41	1-attached	2.83	2.96
2-5 Years	3.35	2.53	2	3.25	2.57
6-10 Years	3.54	2.62	3-4	3.56	3.00
11-20 Years	3.58	2.25	5-9	2.32	2.23
21-30 Years	3.11	1.84	10+	1.71	1.63
30+ Years	2.79	1.74	Other	3.50	3.72

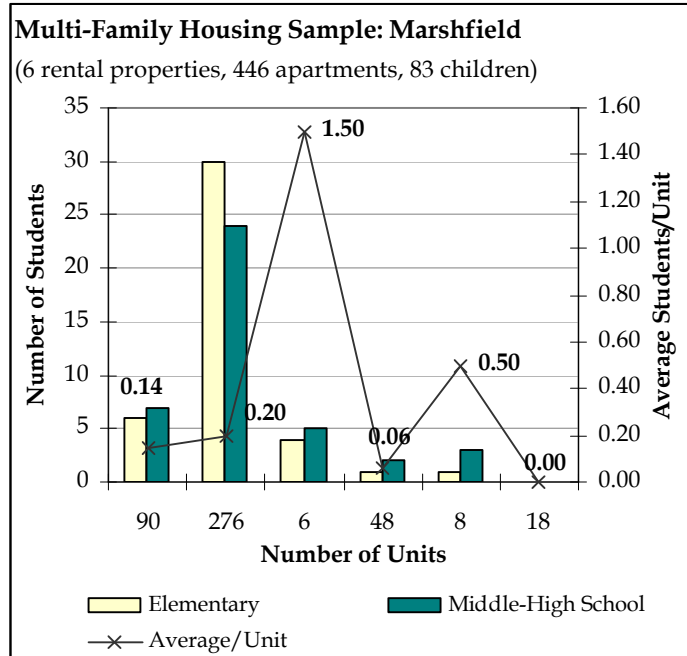
% Householders by Age	<u>Average Household Size</u>		Household Type	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
15-24	1.0%	8.5%	Households	18,365	15,310
25-34	11.6%	23.6%	Families	14,095	8,593
34-44	23.1%	23.8%	With School-Age Children	5,048	4,278
45-54	23.5%	18.0%	% Households	27.5%	27.9%
55-64	16.1%	10.1%			
65-74	13.9%	6.9%			
75+	10.8%	9.1%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.



## Marshfield

Population (2000)	24,324
Total Housing Units	9,954
% Single-Family	85.3%
% Multi-Family	10.8%
<b>K-12 Enrollments</b>	
1990	4,006
2000	4,570
% Change	14.1%
<b>Expenditures (2000)</b>	
Integrated School Costs	\$41,478,951
% Change 1990-2000	73.0%
Municipal-Residential	\$12,135,336
Municipal-Nonresidential	\$1,359,081
<b>Accuracy of Per Capita Multiplier Forecast</b>	
Schools +/- %	-12.0%
Residential +/- %	52.0%



### Households and Housing Unit Profile: Marshfield

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.92	1.87	1-detached	2.96	2.23
1 Year	2.75	1.78	1-attached	2.18	2.52
2-5 Years	3.07	1.94	2	2.66	2.19
6-10 Years	3.38	2.16	3-4	1.33	1.41
11-20 Years	3.12	1.76	5-9	1.50	1.56
21-30 Years	2.75	1.34	10+	1.83	1.64
30+ Years	2.12	0.81	Other	3.00	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.2%	1.8%	Households	7,228	1,677
25-34	12.6%	20.3%	Families	5,884	791
34-44	23.5%	23.7%	With School-Age Children	2,102	360
45-54	30.1%	20.7%	% Households	29.1%	21.5%
55-64	16.7%	12.3%			
65-74	10.5%	8.5%			
75+	6.3%	12.7%			

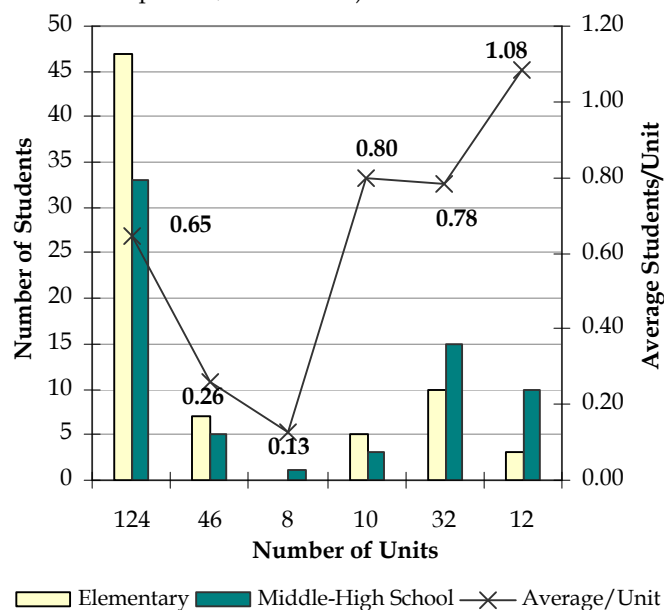
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Barnstable

Population (2000)	47,821
Total Housing Units	25,018
% Single-Family	84.1%
% Multi-Family	8.5%
<u>K-12 Enrollments</u>	
1990	5,705
2000	7,029
% Change	23.2%
<u>Expenditures (2000)</u>	\$87,357,872
Integrated School Costs	\$50,529,866
% Change 1990-2000	105.3%
Municipal-Residential	\$29,199,366
Municipal-Nonresidential	\$7,628,640
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-20.7%
Residential +/- %	12.0%

### Multi-Family Housing Sample: Barnstable

(6 Developments: 220 Rental Units, 126 Children, 12 Ownership Units, 13 Children).



### Households and Housing Unit Profile: Barnstable

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.45	2.12	1-detached	2.49	2.45
1 Year	2.42	2.06	1-attached	1.81	2.49
2-5 Years	2.65	2.31	2	2.18	2.19
6-10 Years	2.65	2.17	3-4	1.94	1.82
11-20 Years	2.52	1.55	5-9	1.53	1.82
21-30 Years	2.03	1.72	10+	1.52	1.55
30+ Years	1.88	1.73	Other	2.55	1.67

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.6%	6.7%	Households	14,943	4,683
25-34	7.7%	20.9%	Families	10,751	2,238
34-44	19.3%	25.0%	With School-Age Children	3,155	891
45-54	21.1%	17.3%	% Households	21.1%	19.0%
55-64	17.1%	7.3%			
65-74	16.4%	7.8%			
75+	17.7%	15.0%			

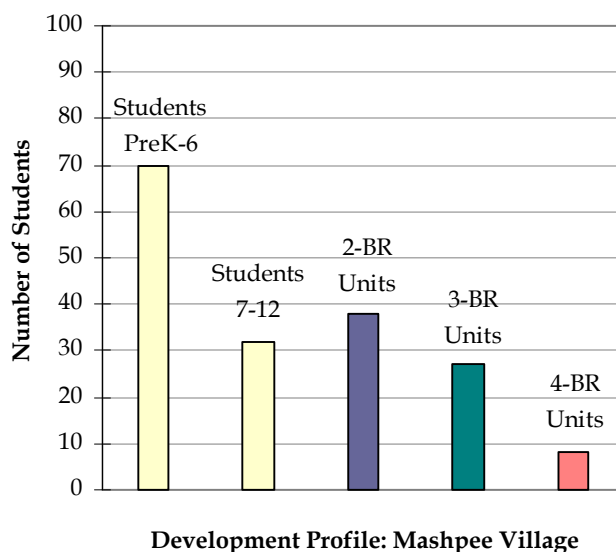
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Mashpee

Population (2000)	12,946
<u>Total Housing Units</u>	8,325
% Single-Family	76.4%
% Multi-Family	8.4%
<u>K-12 Enrollments</u>	
1990	1,188
2000	2,173
% Change	83.0%
<u>Expenditures (2000)</u>	\$29,254,828
Integrated School Costs	\$14,439,597
% Change 1990-2000	122.2%
Municipal-Residential	\$12,918,350
Municipal-Nonresidential	\$1,896,881
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	8.6%
Residential +/- %	46.7%

### Multi-Family Housing Sample: Mashpee

(1 Development: 73 Family Units, 72 Elderly Units, 102 Children; 1.40 Children/Family Unit).



### Households and Housing Unit Profile: Mashpee

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.40	2.63	1-detached	2.57	3.07
1 Year	2.29	2.46	1-attached	1.75	1.86
2-5 Years	2.49	2.77	2	1.13	2.46
6-10 Years	2.49	2.86	3-4	1.55	2.47
11-20 Years	2.51	1.79	5-9	1.58	1.84
21-30 Years	2.01	1.14	10+	1.50	1.53
30+ Years	2.05	N/A	Other	1.55	2.41

% Householders by Age	<u>Average Household Size</u>		Household Type	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
15-24	0.2%	4.6%	Households	4,382	874
25-34	11.0%	25.3%	Families	3,101	534
34-44	22.1%	31.2%	With School-Age Children	956	264
45-54	18.8%	14.0%	% Households	21.8%	30.2%
55-64	16.3%	7.9%			
65-74	18.4%	11.3%			
75+	13.2%	5.7%			

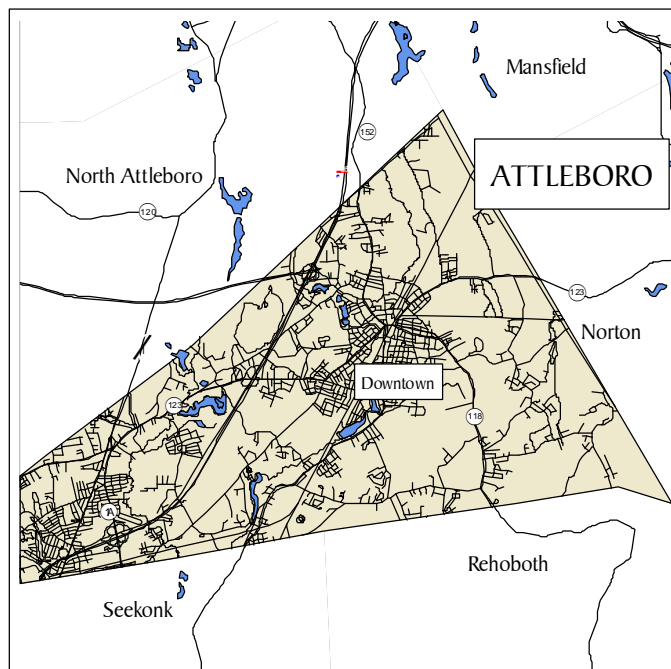
Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Attleboro

**Population and Housing.** Attleboro's housing and population growth statistics are a measure of the city's vitality. Once considered New England's leading jewelry producer, Attleboro retains a large base of jewelry and silver plating industries today. Its industrial history is evident not only in the make-up of Attleboro's economy, but also in the housing mix and density that define its downtown neighborhoods: single-family homes alongside two-, three- and four-unit buildings, all contributing to the city's visual character and diversity.

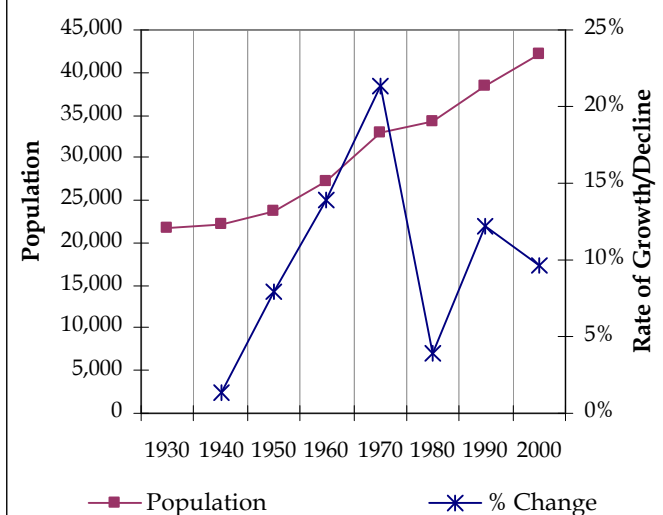
Attleboro ranks 6 out of all 45 cities in Massachusetts for 1990-2000 population growth at 9.6% (Fig. 1). During the 1990s, Attleboro absorbed a 10% increase in housing units and a 13.2% increase in households.<sup>1</sup> About 13% of the city's housing stock was built during the past decade, a pace of residential development that Attleboro has maintained since the 1960s. Most Attleboro residents own their homes, and a substantial majority of its owner-occupied housing units are single-family residences (79%). Two-family homes also offer a common source of ownership housing in Attleboro. Each year, two-family home developments account for about 10% of Attleboro's residential building permits.<sup>2</sup>

Of the 2,177 new housing units built in Attleboro during the 1990s, nearly 75% are owner-occupied and 22%, renter-occupied.<sup>3</sup> Multi-family developments constitute less than 10% of the city's new homes and 15% of its entire housing inventory. Most of the large multi-family developments are apartments, which make up 36% of the city's 6,100 rental units.<sup>4</sup> Federal census data show that 5,800 renters live in Attleboro and they are more likely to occupy two- to four-unit homes (49%) than any other type of housing.<sup>5</sup> Among family renters, 73% of those with 3+-person households live in single-family, two- or three-family homes.<sup>6</sup>



**Fig. 1. Population Change: 1930-2000**

(Source: MISER)

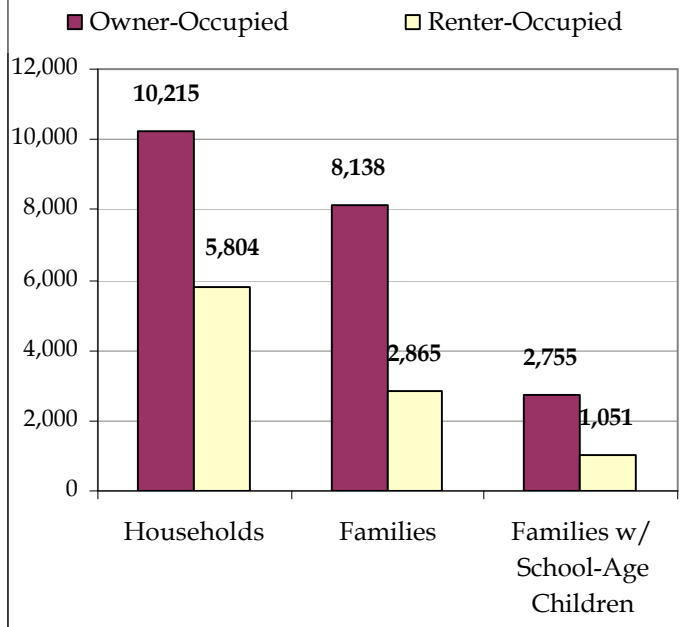


**School Enrollments.** The Attleboro Public Schools opened the last decade with 5,587 children in grades K-12. By 2000, the city was educating 6,922 students. Attleboro's 23.9% enrollment growth rate is on the high end of the average range for the Commonwealth and ranks ninth among urban school systems.<sup>7</sup> During the 1990s, the city's integrated school operating expenditures increased by 67%, not including debt service for school construction, expansion and modernization projects.

**Housing and Children.** Though Attleboro is incorporated as a city, its physical, economic and demographic characteristics suggest a more suburban than urban identity. New residential development in Attleboro consists mainly of subdivisions. In fact, three-fourths of the city's new housing units are single-family residences, 94% occupied by homeowners. Since homes in Attleboro typically cost less than homes closer to Boston, its suburban neighborhoods attract young families: more than 65% of all homebuyers in Attleboro after 1990 were 25-34 year olds.<sup>8</sup> In the same period, the city also experienced a lower-than-average rate of turnover in owner-occupied housing units. As a result, Attleboro retained many families that bought homes in the city a decade before, and by the early 1990s their children had begun to attend public school. The impact of in-migration that occurred over the past 10-20 years is evident in the larger average size of owner-occupant households that came to Attleboro after 1980 (see "Households and Housing Units Profile" at the end of this section). Considering only householders of childbearing age, more than 3,000 families bought their present home in Attleboro between 1980-2000. Fig. 2 indicates that a total of 2,755 Attleboro homeowners have school-age children.

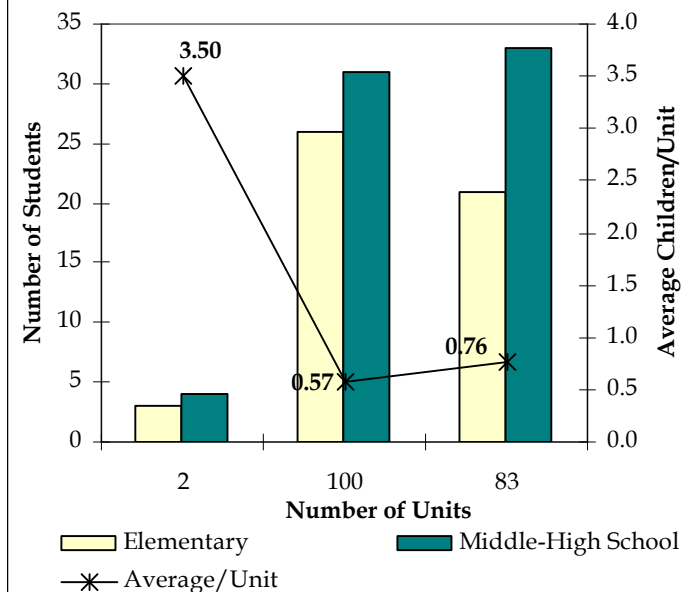
**Fig. 2: Families with Children by Tenure**

(Source: Census Bureau)



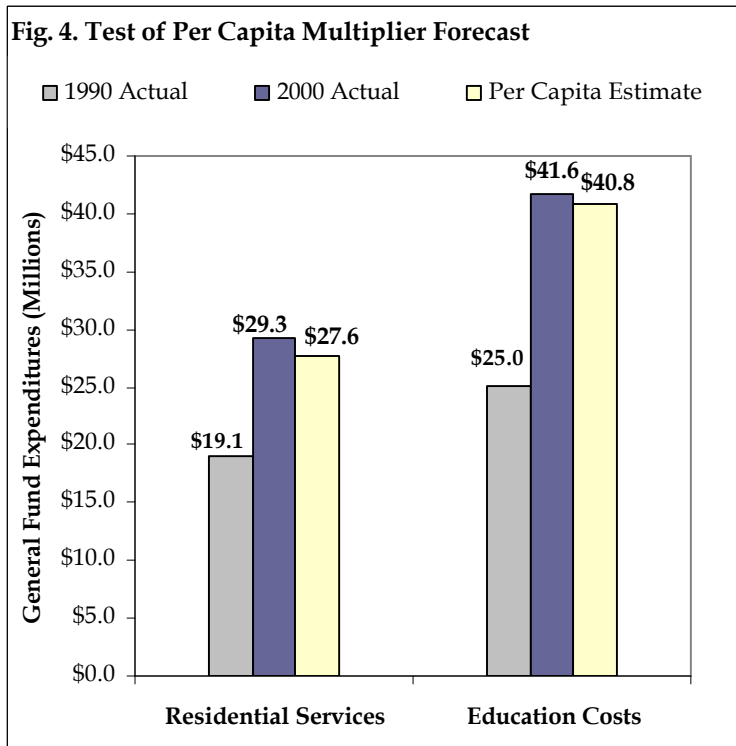
**Fig. 3: School Children in Multi-Family Housing**

(Sample: 3 developments; 184 units, 118 children)

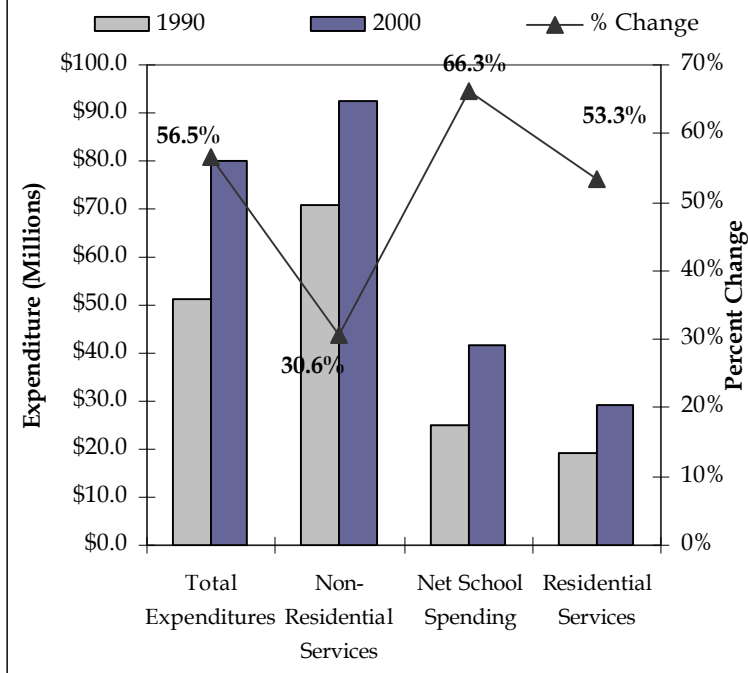


Since very little new rental development has occurred in Attleboro, multi-family units most likely had a nominal impact on school enrollment growth. Undeniably, Attleboro apartments house many families with school children, but there is an important difference between the city's apartment developments and the attached housing units found in older neighborhoods: average household size. Fig. 3 presents data for three rental properties in Attleboro. The properties differ in several ways, but it is noteworthy that the two-family building exceeds the larger apartment developments for children per unit. This is consistent with federal census data that suggest a correlation between renter household size and the density and scale of development.

**Fiscal Impact of Residential Development.** Fig. 4 shows that if Attleboro had used the per capita multiplier method in 1990 to predict the fiscal impact of new development, assuming a ten-year growth rate equal to what occurred by 2000, city officials would have arrived at estimates very close to their actual FY 2000 expenditures. The precision of per capita multipliers for forecasting costs in Attleboro seemingly reflects the city's stable 40-year growth history. However, the estimates belie significant changes that occurred in Attleboro during the 1990s.



**Fig. 5. Actual Change in Municipal & School Expenditures, 1990-2000**



Between 1990-2000, Attleboro's total general fund expenditures rose by 56.5% (Fig. 5). Most of the city's expenditure growth involved education, public safety and solid waste, and nearly all of the increases materialized after 1995. In FY 2000, Attleboro was spending \$1.52 of general fund revenue

for every \$1.00 spent in FY 1995, yet the ratio of FY 1995-FY 1990 expenditures was only \$1.03. In effect, city government operated on level funding for the first half of the 1990s. Thereafter, no cost grew more dramatically than solid waste: by FY 2000, Attleboro was spending \$4.76 for every \$1.00 in revenue budgeted for solid waste services in FY 1995. The increase had little to do with new development. Rather, it was attributable to higher disposal fees charged by SEMASS.<sup>9</sup>

The Education Reform Act also affected city expenditures. Just as skyrocketing solid waste costs could not be foreseen in 1990, changes to state education laws and state aid formulas were barely on the horizon at the beginning of the decade. From the beginning of Education Reform to FY 2001, Attleboro's net school spending increased from 84.5% to 101.4% of the foundation budget set by state education officials.<sup>10</sup> Clearly, education expenditures grew much faster than school enrollments, but so did state aid. Between 1990-2000, state aid to Attleboro increased by 103%, mainly from Chapter 70 and school construction reimbursements from the School Building Assistance Bureau (SBAB).<sup>11</sup>

**Summary.** Steady single-family home production contributed most of Attleboro's school enrollment growth during the 1990s because a majority of the city's new homes are in suburban neighborhoods. Demographic changes were also a factor, however. The percentage of family households declined as one-person and non-family households increased, but the average number of children per family rose from .57 in 1990 to .64 in 2000.<sup>12</sup> Fewer school-age children lived in apartment developments than in Attleboro's inventory of older two-, three- and four-unit homes, apparently because of differences in unit size, number of bedrooms and location. More families lived in multi-unit homes built prior to 1939 – that is, in the city's established neighborhoods – than in apartment developments built since 1970.<sup>13</sup>

### Households and Housing Unit Profile: Attleboro

Years in Residence	Average Household Size			Average Household Size	
	Owner-Occupied	Renter-Occupied	Units in Structure	Owner-Occupied	Renter-Occupied
Town Average	2.86	2.08	1-detached	2.95	2.84
1 Year	2.64	1.98	1-attached	2.85	2.33
2-5 Years	2.99	2.22	2	2.90	2.16
6-10 Years	3.31	2.01	3-4	2.60	2.19
11-20 Years	3.18	1.95	5-9	1.60	2.09
21-30 Years	2.79	1.85	10+	1.82	1.51
30+ Years	1.97	1.96	Other	1.92	2.18

% Households by Age of Householder	Owner-Occupied	Renter-Occupied	Number of Households by Household Type	Owner-Occupied	Renter-Occupied
15-24	0.8%	7.9%	Households	10,215	5,804
25-34	14.4%	27.2%	Families	8,138	2,865
34-44	28.6%	21.1%	With School-Age Children	2,755	1,051
45-54	21.2%	16.1%	% Households	27.0%	18.1%
55-64	14.3%	8.2%			
65-74	11.5%	8.8%			
75+	9.2%	10.8%			

**Source:** Bureau of the Census, Census 2000, Summary File 3, Tables H14, H32, H33, HCT1, HCT9. Cross-tabulations and statistics by author.

## END NOTES

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<sup>1</sup> Bureau of the Census, 1990 Census of Population and Housing, Summary File 1, Table DP-1; Census 2000, Summary File 3, Tables P1, P10: Massachusetts, City of Attleboro.

<sup>2</sup> Bureau of the Census, reported by Massachusetts Institute for Social and Economic Research (MISER) [online database] "Residential Building Permits Issues in Massachusetts," 1995-2000, in EXCEL format [an95-98.xls through ytd2002\_12.xls], INTERNET at <<http://www.umass.edu/miser/>> [updated January 2003], cited 14 April 2003.

<sup>3</sup> Census 2000, Summary File 3, Table H34.

<sup>4</sup> Census 2000, Summary File 3, Tables H8, H31, H32.

<sup>5</sup> Census 2000, Summary File 3, Tables H32, HCT5.

<sup>6</sup> Census 2000, Tables HCT2, HCT3.

<sup>7</sup> Massachusetts Department of Education, "Long-Term Trends in School Enrollments," Attleboro Public Schools, in HTML format, INTERNET at <<http://www.mass.gov/doe>> cited 24 March 2003.

<sup>8</sup> Census 2000, Table HCT5.

<sup>9</sup> Community Opportunities Group, Inc., and Connery Associates, City of Attleboro Land Use Growth Management Plan, June 2000.

<sup>10</sup> Massachusetts Department of Education, Report of the Foundation Budget Review Commission (June 2001), Table 5, in HTML format [table5.htm], INTERNET at <<http://www.state.ma.us/legis/reports/foundation.htm>>, cited October 2001.

<sup>11</sup> Massachusetts Department of Revenue, Municipal Data Bank [online database], "Cherry Sheets," in EXCEL format [csr90ctr.xls, csr00ctr.xls], INTERNET at <<http://www.mass.gov/dls>> cited 22 December 2000.

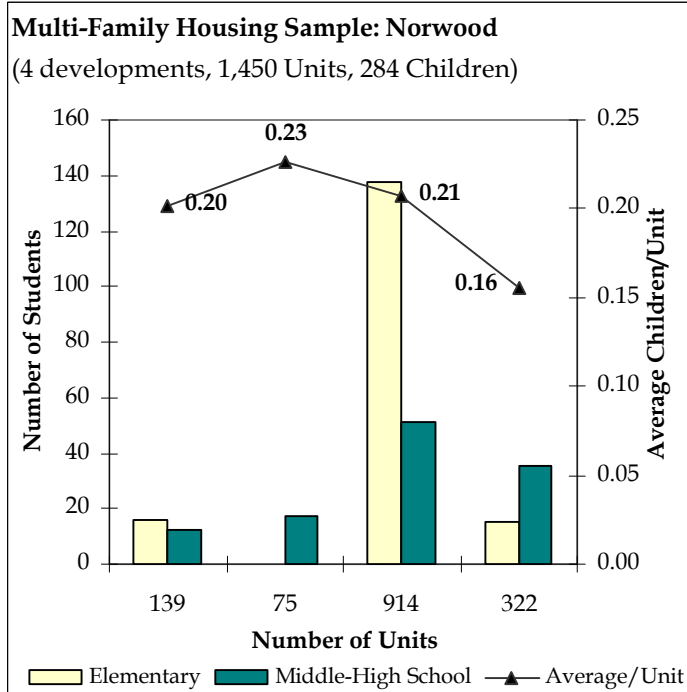
<sup>12</sup> 1990 Census of Population and Housing, Summary File 3, Tables P004, P023; Census 2000, Summary File 3, Tables P10, P16.

<sup>13</sup> Census 2000, Summary File 3, Tables HCT4, HCT5.



## Norwood

Population (2000)	28,587
Total Housing Units	11,945
% Single-Family	51.4%
% Multi-Family	24.2%
<u>K-12 Enrollments</u>	
1990	3,312
2000	3,539
% Change	6.9%
<u>Expenditures (2000)</u>	\$75,205,291
Integrated School Costs	\$27,875,999
% Change 1990-2000	39.4%
Municipal-Residential	\$28,500,330
Municipal-Nonresidential	\$18,828,962
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-0.7%
Residential +/- %	-9.3%



### Households and Housing Unit Profile: Norwood

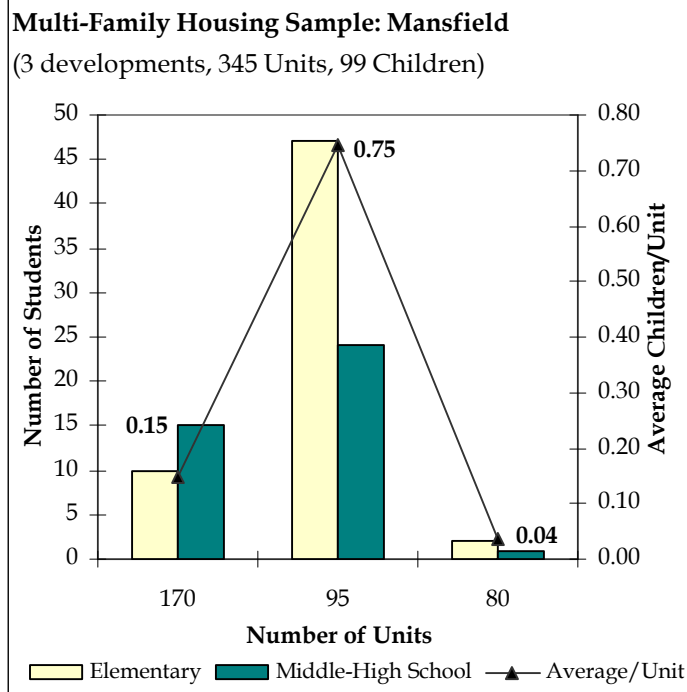
Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.70	2.02	1-detached	2.82	2.68
1 Year	2.62	2.20	1-attached	2.33	2.53
2-5 Years	2.66	2.08	2	2.36	2.10
6-10 Years	3.50	1.90	3-4	1.33	2.10
11-20 Years	3.31	1.69	5-9	1.29	1.84
21-30 Years	2.52	1.83	10+	1.61	1.76
30+ Years	2.06	1.45	Other	N/A	N/A

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	4.7%	Households	6,648	4,975
25-34	8.6%	28.2%	Families	5,017	2,383
34-44	20.5%	24.5%	With School-Age Children	1,527	736
45-54	19.6%	15.8%	% Households	23.0%	14.8%
55-64	16.8%	9.5%			
65-74	16.9%	7.8%			
75+	17.3%	9.6%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Mansfield

Population (2000)	22,414
<u>Total Housing Units</u>	8,120
% Single-Family	64.7%
% Multi-Family	21.8%
<u>K-12 Enrollments</u>	
1990	2,580
2000	4,228
% Change	63.9%
<u>Expenditures (2000)</u>	\$43,458,954
Integrated School Costs	\$27,809,195
% Change 1990-2000	118.1%
Municipal-Residential	\$11,993,966
Municipal-Nonresidential	\$3,655,793
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-3.0%
Residential +/- %	-12.5%



### Households and Housing Unit Profile: Mansfield

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.10	2.11	1-detached	3.22	3.00
1 Year	2.51	1.96	1-attached	2.23	3.67
2-5 Years	3.31	2.06	2	2.64	2.48
6-10 Years	3.56	2.38	3-4	2.61	2.34
11-20 Years	3.09	2.13	5-9	1.45	2.30
21-30 Years	2.66	2.91	10+	1.46	1.63
30+ Years	2.50	1.27	Other	N/A	N/A

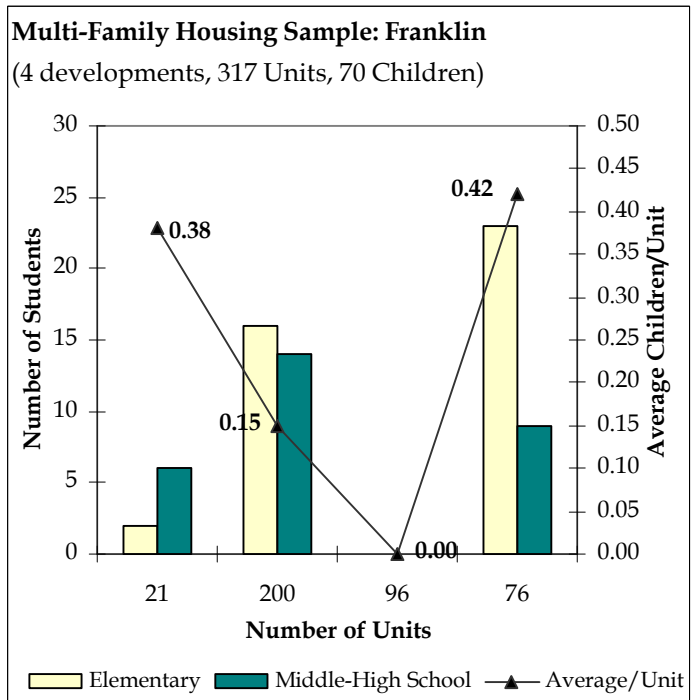
  

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.5%	5.5%	Households	5,695	2,247
25-34	15.3%	36.0%	Families	4,837	1,061
34-44	37.8%	27.1%	With School-Age Children	2,055	366
45-54	24.5%	12.9%	% Households	36.1%	16.3%
55-64	11.1%	4.4%			
65-74	5.2%	4.5%			
75+	5.5%	9.7%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Franklin

Population (2000)	29,560
<u>Total Housing Units</u>	10,327
% Single-Family	70.3%
% Multi-Family	12.6%
<u>K-12 Enrollments</u>	
1990	3,319
2000	5,182
% Change	56.1%
<u>Expenditures (2000)</u>	\$52,958,090
Integrated School Costs	\$38,944,017
% Change 1990-2000	144.6%
Municipal-Residential	\$11,125,035
Municipal-Nonresidential	\$2,889,038
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-17.2%
Residential +/- %	7.6%



### Households and Housing Unit Profile: Franklin

Years in Residence	<u>Average Household Size</u>		Units in Structure	<u>Average Household Size</u>	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	3.06	1.95	1-detached	3.22	2.71
1 Year	3.04	2.11	1-attached	2.25	2.02
2-5 Years	3.23	2.12	2	2.59	2.20
6-10 Years	3.37	1.53	3-4	2.05	1.64
11-20 Years	3.16	1.66	5-9	1.99	1.80
21-30 Years	2.66	1.18	10+	1.33	1.89
30+ Years	2.12	1.46	Other	N/A	N/A

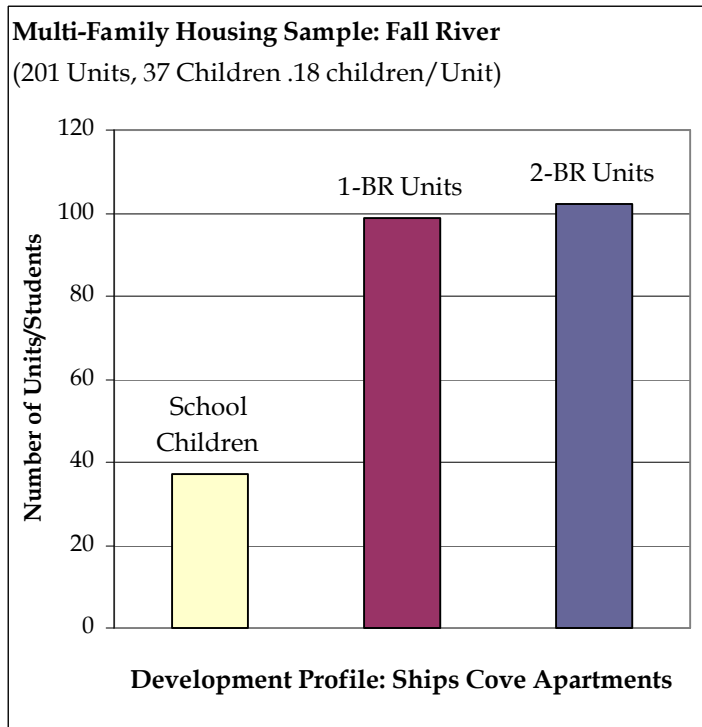
  

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	0.4%	4.0%	Households	8,261	1,891
25-34	14.6%	27.9%	Families	7,082	818
34-44	34.9%	19.9%	With School-Age Children	3,007	325
45-54	23.7%	11.3%	% Households	36.4%	17.2%
55-64	12.4%	8.2%			
65-74	7.5%	11.1%			
75+	6.5%	17.6%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

## Fall River

Population (2000)	91,938
Total Housing Units	41,857
% Single-Family	19.8%
% Multi-Family	30.8%
<u>K-12 Enrollments</u>	
1990	12,302
2000	12,180
% Change	-1.0%
<u>Expenditures (2000)</u>	\$154,511,720
Integrated School Costs	\$102,655,151
% Change 1990-2000	88.2%
Municipal-Residential	\$45,962,256
Municipal-Nonresidential	\$5,894,313
<u>Accuracy of Per Capita Multiplier Forecast</u>	
Schools +/- %	-30.5%
Residential +/- %	6.9%



### Households and Housing Unit Profile: Fall River

Years in Residence	Average Household Size		Units in Structure	Average Household Size	
	Owner-Occupied	Renter-Occupied		Owner-Occupied	Renter-Occupied
Town Average	2.75	2.09	1-detached	2.89	2.18
1 Year	3.05	2.20	1-attached	2.42	2.47
2-5 Years	3.03	2.14	2	2.58	2.12
6-10 Years	3.33	2.17	3-4	2.72	2.31
11-20 Years	3.15	1.98	5-9	2.30	2.11
21-30 Years	2.50	1.78	10+	2.05	1.58
30+ Years	2.04	1.67	Other	2.23	1.90

% Householders by Age	Owner-Occupied	Renter-Occupied	Household Type	Owner-Occupied	Renter-Occupied
15-24	1.2%	9.5%	Households	13,539	25,220
25-34	8.9%	24.4%	Families	10,444	13,246
34-44	19.3%	18.8%	With School-Age Children	3,211	5,488
45-54	23.7%	14.8%	% Households	23.7%	21.8%
55-64	16.0%	9.5%			
65-74	15.3%	9.5%			
75+	15.7%	13.6%			

Source: Bureau of the Census, Census 2000, SF 3, Tables H14, H32, H33, HCT1, HCT9.

Housing the Commonwealth's  
School-Age Children

# Appendix

A: Developer Report Form

B: Local Report Form

C: Statewide Data Sets

D: Boxborough Demographic Study (2001)

## APPENDIX A

**Citizens' Housing and Planning Association**  
**Request for Data: School Children in Multifamily Housing Developments**  
**Revised Request: 2/18/03**

In response to requests for a simplified reporting procedure, we ask that you complete the following form and return it to CHAPA no later than February 28, 2003. If you have any questions, please contact Judi Barrett, Community Opportunities Group, 617-542-3300 ext. 308, email address: jbarrett@cogincorp.com, or John Connery, Connery Associates (781-665-8130), email address: johnconnery@attbi.com.

**Please fax your completed forms to Aaron Gornstein, CHAPA Executive Director, 617-742-3953.**

Name of Owner/Developer: \_\_\_\_\_

Name of Development: \_\_\_\_\_

Location (City/Town): \_\_\_\_\_

Total Units: \_\_\_\_\_

Year Built (Approx. Age): \_\_\_\_\_

Check One:                      Ownership (Condominiums) ☐                      Rental ☐

In the table below, please enter the number of school-age children (ages 5-17) living in the development by (a) unit size and (b) rent level. For example, if your development includes 10 affordable two-bedroom units with a total of five children, enter "10" in the "Number of Units" column and "5" in the "Number of School-Age Children" column under the heading "Affordable Units," next to "Two-Bedroom Units."

<u>UNIT SIZE</u>	<b>Affordable Units</b>		<b>Market Units</b>		<b>Total Units</b>
	Number of Units	Number of School-Age Children	Number of Units	Number of School-Age Children	Sum of Affordable + Market
Studio					
1-Bedroom					
2-Bedroom					
3-Bedroom+					

Name of person completing this form: \_\_\_\_\_

Office Phone Number: \_\_\_\_\_

APPENDIX B

REQUEST FOR INFORMATION

Citizens' Housing and Planning Association  
Community Opportunities Group, Inc. | Connery Associates

For assistance completing this form, please contact Community Opportunities Group, Inc.,  
617-542-3300, and speak with Judi Barrett at ext. 308 or Karen Byron at ext. 319.

COMMUNITY: \_\_\_\_\_ DATE: \_\_\_\_\_

SCHOOL DISTRICT: \_\_\_\_\_

	INSTRUCTIONS. Enter the number of children receiving school bus transportation for the grade levels listed below, for each address shown on the left. If your schools operate on a different grade configuration from the groupings in our chart, indicate the grades you are reporting on the line next to "OR." Thank you.			
Development/ # Units Address	Grades K-5 OR _____	Grades 6-8 OR _____	Grades 7-12 OR _____	Other: _____

Please provide us with a contact name and telephone number to call in case we have questions.

CONTACT NAME: \_\_\_\_\_ PHONE NUMBER: \_\_\_\_\_

PERSON COMPLETING THIS FORM: \_\_\_\_\_

RETURN THIS FORM BY MAIL TO: Community Opportunities Group, Inc., 129 Kingston Street Third Floor, Boston, MA 02111,  
ATT: Judi Barrett, or BY FAX to 617-542-3302. Thank you!

## APPENDIX C

### State Data Sets by County

#### Change in Massachusetts Housing Inventory: 1990-2000

Units in Structure	<u>2000</u>	<u>1990</u>	Absolute Change	% Total Increase/Decrease
1, detached	1,374,479	1,232,188	142,291	95.3%
1, attached	104,129	89,544	14,585	9.8%
2	304,501	306,484	-1,983	-1.3%
3 or 4	299,416	294,064	5,352	3.6%
5 to 9	156,135	159,775	-3,640	-2.4%
10 to 19	113,697	127,422	-13,725	-9.2%
20 to 49	102,571	103,459	-888	-0.6%
50 or more	142,321	110,110	32,211	21.6%
Mobile home	24,117	24,116	1	0.0%
Boat, RV, van, etc.	<u>623</u>	<u>25,549</u>	<u>-24,926</u>	<u>-16.7%</u>
Total	2,621,989	2,472,711	149,278	100.0%

#### Housing Unit Occupancy Characteristics, 1990-2000

Summary Statistics	2000	1990	% Change	Absolute
Total Units (Massachusetts)	2,621,989	2,472,711	6.0%	149,278
Occupied housing units	2,443,580	2,247,110	8.7%	196,470
Owner-occupied housing units	1,508,052	1,331,493	13.3%	176,559
Renter-occupied housing units	935,528	915,617	2.2%	19,911
Vacant Units	178,409	225,601	-20.9%	-47,192

Units for Rent	2000	1990	% Change	Absolute
Massachusetts	35,943	67,772	-47.0%	-31,829
Barnstable	1,569	3,122	-49.7%	-1,553
Berkshire	1,547	1,443	7.2%	104
Bristol	4,587	5,716	-19.8%	-1,129
Dukes	73	137	-46.7%	-64
Essex	3,508	9,407	-62.7%	-5,899
Franklin	290	616	-52.9%	-326
Hampden	3,945	4,484	-12.0%	-539
Hampshire	499	697	-28.4%	-198
Middlesex	5,433	11,948	-54.5%	-6,515
Nantucket	56	145	-61.4%	-89
Norfolk	2,156	3,653	-41.0%	-1,497
Plymouth	1,441	3,247	-55.6%	-1,806
Suffolk	5,930	15,108	-60.7%	-9,178
Worcester	4,909	8,049	-39.0%	-3,140



## APPENDIX C

### State Data Sets by County

#### Change in Seasonal Housing, 1990-2000

Seasonal Homes	2000	1990	% Change	Absolute
Massachusetts	97,434	90,367	7.8%	7,067
Barnstable	47,610	46,834	1.7%	776
Berkshire	6,674	6,324	5.5%	350
Bristol	2,256	1,981	13.9%	275
Dukes	8,102	5,390	50.3%	2,712
Essex	4,330	4,654	-7.0%	-324
Franklin	1,157	1,247	-7.2%	-90
Hampden	2,060	1,647	25.1%	413
Hampshire	1,071	877	22.1%	194
Middlesex	3,375	1,652	104.3%	1,723
Nantucket	5,213	3,568	46.1%	1,645
Norfolk	1,286	827	55.5%	459
Plymouth	8,865	11,086	-20.0%	-2,221
Suffolk	2,256	959	135.2%	1,297
Worcester	3,179	3,321	-4.3%	-142

#### Growth and Change in Single-Family, Multi-Family Housing:<sup>1</sup> 1990-2000

	2000		1990		% Change	
	Single-Family	Multi-Family	Single-Family	Multi-Family	Single-Family	Multi-Family
Massachusetts	1,374,479	514,724	1,237,786	497,917	9.9%	3.3%
Barnstable	121,955	9,585	109,417	8,697	10.3%	9.3%
Berkshire	41,315	7,391	38,638	7,174	6.5%	2.9%
Bristol	111,183	34,963	97,059	33,518	12.7%	4.1%
Dukes	13,518	259	10,491	203	22.4%	21.6%
Essex	149,666	51,702	135,090	49,504	9.7%	4.3%
Franklin	20,437	3,568	18,565	3,493	9.2%	2.1%
Hampden	102,415	34,103	95,036	35,053	7.2%	-2.8%
Hampshire	35,500	9,488	30,686	8,975	13.6%	5.4%
Middlesex	282,013	123,247	257,471	116,422	8.7%	5.5%
Nantucket	7,964	153	5,880	144	26.2%	5.9%
Norfolk	151,611	55,464	138,666	50,317	8.5%	9.3%
Plymouth	130,157	18,970	117,864	19,115	9.4%	-0.8%
Suffolk	39,097	118,415	37,058	118,230	5.2%	0.2%
Worcester	167,648	47,416	145,865	47,072	13.0%	0.7%

<sup>1</sup> “Multi-family” includes buildings of five or more housing units.

## APPENDIX C

### State Data Sets by County

#### Owner and Renter Occupancy Trends by County, 1990-2000

	<u>Renter-Occupied Units</u>				<u>Owner-Occupied Units</u>			
	<u>2000</u>	<u>1990</u>	<u>Absolute</u>	<u>%</u>	<u>2000</u>	<u>1990</u>	<u>Absolute</u>	<u>%</u>
				<u>Change</u>				<u>Change</u>
Massachusetts	935,332	915,577	19,755	2.2%	1,508,248	1,331,533	176,715	13.3%
Barnstable	21,039	21,450	-411	-1.9%	73,783	56,136	17,647	31.4%
Berkshire	18,518	18,902	-384	-2.0%	37,488	35,413	2,075	5.9%
Bristol	78,880	76,825	2,055	2.7%	126,531	110,843	15,688	14.2%
Dukes	1,842	1,420	422	29.7%	4,579	3,583	996	27.8%
Essex	100,397	97,602	2,795	2.9%	175,022	153,683	21,339	13.9%
Franklin	9,737	9,517	220	2.3%	19,729	18,123	1,606	8.9%
Hampden	66,764	67,547	-783	-1.2%	108,524	102,359	6,165	6.0%
Hampshire	19,624	18,889	735	3.9%	36,367	31,163	5,204	16.7%
Middlesex	214,629	209,734	4,895	2.3%	346,591	309,793	36,798	11.9%
Nantucket	1,366	969	397	41.0%	2,333	1,628	705	43.3%
Norfolk	75,414	73,627	1,787	2.4%	173,413	154,171	19,242	12.5%
Plymouth	41,122	40,386	736	1.8%	127,239	109,133	18,106	16.6%
Suffolk	184,170	178,181	5,989	3.4%	94,552	85,880	8,672	10.1%
Worcester	101,830	100,528	1,302	1.3%	182,097	159,625	22,472	14.1%

#### Composition of Families with School-Age Children

	Total Families	<u>%</u>		<u>Couples</u>		<u>Single Parents</u>	
		<u>Married</u>	<u>% Single</u>	<u>w/</u>	<u>Average</u>	<u>w/</u>	<u>Average</u>
		<u>Couples</u>	<u>Parents</u>	<u>School</u>	<u># School</u>	<u>School</u>	<u># School</u>
Massachusetts	1,587,537	76.9%	23.1%	421,022	1.67	154,852	1.58
Barnstable	61,313	81.5%	18.5%	13,632	1.65	5,154	1.50
Berkshire	35,225	77.3%	22.7%	8,435	1.70	3,711	1.55
Bristol	141,545	76.6%	23.4%	37,702	1.63	14,611	1.52
Dukes	3,838	76.7%	23.3%	1,026	1.55	449	1.60
Essex	186,043	76.9%	23.1%	50,717	1.66	19,106	1.62
Franklin	18,517	77.6%	22.4%	4,867	1.66	2,076	1.55
Hampden	116,570	70.2%	29.8%	28,409	1.69	16,127	1.66
Hampshire	33,879	79.7%	20.3%	9,300	1.66	3,299	1.47
Middlesex	363,933	80.7%	19.3%	99,645	1.66	25,973	1.55
Nantucket	2,114	82.5%	17.5%	581	1.59	159	1.41
Norfolk	166,826	82.4%	17.6%	49,053	1.66	10,416	1.50
Plymouth	123,120	79.5%	20.5%	36,875	1.73	10,864	1.57
Suffolk	140,802	59.7%	40.3%	26,290	1.67	23,568	1.60
Worcester	193,812	78.1%	21.9%	54,490	1.69	19,339	1.59

# APPENDIX C

## State Data Sets by County

### Change in Renter Occupancy of Single-Family Homes

	<u>1990</u>	<u>2000</u>	%	Absolute
Massachusetts	82,461	89,729	8.8%	7,268
Barnstable	10,519	10,196	-3.1%	-323
Berkshire	2,512	3,075	22.4%	563
Bristol	6,155	7,016	14.0%	861
Dukes	1,071	1,287	20.2%	216
Essex	8,402	9,149	8.9%	747
Franklin	1,566	1,859	18.7%	293
Hampden	5,504	7,738	40.6%	2,234
Hampshire	2,423	2,828	16.7%	405
Middlesex	15,449	15,314	-0.9%	-135
Nantucket	572	782	36.7%	210
Norfolk	7,378	7,297	-1.1%	-81
Plymouth	8,612	8,368	-2.8%	-244
Suffolk	3,384	4,473	32.2%	1,089
Worcester	8,914	10,347	16.1%	1,433

# APPENDIX C

## State Data Sets by County

**Occupied Housing Units: Increase/Decrease in Units by Number of Bedrooms, 1990-2000**

	Total	Owner-Occupied					Units by # Bedrooms					Renter-Occupied					Units by # Bedrooms/Unit				
		0	1	2	3	4	5+	0	1	2	3	4	5+	Total	0	1	2	3	4	5+	
Massachusetts	176,715	1,282	13,382	33,686	67,374	50,333	10,658	19,755	13,640	20,505	-10,445	-6,619	2,585	89							
Barnstable	17,647	34	389	2,962	10,075	3,647	540	-411	209	397	-579	-430	47	-55							
Berkshire	2,075	-1	361	419	1,054	-17	259	-384	30	333	-597	-411	189	72							
Bristol	15,688	110	1,002	2,338	8,079	3,339	820	2,055	512	1,910	-852	-96	417	164							
Dukes	996	5	74	180	593	134	10	422	15	200	161	67	-18	-3							
Essex	21,339	239	1,940	3,948	6,652	6,801	1,759	2,795	1,483	2,646	-1,118	-135	159	-240							
Franklin	1,606	4	-87	879	734	203	-127	220	91	153	-191	30	130	7							
Hampden	6,165	110	734	482	2,365	2,234	240	-783	701	832	-1,705	-1,449	633	205							
Hampshire	5,204	0	305	1,164	2,345	1,420	-30	735	-18	462	115	262	-119	33							
Middlesex	36,798	212	2,154	7,368	10,886	13,943	2,235	4,895	3,958	4,259	483	-2,934	-839	-32							
Nantucket	705	-14	-42	81	412	225	43	397	-8	148	193	42	26	-4							
Norfolk	19,242	154	1,309	4,303	3,582	8,188	1,706	1,787	819	3,413	-1,393	-993	163	-222							
Plymouth	18,106	55	999	2,973	9,455	3,819	805	736	466	416	-271	95	25	5							
Suffolk	8,672	289	2,978	3,299	574	39	1,493	5,989	4,551	3,663	-4,036	-11	1,778	44							
Worcester	22,472	85	1,266	3,290	10,568	6,358	905	1,302	831	1,673	-655	-656	-6	115							

Reduction in renter-occupied units

## APPENDIX D

Boxborough Demographic Study (2001)							
Data reprinted with permission of Alicia Altieri, Boxborough Town Planner <sup>1</sup>							
Road Name	Residents	Units	Persons/ unit	17 and under	17 and under/unit	Elementary school students	
Avebury Circle+	45	11	4.09	20	1.82	12	1.09
Baldwin *	25	11	2.27	4	0.36	4	0.36
Barteau Lane	14	4	3.50	4	1.00	1	0.25
Benjamin Drive+	12	4	3.00	7	1.75	6	1.50
Bicentennial**	14	5	2.80	2	0.40	0	0.00
Blanchard Road+	47	14	3.36	20	1.43	6	0.43
Boxmill Road+	40	12	3.33	8	0.67	0	0.00
Cedarwood Road+	30	8	3.75	13	1.63	6	0.75
Chester Road	43	13	3.31	13	1.00	3	0.23
Cobleigh Road+	42	14	3.00	12	0.86	5	0.36
Coolidge Farm Road+	58	14	4.14	25	1.79	19	1.36
Cortland*	90	32	2.81	25	0.78	10	0.31
Davidson Road	69	22	3.14	17	0.77	1	0.05
Eldridge Road	12	3	4.00	5	1.67	0	0.00
Emanuel Drive+	66	16	4.13	20	1.25	13	0.81
Fifer's Lane+	68	17	4.00	22	1.29	11	0.65
Flagg Hill	105	30	3.50	35	1.17	16	0.53
Guggins Lane+	65	19	3.42	14	0.74	5	0.26
Hager Lane+	54	13	4.15	23	1.77	11	0.85
Howard Lane**	16	5	3.20	3	0.60	0	0.00
Inches Brook Lane+	33	8	4.13	17	2.13	10	1.25
Joseph Road+	107	26	4.12	55	2.12	34	1.31
Macintosh*	37	16	2.31	8	0.50	2	0.13
Mayfair Drive+	80	17	4.71	21	1.24	27	1.59
Meadow Lane+	102	26	3.92	20	0.77	21	0.81
Meetinghouse Lane+	7	3	2.33	2	0.67	0	0.00
Nashoba Drive+	7	3	2.33	2	0.67	1	0.33
Old Orchard Lane+	21	8	2.63	5	0.63	3	0.38
Osceola Drive+	18	7	2.57	3	0.43	2	0.29
Patch Hill Road+	55	14	3.93	19	1.36	12	0.86
Pine Pasture Run+	20	5	4.00	10	2.00	1	0.20
Pierce Lane+	21	5	4.20	12	2.40	3	0.60
Prescott Road+	42	13	3.23	9	0.69	4	0.31
Reed Farm Road+	124	29	4.28	23	0.79	23	0.79
Robinson Road+	86	22	3.91	23	1.05	20	0.91
Russet Lane*	56	23	2.43	7	0.30	6	0.26
School House Lane+	19	6	3.17	13	2.17	3	0.50
Steele Lane+	45	11	4.09	16	1.45	8	0.73

<sup>1</sup> Table symbols. \*Condominium, \*\*Private common driveways, subdivision roads w/ single family+

### Boxborough Demographic Study (2001)

Data reprinted with permission of Alicia Altieri, Boxborough Town Planner<sup>1</sup>

Road Name	Residents	Units	Persons/ unit	17 and under	17 and under/unit	Elementary school students	
Stonehedge Place+	46	14	3.29	7	0.50	3	0.21
Tamarack Lane+	34	9	3.78	14	1.56	7	0.78
Tokatawan Spring Lane+	29	8	3.63	13	1.63	4	0.50
Waite Road+	64	20	3.20	13	0.65	8	0.40
Whitcomb Road	51	14	3.64	17	1.21	9	0.64
Whitney Lane+	59	14	4.21	24	1.71	8	0.57
Woodward **	18	5	3.60	6	1.20	0	0.00
Total	2096	593					
Average			3.48	14.47	1.17		

Source: Town Clerk  
School Department

### Condominium Developments

Location	Residents	Units	Persons/ unit	17 and under	17 and under/unit	Elementary school students	
Codman Hill Cotominiums (Codman Hill Road)	165	108	1.53	33	0.31	15	0.14
Liberty House Cotominiums (Liberty Square Road)	38	24	1.58	5	0.21	0	0.00
Liberty Village Cotominiums (Liberty Square Road)	42	41	1.02	0	0.00	0	0.00
Meenmore Cotominiums (Leonard Road)	116	96	1.21	8	0.08	5	0.05
Carriage House Cotominiums (Massachusetts Avenue)	24	30	0.80	0	0.00	0	0.00
Brook Village Cotominiums (Swanson Court and Spencer Rd)	280	192	1.46	43	0.22	19	0.10
Harvard Ridge (Swanson Road)	243	176	1.38	35	0.20	1	0.01
Sheriff's Meadow* (Stow Road)	14	12	1.17	0	0.00	0	0.00
Tisbury Meadow* (Stow Road)	13	8	1.63	0	0.00	0	0.00

