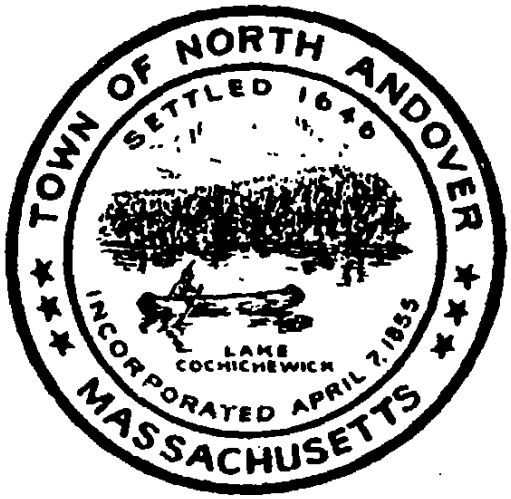



# Town of North Andover Master Plan

*This document represents a final draft of the North Andover Master Plan. Additional items that need work are Maps, charts, inventory, and other basic information that is supplemental to this document. The remaining work does not impact the outcome of the items listed in the Warrant Book for the May 13, 2000 Town Meeting. If you have any question please feel free to call William J. Scott, Community Development Director at 688-9531, or by Email nacds@shore.net.*

# Introduction

## INTRODUCTION

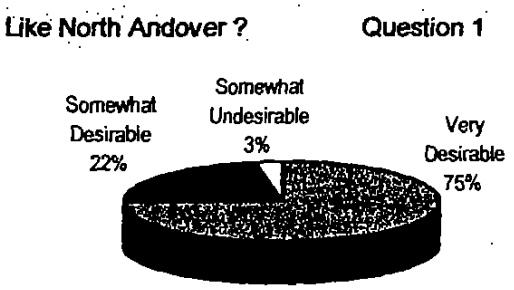
Three years ago, the Master Plan Committee began working on a new Master Plan for North Andover. Our membership included delegates from committees, citizen activists, professionals, developers and open space advocates. Owing to the breadth and diversity of our skills, talents, interests and knowledge, we often disagreed about what the Town's priorities should be and how best to accomplish them. Beneath the issues that separated us, however, we discovered that we shared similar aspirations for North Andover's future. Our common concerns helped us bridge our differences and enabled us to unite behind the goals, policies, recommendations and strategies that are prescribed by this Master Plan.

Throughout the summer and fall of 1997, our Committee engaged extended discussions about an overall direction for the Master Plan. We set community development goals and we chose the best strategies for reaching them. At the same time, we considered ways of measuring impacts from growth and change in North Andover so the Town could monitor outcomes under the new Master Plan. Thus, we went beyond conventional goals and objectives by striving for clarity about the ingredients of community development success.

We started from the premise that our Town must plan for and direct change that:

- Preserves our rural, New England character
- Provides for educational excellence in our public schools
- Maintains our traditional diversity
- Preserves and enhances our natural resources
- Promotes a self-sufficient local economy with appropriate public and private opportunities and services, and
- Is fiscally responsible and broadens our tax base.

These points supplied a value system that kept us focused as we developed the goals, policies and recommendations presented in the new Master Plan. What became apparent to all of us while we collected and reviewed data, historical records and other information about our Town is that the North Andover we know today is at serious risk. Indeed, the North Andover with which residents identified 30 years ago has given way to forces of growth and change




***1997 Master Plan Survey:*** *The first question of the survey was :* ***"How do you like North Andover as a place to live?".*** *Close to 75 percent of the responses (see adjacent pie chart) found the Town "Very Desirable" with 22% giving the opinion "Somewhat Desirable". No one responded "Undesirable" and only 3% responded "Somewhat Undesirable". This indicates a strong majority are positive about North Andover as a place to live.*

that turned Merrimack Valley's best-kept secret -- our Town -- into one of the region's most sought-after places to live. We were not surprised, then, when 75% of the citizens who answered out 1997 survey said they found North Andover a "very desirable community." Clearly, the vast majority of people who live here treasure what North

Andover has to offer. Our challenge today is to prevent North Andover's development future from destroying what is left of our historic past.

Unless everyone joins in an undivided will to protect North Andover's quality of life, the Master Plan Committee foresees a not-so-distant future in which the residential tax burden outstrips the ability of many households to pay for the cost of good government and good schools. We foresee the continued loss of North Andover's open space, a measurable decline in the quality of our drinking water, and the gradual loss of vital wetlands. Moreover, the failure to take charge of North Andover's growth and development will erode the base of small, community-oriented businesses that form the backbone of our economy.

Our Town has numerous assets that other communities would relish. When we began to develop an inventory of them, we were struck by some common themes that contribute to North Andover's identity:

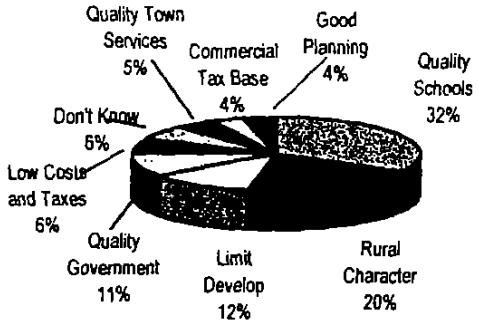
- The retained features of our community's roots: our rural agricultural legacy on the one hand, and our industrialization on the other.
- A shared commitment to open space, as evidenced by the amount of land that is protected by the Town, the state and non-profit organizations, and residents' willingness to invest in additional open space protection.
- The community's consciousness of its natural resource responsibilities.
- Housing diversity that parallels our Town's history in architectural styles, home sizes and types, location and cost.
- A highly educated workforce that is attractive to new and expanding companies.
- A strong tradition of voluntecrism, as evidenced by the time and effort that many residents devote to civic, social, cultural, recreational and governmental service.
- An economy that supports both leading-edge firms and very small businesses.
- An excellent public school system and a well-known private college.
- An affordable tax rate structure for homeowners and businesses alike.
- High-quality drinking water from Lake Cochichewick, as evidenced by our 1998 surface water supply award from the state Department of Environmental Protection (DEP).

All of these advantages are vulnerable to urgent or near-term threats. For while North Andover can boast an enviable set of assets, it must confront the liabilities that stand to weaken the caliber of our Town. Among the most serious:

- From 9.5% in 1985, farms have declined to 7% of all land in North Andover. Put into perspective, when officials first began to track statewide land use change in 1951, 23% of North Andover's 17,852 acres were devoted to active farming use.
- Despite the amount of open space in North Andover today, much of it is disconnected, inadequately maintained and undervalued by residents because they do not know where the land is or that they can use it. Our Town and other agencies may own land, but the shortage of active and passive recreation facilities is a deterrent to public enjoyment and use of our open space.
- Although North Andover residents are environmentally alert, we continue to use water at an escalating rate. Lake Cochichewick is a finite resource, yet we place demands on it that all but promise water supply and water quality problems for residential and business consumers. Just a decade ago, our Town discovered water quality degradation in Lake Cochichewick and initiated steps to protect the watershed from excessive development. The

***1997 Master Plan Survey:*** *.....the next question asks for opinions of the future :* ***Please tell me in one brief sentence what would you want as your vision for the Town of North Andover ?*** *This was a tough question for many who took several minutes to respond. The responses were categorized to provide the common answers shown in the adjacent pie chart. Why people like the community (above question) are close to the same issues they see as important in a Town Vision.*

Vision for North Andover Question 3




Lake is our only source of drinking water. Still, we lack basic capacity to develop leadership an overall resource protection strategy for Lake Cochichewick. North Andover desperately needs water resource management leadership.

- One of the hallmarks of our rural character is North Andover's system of narrow, winding roads. At the other end of the spectrum, we have congested, often dangerous traffic conditions on Routes 114 and 125. As increased traffic volumes press these streets beyond their design capacity, we see the effects in the Old Center and along many neighborhood roads that were never intended to accommodate more than local use.
- Whether our Town still has an array of housing types that spell choice for homebuyers, North Andover's population is becoming economically and socially homogenized. Because ours is a very desirable community, the market demand for housing here is producing high-cost single-family dwellings and causing the value of existing homes to rise beyond the reach of many. As developable land is absorbed by new growth, North Andover will face the same dilemma that is affecting other high-growth suburbs: the conversion of two-family to single-family dwellings and the demolition of older housing stock to make way for larger, modern homes. North Andover needs zoning controls and a demolition delay bylaw to protect its architectural and residential use diversity.

The confluence of residential growth, lost open space and scenic views, and heightened demands on our water supply, our streets and our municipal and school services, leads to a self-evident conclusion. Without a strategic development agenda and the capacity to carry it out, North Andover cannot retain the qualities that it values most. Our once-diverse tax base is becoming increasingly residential. The obvious impacts of new home construction can be felt in the cost of providing excellent schools and building or modernizing our school facilities. The less obvious impacts are just as costly. We keep deferring maintenance and upkeep of our municipal buildings, we stop short of staffing town departments at the level needed for quality public services, and we do not take care of our roads, our sewer system, our playgrounds, parks and fields. North Andover needs ways to meet the demands of our growing population, which means addressing the impacts of new growth.

The Master Plan Committee believes that in order to withstand these threats and build a viable future for North Andover, the Town has to reverse its narrowing tax base and

curb the growth in cost of community services. In the early 1980s, 23% of our total assessed value lay in commercial and industrial property. At the end of the 1990s, the non-residential share hovered at 17%. To restore any semblance of fiscal equilibrium, we need land use policies that achieve seemingly opposite aims but without conflict: North Andover has to encourage economic growth and protect our remaining rural ambience.

We concluded that:

- Unless North Andover adopts a *fiscally sound Master Plan*, the residential tax burden will soon exceed the ability of many households to pay for good government and good schools.
- Unless North Andover adopts an *environmentally protective Master Plan*, the entire community stands to lose important open space, scenic vistas and wetlands while the quality and quantity of our drinking water declines.
- Unless North Andover adopts a *business-friendly Master Plan*, failing to take charge of growth and development will destroy the base of small, community-oriented businesses that form the backbone of our economy.
- Unless North Andover adopts a *rational, managed-growth Master Plan*, we will still grow -- but what we become is not what our community envisions for the future. North Andover will lose what little housing and population diversity it has managed to retain, and we will look like any other monotonously over-built suburb.
- Unless North Andover adopts a *"quality-of-life" land use plan*, many neighborhoods will suffer the consequences of unmanaged traffic and circulation change -- congestion, unsafe streets without sidewalks and a gradual shift in function and character as local streets transform into collector roads.

It is important to understand that North Andover *is* suburban. In the parlance of state agencies, we are an "economically developed suburb" because many businesses and industrial concerns have claimed North Andover as their home, making us a regional employment center. Nonetheless, new-home construction has become a constant while open land slowly declines. Once new households settle in, the number of school-age children increases. Families that can afford to buy or build a home in North Andover want high-quality schools, good town services, and a range of recreational, social and cultural opportunities that respond to residents' needs. As market pressure drives housing costs upward, the elderly and people of modest means are ever less able to call North Andover their hometown.

The locations of developable land in North Andover dictate that unless we intervene, some neighborhoods will undergo a significant change in character by the time our community reaches build-out, or the hypothetical point when there is no more land to develop. As long as traditional subdivisions of single-family homes dominate our development horizon, North Andover's operating and capital budgets will climb, open space will dwindle, traffic will intensify on arterial streets that are already congested and change the rural ambience of our back roads.

North Andover has argued for many years that its future welfare depends on regaining control over the property occupied by Lawrence Municipal Airport. Put to more economically productive uses, the 550-acre Airport site that now yields no revenue for North Andover could support about $323,000,000 in taxable value – or more than double the total of all commercial and industrial assessments in our community today. Moreover, the scale of business development that can occur on the Airport property will probably trigger a second

benefit for North Andover, and that is the long overdue interchange improvements at I-495 and Sutton Street. Given its location in an established industrial setting, the Airport land could bring about North Andover's fiscal stability without detracting from the residential fabric of our Town.

We know, however, that obtaining control of the Airport property is a long-range project. The City of Lawrence strongly opposes replacing the Airport with more fiscally beneficial land uses, and for a variety of reasons Lawrence's objections could prevent us from accomplishing our objectives. Thus, North Andover has to focus on other, short- and longer-term strategies to prevent the social, economic and aesthetic demise of our community. The Master Plan Committee's goals, policies and implementation plan represent the balance and strategic thinking that can produce and sustain a high quality community. A Master Plan founded on the concepts described in this report will chart the course toward North Andover's future vitality by preserving our traditions and character and expanding our economic base.

The new Master Plan concerns itself *primarily* with achieving fiscal and economic stability, preserving the character of our neighborhoods, safeguarding our natural resources and diversifying the types of growth that will occur here over the next 10-15 years, during which the majority of usable open land will convert to developed uses. In effect, this plan acknowledges our Town's established suburban condition: we do not advocate turning back the clock to a time when North Andover was transitioning from a semi-rural community to what it is today. Except for intermittent evidence of our rural and historic past, such as in parts of Out-Country and the Old Center, the degree of change we have witnessed since the 1960s has transformed North Andover into a mature suburb. With an overall development density of 941 people per square mile, North Andover needs to focus on achieving balance and making our remaining growth beneficial to everyone in the long run.

Accordingly, this is not a "no-growth" master plan but rather, a "managed growth" master plan. It advocates for "quality development," which happens only when local officials work to orchestrate an overall growth outcome that achieves equity for private development rights and the public interest. North Andover has to match its concern over quantitative growth impacts with a qualitative perspective about development, or we will end up like countless other suburbs: overwhelmed by long-term debt and the cost of education, homogenized in appearance, choked by peak period traffic, unaffordable to both our aging parents and our young-adult children, and devoid of usable open space.

The new Master Plan's proposed goals, policies and recommendations can be summarized in five points:

*Recognize the centrality of economic development.* North Andover's quality of life demands a strong local economy and a diverse tax base. When commerce and industry thrive, they promote new investment and produce tax revenue for our Town. If North Andover wants to be a desirable, affordable community with excellent schools and public services, we must keep today's companies and attract new ones for tomorrow. Without them, homeowners will pay higher and higher tax bills each year. Business taxpayers help finance our education and town government costs, pay for open space, and keep our roads in good condition. In nearly all cases, businesses generate *surplus* tax revenue: they cost less in government services than the amounts they pay in property taxes. With the right balance of places to live and places to work, our Town will be in the best position to

manage annual spending growth and develop the community facilities that residents have a right to expect.

Business needs a place to grow and prosper. We can meet this need with suitable land, fair zoning and taxation policies, adequate infrastructure and a community climate that supports economic development. North Andover's challenge is to realize our full economic development potential without damaging the character of the Town. For this reason, the Master Plan's goals envision economic development that will not sacrifice North Andover's desirability or the quality of our environmental, historic architectural and other important assets.

*Value North Andover's natural resources and treat them accordingly.* Because environmental and cultural resources are both icons of the past and living evidence of the present, every community wants to preserve them. These resources include natural attributes like land, water and vegetation on one hand, and the legacy of human settlement on the other. Collectively, they represent each town's unique traits and character, for the relationship between natural features and the pattern of growth and land use change tells the story of how a community came to be what it is today. Environmental and cultural resources are highly vulnerable to growth and change, and they cannot be replaced. When cities and towns fail to take charge of their futures and remain passive players in the community development process, the damage is most evident in a breach of the natural and cultural order that once was. As citizens, we have custodial responsibility for the resources we inherited. Our failure to recognize these resources and elevate them to the highest position in all local policies and land use decisions will defeat *any* plan or strategy for quality community development.

*Focus on managing residential development, not on stopping growth.* Of all land uses, housing has the greatest impact on community character. Through architecture and neighborhood settlement patterns, housing documents the evolution of villages to towns and towns, to cities. To the extent that building style, age, quality and appearance supply physical evidence of growth and change, residential uses speak volumes about the people who built a town from its earliest days to the present. The distribution of different housing types, along with the condition of housing stock from one area or neighborhood to another, attests to the past and present socio-economic organization of cities and towns. These factors narrate local history on one hand, and shed light on current opportunities and community problems on the other. Thus, transportation, zoning and market forces may affect overall growth and the quality of change that occurs over time, but housing surpasses all other community development indicators as a means of looking into the future social order and economic make-up of communities.

Historically, North Andover enjoyed a rich tradition of home types and styles. From the densely settled neighborhoods of single- and two-unit homes near downtown to Out-Country's farmhouses and the stately buildings nestled around the Old Town Center, housing is our best record of the diversity of people who lived here. Once the 1960s brought an interstate highway system into the region, North Andover changed from a rural community with a manufacturing base to the economically developed suburb of 25,000 people that it is today.

Clearly, new-home construction is changing the look and feel of North Andover. Massive single-family houses are replacing open fields and slowly beginning to homogenize our Town's architectural character. At the

same time, moderately sized homes clustered together in planned developments are commanding top dollar in the region's housing market because North Andover is such a desirable place to live. Moreover, the rate of residential development here threatens to topple our ability to manage the Town's finances. Although ongoing change is inevitable, housing starts must be brought in line with North Andover's capacity to accommodate population growth -- and housing starts have to respond to a wider range of market needs.

*Synchronize circulation improvements with development goals.* Circulation systems are the basic element of community form because they direct both the location and intensity of development. By delineating common space for travel, roadways organize the flow of traffic from origin to destination points. The ancestors of today's paved streets – such as the cart paths and ancient ways – were largely laid out alongside, near or in order to bypass important natural resources, mainly water. These systems primarily served local travelers who moved about on foot, by horse or by carriage. Because early commerce depended on water for shipping and power, it stands to reason that much of our interior street network evolved to meet needs for water access. When technological advancements brought us rail and interstate highways. new access demands indelibly altered a once self-contained, local circulation network with limited regional connections. All of us understand that any community's economy relies on the quality, condition and functional capacity of roads. They supply the means of transit for exporting and importing materials, goods and supplies, for moving labor between home and work, and for bringing the disposable income of consumers to the marketplace. When too many needs compete for limited space in the travel lane, roads become congested and unsafe, and they impede development in areas that are otherwise suitable for growth.

The Master Plan must help us achieve a better fit between development and North Andover's circulation system. Sound circulation plans anticipate rather than react to the needs and demands placed upon local streets. As conditions on Route 114 and Route 125 attest, traffic congestion and public safety problems detract from North Andover's quality of life. These conditions are very serious obstacles to the Town's ability to secure economic vitality in the future.

*North Andover needs a coordinated approach to capital improvements planning.* Every community needs municipal and school facilities that are adequate to meet the needs of the people who use them most frequently – residents and public employees. We know that overcrowded school buildings impede the quality of education, yet we tend to give too little recognition to the impacts of archaic and under-sized or poorly located town buildings on the quality of public services. Furthermore, architectural barriers in older public buildings make access difficult if not impossible for many senior citizens and persons with disabilities.

To provide a fine public education for our children, North Andover consistently allocates most of the tax levy growth allowed under Proposition 2 ½ to our school budget and school building improvements. No one disputes that high-quality public schools should be our Town's top priority because the school system's reputation makes North Andover desirable for new residents and businesses. Without the resources to address all of our Town's public facility problems, however, we have continuously sacrificed maintenance and repairs to municipal buildings. As a result, Town employees work in cramped quarters without the

most basic modernization changes that would make service delivery far more efficient. Our Town buildings are in poor condition, our Fire Station needs a new home and we desperately need to upgrade our sewer system. None of these needs will be met unless we establish and commit ourselves to a Capital Improvements Plan (CIP).

The deterioration and functional inadequacy of public buildings visibly attest to North Andover's pressing capital needs, but the underlying issue is community services. Indeed, buildings represent one part of a much larger system that includes our parks, playgrounds and other outdoor recreation areas. These facilities supply the foundation for services and programs that must be available equally to all residents so that everyone can participate as a member of the community at large. A lack of sustained capital investment and operating support for community services is eroding North Andover's quality of life.

The Master Plan Committee is pleased to submit a plan for managing change and ensuring that as we grow, we do not lose the ingredients of a desirable, thriving community.

## The North Andover Master Plan Committee

Scott R. Lodde, Chairman
Susan Dennett
George Koehler
Frank Terranova
Abbe Ritchie
Paul Healy
John Cusack
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Jeanne Bramanti

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## Assisted by:

North Andover Department of Community Development and Services
Community Opportunities Group, Inc. of Boston
APRIL 2000

# Local History

## LOCAL HISTORY

Many factors influence the history of a community's physical development. In North Andover, environmental resources and aesthetic beauty have shaped the land use pattern we see today.

Our community is comprised of distinct geographic areas that have evolved differently over the past several centuries due to the prevalence of natural resources in each area, including open fields, farmland, steams, and ponds as well as significant tracts of woodlands. For example, it was the abundance of flat fertile land and ample water supple that first fostered agricultural enterprises when Andover was settled in the 1640s. The founders chose a spot near today's Old Center as the best place to live. During the 19th century, water power from the Merrimack River and the Cochichewick Brook brought industrialization to the northern section our town, forever changing the development pattern and land use in this area to an intensely settled enclave which serves today as our commercial and governmental center.

The rocky soil and wetlands of North Andover's southern and eastern sections have discouraged development for most of the town's history. Local and state organizations continue to work in concert to protect these ecological sensitive areas from adverse development in the future. It is only through responsible planning and land protection that undeveloped lands remain preserved for future generations.

The placement and development of transportation corridors has also played a significant role in North Andover's development from a rural, agrarian village to the suburban community we have become. The early 17th convergence of cart routes spurred the development of what we call the Old Center. In 1853, however, the introduction of rail service in North Andover's northern quadrant contributed to this area's subsequent industrial development, effectively halting all development interest in the Old Center. Later in the 20th century, the introduction of major interstate highways and the resulting influx of commuters seeking new housing forever sealed North Andover's evolution into suburban community. Ironically, while the development and location of these routes spurred development on adjoining land, corridor placement also helped to preserve areas of North Andover that were rendered remote by their distant relation to major roadways. Today, however, construction technology has advanced to such a degree that areas once deemed remote and unattractive are now readily buildable, leading to the development of new and improved roadways to these areas.

The history of North Andover is not atypical of the rich heritage found in many early Massachusetts towns. Andover, once the largest town in the state, was settled in the 1640s in an area near today's Court Street and Academy Road. By 1709 enough residents had moved to the southern part of town to create a separate South Parish. The meeting house (not far from the old burying ground) remained the town's political center. Development nearby consisted of a few houses and some craftsmen's shops, but the economy was still agrarian.

The Old Center represented the crossroads for travel throughout the region, including roads to Salem, Newbury, Haverill and Billerica. Throughout the 19th century, residential, agricultural and commercial enterprises continued to build up around the crossroads. The 1829 Brick Store, Warren Stevens' store (now the Hay Scales) and the small Hay Scales Building are remnants of the area's historic commercial development. Wealthy residents of the 18th and 19th centuries also built large estates in the

area, including the Phillips Mansion, Kittredge Mansion and the Captain Nathaniel Stevens House, which are still extant today. We are fortunate that so many early estate residences have been preserved and continue to be maintained by the North Andover Historical Society and the Trustees of Reservations.

As the 19th century progressed, North Andover's physical and cultural identity began to shift from the Old Center to the north, sparking a period of significant physical and social change. This change ultimately helped to preserve the Old Center's rural character. Development in the Old Center essentially ceased as industrial enterprises burgeoned in the northern section of North Andover, although after the nation celebrated its Centennial local interest in our original settlement area was rejuvenated. The Village Improvement Society reconstructed the Old Center by introducing a new town green. Roads were relocated and buildings were moved or removed, creating a large landscaped expanse with new trees and plantings. Today, this area still has a "colonialized" image and it is the site of several businesses and museums. Private homeowners and the North Andover Historic Society have worked to preserve many properties in their original condition. As development in the Old Center languished, the industrial revolution triggered a new type of development elsewhere in North Andover. In the mid-19th century, industrialization gained momentum throughout the United States, particularly in the area surrounding the Merrimack River west of Boston. During the 1840s, investors purchased extensive tracts of land along both sides of the River and built a dam to supply waterpower for new textile mills. Immigrant labor was used not only for the dam construction, but also for labor in the mills. This area was incorporated as the Town of Lawrence, by taking land from surrounding towns including Methuen and the west parish of Andover.

Although North Andover is not located immediately on the Merrimack River, the industrial revolution played a key role in our town's growth and development history. The Cochichewick Brook, which runs from Lake Cochichewick to the Merrimack River, provided sufficient waterpower to fuel industries all along its banks. After supplying water to early agriculture-related enterprises such as saw and grist mills, the Brook became the site of woolen factories and machine shops in the 19th century. These manufacturing facilities were concentrated away from the Old Center in the northern section of the North Parish, which soon became the "new" center of North Andover as it gained prominence from extensive residential, commercial and institutional development. This new center "attracted unprecedented population growth during the 1840s and 1850s, generating "cultural, ethnic, architectural, social and religious diversity". After the creation of Lawrence, the south and west parishes of Andover began to agitate for their own meeting house, and they forced a formal separation in 1855. With a larger and wealthier population they were able to wrest the name of Andover from the place of original settlement, and the North Parish became North Andover. This separation coincided with the North Andover's social and physical evolution from an agrarian community to a manufacturing center with its associated prosperity, intensity and physical concentrations. The introduction

of the railroad in the 1850s, with a depot adjoining the mill village, solidified our town's changing character by the end of the 19th century.

Physically, the mill developments evolved into a settlement comprised not only of a factory village with mill buildings and residential housing, but also a civic and commercial center as well. The success of industrial enterprises such as the North Andover, Sutton and Stevens Mills and the Davis & Furber Machine Shop resulted in a population boom as more and more workers were employed in the mills. This influx generated a great demand for housing and services in the vicinity. Mill owners responded by constructing a variety of residential and public buildings in the area now commonly referred to as Machine Shop Village. The contrast between the simpler multi-unit structures designed to house mill workers and the ornately designed residences built for the owners and partners in the mills is still evident today.

Manufacturing continued to be a major economic force in North Andover through the mid-20th century. While the rest of New England experienced a general decline in textile manufacturing after the Great Depression, our town's textile and machine industries continued to expand. North Andover's agrarian character had been irrevocably replaced by one of manufacturing. Today, we have but a handful of local farms, and they struggle to maintain their livelihood while contributing to a visual image of North Andover's past. Many of these remaining agricultural enterprises utilize the Commonwealth's tax incentive program, the Farmland Assessment Act, to provide much needed relief to what is now a waning economy. This program also provides our community with a way to preserve these parcels from development if the owners decide to cease agricultural operations and sell their property.

During the 20th century, technological advances in transportation modes replaced manufacturing as the primary catalyst defining North Andover's character. As passenger rail service declined in the 1940's, the automobile became a more prominent fixture on the landscape and has left an indelible mark on the community. Once this mode of transportation gained prominence, local roadways were developed and improved, providing more efficient access to North Andover's remote areas.

What was once a concentrated development surrounding the industrial village began to change, and suburban development quickly expanded to outlying areas as highway transportation enticed more and more people into the community. During the last half of the 20th century, former estates and farmsteads were subdivided into residential houselots and large office parks were created off Route 114. The introduction of public infrastructure, such as water and sewerage systems, also played a significant role in the development of outlying areas. Realizing early on that the community's character-defining open space may be lost forever, our town and various government and non-profit organizations have worked to preserve significant parcels from future development.

The construction of the interstate highway system, most notably Interstate 93 (1960) and Interstate 495 (1967), provided fast and efficient access to major business centers such as Lowell to the west, Portsmouth to the north and Boston to the south. These advances brought an unprecedented number of people into the Merrimack Valley region, and to our town in particular. North Andover's population nearly doubled between 1950 and 1970 and increased another 44% between 1970 and 1990.

Unsurprisingly, 60% of all housing units here were built after 1960. By 1986, more

than 190 acres of undeveloped land were being developed each year. The resulting increase in local traffic is significant. On town roadways that are already congested and reflect the rural past, a 13% increase in traffic between 1990-1996 has caused serious concerns about pedestrian and vehicular safety as well as a significant loss of service for many roadways.

This population explosion has had numerous impacts on North Andover's physical appearance and the character of our community. In an effort to maintain the town's scenic beauty and to limit overloading local infrastructure, our zoning districts give primacy to residential uses (85% of our land is residentially zoned) with minimal land zoned for commercial or industrial uses. The gradual loss of our historic manufacturing base during the early- and mid-20th century, combined with the prevalence of improved transportation corridors, created a community ripe for residential development. New roads, loss of open space and scenic vistas, and increased dependency on local services and infrastructure systems have combined to create a community poised to enter the new millenium with critical choices to make about the future character of our town.

Fortunately, the southern and eastern sections of Town around Lake Cochichewick, commonly referred to as "Out-Country," had always been sparsely settled with minimal public infrastructure to induce development. This is due in part to North Andover's overall development pattern, the prevalence of wetlands, and the abundance of preserved forestland (now known as Boxford and Harold Parker State Forest.) The Lake itself serves many critical functions for North Andover, necessitating strict environmental and development controls. It is our primary source of drinking water and a popular but restricted recreational facility. Without town ownership of critical parcels in the watershed or agreements with surrounding towns that are also located in the watershed, our ability to control adverse development around the Lake Cochichewick will be hindered, however. Over the last 20 years, North Andover's suburbanization has had a particular affect on local demographics. While the population in many Massachusetts communities is aging, North Andover's is getting younger. It is expected that the number of children between the ages of 0–19 years will increase 22% between 1990 and 2010. This significant increase in the number of school-age children, together with the need to keep pace with technological advances, has resulted in significant changes in the town's public expenditures.

Existing school facilities have been renovated and two new schools have been built with a third on the drawing boards. Most notable in terms of land use change was the construction of a new elementary school in Out-Country, to house the children from the myriad of new residential developments that have been constructed in this area during the past decade. Our town has established the School Committee's Task Force 2000 and Financial Task Force groups to identify the tools necessary to provide the community with the best education possible by the year 2000 through both curriculum and facility improvement recommendations. As North Andover enters the new millennium, we must recognize that our rich heritage and stunning natural resources contribute significantly to our community's sense of place. Efforts to preserve these resources have been a critical priority for local citizens and non-profit and governmental organizations alike. Today, we are blessed with active social organizations that seek to preserve North Andover's architectural and cultural past. The Historical Society, formed in 1913, operates a museum in the Old Center where it houses an extensive collection of furniture and antique cooking utensils. The Society also owns, maintains and seeks to preserve various historic resi-

dential properties. The Stevens-Coolidge Place with 92 acres of land is maintained by the Trustees of Reservations.

Other historic structures are preserved by various non-profit organizations, including the Kittredge Mansion (1784), the Parson Barnard House (ca. 1667), and the Stevens-Coolidge Place (ca. 1830). Other privately owned historic structures are included in several National Register districts in the town, including the Machine Shop Village District and Tavern Acres Historic District surrounding the Stevens Library. The Town-wide commitment to preservation is further evident in the 1987 designation of the Old Center Common Local Historic District, which is also a National Register District.

Preserving the community's environmentally sensitive areas and rural character have also been high priorities since the 1950's. By combining local, state and non-profit ownership with development restrictions and local land use regulations, many of North Andover's most important rural vistas and agricultural landscapes have been preserved despite increasing development pressures within the community. As of 1997, more than 20% of the Town's land area has been preserved as open space.

## *Baseline Timeline*

The following timeline is a presentation of the milestone events in our community. Clearly there are events which are not here which are of equal importance to the reader. We choose events which shaped the communities future and provided a brief outline of the past.

***1910'S - 1920's***

1912 - Bradstreet School opened
1920 - Town population: 6,100
1924 - Thompson School opened
1925 - Town Hall opened

***1930's***

1931 - City of Lawrence acquires 312 acres of land for municipal airport (purchase price - $18,000)

***1940's***

1940 - Town population: 7,500
1940 - 153 acre Ward Reservation to The Trustees of Reservations
1943 - First zoning by-law adopted. Residential zoning: village, country, rural; Business zoning: neighborhood, village; Industrial zoning: large, small
1945 - Town population: 8,000

***1950's***

1950 - Kittredge School opened
1954 - Middle School (former High School) opened
1950 - Town population: 8,500
1950 - Manufacturing sector represents over 90% of all employment in North Andover
1955 - Western Electric plant opens
1955 - Town population: 9,400
1956 - Lake Cochichewick North Pumping Station constructed (replaces South Station)
1957 - Blackwell Report (1957 Master Plan) entitled *Changing North Andover* is completed
1957 - North Andover employment: Manufacturing (93%); Wholesale & Retail Trade (4%); Service Industry (2%); Construction (1%)
1958 - Franklin School opened
1958 - New Building Code implemented

***1960's***

1960 - Interstate 93 opens
1960 - Town population: 11,000
1961 - Conservation Commission organized
1964 - Atkinson School opened
1967 - Interstate 495 opens
1968 - Weir Hill given to The Trustees of Reservations
1969 - Police Station (Osgood/Main) opened

***1970's***

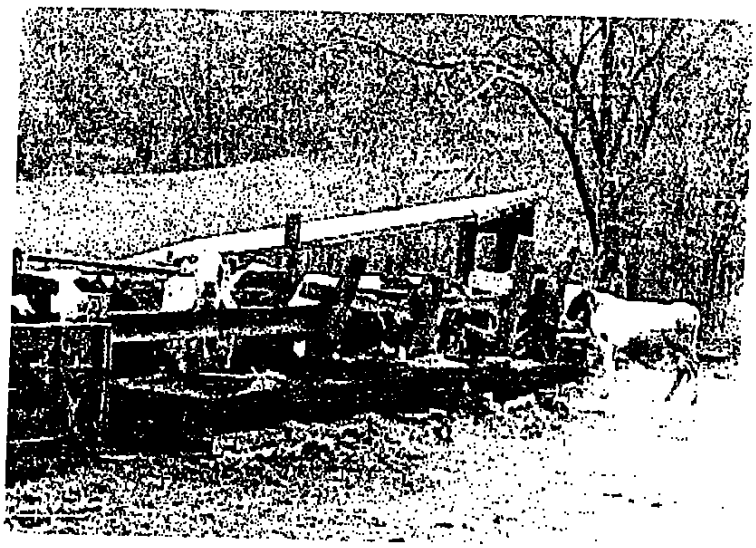
1970 - Town population: 16,000
1970 - First Open Space Plan
1971 - James Swamp donated to Town (57 acres)
1972 - Brown Report (1972 Master Plan) completed
1972 - Salem Street Fire Station opened
1972 - Lake Cochichewick Watershed Plan completed
1972 - High School opened
1975 - Rea's Pond purchased
1977 - Wetlands mapping completed
1977 - Greater Lawrence Sanitary District plant opens to process waster water in four communities
1979 - Local Wetlands Protection Bylaw adopted
1979 - Flood plain zoning adopted

***1980's***

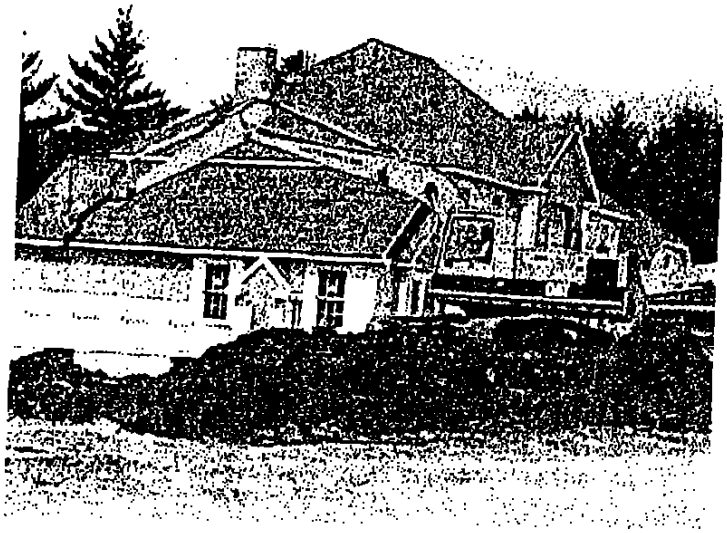
1980 - Open Space Plan updated
1982 - State purchase Holt Road landfill site
1984 - Senior Center opened
1984 - 23 communities organize the North East Solid Waste Committee. North Andover becomes host community to the Massachusetts Refusetech, Inc. plant.
1985 - Town appropriates $10 million for new water treatment plant
1985 - Building moratorium in Lake Cochichewick watershed approved
1986 - Giardia bacteria discovered in water supply. Health Department issues boil order.
1987 - Contract signed for construction of water treatment plant
1987 - Balanced Growth Plan (1987 Master Plan) completed
1987 - DPW office (Osgood Street)opened
1987 - Open Space Plan updated
1987 - Lake Cochichewick Watershed Plan revised
1988 - Ozonators added to treat water for Giardia problem
1988 - Mazurenko Farm purchased under Chapter 61A (right of first refusal)
1988 - GLSD incinerators shut down after neighbors complain of odor problems.

***1990's***

1990 - Town population: 23,000
1990 - Water treatment plant opens - total cost $19.9 million.
1994 - Osgood Hill purchased
1994 - Drought drops level of Lake Cochichewick to 108 inches forcing conservation
1995 - Town population: 25,000
1995 - The North Andover Strategic Plan completed
1995 - Open Space Plan revised
1996 - Water system pumps 1.14 billion gallons per year (one-half residential use)
1996 - The North Andover Strategic Planning Committee completes report
1996 - North Andover Open Space Committee formed
1996 - Town Meeting approved funding for revised Comprehensive Master Plan and updated Watershed Report.



# Land Use



LAND USE

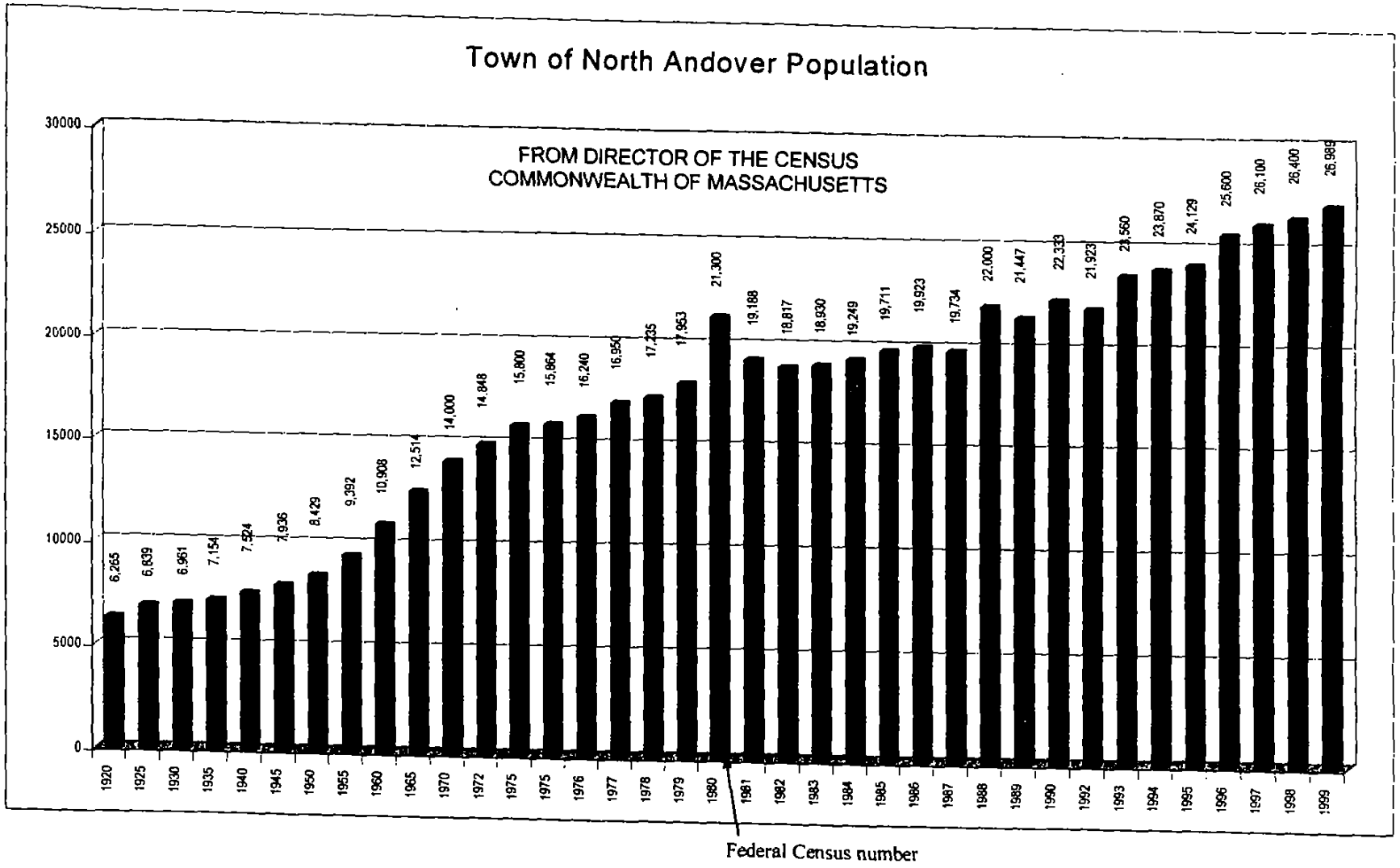
1. Introduction

North Andover is changing in ways that trouble many residents and nearly everyone who serves in local government. Forty years ago, we were a semi-rural town on the eve of suburbanization. Unlike many Merrimack Valley communities, we had retained a reasonably vital industrial base with 157 manufacturing firms. Our 1960 population of 11,000 was comprised of wealthy, middle-income and lower-income people, many having lived here since birth. North Andover's agricultural heritage was still evident, for about 23% of the town was open space and active farmland. Our land use map was fairly simple before 1960: the North and Middle sections, plus Out-Country, three geographic areas differentiated by their development histories, functions and circulation patterns. Although it would be inaccurate to paint a bucolic picture of North Andover's 20th century past, our town enjoyed a wide range of natural and man-made assets. Indeed, North Andover was poised for growth, but we were unprepared to prevent the losses that lay ahead.

By 1990, North Andover had become a maturing suburb of 23,000 residents and an influential regional employment center. After two interstate highways spliced the Merrimack Valley in the 1960s, we witnessed an unparalleled growth explosion that forced us to build news schools, police and fire stations, a senior center and a $19.9 million water treatment plant. We learned from experience what could happen to an inadequately protected water supply, for in 1986 we discovered *giardia* contamination at Lake Cochichewick. We began in earnest to buy open space, and town meeting enacted new rules to reduce development in the watershed. At the beginning of he 1980s, North Andover created a community development office in order to take advantage of federal grants we qualified for because of our old and underused mills and aging homes, and also the sizable number of working-class families that still lived here. A decade later, owing to the cumulative increase in new, upper-end market housing and a spike in new-home construction between 1984-1988, less than 15% of all owner-occupied housing here was affordable to the working class. Not surprisingly, North Andover's 1990 median household income ranked among the top 20% of communities statewide.

Nowhere are the strains of suburbanization more evident than in North Andover's long-term debt and traffic congestion on our arterial streets. The 20-year cost of our *current* bonded indebtedness exceeds $74 million -- for schools, open space, water, sewer and road improvements, and renovating or designing and constructing municipal facilities. During peak periods, traffic on Routes 114 and 125 far surpasses the design capacity of either street, making in-town travel unbearable and at times, unsafe.

There is no universal formula for predicting the number of new homes it takes to cause irrevocable change. Towns that lose their identity when they gain population cannot point to a particular subdivision as the straw that broke the camel's back. Instead, the problem lies in what subdivisions cumulatively reveal about the misfit between local development regulations -- the community's blueprint -- and the earlier character of the town, the ingredients that made it special. Such is a master plan's concern with land use, for how land is used in the collective pervasively influences every facet of a town's character. The issue is not simply whether land is "used" for homes, stores or public buildings, but how the accumulation of *uses* and the community's *land* work together. Thus, a "land use analysis" con-


Town of North Andover Population
FROM DIRECTOR OF THE CENSUS
COMMONWEALTH OF MASSACHUSETTS
30000
25000
20000
15000
10000
5000
0
6,265
6,839
6,961
7,154
7,524
7,936
8,429
9,392
10,908
12,514
14,000
14,848
15,800
15,864
16,240
16,950
17,235
17,953
21,300
19,188
18,817
18,930
19,249
19,711
19,923
19,734
22,000
21,447
22,333
21,923
23,560
23,870
24,129
25,600
26,100
26,400
26,989
1920
1925
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Federal Census number

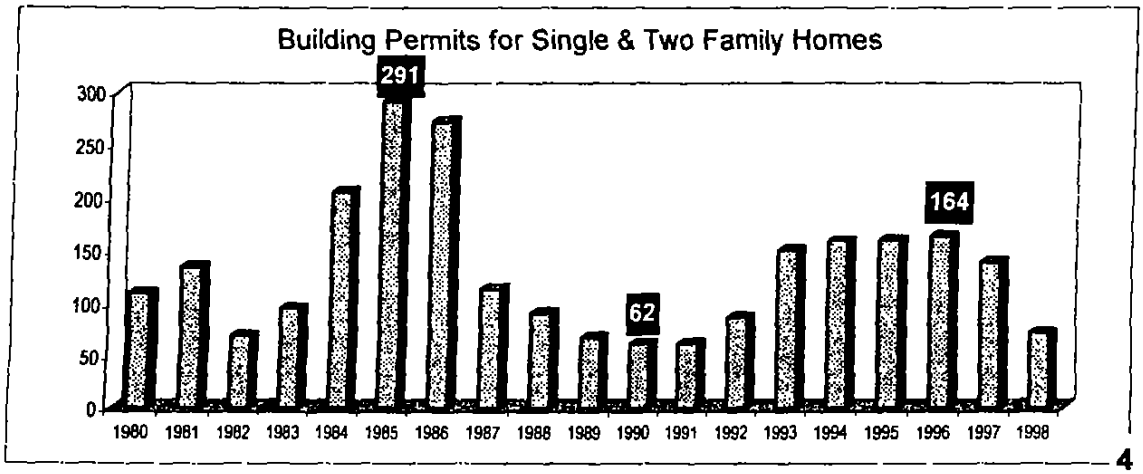
siders how all uses intersect and their resulting effects -- whether they mutually support one another, create specific conflicts or worst of all, deplete a community of its once-distinctive qualities. A "build-out analysis" considers how the existing arrangement of land uses and the rules of new growth can be used to forecast what will happen on a town's remaining developable land.

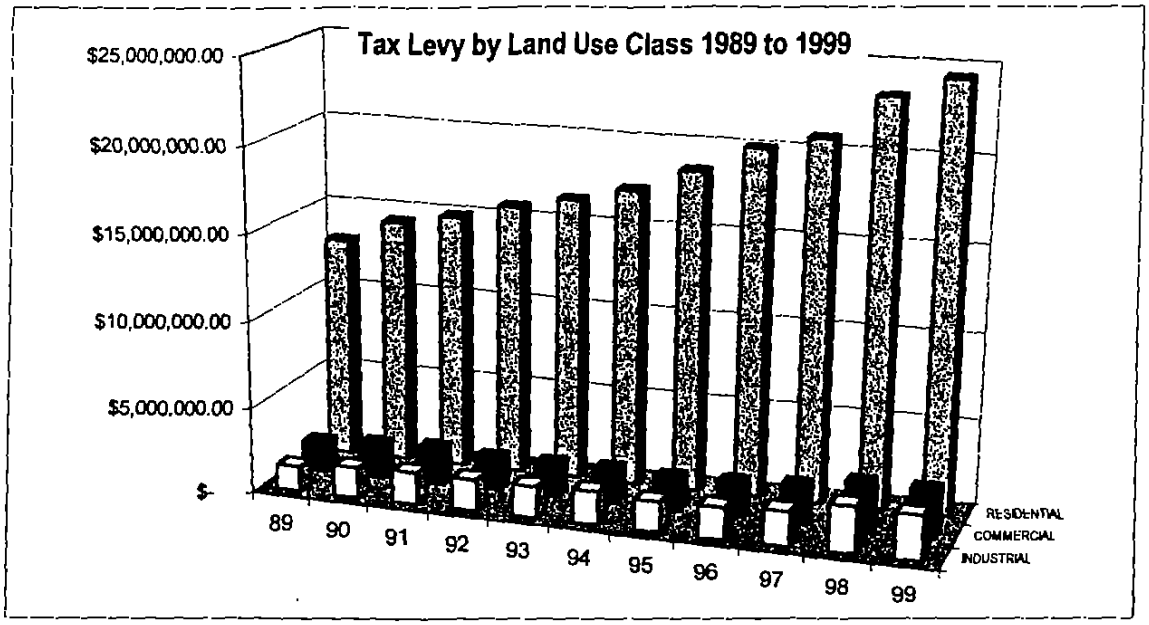
Land, water, population, transportation, market forces, social and cultural traditions, development regulations, political decisions and environmental constraints interact and perpetually remake both the pattern of land use and the fabric of the community as a whole. Day-to-day land use change is rarely apparent, but residents nonetheless experience the results in terms of visible appearance, landmarks, traffic generation and fiscal impact. In most communities, residents correctly interpret "land use impacts" as "quality of life impacts" and North Andover is no exception. A failure to understand the dynamics of land use change can lead to planning in a vacuum and produce the very growth blueprint that breaks the metaphorical camel's back. To some extent, that is what has happened, and continues to happen, in North Andover.

All communities pass through development phases in which the nature and scale of change induce fundamental shifts in character. The below chart shows that North Andover is one of many communities that has faced the roller coaster of development as markets rise and fall our land use changes with each rise. Under its existing blueprint -- the zoning bylaw and related regulations -- North Andover will continue to grow because there is still land left for new homes, yet strikingly little for commercial or industrial development. This means that an already imbalance relationship between cost and revenue producers will worsen. The above chart demonstrates that the revenue gap between residential land uses and commercial continues to grow.

Housing market characteristics assure that our town will remain "attractive," but whether we can keep even random pockets of our agricultural past is questionable unless we change how we manage development in our community. This Master Plan defines the important land use decisions that North Andover needs to make and provides recommendations to manage growth in ways that can achieve the our goals.

North Andover of the 1990s presents a more complex land use pattern than what was evident forty years ago. Today, it is more appropriate to visualize North Andover as five rather than three sub-areas, and on that basis the Division of Community Development and Services prepared a detailed build-out scenario based on existing






rules and regulations. The build-out analysis demonstrates that significant new residential development will occur throughout North Andover. Unquestionably, the development of remaining land here will change the character of every neighborhood, which means it will also change the character of the entire community.

Most people describe their hometown in terms of its unique qualities -- qualities that make a community visually and operationally different from others in the same general region. North Andover has traditionally drawn its uniqueness from two attributes. One is a set of physical characteristics: a mosaic of industrial-era and modern-day economic development, our water resources, rural roadways, rolling topography and dramatic large hills, the substantial inventory of historic buildings here, and a well-established suburban momentum. The other is location: North Andover's access to modern highways in the metropolitan area.

Both have served to increase North Andover's desirability for existing residents and when coupled with the dwindling land supply elsewhere, they form the basis for the strong and sustained residential development pressure that has been exerted on our community for some time now. Understanding what we may eventually become can provide valuable insights into the changes required to achieve what North Andover *wants* to become.

## 2. The Physical Characteristics of North Andover

### Geology, Soils, Topography

Among the influential landscape features of our community are the many large, oval-shaped hills that once gave North Andover a rural, open appearance. With the exception of Claypit Hill, all are drumlin formations comprised of clay, sand and boulders, our unique collection of hills supplies enduring evidence of continental glaciation. Significantly, both our original Open Space and Recreation Plan (1970) and the 1972 Master Plan recommended that North Andover take steps to protect our eight major hilltops from development because of their rural and aesthetic contributions to our community's image. In the absence of timely, pro-active measures to preserve these distinctive landscape features, five have been developed -- Town Farm Hill, Claypit Hill, Barker Hill, Boston Hill and a

portion of Woodchuck Hill. The Trustees of Reservations owns Weir Hill and our town recently acquired Osgood Hill.

Underlying North Andover are two significant bedrock zones, the Merrimack belt at the far northern edge of town and the Nashoba belt throughout the remainder of our community. These zones are distinguished by the metamorphosed sandstone and siltstone composition of the Merrimack belt, and Andover granite and Sharpners Pond Diorite in the Nashoba belt. They are divided by the fault lines known as Clinton-Newbury, which extends through much of southern New England. The Assabet River Fault runs through the Nashoba zone where an extensive formation of Andover granite essentially terminates and a composite, formation of . The fault has caused occasional minor earthquakes, most recently the 1990 quake noticeable to residents in the Town of Littleton.

Four primary soil classifications have been identified in North Andover by the United States Soil Conservation Service (1981). They include, first, the Paxton-Woodbridge-Montauk, an association that is common on hills and sloped upland areas and appears in North Andover in the highlands along Lake Cochichewick. Second, the Canton-Carlisle-Sutton soils group exists here on the tops, sides and toe slopes of low hills and in minor depressions. These soils occasionally create development constraints because they are associated with seasonal high water tables and poorly drained wetlands. Overall, however, areas with either Paxton-Woodbridge-Montauk or Canton-Carlisle-Sutton soil characteristics are developable for residential uses and historically, they were capable of supporting productive agriculture.
The Charlton-Rock Outcrop-Medisaprists association is most evident in the southern portion of our community, where there are low, irregularly shaped hills, ridges and plains, along with bedrock outcrops and low-lying wetland areas. Charlton soils are suitable for residential use, but overall development potential is constrained in areas where the Charlton soil group is mixed with rock outcrops and the organic "medaprist" soils. Finally, the Hinkley-Windsor-Merrimac association consists of excessively drained soils that are common in plains, stream terraces and the lower elevations of certain types of hills. This mix of soil groups generally exists along the Merrimack and Shawsheen Rivers and Mosquito Brook. As a rule, Hinckley-Windsor-Merrimac soils can support agricultural and residential land uses.

Farmland

Farmland has defined North Andover's character since the first settlers arrived. Most of North Andover's farmland has been replaced by residential development since 1950, however. Currently, eighteen landowners are using M.G.L. 61A (Farmland Assessment Act) to protect a total of 1,298 acres. The Farmland Assessment Act guarantees that in exchange for lower taxes, agricultural landowners must give our community the right of first refusal if they decide to sell their land for development. We exercised this right in 1988 when North Andover purchased the former Mazurenko Farm for watershed protection and permanent farmland preservation. Not only are the farm's fields still active, but also our town avoided a residential subdivision that may have caused harmful impacts to our water supply. Little has been done to preserve the remaining open fields and farmland that have historically contributed to the character of North Andover, although the Planned Residential Development concept has been used successfully to preserve portions of the Barker Farm.

Surface Waters Resources

Much of North Andover is a highland at the junction of three watersheds: the Merrimack River, and the headwaters of the Ipswich

River (via Boston Brook and Mosquito Brook) and the Parker River. Generally, the southern and southeastern portions of our town flow into the Ipswich River while the northern and western portions drain into the Merrimack River.

Lake Cochichewick is our sole source of public drinking water. North Andover learned the hard way that water resources are highly vulnerable, for the cumulative impacts of new-home construction, septic systems and storm water run-off led to *giardia* contamination of Lake Cochichewick in 1986. Our town was forced to construct a filtration plant, we instituted a three-year building moratorium throughout the watershed and commissioned a comprehensive watershed study. As a result of the Lake Cochichewick Watershed Plan (in conjunction with the 1987 Balanced Growth Plan), a number of steps were taken to protect the water supply.

These include major revisions to the Zoning Bylaw, Board of Health Rules and Regulations and Wetlands Regulations, land acquisition, increased street sweeping, and an extension of sewer system. Although our water supply protection efforts generally surpass what many communities have done, several steps recommended in the Watershed Plan have not been taken.

Today, about 25% of all land in the watershed is protected open space. This includes Osgood Hill and the Trustees of Reservations' Weir Hill Reservation, Mazurenko and Rea's Pond Conservation Areas, a large portion of the Town Farm, a portion of the Smolak Farm, which is protected under an Agricultural Preservation Restriction, and a small conservation easement managed by the Essex County Greenbelt Association. The remaining land in the watershed is not protected and will likely be developed at some point. The reason: land in the watershed is both desirable and valuable because of the open spaces, lake views and larger lots. Even when the real estate market was at its most depressed state in 1989-91, land in the watershed continued to be built upon at a higher rate than non-watershed land.

Wetlands

North Andover was one of the first communities in Massachusetts to organize a Conservation Commission (1961). Our first Conservation Commission quickly went to work on steps to protect North Andover's natural resources. Since the passage of the Massachusetts Wetlands Protection Act in 1972, the Commission has rigorously enforced the provisions of state law as well as our local wetlands protection bylaw, which town meeting enacted in 1979. Comprehensive wetlands protection regulations were adopted in 1991 and revised in 1998, providing detailed performance standards to support the local bylaw.

In an effort to protect wetlands more effectively, a town-wide wetlands mapping project was completed in 1998. Vegetated wetlands were delineated using aerial photography. Additional data was gathered on vegetation types, hydrologic data and soils through field checking. This data, though now somewhat outdated, has been a great help to planning staff and landowners alike in obtaining concise information about development constraints and understanding wetlands and surface waters.

Flood Hazard Areas

North Andover lies in the floodplain of the Merrimack and Shawsheen Rivers to the north and west and various tributaries of the Ipswich River in the south and east. In an effort to protect the community from lost flood storage, town meeting adopted floodplain zoning in 1979 and thereby restricted building in flood plain areas. Figure XXX depicts the locations of floodplains areas based on the Flood Insurance Rate Maps (FIRM). The southeastern and southern area of the com-

## Flood Insurance Rate Map (FIRM) Designations

- Area inundated by 1% annual chance flooding, for which no BFEs* have been determined.
- Area inundated by 1% annual chance flooding, for which BFEs have been determined.
- Area inundated by 0.2% annual chance flooding; area inundated by 1% annual chance flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or area protected by levees from 1% annual chance flooding
- Area determined to be outside the 1% and 0.2% annual chance floodplains.

*BFE = Base Flood Elevation

munity are the predominate flood-zone areas. Combined with the lack of infrastructure these areas have been relatively undeveloped until recently.

Forest Resources

According to the state's aerial photography program that helps track land use change across Massachusetts, 53% of North Andover was forested in 1951 while 48% was forested in 1985. This data would suggest that little has changed, but in fact the opposite is true. Residential subdivisions in forested areas will be classified as "forest" by aerial photograph interpreters, but upon close examination the character of North Andover's forested land has changed considerably. There are relatively few areas of remaining *unbroken* forest, and they include lands that are unbuildable -- swamps and protected open space.

No stands of old growth forest are known to exist in North Andover, nor is there much likelihood that any such stands exist in the region due to the extent of agricultural land use for over 200 years. Some individual specimens are quite old, particularly 'boundary oaks' and street trees, such as white oak, various red oaks, sugar maples, beech, white pine and others.

Only three North Andover landowners temporarily protect an aggregate of 41 acres of forested land through Chapter 61 (Massachusetts Forest Tax Law). This method of temporary land preservation has been successful at least in the short term, for we have not lost any land classified as "forest" to new development since the last Open Space Plan (1995). While more landowners are now considering Chapter 61, our community's overall participation is very low. That only 41 acres are protected by Chapter 61 agreements reflects either a lack of public knowledge about the program or program limitations that make landowners wary. For example, some landowners are reluctant to enter into a 10-year "no development" agreement with the town, even though they gain a generous property tax advantage.

1. North Andover's Current Land Use Plan and the Buildout Potential

The overall land use pattern that exists in North Andover today evolved from a combination of pre-zoning development realities and three planning studies commissioned by the town since the late 1950s. They include the 1957 *Master Plan* (Blackwell), the 1972 *Master Plan* (Brown) and the 1987 *Balanced Growth Plan* (Connery). We reviewed them at the beginning of our work on this Master Plan, and we were surprised to see that while the town has addressed some of the reports' findings, our community has stopped short of implementing a number of important recommendations .

***1957 Master Plan***

The 1957 Master Plan was North Andover's first attempt at a comprehensive planning document. The Plan, prepared under the direction of John T. Blackwell divided the Town into three separate study areas: the North Study Area - 5,230 acres (Old Center north to the Merrimack River); the Middle Study Area - 9,025 acres (Boston Street north to the Old Center); and the South Study Area - 3,900 acres. The report provided a summary of the major land uses throughout the Town and established a geographic, historic and economic baseline for other studies from which to measure. The following is a list of relevant statistics from the 1957 Master Plan:

- *Open Space: 16,298 acres*
- *Residential Zoning: 1,261 acres*
- *Manufacturing firms: 157*
- *Employed in Manufacturing: 8,869*
- *Population: 10,000*
- *Buildable lots (residential): 5,000*
- *Projected population (1990): 35,000*

The major recommendations in the 1957

Plan included:

⇒ **Creation of two Parkway Loops (roadways)** - the first loop was "to provide a new major roadway protectively encircling both the old colonial village and the 19th century textile village of North Andover". The second loop was proposed for future access and circulation throughout the growing southern section of Town.

⇒ **Airport** - the planners strongly recommended the removal of the Lawrence Municipal Airport to a new location near the Merrimack River in Andover, northwest of the I93/I495 interchange.

⇒ **Acre lot sizes** - larger lot sizes were recommended in the Middle Study Area "to prevent random and uneconomic municipal costs".

⇒ **Land acquisition program** - public acquisition of the tops of three prominent hills; Weir Hill, Byers Hill and Barker Hill, surrounding Lake Cochichewick.

***1972 Master Plan***

The 1972 Master Plan was a product of the North Andover Planning Board, the Planning Advisory Committee and the consulting firm of John Brown Associates. The report produced by this committee was the Town's first *comprehensive planning document* and was intended to serve as a guideline on the topics of land use, thoroughfares and community facilities. The report presented a proposal for an *open space development concept* for future land use planning. A major recommendation of this committee was the placement of approximately 1,700 acres of existing private land into an "open space network". The report listed sixteen (16) specific issues, problems and opportunities as background to the ultimate goals and objectives presented in the final report. The issues addressed in the report included:

**1957 Master Plan**

*"The presence in North Andover of the airport deprives the Town of tax income from desirable industrial development of 350 acres or more of the only major land area in North Andover well suited for large-scale industrial use by its relation to highways and utilities."*

- Development control of vacant land along routes 114 and 125
- Industrial development
- Phasing of future growth
- Expansion of utilities
- Open space conservation
- Upgrading of the Main Street Business District
- Other business districts
- Establishment of a Historic Preservation District
- Disposition of ABM site
- Future status of the Lawrence Municipal Airport
- Town Hall and other community facilities
- Regional position
- Apartment development
- The Southeast quadrant
- Existing neighborhoods
- Low and moderate income housing

The 1972 Plan created a number of long-term goals and defined specific measurable objectives to follow in areas relating to the economy, land use, housing, conservation and open space, transportation and circulation, and public facilities and services. Highlights from these goals and objectives included:

**Goal (Economy):** Encourage the growth of business and industry to relieve the tax burden on the single-family homeowner. **Objective:** Create new zoning districts to attract high tax yielding forms of new development while working with other towns in the region to attract new industries.

**Goal (Land Use):** Eliminate the possibilities for strip development occurring along Routes 114 and 125.
**Objective:** Improve site plan review to regulate design elements while setting aside land along Route 114 for industrial use.
**Goal (Housing):** Integrate open space with housing to provide for a pleasant setting, recreation, environmental protection and reduction in density.
**Objective:** Encourage development of new housing types and arrangements such as town houses and cluster development while adopting density control zoning (planned unit development to integrate housing types and density).
**Goal (Conservation and Open Space):** Provide and maintain a townwide system of recreational open spaces while creating an open space network connecting major open space facilities throughout the Town.
**Objective:** Insure that certain hills (Barker, Osgood, Weir, Woodchuck, Claypit, Bruin and Boston) are protected from intense development while adopting planned unit development and cluster zoning to encourage the reservation of open space.

Some of the more interesting recommendations to come from this plan included:

⇒ Creation of an East-West arterial in the vicinity of Johnson Street at Route 114. This route would have followed an improved Summer Street to Salem Street and was intended to serve the growing traffic caused by increased residential building in the area.
⇒ Cooperation with the Town of Andover to purchase water from their water treatment plant to satisfy the Town's needs beyond 1990 or before if it became necessary due to increased water needs.
⇒ Extension of the sewer line on Route 114 (north of Hillside Road) southward to Berry Street
⇒ Creation of five (5) residential densities from very low (.67 units per acre) to high (7 units per acre) with the option of a Planned Unit Development (PUD) to allow for the retention of more open space.

**1987 Growth Plan**
*"..., the VR zone is a counterbalance to the two acre proposals in other portions of the Town, and is the major effort for the creation of broader housing opportunities in North Andover."*

### *1987 Growth Plan*

The 1987 Master Plan (also know as the Balanced Growth Plan) was initiated by the Board of Selectmen in October, 1985 in response to a growing concern that - "... (then) existing zoning allows and promotes, an irreversible change in the overall character of North Andover from a desirable semi-rural, self sufficient town to an urbanized, overdeveloped, less appealing community undistinguished in the larger Merrimack Valley region."

Four major proposals formed the basis of the 1987 Plan:

⇒ **2 Acre Zoning** - Established two acre minimum lot sizes in zone R-1 providing more protection to the critical watershed areas.
⇒ **PRD** - Established the Planned Residential Development (PRD) concept in both the R-1 and R-2 districts.
⇒ **Village Residential** - Established the Village Residential District (VR) along Route 114. The goal was to increase the variety and density of housing choices available in the Town. The VR zone allows 1/4 acre single family lots.
⇒ **Village Commercial** - Established the Village Commercial District (VC) along Route 114. The VC District was de-

signed to provide commercial development for local needs. It encourages attractive "New England Town" type of development rather than strip commercial development. The zone requires strict adherence to buffering, landscaping and rear-of-lot parking.

## *Zoning Today*

Our town's primary agent of development control is a system of seven residential zoning districts. Since nearly 90% of all land in North Andover is zoned for residential uses, it is unsurprising that residential development is generally seen as the principal threat to our town's aesthetic beauty and fiscal health. When we conducted our community survey three years ago, "too much development" ranked highest on a slate of negative changes presented to North Andover's citizens -- who also registered strong feelings about the importance of open space to our town's character. As our build-out study illustrates (see Section 4, this chapter), North Andover has ample reason to be concerned about the impacts of sustained residential growth on our streets, our schools, our town finances, and what is left of our historic agrarian past.

By adopting the simplest or most urgent proposals and rejecting or ignoring others over time, North Andover has unwittingly allowed growth to outstrip the capacity of our environmental and man-made public resources. Simply stated, we are growing not only at a rate but also in directions that cannot be sustained.

In addition to a hierarchy of residential zones, North Andover has five business districts, four industrial districts and a "Village Commercial" district, which is a companion to the Route 114 Village Residential concept promoted by the 1987 Balanced Growth Plan. Our zoning is complicated less by superfluous regulations than by an unusual number and arrangement of zoning districts.

Moreover, except for the Village Residential District, most zones are delineated by streets *or* by parcel assemblies that required zoning changes long ago in order for proposed projects to go forward. In communities with a strong tradition of preserving town character, zoning district boundaries usually follow the natural contours of land, recognizing important scenic features, waterways and historic patterns of development. Similarly, subdivision regulations in these communities are sensitive to project scale, aesthetics and landscapes. Between our zoning bylaw and the suburban-form attributes of our subdivision regulations, North Andover has been primed to grow in a haphazard, inadequately planned fashion, with the increasingly monotonous appearance of new neighborhoods detracting from the charm and diversity of older ones.

## *Zoning Descriptions and Buildout*

Our residential development direction is a factor of vacant land, the zoning requirements and the environmental constraints of the land. The Master Plan Committee views the buildout analysis is a means to assess the end result of the relationship of these three factors. This analysis was conducted in 1996. Given the rapid development in North Andover since 1996 over 200 new lots were created and 454 single family home building permits were issued. Therefore this information should be considered as a buildout for a point in time and that the numbers will change as lots are created and permits are issued.

### *Analysis*

The approached the study using two geographic approaches, the first as a zoning district or second as expressed in assessors

maps or regions. The zoning district analysis provides an understanding of the impacts of particular districts on development potential. The analysis by assessors maps, or regions, provides the locational answer as to where the development will occur.

## *Summary Results Totals*

The tables on page 18 indicate the totals for the Buildout analysis. These totals remain constant between the Zoning and Region analysis. The bottom row in each of the tables indicates that there are ; 4,457.91 acres available for development, creating 4,620 lots if wetlands were not considered, with 3,800 lots if wetlands were considered, for a difference of 1,020 lots lost to wetlands. The total lots created would generate 30,400 average daily trips per day of traffic at eight trips per day per lot ( for a single family home the Institute of Transportation Engineers Manual cites 10 trips per day as the normal rate). Based on the number of lots an additional 1,900 school children would be generated at 0.5 children per lot.

## *Zoning District Descriptions*

There are five residential zoning districts in the community ranging from a 2 acre minimum to a 5,000 square foot per lot requirement. The zones also provide a variety of allowed uses with R1 being the most strict, limited to predominately single family, and R6 being the most liberal residential zone allowing a greater range of uses and the highest residential densities. For this analysis the use of each lot as a site for single family home was the assumption. The use of a special permit to obtain multi-family densities was not considered in the analysis. The following is an analysis of each zoning district.

- ***R1 87,120 sq. ft. per Lot***

**Location and Description :**This zone is formed by the Boxford and Middleton Town lines to the east and south respectively. To the west the zone line is formed by Salem Street. The district then encompasses the watershed area around the lake, to the north. The district requires a 2 acre minimum lot size for housing development.

**Buildout Potential Lots:** The chart and table titled "Buildout by Zoning District" shows the impacts of the low density R1. The district has the greatest number of acres available for development with 2,186.75. However the district does not create the highest number of lots. The number of lots that can be created minus wetlands is 767 . This is a function of the two acre zoning and a loss of 290 lots to wetlands.

**Traffic :** As with all zones the impacts of the zone are proportional to the number of lots. R1 will generate the second highest traffic counts at 6,136 trips per day. The primary concern for this level of increase is the remote location of the R1 district and the need for the traffic to traverse rural roads to reach destinations.

**School Children :** Again the zone creates the second highest impact. The issue of remote location is a factor.

- ***R2 43,560 sq. ft. per lot***

**Location and Description :** This zone is formed by the Middletown and Andover Town lines to the south and west respectively and Salem Street to the east. Pockets of R2 lie at either side of the lake in areas not in the Watershed. This zone requires a minimum of 1 acre lots for housing. Pockets of other zones lie within R2 such as VR and several business and industrial zones.

**Buildout Potential Lots :** This district comprises the second greatest acreage available at 1,408 creating the greatest

number of lots at 1,051 lots minus wetlands. Loss of lots due to wetlands is second highest at 297 lots.

**Traffic :** This zone creates the greatest traffic with over 8,000 trips per day. The location of the zone adjacent to 114 provides some form of relief to a major collector. However this relief is at the expense of the streets leading to Route 114.

**School Children :** The district will generate the greatest number of school children at 525 new pupils.

- ***R3 25,000 sq. ft. per lot.***

**Location and Description :** This district is near downtown providing a transitional zone between R4, the downtown and the less dense R1 and R2. This district is formed by a rail-road right of way to the east, route 125 to the north the Lawrence boundary to the west, and Rea Street to the south. The district contains pockets of the other residential and commercial zones. This zone also extends into the watershed district in the area of the Ridgewood Cemetery.

**Buildout Potential Lots:** With 428 acreas the zone has less than one third of the of available acres that R2 provides, yet the zone creates 681 lots which is over 60 percent of the number of lots created by R2. The south west corner of the watershed is comprised of R3. This increases potential lots in the watershed substantially due to the higher density allowance. The loss of lots due to wetlands is 34 which is substantially lower than R1 and R2.

**Traffic :** This district is the forth highest generator of traffic at 5,448 trips, this district is adjacent to major collectors of 125 and 114.

**School Children :** Many of the existing schools are within this area. This zone will generate 340 school children.

- ***R4 12,500 sq. ft. per lot.***

**Location and Description :** This district is formed primarily by Route 125 to the south with some extensions beyond 125 , the airport and Shawsheen River to the north, the abandon rail line to the east and route 114 to the west. The zone contains pockets of other residential, commercial and industrial districts. The district is the highest density large area district encompassing most of the densely developed portion of the Town.

**Buildout Potential Lots:** The district has 150 acres of available land for development. This creates 496 lots with a wetlands loss of only 30 lots. Many of the lots in this district are represented by pre-existing non-conforming lots. During the analysis it became evident that many of the vacant lots in and around the Downtown were created prior to the R4 district and are held separately in ownership from surrounding lots. Therefore the potential for this zone is determined more as a function of the legal status of non-conforming lots within the zone. Based on lack of legal standing the number may not be as high as the computer model indicates.

**Traffic :** Creating an additional 3,968 trips, this district is within the area of major collectors 125, 114 and interstate Route 495.

**School Children :** The district generates the lowest number of school children, at 248, for a district encompassing a larger area.

- ***R5 5,000 Sq. Ft.***

**Location and Description :** This is a smaller pocket district which coincides with the higher density multifamily projects such as Royal Crest, Heritage, and the Housing

Authority property . The district lies primarily off 125 in pockets surrounded by R4 with one portion off 114 surrounded by R3.

**Buildout Potential Lots:** The available acres in this district is minimal at 4.75 with the most attributable to Housing Authority properties.

**Traffic:** The numbers generated in this district are minimal. Considering that the property owned by the Housing Authority is adjacent to elder housing, the potential for traffic growth could be even less than indicated if the elder housing was expanded.

**School Children:** This district poses minimal impacts to the school system at only an increase of only 16 school children.

- ***R6 5,000 sq. ft. per lot***

**Location and Description :** The district is surrounded by commercial and industrial uses with a small portion of abutting R3 across the 125 bypass. Other than the R3 the district is primarily isolated from other residential districts within a triangle formed by 125 and 114. Typically districts located adjacent to major collectors and non-residential zones are multi-family developments. This district is almost completely built-out with single family homes associated with the Meadowood development. One lot remains with 9.90 acres located behind homes located on 114 and the Meadowood development. However the 9.90 acre lot has a considerable amount of wetlands (close to 75%) and represents a substantially lesser development potential. A development in the remaining R6 property will create a conflict between an adjacent industrial park and the new residential uses of R6. In 1999 the zoning along route 114 and Willow Street was amended to Village Commercial. This prevented further residential development adjacent to industrial and commercial areas.

**Traffic :** The zone produces the least potential amount of traffic at 168 trips per day.

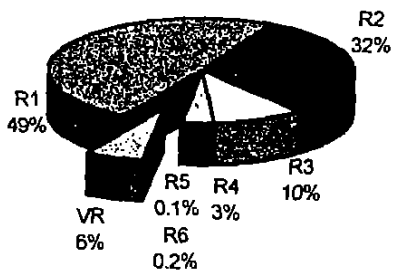
**School Children :** As with traffic the zone produces the least potential for school children at 10.

- ***Village Residential, VR 11,000 sq. ft. per lot with municipal Sewer***

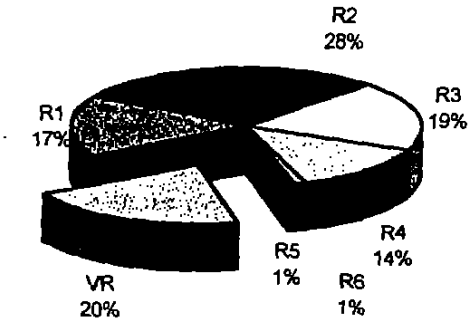
**Location and Description:** The VR district is located along route 114 to the west in the areas of Boston Hill, and the Harold Parker State Forest and to the east of 114 in the area of Farnum, Berry, and Brook streets. The zone provides for a density increase from one acre to quarter acre lots in the event sewer is extended down 114. At the time of the buildout analysis the above lot incentive for municipal sewer was in the zoning by-law. At the May 1998 the Zoning by-law was amended to eliminate the density bonus for the VR district. Therefore all of the numbers in the analysis should be reduced by 25% to reflect the impact pursuant to the amendment.

**Buildout Potential Lots:** The primary issue with the zone is the ability to quadruple the density with the provision of sewer. VR represents only 269 acres yet the zone creates a high number of the lots at 752. This is despite the highest loss of lots due to wetlands at 304. As indicated above the zoning by-law was amended to eliminate the destiny bonus for sewer. However prior to the zoning amendment two key properties were grandfathered from the amendment by filing subdivision plans. The Forestview Development of 92 lots and the Boston Ski Hill development of approximatly 108 units are both VR development under the prior 1/4 acre density. Considering that these properties represents a substantial potion of the VR zone the reduc-

**Acres Vacant as a Percent of Total Acres**




**Lots Created by Zone as a Percent of Total Lots**




tion in lots through the zoning amendment is not fully realized. The VR district creates a substantial impact in an area that is identified by the Master Plan survey as being more favorable for commercial development. In essence the district is a contradiction in what the community wants for 114. In a strong real estate market, with sewer being provided by a developer the potential for full buildout is eminent.

**Traffic :** The primary issue with the district is the potential for additional curb cuts onto 114 from subdivisions. At 6,016 trips per day the district creates a potential for access and egress peaks along 114 from new subdivision roads. These peaks in traffic may coincide with the commuting peak periods on 114 causing issues with turning traffic.

**School Children :** The district generates the third highest number of school children at 376. The VR district west of 114 is remote and a considerable distance from the nearest school.

***Buildout by Zoning Conclusions***

The adjacent pie charts indicate the relationships between potential acres for development and potential lots created as a result of multiplying the zoning density. The VR district is pulled out from the pie to show the relationship between the districts low acres at 6% and the high lot creation at 20%.

The R3 districts in the watershed is contrary to the goal of watershed protection as stated in many prior plans. Higher density zoning in the watershed also contradicts the importance of the watershed as expressed through the community phone survey and neighborhood meetings.

The R6 and R5 district must not be expanded, or created elsewhere. These higher density districts have already provided for a substantial amount of varied housing. Expanded these zones will create densities that are not acceptable to the community, based on results of the neighborhood meetings and survey.

***Buildout by Region***

This data from this section is generated by sorting the vacant parcel data by assessors maps. Then the assessors maps and resulting data are grouped to create planning regions. (see map on pages 10 and 11) Because the assessors maps are rectangular, in a few cases they do not always follow what many would consider the description of a particular region. However the regions are a strong approximation as to how the Town is divided by areas that are distinguishable by factors such as land use, housing densities and regulations such as the watershed.

Based on these regions the Town was divided into five regions as described below. Reference should be made to the map on pages 10 and 11 and the charts on page 9.

***Region Description and Impacts***

- ***Outcountry***

**Location and Description :** This region is formed by assessors maps 90a, 90b, all of the 105 maps, 104 a, 104b, 104d, and 106 a. The majority of the region is the R1 zoning district and as such has similar boundaries of the Boxford line, Salem Street, Middleton Line and the Lake area.

**Buildout Potential Lots:** This region, which is predominately R1 zoning, has the ability to create an additional 450 lots. In the Outcountry Region the loss due to wetlands is 75% of the R1 loss with 223 lots lost. The primary issue with this region is the remote position in relation to established road networks and services.

**Traffic :** The assessment by region allows a more definitive answer to the question ; Where is all this traffic coming from ?. Again as with the R1 zoning district the issue of isolation from services creates a need for the estimated 3,600 trips to use the rural roads more extensively.

**School Children :** The Outcountry Region does not generate the greatest number of school children at 225. This number is fourth as compared to other regions.

- ***Lake Region***

**Location and Description :** The Lake Region is represented by assessors maps : 35, 36, 37 a through d, 62, 63, 64, 90c, 103 and 104c. The region was selected based on its close approximation of the watershed boundaries as expressed by zoning. Map 104c is the only map of which half of the area lies outside the watershed. The region is comprised predominately of R1 zoning with some R3.

**Buildout Potential Lots:** This region is a primary concern because it represents the Town's watershed protection district for the Lake Cochichewick water supply.

Many of the lots that comprise the potential Buildout represent substantial acreage along the Lake's shore. As indicated in the Baseline section of this report the need to protect the watershed has been a consistent goal of the community. This has been echoed by the community survey as a current priority. This region generates almost as many lots, at 437, as the Outcountry Region, at 450, with the Outcountry Region having twice the acreage. The reason for the higher lot count with less are is the presence of R3 in the watershed. The R3 district at 25,000 square feet per lot creates eight times as many lots as the R1 which requires 87,120.square feet per lot.

**Traffic :** The Lake Region generates the next to lowest traffic impacts at 3,496, but this should not be considered as a minimal impact.

**School Children :** Only 218 school children are anticipated from this zone.

- ***North Region***

**Location and Description :** This region is formed by assessors maps ; 34 , 61a , 61, and maps 72 through and including 78. The region is predominately covered by industrial districts with the Lawrence Airport comprising 550 acres of the region. Therefore the residential numbers for this region are the lowest because much of the of vacant acreage is in non-residential zoning districts.

**Buildout Potential Lots:** The Region creates only 89 lots after a loss of 20 lots due to wetlands. One of the primary issues for this region will be the expansion of the airport and/or industrial growth and the separation of those uses from the residential uses.

**Traffic :** Again minimal numbers are created with 712 trips generated from residential zones in this region. Trips associated with potential industrial and commercial developments are not assessed.

**School Children :** A low number of school children at 44 represents a minimal impact and the least impact as compared to other regions.

- ***Middle Region***

**Location and Description :** This region is comprised of assessors maps ; 38, 65, 98 a through d, 106 b, 106 c, 106 d, 107a, and 108a. The zoning districts in this region are predominantly R2 with some R1, VR and R3. The region is generally bound by Salem Street to the east, route 114 to the west.

**Buildout Potential Lots:** The combination of the R2, R3, and VR and over 1,000 vacant acres creates the greatest impacts potential of any region. The number of lots created is 1,108 lots minus those lost to wetlands. This is more than the Outcountry and Lake Regions combined. This can be attributed to R3 and VR in this region combined with the second highest acreage available.

**Traffic :** This region will generate a substantial amount of traffic at 8,864 trips. The primary concern will be the access and egress points to this region and the impacts on those existing streets between the region and major collectors such as 114 and 125. The consistent use of this region as an east west transportation route, between Salem Street and Route 114, could face increased problems through the growth in traffic from within this region. Further, through increased populations, the use of the connectors roads by school children, pedestrians, and cyclists will exacerbate conflicts with vehicles. Development in this area should address the improvement to roads moving the east west traffic through the region to avoid conflicts with new developments. A proposal for an east west connector was made in the 1972 plan as indicated erirler in this chapter.

**School Children :** This area is the highest generator for school children at 554. However the region is not substantially higher than other regions such as the West at 425 and Downtown at 432.

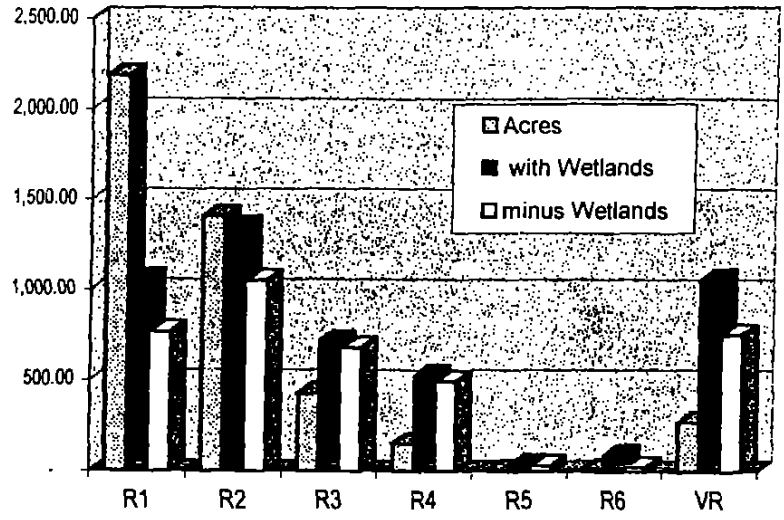
- ***West Region***

**Location and Description :** This region is comprised of the assessors maps : 25, 107b through d, 108, 108c and 109. The region is located west of 114 with some areas just east of 114. The Middleton line is to the south and northerly near the 125 bypass intersection with 114. The region is predominately R2 zoning with the greatest amount of VR. The region also includes R3 and R6.

**Buildout Potential Lots :** The presence of the VR district creates the greatest growth potential for this region with over 1,281 potential lots within 630 acres for an average one half acre density. This is tempered by a substantial loss of 430 lots due to wetlands creating a density of 1.35 acres per lot. Wetlands in this region are a critical factor in determining potential Buildout. Again as expansined earie;ler the

**Traffic :** Much of the available. land lies in the southerly portions of this region and

## Buildout Zoning District Comparision




**What are all these Numbers ?**

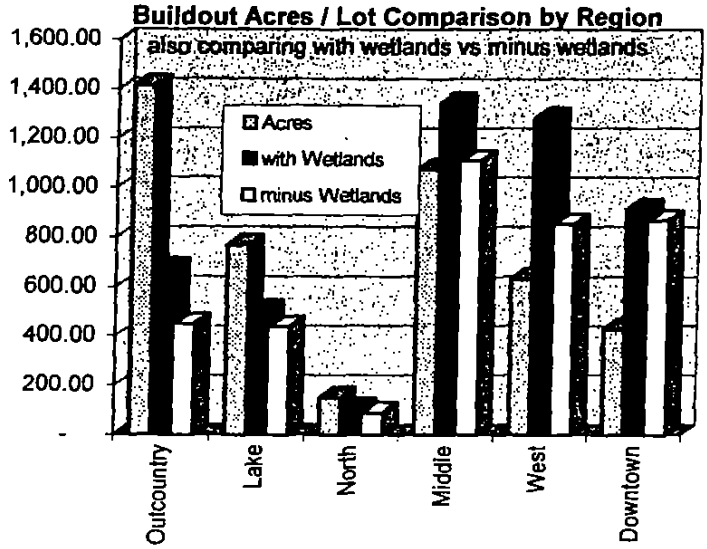
*The charts and data on this page represent the results of the Buildout. There are two ways to look at the information : by Zoning District the top chart and data, and by Region the bottom chart and data.*

*The table below each chart is the specific results for each category. The first column is either the Zone or Region which represents the area the data in the row results from. The second column represents the acres which are available for development for the area (Zone or Region) The third column is the number of lots that could be created if wetlands were not a limitation. This allows us to determine the impacts of wetlands on development. The fourth column takes into account wetlands and reduces the lots. After this column that data is not represented on the charts. The fifth is the difference between the third and fourth columns. The sixth is the number of trips (a trip is every crossing of a driveway of a car) if you assigned 8 trips per lot. The last column is the number of school age children that would result at 0.5 children per lot, or household.*

| Zone | Acres | Number of Lots with Wetlands | Number of Lots minus Wetlands | Wetlands Difference | Traffic 8 trips per Lot | School Children 0.5 per lot |
|---|---|---|---|---|---|---|
| R1 | 2,186.75 | 1,057.00 | 767.00 | 290.00 | 6,136.00 | 383.50 |
| R2 | 1,408.10 | 1,348.00 | 1,051.00 | 297.00 | 8,408.00 | 525.50 |
| R3 | 428.68 | 715.00 | 681.00 | 34.00 | 5,448.00 | 340.50 |
| R4 | 150.06 | 526.00 | 496.00 | 30.00 | 3,968.00 | 248.00 |
| R5 | 4.75 | 32.00 | 32.00 | - | 256.00 | 16.00 |
| R6 | 9.90 | 86.00 | 21.00 | 65.00 | 168.00 | 10.50 |
| VR | 269.67 | 1,056.00 | 752.00 | 304.00 | 6,016.00 | 376.00 |
| Totals | 4,457.91 | 4,820.00 | 3,800.00 | 1,020.00 | 30,400.00 | 1,900.00 |

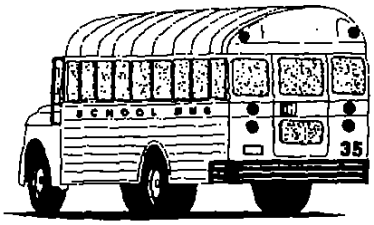
## Buildout Acres / Lot Comparison by Region

also comparing with wetlands vs minus wetlands




| Region | Acres | Num. Lots with Wetlands | Num. Lots minus Wetlands | Wetlands Diff. | Traffic 8 trips per lot | School Children 0.5 per lot |
|---|---|---|---|---|---|---|
| Outcountry | 1,411.51 | 673.00 | 450.00 | 223.00 | 3,600.00 | 225.00 |
| Lake | 766.84 | 504.00 | 437.00 | 67.00 | 3,496.00 | 218.50 |
| North | 149.83 | 109.00 | 89.00 | 20.00 | 712.00 | 44.50 |
| Middle | 1,073.33 | 1,342.00 | 1,108.00 | 234.00 | 8,864.00 | 554.00 |
| West | 630.13 | 1,281.00 | 851.00 | 430.00 | 6,808.00 | 425.50 |
| Downtown | 426.27 | 911.00 | 865.00 | 46.00 | 6,920.00 | 432.50 |
| Totals | 4,457.91 | 4,820.00 | 3,800.00 | 1,020.00 | 30,400.00 | 1,900.00 |

are as remote as the Outcountry Region. However the VR portions of this region are served by route 114 making access more direct. There are other areas in the region that would create traffic in remote areas served only by Boston Street. The presence of the Harold Parker State Forest severely limits developable land in this area. This region is isolated from the community. As such the region requires more costly approaches to Town services. The proximity of the region to 114 provides access for the traffic , however the same traffic will cause interruptions in 114 through curb cuts.




**School Children :** The issue with this region is the lack of proximity of the southerly portions of the region to schools. With an increase of 425 school children this region presents a transportation need.

- ***Downtown Region***

**Location and Description:** This region is formed by the remaining assessors maps that are in and around the downtown area. The zoning districts within this region are the higher density R4 and R5 districts along with R3.

**Buildout Potential Lots :** As indicated in the Buildout by Zoning Section, the R4 district contains a substantial number of lots that may be considered as non-conforming or in-fill lots. This is the primary reason for this region creating the second highest number of lots at 865. The higher densities zoning district and and lack of wetlands limitations are also a primary reason for the high lot creation. This region is within the primary area of Town services and highway access. Clear guidelines for establishing the non-conforming status or lots will possibly reduce the potential lots.

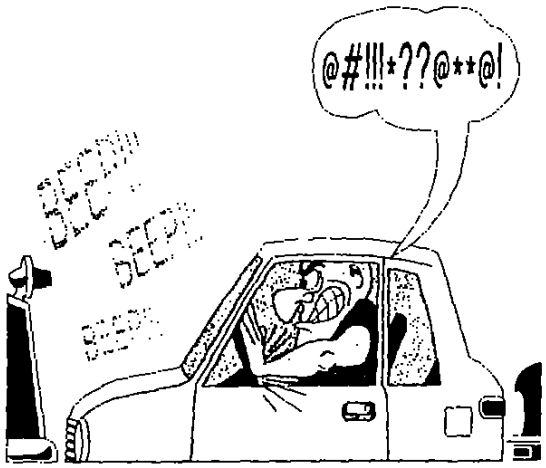
**Traffic :** This region will generate the second highest potential trips. Many of the primary routes pass through and around this region the traffic concern will be the addition of substantial trips to areas that already could be considered as congested.

**School Children :** The location of all of the schools but one lie within this region. The impacts associated with school children, at 432 children additional, are dependent on the existing populations and the ability for the school to absorb this regions potential increase. Again the issue of whether the non-conforming lots are viable is a factor that could substantially change the buildout in this region.

***Buildout by Region Conclusions***

The travel to and from households, and proximity of the households to Town and retail services are interrelated factors that will create more impacts if a balance of

How the community acts to affect the changes indicated in the Buildout will determine if any of these issues will be addressed. Many of these issues are not new (see Baseline section) . They have been identified in prior plans and studies over 40 years ago. The important next step is developing ***recommendation for implementation.*** The buildout computer model will be used to assess changes in zoning to determine the most effective way to address the needs identified by the community.




What can be gleaned from these statistics?

- More than one-third of North Andover's new growth potential exists in Outcountry and the West region, which are remote from existing schools.
- The more remote the growth region, the greater the traffic, utility extension and school transportation impacts.
- Increasing the number of vehicle trips per day on rural roadways creates public safety and quality of life problems for residents in these areas.
- Although the estimated number of future house lots was computed by discounting wetlands from gross available acreage, the reality is that as build-out progress, wetland impacts will increase -- during construction, and afterward.
- Ongoing sprawl will force North Andover to create a more extensive network of public facilities, especially fire stations, in order to provide timely and effective town services.
- Where North Andover is going runs contrary to what we heard from the vast majority of residents who answered our survey or attended one of our neighborhood meetings in 1996.
- Unless North Andover acts to promote responsible commercial and industrial growth, the impacts of residential development will place our fiscal health and well-being in jeopardy.

# Environmental and Cultural Resources

# ENVIRONMENTAL AND CULTURAL RESOURCES

## 1. Introduction

Environmental and cultural resources are a community's most important assets. They include such natural attributes as land, water and vegetation on one hand, and the legacy of human settlement on the other. Collectively, they represent each town's unique traits and character, for the relationship between natural features and the pattern of growth and land use change tells the story of how a community came to be what it is today.

At the same time, environmental and cultural resources are highly vulnerable. Among all community assets, these two have the greatest value because they cannot be replaced. When cities and towns fail to take charge of their futures or when circumstances beyond the control of local officials override even the best growth management plans, the damage is most evident in a breach of the natural and cultural order that once was. As citizens, our custodial responsibility for the community resources we inherited is best expressed in the one of this Master Plan's central goals: to value North Andover's natural resources and treat them accordingly.

North Andover originated as the Town of Andover's north parish in 1640. Our transformation from a colonial settlement to the community we are today depended heavily on the natural resources that give North Andover its aesthetic appeal and economic value. For example, the availability of low, relatively flat, fertile valleys fostered the early growth of agriculture here. Similarly, the Merrimack River and Cochichewick Brook supplied the hydropower that brought industrialization to North Andover in the 18th and 19th centuries. Until recently, the prevalence of rocky soils and wetlands discouraged growth in the southern and southeastern portions of our Town. The correlation between environmental resources and development type, scale and impact is expressed in a land use pattern that distinguishes the place we call North Andover.

Topographically, our Town is comprised of a highland on the outer edge of the Merrimack River Valley where four watersheds meet: the Merrimack River, the Shawsheen River, the Ipswich River (via Boston Brook and Mosquito Brook), and the Parker River. Drumlins contribute to a system that naturally drains the southern and southeastern portions of North Andover into the Ipswich River, and the northern and western areas into the Merrimack River. Several smaller tributaries flow throughout the Town, including Cochichewick Brook, which drains into our largest body of water, Lake Cochichewick.

The Lake serves many functions in North Andover. It is our primary source of drinking water as a restricted but popular recreational facility. During the 19th century, Lake Cochichewick was expanded to its present 564 acres as a direct result of industrial growth needs. Surrounding the Lake is the 2,732-acre Lake Cochichewick Watershed, 14% of which lies in the neighboring Town of Boxford.

Protecting environmentally sensitive areas and preserving North Andover's rural character have been high priorities here since the 1950's. By combining local, state and non-profit ownership, development restrictions and local regulations, we have retained vestiges of our rural vistas, agricultural landscapes and historic building fabric despite the relentless development pressures on our Town. For example, the Old Center district in the heart of North Andover still exemplifies a traditional 19th cen-

tury New England village with white clapboard houses, a spired church, village green and small commercial district. Similarly, the southern part of North Andover is characterized by rolling hills, fields, marshes and woodlands. The unprotected lands here are quickly being developed, although significant tracts have been dedicated to conservation, particularly within the Harold Parker State Forest.

In contrast, the railroad and industry accounted for the prominence of our Town's northernmost end, which serves today as our center of commerce and government. Intensely settled and mixed-use in character, the northern section of Town retains some of the social, economic and ethnic heterogeneity that once distinguished North Andover from nearby communities. As market forces propel the cost of land and housing toward parity with our neighbors, North Andover stands to lose the limited but tangible diversity that made the Town's cultural heritage regionally unique.

## 2. Existing Conditions

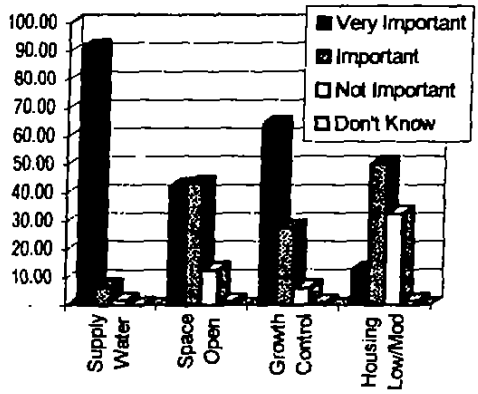
Our community has devoted considerable effort to planning for growth while preserving our rural character and unique resources. Beginning with the 1957 *Changing North Andover Plan*, the Town commissioned and tried to implement numerous studies in hopes of achieving sustainable and manageable development. For example, *Open Space and Recreation Plans* were written here in 1972, 1980, 1987, and 1995. A *Comprehensive Plan* was prepared in 1972, and 1987 witnessed the completion of both a *Balanced Growth Plan* and *Lake Cochichewick Watershed Plan*. An economic development *Strategic Plan* followed in 1996.

Our track record for reaching the natural and cultural resource protection goals in these plans has been mixed. Over time, we have revised our zoning and related land use regulations and made them more restrictive. Still, with the exception of Osgood Hill, initiatives to acquire critical sites, particularly within the Lake Cochichewick Watershed, have proven difficult. Residents want their fields, forests and water resources shielded from the impacts of development, but they often stop short of taxing themselves to finance the cost of long-term protection. In 1998, voters rejected a Proposition 2 ½ override that would have been necessary to acquire the Renshaw Carter Property.

**1957 Master Plan**
*"To protect the town water-supply, for which there is no easy nor nearby replacement, public open space reservation was recommended along all the Lake Cochichewick shores not already otherwise reserved (as, for example, by Campion Hall, the Brooks School, Rolling Ridge Retreat and the Boston University Conference Center."*

This is in contrast to the response from the 1996 community survey for the Master Plan. In question 7 of the Master Plan survey, people were asked to rate the importance of several issues, from "*Very Important, Important, Somewhat Important to*

**Importance of Issues**



*Not Important*". The responses show that Water Supply protection clearly is the most important with a 91% response in the *"Very Important"* category. *"Growth Control"* is second in the *"Very Important"* selection with *"Open Space"* dividing it's responses between *"Very Important"* and *"Important"*. The community clearly sees the water supply as a *"Very Important"* issue with a 91% response. Survey question # 2 resulted in a 20% response indicating that the residents appreciate North Andover's *Rural Character and want to see it preserved.* The third highest response in question # 2 was *"Limit Development"* at 12%.

North Andover has benefited from several non-profit organizations acquiring ownership of or development rights to sensitive parcels, and we have a number of state landholdings here as well. These other public and private open space investments secure protection for valuable sites and limit the Town's management liability. However, they do not substitute for our duty as citizens to safeguard North Andover's environmental quality. Although we sometimes rise to the occasion, we lack consensus about shaping the future of North Andover – perhaps because we lack a coherent frame of reference about the community we are today and the role that natural and cultural resources play in shaping our sense of place. It is significant that because so much development has occurred here in the past three decades, the majority of our residents today have lived in North Andover for less than twenty years.

As if to illustrate the impact of changing demographics on political culture, more than 1,100 people attended a special town meeting to act on the proposed $58 million high school, yet it is almost impossible to inspire the same sense of urgency about open space and watershed protection.

Our unique topography, location within several river plains and agrarian history all contribute to the wealth of natural and scenic resources that North Andover offers.

Within our 26.63 square mile area (17,043.20 acres) we have such non-forested resources as open fields, meadows, farmland, and shorelines along streams & ponds, forested lands with wooded trails, and a rich expanse of unbroken woodlands.

**Forested Land**

Aside from the Harold Parker and Boxford State Forests, only 27 acres of our considerable forested land are shielded from development. Moreover, these sites are but *temporarily* protected under MGL c. 61, the Massachusetts Forest Tax Law that grants property tax relief to participating landowners in exchange for a 10-year forested use restriction. MGL c.61 offers a voluntary incentive to eligible property owners to preserve and manage their forests. The tax reduction is secured by a renewable 10-year agreement that the owner and local officials execute and record at the Registry of Deeds.

Like companion legislation for agricultural and recreational land, MGL c.61 gives cities and towns the right of first refusal if an owner decides to sell his property during the tax reduction agreement's 10-year term. In theory, the law dissuades owners from selling their land because when they do, most of the deferred taxes must be paid to the community. However, for large, developable tracts of land, a strong real estate market often outweighs the statutory disincentive to sell. The income from a few lots pays the back taxes and leaves the rest for profit. While we should work to place more forested land in MGL c.61 agreements, we must recognize that at best, we are buying time – not permanent site control.

**Farmland**

North Andover's extensive development over the past three decades has left its greatest impact on farmland. Today, approximately 1,300 acres in 17 parcels are protected under the Massachusetts Farmland Assessment Act, or MGL c.61A. This classification also provides us with the right of first refusal when a restricted site is for sale, and it is available to eligible landowners by means of a 10-year renewable agreement. North Andover exercised this right when we purchased Mazurenko Farm in 1988 with local funds and a Self Help grant from the state.

**Hills**

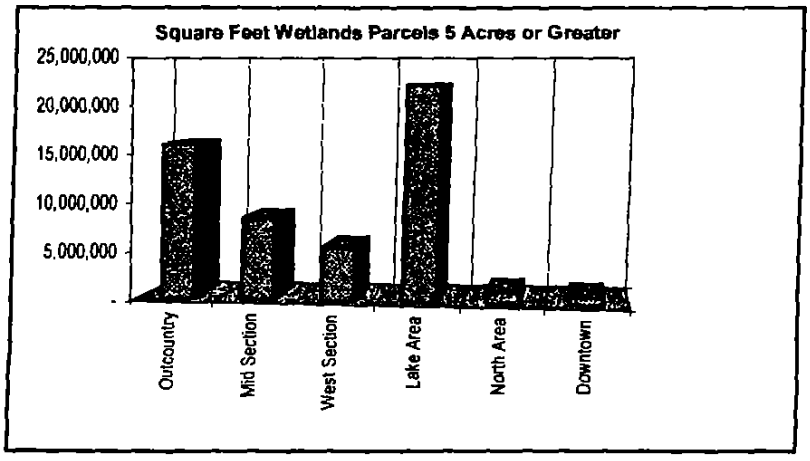
North Andover's topography is comprised of a series of hills that includes Osgood, Weir, Town Farm, Bear, Boston, Byers, Barker, Claypit, Woodchuck, Mills (the highest, at 405 feet). The *Changing North Andover Plan* (1957) gave primacy to protecting these hills for both scenic (Clay Pit, Boston, Woodchuck, Town Farm, and Bear) and water quality reasons (Weir, Byers, and Barker). Of the hills that form many of our most important vistas, only five – Woodchuck, Town Farm, Weir, Barker, Bruin, and Osgood – have some form of protection. However, none of them is completely protected from development.

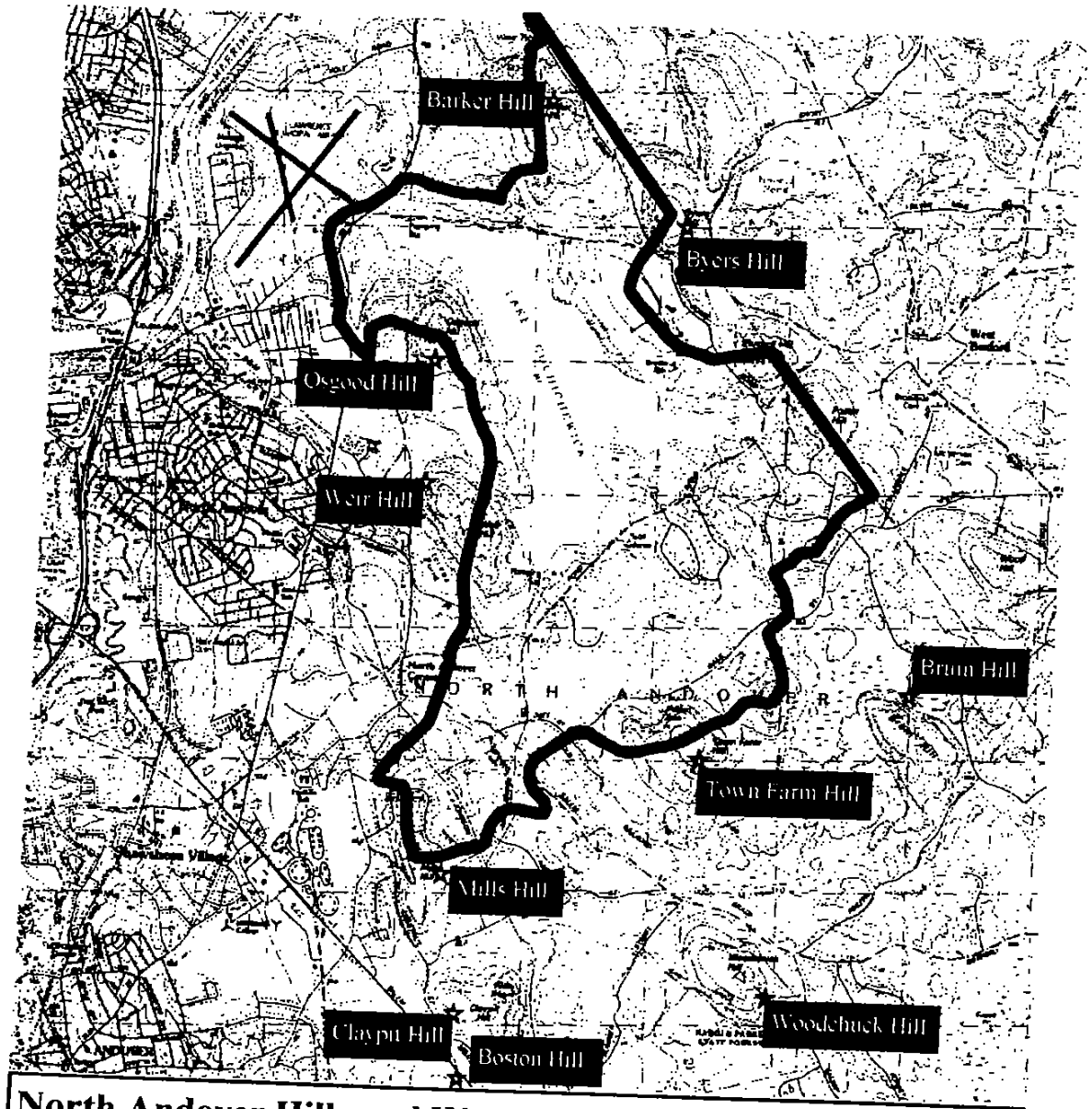
**Watersheds and Wetlands**

The southeast quadrant of our Town remains the least developed of all. This is primarily because designated wetlands constitute some 30% of the area, which is located within the Ipswich River Watershed. Neighboring towns use the Ipswich River as a drinking water source.

We take pride in our Wetlands Bylaw, which has been a highly successful regulatory tool for protecting North Andover's fragile ecosystems. Among the advantages of our Bylaw is that it protects wildlife habitats beyond the 100-foot zone that is regulated by the Massachusetts Wetlands Protection Act, MGL c. 131 §40. In North Andover, we have instituted a "no disturbance" buffer zone of 25 feet along existing wetlands, a 50-foot buffer prohibiting construction, and development review over construction near smaller ponds, vernal pools, and freshwater wetlands that may not meet the definition of Bordering Vegetated Wetland under state law.

In North Andover, the overriding concern has been to protect our drinking water supply from degradation caused by excessive development and incompatible land uses. After several years of intense development during the early 1980's, we were faced with just that threat. In 1985, officials discovered giardia in Lake Cochichewick, reinforcing the vulnerability of water resources to pollutants from new home construction, septic systems, storm water run-off, and agricultural erosion. The Town enacted a "boil water" order, constructed a filtration plant, and enacted a three-year moratorium while a comprehensive watershed study was undertaken. The study identified inlet streams and inflows as conduits for water quality deterioration at Lake Cochichewick.






**North Andover Hills and Watershed**

**Lake Cochichewick**

Based on recommendations in the *Lake Cochichewick Watershed Plan* that 1EP, Inc., prepared in 1987, our community adopted a Watershed Protection Overlay District. The Overlay District imposes a 150-foot conservation buffer zone from the annual mean high water mark, prohibits new construction within a 250-foot zone and discharges within 400 feet, and sets a minimum lot size of two acres. It also calls for a development review process for proposed uses within the Lake Cochichewick Watershed. To counter the development pressure that led to the Lake's contamination, we also commissioned a Growth Management Plan (known as the *Balanced Growth Plan*) during this period.

Despite strong town-wide concern about water quality at Lake Cochichewick, we have managed to permanently protect very little land within the Watershed. The 10% that is protected includes Weir Hill Reservation, Mazurenko and Rea's Pond Conservation Areas, a large part of the Town Farm, a portion of the Smolak Farm, which is protected under an Agricultural Preservation Restriction (APR), Osgood Hill, and a conservation easement managed by the Essex County Greenbelt Association.

**Streams and Rivers**

The 1997 Massachusetts Rivers Protection Act provides new protection for rivers and streams throughout the Commonwealth. The law amplifies pre-existing requirements under MGL c.131 §40 by restricting new development within 200 feet of all *perennial* streams and rivers.

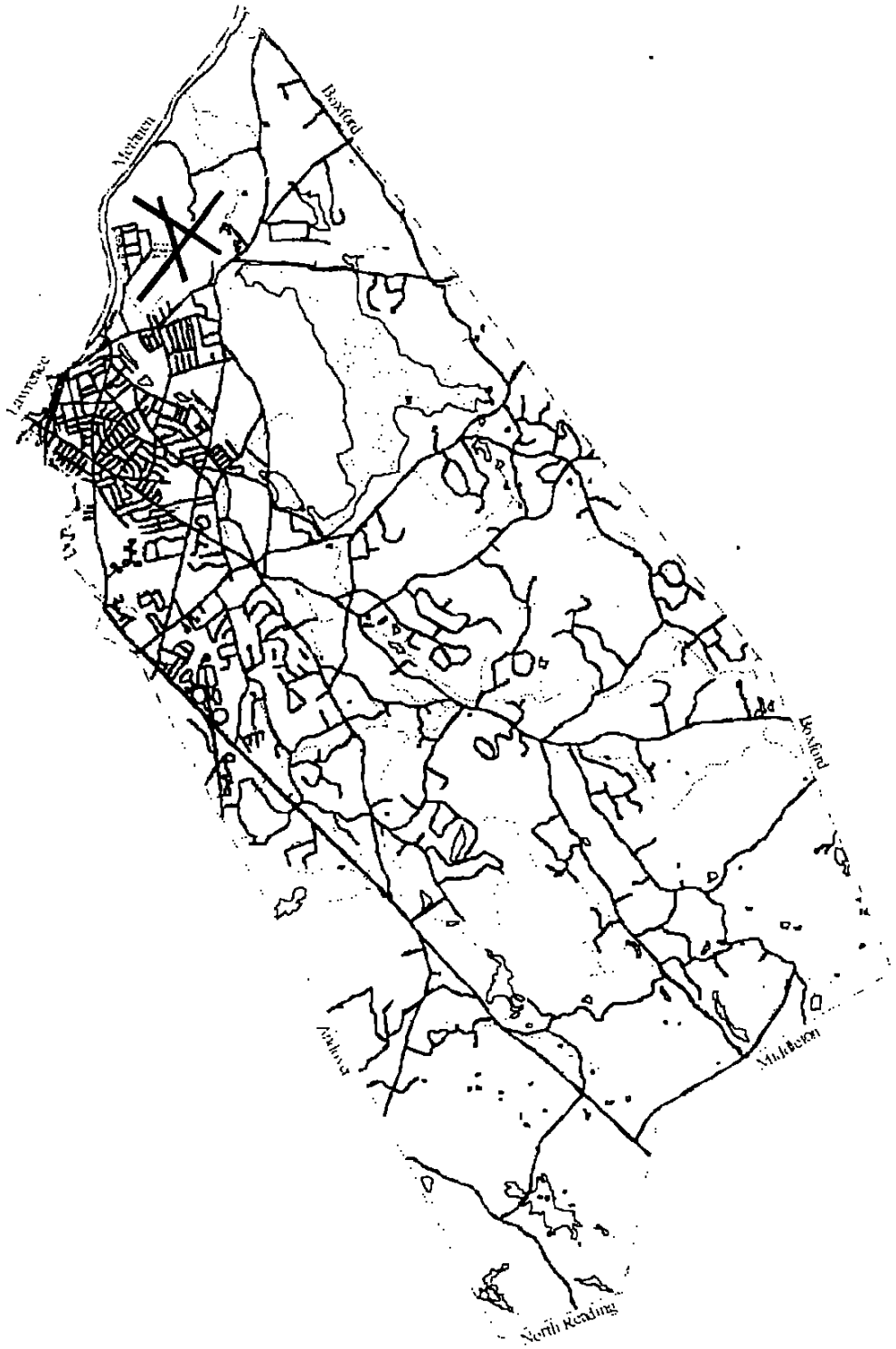
Our ability to invoke such tools as the Rivers Protection Act will be an important step toward limiting intrusive development near natural ecosystems, where unwanted land use change could ultimately harm the Town's water supply or create downstream flooding and other problems for residents.

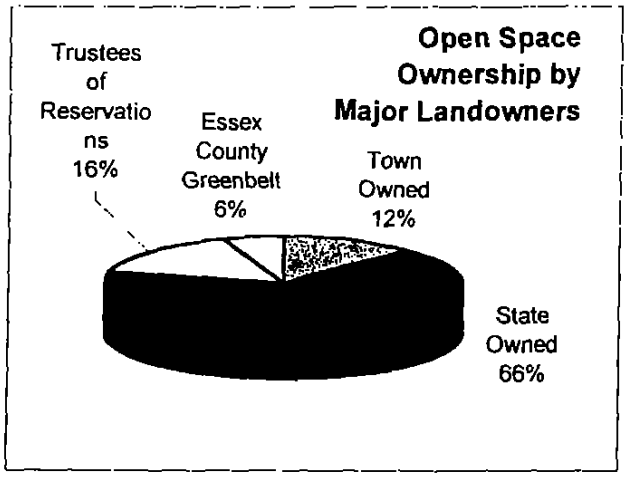
## Lake Cochichewick Milestones

The following timeline depicts the milestones associated with Lake Cochichewick. Considering the span of time and the constant increase in population the acquisition history of the Town has not been considerable. To date the total acres purchased in the watershed is equivalent to approximately slightly less than 1/50th of an acre per resident.

1634 - General Court of Massachusetts ordered land around Chochichawicke" (Indian name for "place of the great cascade") be reserved for an inland plantation.
1671 - Earliest industrial use of Lake Cochichewick; 357 acres.
1830 - First major dam on Lake Cochichewick increases lake to 500 acres.
1855 - North Andover incorporated.
1860 - Town population: 2,100.
1865 - Lake Cochichewick dam construction increased lake to lake to 564 acres, 45 foot maximum depth, 23 foot average depth.
1880 - Town population: 2,500.
1889 - Lake Cochichewick South Pumping Station
1950 - Town population: 8,500.
1955 - Town population: 9,400.
1956 - Lake Cochichewick North Pumping Station constructed (replaces South Station).
1960 - Town population: 11,000.
1968 - Weir Hill given to Trustees of Reservations.
1970 - Town population: 16,000.
1972 - Lake Watershed Plan completed.
**1975 - Rea's Pond purchased.**
1977 - Wetlands mapping completed.
1985 - Town appropriates $10 million for new water treatment plant.
1985 - Building moratorium in Lake Cochichewick watershed approved.
1986 - Giardia bacteria discovered in water supply. Health Department issues boil order.
1987 - Contract signed for construction of water treatment plant.
1987 - Lake Cochichewick Watershed Plan
1988 - Ozonators added to treat water for Giardia.
1988 - **Mazurenko Farm in watershed purchased.**
1990 - Town population: 23,000.
1990 - Water treatment plant opens - total cost $19.9 million.
1994 - **Osgood Hill purchased.**
1994 - Drought drops level of Lake Cochichewick to 108 inches forcing conservation.
1995 - Town population: 25,000.
1996 - Water system pumps 1.14 billion gallons per year.
1998– 144 acre Renshaw/Carter Parcel acquisition passes Town meeting and fails override.

Open Space Map






Our Conservation Commission, in a proactive step, has recently completed amendments to the Wetlands By-Law to incorporate the Rivers Act and Stormwater Management Policy. As the Town continues to digitize our parcel maps using Geographic Information System (GIS) technology, the Conservation Commission will be able to construct a parcel base map with a data layer of buffer zone boundaries along all streams and rivers.

**Protected Open Space**

According to the 1987 *Balanced Growth Plan*, 3,096 acres of North Andover land had been dedicated to conservation and recreation purposes (not including those portions of the Harold Parker and Boxford State Forests that are located in neighboring Boxford). The amount of permanently protected land in 1987 represented about 18% of the total area of our Town, and was significantly higher than the regional average of 9%. As of 1997, we had increased our protected open space to 3,435 acres, or 20% of the Town, primarily because voters agreed to purchase 154 acres on Osgood Hill. Of the total protected land inventory, 470 acres are within the watershed, 2,361 acres are outside the watershed, and 614 acres are Town-owned. Nearly 64% of all protected open space in North Andover is owned by the state, while various town agencies own 18%, the Trustees of Reservations, 15% and Essex County Greenbelt, 3%. The current inventory of protected open space in North Andover is listed on the following page.

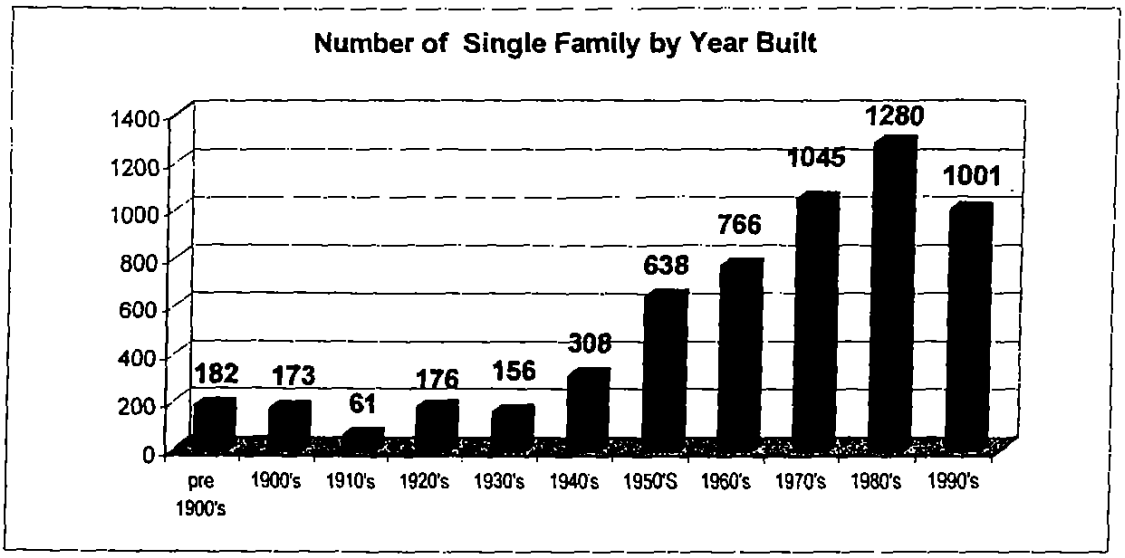
**Historic Resources**

North Andover retains a diverse collection of well-preserved architectural styles ranging from First Period homes of the early 1700's to early 20th-century Craftsman-style bungalows and Colonial Revival residences. We take pride in the number, quality and variety of historic sites in our community. Through architecture and settlement patterns, we can visualize the social and economic legacies that make contemporary North Andover unique. Over time, our Town has surveyed more than 350 historically significant properties and filed the completed inventory forms with the Stevens Library and the Massachusetts Historical Commission.

North Andover's three designated National Register Districts illustrate the historic patterns and diversity of development here. The North Andover Center Historic District, with 75 properties designated in 1979, represents the Town's original settlement. The Machine Shop Village Historic District's 151 designated properties (1982) document the style and character of industrial development during the mid-1800s. In the Tavern Acres Historic District, the 41 properties that were designated in 1995 represent a well-preserved example of planned residential development from the 1920s.

The National Register also lists several individual properties in North Andover, including the Parson Barnard House (1715) and the Kittredge Mansion (1784), as well as 14 homes in the First Period Buildings of Eastern Massachusetts Thematic Resource Area.

| Open Space in North Andover by Major Property Owners | | |
|---|---|---|
| | | |
| *PROPERTY* | *ACRES* | *PRIMARY USES* |
| **Town-Owned Open Space (Including Conservation Land)** | | |
| Town Farm/Forest | 170 | Watershed, Conservation, Recreation |
| Mazurenko Farm | 105 | Watershed, Conservation, Recreation |
| Rea's Pond | 15 | Watershed, Conservation, Recreation |
| Cyr Recreation Center | 88 | Conservation, Recreation |
| James Swamp | 57 | Conservation, Recreation |
| Town Common | 8 | Historic Preservation, Recreation |
| Merrimack River Well | 8 | Water Supply |
| Shawsheen River | 5 | Flood Control, Conservation, Recreation |
| Memorial Park | 3 | Historic Preservation, Recreation |
| Riverview Street | 1 | Future Boat Ramp, Recreation |
| Foster Farm * | 93 | Conservation, Recreation, Future School Site |
| Osgood Hill * | 165 | Conservation, Recreation, Historic Preservation |
| Town Owned | 718 | Subtotal |
| | | |
| **State-Owned Open Space** | | |
| Harold Parker State Forest | | |
| (60% in NA) | 3,100 | Recreation |
| Boxford State Forest | | |
| (40% in NA) | 828 | Recreation |
| State Owned | 3,928 | Subtotal |
| | | |
| **Lands Held by Trustees of Reservations** | | |
| Weir Hill | 192 | Watershed, Recreation, Conservation |
| Stevens-Coolidge Place | 91 | Historic |
| Ward Reservation* | 640 | Recreation, Conservation |
| Trustees of Reservations | 923 | Subtotal |
| | | |
| | | |
| **Lands Held by Essex County Greenbelt Association** | | |
| Fish Cedar Swamp | 6 | Conservation |
| Farnsworth Reservation | 50 | Conservation |
| Chaplin Cedar Swamp | 61.5 | Conservation |
| Wilmot Lot | 11 | Conservation |
| Chaplin Nike Site | 43.8 | Conservation |
| Bruin Hill | 62.3 | Conservation |
| Purgatory Swamp | 91 | Conservation |
| Christmas Tree Estate | 9.1 | Conservation |
| Essex County Greenbelt | 334.7 | |
| | | |
| Totals | 5,904 | Acres |




In 1987, Town Meeting strengthened the protections available for significant historic assets by creating the North Andover Historic District, with 52 properties in the Old Center Common area. Because it is a local district created under state law, building alterations and construction are subject to review and approval by the North Andover Historic District Commission.

## 3. Significant Issues

North Andover's most recent growth spurt has introduced a suburban character of development that is markedly different in scale, form and appearance than we had seen in the past. Much of the change is attributable to easier access to our community, which was made possible by the construction and expansion of regional transportation corridors such as Routes 495 and 93. In the 20 years from 1950 to 1970 alone, our population almost doubled from 8,485 to 16,284. By 1980, the population had increased another 24%. The economic downturn of the late 1980's caused this pattern to stall, but the past five years indicate that growth is clearly on the rebound.

Attesting to the rate of population growth here, new-home construction in North Andover has increased exponentially. Nowhere has development pressure been more intense than on North Andover's remaining agricultural land. Because it usually requires minimal site preparation, agricultural land can be subdivided easily into house lots. The effects on North Andover have been dramatic and unalterable; we lost most of our active farmland in the past 50 years.

In 1951, 23% of our Town, or 4,119 acres, was classified as agricultural/open space. Twenty years later, the amount had dropped to only 2,508 acres, for a 40% loss in agricultural land. By 1990, less than 9% of North Andover remained classified as land used for agriculture/open space, with only two dairy farms still operating. Conversely, the percentage of land categorized as urban space increased from 7% (1,252 acres) in 1951 to 22.9% (4,095 acres) in 1985, a more than 30% increase, as detailed below.

Between 1951 and 1980, North Andover's land absorptive rate (rate of vacant land conversion) was approximately 65 acres per year. By 1980, the rate had tripled to 193 acres per year. Our residential growth peak occurred in 1985 when the Building Department issued a staggering 320 building permits – 2.5 times the Merrimack Valley average of 131 permits in the same period.

According to records at Town Hall, 814 permits have been issued for new single-family home construction over the last eight years, which represents an average of about 100 new homes annually. The above chart shows the growth from 1970 until today, 3,326 single family homes, has exceeded the growth in homes from all prior decades, 2,254.

As a community, we remain committed to land conservation in the southern section of Town. This concept was originally recommended in the 1956 *Changing North Andover Plan*. Our goal was to preserve the southern stretch of North Andover as open space and woodlands by gradually acquiring parcels through gifts, purchases and easements, and limiting the extension of public utilities or facilities into the area. However, no action has been taken to implement what we said we wanted to accomplish, however.

The protective theme for the southern part of North Andover was reiterated in our 1970 *Open Space Plan* and 1972 *Comprehensive Plan*, both of which called for an "open space emphasis" development concept. These plans recommended placing approximately 1,700 acres of private land into an open space network in order to link existing public parcels. The acreage involved represents approximately one-third of the total land area in southern North Andover and appears undevelopable because of slope, wetlands, or other soil problems. However with the expansion of sewer to this area the potential for development increases.

**Lake Cochichewick**

A common theme in most North Andover planning studies has been protecting Lake Cochichewick and its water quality. This remains a high priority today, but like many other communities, ours sometimes finds it difficult to match actions with intent. Zoning in the Lake Cochichewick Watershed requires a minimum lot size of two acres, except where one-acre house lots are permitted in the southwest corner. The validity of the one-acre provision and lack of correspondence between existing watershed boundaries and surrounding roads need to be addressed.

Moreover, the Town needs to continuously monitor the effectiveness of our regulatory system and our protection of land within the Watershed. In 1998, North Andover won a surface water quality award from DEP. To maintain the Lake's value as a drinking water resource, we must take comprehensive steps to protect it. The purpose of regulations is not to stop development, but to set standards and conditions under which development can occur. So long as we rely primarily on a regulatory approach to protecting our water supply, we must accept the results: limited control over private landowners. North Andover's declining base of agricultural land has eroded the rural character of our community. We lament the loss of working farms and the effects on North Andover, but until recently we had not done enough to launch a coherent, planned course of action to protect our remaining agricultural land.

In 1998 we completed an update of the 1987 watershed study. This analysis is a technical companion study to the Master Plan. The study analyzed the potential impacts of development on the Lake and the remedial steps necessary to mange the impacts.

The results indicate that the impacts of development on the Lake Cochichewick water supply are a reality. The study through the use of the "P8" computer model, documents the implications of further development in the watershed. The "P8" model is a catchment model used to predict the generation and transport of stormwater runoff

> *" If we can curb the amount of nutrients coming into the lake, that would be a big help", ...."It would cost a lot of money in the long run if it is not controlled"*
>
> Water Plant Superintendent Dennis Bedrosian
> *Why isn't Water OK?*
> Lawrence Eagle Tribune
> 1993 Article concerning increased algae blooms.

pollutants in urban watersheds.

The results of the analysis show that the majority of the total phosphorus load entering Lake Cochichewick is from existing development and usage within the watershed; this accounts for nearly 80% (933 lbs/yr) of the total. The remaining contributors include direct precipitation (158 lbs/yr) and internal recycling (92 lbs/yr).

*P8 Model Partial Build-Out*

The total phosphorus load estimated under a partial build-out scenario (33% development) was approximately 1,425 lbs/yr, with a watershed load of 1,175 lbs/yr. Under these conditions, Lake Cochichewick would be expected to experience an increase in the occurrence and duration of nuisance alga blooms.

*P8 Model Full Build-Out*

The total phosphorus load estimated under the full build-out scenario (assuming all land in the watershed , including land in Boxford was developed) was approximately 1,984 lbs/yr, with a watershed load of 1,734 lbs/yr. Under these conditions, Lake Cochichewick would be expected to experience a very substantial increase in the occurrence and duration of nuisance alga blooms.

While at present the Lake is not at risk, what happens in a lake with high phosphorous concentration is that alga blooms turn the water green and cloudy, more fish die due to the reduction of oxygen, and unpleasant odors and tastes arise.

**Open Space Protection: A Top Priority**

We are actively exploring Self-Help grants and annual Conservation Fund appropriations as mechanisms to achieve our objectives. In 1997, however, North Andover received a $250,000 commitment from the state's Self-Help program, for the acquisition of the Carter/Renshaw parcel, but we were unable to use the grant. The project failed an override vote and the grant funds were never committed. Furthermore, our Open Space Committee and Conservation Commission created a priority parcel list so the Town can concentrate on sites that most need permanent protection. To identify the highest priority parcels, committee members devised a comprehensive ranking system that considered these site attributes:

- Adjacent to Lake Cochichewick Tributary;
- Within boundaries of Lake Cochichewick watershed;
- Abutting existing/protected open space; development risk;
- Unique aesthetic, historic value or community character;
- Feasibility of a trail network and adjacent networks;
- Unique wildlife-- wetlands/river corridor/riparian habitat, etc.

As a result of the Conservation Commission/Open Space Committee land evaluation process, the 1998 Town Meeting considered proposals to purchase two priority sites: the 90-acre Foster Farm and the 144 acre Carter/Renshaw parcel located in the Watershed. At the same Town Meeting, voters were asked to institute a Conservation Fund in order to supply a ready source of acquisition capital for purchasing key parcels as they become available. In addition, the North Andover Open Space Committee has begun discussing a Home Rule Petition to create a "Transfer Tax" that would build a capital reserve for future open space purchases, but no formal proposal has been placed before town meeting.

The transfer tax concept originated on Nantucket, but the Massachusetts Legislature has repeatedly declined to extend the same open space financing power to other cities and towns in the Commonwealth. It appears that what open space proponents hoped to accomplish with a transfer tax petition will be possible through the Community Preservation Act, enabling legislation promoted by Executive Office of Environmental Affairs Secretary Robert Durand.

In the interests of quality planning and readiness to act, our Town hired the Merrimack Valley Planning Commission (MVPC) to prepare an Open Space Map, and to separately map all of MGL c.61 and c.61A lands in North Andover. MVPC's services will assist us as we work toward implementing the 1995 *Open Space and Recreation Plan.* Among its many recommendations, the recent 2000 *Open Space Plan* encourages the use of MGL c. 61A and the Agricultural Preservation Restriction Program (APR), as well as promoting markets for locally grown products, in order to retain active agricultural land.

**Open Space in Planned Residential Developments**

At present, North Andover is reviewing and reconsidering the Planned Residential Development (PRD) Bylaw that we adopted at Town Meeting several years ago. This set of zoning regulations permits an exchange of higher-density development for dedicated open space in the R-1, R-2 and R-3 districts. Although several issues prompted us to evaluate the effectiveness and results of the PRD ordinance, a major one involves the usefulness and management of reserved open space in these projects. Town officials have considered offering this open space to a non-profit organization so the land can be properly managed and maintained. If no organizations want to participate, the Town could take ownership. A last choice would be to place the land into a trust held by the Homeowners Association.

North Andover's growing population, increasing number of families with young children and changing demographics collectively account for a shift in open space priorities and management needs. Today, public sentiment argues that PRD's should produce open space that is usable, not poor marginal land. Although our community enjoys a rich array of natural resources, both perceived and real public access to many open space and recreation sites is limited. We need to properly maintain these areas, but the more pressing challenge is to fund capital improvements that can maximize public use of our existing recreation facilities. Toward that end, North Andover should determine the appropriateness and impact of user fees as a source of funds for maintenance costs and future land acquisition.

**Public Access and Use**

In response to the Town's evolving interest in outdoor recreation, we recently received several grants to enhance public enjoyment of our community's natural resources. For example, in collaboration with the Town of Andover and the City of Lawrence, we obtained a $230,000 grant for design and preliminary engineering services to develop the Shawsheen River Multi-Use Corridor. In addition, North Andover successfully applied for $30,000 in federal FY 1996 ISTEA (Intermodal Surface Transportation Efficiency Act) Enhancement Funds to launch the first phase of development for the Essex Railroad Rail Trail, a proposed seven-mile pedestrian and bicycle path along the former B & M Railroad right-of-way. The initial ISTEA award will be used for an existing conditions survey and project cost estimate to investigate the use of the rail line for a recreational trail. This "rails to trails" study may provide the foundation for a regional recreational facility, connecting with rail beds in Middleton,

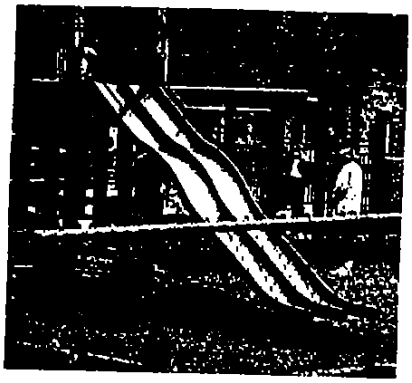
Danvers and Peabody and into the existing Essex County Greenbelt system. Approximately 80% of the rail bed still exists, but site planning is key to establishing where private encroachment has occurred over time.

Managing Lake Cochichewick may be simplified by addressing access issues that were raised in the *Open Space and Recreation Plan*, but the problems are larger and more complex, and they are systemic. At any given time, multiple North Andover offices, departments and committees have authority over or direct interest in issues pertaining to the Lake. They include our Conservation Commission, Board of Health, Planning Board, the Divisions of Public Works and Planning and Community Development, Recreation Council, and the Board of Selectmen. Given the size of the Lake and the public health and welfare ramifications of its use, our community needs to examine whether we have the institutional capacity to manage this critical resource. Lake Cochichewick serves many masters. We demand from it a steady supply of potable water and a pristine appearance that comports with our image of an environmentally conscious North Andover. Whether these expectations are appropriate, they are real. Because North Andover lacks a central, coordinating agency that looks holistically at all of the demands placed on this one water body – development impacts, competing uses, safe drinking water – we are not *managing* Lake Cochichewick. Rather, we run the risk of *mismanaging* it.

**Historic Resources**

While North Andover has been fortunate to retain many well-preserved historic buildings, the likelihood is that continued development pressure will induce inappropriate and irreversible damage to the architectural integrity of many of these structures. We need to consider carefully whether additional local historic districts and a demolition delay ordinance could help ensure the continued preservation of our historic built resources. They are as central to North Andover's "community culture" as the hills, open fields, wetlands and forests that shape and define our landscape. Like the old farms that gave way to subdivisions, historic buildings cannot be replaced.

To create new local districts, we must first update our Town's inventory of significant properties to identify building alterations that have occurred since the last inventory revision, and to survey additional neighborhoods. Public education is critical. Additional National Register districts, a signage program and professional staffing can help foster public appreciation of the community's historic buildings and encourage private preservation. A review of educational efforts in other communities and technical assistance from the Massachusetts Historical Commission on planning and outreach grants will build the foundation for a proactive effort.



# Community Facilities and Services

## COMMUNITY FACILITIES AND SERVICES

### 1. Introduction

Community facilities and services supply the civic infrastructure that supports a particular land use pattern and enhances the quality of life for local residents. A community facility is any piece of municipal property that has been developed for public purposes. By definition, it is paid for, available to and used by "the community." Population demographics, environmental and geophysical constraints, fiscal conditions, tradition and local political culture dictate the number, type and location of community facilities and what they offer.

It is important to remember that "community facilities" involves more than buildings. Soccer fields, municipal parking lots and bike paths fall in the same category because they enable our town to offer resident services. Similarly, drinking water reaches our homes and businesses by way of a public water system. Since all town and school programs are suppo rted by tax revenue or special user charges (sometimes both), civic infrastructure and fiscal impact are mutually dependent public policy issues. Each is affected by the land use choices we make, as demonstrated by the relationship between residential growth and the number and cost of school building projects North Andover has undertaken or approved in the past ten years. Given that our community is destined to grow by another 3,800 homes (1996 Buildout Study), land use practices will continue to shape important public facility and fiscal debates in the future.

North Andover has experienced large population increases in the last 30 years, from approximately 16,000 residents in 1970 to over 26,000 today. Accordingly, our town services have been increasingly strained. After Proposition 2½ went into effect in 1981, North Andover struggled more than ever to finance the public services that residents expect. Each year, the problem worsened as population impacts produced school impacts, forcing us to devote every spare dollar to preserving and enhancing the quality of our school system. Still, North Andover's school buildings became overcrowded because the annual cost of school operations made capital improvements difficult.

Our fire department needs more equipment and a new substation, and the outdated Central Fire Station needs to be replaced along with the Police station. As water consumption increases each year, North Andover's homes, businesses and industries use so much water that average-day demand is inching toward the Lake's authorized safe yield. Town Hall is woefully inadequate to meet modern municipal needs, forcing some departments to become scattered-site operations while many of those remaining at Town Hall are inaccessible to persons with disabilities.

The availability of public infrastructure -- water and sewer lines -- affects community growth in several ways. Most development options require that public water be available because it is integral to the health, safety and well-being of household occupants or it is necessary to industrial production and operations. Water is so crucial to development that in practice, the cost of extending water service is born by developers while municipalities generally shoulder responsibility for repairing or replacing system components. As residential development reaches the less suitable land in our community a subdivision that could normally be accommodated by on-site sanitary waste disposal systems is becoming dependent on a developer sponsored expanding network of public sewers. Zoning incentives for lots with sewer have exacer-

bated this developer supported sewer expansion along areas such as route 114. Our proactive efforts have focused on to protecting the Lake Cochichewick watershed and repairing sewer lines to serve the more intensely developed sections of town.

Most community facilities and services react to rather than shape the course of growth and change. Additional school buildings and teachers, Town Hall service hours and staffing levels, playgrounds and baseball fields are driven by demand. As North Andover grows, so does the demand for public services: more families, more schools; more streets, more plows; more buildings, more firefighters and equipment; more retail establishments, more police.

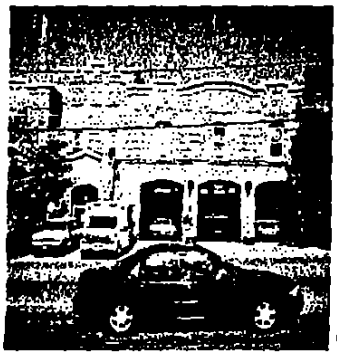
Thus, development affects the quality of our lives by changing the character of the community, impacting water recharge areas, reducing open space and adding traffic and pollutants. As our rising debt service obligations attest, development also taxes fiscal and human resources.

## 2. Existing Conditions

### Town Services

### *Fire Department*

North Andover is served by two fire stations. The central station , which was built at the turn of the century, is located on Main Street adjacent to Town Hall. In 1971 the Johnson street station was constructed to address the growth of areas outside the downtown.



**Central Fire Station**

Fire Department capacity is comprised of 46 firefighters, nine lieutenants, one deputy, and the Fire Chief. The Department owns and maintains 10 pieces of apparatus, including three engines, one ladder, two ambulances, one brush truck and one fire alarm, plus the cherry picker, the chief's car and one fire prevention vehicle.

### *Police Department*

Shortly after we built the Salem Street Fire Station in 1970, North Andover relocated the Police Department from Main Street to the current Police Station on Osgood Street (1972). At present, the town's police force includes 22 officers, six lieutenants, four sergeants and the Police Chief. Three of the department's personnel serve as detectives and one, as juvenile officer.

**Police Station**

### *Division of Public Works*

Owing to a lack of space at Town Hall and the need for greater operating efficiencies, we also relocated the Division of Public Works (DPW) from Main Street to its current facility on Osgood Street in 1987. At that point, the DPW was able to consolidate its administrative and field operations under one roof. North Andover's DPW includes three primary departments that are overseen as follows:

- Superintendent of Highways and Utilities who is responsible for road maintenance, snow removal, grading, resurfacing, drainage, and sweeping. Along

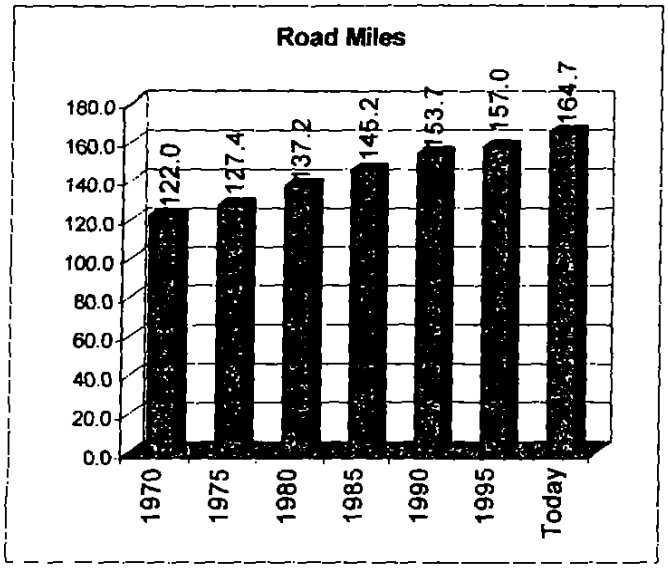
with fleet maintenance.

- Director of Engineering and Administration
- Superintendent of Forestry, Trees, and Grounds who is responsible for all trees and municipal grounds maintenance.

Functionally, the Department is responsible for these services:

- Road maintenance and reconstruction. North Andover handles nearly all of road maintenance and repairs with "force account" labor, meaning Highway Department employees. Last year, the Highway Department was carrying approximately $3 million in roadway, drainage, sidewalk and paving projects for which we receive "Chapter 90" reimbursements from the Commonwealth of Massachusetts. These funds are integral to keeping abreast with the consistent increase in roadway miles. Since 1970 the miles of roads in our community have risen steadily, on average 10 miles per year. This increase has not been met with a commensurate increase in personnel. For example the total personnel in Fiscal 1987 was 59 full time employees, 88 total employees while today the personnel has decreased to 44 full time employees and 60 total employees. More specifically the labor personnel decreased from 37 in 1987 to 21 today. As road miles are increasing staffing continues to decrease.
- Solid waste collections are done once a week. The Town collects about 7,800 tons of refuse per year and disposes of it at the Holt Road Resource Recovery Facility.
- Recycling, which began in January 1994.
- Curbside collection is done every other week. Residents can recycle three types of glass, along with aluminum, #2 plastic and paper. North Andover maintains 5,000 recycling red bins.
- The drop-off center, located at DPW Garage, is open five days a week from 9-3:00 and one Saturday a month from 9-12:00.
- The drop-off for yard waste is located at the Cyr Recycling Center on Sharpner's Pond Road. It is open Tuesdays, Thursdays, and Saturdays from April through December.
- Oil recycling is done at the DPW garage on the third Saturday of the month.
- White goods can be recycled two Fridays a month by appointment.

Public Works Garage




*Sewer Infrastructure*

North Andover has developed and maintains a public sewer system that serves approximately 40% of the land area in Town. It is funded by an "enterprise account," which means that users pay for all of the operating and capital costs associated with managing, maintaining and developing the system. Our network of public sewers is divided into three sections: East Side, West Side, and Central. The statistics below summarize the extent of sewer system growth over the past 40 years.

**Sewer Lines**

| Year | Miles of Pipe | Service Connections | Percent Increase Connections |
|---|---|---|---|
| 1960 | 31.70 | 1,924 | |
| 1970 | 42.60 | 2,542 | 24.31 |
| 1980 | 47.20 | 3,187 | 20.24 |
| 1990 | 59.20 | 3,814 | 16.44 |
| Today | 68.10 | 4,168 | 8.49 |

In 1987, about 150 of 600 dwellings in the watershed area were connected to North Andover's sewers and most of these were gravity systems. To expand sewerage throughout the area the Town needed to construct pumping stations and install force mains. By 1996, two of the three phases watershed district sewerage had been completed. Phase three remains stalled while the Town negotiates easement rights with private property owners. Town officials hope to avoid eminent domain takings and the litigation that surely would result.

*Water Supply and Infrastructure*

Water pumped from our one supply source, Lake Cochichewick, reaches 70% of the homes and businesses in North Andover today. Like the sewer system, our water department operates on an enterprise accounting format. Consistent with the Town's overall growth since 1960, the water distribution system has developed at a pace indicated in the below table.

**Miles of Water Mains**

| Year | (All Sizes) Miles | Connections | Percent Increase Connections |
|---|---|---|---|
| 1960 | 69.20 | 2,728 | |
| 1970 | 96.50 | 3,765 | 57.40 |
| 1980 | 114.90 | 5,120 | 52.80 |
| 1990 | 141.00 | 5,861 | 40.80 |
| Today | 134.63 | 7,200 | 31.90 |

In response to the Lake's *giardia* problem, in 1988 the Town added ozonators to treat water withdrawn from the Lake and a $19 million water treatment plant was brought on line in May 1991. Distribution system extensions are carried out primarily by developers, but we are responsible for maintaining water mains and standpipes, locating and eliminating leaks, and replacing old or under-sized water mains in order to provide adequate fire flows and domestic water pressure. Toward that end, our Water Department spends approximately $800,000 per year on water main rehabilitation. This rehabilitation program has allowed the Town to moderate the rapid in crease in water distribution and service connections. Since 1960 the length of water lines have increased by over 60%, and the service connections have increased by 45%, yet the consumption has increased one third during that period. This may be primarily due to the focus of the Town on rehabilitation. While the water system increases in size, the Town replaces older lines, thus affecting consumption through water loss prevention.

Significantly, although the safe yield for Lake Cochichewick is 4.0 million gallons per day (gpd), consumption has approached the safe yield limit during non-peak periods and we consistently exceed it during peak-

Water Treatment Plant

season demand cycles. The "non-peak" average-day demand is about 3.1 million gpd, but during the four-month peak season it soars to an average of 5.8 million gpd. In unusually hot, dry weather, North Andover homeowners and businesses have tapped the Lake for as much as 7 million gpd, as evidenced in the below table.

**Water Supply Demand**

| Year | Average Day Demand (in mg) | Maximum Day Demand (in mg) |
|---|---|---|
| 1998 | unavailable | 6.39 mg |
| 1997 | 3.19 mg | 7.00 mg |
| 1996 | 3.11 mg | 5.32 mg |
| 1995 | 3.14 mg | 6.95 mg |
| 1994 | 2.99 mg | 5.70 mg |
| 1993 | 2.90 mg | 5.97 mg |
| 1992 | 2.79 mg | 4.30 mg |
| 1991 | 2.90 mg | 6.37 mg |

## *Parks and Playgrounds*

North Andover's Public Works Department maintains eight developed playground facilities and four public parks as listed on the next page. Additionally, the Thompson, Chadwick and Middle Schools double as summer recreation sites for children grades 1-8. The Town sponsors a seven-week program from 9-1:00 on weekdays, offering supervised sports, crafts, field trips and other activities.

## *Recreation Facilities*

A number of outdoor recreation facilities are located throughout North Andover. Our current inventory of active and passive recreation areas consists of those listed on the next page. Despite the current number of facilities the consistent growth in programs such as soccer, baseball, softball, among other sports has created a severe shortage of fields. The field shortage was highlighted by a recent lawsuit filed by a newly created Little League seeking equality in field disposition. The shortage of soccer fields will be exacerbated by the construction of the recently approved High school which will displace most of the fields used by the soccer association. The Town will seek funds at the May 2000 Town meeting to create two additional soccer fields at the Foster Farm site.

## *Veterans Services*

Located at Town Hall on Main Street, the Veterans Services office assists veterans and their dependents in obtaining financial aid and claiming benefits from the federal Veterans Administration. The department also arranges for special vehicle plate registrations for veterans, maintains veteran graves and places markers and flags as necessary, and also provides information on VA-insured housing loans.

## *Senior Services*

The North Andover Council on Aging is a town and state funded agency with one full-time salaried employee. The Council is headquartered at the Senior Center on Main Street, which opened in 1984. In 1996 the Town received a Community Development Action grant for $583,000 to double the size of the Senior Center. Construction of three new large function rooms and a professional kitchen was completed

# Town Recreation Facilities

| Map # | Recreation Area | Location | Facilities and Services |
|---|---|---|---|
| 1 | American Legion Beach | Stevens Pond, Stevens Street | Swimming, picnic area, maintained equipment and beach |
| 2 | Rea's Pond | Route 133 | Fishing and ice skating |
| 3 | Sharpner's Pond | Sharpner's Pond Road | 100-acre facility including the pond, open space, woodlands, ball field, 1.5 miles of maintained trails for biking/hiking. |
| 4 | Town Forest | Dale Street | 87 acres of woodlands and meadows for picnics, hikes, snowshoe, and cross country skiing |
| 5 | Weir Hill | Harkaway Road | 192 acres of trails, woods, pasture and roads (owned/maintained by Trustees of Reservations) |
| 6 | Harold Parker State Forest | Route 114 | 2,089 acres of state-owned and maintained park-land, including ponds, camping areas, hiking, fish-ing, cross country skiing. |
| 7 | Lake Cochichewick | Great Pond Road | Limited to fishing for licensed residents; no motor-ized craft |
| 8 | Aplin | Clarendon Street | Baseball, basketball, playground, skateboard park. |
| 9 | Chadwick | Chadwick Street | 3 softball fields, basketball, playground |
| 10 | Drummond Park | Johnson & Milk Street | Lighted ball field, basketball, playground structure, sledding, and new Youth Center |
| 11 | Grogan | Grogan and Gilbert Street | Baseball, football, basketball, playground |
| 12 | Middle School | Main Street | One Baseball, 2 softball, basketball, track, football stadium. |
| 13 | Reynolds Field | Johnson and Rea Street | Playground, soccer fields, open space |
| 14 | Carl Thomas | Mass. Avenue | Playground, baseball fields, sledding, 3 little league fields. |
| 15 | Gallagher Field | Dale Street | Soccer field, baseball field |
| 16 | Sharpners Fields | Sharpners Road | 2 ballfields and 2 soccer fields |
| 17 | High School | Osgood Street | 6 soccer, 2 lacrosse, 1 baseball, 1 softball, |
| 18 | Franklin School | Andover Street | 1 basketball court , 2 ballfields, one soccer field |
|  | Thompson School | Waverly Street | 1 basketball court, 1 ballfield. |

| Elder Housing<br>Facility | Year Constructed | Number of Units |
|---|---|---|
| O'Connor Heights | 1988 | 30 |
| McCabe Court | 1989 | 70 |
| Sutton Pond | 1993 | 140 |
| Heritage | 1993 | 100 |
| Edgewood I | 1996 | 147 |
| Edgewood II | Current | 120 |
| Totals | | 607 |

in late 1997. Currently the Town is working with a $126,000 Emergency Management Agency grant to upgrade the facility as an emergency shelter for the elderly. The improvements to the Senior Center are a response to a growing senior population. Evident in the rationale for the expansion is the need for expanded services. Increases in elder housing has created a dramatic increase in elder clients and the need for senior services. The Center operates weekdays from 8:30 to 4:30, and occasional evenings. Its main purpose is to provide programs and services to the elderly, i.e. persons 60+, including crafts, exercise, educational events, health services and social activities. For example, the visiting nurse association sponsors health clinics for senior citizens and various organizations provide information, referrals, support groups, fuel assistance, and education. Lunch is served daily at 11:45.

## *Stevens Memorial Library*

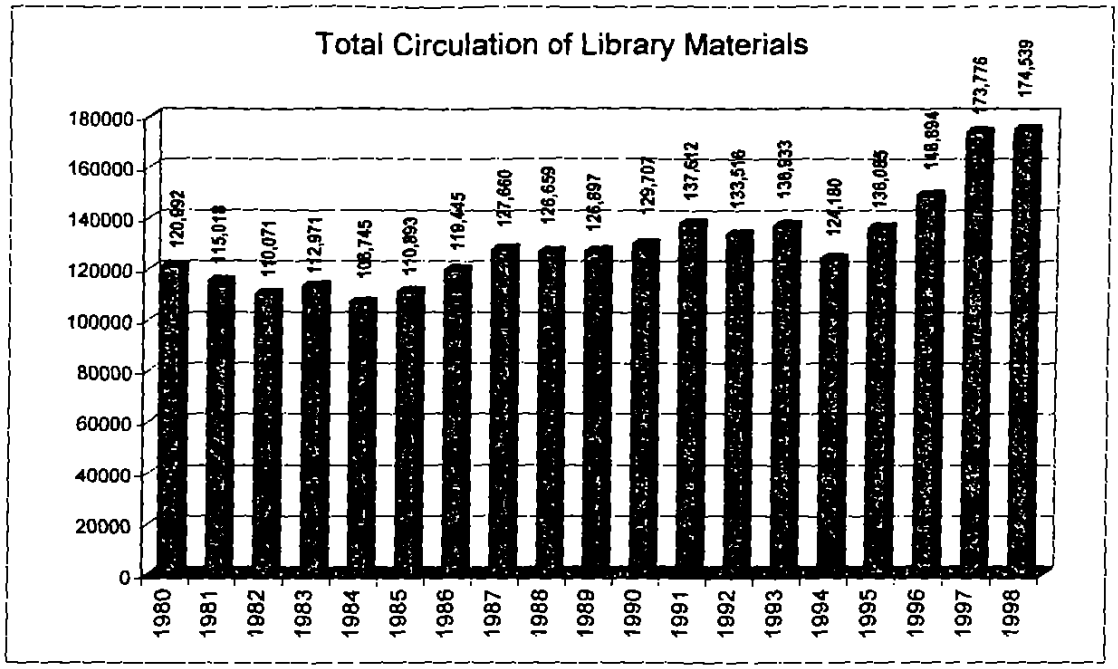
The Stevens Memorial Library located on Main Street is part of the 26-member Merrimack Valley Library Consortium, a regional collaborative that supports an extensive inter-library loan network with 500,000 titles and provides access to the Boston Public Library's research facilities. Our library is open from 10 a.m. to 9 p.m. on Mondays and Wednesdays, from 10 a.m. to 4 p.m. on Thursdays and Fridays, 10 a. m. to 5 p.m. on Saturdays, and 2-5 p.m. on Sundays (except from mid-June through

Senior Center

Labor Day). It has a total of 70,000 volumes, a children's room with special programs and story hours, 217 periodical subscriptions, along with cassettes, videos, CD's, computer programs and a research computer.

The library is presently staffed with five full-time librarians and library assistants, and 14 part-time library aides and other staff. For funding, the library relies on support from 11 trust funds overseen by a board of seven trustees, annual town appropriations and state aid. In 1995, the Town received a matching grant from the State and constructed an 18,000 square foot addition to this Main Street facility. As the Library and community have grown in size so has the circulation of materials. Between 1980 and 1998 the circulation of the Library materials has increased by over 53,000 materials. This represents an annual increase approximately 3,000 materials. There is a strong correlation between the Library expansion and circulation increase as nearly 50% of the circulation increase has occurred subsequent to the additions and renovations.

Stevens Library

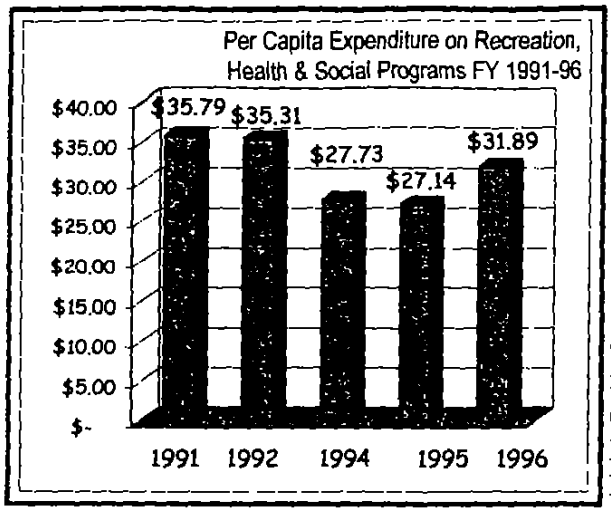



*Youth Services*

Among the busiest town departments with the smallest number of staff is the Department of Youth Services. Its director, full-time youth worker and part-time adventure coordinator manage and oversee a substantial range of programs and services for North Andover's elementary, middle- and high-school age children. The Youth Services department has always been plagued by the lack of a center. After almost a decade of effort by the Joseph N. Hermann Youth Center non-profit organization And the Town the Youth Center building is becoming a reality. As we complete this Master Plan the 18,000 square foot Youth Center is 70% complete. Located on Johnson Street the site of the former Red Barn, the Youth Center is an example of our community sprit. The community fundraising effort through the Joseph N. Hermann non-profit organization has raised over $1.4 million to match the $975,000 of Town funds and $150,000 of State funds. This new center will provide unmatched facilities such as gymnasium, computer room, and other activity rooms to match the below services. Many of these services have been with a combination of funds, donations and Town budget. However as we watch service demand and facilities increase the growth in human services budgets has not kept pace as show in the chart on the following page.

Among the services sponsored by the Youth Services Department.

- Support Groups (variety)
- Court-related programs for first-time juvenile offenders who participate for four to six months
- Student-run programs (variety)
- Family/ individual services
- Self-esteem building
- Social and recreational activities
- TEENCO, social events for middle school youth
- Grogan's Field, recreation for elementary and middle school children in the Grogan's Field neighborhood
- A concert series that allows high school youth to showcase their talents
- Basketball leagues for middle and high school youth
- Youth lacrosse for middle and elementary school youth



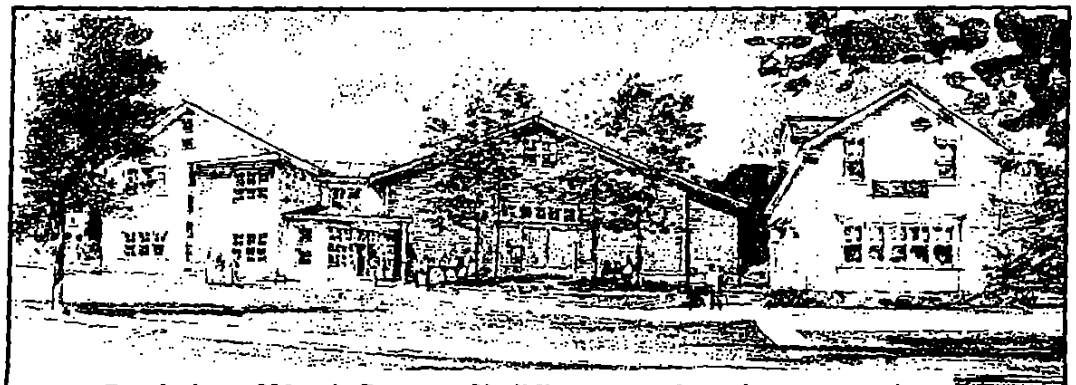

- Job Bank
- Holiday Drives
- A clothes closet that distributes low-cost clothing to North Andover families

## *Emergency Management Agency/ Civil Defense*

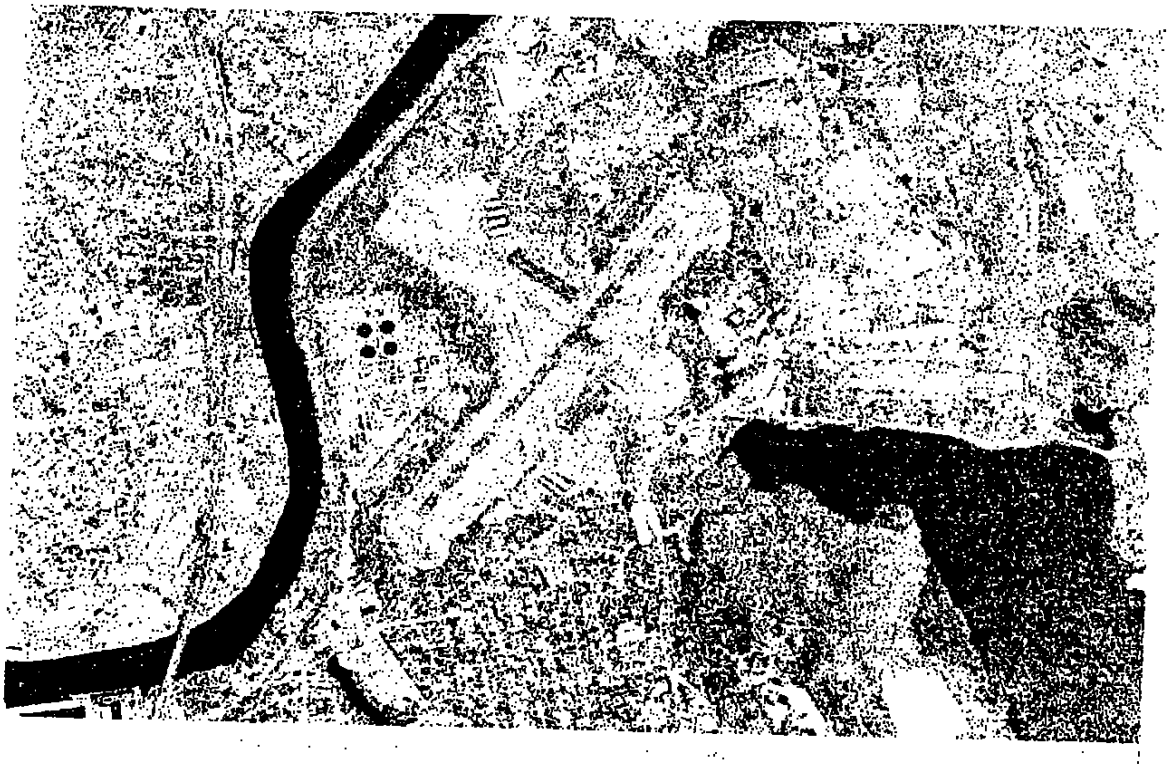
A salaried, part-time director runs North Andover's Emergency Management Agency (EMA) with auxiliary police. The EMA oversees and tests the Radio Amateur Communications Emergency Services (RACES) system and maintains a radio repeater at the top of Boston Hill. Located in the Senior Center department's main purpose is to aid officials and the general public in an emergency.

## *Public Schools*

North Andover provides high-quality public education to 4,185 children in preschool and grades K-12. The school system owns and maintains eight buildings, including the Bradstreet School, which serves preschool and kindergarten students; five elementary schools (K-5), the newly re-built the Thompson School (1999), and the Anne Sargeant (1995), Kittredge (1950), Atkinson (1964) and Franklin (1958) Schools; the Middle School (1954) and the High School. In addition, approximately 54 North Andover children attend vocational, out-of-district or collaborative schools. Fifteen percent of all North Andover school-age children attend private and parochial schools, which is comparable to other relatively affluent suburban communities. The North Andover public schools are highly valued by new and older residents, as demonstrated by the results of our 1996-97 Master Plan survey and neighborhood meetings. The Master Plan Committee heard consistently that the quality of our town's schools was among the main reasons that new people had moved here and that longer-term residents chose to stay. Despite continuing concerns about the adequacy of school buildings and particularly, classroom space, the North Andover school department has clearly been effective at delivering high-quality public education.



Rendering of Youth Center of building currently under construction



# Economic Development

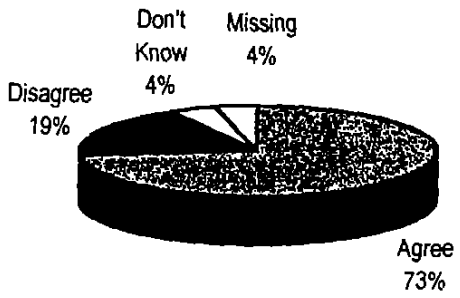
## ECONOMIC DEVELOPMENT

### 1. Introduction

Economic development is a vital part of our past, the community we are today, and the community we want to be in the future. For North Andover, economic development has become a major factor in our local policy making, priority setting and strategic planning endeavors. By "economic development," we mean the commerce and industry that contribute to North Andover's quality of life by increasing the sources and amount of capital that we import and recycle in our community. Stabilizing and enriching our business base can help us shape a vital, diverse economy and secure a sound fiscal future for North Andover. At the same time, we recognize that growth – whether residential, commercial or industrial – can induce environmental, infrastructure and other impacts that no amount of fiscal gain will offset. The challenge for North Andover is to realize our full economic development potential without damaging the character of the Town. Accordingly, our goals for the future establish that economic development must occur, but not at any cost.

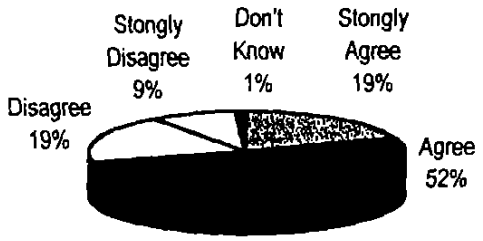
In preparing this Master Plan, we relied not only on current information and community perspectives, but the results and pertinent recommendations of previous planning initiatives. For example, we considered and have reaffirmed the 1996 Strategic Planning Committee's vision of a North Andover with a broader tax base by Fiscal Year (FY) 2007. Moreover, we believe North Andover should continue to press for the decommissioning of Lawrence Municipal Airport in favor of a planned industrial complex that can better meet the revenue needs of both our Town and the City of Lawrence. We also listened to North Andover's citizens of today, and we took their comments seriously. Of the 247 residents who responded to our 1997 community survey, over 70% called for more industrial development provided it is "done properly with a review of traffic and other impacts, and away from residential areas." Our community also cares deeply about downtown North Andover. Well over half of last year's the survey respondents confirmed that downtown is "the best place for commercial development provided that the traffic and parking problems can be resolved." They also called downtown an "important" or "very important" issue on the slate of North Andover's growth and development priorities.

**Would Accept Industrial Development ? Q 8**




From the many neighborhood meetings and public forums we held and from the results of our survey, we know that our Town wants the cleanest, highest quality industrial firms to locate here, and we believe we can attract them because North Andover is a very desirable community. We want a downtown that is busy and attractive, and we want a limited array of village commercial satellites that can serve outlying North Andover's retail and service needs. We be-

**Commercial on 114 Traffic Resolved Q 14a**



lieve that if done properly, economic development can help solve our chronic traffic and circulation problems along Route 114 and Route 125. Finally, we believe that sound planning, protective regulations and strategic business marketing will not only strengthen our local economy, but also achieve the dual objectives of environmental quality and fiscal stability. In short, we envision a North Andover that is among the Commonwealth's finest places to live because a *responsible* economic development agenda enabled us to steady our finances, curtail residential growth and preserve (if not enhance) our environmental resources.

North Andover's future economic development affects our overall growth in numerous ways. Economic development presents benefits in terms of increased tax and other revenues to the Town, and "spin-off" business development that occurs in response to new opportunities in a growing economy. It also creates employment prospects for our residents.

The related or secondary impacts of economic development vary. A new industrial project could finance infrastructure improvements that benefit our Town as a whole, or it might prime the pump for entrepreneurship and small business growth. Conversely, the location of a large industrial operation here could exacerbate residential growth pressures in order to accommodate a new workforce, or it may create new sources of noxious byproducts.

We acknowledge the potential for both desirable *and* unwanted economic development impacts, but we believe that the goals and policies in this Master Plan will position North Andover to maximize success and reduce risks. The degree to which other development concerns are affected by strategies to shape and strengthen the local economy depends on a well- conceived economic development plan.

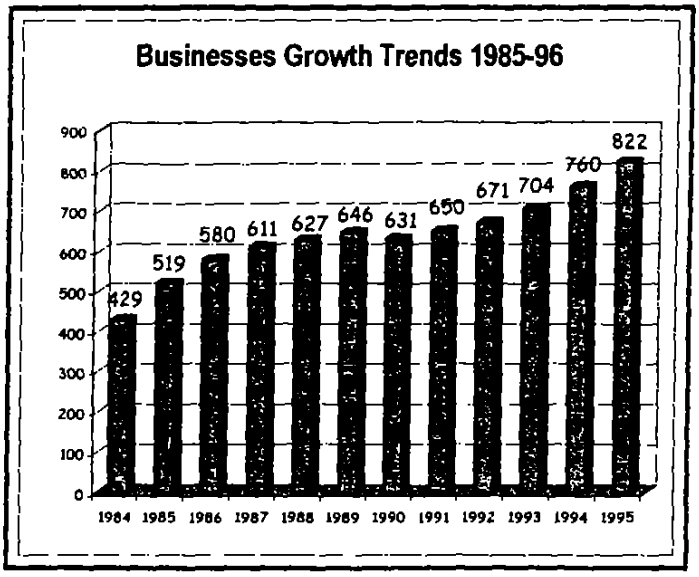
## 1. Existing Conditions

In terms of commerce and industry, our community can be described as "quietly" developed. Today, North Andover has six industrial parks and/or districts that encompass approximately 745 acres. We supply water and sewer service to five of these areas, and water only to the sixth. All but one have direct access to a major arterial roadway, either Rte. 114 or Rte 125. A number of our Town's largest employers are located in these existing industrially developed zones. Further, there is a proposal to create a seventh industrial complex on a 52-acre portion of the Lawrence Municipal Airport property. Ultimately, the Town would like to convert the entire 550-acre Airport site to revenue-generating industrial uses.

Despite the amount of existing and anticipated industrial activity in North Andover, our community does not appear to be teeming with industrial uses and we want to keep it that way. The majority of our developed industrial parcels have been designed and built to achieve screening from the Town's major roadways, and on balance, the facilities that are visible are also attractive. Because of North Andover's layout and development pattern, the quality of our businesses and the thoughtful actions of local officials over the years, many would be surprised to know that nearly 9.5% of all land in our Town is zoned for some type of commercial or industrial use. Our community's 822 business establishments employ nearly 18,500 workers who earn an average annual wage of $38,699.00. Many of these employees commute from nearby cities and towns.

Our own labor force is comprised of 13,255 residents, 96.5% of whom are employed. They work in North Andover or on the average, within 23 miles of home. Attesting to the economically advantaged position of many North Andover households, the me-

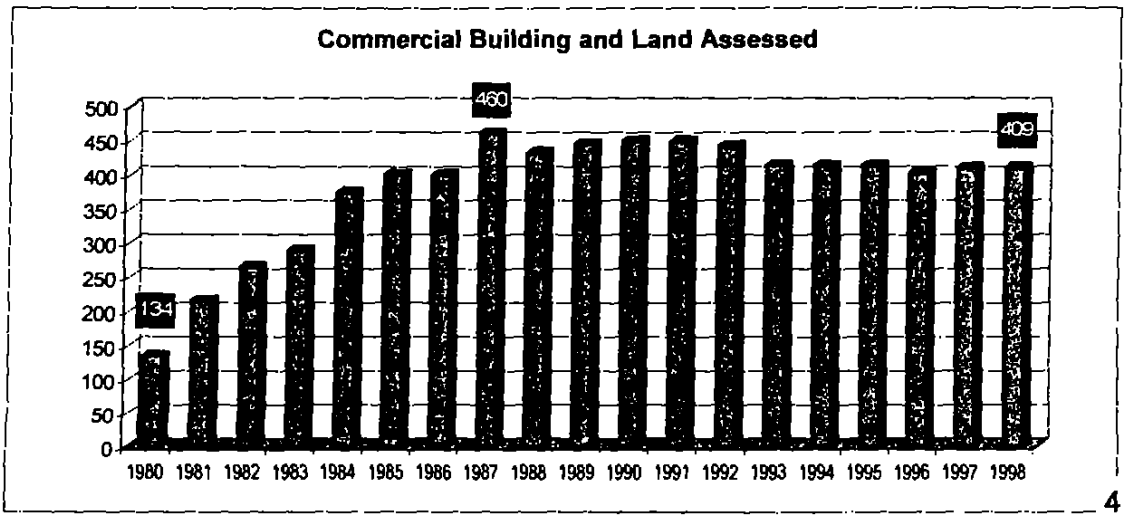
dian family income here was $61,468 at the beginning of the decade –$15,674 more than the Essex County median, and $17,101 higher than statewide. When federal census takers computed our 1990 per capita income, they found that ours had jumped 28.4% between 1987-1989, to $22,957. Comparatively, our per capita wealth elevates North Andover to a state rank of 39 out of 351 cities and towns.




Of the primary industrial classifications tracked by government agencies, manufacturing remains the dominant source of employment in North Andover: manufacturing companies employ nearly half of all persons working in our Town. At the other end of the spectrum, slightly more than 1% of all workers here are employed in the agricultural, forestry and fishing sector. Despite the small size of this workforce, agriculture-related employment gained both numerically and in its percentage share of all employment between 1990-1996 while manufacturing has dropped from 9,160 employees (54%) at the beginning of the decade to today's pool of 8,355 workers (45%).

The decline in manufacturing employment here is a microcosm of a much larger, long-term change in New England's economic structure, but knowing that other cities and towns share North Andover's pain does not change the impact of manufacturing loss on our community. To put that impact in perspective, nearly 72% of the 14,102 persons working in North Andover in 1985 held manufacturing jobs.

In the other sectors for which recent government statistics are available, the size of the transportation, communication and public utilities workforce also declined in North Andover after 1990. From 6% of all persons working in our Town being employed by transportation-public utilities companies



in 1990, only 4% work for those concerns today. The same holds true with government employees, who made up 5% of the 1990 workforce and 4% by 1996. A comparable reduction is evident in finance, insurance and real estate: the percentage share dropped from over 3% in 1990 to 2% in 1996.

Not surprisingly, employment growth in North Andover is most visible in trade and services. During the 1990s, our wholesale and retail trade workforce rose nominally, from 2,144 to 2,345 (although the trade sector's share of all workers remained the same, 13%) while the services workforce swelled from 2,582 (15%) to 4,860 workers (26%) by 1996.

A review of non-residential projects approved by North Andover officials since 1990 sheds light on both the state of business activity in our Town today and the workforce changes that have occurred during the decade. Our new or expanded professional and medical office buildings, new dormitories and other facilities at Merrimack College, managed housing and assisted living facilities for the elderly, and related types of projects mean that services employment has found a place to grow in North Andover.

Today, about 78 acres of commercial land with nearly 500,000 square feet of buildings, parking and other development amenities provide services-sector employment for one fourth of all persons working in North Andover, not including self-employed professionals who work at home. When the community's retail and other types of commercially classified properties are added to the mix, a total of 272 acres (about 1.5% of the Town's land area) have been put to use by businesses that employ 9,269 workers, or half of the total workforce.

Our present industrial mix accounts for 5.4% of all land in North Andover. Industry supplies six of the Town's seven largest employers and three of our top ten taxpayers. Of the 9,183 people working in an industrial setting here, 5,600 are on Lucent Technologies' payroll and another 771 work for A.E.G. Schneider. North Andover's 401 acres of industrially developed land are used primarily for manufacturing, research and development and warehouse storage facilities connected with these operations, and utility companies. Collectively, they represent about 3,700,000 square feet of buildings ranging from modern plants and corporate offices to older mill structures that have not been converted to other, non-industrial uses.

We would have considerable untapped industrial development potential in North Andover if the 550-acre Lawrence Municipal Airport site were added to the 80+/- acres of vacant developable industrial land here. These sites could yield new sources of employment, tax revenue and industrial sector spin-off opportunities, along with corresponding commercial growth, although the Town's supply of commercially zoned land is very limited. Under current zoning, we estimate that less than 20 acres of developable or potentially developable land are available for future business (non-industrial) growth.

According to our 1987 *Balanced Growth Plan*, approximately 325 acres of then-vacant developable land was zoned for industrial and commercial uses. (This estimate did not include the 550 acres at Lawrence Municipal Airport because the acreage is not vacant.) At that time, North Andover had 2,002,500 square feet of retail and office buildings, and 3,029,100 square feet of industrial buildings. Given assumptions about the development possibilities for our available land, the *Balanced Growth Plan* estimated our undeveloped commercial and industrial capacity at 1,949,743 square feet and 3,525,467 square feet respectively.

Translated into build-out terms, the capacity estimates of 1987 meant a 97% increase in retail and office development and a 166% increase in industry. Since 1987, approved and built industrial projects – a limited amount of new construction but numerous additions and alterations to existing facilities – have incrementally increased North Andover's supply of building space by about 671,000 square feet. Commercial buildings with an aggregate impact of some 450,000 square feet have gone up in the same period, including shopping areas, nursing homes and medical office facilities, professional offices and restaurants.

Further, North Andover officials approved an additional 284,945 square feet of new commercial and industrial development in 1997 alone. A few large projects account for half of these most recent approvals – the new Stop & Shop on Turnpike Street, a new dormitory and theatre complex at Merrimack College – and an assortment of smaller commercial buildings represent the balance of recent site plan approval decisions by the Planning Board.

## 2. Significant Issues

### *Industrial Growth in North Andover*

Like many New England communities, our Town's economic history is a meld of farming and mills. The 1800s saw the opening of the Sutton Mill, the damming of Lake Cochichewick and the separation of North Andover from Andover. After the Stevens-Kittredge woolen mill opened in 1813, followed by the Davis & Furber Machine Company in 1836, manufacturing assumed a dominant role in our economy.
As North Andover's population grew, we modernized: the Town built schools, improved streets and developed a public water system. Throughout, we maintained a strong identity as a manufacturing community or as the *Balanced Growth Plan* described us, "a company town." The industrial base that was spawned by our Town's early mills expanded over time and continued to provide substantial employment for the residents of North Andover. By the time we adopted our first zoning bylaw in 1943, North Andover was vested equally in preserving its industrial heritage and rural charm. We zoned to accommodate the industry we had, and we made room for more to grow.

Our community prepared its first Master Plan 1957. At that time, North Andover's employment base still hovered at 93% manufacturing but the exodus of the textile industry from New England had begun. The closing of Merrimack Valley textile mills affected residents throughout the region, but because our tax base was so diverse we felt the impact less than did many of our neighboring communities. When a major Western Electric Company plant opened in North Andover in the mid-1950s it served to anchor and re-direct the local economy during a period of regional economic transition.

The 1957 Master Plan – *Changing North Andover* – considered and described our Town as three districts: the North Study Area, the Middle Study Area and the South Study Area. The North Study Area contained North Andover's original village developments, over 70% of our population, the most convenient access to transportation and the majority of our then-existing industry. It became the logical setting for additional industrial development. The Plan deemed our Middle and South Study Areas to be best suited for residential development, although a southerly portion of Route 114 was reserved for future industry.

### *Commercial Growth in*

*North Andover*

Traditionally, commercial activity here occurred in the northern section of Town where most of our population lived. The original commercial based evolved from and grew in the colonial village development around the Old Center and North Parish Church. Later, our merchants moved their businesses into the northern end of North Andover, a change prompted by industrial growth along the Merrimack River and the Boston & Maine Railroad, such as the Davis & Furber Mill Complex. For this reason, North Andover's downtown is not within the geographic center of our community. It runs along Main and Water Streets, between Sutton and Elm.

The last comprehensive study of North Andover's downtown was completed in 1982. While the character and structure of downtown have changed since then – for example, Messina's Market is now a Star Market – some of the problems highlighted in the 1982 study have not been addressed. North Andover's downtown development problems are neither unique nor mysterious, however. As many communities that have successfully tackled downtown revitalization know, it takes a collaborative effort by business and local government to rebuild the economic, civic, social and cultural vigor of yesteryear's central business district.

The 1982 downtown study encouraged North Andover's merchants to become more organized and to coordinate key aspects of their businesses, such as hours of operation and advertising. The study also flagged a need for commercial property improvements in order to bring architectural harmony into downtown North Andover. Both of these issues are within the control of downtown business and property owners, yet synchronizing the decisions of multiple free-standing businesses is difficult without a shared vision of the future. Unlike a shopping mall where a single entity brings management capacity and ownership power to the operation of a large retail complex, a downtown is comprised of independent *and* autonomous retail and service establishments. Although most downtown experts recognize that the very independence of local merchants is an asset (sometimes hidden), in the disorganized downtown that same feature acts more as a liability.

The physical characteristics of our downtown have not changed because we lack suitable or sufficient land for new construction. About the only vacant space in our downtown is off-street parking, which means that we have to make the best use of existing commercial buildings. We need sound parking policies that favor customers and direct downtown workers to park away from stores. We also need to prevent the migration of governmental and institutional facilities out of downtown because they give the general public reasons to come into our central business district each day. Moreover, we have to think carefully and strategically about how much additional commercial growth we will allow outside of downtown, that is, in the outlying areas of North Andover. To some extent, the sprawl of commerce along parts of Routes 125 and 114 has contributed to siphoning the retail and services mix out of our downtown; some shops found better space to operate and grow in these projects, and they moved. In other instances, new competing retailers won enough of the market share to topple a downtown merchant. Our Town is growing and we realize that it will continue to grow. Still, as one citizen observed during the Master Plan process, "How many dry cleaners can one town support?" If we want a viable downtown, we have to recognize that while a nearby community's mall may draw North Andover shoppers out of town, our own land use and development

policies can be equally lethal. At the same time, we need to assess whether the downtown North Andover once had (or wanted) remains realistic as a commercial center. In our 1972 Master Plan, we acknowledged the need to control development along Routes 114 and 125. We therefore set out to eliminate the possibilities for strip development on both roadways by improving our site plan review process and setting aside land on Route 114 for industrial use. We tried to address similar concerns when the *Balanced Growth Plan* was prepared 15 years later, although a different set development issues had surfaced by then. Chief among them was the discovery of pollutants in Lake Cochichewick, which prompted a watershed protection study and a plan to reduce the watershed area's development potential by increasing residential lot sizes to a minimum of two acres.

The *Balanced Growth Plan* essentially called for a new village center in the southern portion of North Andover. Toward that end, we enacted two changes to the zoning on Route 114. First, we created a "Village Commercial" district that would encourage village center-style development, and a "Village Residential" bylaw to induce housing diversity and literally "transfer" some of the watershed area's development potential to Route 114 from Mill Street to the Middleton town line. The point was to house North Andover's growing population where a critical density mass would be needed to sustain commercial activity in the new village center. A related aim was to induce privately financed extensions of North Andover's sewer system by allowing greater housing densities in the Village Residential zone for projects with access to sewer service. The area that was rezoned for Village Residential use included about 375 acres of land that we had set aside for industry in 1972. The impacts of the industrial loss is felt today. Assuming that commercial and industrial square feet represent one-third of a typical development then the 375 acres represents a loss of over 5.3 million square feet of industrial space. A third objective was to alter cross-town traffic patterns by providing basic goods and services to residents *where they live*.

The Village Commercial District guidelines include design requirements that were intended to promote a traditional "New England Town" development pattern instead of strip development. They include such restrictions as roadside buffer zones, optimum landscaping and rear-of-lot parking. Further, Village Commercial zoning explicitly prohibits certain uses allowed in the General Business District, a measure that was taken to achieve a Route 114 village center that would be resident service-oriented as well as attractive. Unfortunately, the regulations imposed on Village Commercial development do not address the possibility that new commerce in the southern section of Town will create additional competition for North Andover's downtown businesses. Our conscious decision to site small retail complexes in outlying residential areas must be carefully considered in light of our stated desire to bring businesses that will last into downtown North Andover. Similarly, the Town's need to improve the volume and flow of traffic on Routes 114 and 125 argue for solutions that may frustrate our downtown revitalization goals.

Among the more constant or predictable aspects of North Andover's growth and change is our population wealth. The relatively comfortable household incomes of long-standing residents and the continuing influx of ever-more affluent homeowners collectively suggest that business can thrive in our community. Indeed, a population of bright, highly skilled, productive workers and the financial well being of most householders here mean that North Andover is poised for economic development success

*provided that we apply an undivided will to the strategy we choose as a community.*
The northern portion of our community remains the most densely populated section of all. Not coincidentally, it is also the area where the majority of industrial development has occurred or can occur in the future. Together, these circumstances locate more people close to downtown, a condition that we need to maintain and enhance. At the same time, we must recognize that residential growth management decisions for the Town as a whole are central to building a strong business climate regardless of where we plan to sponsor new commercial and industrial development.

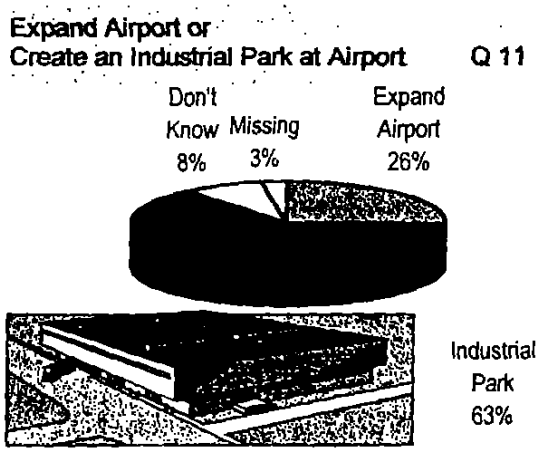
### *Lawrence Municipal Airport*

Throughout our work on the new Master Plan, one theme has dominated most of our discussions and our meetings with citizens: North Andover needs more industrial and commercial development to decrease the tax burden on residential property owners. We agree that redistributing the tax load is key to North Andover's fiscal security and it may also be key to attracting and keeping the highest quality businesses. With about 160 acres of vacant, developable or potentially developable land zoned for non-residential uses today, our community faces a very difficult challenge in trying to shape a tax base that reduces the residential share and increases the commercial-industrial share by even a few percentage points. For more than 40 years, North Andover has considered and in one way or another tried to engineer the departure of Lawrence Municipal Airport from our community. In terms of economic development, the Airport is the "linchpin" issue here because its 550-acre holding on the Merrimack River stands in the way of our own industrial growth goals. It is located adjacent to an industrial complex and a regional sewer district, and it has access to a major arterial roadway.

The Airport property has belonged to the City of Lawrence since the state legislature authorized City officials to acquire the land for airport development purposes in 1931. Because the property is municipally owned, it provides no tax revenue to North Andover. Our Town remains interested in decommissioning the Airport and regaining ownership rights to the land so we can redevelop it as an industrial park. Given the size of the property and its development suitability, plus the Airport's limited (and often negative) return to the City's coffers each year, we think that both our Town and the City of Lawrence can benefit from a fair disposition deal. Lawrence officials do not agree, however, in part because they feel the Airport is important to the City's long-term economic development potential.
The Airport facility typically operates at less than half of its built capacity. It sponsors approximately 100,150 aviation events (i.e., a take-off or landing) each year but it could support as many as 220,000. Decommissioning the Airport carries financial consequences for the City of Lawrence because the Federal Aviation Administration (FAA) is entitled to reimbursement for funds invested in airport improvements. Further, the Airport gives Lawrence a variable income stream, although we think the net income is negligible and occasionally, the Airport runs at a deficit. To sacrifice a facility that Lawrence developed precisely to strengthen its own desirability for business growth, City officials would expect to see their Airport income replaced by an alternative in which North Andover shares industrial development revenue from the business taxpayers that occupy the 550-acre site in the future. Naturally, Lawrence will demand as much of that revenue as it can possibly extract from us: the City has what we want, and political leaders there know they have an upper hand.

North Andover and Lawrence authorities have negotiated on numerous occasions to

**1996 Master Plan Survey:** To test the Town's opinion on the airport we asked the following : "*The 550 acre airport is located in North Andover and is owned by the City of Lawrence. Because the airport is owned by the City the land is exempt from North Andover property taxes. The Airport is currently undergoing a planning phase to increase its business and air traffic. Town officials feel that the airport could provide more jobs and a greater tax base to the Town as an industrial park. Assuming you have only two choices which do you favor :* ***expanding the airport or closing the airport and creating an industrial park?"*** The response was 63% in favor of closing the airport and creating an industrial park, with 26% in favor of expanding the airport.




see whether a deal can be struck. To date, these efforts have not been very productive. The proposal with the most likely chance of success in the short run involves developing 52 acres of land adjacent to the Airport. That proposal has been three years in the making.

The 52-acre industrial site at the Lawrence Municipal Airport can support about 10 buildings representing an aggregate of 304,250 square feet. This estimate yields a development density of 5,850 square feet per acre (in buildings), which is conservative given North Andover's "existing conditions" density of anywhere from 6,160-9,800 square feet per industrially developed acre. At a density comparable to the proposed 52-acre project at Lawrence Airport, today's 141 acres of available land for new industry would yield 824,850 square feet of new or expanded industrial buildings. If developed to the maximum allowable density given North Andover's coverage restrictions and parking requirements, the same 141 acres could yield as much as 1,381,941 square feet of new commercial and industrial space. This assumes, however, that all 141 acres are fully developable, e.g., none of the sites has topographic or environmental constraints that would reduce development capacity and value.

Were the entire Lawrence Airport property available for industrial development, the untapped capacity in North Andover would jump from 141 to 691 acres. Depending on the actual development potential of the site as a whole, this represents somewhere between 6,050,092 to 6,772,491 square feet of new industrial facilities and related office space – and a more secure future for our community.

By decommissioning the Airport and putting the land to better economic use, North Andover could offset some of the impacts of our 1988 decision to rezone industrial land on Route 114 for the Village Residential district. Further, we will gain industrial development potential that nearly doubles the *Balanced Growth Plan's* capacity estimate of 1987 – an estimate that did not include the Lawrence Municipal Airport, but did include about 375 acres on Route 114 that became part of the Village Residential zone.

## 3. Significant Issues

North Andover's town departments do an admirable job of meeting the community's needs even though they work under tight fiscal constraints and many have to contend with moderate-to-severe facility inadequacies. The key shortcomings in our system can be summarized as follows.

### *Public Safety*

Although North Andover's inability to keep pace with population growth or the geographic distribution of development has affected all town services, the Fire Department's capacity to respond to fire and medical emergencies is particularly constrained. The 1957 Master Plan recommended that we needed a new station to service Outcountry, but it was not built until 1971. In 1971 the Johnson Street station opened and it is still in use today, servicing an area much larger than originally planned. At the same time, the 1972 Master Plan was completed and it recommended a third station in the Johnson/Summer Street area in order to service the Route 114 corridor and the now-vastly expanded southeastern section of North Andover. The 1987 Balanced Growth Plan reiterated this recommendation, but the station has never been built. The Johnson Street station has become a project which occurred on the cusp of the greatest single family growth curve since the incorporation of North Andover over 350 years ago. The growth from 1970 until today, 3,326 single family homes, has exceeded the growth in homes from all prior decades, 2,254. As Johnson Street was completed the need for a third Outcountry station was becoming a reality.

The Central Fire Station next to Town Hall is a critical issue. The lack of facilities to meet the highly technical needs of today's Fire Department has caused the Central Station to become obsolete. Issues such as the constrained garage bay doors and the traffic on Main Street compound the problems of the lack of equipment and materials storage. The Central Station lacks the proper location and layout to warrant spending funds on its renovation.

Although not subject to the location problems that our confront our Fire Department, the 1969 Police Station needs to be modernized in order to meet the space requirements of new technology and procedures. In recognition of the changed needs of both public safety departments, our Town commissioned a Public Safety Feasibility Study in 1996. As the 1972 Master Plan observed, "The existing facilities have served their purposes for many years; however, their current abilities to serve as modern, functional public safety facilities is coming to a close." The 1996 feasibility study identifies alternatives, including separate police and fire stations, a police station with provision for a fire substation and a separate fire station, and a public safety facility to house police and fire services. The outcome of the analysis indicated the need for a joint Police and Fire Facility of approximately 40,000 square feet for a estimated cost of $14 million. Because the Police dispatch cruiser from the road and the Fire Department responds from the facility, the location for the new Central facility is dependent on the response time analysis conducted by the Fire Department. The analysis can be expressed in the map titled Response Analysis indicates the relationship between the three stations (two proposed) and the existing facilities. The outcome of the analysis indicates that a new Outcountry station and relocated Central station will provide a response time within acceptable parameters throughout the community.

Facilities are not our only issue for Public Safety Service needs. The growth in homes, miles of roadway and other factors has not

been mirrored by the growth in public safety personnel. Since the growth curve began to climb in 1970 until today we have not provided our Police or Fire Departments with a commensurate increase in personnel. As measured against population and number of buildings in Town, both departments show a percent of personnel per capita decline of one half the force of 1970. These indicators show us that we must concentrate our efforts on both the facilities and personnel. The evidence clearly indicates that both are suffering from a lack of understanding that as our population and buildings increase so should the personnel.

### *Water Supply*

Efforts such as the construction of the Water Treatment Plant, institution of a Watershed Protection District, and construction of sewer in the watershed have substantially improved our water quality record. These acts have elevated our water supply to an achieve an award in 1998 from the State Department of Environmental Protection as the best water supply in the State. While water quality is improving dramatically our dependence on Lake Cochichewick is a serious problem that has worsened not only because of new growth, but also because of resident expectations that water will be available "on demand" for drinking, swimming pools, and lawn and garden maintenance. Annual consumption increases reflect a combination of need and desire while average demand steadily approaches the Lake's safe yield. Additional source possibilities identified to date include:

- Connect to Andover water supply via an existing water main that can be opened to establish a permanent connection. Negotiations toward this end are underway.
- Well sites located near the Lawrence Airport. Located near the Merrimack River, the wells are essentially filled with river water. They were constructed in 1970 but bringing them on line today will require at least two public actions: renovations to comply with current regulatory requirements, and pipes connected directly to the treatment plant because the water must be cleaned before it enters the Lake.
- Pipe water directly from the Merrimack River. For good year-round flow, the pipe would have to come from above the Lawrence Dam.

While water supply remains a critical issue, it is not the only one that the Division of Public Works must contend with as North Andover continues to grow. The Water Department's FY 2000-2004 capital improvements plan identifies an urgent need to commit about $115,000 per year to installing and replacing Granular Activated Carbon (GAC) in the filter beds at the Water Treatment Plant and an expenditure of $172,000 no later than FY 2003 to re-wire the Plant's emergency power generator. Furthermore, the Bradford Standpipe needs to be painted and the Water Department must carry out a water main replacement program to ensure that al meters can be read outside. Over the next five years, the estimated cost of water main replacements alone will be $826,500.

### *Sewer expansion*

While we must complete the final phases of sewer system expansion and connect all homes in the watershed district, the sewer department's five-year capital improvements plan (FY 2000-2004) calls for several short- and longer-term projects.

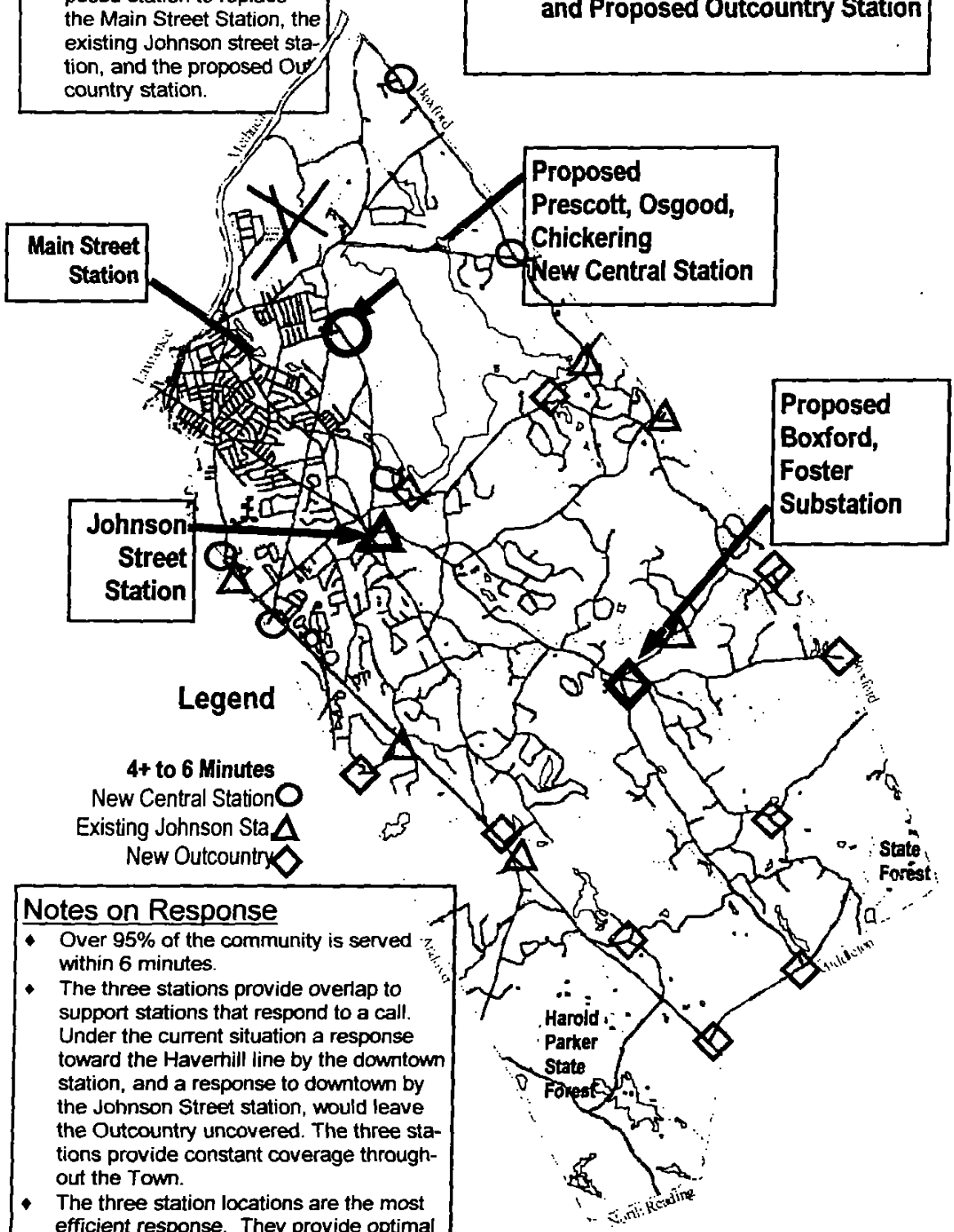
Among the most urgent needs which is currently under construtions: rehabilitating the West Side Interceptor Sewer at an estimated cost of $2.3 million, primarily to

## Response Analysis

**for the existing Johnson Street Station and Proposed Prescott Street Station and Proposed Outcountry Station**

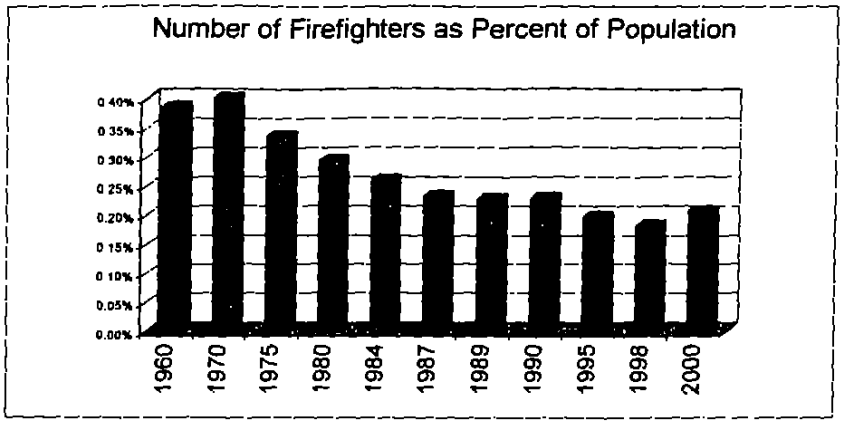
### Map Depicts

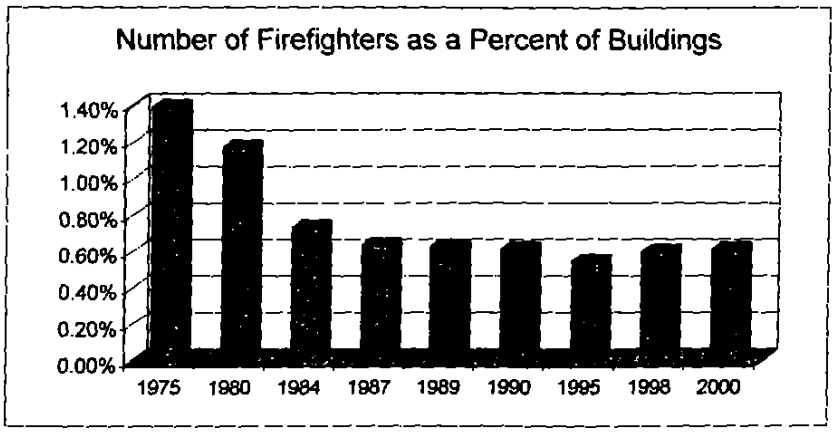
- This map shows the 4 to 6 minute zone response for all three stations; the proposed station to replace the Main Street Station, the existing Johnson street station, and the proposed Outcountry station.

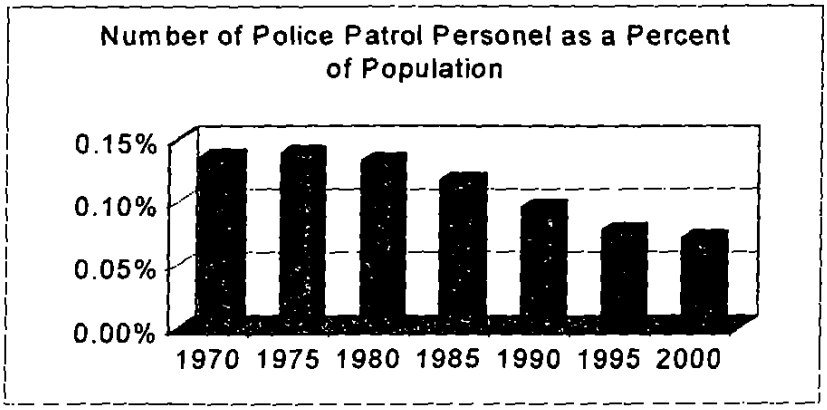


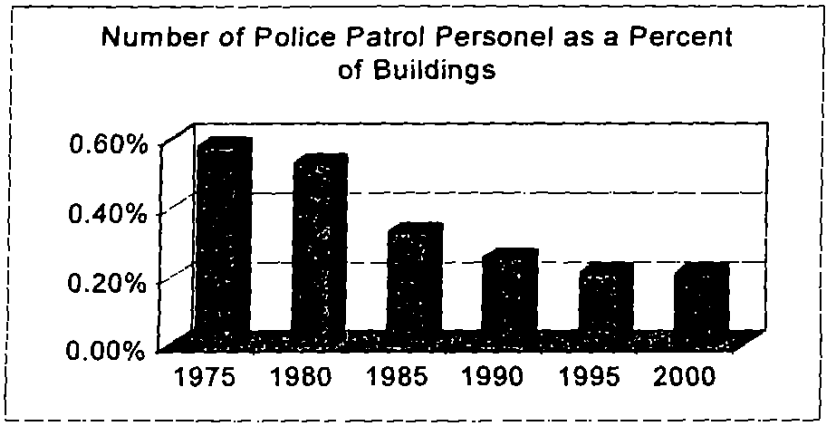

### Notes on Response

- Over 95% of the community is served within 6 minutes.
- The three stations provide overlap to support stations that respond to a call. Under the current situation a response toward the Haverhill line by the downtown station, and a response to downtown by the Johnson Street station, would leave the Outcountry uncovered. The three stations provide constant coverage throughout the Town.
- The three station locations are the most efficient response. They provide optimal response within the Town while not overlapping the response into other communi-


Number of Firefighters as Percent of Population
0.40%
0.35%
0.30%
0.25%
0.20%
0.15%
0.10%
0.05%
0.00%
1960
1970
1975
1980
1984
1987
1989
1990
1995
1998
2000


Number of Firefighters as a Percent of Buildings
1.40%
1.20%
1.00%
0.80%
0.60%
0.40%
0.20%
0.00%
1975
1980
1984
1987
1989
1990
1995
1998
2000


Number of Police Patrol Personel as a Percent of Population
0.15%
0.10%
0.05%
0.00%
1970 1975 1980 1985 1990 1995 2000


Number of Police Patrol Personel as a Percent of Buildings
0.60%
0.40%
0.20%
0.00%
1975 1980 1985 1990 1995 2000

comply with a Consent Order from the Massachusetts Department of Environmental Protection (DEP). Extending sewer service throughout the watershed will require approximately $4 million in public investment over the next five years.
In the area of sewer expansions by the private sector, Zoning By—Law density increases are allowed with the provision of municipal sewer has facilitated the expansion of sewer for over three miles along route 114. This has created further sewer expansions by the private sector throughout the southern portion of our community as a response to the dwindling resource of land suitable for septic systems.

### *School Expansion*

North Andover clearly recognizes the importance of its public schools, particularly the role that quality education plays in the overall reputation of the community and its desirability as a place to live. Three documents are especially useful for understanding our Town's historic, current and future school space needs. First, the 1972 Master Plan provides a historical context for the North Andover schools along with enrollment projections of future school needs. Two later studies, the *Report of the North Andover Strategic Planning Committee* (March 1996) and *North Andover's School Building Master Plan* (October 1996), update the condition of educational facilities. The 1972 Master Plan documented a total school enrollment 3,132 as of October 1, 1971. This was a 3.2% increase over the previous year, marking the first time since 1969 that school enrollments had grown at a rate less than 6.5% per year. From 1964 to 1970 (except for 1969), school enrollments had witnessed an annual growth of 8% to 9.8%. Based on enrollment statistics from 1960 to 1971, the 1972 Master Plan projected a 1990-1991 student population of 520 kindergarteners, 2,860 children in grades 1-5, and a system-wide enrollment of 7,220. Significantly, however, the 1996 School Building Master Plan shows that 1996-1997 school enrollments were much lower: 320 kindergarten students and 1,788 elementary (grades 1-5) students. Information provided to the Town for purposes of bonding a series of capital projects in 1998 documents a 1996-1997 system-wide enrollment of 3,902, which is what the 1972 North Andover Master Plan estimated for 1975-1976. While the overall educational needs identified in both studies do not change, the Town's slower growth rate may have saved us from more severe consequences than we incurred by deferring attention to school needs that have been apparent for 30 years.

According to the School Building Master Plan, North Andover's enrollments grew by 600 students between 1988-1996 and they are projected to grow by an additional 964 students (to a total of 4,935) by 2004. The School Department's own projections do not seem to support this conclusion, however. The 1998 bond report identified a probable enrollment of 4,451 during the 1999-2000 school year yet as of January 1, 1999, data reported to the Massachusetts Department of Education show an actual system-wide enrollment of 4,095. Regardless of whose estimates are relied upon, even the most conservative figures still argue for 23 additional classrooms to address existing unmet needs.

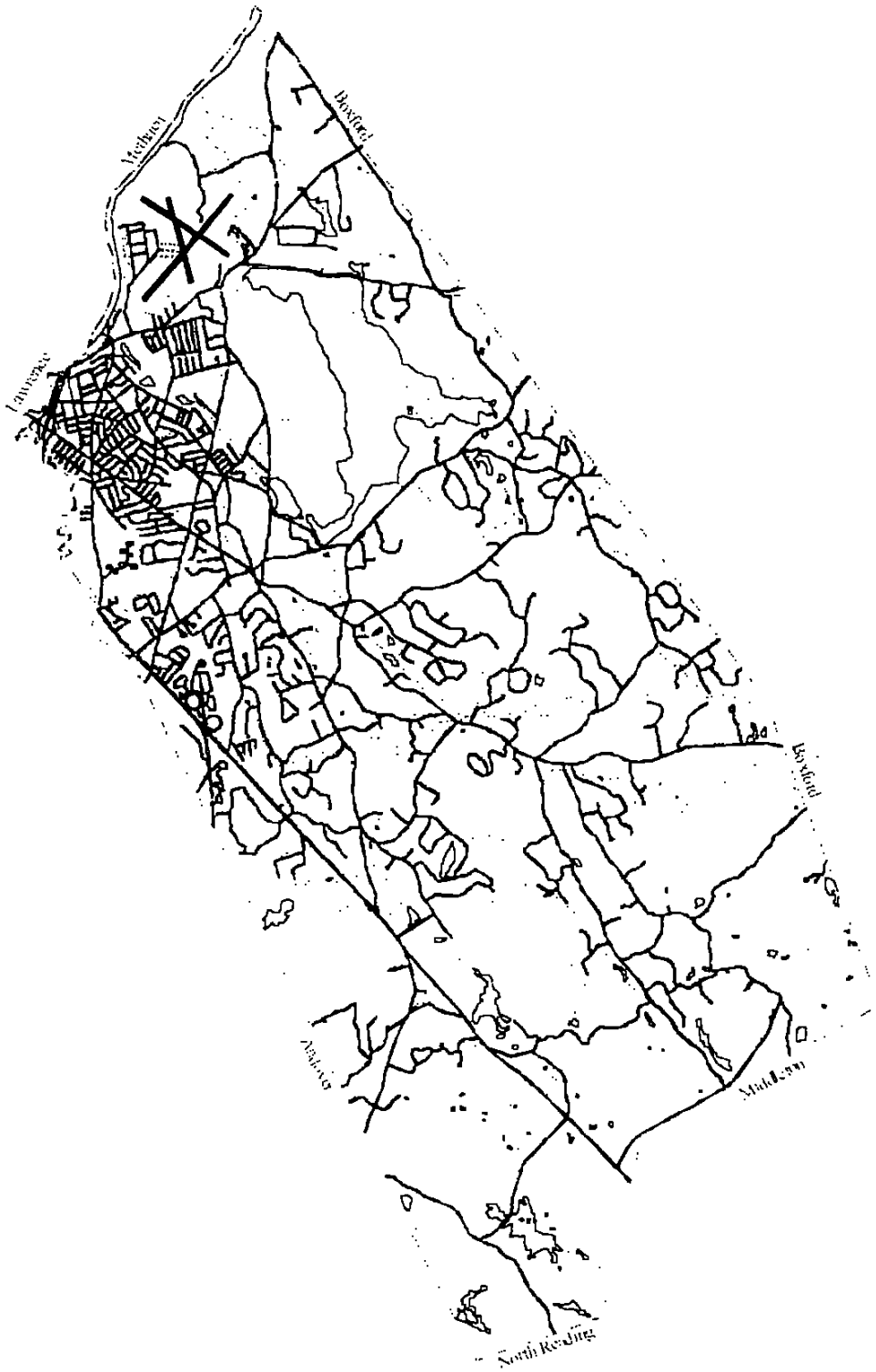
Beginning in 1970, demand for additional classrooms here has been satisfied by installing "portable" classrooms. Eleven are currently in use. Both the School Building Master Plan and the Report of the Strategic Planning Committee underscore that our public schools require considerable capital investment over an extended period of time if we want to continue providing excellent educational opportunities to our children. Both studies recommend that portable classrooms be discontinued because they do not offer meaningful, educationally sound answers to our long-term school space needs. They also note that the Bradstreet School is no longer functional for kindergarten children and is too expensive to renovate. Briefly, here are some shared features of the Report of the Strategic Planning Committee and the School Building Master Plan:

- Atkinson, originally constructed as the Town's Junior High School in 1964, requires an investment of "$4 million in renovations to provide adequate elementary school space." It currently serves grades 1-5 in thirteen rooms, including one portable classroom.
- Bradstreet Early Childhood Center, built in 1911 and expanded in 1948, is the oldest of our school buildings. It needs extensive renovations and is not designed well for small children. All of North Andover's kindergarten classes are currently housed here. One portable classroom serves as the library.
- Franklin, built in 1958 and expanded 10 years later, serves grades 1-5 in sixteen rooms, five of which are portable classrooms. "[It] is estimated to require $3 million in renovations."
- Kittredge, built in 1950, contains grades 1-5 in ten rooms and three portable classrooms, one serving as the library and a second as the computer room. Both reports recommend moving the kindergarten classes from Bradstreet into the Kittredge School, but doing so requires an addition to the existing building. Design and construction will cost at least $3 million, and since the improvements have not been made yet they will probably cost more than the School Building Master Plan anticipated in 1996.
- Thompson, which was recently re-bui at a cost of $6 million and no longer requires portable classroom space, serves grades 1-5.
- Sergeant, completed in 1995, serves grades 1-5 in twenty-five classrooms. "[It] sets the standard for elementary school facilities in the Town. ...[E]ach of the Town's other elementary schools must be able to provide comparable support services, such as laboratory, computer, recreational and library areas."
- The Middle School was originally constructed as North Andover's High School in 1958. It was expanded in 1968 and recently underwent extensive renovations.
- The current High School, designed and built in 1972 as an "open-concept" school, was approved for a complete replacement in January 2000. The open concept "...is no longer valid or conducive to the educational requirements of the community's high school students." A January 2000 Town meeting and an March 2000 override election approved the construction of a new high school and demolition of the existing high school.

## *Public Buildings*

- Town Hall, constructed in 1925, was already inadequate when the 1972 Master Plan was written. At that time, some departments could not be housed in Town Hall, and the Master Plan went on to note: "Most departments must use overcrowded offices lacking in ade-

## Map of Town Facilities and Parks



# Town Building Facilities

| Map Code | Building Name | Use | Year Built | Renovations |
|---|---|---|---|---|
| A | Bradstreet School | Pre-School | | |
| B | Thompson School | Elementary | 1997 | Newly constructed replaced old school |
| C | Sargent School | Elementary | 1994 | New construction |
| D | Atikinson School | Elementary | | |
| E | Franklin School | Elementary | | |
| F | Middle School | Middle School | | Renovations & additions 1998 18 million |
| G | High School | High School | 1972 | Proposed 58 million dollar replacement in FY 2003 approved |
| H | Town Hall | Town Government | | |
| I | Police Station | Police Department | | |
| J | Fire Station Main | Main Fire Station | | |
| K | Johnson St. Station | Second Fire Station | | |
| L | Senior Center | Senior Center | 1984 | 1997 Additions and Renovations $583,000 Grant funded. |
| M | DPW Barn | Public Works Garage | | |
| N | Water Treatment Plant | Town Water Supply Plant | | |
| O | Library | Town Library | 199 | |
| P | Osgood Hill Stevens Estate | Conference Center and Watershed Open Space | 1994 Purchased | 1997 Roof and other repairs. Funds through grants and |

quate circulation space, public counter area, and storage space." Today, Town Hall continues to share space with the Fire Department and is now the administration of Town government is comprised of three buildings: the original Town Hall, and two annexes. The annex located behind Town hall, leased for one dollar a year from the developer of the adjacent condominium complex was occupied by the Community Development departments for three years. This site was vacated due to water problems from the adjacent pond. Interim spaces for Community Development lead to a more permanent five year lease at an office building on Charles Street. In addition to space issues, Town Hall's antiquated systems create such modern-day conflicts as computers competing with air conditioning. Lack of space for meetings remains a serious problem. The 1972 Master Plan also noted that "...two key departments (Assessors and Board of Health), with heavy public contact, especially with the elderly, are relegated to the upper floor instead of clustered with similar functions in the most accessible location." Full accessibility for persons with disabilities has yet to be achieved. At the 1998 Town Meeting the Town authorized $250,000 for renovations to Town Hall. These funds are intended to improve the space and electrical issues within the building. However this does not provide sufficient funds to solve many of the other issues necessary to overcome access and space expansion.

Town Hall

- The Stevens Memorial Library (1907) next to Memorial Park on Main Street was extensively renovated and expanded in 1995. The 1972 Master Plan identified location and parking problems at the Library. Since the Library is outside the business district and lacks adequate sidewalks, virtually all patrons have to rely on vehicle access, which in turn requires parking. Unfortunately, parking is found mainly on adjacent streets. A library needs survey should be conducted to establish and quantify future space and site plan needs.

# Traffic and Circulation

## CIRCULATION AND TRAFFIC

### *1. Introduction*

As the basic element of community form, a circulation system directs both the location and intensity of development. By staking the public space within which people can move freely, roadways serve to organize the flow of traffic from origin to destination points.

The ancestors of today's paved streets – the cart path, the ancient way, and the Indian trail – were largely laid out alongside, near or in order to bypass key natural resources features, the most influential being water resource locations. These systems primarily served local travelers who moved about on foot, by horse or by carriage. To the extent that early commerce depended on water for shipping and power, it stands to reason that much of our interior street network revolves in one way or another around access to water. When technological advancements brought us rail and interstate highways, new access demands indelibly altered a once self-contained, local circulation network with limited regional connections.

Local roads are fundamental to an economy. They supply the means of transit for exporting and importing materials, goods and supplies, for moving labor between home and work, and for bringing the disposable income of consumers to the marketplace. When too many needs compete for a space in the travel lane, roads become congested and unsafe, and they hinder rather than attract development in areas that are otherwise suitable for growth. One of the central goals of our Master Plan is to achieve a better fit between development and North Andover's circulation system. A sound circulation plan anticipates rather than reacts to the needs and demands placed upon local streets. Traffic congestion and public safety problems detract from the quality of life in a community, as conditions on Route 114 and Route 125 attest.

### *2. Existing Conditions*

Our proximity to three major interstate highways – I-495, I-95 and I-93 – *should* be advantageous for us. With significant regional corridors no more than seven miles away and one right in our back yard, North Andover ought to be the region's economic hub. In fact, the lack of a strategically located I-495 interchange frustrates North Andover's ability to attract a number of large, high-quality firms. Even though we have land to offer, our poor highway access creates barriers that, along with Lawrence Municipal Airport, are a key deterrent to the kind of economic development we want and need as a community.

From a commuter's standpoint, the regional highway system opens doors to jobs north, south, and west of North Andover. Interstate 93 supplies equal access to southern New Hampshire's urban centers and Boston, while I-495 delivers southbound traffic to Worcester via I-290 and to points west along the Massachusetts Turnpike. The nearby I-95 corridor spans from Maine to Florida, and intersects with every major highway in eastern Massachusetts.

North Andover has a well-developed internal road network except for the southeastern quadrant. The arterial links to our Town's major activity centers and neighboring communities are state Routes 133, 114, 125 and the 125 by-pass. The Lawrence-Salem Turnpike (Route 114) acts as an arterial spine, running the entire length of North Andover from the City of Lawrence on the north to the Town of Middleton on the south.

Routes 125 and 133 connect us with the City of Haverhill and the Town of Andover. Our other heavily traveled roadways include Sutton, Salem, Waverly and Main Streets, Great Pond Road and Massachusetts Avenue. Despite the degree of urbanization represented by these thoroughfares, developed roads constitute only 1% of our 17,000 square acres of land.

The construction of I-93 (1960) and I-495 (1967) brought an unprecedented number of people into the Merrimack Valley region, and to North Andover in particular. Our population nearly doubled between 1950-1970, and it increased another 24% from 1970-1980. Because about 90% of North Andover is residentially zoned and much of our land was vacant at the time, we were poised to grow – and we did. The strain on local services and infrastructure that we contend with today stems largely from the 1960's investment of federal highway funds to strengthen New England's transportation network and open its rural-agrarian frontier. Within a decade, North Andover was no longer a well-kept secret.

The confluence of new highways and new economic opportunities served as a catalyst for employment and residential growth in the Merrimack Valley. Although manufacturing steadily declined from its place at the helm of the regional economy, commercial development and high-tech industries began to swell along the I-93 and I-495 corridors. Because of our zoning, the abundance of vacant land here and the lack of good access to I-495, we captured less of the highway's economic benefits, however, and far more of the residential population growth. Many of our streets are severely congested during peak periods, in part because commuters from neighboring towns rely on Routes 114 and 125 to reach their destinations at the beginning and the end of the workday. They compete with local traffic, which has grown in proportion to the rate of new home construction here. Collectively, local and transient vehicle trips have pressed North Andover's arterial and collector roads far beyond their design capacity. Congestion often forces traffic to overflow onto residential streets and produces transportation safety problems at the neighborhood level. At certain times of the day, the volume of traffic along Route 114 is so intense as to render a left turn from side streets impossible and dangerous.

## Roadways

Ultimately, the goal of any transportation system is to move people and goods as efficiently as possible. As a system, it is comprised of several mutually dependent elements. In the language of transportation planners and engineers, these elements are known by the following functional classifications.

1) **Limited Access Highways** have regional and statewide importance because they connect regions and major urban centers. They primarily carry "through" traffic as opposed to "local" traffic. The limited access highway has grade separation at the junction of intersecting roads.
2) **Major Arterials** allow high-volume traffic to enter and leave urban areas and they serve the largest centers of activity in an area. Roads in this classification may also allow traffic to by-pass business districts.
3) **Minor Arterials** provide intra-community service and they connect districts with Major Arterials. They link urban and rural areas and often supply the route system for commuter and local bus service.
4) **Collector Streets** usually adjoin one or more residential streets. They serve to collect and funnel traffic from local roads onto arterial streets. Collectors act as a bridge between small population centers, and they provide access

to and traffic movement within major land use categories.

5) **Local Streets** include all other streets. Their primary function is to provide access to adjacent property within neighborhoods.

## Limited Access Highway

The northwestern corner of North Andover that meets I-495 represents a limited access highway interchange because it provides a major link to the larger Merrimack Valley region and beyond. Plans to improve the I-495/Sutton Street interchange have been frustrated repeatedly because the project is controversial in Lawrence and it would disrupt existing commercial activity. Although better access to I-495 is critical to achieving our economic development goals, the Merrimack Valley Planning Commission (MVPC) indicates that the improvements we need will be stalled for the foreseeable future.

The Massachusetts Highway Department (MHD) reports that I-495 traffic continues to increase, the effects of which we see on our own local roadways. Average daily traffic (ADT) counts over the six-year period between 1990-1996 show a 13% increase in traffic, from 67,633 to 76,600.

## Major Arterial

In our transportation system, the major arterials include Routes 114, 125, and Sutton Street. Route 114 is generally a three-lane roadway widening to a five-lane cross-section at major intersections. The street consists of one through lane in each direction with a dual-use, center left-turn lane. Continued development along the Route 114 corridor will exacerbate traffic congestion here, especially if all of its commercial and mixed residential zoning uses materialize. At present, the northern half of Route 114 is the more developed section, although new developments are planned on the southern side of Route 114 as well. Countless traffic studies prove what we already know about Route 114: it is a severely congested, unsafe street. A recent study by MHD shows that east of Route 133, the traffic on Route 114 increased more than 16% from 1989-1994, or from 23,247 to 27,000 ADT. In 1996, Route 114 registered ADT counts of 31,000 and 33,000 in areas north of Waverly and High Streets. Moreover, with over 185 accidents in a five-year period, the 1996 report declared the Routes 125-133 intersection to be North Andover's most hazardous.
A 1994 study characterized traffic on Route 114 between I-495 and the Andover bypass as congested, slow and dangerous, especially during peak hours. MVPC labels congestion on the 2.34-mile stretch to Willow Street as "severe." When the agency conducted a survey of truck haulers in 1994, it found that frequent traffic jams on Route 114 at the Willow Industrial Park impede the efficient movement of freight. To relieve some of the pressure on Route 114, one proposed solution would create access off Route 125 at the Andover/North Andover town line. The widening of Route 114 from the Bypass to Chestnut Street will cost approximately $600,000 and is included in MVPC's Listing of Proposed and Approved Highway Projects (1998-2020). Route 125 moves people and goods to and from local industrial establishments and provides access to I-495 in Haverhill's Ward Hill section. It is along Route 125 that our Town's urban and rural qualities come together in stark contrast. Complaints from area residents that trash trucks choke local traffic and use residential streets to and from the waste facility are well known in North Andover. MHD statistics show an alarming increase in the volume of traffic near the Haverhill Town line. Between 1990-1994 traffic counts increased by more than 42%, or up to

26,000 from 18,313 ADT.
A 1980 MVPC traffic study foreshadowed what is happening today on Route 125. In their report, our regional planners described the Ward Hill area in terms of high traffic volumes and frequent accidents, and they predicted worsening conditions over time. MVPC identified several other likely problem sites, and each has materialized. The list includes the former Western Electric plant entrances (now Lucent Technologies), a capacity problem at Route 125 and Holt Street, a capacity problem north of Lucent Technologies, and non-optimal signal timing/use of roadway space at the Route 125 Bypass intersection. Traffic lights and turning lanes are currently underway at Lucent, however.

In addition to traffic studies, MVPC has also conducted a pavement management analysis in North Andover. The agency described the Andover Street segment of Route 125 as "serious" and planners have recommended pavement reconstruction. This same section of Route 125 is included in the 1997 Transportation Plan's list of projects to be completed between 2001-2010, after which it would be scheduled for resurfacing every 15 years. Further, in its list of Proposed and Approved Highway Projects (1998-2020), the MVPC has included Andover Street for other roadwork. When new industrial or commercial growth occurs near the Lawrence Municipal Airport, the resulting increase in trip generation will push traffic beyond the road's design capacity and compound existing traffic safety problems unless adequate traffic mitigation measures are required.

Another major arterial is Sutton Street, which serves as a commuter road from Lawrence to local industry. The primary industrial destination points include the NESWIC trash burning facility, Lawrence Airport, and the Greater Lawrence Sanitary Treatment facility. Sutton Street also channels traffic to a number of other industrial facilities and will serve the same purpose for proposed sites off Holt Road. It is characterized by heavy truck traffic use, particularly at the intersection of Sutton and Route 125. In addition, Sutton Street supplies traffic from Lawrence with access to Great Pond Road.

Average Daily Traffic on Sutton Street increased between 1990-1994 along the areas west of Routes 125/133 and west of Main Street. Vehicle counts rose respectively from 10,150 to 11,410, or 12%, and 14,930 to 17,397, or more than 16%. MVPC characterizes traffic congestion on the stretch of Sutton Street that runs from Chadwick to Waverly as problematic.
At our Town's request, MVPC has included several Sutton Street proposals in the 1997 Regional Transportation Plan. One calls for a feasibility study to determine whether a new access road can be built as the Clark-Charles-Sutton Street Connector. Another would examine the feasibility of constructing access in the Sutton to High Street Connector. In addition, the 1997 Plan includes funds to reconstruct a portion of Sutton Street at an estimated cost of $1.5 million. Still, our dire need for Sutton Street/I-495 improvements remain unaddressed. Given the amount of urban development in the northern section of our Town, future land use changes that generate more daily vehicle trips will only exacerbate congestion at the Sutton Street/ Route 125 intersection and numerous others along both corridors, forcing larger amounts of traffic onto local streets.

## Minor Arterials

Our "minor arterials" include Route 133 (Great Pond Road), Massachusetts Avenue-Salem Street-Boxford Street and a proposed east-west arterial. The northern section of Route 133 links downtown and Rte. 495 with northeasterly points in our Town. From the Haverhill line, Route 125 has experienced more traffic volume increases

***1997 Master Plan Survey:*** *The importance of rural character is clear through the survey and neighborhood meetings. Therefore we gave the community a choice, would they :* ***"Make some repairs to roads leaving the roads rural in nature and increase police and control traffic through enforcement or improve roads and widen them in the rural area of Town to accommodate increased traffic speeds."*** *The response was 79% want rural roads and increased enforcement compared to 13% seeking to improve the roads to allow increased speeds.*

than any other street in North Andover since 1990. Between 1989-1995, ADT rose from 5,231 to 6,660, or by more than 26%.

Massachusetts Avenue-Salem Street-Boxford Street acts as an inter-community link between Lawrence and I-495 in neighboring Boxford. Given the lack of a major arterial, travelers from the southeastern and central parts of our community use these roads to reach I-495 and northern destination points, a pattern that becomes more pronounced as North Andover's southern quadrant develops. Peak traffic demands in this area correlate with activity on Route 114. As our major roadways become congested, spillover traffic will continue to affect local streets in and around the Old Centre. For this reason, MVPC's regional Transportation Plan provides for signalizing the Osgood Street/ Massachusetts Avenue intersection.

Although North Andover needs another arterial to bisect Route 114 and service Out Country and the residents west of Route 114, our ability to realize a project of this magnitude is questionable. Much of the south section is wetlands and forested. Developable property does exist, but it is diminishing. Moreover, it would have to be taken in order to create enough land area for a new arterial street. The financial, political, geographic and environmental constraints facing such a plan render it nearly infeasible.

Other streets of significance include Peters Street and a portion of Andover Street, which are associated with the overlap of Routes 114, 125, and 133 (i.e., the Wilson's Corner complex) and Main Street. North Andover's Main Street contends with both peak hour commuter congestion and parking problems. Unsurprisingly, our ADT along Main Street increased by more than 20% between 1989-1994, or 10,980 to 13,202 vehicles.

For the most part, the peak parking period along Main Street is typical of a small downtown. It spikes around mid-day during the week and on Saturdays. The current parking capacity in our central business district has never been established definitively, but the 1972 Master Plan estimated that on- and-off street parking spaces ranged from 150 to 200 at the time. The Plan also estimated that if 100% of the area reached full development potential, Main Street would need a total of 400-500 parking spaces. This meant that we would have required another 250-300 spaces.
The Davis-Furber Mills complex adjacent to downtown presents unique access problems. This section of town is fairly old and, consequently, many of the streets used to access the mill are very narrow." In its 1997 Transportation Plan, MVPC suggests exploring the possibility of re-using the abandoned railroad right-of-way that passes through downtown and the mill site as a new Sutton Street to High Street connector. The report adds that the same solution may also reduce congestion along adjacent roads.

## Collector streets

Collector streets move traffic into the arterial system and provide local "sub-area" access. Our collector network consists of Waverly and Main Streets, Osgood Street from Main to Massachusetts Avenue, Andover Street from Route 125 to Johnson Street, the southern leg of Great Pond Road, Marbleridge Road, Johnson Street from Andover Street to the proposed east-west arterial, and Salem Street from Boxford Street south to Middleton line. As traffic on Great Pond Road and Boxford Street approaches capacity, Winter Street will begin to serve as a collector between the two. North Andover has put regulations in place to govern the design of new subdivision roadways and other street improvements throughout the Town. We updated our subdivision standards in 1989, and we are currently developing new standards that are more in keeping with the design objectives discussed in this plan.

## Mass and Public Transportation

Our region benefits from a wide range of public and private transportation services, including local and long-distance bus routes, special transit accommodations for the elderly and the disabled, taxi services and commuter rail. However, like most suburban residents, we rely almost exclusively on our cars for transportation. The results of a 1990 vehicle occupancy study conducted by MVPC revealed how vehicle occupancy rates have actually fallen here. Over the 10-year period from 1980-1990, occupancy rates fell from a range of 1.39-1.55 persons per vehicle (p/v) in 1980 to 1.28-1.50 p/v in 1990, for an 8.5% drop. The numbers dropped more among travelers accessing our highways, or 1.18 - 1.49 p/v. Automobile ownership and use will continue to rise as residential development absorbs more land in Out Country. Still, as North Andover grows and becomes more densely populated, there will probably be an increase in public transportation service as well.

## Bus Transportation

***Merrimack Valley Regional Transit Authority (MVRTA)***

Created in 1974, MVRTA provides public transportation services to eight communities in our region. Today, MVRTA operates three fixed bus routes in North Andover on Monday through Saturday, providing service to Lawrence and within our community. Due to increased demand, bus service to North Andover has been expanded. In 1996, MVRTA carried approximately 1.4 million passengers on its fixed route system. Average weekday ridership has grown by 24% from 1990 (4,236) to 1996 (5,265). MVRTA also serves major employer centers during peak hours on weekdays.

All 45 buses are all equipped with lifts for persons with disabilities. Through its Dial-a-Ride Program, MVRTA also provides special transportation services for disabled residents in seven communities, including our own. Dial-a-Ride is a door-to-door service that operates within three-fourths of a mile on either side of the fixed route system. People who need this service can use it for social, medical, shopping, recreation, and services purposes. Our Council on Aging also provides in-town transportation for North Andover's elderly.

*Trailways*

Trailways, a national carrier, is chartered by the state to provide service between Haverhill's Washington Square and Lowell.

## Rail Transportation

***Massachusetts Bay Transportation Authority (MBTA)***

The MBTA operates 16 trains (8 in and 8 out) every weekday and 12 on the weekends (6 in and 6 out) between our region and the City of Boston. Because the MBTA commuter train does not stop in our Town, North Andover's residents must drive to the stations in Andover, Haverhill or Lawrence in order to use this service. MBTA commuter rail ridership increased nearly three-fold between 1983-1996. In 1983, inbound ridership totaled 373 persons versus 1309 persons traveling inbound in 1996, for a 251% increase.

*AMTRAK Passenger Service*

We anticipate that AMTRAK will provide passenger rail service to points north in New Hampshire and Maine. The high-speed (80 mph) train will provide service between Boston and Portland. At the same time, negotiations are underway to connect Portland to Montreal and other northerly points. When AMTRAK institutes passenger service in our region, the trains will stop at Haverhill's Bradford Station.

*Freight Service*

Guilford Transportation, the parent company of the Boston & Maine Railroad, provides freight service. Guilford maintains freight service over the two major rail lines in the region. The western route serves as both a commuter rail line and a freight line and it extends from Boston north into Haverhill, and then to New Hampshire. The other line connects Salem and Lawrence to New Hampshire via Methuen.

## Lawrence Municipal Airport

Lawrence Municipal Airport is the largest publicly owned airport in Merrimack Valley. It has 60 hangers, 145 tie-downs, and aircraft storage capacity for 259 planes. The Airport also has new Precision Approach Path Indicators (a system of lights used for guidance), weather prediction instruments, a rebuilt taxiway, and a reconstructed main parking lot and main entrance among other improvements. In 1985, a new control tower was constructed. Today, the tower runs 15 hours a day, seven days a week.

Demand at the Airport has grown over the years, although the facility operates far short of its actual design capacity. Recently, the Lawrence Airport averaged 104,000 takeoffs and landings annually as opposed to only 22,000 in 1970, for a 372% increase. Even with this growth, the airport remains at least 50% underutilized. A 1970 study shows that the Airport's annual capacity is 220,000 general takeoffs and landings.

Although located in our Town, the Airport belongs to the City of Lawrence. As such, it pays no property taxes here. Because we rely so heavily on property tax revenue to pay for basic government services, the Airport is a highly charged issue in our community and has been for about 40 years. Given that the Airport owns about 550 acres of land and that it occupies an industrialized setting close to Routes 125, 133 and I-495, the Airport property is extremely valuable. Despite its development potential and the revenue this site could generate for both our Town and Lawrence, North Andover has persisted in trying to convince City officials that there are better ways to use the land. To date, these efforts have been less productive than we would like, although plans to use 52 acres of the property for industrial development are expected to come to fruition.

## Intermodal Transportation

Our Town lacks the bicycle and walking paths that could supply a major transportation alternative and reduce public safety problems on our streets. However, there are two bicycle/walkway paths in the planning stages, the most promising of which is the seven-mile "North Andover Greenway Path" that would be part of a regional greenway network. The North Andover Greenway Path will span from the Merrimack River to the Middleton line and make good use of an abandoned section of the B&M Railroad right-of-way.

By passing through town activity centers, our schools and recreation facilities, the Greenway Path could be invaluable in helping us to meet our public safety and environmental goals. When our open space and recreation plan was updated in 1995, a community survey revealed that 59% of the respondents supported bike paths and 47% supported jogging or hiking paths. Moreover, 87% of the respondents considered hiking or walking to be their favorite open space activity, while bicycling was the response for 78%. Clearly, our community has a strong interest in these forms of outdoor recreation. However we must temper this project with a clear understanding of the rights of property owners and those concerned for the trail impacts.

A proposal to build a pedestrian/bike path and boat ramp along the Merrimack River was proposed at one time, but it was controversial and ultimately, handicapped access issues made the project infeasible. If it were to materialize, the project would provide public access to the Merrimack River. Our Town recently conducted a survey to determine the level of community support for open space and recreation opportunities, and to identify access barriers in our Town's recreational facilities. The survey showed that many of North Andover's recreation sites are aging and inaccessible for persons with disabilities. As we develop new recreation facilities and improve our existing ones, we must be conscious of the different interests we must serve and equalize opportunities to participate among our elderly and residents with special access needs.

### *3. Significant Issues*

Today, unbuildable land is interspersed with numerous private parcels that can be developed. As North Andover's development spreads out from the core, we face a multitude of community planning issues – of which infrastructure that is adequate to support local, cross-town and inter-community traffic may well be the most difficult to solve.

A number of North Andover transportation improvement projects have been proposed and in some cases, approved. As the entity responsible for regional transportation planning, the MVPC recently completed a Regional Transportation Plan (1997). As directed by the federal Intermodal Surface Transportation Efficiency Act (ISTEA), a regional transportation plan "acts as a forum where the transportation needs of a region are identified and where transportation projects and programs intended to solve these project are defined." Within each ISTEA-specified transportation plan, agencies are required to develop a priority list of regional projects through federal fiscal year 2020.

MVPC's "Listing of Proposed and Approved Highway Projects (1998-2020)" includes a number of planning, design and construction initiatives that could benefit North Andover. The project we need most in order to achieve our economic development goals is the improvements to the I-495/Sutton Street interchange. Although

improvement plans are underway, they do not address the continued need for a northbound exit ramp.

In all likelihood, the impacts of regional traffic growth have yet to be fully realized in North Andover. We can control the types of growth in our own Town through zoning regulations, but we are virtually powerless over inter-community traffic that relies on North Andover's arterial system to reach nearby commuter destinations. Much of the remaining industrial, commercial and multi-unit residential growth that can occur here will take place on or adjacent to our major arterials, meaning Routes 114 and 125. We need to create and implement ways to involve new developments in financing public infrastructure improvements along these corridors. Otherwise, our ability to attract quality, revenue-generating development for North Andover will be impeded by unresolved traffic problems.

Further, our future holds significant residential growth in the Out-Country section. The result will be to over-tax municipal infrastructure that is already strained. Connecting Out-Country residential development to Route 114 will rise on the Town's priority list as local roads lose their rural character and become congested and unsafe, especially in the Old Center area. Circulation improvements will also be needed on major arterials near the Lawrence Municipal Airport in order to direct traffic more efficiently and safely within and out of North Andover.

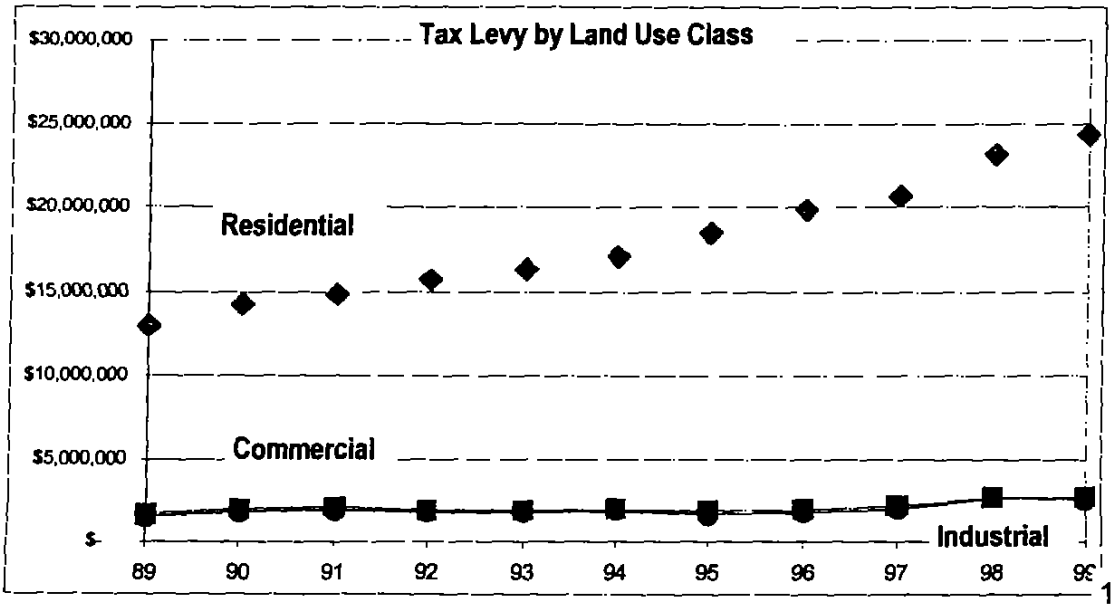
## *Economic Development and North Andover's Fiscal Future*

The ongoing dispute surrounding the Airport directly affects our ability to approach a 1996 Strategic Planning Committee goal of increasing the commercial and industrial tax base to 20% of our total assessed value within ten years. Under optimal conditions, the goal is far-reaching and perhaps impractical, but it speaks to a dire need in North Andover: to preserve what is left of our traditional diversity and population mix and to maintain fiscal stability, we must cap the rate at which residential tax bills are growing here.

Under existing conditions that include a tax-exempt municipal airport on 550 acres of quality industrial land, North Andover cannot even approximate the 1996 goal if fiscal security is measured by assessed value ratios alone. To induce a significant tax burden shift from residential to non-residential land uses, our community must adopt a comprehensive economic development strategy that relies on increasing the supply of industrial and commercial zoned land, development incentives, accurate assessment practices and tax rate structure, and permanently reducing the amount of residential development that can happen in North Andover. Together, these steps can help us achieve the end result of a levy distribution that draws 20% of our local tax revenue from commercial, industrial and personal property sources and 80% from the residential taxpayer.

To evaluate the feasibility and impacts of shifting the non-residential tax base to 20% by 2007, the year that the Strategic Planning Committee had aimed for in its report, we made certain assumptions about the growth of our Town's overall tax base, future estimated tax rates, the value of future commercial development and the density of industrial commercial development. North Andover's residential assessed valuation hovered between 83% and 84% of total assessed value during the mid-1990s. Even with our growth control bylaw in place, this pattern would have to change significantly in order to achieve a reduction to 80% in nine years. The rate of residential growth has consistently surpassed the non-residential rate since the mid-1980s, and this difference largely accounts for the gradual transfer of a hefty tax burden to our community's homeowners.

We estimated the Town's FY2007 total as-



**1957 Master Plan**

*"The presence in North Andover of the airport deprives the Town of tax income from desirable industrial development of 350 acres or more of the only major land area in North Andover well suited for large-scale industrial use by its relation to highways and utilities."*

sessed valuation by reviewing the most recent fiscal years and calculating an annualized rate of increase. North Andover's total assessed valuation rose from $1,626,107,800 in FY1993 to an estimated $2,189,426,794 in FY1998. This represents an overall increase of 34.64% and an annualized rate over the five-year period of 6.13%. We used this 6.13% annual rate to project an FY2007 total assessed valuation of $3,740,019,846.

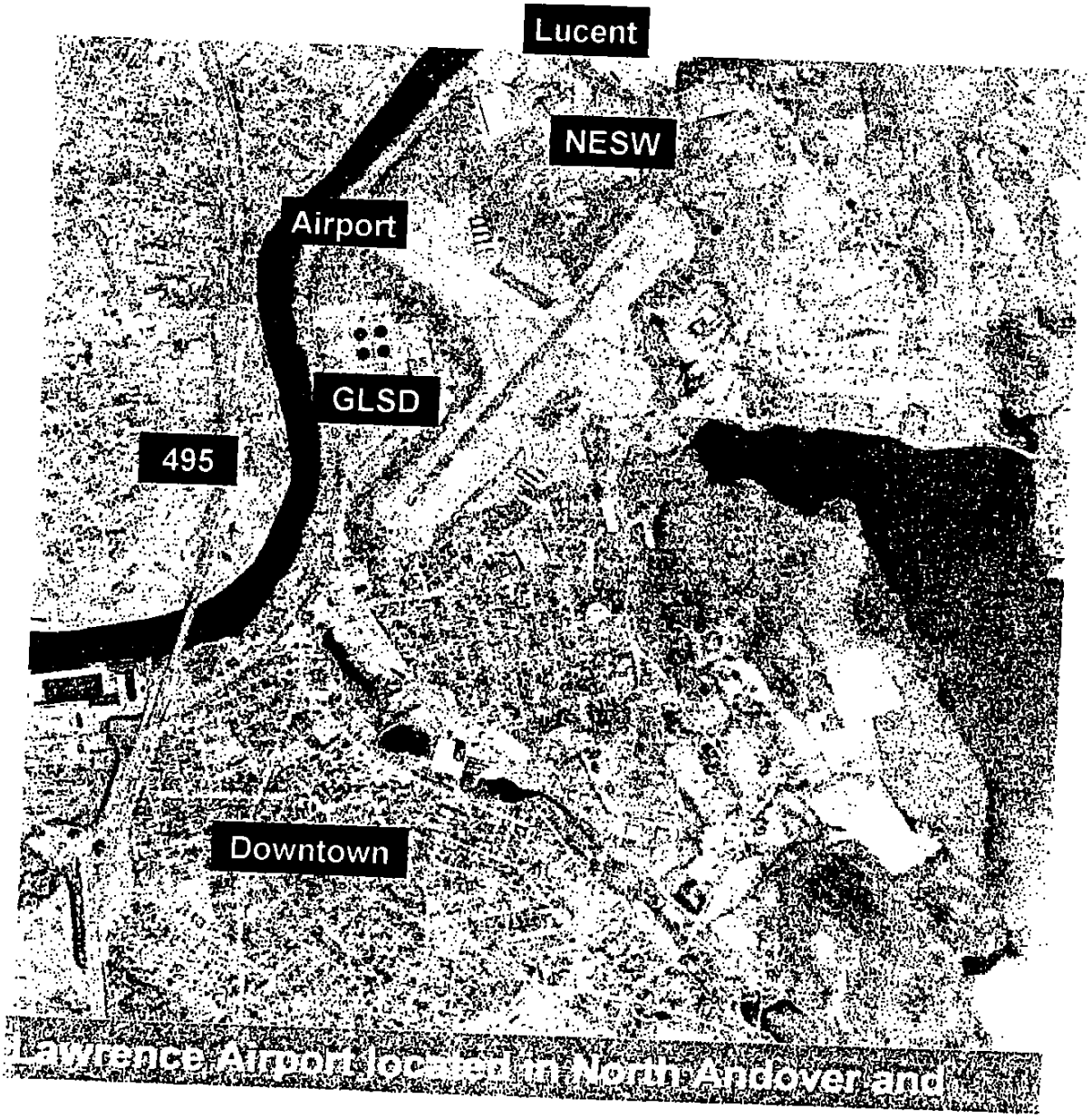
Assuming the ongoing validity of 6.13% in annual assessed value growth, 20% of the FY2007 total valuation equals an assessed value target of $748,003,969 for non-residential property. In FY1997, when we began working on the new Master Plan, the assessed valuation of commercial, industrial and personal property in North Andover totaled $295,145,690. Thus, to meet the 20% goal, our Town would have to increase the scale of commercial and industrial development to a level that can yield an additional $452,858,279 in assessed valuation from these land uses in our community. Over whatever period of time it would take for the free market system to produce such an outcome, this amount of commercial and industrial valuation represents a tremendous level of development. In what is now a seven-year window to FY2007, it represents a "fast-forward" to the very urbanization that many other North Andover planning goals seek to prohibit.

Reviewing the 52-acre proposed Airport Industrial Project puts the scope of development in perspective. The proposed Airport Industrial Project envisions 304,250 square feet of new buildings on the 52-acre site. The projected value of the new buildings and site improvements is $18,255,000. North Andover would have to approve approximately 25 projects of this scope over the next several years ($452,858,279/ $18,255,000=24.8), in order to add the necessary amount of assessed valuation to the tax roles. In increments of projects similar to the proposed Airport park, we would be building 7,606,250 square feet of new space – an amount far higher than the 1987 *Balanced Growth Plan*'s generously estimated future industrial capacity of 3,525,467 square feet. Twenty five additional projects of this size and density – 52 acres with 304,250 square feet of building space – could require as much as 1,290 acres of land zoned for industrial uses. Our current supply of vacant commercial and industrial land – some 161 acres in total – is 11% of the required amount. If the entire Lawrence Airport property were added to the inventory, we could claim a total of 711 acres of non-residential capacity or about 54% of what we would need in order to support 7,606,250 square feet of lower-density construction.

Obviously, the greater a site's per-acre development potential, the less land needed to produce the same built capacity outcome: if all 691 acres were fully developable, they could yield as much as 6,772,491 square feet of new industrial plant. In short, we would have nearly all the land our Town needs in order to strengthen the tax base permanently.

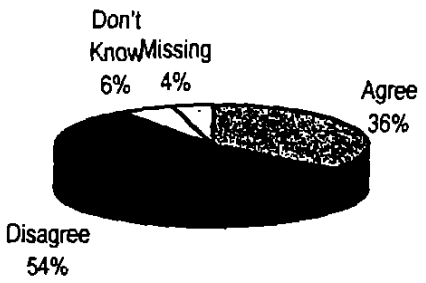
**1972 Master Plan**

*"The airport is currently operating at 9% of estimated annual capacity of 220,000 general aviation take-offs and landings, meaning that there is a large margin for increased use without necessarily increasing its size."*


Lucent
NESW
Airport
GLSD
495
Downtown

***1996 Master Plan Survey:***
*The desire to pay taxes to avoid the need for additional industrial and commercial growth was slightly over one third of the responses at 36% agreeing with the statement : **"I would support higher taxes to avoid the need for more industrial or commercial development."** The majority of response, or 54%, disagreed with the statement.*

**Would Pay more Taxes to Avoid More Industrial and Commercial** **Q 10**




Another way of exploring the same question is *use*. Because North Andover has so little commercial land left to develop, all of our projections are based on industrial growth gains. In truth, many commercial uses yield significantly higher values per acre than industrial buildings. The extent to which we diversify our tax base toward commerce – retail, medical and professional office complexes, assisted living facilities and hospitality-sector uses – we can extract more assessed value per square foot of built space than we do through industry. However, tax base diversification is only one piece of an economic development strategy; we must also be concerned about the quality of the jobs created by the businesses and industries we attract here.

Although it produces a conservative estimate, the proposed 52-acre Airport project is a fairly reliable indicator of how much industrial growth North Andover needs in order to progress toward the Strategic Planning Committee's 20% non-residential assessed value goal by FY2007. Arguably, the proposed density is somewhat lower than the prevailing range in our established industrial areas. However, the fact is that the "existing conditions" densities include sites that were developed a long time ago, before today's coverage ratios and parking requirements were in place. Further, any development capacity estimate has to allow for the likelihood that available acreage is not fully developable due to site constraints that raw data frequently conceal.

Just as the most easily developed residential land is consumed first, the same holds true for commercial and industrial acreage. On balance, today's remaining non-residential inventory will not yield the same development scale or intensity that land used earlier in the growth process did: with few exceptions, the best land is already developed. Among those few exceptions: about 350 of the 550 acres at Lawrence Municipal Airport. When viewed this way, our community's frustration with potentially valuable land being used for purposes that do not benefit North Andover becomes self-evident.

Still, if we assume a more densely developed land use than the proposed Airport project, that is, the greater density attainable under current zoning for a fully developable parcel, $452,858,279 in additional commercial and industrial assessed value can be achieved with less physical impact on the Town. A high-end density estimate would convert our 141 vacant industrial acres into as much as 1,381,941 square feet of new buildings with an aggregate assessed value of about $82,916,469. Under this scenario, we have nearly 23% of the industrial land required to reach a non-residential assessed value of $452,858,279. Simply stated, we would need 770 rather than 1,290 acres to shift the tax base in the direction sought by the 1996 Strategic Planning Committee. It is altogether

ironic that if North Andover could gain control over the entire Lawrence Airport property, we would have about 711 acres of developable non-residential land (including commercial) or 93% with which to reinvent our community's tax base.

When the 1987 *Balanced Growth Plan* was written, North Andover had about 550 vacant non-wetland acres of commercial and industrial land. That amount dropped when we rezoned most of the industrial land on Route 114 to make way for the Village Residential district. Even if we had rejected the Village Residential concept, however, the acreage we rezoned is far less than what North Andover needs to reach the 20% non-residential assessed value goal that many Town officials embraced two years ago. Whether we imagine our future as one in which the Lawrence Municipal Airport acquiesces to our community's plan, we must acknowledge that gaining site control is a long-term project. It is also vulnerable to political compromises that may leave us with far less financial gain than we hoped. Even with the entire Airport site available for new industry, North Andover will not be keeping 100% of the tax revenue generated by the property.

## *Recent Choices and Future Considerations*

In 1997 North Andover officials approved 284,945 square feet of new commercial and industrial development, a rate that approximates the necessary annual assessed value addition to meet the 20% goal. For many reasons, however, this rate of development may be difficult to sustain. First, the most easily developable land converts early in the build-out cycle, leaving a remaining parcel base that is less attractive because of location, site constraints or inadequate infrastructure. Second, market forces drive business investment decisions. A strong economy like today's propels new business growth; in the early 1990s, the Town received less than half the amount of non-residential proposals that came in or were approved three years ago. Third, "non-residential" assessed value can be deceptive in a community like ours. Although North Andover authorized 284,945 square feet of new buildings last year, 75,000 square feet involve a new dormitory at Merrimack College, a tax-exempt institution. A similar pattern is evident in the Planning Board's site plan approval records of previous years. Non-profit institutional facilities can (and usually do) benefit the local economy by increasing total spending power in a community, but they do not increase the tax base. Thus, it is more appropriate to view our recent site plan approval boom in terms of 209,945 square feet with an estimated assessed value of $12,596,700.

While we aim for a greater share of the Town's assessed value being absorbed by commercial and industrial development, we need to explore ways to diversify our business base. North Andover has continued to maintain a relatively high percentage of manufacturing jobs: five of the seven largest private employers here are manufacturing firms, but the vast majority of those jobs, 5,600 of 6,993, are with one employer, Lucent Technologies. This same firm is also North Andover's top taxpayer, for Lucent Technologies' annual tax bill represents 2.9% of the total levy.

Although we have 822 known business establishments in North Andover today, our disproportionate reliance on one employer makes us susceptible to any downturns that occur in the industry represented by this firm. The same kind of dependence also makes communities vulnerable to "economic blackmail." We have no doubt that Lucent Technologies is committed to its North Andover location, but other communities have found themselves on the

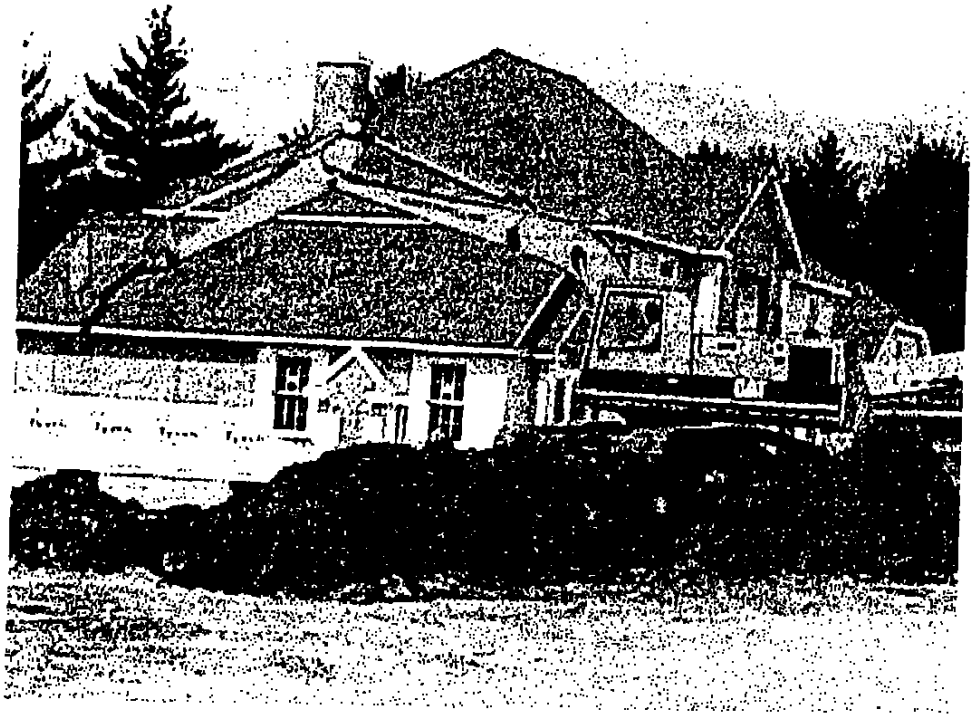
weak side of the bargaining table when large companies threaten to relocate in order to extract tax breaks and other benefits from local officials.

In a way, we find ourselves in a similar position with the City of Lawrence. Our own community's need for additional sources of tax revenue has been pitted against the political clout and chronic financial problems of an urban neighbor. Whether we correctly forecast the mutual fiscal gains that can be achieved by a "revenue positive" development plan for the Lawrence Municipal Airport property, the fact is that North Andover's interests have been subordinate to the Lawrence's. At the risk of trite conclusions, the Airport saga illustrates that putting all of our economic development eggs in one basket is dangerous. We should take heed as we plan to build our tax base. The challenge is to build an inherently diversified one so our community can mitigate the impacts of losing one large business concern.

To achieve our desired assessed value realignment, North Andover would have to rezone several areas along our major arterial routes where there is adequate access and infrastructure for new business growth. The present supply of developable land zoned for industrial and commercial uses is insufficient, even if fully developed, to provide the Town with the additional commercial/industrial/personal property value necessary to meet the stated goal.

Another way of looking at the issue of tax burden, however, is to examine North Andover's tax rate structure. If it is infeasible or undesirable to rezone the amount of land needed to actually change the tax base here, and if the Lawrence Airport property never becomes available for new industrial development, we still must deal with the impact of residential tax bills on the households in our community. As the 1996 Strategic Planning Committee discovered, North Andover's tax rate is about 24% below the average in seven other cities and towns with which we believe our Town is comparable. We think that North Andover can effect a change in the residential tax levy by reallocating a greater share of the total burden to commercial and industrial taxpayers *without impeding our economic development goals.* Although North Andover's families are relatively well off, one of the traditional qualities that has made our Town strong is its population and income diversity. We may not be an economically homogenized community, but we are on the path toward becoming one.

# Housing and Residential Development



## HOUSING AND RESIDENTIAL DEVELOPMENT

### 1. Introduction

Of all land uses, housing renders the greatest overall impact on community character. To the extent that building style, age, quality and appearance supply physical evidence of growth and change, residential structures speak volumes about the people who built a town from its earliest days to the present. The distribution of different use types, together with the condition of housing stock from one area or neighborhood to another, attest to past and present socio-economic structure of cities and towns. These factors narrate local history on one hand, and shed light on current opportunities and problems on the other. Notwithstanding the community development impacts of transportation, zoning and market forces, housing indicators also forecast the future social order and economic make-up of communities.

For statistical purposes, North Andover is part of the Lawrence-Haverhill Metropolitan Statistical Area (MSA). As such, we are an individual community and part of a larger network of communities. North Andover contributes to the regional housing market by providing a variety of housing types. Our community offers multi-unit complexes of apartments and condominiums, two-family homes, and single-family homes in modern subdivisions, planned residential developments and rural settings. Arguably, the dominant housing type here is the single-family home, which supports our tradition as a family-oriented community.

North Andover's identity is established by the confluence of housing stock and the natural resources that influenced the location, style and pattern of community development over time. Many of our homes are historically significant. The variety of architectural styles in housing, ranging from colonial to contemporary, bear witness to yesterday's North Andover and who we are today.

Because housing is North Andover's dominant land use, its continued growth and development interconnect with and directly affect all other aspects of community planning: public facilities and infrastructure, open space, economic development, and circulation. Understandably, we are very concerned about controlling residential growth because the Town's environmental and fiscal health depends on a balanced alignment of population, demand, and revenue. One of the key aims of this Master Plan is to prevent uninhibited growth so that we can preserve what makes North Andover special. Our challenge is to manage the Town's continued development, a task that is not synonymous with stopping growth altogether.

We approached our assessment of North Andover's housing needs and market opportunities by considering the characteristics of our existing housing stock and the population it houses. While housing stock can change over time, as it has in North Andover, many other factors contribute to community housing need. For example, the rate at which people move in and out of a community, the number of persons born and deceased, the aging of household members, growing and shrinking household sizes, and household incomes all conspire to create forces of need. Therefore, we knew that to develop an effective housing profile for North Andover, we had to understand our population and the dynamics of that population.

## 2. Existing Conditions

### *Population*

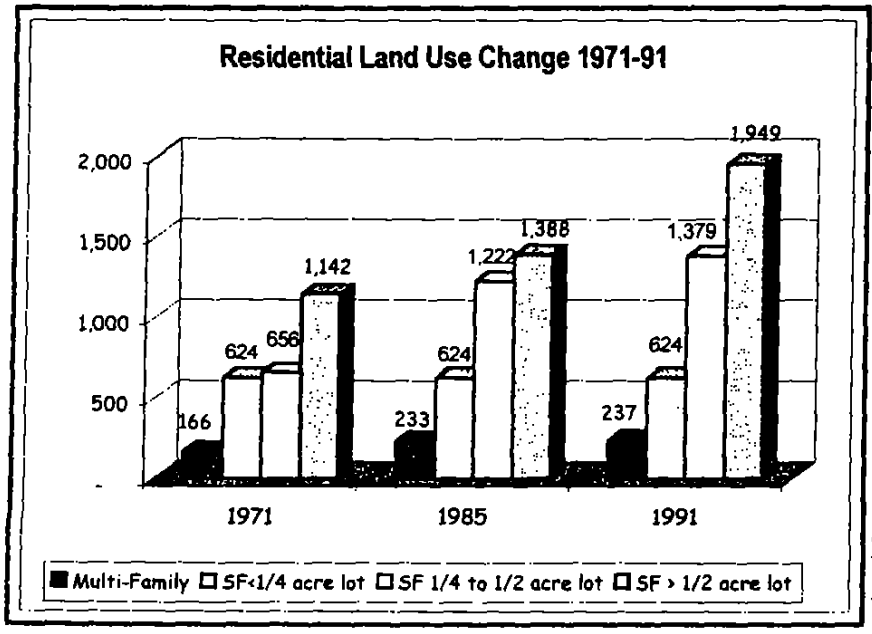
Although we still like to think of ourselves as a small town, North Andover has experienced a significant population increase over time and we are working to address the changing needs of our community as it grows. Based on 1995 data (1995 data was used because it includes race, ethnicity and other information not included in basic population counts), North Andover is home to over 24,000 people of different races, ages, family types and incomes. Racially, 95% of our population is comprised of white persons, 3% Asian and American Indian, 1% percent African-American, and 1% Hispanic persons.

Most of our population is under 44 years of age, with 20 to 44 year-olds forming the largest single age group. Out of 24,351 residents, 28.7 % (6,993 persons) are between the ages of 0-19; 37.8 % (9,912 persons) are in the 20-44 age range; 22.1% (5,392 persons) are between 45-64 years old; and 11.4 % (2,774 persons) are over 65.

The vast majority of family households in North Andover are married couples, yet less than one-fourth of these families have children under 18. Over 75% of our Town's married couple families have no children or their children are adults. Among families with children, single parents head 7% (415) of them. The average household size here is 2.71 persons. In 1989, the median family income in our community was $61,468. Compared to $44,367 statewide in the same period, North Andover's rank of 57 out of 351 cities and towns in the Commonwealth places it in the top 20% for household wealth. At last count, 2.7% of our population (608 persons) lived below the poverty level.

### *Housing*

North Andover's housing stock is comprised of several housing types, although single-family homes represent over 62%, or 5,147 units. They differ architecturally and by development pattern, with many of our oldest dwellings located in village settings or in more isolated rural areas where they remind us of our community's agricultural roots. Although 63.7 percent of our Town's housing was built between 1960 and 1989 (5,270 units), nearly 20% was built before 1940 and of these, most are single-family homes.




It is worth noting that as new-home construction continues to change North Andover's landscape, it also diminishes the impact and "presence" of the history we have managed to retain. That more than 60% of all housing units went up after 1960 suggests that while North Andover is very old, its char-

acter changed radically in a short period of time. We have transformed from a rural-agrarian community that was socially and economically diversified during its industrial era to a town that has the look and feel of a suburban growth center today. Since 1990, an additional 814 units have been approved or built.

Still, not all of our housing consists of single-family homes. Over 15%, or 1,298 dwellings, are contained in two-to-four unit buildings and 20%, or 1,731 units, are in structures with five or more units. In addition, 95 of our housing units (slightly over 1%) do not fit into any of these traditional use type categories.

Consistent with our income levels and population characteristics, North Andover has a high level of homeownership. In 1990, 68.3 % of our housing stock was owner-occupied compared to 59.8% across the Merrimack Valley, which had a corresponding renter-occupancy rate of 40.2 %. Thus, homeownership in North Andover exceeds regional norms. In addition to single-family homes, the 1980s construction and conversion of several apartment complexes to condominiums contributes to our overall homeownership rate.

In 1990, the median value of owner-occupied housing units in North Andover was $233,400 and the median gross rent, $734. During the same timeframe, the Lawrence-Haverhill MSA's median housing value was only $156,000 and median gross rent, $578. Regardless of interim market fluctuations, today's healthy real estate market suggests that 1990 data reasonably represent current housing conditions in our community. In 1997, the median home sale price here, excluding condominium units, was $265,900.

## *Housing Affordability*

The high cost of North Andover homes makes affordability an issue of concern. Residents realize that the cost of housing prohibits many people who grew up here from purchasing a house in their own hometown, which creates a demand for moderately priced housing. Still, many residents feel uncomfortable about encouraging affordable housing because they fear adverse fiscal consequences for the Town. To the extent that single-family homes frequently fail to pay their own way in taxes, affordable housing often exacerbates the problem. A second ingredient in the mix of opinions about housing affordability is an ideological one. Some residents question whether the Town has a duty to provide affordable housing, and others object to the "social engineering" that underlies the affordable housing mandate of MGL c.40B, the Anti-Snob Zoning Act of 1969.

The generally accepted definition of affordability assumes that households paying 30% or less of their income on housing costs are living within their means. To quantify a community's affordability "gap," housing experts usually consider such indicators as the number and percent of residents who currently pay more than 30% of their income on housing, the prevailing cost of housing in a community, and the income required to purchase or rent a standard dwelling unit.

According to the 1990 U. S. Census, about 26% of North Andover homeowners under 64 years of age paid 30% or more of their income for housing costs. Nearly 29% of our senior citizen homeowners paid 30% or more of their income in housing costs. Among tenants, the share of households paying 30% or more of their income on housing costs increased. The cost of housing exceeded 30% of household income for about 27% of our under-65 renters, while

slightly less than half, or 49.24%, of our elderly renters paid 30% or more of their income on housing. Ironically, because our Town values its rural identity and tries to reinforce the same with zoning and subdivision laws, these same laws make it more expensive to live here and they contribute to housing affordability problems for some of our residents. Moreover, they create barriers to moving to North Andover for families of moderate means.

The North Andover Housing Authority manages several developments that house families and individuals who could not otherwise live in our community. Most of our Town's public housing serves elderly couples and individuals. Over time, demand for elderly housing has fluctuated in both North Andover and the surrounding region. Although there is a continued need for elderly housing, the population of lower-income elders who qualify for public housing does not appear to be growing enough to demand more subsidized units. The Housing Authority gives preference to North Andover residents when units become available. In addition, the Housing Authority plans to create four more units of family housing in the near future. Where the units will be located and whether they will be duplexes or townhouses are all issues under consideration at this time.

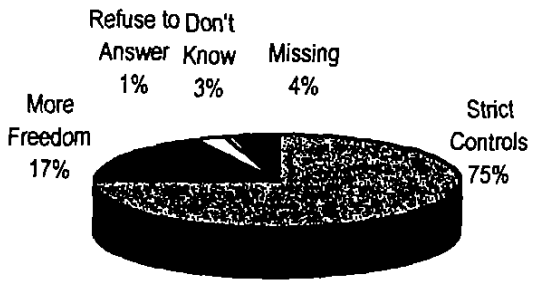
Like most housing authorities, ours owns and manages subsidized units and simultaneously administers state and federally funded rental assistance for income-eligible households. Rental assistance differs from subsidized units because the voucher or certificate that the Housing Authority issues can be used to rent privately owned dwelling units. Under this arrangement, tenants who receive the assistance are free to choose units in any community. When they find one that meets basic housing quality standards, the Housing Authority enters into a contract with the landlord to pay the subsidized portion of each month's rent. In turn, the assisted renters pay up to 30% of their household income as the "tenant share." This means that within certain cost caps, the rental subsidy makes up the difference between what the tenant can afford and the unit's market rent.

The North Andover Housing Authority offers eight Massachusetts Rental Voucher Program (MRVP) vouchers; six from the Alternative Housing Voucher Program; 66 Section 8 Certificates and 50 Section 8 Vouchers. The Section 8 waiting list here tops 800 applicants. Federal requirements often make local preference difficult for housing authorities and ours does not apply local preference when selecting people from the waiting list. Combined with the fact that Section 8 waiting lists in the City of Lawrence and other communities exceed North Andover's, this means that many people come here from the surrounding region in order to apply for Section 8 assistance. However, most of the North Andover Housing Authority's actual recipients have no choice but to use their vouchers or certificates for apartments outside of our community.

Our Town provides few rental opportunities today. During the 1980s, the conversion of several apartment complexes to condominiums further reduced the rental housing supply. Because the supply is limited, rental housing is also expensive here. The effect of North Andover's high market rents is that several individuals and families who sought Section 8 rental assistance could not find suitable housing in our community. In the Section 8 Program, rental cost reasonableness is set by a standard known as "Fair Market Rents," or FMR's. The FMR's that apply to North Andover derive from prevailing rental costs within the Lawrence-Haverhill MSA. Because the area includes less affluent towns and the City of Lawrence, rents in our community usually exceed the maximum allowable FMR that determines a unit's Section 8

***1997 Master Plan Survey:*** *Given the opinions we wanted to learn what choices would people make to direct their Town. The choice :* ***"Develop strict land use and building controls or Allow more freedom for development within reasonable guidelines,"*** *was answered by 75% responding stricter controls.*

**Strict Controls or More Flexible Question 18c**




eligibility. In light of these factors, the North Andover Housing Authority administers Section 8 vouchers and certificates on a statewide basis.

An additional affordable housing feature in North Andover is Wood Ridge, which is a privately owned and managed project on Waverly Road. Developed by the Roman Catholic Archdiocese in the 1980s, Wood Ridge is a 230-unit family townhouse cooperative. This development achieved its affordability for low- and moderate-income households by combining a low-interest mortgage from the Massachusetts Housing Finance Agency (MHFA) and a special Section 8 subsidy known as "project-based assistance" that defrays rent costs for tenants living at Wood Ridge.

## *Zoning*

To protect our natural resources and control the rate and amount of growth here, our Town relies heavily on zoning to guide and manage development. We have several zoning districts and they control development in different ways. The kinds of controls and their relative restrictiveness presumably meet our objectives for and the needs within each part of the community. In some areas our zoning requires large minimum lot sizes as a means of safeguarding critical environmental resources, and in other areas we allow greater residential development densities. Within certain districts we encourage commerce and industry. On balance, our zoning seeks to preserve North Andover's character, protect natural resources and diversify the tax base. North Andover's zoning is also complicated. The residential zones include seven districts known as Residence Districts1-6 and the Village Residential District. Residence Districts 1-6 provide for varied minimum lot sizes, generally from two acres down to 12,500 square feet except for two very small districts where the minimum lot size falls to 5,000 square feet. The Village Residential District previously allowed a minimum lot size of 11,000 square feet and a diversity of housing types, but town meetings have amended the zoning bylaw to limit development in the district to one house per 40,000 square feet.

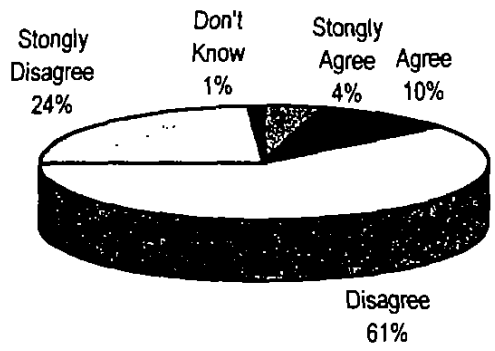
**1987 Growth Plan**

*"..., the VR zone is a counterbalance to the two acre proposals in other portions of the Town, and is the major effort for the creation of broader housing opportunities in North Andover."*

The Village Residential District was established more than 10 years ago to " . . . provide for a broader range of housing types to meet the diverse housing needs of the community and to restore 'residential balance' by increasing housing opportunities . . ." Located along the lower end of the Route 114 corridor, the Village Residential District seemed to promise a "balanced" residential development plan for the community as a whole. Furthermore, we wanted to locate higher density development in areas that were equipped to handle it from environmental, public utility and transpor-

***1997 Master Plan Survey:*** *Seeing the resulting decisions of the 1987 plan with the establishment of VR, a residential district, on Route 114 we asked for an opinion on the statement :* ***"Route 114 is the best place for residential development providing the traffic problems can be resolved."*** *The results indicate that residential is not the most favored use for Route 114 at 24% in strong disagreement and 61% in disagreement with only 4% in strong agreement.*

**Residential on 114 Traffic Resolved . Q 14b**




tation viewpoints. Among the related aims of the Village Residential District was to induce moderately priced housing by allowing densities that effectively write down the cost of land. Nonetheless, land values in North Andover caused housing costs to escalate even in Village Residential developments with 11,000 square-foot lots. As a result, voters decided to curb the district's growth potential.

Our Planned Residential Development (PRD) Bylaw was also designed to accomplish several objectives. When we amended our zoning to allow PRD's, we hoped to promote environmentally sensitive development, encourage open space preservation, support more economical and efficient land use, and sponsor a variety of housing types. These outcomes were to be achieved by allowing developers to concentrate housing units in one part of a site so they could leave another part undisturbed. Thus, the zoning bylaw does not authorize more housing units than could be built on the same site if it were developed as a conventional subdivision; rather, we wanted to encourage smaller individual lot sizes in order to yield open space. PRD projects require Special Permits, and the Planning Board generally grants them for proposals that meet specified design standards. In essence, the PRD bylaw authorizes an exchange of design density for dedicated open space, which is then conveyed to the Town, a non-profit, or to a homeowner's association.

Today, many townspeople believe that the PRD does not meet our needs. As evidenced by comments made at neighborhood meetings and the results of our community survey, residents fear that developers are receiving approvals to build more units than the zoning bylaw allows. Moreover, because the preserved open space is often hidden from street view, residents imagine that it is either useless or could not have been developed in the first place. In truth, the best open space is sometimes back land that supplies linkage value by connecting with public or non-profit holdings. Still, the invisibility of some open space and the visibility of badly planned open space in other projects have collectively undermined support for the PRD concept in North Andover.

Our zoning bylaw also encourages affordable housing development with a negotiated density bonus for qualifying projects. If a PRD developer designates at least 30% of a project's units for occupancy by low- and moderate-income households, meaning units developed in conjunction with a state or federal housing program, the total number of dwelling units can be increased by up to 20%. In the absence of a participating

state or federal program, the Planning Board can consult with the Housing Authority and thereafter consider alternative ways of attaining the affordable housing bonus.

Although many developers have used the PRD tool in our community, they have not taken advantage of the affordable housing provision in our bylaw, perhaps because the very high cost of land here makes even a 20% increase in units unprofitable. The reality is that since the late 1980s, the state has all but stopped financing the construction of new affordable housing units, giving preference to preserving the supply of existing affordable housing or to creating units in existing non-residential space, such as through the conversion of decommissioned schools to rental or cooperative homes. For developers to make use of our density bonus for affordable housing, they would need access to subsidies that are extremely difficult to obtain.

## 3. Significant Issues

To describe our community without regard to our past and future is akin to taking a quote out of context. Who we are now is inextricably tied to the North Andover that our predecessors built, and the community we build today forms an indelible blueprint for tomorrow.

### *Population*

North Andover's population has grown over time and is projected to continue to grow through 2010, although less rapidly than it has in the past. Our 1970 population was 16,284 and by 1990 we had grown to 22,792 persons, for a more than 40% increase. Statisticians estimate that by 2010, North Andover's population will exceed 27,500 residents.

The state's data center, MISER, reports that the 45-64 age group grew by almost 24% between 1990 and 1995, from 4,360 persons to 5,392. The next largest change occurred among 0-19 year olds, up by 400 people (6%) during the same period. As we know, a significant share of elderly householders, especially those who rent, spend more than 30% of their income on housing costs. Because we face an aging population trend, we need to consider how to house our senior citizens affordably. In addition, our increase in very young children means additional demands on our public schools. MISER forecasts a 22% jump in North Andover's number of 0-19 year olds between 1990-2010.

### *Housing*

North Andover's housing stock was built over many years. A significant portion (1,622 housing units) dates to before 1940. Since 1960, however, the number of housing units here more than doubled: over 6,100 units have been approved or built in the interim. During the 1990s, we witnessed a slowdown in local growth, owing in part to the institution of a growth phasing bylaw that helped to moderate the pace of growth although it has no impact on residential build-out overall.

Our homes have become increasingly valuable. In 1970, the U.S. Census Bureau reported our median housing value at $24,800. By 1980, this figure had increased by 186%, to $71,000. A decade later, the median home value in North Andover had skyrocketed to $233,400, representing an increase of 229%. Despite these changes, we have seen increasing levels of housing market activity in our community since 1990. During the first half of the decade, the number of units sold in North Andover increased by 188%, from 267 in 1990 to 770 in 1994. Although the number of sales rose, the median price dropped from

$171,000 in 1990 to $155,400 in 1994, for a -9.2 percent change. When the market rebounded, the median home price swelled to $200,000 in 1997. This fluctuation corresponds with regional and national economic trends during the first half of the 1990s.

We remain concerned with our ability to manage growth and to provide quality public services without over-taxing our residents. As North Andover continues its community development journey, we must shape and direct growth so that new housing respects our historic identity and natural resources, especially near Lake Cochichewick, and uses public utilities efficiently. If the housing market remains strong here, the affordability gap will intensify unless we intervene as a community. The alternative is a North Andover that loses its traditional heterogeneity for a solidified stratum of higher-income residents.

An additional issue that North Andover must consider is Governor Paul Cellucci's recently issued Executive Order 418, which could have a significant impact on our competitiveness for grants from the state. Executive Order 418 directs state agencies to withhold grant funds from communities that impede new housing growth, particularly affordable housing. Given North Andover's strong track record with obtaining grants for public projects, Executive Order 418 creates a special dilemma for us. If we scale back our overall residential development potential too much, we run the risk of losing our eligibility for non-local grant sources. If we do not address residential development impacts on our schools, municipal services, traffic and community facility needs, however, our Town will become less affordable than it already is.

# Strategies and Recommendations

## Development Strategies and Recommendations

In conjunction with the Town's Department of Community Development and Services, the Master Plan Committee is pleased to provide this update on our forthcoming Master Plan. Last May 1998, we distributed the second of two Interim Reports on this project. Many of you may remember that 1998's report included our proposed Master Plan goals and objectives, which we expressed as a set of "desired outcomes" for North Andover's future. The current report contains an overall strategy that we believe is the best way to achieve those "desired outcomes," for they define the kind of community North Andover wants to be. In short, we are recommending today an agenda of responsible planning, concerted action and sound community development practice.

After we released the 1998 report, we held public meetings to hear comments on our proposals and we carefully considered the suggestions made by interested citizens and town officials. Given everything we have learned since our Committee began working on a new Master Plan in 1996, we remain confident that North Andover can build a bright future if the Town makes land use, development and fiscal decisions that compliment the goals of this Master Plan. Without everyone's support and willingness to work together, however, North Andover is in trouble.

***We know now that...***

- Unless the Town adopts a fiscally sound Master Plan, the residential tax burden will soon exceed the ability of many households to pay for good government and good schools.Unless the Town adopts an environmentally protective Master Plan, the entire community stands to lose important open space, scenic vistas and wetlands while the quality and quantity of our drinking water declines.

- Unless the Town adopts a business-friendly Master Plan, failing to take charge of North Andover's growth and development will destroy the base of small, community-oriented businesses that form the backbone of our economy.

- Unless the Town adopts rational, managed-growth Master Plan, we will still grow -- but what we become is not what our community envisions for the future. North Andover will lose what little housing and population diversity it has managed to retain, and we will look like any other monotonously over-built suburb.

- Unless the Town adopts a "quality-of-life" land use plan, many neighborhoods will suffer the consequences of unmanaged traffic and circulation change -- congestion, unsafe streets without sidewalks and a gradual shift in function and character as local streets transform into collector roads.

***The North Andover***
***Master Plan Committee's Mission***

*Our Town must plan for and direct change that:*

- *Preserves our rural, New England character*
- *Provides for educational excellence in our public schools*
- *Maintains our traditional diversity*
- *Preserves and enhances our natural resources*
- *Promotes a self-sufficient local economy with appropriate public and private opportunities and services, and*

Our five-point position paper

- Recognize the centrality of economic development. North Andover's quality of life demands a strong local economy and a diverse tax base. When commerce and industry thrive, they promote new investment and produce tax revenue for our Town. If North Andover wants to be a desirable, affordable community with excellent schools and public services, we must keep today's companies and attract new ones for tomorrow. Without them, homeowners will pay higher and higher tax bills each year. Business taxpayers help finance our education and town government costs, pay for open space, and keep our roads in good condition. In nearly all cases, businesses generate surplus tax revenue: they cost less in government services than the amounts they pay in property taxes. With the right balance of places to live and places to work, our Town will be in the best position to manage annual spending growth and develop the community facilities that residents have a right to expect.

  Business needs a place to grow and prosper. We can meet this need with suitable land, fair zoning and taxation policies, adequate infrastructure and a community climate that supports economic development. North Andover's challenge is to realize our full economic development potential without damaging the character of the Town. For this reason, the Master Plan's goals envision economic development that will not sacrifice North Andover's desirability or the quality of our environmental, historic architectural and other important assets.

- Value North Andover's natural resources and treat them accordingly. Because environmental and cultural resources are both icons of the past and living evidence of the present, every community wants to preserve them. These resources include natural attributes like land, water and vegetation on one hand, and the legacy of human settlement on the other. Collectively, they represent each town's unique traits and character, for the relationship between natural features and the pattern of growth and land use change tells the story of how a community came to be what it is today.

  At the same time, environmental and cultural resources are highly vulnerable to growth and change, and they cannot be replaced. When cities and towns fail to take charge of their futures and remain passive players in the community development process, the damage is most evident in a breach of the natural and cultural order that once was. As citizens, we have custodial responsibility for the resources we inherited. Our failure to recognize these resources and elevate them to the highest position in all local policies and land use decisions will defeat any plan or strategy for quality community development.

- Focus on managing residential development, not on stopping growth. Of all land uses, housing has the greatest impact on community character. Through architecture and neighborhood settlement patterns, housing documents the evolution of villages to towns and towns, to cities. To the extent that building style, age, quality and appearance supply physical evidence of growth and change, residential uses speak volumes about the people who built a town from its earliest days to the present.

The distribution of different housing types, along with the condition of housing stock from one area or neighborhood to another, attests to the past and present socio-economic organization of cities and towns. These factors narrate local history on one hand, and shed light on current opportunities and community problems on the other. Thus, transportation, zoning and market forces may affect overall growth and the quality of change that occurs over time, but housing surpasses all other community development indicators as a means of looking into the future social order and economic make-up of communities.

Historically, North Andover enjoyed a rich tradition of home types and styles. From the densely settled neighborhoods of single- and two-unit homes near downtown to Out Country's farmhouses and the stately buildings nestled around the Old Town Center, housing is our best record of the diversity of people who lived here. Once the 1960's brought an interstate highway system into the region, North Andover changed from a rural community with a manufacturing base to the economically developed suburb of 25,000 people that it is today.

Clearly, new-home construction is changing the look and feel of North Andover. Massive single-family houses are replacing open fields and slowly beginning to homogenize our Town's architectural character. At the same time, moderately sized homes clustered together in planned developments are commanding top dollar in the region's housing market because North Andover is such a desirable place to live. Moreover, the rate of residential development here threatens to topple our ability to manage the Town's finances. Although ongoing change is inevitable, housing starts must be brought in line with North Andover's capacity to accommodate population growth -- and housing starts have to respond to a wider range of market needs.

- Synchronize circulation improvements with development goals. Circulation systems are the basic element of community form because they direct both the location and intensity of development. By delineating common space for travel, roadways organize the flow of traffic from origin to destination points. The ancestors of today's paved streets – such as the cart paths and ancient ways – were largely laid out alongside, near or in order to bypass important natural resources, mainly water. These systems primarily served local travelers who moved about on foot, by horse or by carriage. Because early commerce depended on water for shipping and power, it stands to reason that much of our interior street network evolved to meet needs for water access. When technological advancements brought us rail and interstate highways, new access demands indelibly altered a once self-contained, local circulation network with limited regional connections.

All of us understand that any community's economy relies on the quality, condition and functional capacity of roads. They supply the means of transit for exporting and importing materials, goods and supplies, for moving labor between home and work, and for bringing the disposable income of consumers to the marketplace. When too many needs compete for limited space in the travel lane, roads become congested and unsafe, and they impede development in areas that are otherwise suitable for growth.

The Master Plan must help us achieve a better fit between development and North Andover's circulation system. Sound circulation plans anticipate rather than react to the needs and demands placed upon local streets. As conditions on Route 114 and Route 125 attest, traffic congestion and public safety problems detract from North Andover's quality of life. These conditions are very serious obstacles to the Town's ability to secure economic vitality in the future.

- North Andover needs a coordinated approach to capital improvements planning. Every community needs municipal and school facilities that are adequate to meet the needs of the people who use them most frequently – residents and public employees. We know that overcrowded school buildings impede the quality of education, yet we tend to give too little recognition to the impacts of archaic and under-sized or poorly located town buildings on the quality of public services. Furthermore, architectural barriers in older public buildings make access difficult if not impossible for many senior citizens and persons with disabilities.

To provide a fine public education for our children, North Andover consistently allocates most of the tax levy growth allowed under Proposition 2 ½ to our school budget and school building improvements. No one disputes that high-quality public schools should be our Town's top priority because the school system's reputation makes North Andover desirable for new residents and businesses. Without the resources to address all of our Town's public facility problems, however, we have continuously sacrificed maintenance and repairs to municipal buildings. As a result, Town employees work in cramped quarters without the most basic modernization changes that would make service delivery far more efficient. Our Town buildings are in poor condition, our Fire Station needs a new home and we desperately need to upgrade our sewer system. None of these needs will be met unless we establish and commit ourselves to a Capital Improvements Plan (CIP).

The deterioration and functional inadequacy of public buildings visibly attest to North Andover's pressing capital needs, but the underlying issue is community services. Indeed, buildings represent one part of a much larger system that includes our parks, playgrounds and other outdoor recreation areas. These facilities supply the foundation for services and programs that must be available equally to all residents so that everyone can participate as a member of the community at large. A lack of sustained capital investment and operating support for community services is eroding North Andover's quality of life. To reverse this trend, we adopted five Master Plan goals and three ways of measuring whether we achieve them.

## *Our conclusions*

To build a viable future, North Andover must reverse its narrowing tax base. In the early 1980's, commercial and industrial properties contributed 23% of our total assessed value. Today, their share hovers at 17%. In order to restore and retain fiscal equilibrium, our Town must adopt land use policies that facilitate smart growth: we have to encourage economic development and protect what is left of our rural past. These may seem like conflicting aims, but both are essential to our Town's future de-

sirability as a place to live. It is important to note that even if every available commercial and industrial site were fully developed at its highest and best use, we would not reach the tax base diversity that North Andover once had – let alone keep it.

The list of actions which follows this section, contains numerous strategies and recommendations for implementing the North Andover Master Plan.

The following table is Organized by Strategy. The Strategy means a comprehensive, integrated set of steps to achieve certain results. For example, there are recurring references to such "strategies" as Growth Management, Economic Expansion, Downtown, etc. For each strategy, there are several "topic areas" and "recommendations."

## Process and Product Improvements

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2001 | Scheduling of Governance | Establish and approve Town Schedule with Boards and departments | Town Manager, Division Directors | None Req. |
| 2001 | Community Data / Website | Establish system of data collection. Establish website and post data. | Community Development | Dept Budget |
| 2001 | Annual Survey | Establish survey and implement through Town Census. | Town Manager, Town Clerk | Dept. Budget |
| 2001 | Permit Tacking | Establish computerized permit tracking system. | Community Development, Fire, Town Clerk | Authorization |
| 2001 | Zoning By-Law Reorganization | Town Meeting By-Law October 2000 | Community Development | Dept. Budget |
| 2001 | Land Use Training | Establish Training program and seminar list with Land Use Boards | Community Development | Dept. Budget |
| | | | | |
| 2002 | Regulation Coordination | Town Meeting By-Law May 2002 | Comm. Dev., Town Clerk, Fire, DPW | Dept. Budgets |
| 2002 | Development Evaluation | Town Meeting By-Law May 2002 | Comm. Dev., Town Clerk, Fire, DPW | Dept. Budgets |
| 2002 | Geographic Information System | Town Meeting By-Law May 2002 | Town wide | Authorization |
| 2002 | Negotiated Development | Town Meeting By-law May 2001 | Community Development | Dept. Budget |
| | | | | |

## Growth Management

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2001 | Revenue Ratios | Town Meeting By-Law May 2001 | Finance, Community Development | Authorization |
| 2001 | Phased Growth | Town Meeting By-Law May 2001 | Community Development | Dept. Budget |
| 2001 | Cost Measures | Town Meeting By-Law May 2001 | Community Development | Dept. Budget |
| 2001 | Cost Indicators | Town Meeting By-Law May 2001 | Community Development | Dept. Budget |
| | | | | |
| 2002 | Adequate Facilities Provision | Town Meeting By-Law October 2001 | Community Development | Dept. Budget |
| 2002 | Adequate Facilities Density Bonus | Town Meeting By-Law October 2001 | Community Development | Dept. Budget |
| | | | | |

## Water Resources

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2001 | Water Web | Establish Web site | Water Department | Dept. Budget |
| 2001 | Water Conservation / Water Quality | Establish educational materials and disseminate | Water Department | Dept. Budget |
| | | | | |
| 2002 | Water Commission | Town Meeting, Charter amendment, May 2002 Creation of Commission | Selectmen, Water Department | Authorization |
| 2002 | Watershed Mapping | Town Meeting, coordinate with GIS program May 2002 Funding | DPW | Authorization |
| 2002 | Water Master Plan | Town Meeting May 2002 Funding | DPW | Authorization |
| | | | | |
| 2003 | Watershed Management Plan | Town Meeting May 2003 Funding and Acquisition where necessary | DPW, Water Commission | Authorization |
| 2003 | Conservation Fund | Town Meeting May 2003 Funding establishment | Water Commission, DPW, Selectmen | Authorization |
| 2003 | Water Rate Conservation | Town Meeting, May 2003 | Water Commission | Set Rate |
| | | | | |

## Environmental Quality

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2001 | Environmental Education | Establish educational materials and a method to disseminate | Community Development, Water Department | Dept. Budgets |
| 2001 | Undesirable Industrial Uses Zoning Amendment | Town Meeting By-Law amendment, October 2000 | Community Development | Dept. Budget |
| | | | | |
| 2002 | Industrial Commercial Performance Standards Analysis | Town Meeting May 2002 Funding for analysis | Community Development | Authorization |
| | | | | |
| 2003 | Industrial Commercial Performance Standards | Town Meeting May 2002 | Community Development | Dept. Budget |
| | | | | |

## Rural Historic Character

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2000 | Open Space Plan Update | Update Open Space Plan | Community Development | Dept. Budget |
| | | | | |
| 2001 | Open Space Sites | Inventory and create database. Create committee | Community Development | Dept. Budget |
| 2001 | Trails Map | Inventory and create database and Map | Community Development | Dept. Budget |
| 2001 | PRD Design | Town Meeting By-Law change May 2001 | Community Development | Dept. Budget |
| 2001 | Residential Performance Standards | Amend Subdivision Regulations | Community Development | Dept. Budget |
| 2001 | Street Design | Create Street Design Standards for Town | Community Development DPW | Dept. Budget |
| 2001 | Historic Inventory | Town Meeting Funding May 2001 | Community Development | Authorization |
| | | | | |
| 2002 | Historic Identification | Town Meeting Funding May 2002 | Community Development | Authorization |
| 2002 | MGL Chapter 61A | Negotiate with Property owners and enroll in 61A | Community Development | Dept. Budget |
| 2002 | Transfer of Development Rights | Town Meeting By-Law May 2002 | Community Development | Dept. Budget |
| 2002 | Priorities Resources and Zoning | Town Meeting By-Law May 2002 | Community Development | Dept. Budget |
| 2002 | Technical Assistance | Town Meeting Funding May 2001 Produce guidelines | Community Development, Consultant | Authorization |
| | | | | |
| 2003 | Demolition Delay | Town Meeting By-Law May 2003 | Community Development | Dept. Budget |
| | | | | |
| | | | | |

## Facilities

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2001 | Facilities Plan | Town Meeting funding of plan May 2001 | Town Manager, Community Development | Authorization |
| 2001 | Sewer Master Plan | Town Meeting funding of plan May 2001 | DPW | Authorization |
| 2001 | Geographic Information System | Town Meeting Funding May 2001 | DPW, Community Development | Authorization |
| 2001 | Drainage Improvement Program | Town Meeting funding of plan May 2001 | DPW | Authorization |
| | | | | |
| 2002 | Facilities Land Acquisition | Establish Facilities Plan and Acquisition Strategy | Town Manager, Community Development | Authorization |
| 2002 | Capital Improvements Fund | Town Meeting By-Law and Funding May 2002 | Town Manager, DPW | Authorization |
| | | | | |
| 2003 | Town Hall | Town Meeting Funding of project May 2003 | Town Manager, Community Development | Authorization |

## Traffic Safety and Circulation

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2000 | Truck Traffic | Establish program with Police Department | Police Department, Community Development | Dept. Budget |
| 2000 | Traffic Education | Establish program through the Police Department | Police Department | Dept. Budget |
| | | | | |
| 2001 | Community Paths | Town Meeting Funding of CIP. | Community Development, DPW | Dept. Budget |
| 2001 | Traffic Studies | Department Policies and Guidelines | Community Development, Police Dept. | Dept. Budget |
| 2001 | Traffic Safety Zones | Police Department and School Department Policies | Police Dept. Community Development | Dept. Budget |
| 2001 | Dept. Budget | Establish alternate transportation programs | Community Development | Dept. Budget |
| 2001 | Dept. Budget | Zoning By-Law Amendment | Community Development, DPW | Dept. Budget |
| | | | | |
| 2002 | Intersection Safety | Establish CIP for Intersections, Town Meeting Funding | DPW, Police Department | Dept. Budget |
| 2002 | Pavement Management | Establish Plan and begin funding | DPW | Authorization |

## Downtown

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2000 | Downtown Needs | Survey and Public Meetings with report issued | Community Development | Dept. Budget |
| | | | | |
| 2001 | Downtown Partnership | Application for CDBG funds Downtown Program | Community Development | CDBG Grant |
| 2001 | Downtown Design Standards | Town Meeting funding consultant to write standards | Community Development | Dept. Budget |
| | | | | |
| 2002 | Downtown Incentive Programs | CDBG Main Street Application | Community Development | CDBG Grant |
| 2002 | Downtown Improvements | CDBG Main Street Application | Community Development | CDBG Grant |

## Route 114

| Fiscal Year | Action Title | Required Action | Department or Team | Funding |
|---|---|---|---|---|
| 2000 | Route 114 Corridor Plan | PWED Application pending | Community Development | PWED |
| | | | | |
| 2001 | Site Pre-Development Route 114 | PWED Application Pending | Community Development | PWED |
| | | | | |
| 2003 | Route 114 Improvements | Place work cited in Corridor plan on the TIF | Community Development | Dept. Budget |

## Economic Expansion

| | | | | |
|---|---|---|---|---|
| 2000 | Site Planning Guidelines | Town Meeting Zoning By-Law Amendment May 2001 | Community Development | De |
| 2000 | Economic Site Assessment | Inventory and Assess properties | Community Development | De |
| 2000 | Desirable Industrial Uses | Research uses and create an industry database | Community Development | De |
| | | | | |
| 2001 | Site Marketing | Town Meeting Funding of consultant May 2001 | Community Development | De |
| 2001 | Rezoning Industrial/Commercial | Town Meeting Zoning By-Law Amendment May 2001 | Community Development | De |

## Airport

| | | | | |
|---|---|---|---|---|
| 2001 | Airport Highest and Best Use Economic Analysis | Town Meeting Funding for Analysis May 2001 | Community Development | Ai |
| 2002 | Master Site Plan Highest and Best Use | Town Meeting Funding for Analysis May 2002 | Community Development | Ai |
| | | | | |
| 2003 | Airport Implementation Plan | Town Meeting Funding for Analysis May 2003 | Community Development | Ai |

# Appendix A
# Development Strategies and Recommendations

*Throughout Appendix A, you will see terms that have specific meanings in the field of community planning and development. Strategy means a comprehensive, integrated set of steps to achieve certain results. For example, there are recurring references to such "strategies" as Growth Management, Economic Expansion, Downtown, etc. For each strategy, there are several "topic areas" and "recommendations." For the most part, topic area means a Master Plan element (section) that has one or more goals associated with it, e.g., Economic, Environmental and Cultural. In some cases, topic area refers to a function that must be addressed in order to execute the overall goals of the Master Plan, such as "Administration" or "Fiscal."*

*The recommendations always express action steps for (a) initiating and completing an individual strategy or (b) carrying out several strategies, since some actions affect more than one strategy and are central to implementing the Master Plan as a whole. Generally speaking, Appendix A is organized first by Topic Area and then, by the year in which each recommendation should be undertaken. This design allows everyone to see that topic areas reach across the Master Plan and thereby unify its implementation over time.*

| Recommendation | | Background | |
|---|---|---|---|
| *Topic Area* | | *Strategy* | *Rec. #* |
| **Administration** | Revenue Ratios: North Andover will develop a revenue ratio profile on major land use categories, subject both the analysis and draft report to a public hearing/comment process, and adopt the ratios (in proposed or modified form) for policy, regulatory and other uses by the Town's elected and appointed officials. (FY 2000: Repeat at end of next revaluation and all subsequent three-year reevaluations.) | **Growth Management** | 96 |
| | | *Does a single family home cost more for the Town to provide services than it provides in revenues? Is commercial and industrial development our fiscal savior? Each side of these questions use different parameters in their methodology to achieve opposing outcomes. The common mantra is new homes are causing our problems, yet the response is that new homes are larger, produce more taxes, have fewer school children and thus fewer costs. This recommendation is intended to help solve this issue by placing mutually agreed upon parameters into an analysis that achieves a set of values that can determine fiscal impacts by land use.* | |
| **Administration** | Zoning By-Law Reorganization: North Andover will completely revise the zoning by-law. The revisions will focus on clarifying definitions, process, and uses as described in the written report to Town Meeting, May 3, 1999. | **Process & Product Improvements** | 7 |
| | | *The current by-law has been amended in a patchwork manner over time, resulting in a document that is often repetitive and leaves gaps or conflicts in some sections. The relationship between uses, dimensions, parking and other common restrictions are not clearly linked within the by-law. For example, a particular use in the Table of Uses often differs from the use listed in the parking section. This lack of consistent use definitions makes determining the status of a proposed use more difficult. Proposed changes will amend the by-law for clarity and address issues that involve loopholes detrimental to the Town. Essentially the review outlines issues that will coordinate patchwork amendments. The document developed for the May 3rd Town meeting represents recommendations for organizational changes. Further changes to both the zoning map and how uses are addressed will be necessary. Recommendations for organizational change precede many of the more substantive recommendations so that future amendments can be incorporated in a more organized fashion.* | |
| **Administration** | Flexible Special Permits: North Andover will make desirable modifications to the North Andover zoning bylaw that decrease the number of uses allowed as of right and increase the number of uses allowed by special permit. (Special permit uses may be established within existing or new districts or as "overlay" regulations that affect more than one district.) | **Process & Product Improvements** | 104 |
| | | *The zoning by-law allows the use of property by right (requiring no review for issues relating to the use) or disallows the use. This black and white zoning does not provide protections against poor proposals or allow flexibility for negotiation. Instead of allowing a special permit for use, the by-law requires only that the applicant file for site plan review. This method does not provide the Planning Board with sufficient powers beyond the simple aspect of plan review. A wider range of use that requires a special permit would provide the Planning Board more power for negotiation or denial.* | |

| Recommendation<br>*Topic Area* | *Strategy* | Background<br>Rec. # |
|---|---|---|
| **Administration** | **Process & Product Improvements** | 55 |
| Permit Tracking: North Andover will establish permit tracking computer systems based on the ability to create a more effective process. The system will evaluate the outcome of development through the use of data by allowing the analysis of long-term impacts and trends. | *A permit tracking system was initially developed for the Community Development Division. However, many of the aspects of the system targeted the immediate administrative needs of the Division and not the long-range data compilation to assist in planning. This recommendation sets the parameters for permitting systems to take the information from everyday paper-pushing to use as a planning tool.* | |
| **Administration** | **Process & Product Improvements** | 58 |
| Scheduling of Governance: North Andover will analyze the peak demand periods for each department, Board, Committee and Commission, and implement methods to improve work product. Through this effort the Town will increase information to the public and minimize service disruptions associated with substantial increase in workloads due to multiple coinciding demands. The Town will make changes in relevant processes, by-laws, Town Charter and/or staffing to focus on providing information and access to government in a manner that does not overload both government and residents participating in government. | *Town meeting is the best example of the condensed workload of Town government. The process around the development of budgets, ideas, and issues is packed into a time window too short for the government to continue to provide services and the public to digest all of the information. The Town Clerk faces elections, Town Meeting, and Town reports within a short time period. The Town Manager, Finance Director and all elected officials are facing budgets, capital improvements, street acceptances, and by-law changes within the same short period of time. The Community Development office peak permitting demand coincides with zoning proposals and street acceptances for Town Meeting. Reorganizing the government process by distributing the peak demands over time will allow the government and residents to focus more clearly on specific issues and develop a better product. As an example, moving zoning amendments and street acceptances to a fall Town meeting through an appropriate by-law or other method would allow the Planning Board time to develop zoning proposals outside of the spring peak permitting demand. Thus, better products in both permitting and long range planning can evolve through the interaction of the Planning Board and residents who are not divided by a deluge of multiple issues and information.* | |
| **Administration** | **Growth Management** | 97 |
| Cost Indicators: North Andover Town offices and staff will review their existing policies, regulations and practices for alignment or conflict with the cost of community service indicators created through the Revenue Ratios and report their findings to the Selectmen and Town Manager. (FY2000) | *We may know what development costs, however, unless we realign our methods and stay ahead of change the impacts can become problems rather than opportunities. This recommendation creates an evaluation process to continually reassess the impacts and realign our regulations to address change in development patterns.* | |
| **Administration** | **Process & Product Improvements** | 36 |
| Land Use Training: North Andover will provide adequate training to all members of its land use boards so they can meaningfully participate in a negotiated development review process. | *The volunteers for land use boards and commissions are dedicated residents that donate countless hours to the community. Their resources can be enhanced by providing specific training in development review in a manner that ties to the new regulations.* | |

| Recommendation | | Background | |
|---|---|---|---|
| *Topic Area* | *Strategy* | | *Rec. #* |
| **Economic** | **Downtown** | | 3 |
| Downtown Needs: North Andover will work with downtown property owners, businesses and residents to conduct a needs analysis for downtown. The analysis will determine the opportunities and constraints to business growth, and will also result in a comprehensive existing conditions profile that is crucial to identifying priorities for a Downtown Plan. | | *The determination of needs and existing conditions is the first step in any planning process. In February 1999, a group of downtown landowners and merchants held a meeting to begin the process of working with the Town to establish a plan. At the meeting a parking survey was distributed to determine the parking needs of landowners and businesses in the downtown area. Data collection and a needs assessment are necessary to create informed goals and objectives for downtown development.* | |
| **Economic** | **Airport** | | 47 |
| Airport Economic Analysis: North Andover will complete an Economic Impacts Model of the Lawrence Airport to determine the impacts of the Airport on the Town and Region. The model will be based on the analysis conducted on Logan Airport in 1995 which identified the economic impact on the region by zip code. | | *The City of Lawrence is of the opinion that the economic impact of the airport to the region and the Town is considerable. This is one of the City's primary justifications for the continued operation of the Airport. North Andover's future welfare depends on regaining control over the property occupied by Lawrence Municipal Airport. Put to more economically productive uses, the 550-acre Airport site that now yields minimal revenue for North Andover. (The land is not taxable because it is owned by the City of Lawrence) can support at least $323,000,000 in taxable value. This amount would more than double the total of all commercial and industrial assessments in our community today. The analysis from this recommendation will determine the actual existing economic impact of the airport. This will become the starting point from which the continued operation of the airport or an alternative use will be determined.* | |
| **Economic** | **Economic Expansion** | | 6 |
| Site Plan Guidelines: North Andover will amend the zoning ordinance to establish clear site plan review guidelines that will provide a more expedient review of commercial and industrial permits. The guidelines will include clear and reasonable standards, and processes for site and building design. The product will determine a method to reach an outcome for positive site plan design without the need for increased red-tape . The eventual product will be a Site Plan Review Handbook that would set forth specific performance standards. | | *The current site plan requirements lack clarity about the design standards a developer should use in order to reach a desired outcome for the Town. The result: the development community submits proposals that meet minimum standards only. Throughout meetings with the Planning Board, negotiation often moves into unknown design standards and reduces any positive outcome that could occur between all parties. Setting performance parameters provides applicants with the necessary information to allow the design of a project to evolve more quickly.* | |

| Recommendation | | | Background | |
|---|---|---|---|---|
| | *Topic Area* | *Strategy* | | Rec. # |
| | **Economic** | **Economic Expansion** | | |
| Economic Site Assessment: North Andover will inventory all property and determine the potential for economic development. The inventory will include an analysis of existing parcels regardless of current zoning, in order to determine possible infrastructure, site and zoning needs. The analysis should also include a review of all relevant criteria such as topography, soils, access, adjacent land uses and utilities. | | | *As development continues, the expansion of existing opportunities are not clearly apparent without an inventory of existing site resources. An inventory is the first step in determining appropriate sites for rezoning and economic expansion within the constraints of the environment. surrounding land uses, and infrastructure. According to the 1996 Master Plan Survey, an increase in industrial development was seen as a positive step. When asked to respond to the statement: "Done properly with a review of traffic and other impacts and away from residential areas I would accept industrial development," over 70% of the respondents agreed. This increased to 75% for a similar statement about commercial development.* | |
| | **Economic** | **Economic Expansion** | | 19 |
| Desirable Industrial Uses: North Andover will complete an economic development strategy that identifies desirable types of industrial firms that are environmentally safe and in an expansion mode. The Town will provide an explicit strategy for marketing North Andover to those firms. The strategy will include incentives for positive industrial development through taxation, subsidizes infrastructure improvements and other economic development assistance. | | | *Proactive selection of industries that a community desires is the best method of attaining an industrial base. Waiting until those industries come to a community always creates problems when an unecceptable industrial development seeks North Andover as a location. For preferred industries zoning by-laws and economic strategies can be developed to encourage those uses. In essence North Andover is competing for the most desirable industrial uses. Without a strategy, preferred industries will locate in other communities and the Town will be faced with industries that are less desirable.* | |
| | **Economic** | **Route 114** | | 1 |
| 114 Corridor Plan: North Andover will create a strategic plan for economic expansion along Route 114 by establishing a corridor plan that identifies the following: A. Site opportunities, B. Zoning amendment requirements, C. buildout potential, and D. Infrastructure needs. | | | *The development of Route 114 is constrained by topography, wetlands and adjacent land uses. More significant is the relationship of development to the current and future traffic patterns in the area. According to the Master Plan Survey in 1996, over 63% of the community chose Economic Development over Residential for Route 114. The corridor plan will determine the economic opportunities for the highway within the constraints of the natural environment and traffic impacts. Further, the analysis will set forth the possibilities for rezoning in a manner that addresses the needs of residents along Route 114. Without the corridor plan, there will be continued pressure to rezone without regard to other properties and environmental constraints. A grant has been filed to finance the cost of developing the plan.* | |
| | **Economic** | **Downtown** | | 5 |
| Downtown Partnership: North Andover will establish a formal downtown Partnership Program within the context of the State Department of Housing and Community Development (DHCD) guidelines. The Partnership will establish a mission statement and Goals and Objectives for the organization. | | | *This recommendation moves the needs analysis into an organizational framework and begins the process of establishing goals and objectives for a downtown plan. According to the Department of Housing and Community Development (DHCD), this is a prerequired to receiving planning grant funds. When responding to the statement: "Downtown is the best place for commercial development providing the traffic problems and parking can be resolved," (1996 Master Plan survey), the response was "Strongly Agree" at 16.60%, "Agree" at 49% and "Disagree" at 25%. The majority of respondents see the downtown as an opportunity for commercial* | |

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| | | *development. Creating a partnership in the downtown will establish a unified representation to develop the plan. Our advantages are clear, for North Andover is one of the few downtown's that provide needed services such as groceries, hardware, Town Government and the Post Office. Establishing a downtown partnership will only enhance these assets with better planning.* | |
| **Economic** | **Economic Expansion** | **Economic Expansion** | 44 |
| Rezoning for Industrial/Commercial: North Andover will amend the Town Zoning Map to create additional commercial and industrial zones. The amendments will be based on capturing the most highly rated industrial and commercial sites from the land use analysis conducted in year 2000. | | *To build a viable future for North Andover the Town has to reverse its narrowing tax base. In the mid-1980's, about 23% of our total assessed value lay in commercial, industrial and personal property. Since then the non-residential share has declined to 17%, meaning that the residential base has increased from 77% to 83% in about one decade. To restore any semblence of fiscal equilibrium we need land use policies that achieve seemingly opposite aims but without conflict. North Andover has to encourage economic growth on the one hand and protect our remaining rural ambiance on the other. A permanent reduction in the residential share of North Andover's total assessed value will indicate success by broadening our tax base with new business growth.* | |
| **Economic** | **Economic Expansion** | | 4 |
| Site Marketing: North Andover will develop a scope of work and hire marketing and site consultants for a five-year contract to assist property owners in preparing and carrying out marketing strategies for their sites and facilities. The Town will work with the Merrimack Valley Regional Chamber of Commerce to determine if there are regional opportunities to share the postion with other communities. | | *This is a follow-up recommendation to the inventory of sites. Once the inventory is complete the consultants will assist property owners in planning for the re-use of their property to attain the highest and best use. The consultants will work closely with the Community Development Office to ensure that the guidance they provide property owners also meets the Town's needs. Development is not often a step for which every property owner has the requisite skills for success. This step will provide those skills and thereby enhance the outcome.* | |
| **Economic** | **Environmental Quality** | | 53 |
| Industrial/Commercial Performance Standards: North Andover will conduct an environmental analysis to determine the impacts of current industrial and commercial uses and develop reasonable performance standards to reduce impacts where they are seen as unacceptable. | | *Throughout the community there are commercial and industrial uses which negatively impact the neighborhood. Likewise, there are uses which do not impact residential neighborhoods. An assessment of industrial and commercial uses for noise levels, odors and traffic impacts will determine the high and low ranges for the development of reasonable performance standards. By assessing all of the commercial and industrial uses, the Town can set a baseline for impacts throughout the community.* | |
| **Economic** | **Route 114** | | 52 |
| Site Predevelopment Route 114: North Andover will establish a marketing strategy for the sites identified in the Corridor Plan. The Planning Board will review the strategy to reach a consensus on a master plan for each site. This step will reduce the time for site plan review and provide the Town coordinated development proposals. The project will establish site information materials for marketing the selected properties. | | *The amendment of zoning and the creation of infrastructure does not guarantee that the property owners of the newly zoned property will have the tools necessary to develop the sites within the Town guidelines. By proactively developing site plans through the corridor plan and reviewing them with the Planning Board the process of development can be reduced. The plans will also have a more lengthy review prior to site plan review thereby streamlining the development process.* | |

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| **Economic** | **Airport** | | 49 |
| Master Site Plan, Airport Highest and Best Use: North Andover will determine the highest and best use for the airport property. The Town will establish a plan including the following components: Master Site Plan indicating uses and layout of the property, costs for the development of the plan, costs to payout FAA and other relocation requirements, and model to determine the economic, environmental, and traffic impacts of the Master Site Plan. | | *Given its location in an established industrial setting the airport site can bring about and sustain North Andover's fiscal stability without detracting from the residential fabric of our Town. This recommendation will prepare a plan for reuse of the airport in the event the Economic Impacts Model in FY 2000 shows a less than acceptable economic return from the airport. This analysis intends to document the economic potential of other possible uses, namely industrial and commercial.* | |
| **Economic** | **Downtown** | | 22 |
| Downtown Design Standards: North Andover will, through incentives and regulatory means, create special site plan and architectural design standards for the central business district in order to encourage compatible building facades and commercial signage and use and dimensional rules that enhance downtown's desirability for a mix of retail, restaurant and service establishments. | | *Design standards for the downtown will coordinate the improvements and appearance of the downtown. This will establish a central business district that has an identity that will create economic activity. Beyond the issue of design the appropriate mix of business must be established to encourage a balance of retail and services.* | |
| **Economic** | **Route 114** | | 51 |
| Route 114 Improvements: North Andover will submit to the State DPW a Capital Improvement Plan for Route 114 to begin the improvements to areas that require immediate attention. The Town will use the results of the corridor analysis to determine the highest priority projects. | | *The first step in the redevelopment of Route 114 will be the improvements to existing problem areas. The 1996 Master Plan Survey question regarding industrial and commercial development on Route 114 was preceded by the statement "Done properly with a review of traffic and other impacts and away from residential areas....." Over 70% of the respondents agreed to the statement accepting more industrial/commercial development. However, as planning occurs for industrial/ commercial development the impacts from traffic must be part of the process.* | |
| **Economic** | **Downtown** | | 45 |
| Downtown Incentive Programs: North Andover will apply for Downtown Rehabilitation funds including the following: Façade improvement, Micro-business loan pool, and other applicable incentive programs to assist businesses in their decision to locate and or expand in the downtown. | | *This recommendation sets the stage for implementation by taking the prior year's ground work of planning and offering incentives for economic expansion.* | |

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| **Economic** | **Airport** | | 50 |
| Airport Implementation Plan: Upon the conclusion of the Master Site Plan, depending on the results of the plan, North Andover will establish an implementation plan that identifies the mechanisms and funding sources to close the airport. Establish a joint municipal agreement for the redevelopment. The Town will seek funding and consultants for the implementation. The Town will establish a Redevelopment Authority between both communities, North Andover and Lawrence, to implement the plan. | | *A coordinated effort through a Redevelopment Authority will address many of the issues of implementation. An agreement as part of the establishment of the Authority will address the issues of maintaining control over the eventual planning and implementation process by each municipal government.* | |
| **Environmental & Cultural** | **Rural Character** | | 100 |
| Priorities Resources & Zoning: North Andover will establish, publish and map the Town's inventory of environmental and cultural resources that will be addressed through new policies and procedures. The Town will subject a draft of the inventory and map to a public hearing/comment process. The Town will then write the necessary zoning bylaws, regulations and policies that are required to protect or enhance the inventory. | | *The Town is identifying resources as development occurs. Proactively identifying the Town's most valuable scenic vistas, streams, ponds, farm land and other environmental and cultural resources can allow them to be incorporated into developments. Not knowing the areas of the community which are most valued will surely create lost opportunities.* | |
| **Environmental & Cultural** | **Environmental Quality** | | 18 |
| Undesirable Industrial Uses: North Andover will amend its zoning bylaws to discourage or prohibit undesirable industrial uses such as waste processing plants and like facilities and encourage those consistent with the character and needs of North Andover. | | *The Town of North Andover clearly bears the burden of waste processing for the region. The NESWC Waste Incinerator combined with the Greater Lawrence Sanitary District sewage plant are two facilities that North Andover hosts. In 1997 the Town spent a considerable effort prohibiting the development of an additional waste facility. Residents have made clear that the continued proliferation of these uses is unacceptable. While the State Zoning Laws, as expressed through Chapter 40A, makes the prohibition of these uses legally difficult the Town will investigate the use of cumulative impact in the development of a performance standards by-law. Another recommendation requires that the Town assist less environmentally hazardous industries.* | |
| **Environmental & Cultural** | **Rural Character** | | 26 |
| Open Space Update: North Andover will update its 1995 Open Space Plan and through the update establish a unified acceptance of the goals and objectives of the plan with all parities that will be responsible for its implementation. | | *The acquisition of open space should be a unified goal for the community. In the 1996 Master Plan Survey, in response to the requests for a "vision" of the community, 20% responded with "Open and Rural Character." This answer was exceeded only by educational systems with a 28% response. The most effective means to meet any goal is to insure that the goal is system wide throughout Town government. The plan must be updated every five years. This recommendation takes the update one step further and stipulates the development of a plan that is accepted by all parties who will be responsible for implementation of the plan.* | |

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| Historic Inventory: North Andover will regularly update and expand its inventory of historic structures and landmarks and prepare and seek approval of National Register nominations for all qualifying individual sites and districts. | Environmental & Cultural | Historic Character | *The value of historic structures and landscapes is most appreciated after their loss. The simple act of inventory and designation as a National Register site will provide opportunities for preservation and protection from loss.* | 72 |
| Human Services Analysis: North Andover will commission a study of the Town's recreational, health and social facilities and service needs in order to identify gaps, set priorities and develop improved funding methods. | Environmental & Cultural | Human Services | *North Andover is a rapidly changing community. Many of the residents that are here today were not here 10 years ago. These rapid changes require an assessment of the population to determine who our health and human services should be serving. The private sector conducts market studies to determine a strategy for providing services. North Andover's financial commitment to health and recreation is not strong enough to sustain what many towns would consider basic levels of service. With limited resources the Town should be providing human services to an identified population with specific needs. The need to identify those populations that are currently under served is critical to determine proper service programming. An in-depth analysis of the population and services will establish a more responsive human services delivery system.* | 42 |
| Development Evaluation: North Andover will establish criteria and a process to evaluate the pre-approval and post construction outcomes of developments to assess the compliance with the decision, the adherence to community goals, and the cost/benefit of the proposal. A multidepartmental methodology that tracks the above factors for five years after development will be established with the data used to determine changes to by-laws and processes to enhance the outcomes of review, approval and construction and enforce noncompliance with decisions. | Environmental & Cultural | Process & Product Improvements | *Development review occurs at a fixed point in time within the context of the current issues, by-laws, and site factors. Development review can at times look at the minutia of the site and immediate off-site impacts and miss the overall picture. This recommendation attempts to establish the bigger picture during the approval process and well after construction. Often the Town is faced with developments that, while well intentioned and designed, causes problems for the new residents who are impacted by engineering that does not solve problems. This recommendation begs the question for all departments: "What did we do right or wrong and how can we make sure that it does not happen again?"* | 54 |
| Regulation Coordination: North Andover will synchronize development rules with the desire to preserve community and neighborhood character by adopting and coordinating zoning, regulatory, construction and policy approaches that can protect North Andover's important environmental and cultural resources. The Town will synchronize interdepartmental and permit granting authorities, construction methods, and development rules and regulations to insure that all authorities apply shared standards to proposals in all cases and specifically in environmentally sensitive areas. | Environmental & Cultural | Process & Product Improvements | *Does everyone approach the problems the same way? The answer in many cases is no, and that may not be a bad thing. Each department views development from a different perspective, a perspective that insures their issues are addressed. The key aspect of a successful regulatory process is to coordinate those perspectives into a unified approach.* | 99 |

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| Street Design: North Andover will establish and use appropriate design criteria for various classes of streets giving primacy to landscape preservation, aesthetics and limited disturbance of land while maintaining the highest safety standards for vehicular, pedestrian and bicycle traffic. | **Environmental & Cultural** | **Rural Character** | *In the 1996 Master Plan survey respondents were asked would they want to: "Make some repairs to roads leaving the roads rural in nature and increase police and control traffic through enforcement or improve roads and widen them in the rural area of Town to accommodate increased traffic speeds." The response was 79% want rural roads and increased enforcement compared to 13% seeking to improve the roads to allow increased speeds. The community clearly favors rural roads. This recommendation creates design criteria for the Town to insure improvements to roadways are performed within the desire for rural character while enhancing public safety* | 40 |
| Transfer of Development Rights: North Andover will amend the Zoning By-law to include the use of Transfer of Development Rights (TDR) in order to protect significant open space from future development. | **Environmental & Cultural** | **Rural Character** | *What is "Transfer of Development Rights?" A zoning incentive that allows the development rights to important, privately owned open space to be transferred into an area that is more acceptable for development. In exchange for retaining a desired parcel as permanent open space the developer of "receiving" property can gain approval for a project that equals the density allowed on both sites. This recommendation will bring another tool to the effort of maintaining rural character.* | 29 |
| Open Space Sites: North Andover will complete the detailed inventory and rating of sites for open space acquisition. The Town will implement an acquisition strategy for the inventory sites by appointing a negotiating committee to work with property owners to secure agreements for eventual preservation through development rights, purchase, easements or other preservation methods. | **Environmental & Cultural** | **Rural Character** | *The 1995 Town of North Andover Open Space Plan established a list of critical sites for protection. This list was refined and updated in 1997 with a more detailed inventory. What remains needed is a discussion with property owners to establish their intent for use of their property and determine the avenues available for preservation. By proactively and amicably negotiating the protection of critical properties, the Town can be prepared to address open space needs as property owners begin to move forward with their plans. More importantly, negotiations can help establish the amount of funds necessary to acquire an interest in the sites.* | 14 |
| Watershed Mapping: North Andover will complete an aerial flight of the watershed area to develop all base information such as topography structures, wetlands, roads and other features. The Town will combine these features with others such as septic systems, drainage structures, etc., and create a computer Geographic Information System (GIS) file. The Town will use the information to tract water testing data, development impacts and to generate impact scenarios based on development projections and disaster scenarios. | **Environmental & Cultural** | **Water Resources** | *The Water Department performs testing of tributaries leading into the lake. By mapping the test results, the Water Department can begin to correlate the results with land uses and other activities. The mapping will also provide valuable growth, management, capital improvements, and disaster spill modeling capability. This will allow the Town to determine acquisition, infrastructure improvements, and response strategies. In the area of permitting, the lack of accurate mapping for the watershed has forced all property owners to determine their compliance by hiring engineers for every small addition. Accurate maps will allow the planning office to determine the proximity to wetlands and other resource areas and reduce the cost and time for homeowners.* | 12 |

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| Industrial/Commercial Performance Standards: To the degree allowed by law, North Andover will establish environmental performance standards for commercial and industrial uses and provide for appropriate means of local enforcement. | Environmental & Cultural | Environmental Quality | *The benefits of economic development also have costs. The creation of environmental performance standards for commercial and industrial uses will provide the community with a higher quality of life and provide the business community with clear, reasonable objectives to meet. Performance standards such as lighting, noise, odors and other impacts will set a standard through which the Planning Board and other agencies can establish conditions for approval. This recommendation follows the provision to assess the impact of industrial and commercial uses to establish a baseline.* | 20 |
| Demolition Delay: North Andover will adopt and enforce a demolition delay by-law for historic structures to allow the investigation of alternative options to demolition of historic structures. The by-law shall be part of an educational program to provide property owners and developers with an understanding of the methods and opportunities for historic preservation. | Environmental & Cultural | Historic Character | *What is a demolition delay bylaw? Locally adopted legislation that prevents needless demolition of historically significant buildings. "Needless demolition" means that it is economically feasible to save the building. Demolition delay bylaws require a waiting period before the owner of a significant building can obtain a demolition permit. The building must first be put on the marketplace. If no interested buyer comes forth to acquire and preserve the property within a reasonable period, the owner is allowed to tear down the building. Saving our community's historic resources in partnership with private investors.* | 30 |
| Negotiated Development: North Andover will transform the development permitting system into a negotiated process that encourages developer creativity, meaningfully involves the Town in site-specific development planning and maximizes the use of special permits to produce quality projects that benefit existing and future residents. | Environmental & Cultural | Process & Product Improvements | *"If I meet the regulations I must be approved", this is the mantra of a development community that is offered little room for negotiation. Poor regulations can create a plan review process that is a card game of regulations and not a negotiation to a positive outcome. The means to achieve better outcomes is to create a process that allows a negotiated development. However, the same process must offer clarity as to the outcomes so that the target does not change as the negotiations occur.* | 103 |
| Water Commission: North Andover will establish a Water Commission to insure the protection and enhancement of the water supply and to assist in decisions regarding budgetary and capital improvements issues toward the promotion, planning and implementation of a long-range plan to continue to improve the quality and quantity of water. | Environmental & Cultural | Water Resources | *The lack of a direct policy organization places the Department of Public Works in the postion of making policy decisions without an organization to advocate for the protection and enhancement of the water supply. As an example, in the absence of a Water Commission the decision for protection of the water supply through watershed property acquisition is addressed as more of a competing financial issue than a water resource obligation. A Water Commission will provide advocacy and policy decision toward insuring a primary focus on the protection and enhancement of the resource. The water supply and its delivery requires the sole attention of a public body which has a primary purpose of protecting and enhancing the resource.* | 8 |

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| Downtown Improvements: North Andover will furnish the central business district with appropriate public amenities, including but not limited to benches, bike racks, trash receptacles, lighting, and public signage, in order to make downtown accessible to vehicular, pedestrian, and bicycle traffic. | **Economic** | **Downtown** | *The businesses in the downtown provide goods and services to the public. The community has an obligation to provide the amenities necessary to support users of the downtown seeking those goods and services.* | 23 |
| Watershed Management Plan: North Andover will begin implementation of the Capital Plan identified in the 1999 Water Quality and Management Options as indicated in Table 5-3 titled "Specific Management Recommendations for Individual Sub-Basins in the Lake Cochichewick Watershed". As part of that implementation North Andover will assess, adopt and adhere to an appropriate road maintenance program in all watershed areas. | **Environmental & Cultural** | **Water Resources** | *The recently completed Evaluation of Water Quality and Management Options in Lake Cochichewick, February 1999, documents clear steps necessary to improve the water quality in the Lake through capital improvements and infrastructure management. Some of these steps require land acquisition and construction of sediment forbays or other filtering methods. In light of the continued housing growth and expansion of existing uses in the watershed, and the lack of acquisition strategy for land, the methods in the report are the most appropriate for immediate water supply protection.* | 25 |
| Historic Identification: North Andover will establish and maintain an interpretive signage program to educate the public about the Town's historic areas. | **Environmental & Cultural** | **Historic Character** | *Many of the Town residents are not familiar with the rich historic heritage the Town offers. The "On this Site" signs are roadmaps to the past and a means to enrich the communities heritage through education.* | 73 |
| Environmental Education: North Andover will design and continuously implement public education programs on wetlands, household use of hazardous materials, disposal of hazardous waste, solid waste, recycling, and source reduction. | **Environmental & Cultural** | **Environmental Quality** | *Through education the Town can create opportunities for improvement in environmental quality. The education of residents and businesses will expand the opportunities for environmental protection beyond the limits of the regulatory means and expand support for environmental programs.* | 24 |
| Trails Map: North Andover will prepare and make available to the public a town-wide open space and trails map. | **Environmental & Cultural** | **Rural Character** | *Through the State Park system, private non-profit lands, and the Town-owned property there are resources yet untapped due to the lack of access. The opportunity exists to link these resources through a network of trails. There are existing trails throughout these resources. At a minimum, the existing connections should be identified. Developing the maps to existing trails, the Town can develop support for a broadened trail effort.* | 27 |

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| M.G.L.Chapter 61A: North Andover will promote the use of M.G.L.chapter 61A to encourage owners of active farms to retain their land in agricultural use. The Town will inventory properties which could meet the requirements of 61A and actively negotiate with property owners to encourage their initial and continued participation. | Environmental & Cultural | Rural Character | *What is M.G.L. Chapter 61A? It is a local tax incentive that encourages agricultural land owners to maintain their properties as active farms. By entering into a 10-year agreement with the Assessor's Office, owners of eligible sites are taxed at less than the full assessed value of their agricultural land. The lower property tax bill they pay is designed to help them stay in the business of farming. When participating owners decide to sell their land while the 10-year agreement is in effect, the Town has a 120-day right of first refusal to buy the property. If the Town declines and a private developer buys the property instead, the deferred taxes have to be repaid. Massachusetts has similar laws to protect forests and private recreation areas. They are known as Chapter 61 and Chapter 61B. Chapter B is an incentive tool to maintain open space and protect the character of our Town.* | 71 |
| Conservation Fund: North Andover will approve annual appropriations for a Conservation Fund in order to build a reserve for future land acquisitions in the watershed and conservation land maintenance. The Town will explore all options available to raise the funds. | Environmental & Cultural | Water Resources | *The 1957 Master Plan recognized the importance of open space and more importantly the water supply. Over 41 years ago the plan identified that the Town should".... protect the town water supply for which there is no easy nor nearby replacement. Public open space reservation was recommended along all the Lake Cochichewick shores not already otherwise reserved as, for example, by Campion Hall, the Brooks School, Rolling Ridge Retreat and the Boston University Conference Center." Unfortunately this, nor has any other plan, created a regular and planned program of land acquisition. The site selection for open space is evident through the 1995 Open Space Plan and updated site lists. However, the response has been a scattered reaction to land sales and imminent development. Waiting does not enhance the Town's position. Is estimated that if the Town were to wait 20 years to purchase open space in the watershed we would spend twice as much money for half as much land. Establishing a fund to purchase open space now will fulfill the needs of plans over 41 years old. Waiting only looses opportunities and increases costs.* | 28 |
| Water Web: North Andover will establish a "Water Reality" web site providing up-to-date information to the public on the current state of the water supply and relevant projects and programs that enhance the quality and quantity. | Environmental & Cultural | Water Resources | *The general public in North Andover is increasingly using the internet as a means of gaining access to information. This is an opportunity for the Town to provide information about the health of the water supply. Information about how to conserve water, results of water testing, water billing, conservation equipment, lawn care in the watershed, the Town's compliance with state and federal laws, and other relevant information would be posted on the web site. In light of the continued newspaper coverage about water issues the web site will provide a factual source of information for the public.* | 9 |
| Water Rate Conservation: North Andover will design and implement a water rate structure that encourages conservation among residential, commercial and industrial water users. | Environmental & Cultural | Water Resources | *The current rate structure does not account for potable verses not potable use of water. Those using water for lawn sprinklers, pools and other nonessential uses should be charged at a higher rate for that use to encourage conservation.* | 143 |

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| **Environmental & Cultural** | **Water Resources** | | 10 |
| Water Conservation: North Andover will establish and distribute educational materials for every water user to provide methods for water conservation and reduce the water use per user. The information will include a survey for water use to determine water use patterns and target a second round of materials to those issues that are specific to the users' needs in North Andover. | | *As the water lines reach out through the community more homes are being connected. Homes are often greater in size and increasing in water usage through items such as lawn sprinklers. The lack of education on water conservation will only exacerbate the issues of water supply demand. Before the Town reaches the point of regulating water use, conservation methods should be the preferred alternative. Education is the first step to a successful, voluntary program and a method to develop advocacy.* | |
| **Environmental & Cultural** | **Water Resources** | | 11 |
| Water Quality: North Andover will establish educational materials for residents of the watershed to provide alternative methods to lawn care and other property maintenance issues that can cause degradation of the watershed through runoff of chemicals and other pollutants. | | *Much like the education for water conservation this recommendation may prevent the need for future, more restrictive regulations. As the watershed develops there will be an increase in the expansion of lawns and the resulting use of chemicals. This runoff can be minimized by educating those residents in the watershed to reduce reliance on chemicals and increase the use of alternatives.* | |
| **Facilities & Services** | **Facilities** | | 65 |
| Sewer Master Plan: North Andover will continue to fund and implement a sewer system improvements plan within its Capital Improvements Plan (CIP) in order to insure systematic construction, maintenance and reconstruction of a high-quality sewer system. Specifically, the Town shall continue the watershed sewer initiative in a manner that captures all existing septic systems and undeveloped land. | | *The Town is in the midst of a multilevel sewer system improvements plan. The Public Works Department established the plan as a result of working with State Officials to resolve historical sewer system failures. The Public Works Department has accomplished considerable results in the reduction of inflows of storm water from homes and groundwater. In addition, a sewer system construction is planned to resolve overtaxed pipes. The Public Works Department continued efforts to approach the problem from a long range improvement perspective by solving problems in a comprehensive manner is the most effective approach. These projects must continue in the comprehensive manner programmed by Public Works to insure that the problems are not deferred any further.* | |
| **Facilities & Services** | **Facilities** | | 68 |
| Facilities Land Acquisition: North Andover will identify and develop an acquisition plan for municipal and school building sites implementing it through scheduled adherence to a Capital Improvements Plan (CIP). When making public facility siting decisions, North Andover will take into account service areas, need, administrative efficiency, and development and operating cost impacts. | | *The programmed acquisition of sites ahead of the need is the most cost effective method to insure the most effective siting. The acquisition of the Foster Farm parcel is an example of the effectiveness of this recommendation. The parcel was acquired in 1998 for a school planned for five years later. Waiting to acquire the site would have missed the opportunity to gain access to the most favorable location to meet service demands and resulted in an increase in price.* | |

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| **Facilities & Services** | **Water Resources** | | 64 |
| Water Master Plan: North Andover will continue to fund and implement a water system improvements plan within its Capital Improvements Plan (CIP) in order to insure systematic construction, maintenance and reconstruction, of high-quality water delivery and treatment . The plan will account for the relationship between expansion of the water infrastructure and the water quantity and through efforts such as loss reduction and conservation to allow expansion in a manner that will minimize the impact on water quantity. | | *The Town is in the midst of a water expansion and repair plan. The plan is designed to address priority areas of loss reduction and water system expansion. The expansion is moving into the community where fire safety and improved water quality is necessary. This recommendation encourages the continued development of the plan and correlates the expansion of the water system to balancing increased demand with increased loss reductions and conservation. The concern is that as the system expands the demand on the system will negatively impact water quantity.* | |
| **Facilities & Services** | **Growth Management** | | 95 |
| Cost Measures: North Andover will incorporate cost of community service measures into North Andover's overall growth management system in order to encourage land uses that provide net fiscal gain to the Town and to regulate, phase, discourage, or prohibit uses with net fiscal losses. Cost of community services measures calculated as revenue ratios will be updated after each three-year revaluation cycle. | | *So we have all this information that gives us an idea about what land uses cost the Town more money to support. Do we sit and wait for the right developments to locate to North Andover? No. We move toward encouraging the land uses that benefit the community by creating opportunities for those land uses.* | |
| **Facilities & Services** | **Growth Management** | | 105 |
| Adequate Facilities Provision: North Andover will develop as part of the long-range capital improvements plan the assessment of charges against private projects that trigger compliance with required adequate facilities provisions of new zoning. The Town will establish a clear schedule of desired public facilities and improvements needed to serve local residents by facility and/or neighborhood area and incorporate the schedule in its CIP and as a requirement for appropriate on and off-site improvements for developments. | | *The relationship between development and municipal capital improvements needs to be specifically expressed as a requirement and not negotiated for each case. If during the review process it is evident that offsite improvements in the Town Capital Plan will be triggered then the development community should share in such costs. Creating these guidelines within zoning will formalize the process.* | |
| **Facilities & Services** | **Facilities** | | 41 |
| Capital Improvements Fund: North Andover will annually reserve a fixed percentage of its total budget for capital improvements and capital equipment and establish a comprehensive list of prioritized projects, financing major projects through long-term debt in order to allocate costs among current and future users. | | *Creating a CIP is moot without the mechanisms to regularly fund the programs. Establishing priorities and a funding source is a means to accomplish these priorities.* | |

| Recommendation | Topic Area | Strategy | Background | Rec. # |
|---|---|---|---|---|
| Geographic Information System: North Andover will establish a comprehensive Geographic Information System and single community database with appropriate protections for privacy that incorporates the community data such as parcel information, environmental limitations, census, schools, traffic, infrastructure, facilities, public safety responses, and other relevant service information. | **Facilities & Services** | **Process & Product Improvements** | *The development of plans and services is often faced with an extensive process of data collection and linkage with geographic factors. As an example, the ability to quickly plot response times for public safety and run real-time scenarios is vital to providing the public with the tools for reaching informed decisions. The Buildout Study in the 1996 Master Plan interim report took three months to complete. During the study process, without GIS, the correlation of data in a spreadsheet to other mapped information was time consuming. With GIS, once the data and mapping is complete, the same project may take one hour and multiple scenarios could be run to determine outcomes of alternate landuse or service decisions.* | 56 |
| Recreational Facilities Plan: North Andover will plan, fund, and implement a recreation facilities improvements plan within its Capital Improvements Plan (CIP) in order to provide well-designed, modern, conveniently located recreation facilities that meet the demand levels of the users and are accessible to and usable by all persons. | **Facilities & Services** | **Recreation** | *Recreation facilities offer an environment in which people can share interests, develop new skills, socialize and build a sense of community. Ideally, they are developed as a neighborhood and community- wide system that provides a range of choices. When cities and towns neglect their recreation "infrastructure," they make it difficult to create and sustain cohesive communities. Our Town needs to reverse its tendency to put recreation last on the list of public priorities.* | 69 |
| Recreation Partnerships: North Andover will establish working partnerships with quality developers to increase the supply of neighborhood recreation facilities as identified through a recreation facilities plan. | **Facilities & Services** | **Recreation** | *The development of new homes places demands on schools, traffic and other services. As homes are developed in more remote locations from services, such as recreation facilities, the new residents and their children are forced to travel or do not take advantage of the resources. Through mutual negotiation with the development community new recreational facilities should be established in or near new neighborhoods to meet needs closer to residents.* | 31 |
| Community Paths: North Andover will establish, fund, and implement a sidewalk and community paths improvement plan within its Capital Improvements Plan (CIP) in order to insure systematic construction, maintenance and reconstruction, of high-quality access to safe pedestrian and cycle routes. The plan will coordinate with the pavement management plan. The community paths will assess and develop improved trail opportunities to connect neighborhoods through alternate connecting off-street methods. The plan will identify future connections that will be incorporated into the plans of future development proposals | **Facilities & Services** | **Traffic Safety** | *Despite North Andover's environmentally conscious citizenry, we offer little in the way of sidewalks, bicycle paths and walking trails where people of all eges can move safely about the Town. These facilities not only serve outdoor recreation interests, but they can help solve public safety problems by separating pedestrian, bicycle and vehicular traffic. The development in North Andover has created a systems of neighborhoods isolated by cul-de-sacs. This development pattern promotes privacy and neighborhood identity. However the downside is walking or cycling outside the neighborhoods on connecting roadways to destinations such as other neighborhoods, schools, and parks. The connecting roadways are often not equipped with sidewalks, shoulders or other safe means for pedestrians or cyclists. This recommendation recognizes the need for an expanded sidewalk program and the development of connections between the neighborhoods and Town amenities. The separation of vehicular and pedestrian traffic is the safest method of addressing conflicts.* | 63 |

| Recommendation | | | Background |
|---|---|---|---|
| *Topic Area* | | *Strategy* | *Rec. #* |
| **Facilities & Services** | Facilities Plan: North Andover will plan, fund, and implement a facilities improvements plan within its Capital Improvements Plan (CIP) in order to provide well-designed, modern, conveniently located municipal and school buildings that meet current codes and are accessible to and usable by all persons. The plan shall be based on comprehensive feasibility studies and include all relevant costs associated with the design, construction, land acquisition and operations and maintenance increases associated with each facility. The plan shall provide alternatives analysis to determine the most effective program in terms of cost and benefits. | **Facilities** | 66<br>*The deterioration and functional inadequacy of public buildings visibly attest to North Andover's pressing capital needs, but the underlying issue is community services. Indeed, buildings represent one part of a much larger system of public service delivery that includes our parks, playgrounds and other outdoor recreation areas on the one hand, and community enhancement programs on the other. Together these facilities supply the foundation for services and programs that must be equally available to all residents and enjoyed by everyone who want to participate.* |
| **Facilities & Services** | Drainage Improvement Program: North Andover will establish, fund, and implement a drainage improvement plan within its Capital Improvements Plan (CIP) in order to insure systematic, high-quality drainage maintenance and reconstruction. The plan will coordinate with the pavement management plan. | **Facilities** | 62<br>*As development occurs the additional drainage systems from new developments have taken a toll on the existing Town systems. The October 1996 storm was an indication of the issues that the Town can face with a severe storm event. The Public Works department is assessing the pavement management options and creating a GIS system around the underground utilities Within the scope of these proactive programs the additional complement of drainage is vital to solve roadway design problems.* |
| **Facilities & Services** | Town Hall: North Andover will, as part of a comprehensive capital improvements plan, locate its town government administrative offices in a consolidated facility within the Downtown central business district. | **Facilities** | 21<br>*Most downtown locations require the presence of institutional facilities to support a positive economic ripple effect that is caused by the users and employees of the facility. Without the government offices the downtown business would loose a valuable draw for that ripple effect. Beyond the issues of economic development the presence of Town Government in the downtown is an integral part of the Town character. Current Capital Improvements plans are developed with the Town Hall location expanding into the Fire Station after the Fire Department relocates.* |
| **Facilities & Services** | Community Data: North Andover will create a community profile to provide every resident with a summary of all vital data regarding the Town, its residents, infrastructure, budgets, and other statistics that are important to making decisions and tracking change. The Town will provide and use the profile as a measurement of change in the Town Annual Report. The Town will provide a resource list where residents can gain more detailed additional information. Incorporate the information into a Town government web site. | **Process & Product Improvements** | 59<br>*Do you know how many road miles there are in Town? If you knew how it has changed over the past five years would that help you understand the budget issues facing the Public Works Department? How about the number of Police and Fire personnel per capita in 1990 verses today? These summary statistics are vital to residents and those involved in government. However, they often reside in separate departments available upon separate request. A summary of all of the data in a format that allows historical tracking will provide the public better information to make informed decisions.* |

| Recommendation | Topic Area | Strategy | Background | Rec. # |
|---|---|---|---|---|
| Annual Community Survey: North Andover will create and implement an annual community-wide random survey to determine the needs of the community and their opinions on services, budgets, proposals, and Town projects. The Town will use the data to help formulate budgets and capital plans. The Town will track the responses each year to determine the changing needs of the community. The Town will, as needed, establish additional specific surveys relevant to current neighborhood or constituent issues. | **Facilities & Services** | **Process & Product Improvements** | *The additional factor of subjective opinions conducted in a formal valid process is necessary to reach conclusions on difficult policy decisions. Often the phrase "preaching to the choir" can be heard in the development of budgets and projects. This recommendation hopes to expand the choir to the public at large and gain another tool for the elected and appointed officials to formulate the appropriate direction for projects and budgets prior to discovering diverging opinions at Town Meeting.* | 57 |
| Phased Growth: North Andover will adopt a phased growth bylaw that explicitly links an annual limit on building permits with cost-of-service ratios for various classifications of residential development. | **Housing** | **Growth Management** | *Our Town's desirability has become all too evident: the rate of residential development threatens to topple our fiscal stability. Whether ongoing change is inevitable, housing starts must be brought in line with North Andover's capacity to accommodate population growth. To maintain our community's character and manage the impacts of future growth this recommendation is established to link phased growth to impacts. This is dependent on the outcome of development of revenue ratios. The outcome of that analysis will be linked to a capital improvements plan to determine the impacts and appropriate phasing for growth.* | 32 |
| Residential Performance Standards: North Andover will establish in its residential zoning and subdivision regulations a standard set of baseline rules and performance standards to encourage outcome of quality open space, rural development plans, and negotiated approval of mixed residential use types in appropriate locations. The standards shall encourage developer creativity and achieve neighborhood compatibility in new projects. | **Housing** | **Rural Character** | *By-laws and regulations are created to reach an outcome. However, regulations are at times designed to protect the Town from poor development which creates restrictions that offer limited flexibility. The result is an overregulated, non-negotiable, set of engineering standards that never get to the point of flexible design addressing the priorities of the community. Amending the zoning and subdivision regulations to focus on creative performance standards that encourage quality open space while meeting engineering standards is a necessity.* | 34 |
| PRD Design: North Andover will improve the architectural and site design standards for Planned Residential Developments through appropriate zoning amendments. | **Housing** | **Rural Character** | *Of all land uses, housing has the greatest influence on community character. Through architecture and neighborhood settlement patterns, housing tells the story of a village's evolution to a town. To the extent that building style, age, quality and appearance supply physical evidence of growth and change, residential use types speak volumes about the people who built a town from its earliest days to the present.* | 75 |

| Recommendation | Topic Area | Strategy | Background | Rec. # |
|---|---|---|---|---|
| Adequate Facilities Density Bonus: North Andover will adopt a facilities bylaw that reduces the current as-of-right density in most neighborhoods and authorizes negotiated density increases in exchange for developer-supplied public improvements or contributions into special revenue accounts held for the same. | Housing | Growth Management | *A lack of sustained capital investment and operating support for community facilities and services is eroding North Andover's quality of life. To reverse this trend we need to create innovative ways to fund the priorities. Funding of capital improvements through the private sector is a means to distribute the burden through alternate funding sources. An example of this recommendation is the improvement or creation of a park that would not normally be the responsibility of the developer, yet through a density bonus the developer provides the improvements as a condition of the approval.* | 33 |
| Housing Plan: North Andover will implement a comprehensive housing plan that provides for housing stock diversity and affordable housing development. The Town will begin by completing an affordable housing study to identify and quantify the community's existing and estimated housing needs and to locate a range of appropriate locations for affordable housing development. Sites may include existing undeveloped land or properties that need redevelopment and would be appropriate for housing use. The Town will write an overlay zoning amendment to offer affordable housing incentives in appropriate locations. | Housing | Affordable Housing | *Whether our Town still has an array of housing types that spell choice for home buyers, North Andover's population is becoming economically and socially homogenized at a slow but perceptible rate. Because ours is a very desirable community, the market demand for housing here is producing high-cost single-family dwellings and causing the value of existing homes to rise beyond the reach of many. As developable land is absorbed by new growth, North Andover will face the same community development dilemma that is affecting other high-growth suburbs: the conversion of two-family to single-family dwellings and the demolition of older housing stock to make way for larger, modern homes. The housing market often leaves behind many of our residents. The Town has an obligation to understand and provide opportunities that the market may not offer. Ask the question: Can my children afford to live where they grew up?* | 110 |
| Housing Sites: North Andover will coordinate appropriate town boards, commissions and staff to select a publicly owned site that could be sold or placed under a long-term lease for affordable housing development. At minimum, site selection process will include Planning Board, Conservation Commission, Housing Authority and Open Space Committee. The Town will issue Request for Proposals so that qualified developers can compete for the project award. | Housing | Affordable Housing | *The best method of controlling the outcome of a project is to initiate the project. The Town can be proactive in the development of affordable housing by offering public property for the development. With this step the Town can have a better control over the benefits to the Town.* | 114 |

| Recommendation | | Background | |
|---|---|---|---|
| *Topic Area* | *Strategy* | | *Rec. #* |
| **Housing** | **Affordable Housing** | | 115 |
| LIP Developer: North Andover will select a developer and work cooperatively toward an application for project approval to the state's Local Initiatives Program after obtaining LIP support process comprehensive permit and any other approvals required for project to proceed. | | *What is the Local Initiatives Program? LIP is a state program, not a mandate. It encourages communities to work with developers in order to build affordable homes for low- or moderate-income people. "Affordable" means a monthly housing cost that is no more than 30% of monthly income. LIP projects normally reserve 25% of their homes for low- or moderate-income occupancy; the rest are market units. There is no public subsidy. Communities help by waiving density and other rules that make development costly. A project that meets LIP requirements counts toward the sponsoring community's 10% low- and moderate-income housing goal under state law.* | |
| **Housing** | **Rural Character** | | 35 |
| Development Technical Assistance: North Andover will produce and supply technical assistance materials to property owners and developers in order to illustrate preferred development plans, architectural styles, and open- space solutions. | | *When development proposals reach the permitting stage, the developer and or property owner has already expended a considerable sum of money to create the plans. Asking the development community to step back and recreate plans is not as successful as providing applicants with informational guidelines for development prior to plan development. Through technical assistance materials the Town can express their design ethos prior to the expenditure of funds by a developer or property owner. Thus guiding development at the planning steges and not at the permitting stage.* | |
| **Traffic** | **Traffic Circulation** | | 78 |
| Traffic Studies: North Andover will require in all regulations, policies and by-laws engineering studies and traffic mitigation plans for high-impact development on primary roads. The studies will incorporate a uniform format that will coordinate review through Town agencies. | | *This recommendation suggest we should create a uniform method for traffic studies and require them in all cases.* | |
| **Traffic** | **Traffic Circulation** | | 38 |
| Truck Traffic: North Andover will stringently enforce motor vehicle laws in order to reduce travel speeds of truck traffic, establish preferred truck routes as allowed by law, and insure that trucks meet all necessary safety regulations. The Police Department shall establish a truck monitoring program with the State Police to check compliance with all applicable regulations. The Police Department will work closely with businesses to which the trucks have a relationship to communicate areas where the businesses could improve on safety. North Andover will successfully prohibit large truck traffic on rural roads by identifying and securing state approval of an appropriate, alternate route. | | *The Neighborhood meetings held as part of the 1996 Master Plan Report identified the primary traffic concern as the number of trucks traveling on minor roads in Town. Weight limits should be imposed and truck traffic should be limited to major routes and state highways. Additional concern was expressed regarding the amount of truck traffic on Salem and Johnson Streets. Measures are in place via an agreement with NESWC regarding waste haulers routes. This recommendation establishes a program within those parameters, however, the program should be expanded to all truck traffic such as construction vehicles which are also an issue for residents.* | |

| Recommendation | | Background | |
|---|---|---|---|
| *Topic Area* | *Strategy* | | Rec. # |
| **Traffic** | **Traffic Circulation** | | 15 |
| Traffic Safe Zones: North Andover will establish safe traffic zones focusing on neighborhoods and schools. The Town will analyze traffic patterns and determine methods to encourage the continued use and/or redirection of traffic to mitigate impacts to residential and school areas. The Town will establish a detailed plan for enforcement that addresses the safety of school children and neighborhoods by encouraging safe travel through these areas. Within these zones the police department shall increase enforcement and measurably reduce violations. | | *North Andover's geographical location places the community in the center of substential commuting routes. Streets such as Massachusetts Ave., Johnson Street, and Route 125, Route 133 all exceed 10,000 vehicle trips per day. Commuters use back roads not originally designed or constructed for high volumes. The peak traffic coincides with traffic for schools and neighborhoods. This places an increased danger on children walking to schools and residents using local roads. This recommendation will establish safer areas for residents and school children and by enforcement encourage preferred routes for commuters. The areas identified as requiring a higher level of safety will be more closely monitored for traffic violations.* | |
| **Traffic** | **Traffic Circulation** | | 70 |
| Transportation: North Andover will encourage alternatives to travel by means of private car, including bicycling, walking, carpooling, and use of available public transportation through the establishment of the following: a ride share and public transportation web site for North Andover residents to create connection opportunities, improves cycling safety through the Community Paths programs, encouraging bus and other transportation providers to include expanded North Andover routes. | | *The proliferation of vehicles in the community is a result of the isolation of residents from opportunities to other forms of transportation. The development of tools such as local web site to identified ride sharing opportunities provides alternatives to single user private cars. Safer streets and paths open up opportunities for walking and cycling.* | |
| **Traffic** | **Traffic Safety** | | 39 |
| Curb Cuts: North Andover will make the zoning and other regulatory changes necessary to encourage coordinated design and development of curb cuts on primary streets in order to promote safe, orderly circulation in and out of high-traffic impact sites. The Town will work with the State where appropriate to develop plans to implement through State permitting to require more appropriate curb cut coordination and planning. | | *When too many drivers compete for a space in the travel lane, the resulting traffic becomes congested and unsafe. The development along major roadways of individual properties creates an unsafe traffic pattern if each property were to use separate and uncoordinated curb cuts. The intent of this recommendation is to address the problem by developing curb cut regulations tied to expansion of existing uses and creation of new uses. In addition, the recommendation establishes that the Town will plan with the State to implement the coordination of curb cuts through State permitting.* | |
| **Traffic** | **Traffic Safety** | | 16 |
| Intersection Safety: North Andover will assess the roadways to determine the most hazardous intersections and develop engineering plans to reconstruct and/or ad traffic devices. The intersection work will be coordinated with sidewalk and drainage plans. The process will include a series of public meetings to gain comments back from the public on the redesign of intersections to insure that both public safety and rural character are addressed. | | *The rural development pattern of North Andover has created unsafe road alignments. Many of the intersections in North Andover are not at 90 degrees with a positive line of sight. As traffic and speeds increase, these intersections combined with narrow roads and obstacles to line of sight become a hazard. Realignment and construction of more positive intersections is necessary to provide safer roadways. Understanding the need for a continued rural environment, this recommendation establishes public meetings to create opportunities for input.* | |

| Recommendation | | Background | |
|---|---|---|---|
| *Topic Area* | *Strategy* | | Rec. # |
| **Traffic** | **Traffic Safety** | | 37 |
| Pavement Management: North Andover will establish, fund, and implement a pavement management plan within its Capital Improvements Plan (CIP) in order to insure systematic, high-quality road maintenance and reconstruction. The plan will coordinate various sources of data to assess the prioritization of improvements based on criteria such as conditions of roadway, traffic volumes, surrounding land uses, etc. | | *The Department of Public Works is currently preparing a comprehensive pavement management assessment and program. This effort will lead toward a pavement management strategic plan that will identify the costs and prioritization of improvements. These efforts will be matched with traffic monitoring conducted by public safety to determine traffic volumes. This effort will establish a five year, updated each year, pavement management plan.* | |
| **Traffic** | **Traffic Safety** | | 61 |
| Traffic Education: North Andover will establish a traffic safety education program that is incorporated within the school department curriculum as part of a Police Department comprehensive educational effort. | | *The three "E's" of traffic safety are "education," "enforcement" and "engineering". Education is a critical component to increase the ability of drivers and proactively reduce accidents. Creating a regular program that addresses issues such as driving while intoxicated will increase traffic safety by educating new drivers.* | |

# Appendix B
# Buildout Study Methodology

## Build-Out Methodology

Community planning supplies methods of analysis to determine the inevitable -- that is, what will happen if we continue to grow and change according to current land use policies and regulations. Forecasting a community's development direction considers such factors as vacant land, development suitability and zoning requirements. A build-out analysis establishes the end result of relationships among these three factors. A build-out analysis is also a test of local zoning.

In late 1996, the Department of Community Development and Services completed a build-out analysis in order to determine North Andover's *residential* development potential. (The build-out analysis produced the information presented in Section 4 above, and forms the basis for many of the recommendations outlined later in this Master Plan.) The computer model used for this purpose relies primarily on data from the assessor's office, which in our case was received in July 1996. The data were culled using a hierarchy of criteria to create a spreadsheet that identifies residentially zoned parcels with development potential. It is important to point out that the build-out methodology was designed for a *conservative* estimate of our community's development potential. Neither the Community Development Department nor the Master Plan Committee wanted to risk the possibility of an inflated development forecast, particularly since we knew that significant Master Plan implementation measures were likely to stem from the results of the build-out analysis. Accordingly, the methodology chosen for North Andover's study is a more exacting approach than is normally used by communities engaged in master plan or growth management process.
Specifically, the build-out analysis involved these steps:

- **Initial review for database accuracy**. In July 1996, the Assessor's data were downloaded into a Microsoft Excel spreadsheet. The data included pre-selected fields from the property data cards for all parcels in North Andover: map and parcel number (also known as the parcel identification number), a use code drawn from the Massachusetts Department of Revenue's classification system, street address, owner, total acres, zoning district, and gross square feet of buildings. The first step in the data selection process was to eliminate "repeat" parcels, a condition that occurs in assessor's databases as a result of tax classification. Identical parcels were eliminated through the use of the "Advanced Filter" function in Excel, and a "Unique Records" selection was made in order to ensure that the analysis considered only one record per parcel. This process culminated in a spreadsheet with every parcel in North Andover.
- **Elimination of protected parcels.** In this stage, parcels with no development potential for reasons of ownership, e.g., lands owned by government and non-profit organizations, were eliminated from the inventory. This includes, for example, parcels classified as State Parks by the Commonwealth of Massachusetts, those owned by the Trustees of the Reservations and Town of North Andover, and other properties known to be protected in perpetuity through such mechanisms as an Agricultural Preservation Restriction (APR). Other properties that are undevelopable because of use and configuration were also eliminated, e.g., power line easements and rail rights-of-way. While these sites could contribute to the development potential of

adjacent parcels, in many cases they do not represent a means to create individual house lots.
By using the "Auto Filter" function in Excel, we identified records of protected parcels and then deleted them from the database. Thus, the remaining records represented properties that are *not* protected in perpetuity or lack obvious use and configuration constraints.

- **Zoning Designation.** A crucial step in determining a community's total build-out potential requires assigning the correct zoning designation to each parcel. Differences across North Andover's zoning districts can mean twice the amount of lot creation from one area to the next. By comparing the parcel map to the zoning map, we reviewed every parcel in the assessor's database to ensure that the zoning district fields were correct. First, we selected and reviewed the assessor's maps that lie entirely in one zoning district, and then we conducted an individual parcel review for assessor's maps that cross zoning district boundaries. Once we established the correct zoning district classification for all parcels, we were able to carry out the next phase of parcel elimination.
- **Built Parcel Elimination.** During this phase, we eliminated parcels that met their zoning district's minimum lot area requirements and also contained a principal structure. The "Auto Filter" function of Excel was used to identify parcels with a structure of greater than 500 square feet on a parcel of less than one acre. Each parcel was then considered in light of zoning district rules, and if the parcel could not be further subdivided or support an additional structure it was eliminated from the database. For purposes of the build-out analysis, we did not add a factor for lot area variances. We retained adjacent parcels held in common ownership. At this point the spreadsheet was comprised of all unprotected parcels with sufficient vacant or surplus land for additional development. Lots that did not meet the required zoning but are in areas with similarly sized lots were assumed to be grandfathered, and they were left in the spreadsheet. Parcels with larger structures such a nursing homes, apartment complexes and so forth were eliminated on the assumption that the land area fulfills the zoning requirements. We checked zoning requirements to confirm that there was not a substantial parcel of vacant land associated with these large-structure parcels.
- **Building Permit Elimination.** Because the data were derived from the assessor's database as of January 1, 1996, we needed to update some of the information to reflect changed that had already occurred. The Building Office reviewed the database to identify lots with building permits so we could delete them from the build-out analysis. Lots with surplus land for future development were retained in the spreadsheet despite the issuance of a building permit, however, because they could be further subdivided. Generally, we eliminated all lots that met minimum zoning requirements and had obtained a building permit for a principal structure. Subdivisions that were active and could obtain a building permit within the year were also eliminated from consideration. This process gave us an up-to-date assessment of build-out capacity.
- **Hidden Protected Lands Elimination.** Parcels such as smaller parks under private trusts, condominium and PRD open space preserved in perpetuity, detention basins or other lots held for infrastructure all were eliminated from the spreadsheet. Such

parcels are often confused for building lots until the actual developments are reviewed. In many cases, development plans had to be compared to the assessor's maps in order to identify open space and other parcels that could not be developed.

- **Wetlands Assessment.** Parcels of five acres or more were reviewed against available wetlands information. These parcels were assigned a coefficient for wetlands, representing the percentage of wetlands covering the site in accordance with the local by-law and the state's Wetlands Protection Act. The coefficient was used to reduce the development potential of a lot by eliminating a percentage of the lot area from the calculations below.
- **Assignment of Zoning Multipliers.** A column for lot square feet was added to the Excel spreadsheet by multiplying the acres column by one acre or 43,560 square feet. This process resulted in a column that calculated the maximum number of lots that could be created from the existing parcel. The total development potential of any parcel with an existing home was reduced by one lot to allow for a conforming lot around the house.
- **Wetlands Reduction.** The lot number required a wetlands adjustment by multiplying out the percentage of wetlands loss for parcels of five or more acres. This step resulted in a net number of new lots, i.e., accounting for undevelopable wetlands acreage.
- **Rounding the Lots.** Lots that were within 0.25 of becoming one lot (based on zoning) were rounded to one lot. Lots that contained a structure and were not one full lot were eliminated.
- **Data Creation.** At this stage the spreadsheet was considered clean of all lots that could not be developed further. Residential District lots were separated from the Commercial and Industrial, such that only the residential lots were analyzed.

# Appendix C
# Capital Improvements Plan Scenarios

# A-1

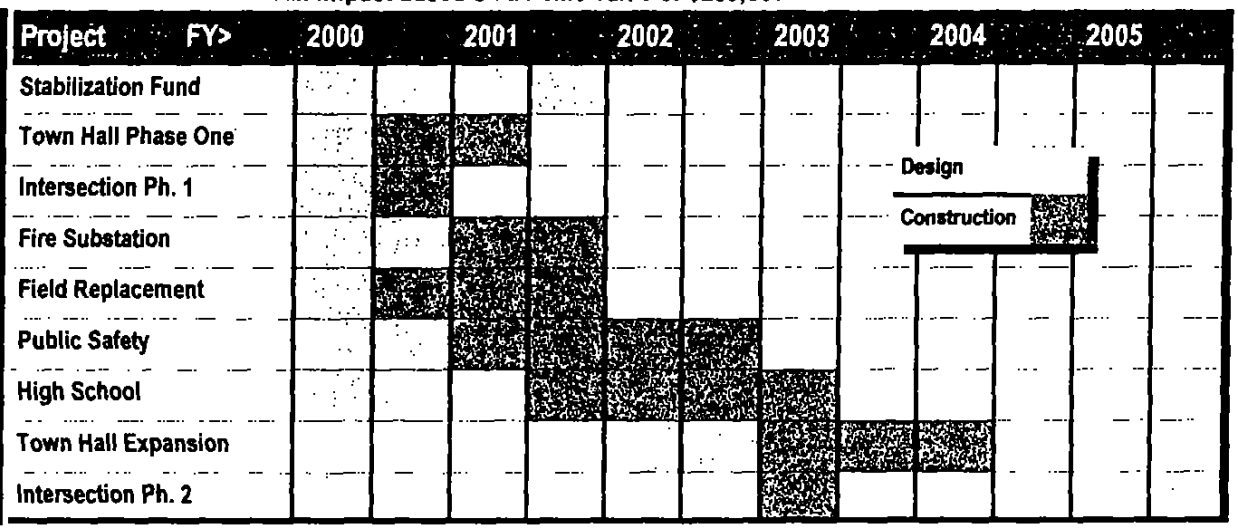
# High School at Middle Field
# Public Safety at Triangle

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ 5.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 15.00 | $ 15.00 | $ 15.00 | $ 13.13 |
| Intersection Ph. 1 | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ - | $ 6.25 |
| Fire Substation | $ 2.75 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 27.50 | $ 24.72 |
| Field Replacement | $ 33.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ - | $ 16.31 |
| Public Safety | $ 11.00 | $ 30.00 | $ 62.50 | $ 120.00 | $ 115.00 | $ 110.00 | $ 105.00 | $ 100.00 | $ 81.69 |
| High School | $ 44.00 | $ 135.00 | $ 225.00 | $ 220.00 | $ 152.50 | $ 152.50 | $ 150.00 | $ 147.50 | $ 153.31 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total by Year | $ 90.75 | $ 212.50 | $ 377.50 | $ 442.50 | $ 417.50 | $ 382.50 | $ 365.00 | $ 347.50 | $ 329.47 |
| Change from prior year | $ 90.75 | $ 121.75 | $ 165.00 | $ 65.00 | $ (25.00) | $ (35.00) | $ (17.50) | $ (17.50) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario places a new High School at the middle fields above the current High School. The amount of space afforded by the middle field area and the ability to continue construction without disruption to the students are primary reasons for the favorable location. A primary issue is the relocation of fields to accommodate the High School. Due to this action the schedule for the High School will be impacted. The Public Safety Facility is a combined Fire and Police Facility located at the Triangle formed by Prescott, Osgood and Chickering. The location of a combined Public Safety Facility is dependent on providing the best response times for the Fire Department. This location provides the highest rated location for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The combination of these alternatives creates a scenario where the High School and Public Safety are not interdependent. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# A-1 High School at Middle Field Public Safety at Triangle

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine location and number of fields and acquire property or interest in property. |
| **Public Safety** | Requires acquisition of property, and realignment of Osgood Street to terminate at Prescott. |
| **High School** | Replacement of fields necessary prior to construction. |
| **Town Hall Expansion** | Requires that Fire Department move out prior to construction. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.66 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| **Stabilization Fund** | NA | 1,000,000 | NA | 1,000,000 | | |
| **Town Hall Phase One** | NA | 1,000,000 | 120,000 | 1,120,000 | none | |
| **Intersection Ph. 1** | NA | 250,000 | 150,000 | 400,000 | none | |
| **Fire Substation** | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| **Field Replacement** | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| **Public Safety** | 47,209 | 9,500,000 | 1,088,000 | 10,588,000 | none | 125,576 |
| **High School** | 229,758 | 38,635,000 | 8,140,000 | 46,774,000 | 17,306,380 | 611,156 |
| **Town Hall Expansion** | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| **Intersection Ph. 2** | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

Reimbursement for schools at 37% of Total Cost column.

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Best Location for public safety. Site serves 80% of the population within five minutes.
- ◊ Access to multiple roadways.
- ◊ High visibility on main roadway
- ◊ Use street right-of-way for site .
- ◊ Combined facility coordinates total public safety effort.
- ◊ Reduces cost over separate facilities by approximately $800,000

### High School

- ◊ Approved for reimbursement by Department of Education.
- ◊ Minimizes disruption of students and school operations during construction..
- ◊ Optimizes the use of playing fields.
- ◊ Best long term planning and educational solution.
- ◊ Best long term use of tax dollars and ability to maximize State Reimbursement.
- ◊ Optimizes distribution of parking for playing fields and building uses.
- ◊ Accreditation issues resolved.
- ◊ Energy efficient building.

## Disadvantages

### Public Safety

- ◊ Acquisition of property not definitive.

### High School

- ◊ Higher cost than renovation/Addition options
- ◊ Some Playing fields disrupted during construction.

# A-2

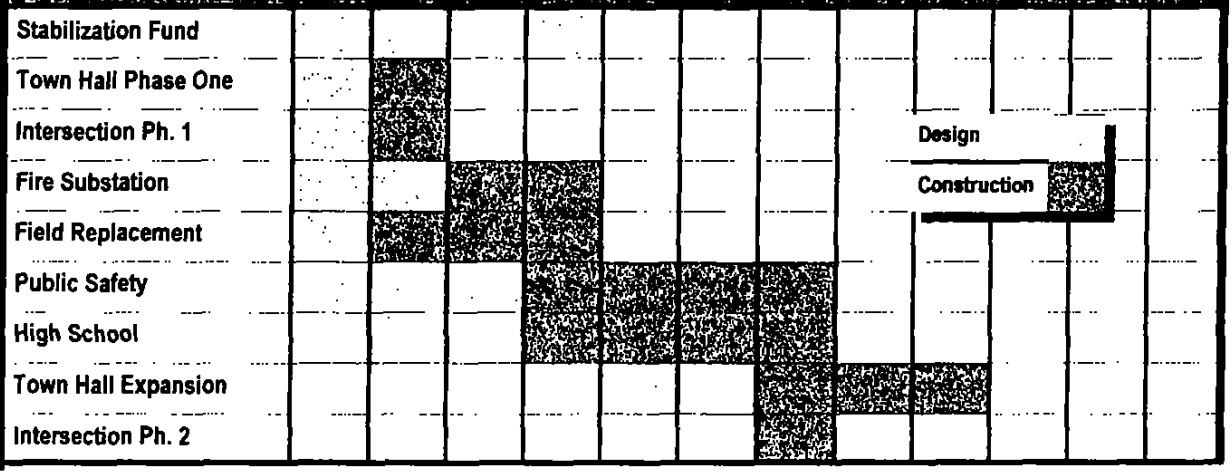
# High School at Middle Field
# Public Safety at Upper Field

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ 5.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 15.00 | $ 15.00 | $ 15.00 | $ 13.13 |
| Intersection Ph. 1 | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ - | $ 6.25 |
| Fire Substation | $ 2.75 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 27.50 | $ 24.72 |
| Field Replacement | $ 33.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ - | $ 16.31 |
| Public Safety | $ 5.50 | $ 5.00 | $ 35.00 | $ 55.00 | $ 127.50 | $ 120.00 | $ 115.00 | $ 110.00 | $ 71.63 |
| High School | $ 44.00 | $ 132.50 | $ 220.00 | $ 217.50 | $ 150.00 | $ 150.00 | $ 147.50 | $ - | $ 132.69 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total by Year | $ 85.25 | $ 185.00 | $ 345.00 | $ 375.00 | $ 427.50 | $ 390.00 | $ 372.50 | $ 210.00 | $ 298.78 |
| Change from prior year | $ 85.25 | $ 99.75 | $ 160.00 | $ 30.00 | $ 52.50 | $ (37.50) | $ (17.50) | $(162.50) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario places a new High School at the middle fields above the current High School. The amount of space afforded by the middle field area and the ability to continue construction without disruption to the students are primary reasons for the favorable location. A primary issue is the relocation of fields to accommodate the High School. Due to this action the schedule for the High School will be impacted. The Public Safety Facility is a combined Fire and Police Facility located at the Upper Field on the High School property. The location of a combined Public Safety Facility is dependent on providing the best response times for the Fire Department. This location would be the second highest rated location for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The combination of these alternatives creates a scenario where the High School and Public Safety are not interdependent. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# A-2 High School at Middle Field Public Safety at Upper Field

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine location and number of fields and acquire property or interest in property. |
| **Public Safety** | Requires that fields be replaced prior to construction. |
| **High School** | Replacement of fields necessary prior to construction. |
| **Town Hall Expansion** | Requires that Fire Department move out prior to construction. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.66 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| **Stabilization Fund** | NA | 1,000,000 | NA | 1,000,000 | | |
| **Town Hall Phase One** | | 1,000,000 | 120,000 | 1,120,000 | none | |
| **Intersection Ph. 1** | NA | 250,000 | 150,000 | 400,000 | none | |
| **Fire Substation** | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| **Field Replacement** | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| **Public Safety** | 47,209 | 8,200,000 | 738,000 | 8,938,000 | none | 125,576 |
| **High School** | 229,758 | 38,635,000 | 8,140,000 | 46,774,000 | 17,306,380 | 611,156 |
| **Town Hall Expansion** | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| **Intersection Ph. 2** | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

Reimbursement for schools at 37% of Total Cost column.

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Best Location for public safety. Site serves 80% of the population within five minutes.
- ◊ Access to multiple roadways.
- ◊ High visibility on main roadway
- ◊ Combined facility coordinates total public safety effort.
- ◊ Reduces cost over separate facilities by approximately $800,000
- ◊ No acquisition cost or issues.

### High School

- ◊ Approved for reimbursement by Department of Education.
- ◊ Minimizes disruption of students and school operations during construction..
- ◊ Optimizes the use of playing fields.
- ◊ Best long term planning and educational solution.
- ◊ Best long term use of tax dollars and ability to maximize State Reimbursement.
- ◊ Optimizes distribution of parking for playing fields and building uses.
- ◊ Accreditation issues resolved.
- ◊ Energy efficient building.
- ◊ All codes in compliance.

## Disadvantages

### Public Safety

- ◊ Public Safety complex reduces land area for High School project.
- ◊ Requires waiting for fields to be replaced before construction.

### *High School*

- ◊ Higher cost than renovation/Addition options
- ◊ Second vehicular access very desirable, but requires land acquisition.
- ◊ Playing fields disrupted during construction.

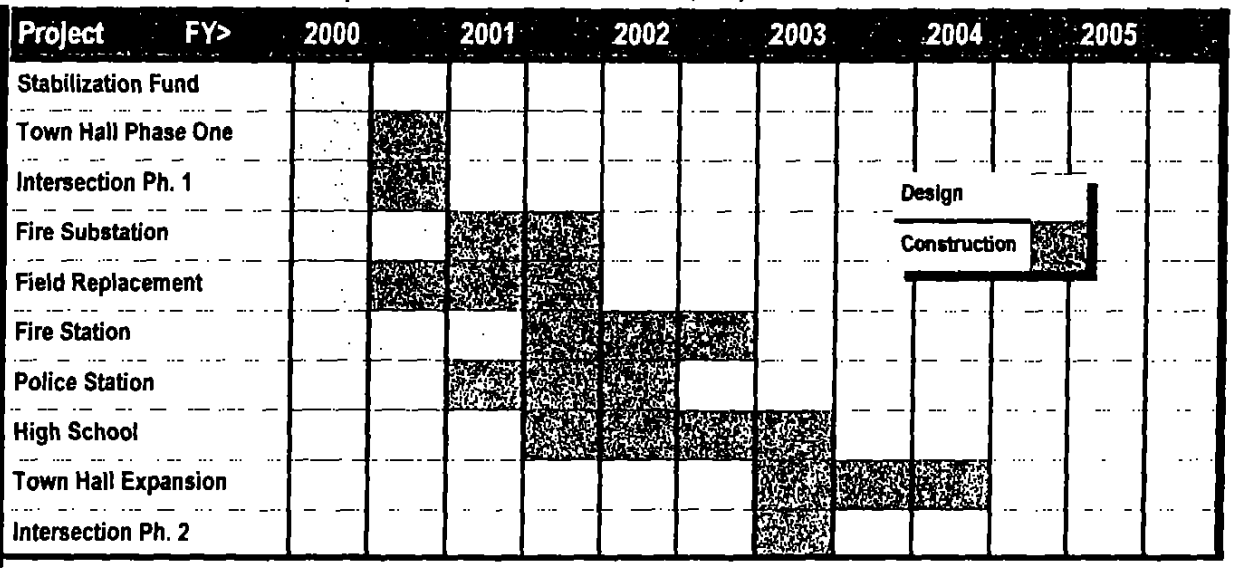
# A-3 High School at Middle Field Fire Station and Police Station Separate

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ - | $ 5.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 15.00 | $ 15.00 | $ 11.25 |
| Intersection Ph. 1 | $ - | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ 6.25 |
| Fire Substation | $ - | $ 2.50 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 21.25 |
| Field Replacement | $ - | $ 30.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ 15.94 |
| Fire Station | $ 2.75 | $ 30.00 | $ 75.00 | $ 72.50 | $ 67.50 | $ 70.00 | $ 62.50 | $ 60.00 | $ 55.03 |
| Police Station | $ 5.50 | $ 25.00 | $ 60.00 | $ 57.50 | $ 55.00 | $ 52.50 | $ 50.00 | $ 47.50 | $ 44.13 |
| High School | $ - | $ 40.00 | $ 132.50 | $ 220.00 | $ 217.50 | $ 150.00 | $ 150.00 | $ 147.50 | $ 132.19 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total by Year | $ 8.25 | $ 127.50 | $ 315.00 | $ 460.00 | $ 492.50 | $ 417.50 | $ 377.50 | $ 362.50 | $ 320.09 |
| Change from prior year | $ - | $ 119.25 | $ 187.50 | $ 145.00 | $ 32.50 | $ (75.00) | $ (40.00) | $ (15.00) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario places a new High School at the middle fields above the current High School. The amount of space afforded by the middle field area and the ability to continue construction without disruption to the students are primary reasons for the favorable location. A primary issue is the relocation of fields to accommodate the High School. Due to this action the schedule for the High School will be impacted. The Fire and Police Facilities are separate. The Fire Facility can be located at the Upper Field or at a property along Prescott across from the Upper Field. The location of the Fire Department is dependent on providing the best response times . The above locations would be the highest rated for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The Police Station site would be along Route 125 behind the Atkinson and Middle Schools. This location was seen as a benefit to provide greater security in the heart of the Middle and elementary schools. The separate facility scenario is seen as less favorable due to increased costs of two buildings and the reduction in Public Safety coordination opportunities. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# A-3 High School at Middle Field Fire Station and Police Station Separate

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine location and number of fields and acquire property or interest in property. |
| **Fire Station** | Requires that fields be replaced prior to construction if the upper field is used.<br>Requires land acquisition and realignment of Osgood for Triangle site. |
| **Police Station** | Requires approval of school for use of 125/Atkinson property. May affect Atkinson plans. |
| **High School** | Replacement of fields necessary prior to construction. |
| **Town Hall Expansion** | Requires that Fire Department move out prior to construction. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.66 /Sq Ft Annual |
|---|---|---|---|---|---|---|
| **Stabilization Fund** | NA | 1,000,000 | NA | 1,000,000 | | |
| **Town Hall Phase One** | | 1,000,000 | 120,000 | 1,120,000 | none | |
| **Intersection Ph. 1** | NA | 250,000 | 150,000 | 400,000 | none | |
| **Fire Substation** | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| **Field Replacement** | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| **Fire Station** | 22,517 | 4,485,074.37 | 705,197.89 | 5,190,272.26 | none | 59,895 |
| **Police Station** | 28,932 | 5,132,596.04 | 834,332.65 | 5,857,925.69 | none | 76,959 |
| **High School** | 229,758 | 38,635,000 | 8,140,000 | 46,774,000 | 17,306,380 | 611,156 |
| **Town Hall Expansion** | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| **Intersection Ph. 2** | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

Reimbursement for schools at 37% of Total Cost column.

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Separate facilities allow for more site choices.
- ◊ Separate Facilities allows projects scheduling to move faster for Town Hall.
- ◊ Separate Facilities allows the decision to schedule separate projects.

### High School

- ◊ Approved for reimbursement by Department of Education.
- ◊ Minimizes disruption of students and school operations during construction..
- ◊ Optimizes the use of playing fields.
- ◊ Best long term planning and educational solution.
- ◊ Best long term use of tax dollars and ability to maximize State Reimbursement.
- ◊ Optimizes distribution of parking for playing fields and building uses.
- ◊ Accreditation issues resolved.
- ◊ Energy efficient building.

## Disadvantages

### Public Safety

- ◊ Higher cost over combined facility
- ◊ Substantially reduced opportunity to establish a public safety team effort and coordinate responses.
- ◊ *Higher O&M Costs.*
- ◊ No opportunity for shared spaces and facilities.

### High School

- ◊ Higher cost than renovation/Addition options
- ◊ Some playing fields disrupted during construction.

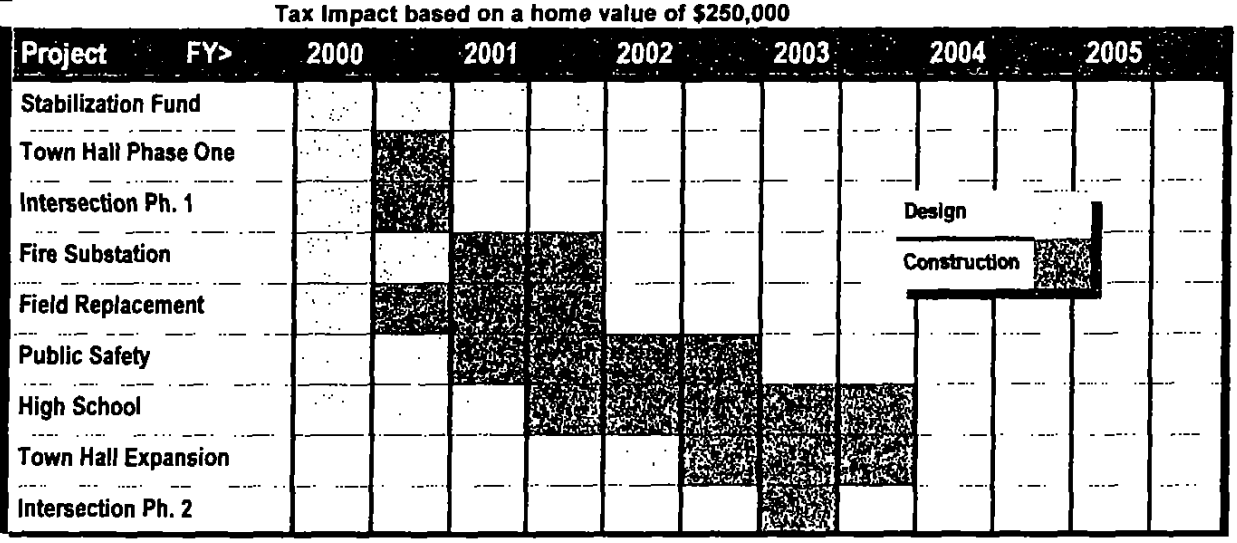
# B-1 High School Renovate/Additions Public Safety at Triangle

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ - | $ 2.50 | $ 2.50 | $ 2.50 | $ 2.50 | $ 2.50 | $ 2.50 | $ 1.88 |
| Intersection Ph. 1 | $ - | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ 6.25 |
| Fire Substation | $ 2.5 | $ 2.50 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 21.56 |
| Field Replacement | $ 30.0 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ - | $ 15.94 |
| Public Safety | $ 10.0 | $ 30.00 | $ 50.00 | $ 122.50 | $ 117.50 | $ 112.50 | $ 107.50 | $ 102.50 | $ 81.56 |
| High School | $ - | $ 42.50 | $ 135.00 | $ 222.50 | $ 217.50 | $ 152.50 | $ 150.00 | $ 147.50 | $ 133.44 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 8.44 |
| Total by Year | 42.50 | $ 102.50 | $ 227.50 | $ 435.00 | $ 457.50 | $ 372.50 | $ 362.50 | $ 345.00 | $ 293.13 |
| Change from prior year | 42.50 | $ 60.00 | $ 125.00 | $ 207.50 | $ 22.50 | $ (85.00) | $ (10.00) | $ (17.50) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario uses the existing High School with substantial renovations and additions. . The primary issue with this scenario is the disruption that will be caused by the construction. While the supply of fields is not optimum the relocation of them would not be necessary. The schedule would not be impacted by the fields but it will be longer due to phased construction. The Public Safety Facility is a combined Fire and Police Facility located at the Triangle formed by Prescott, Osgood and Chickering. The location of a combined Public Safety Facility is dependent on providing the best response times for the Fire Department. This location provides the highest rated location for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The combination of these alternatives creates a scenario where the High School and Public Safety are not interdependent. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# B-1 High School Renovate/Additions Public Safety at Triangle

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine location and number of fields and acquire property or interest in property. |
| **Public Safety** | Requires acquisition of property, and realignment of Osgood Street to terminate at Prescott. |
| **High School** | Requires that construction be phased to accommodate ongoing High School use. |
| **Town Hall Expansion** | Requires that Fire Department move out prior to construction. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.66 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| **Stabilization Fund** | NA | 1,000,000 | NA | 1,000,000 | | |
| **Town Hall Phase One** | | 1,000,000 | 120,000 | 1,120,000 | none | |
| **Intersection Ph. 1** | NA | 250,000 | 150,000 | 400,000 | none | |
| **Fire Substation** | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| **Field Replacement** | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| **Public Safety** | 47,209 | 9,500,000 | 1,088,000 | 10,588,000 | none | 125,576 |
| **High School** | 232,427 | 38,024,000 | 8,885,000 | 46,909,000 | 17,356,330 | 618,256 |
| **Town Hall Expansion** | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| **Intersection Ph. 2** | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

Reimbursement for schools at 37% of Total Cost column.

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Best Location for public safety. Site serves 80% of the population within five minutes.
- ◊ Access to multiple roadways.
- ◊ High visibility on main roadway
- ◊ Use street right-of-way for site .
- ◊ Combined facility coordinates total public safety effort.
- ◊ Reduces cost over separate facilities by approximately $800,000
- ◊

### High School

- ◊ Lower cost than all new construction.
- ◊ Reimbursable by Department of Education

## Disadvantages

### Public Safety

- ◊ Acquisition of property not definitive.

### High School

- ◊ Prolonged construction schedule will disrupt education for three years.
- ◊ Approximately 3 million for temporary portables during construction. No permanent benefit for investment.
- ◊ Will require relocation of at least one grade level to another school during construction.
- ◊ Renovations/additions will negatively impact adjacent wetlands.
- ◊ Final design is compromised due to configuration of existing building.
- ◊ Difficulty locating the following during construction: parking, portables, construction materials, construction vehicles.
- ◊ Parking is remote from playing fields.

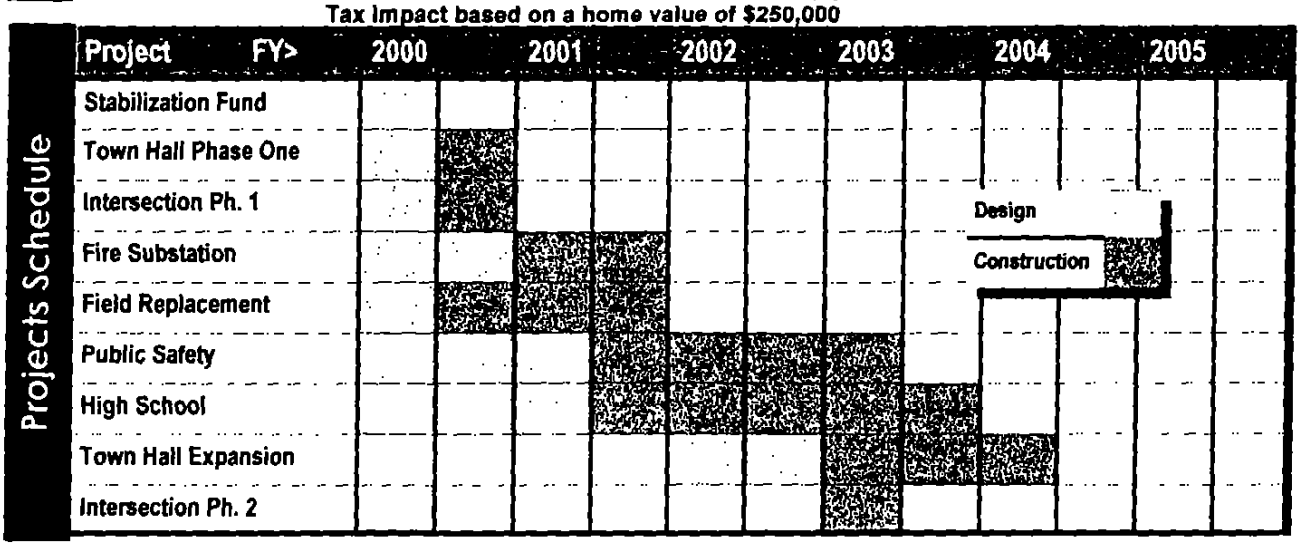
# B-2 High School Renovate/Additions Public Safety at Upper Field

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ - | $ 2.50 | $ 2.50 | $ 2.50 | $ 2.50 | $ 2.50 | $ 2.50 | $ 1.88 |
| Intersection Ph. 1 | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ - | $ 6.25 |
| Fire Substation | $ 2.75 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 27.50 | $ 24.72 |
| Field Replacement | $ 33.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ - | $ 16.31 |
| Public Safety | $ 5.50 | $ 5.00 | $ 35.00 | $ 55.00 | $ 127.50 | $ 120.00 | $ 115.00 | $ 110.00 | $ 71.63 |
| High School | $ - | $ 42.50 | $ 135.00 | $ 222.50 | $ 217.50 | $ 152.50 | $ 150.00 | $ 147.50 | $ 133.44 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total by Year | $ 41.25 | $ 90.00 | $ 242.50 | $ 365.00 | $ 480.00 | $ 380.00 | $ 362.50 | $ 345.00 | $ 288.28 |
| Change from prior year | $ 41.25 | $ 48.75 | $ 152.50 | $ 122.50 | $ 115.00 | $(100.00) | $ (17.50) | $ (17.50) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario uses the existing High School with substantial renovations and additions. The primary issue with this scenario is the disruption that will be caused by the construction. While the supply of fields is not optimum the relocation of them would not be necessary. The schedule would not be impacted by the fields but it will be longer due to phased construction. The Public Safety Facility is a combined Fire and Police Facility located at the Upper Field on the High School property. The location of a combined Public Safety Facility is dependent on providing the best response times for the Fire Department. This location would be the second highest rated location for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The combination of these alternatives creates a scenario where the High School and Public Safety are not interdependent. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# B-2 High School Renovate/Additions Public Safety at Upper Field

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine location and number of fields and acquire property or interest in property. |
| **Public Safety** | Requires that fields be replaced prior to construction. |
| **High School** | Requires that construction be phased to accommodate ongoing High School use. |
| **Town Hall Expansion** | Requires that Fire Department move out prior to construction. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.66 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| **Stabilization Fund** | NA | 1,000,000 | NA | 1,000,000 | | |
| **Town Hall Phase One** | | 1,000,000 | 120,000 | 1,120,000 | none | |
| **Intersection Ph. 1** | NA | 250,000 | 150,000 | 400,000 | none | |
| **Fire Substation** | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| **Field Replacement** | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| **Public Safety** | 47,209 | 8,200,000 | 738,000 | 8,938,000 | none | 125,576 |
| **High School** | 232,427 | 38,024,000 | 8,885,000 | 46,909,000 | 17,356,330 | 618,256 |
| **Town Hall Expansion** | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| **Intersection Ph. 2** | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

Reimbursement for schools at 37% of Total Cost column.

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Good Location for public safety. Site serves 80% of the population within five minutes.
- ◊ Access to multiple roadways.
- ◊ High visibility on main roadway
- ◊ Combined facility coordinates total public safety effort.
- ◊ Reduces cost over separate facilities by approximately $800,000
- ◊ No acquisition costs for site.

### High School

- ◊ Lower cost than all new construction.
- ◊ Reimbursable by Department of Education

## Disadvantages

### Public Safety

- ◊ Public Safety complex reduces land area for High School project.
- ◊ Requires waiting for fields to be replaced before construction.

### High School

- ◊ Prolonged construction schedule will disrupt education for three years.
- ◊ Approximately 3 million for temporary portables during construction. No permanent benefit for investment.
- ◊ Will require relocation of at least one grade level to another school during construction.
- ◊ Renovations/additions will negatively impact adjacent wetlands.
- ◊ Final design is compromised due to configuration of existing building.
- ◊ Difficulty locating the following during construction: parking, portables, construction materials, construction vehicles.
- ◊ Parking is remote from playing fields.

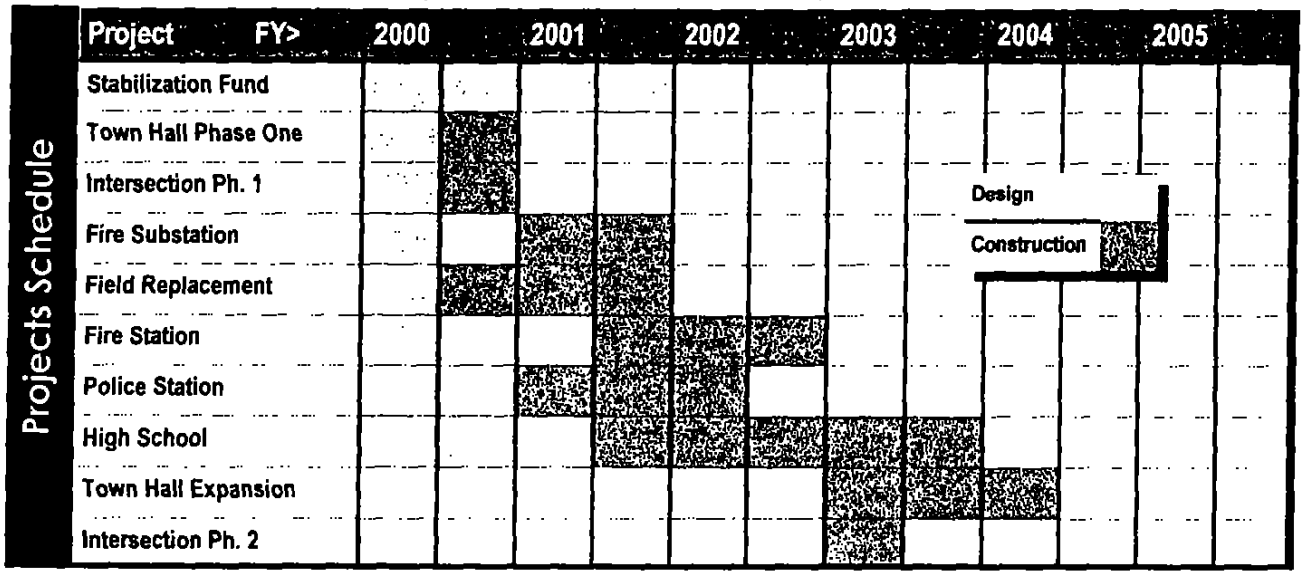
# B-3 High School Renovate/Additions Fire Station and Police Station Separate

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ - | $ 5.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 15.00 | $ 15.00 | $ 11.25 |
| Intersection Ph. 1 | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ - | $ 6.25 |
| Fire Substation | $ 2.75 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 27.50 | $ 24.72 |
| Field Replacement | $ 33.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ - | $ 16.31 |
| Fire Station | $ 2.75 | $ 30.00 | $ 75.00 | $ 72.50 | $ 67.50 | $ 65.00 | $ 62.50 | $ 60.00 | $ 54.41 |
| Police Station | $ - | $ 2.50 | $ 22.50 | $ 52.50 | $ 50.00 | $ 47.50 | $ 57.50 | $ 55.00 | $ 35.94 |
| High School | $ - | $ 42.50 | $ 135.00 | $ 222.50 | $ 217.50 | $ 152.50 | $ 150.00 | $ 147.50 | $ 133.44 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total Impact | $ 38.50 | $ 117.50 | $ 307.50 | $ 452.50 | $ 485.00 | $ 387.50 | $ 380.00 | $ 362.50 | $ 316.38 |
| Change from prior Year | $ - | $ 79.00 | $ 190.00 | $ 145.00 | $ 32.50 | $ (97.50) | $ (7.50) | $ (17.50) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario uses the existing High School with substantial renovations and additions. The primary issue with this scenario is the disruption that will be caused by the construction. While the supply of fields is not optimum the relocation of them would not be necessary. The schedule would not be impacted by the fields but it will be longer due to phased construction. The Fire and Police Facilities are separate. The Fire Facility can be located at the Upper Field or at a property along Prescott across from the Upper Field. The location of the Fire Department is dependent on providing the best response times . The above locations would be the highest rated for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The Police Station site would be along Route 125 behind the Atkinson and Middle Schools. This location was seen as a benefit to provide greater security in the heart of the Middle and elementary schools. The separate facility scenario is seen as less favorable due to increased costs of two buildings and the reduction in Public Safety coordination opportunities. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# B-3 High School Renovate/Additions Fire Station and Police Station Separate

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine location and number of fields and acquire property or interest in property. |
| **Fire Station** | Requires that fields be replaced prior to construction if the upper field is used.<br>Requires land acquisition and realignment of Osgood for Triangle site. |
| **Police Station** | Requires approval of school for use of 125/Atkinson property. May affect Atkinson plans. |
| **High School** | Requires that construction be phased to accommodate ongoing High School use. |
| **Town Hall Expansion** | Requires that Fire Department move out. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees Contingency | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.66 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| Stabilization Fund | NA | 1,000,000 | NA | 1,000,000 | | |
| Town Hall Phase One | | 1,000,000 | 120,000 | 1,120,000 | none | |
| Intersection Ph. 1 | NA | 250,000 | 150,000 | 400,000 | none | |
| Fire Substation | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| Field Replacement | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| Fire Station | 22,517 | 4,485,074.37 | 705,197.89 | 5,190,272.26 | none | 59,895 |
| Police Station | 28,932 | 5,132,596.04 | 834,332.65 | 5,857,925.69 | none | 76,959 |
| High School | 232,427 | 38,024,000 | 8,885,000 | 46,909,000 | 17,356,330 | 618,256 |
| Town Hall Expansion | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| Intersection Ph. 2 | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

Reimbursement for schools at 37% of Total Cost column.

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Separate facilities allow for more site choices.
- ◊ Separate Facilities allows projects scheduling to move faster for Town Hall.
- ◊ Separate Facilities allows the decision to schedule separate projects.

### High School

- ◊ Lower cost than all new construction.
- ◊ Reimbursable by Department of Education

## Disadvantages

### Public Safety

- ◊ Higher cost over combined facility
- ◊ Substantially reduced opportunity to establish a public safety team effort.
- ◊ Higher O&M Costs.
- ◊ No opportunity for shared spaces and facilities.

### High School

- ◊ Prolonged construction schedule will disrupt education for three years.
- ◊ Approximately 3 million for temporary portables during construction. No permanent benefit for investment.
- ◊ Will require relocation of at least one grade level to another school during construction.
- ◊ Renovations/additions will negatively impact adjacent wetlands.
- ◊ Final design is compromised due to configuration of existing building.
- ◊ Difficulty locating the following during construction: parking, portables, construction materials, construction vehicles.
- ◊ Parking is remote from playing fields.

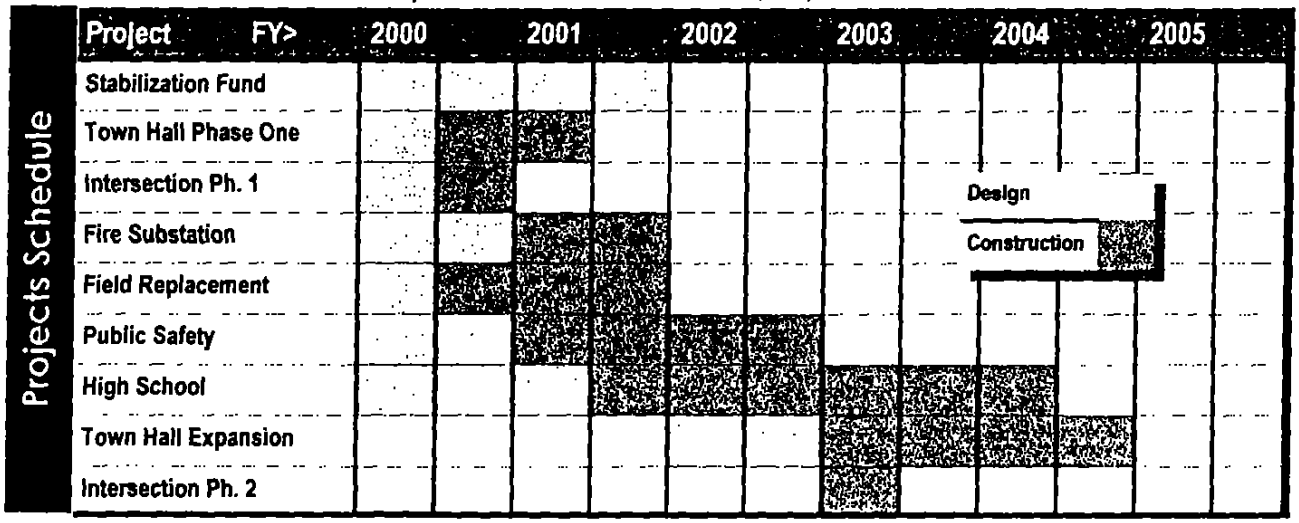
# C-1 High School No Action Minimal Renovation Public Safety at Triangle

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ 5.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 15.00 | $ 15.00 | $ 15.00 | $ 13.13 |
| Intersection Ph. 1 | $ - | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ 6.25 |
| Fire Substation | $ 2.75 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 27.50 | $ 24.72 |
| Field Replacement | $ 33.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ 22.50 | $ - | $ - | $ 19.13 |
| Public Safety | $ 11.00 | $ 30.00 | $ 50.00 | $ 122.50 | $ 117.50 | $ 112.50 | $ 107.50 | $ 102.50 | $ 81.69 |
| High School | $ - | $ 12.50 | $ 77.50 | $ 142.50 | $ 270.00 | $ 265.00 | $ 260.00 | $ 255.00 | $ 160.31 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total by Year | $ 46.75 | $ 87.50 | $ 210.00 | $ 367.50 | $ 537.50 | $ 520.00 | $ 480.00 | $ 465.00 | $ 339.28 |
| Change from prior year | $ - | $ 40.75 | $ 122.50 | $ 157.50 | $ 170.00 | $ (17.50) | $ (40.00) | $ (15.00) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario uses the existing High School with minimal renovations. The focus of the work is on improving the infrastructure of the High School. The disruption that will be caused by the construction is greater than the renovations and additions scenario. While the supply of fields is not optimum the relocation of them would not be necessary. The schedule would not be impacted by the fields but it will be longer due to phased construction. The Public Safety Facility is a combined Fire and Police Facility located at the Triangle formed by Prescott, Osgood and Chickering. The location of a combined Public Safety Facility is dependent on providing the best response times for the Fire Department. This location provides the highest rated location for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the siet is also highly visible. The combination of these alternatives creates a scenario where the High School and Public Safety are not interdependent. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# C-1 High School No Action Minimal Renovation Public Safety at Triangle

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | None planned for this scenario. |
| **Public Safety** | Requires acquisition of property, and realignment of Osgood Street to terminate at Prescott. |
| **High School** | Requires that renovations be phased to accommodate ongoing High School use. |
| **Town Hall Expansion** | Requires that Fire Department move out. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.66 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| **Stabilization Fund** | NA | 1,000,000 | NA | 1,000,000 | | |
| **Town Hall Phase One** | | 1,000,000 | 120,000 | 1,120,000 | none | |
| **Intersection Ph. 1** | NA | 250,000 | 150,000 | 400,000 | none | |
| **Fire Substation** | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| **Field Replacement** | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| **Public Safety** | 47,209 | 9,500,000 | 1,088,000 | 10,588,000 | none | 125,576 |
| **High School** | 201,000 | 27,320,000 | 2,600,000 | 29,920,000 | 29,919,960 | 534,660 |
| **Town Hall Expansion** | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| **Intersection Ph. 2** | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

No Reimbursement for Schools under this Scenario

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Best Location for public safety. Site serves 80% of the population within five minutes.
- ◊ Access to multiple roadways.
- ◊ High visibility on main roadway
- ◊ Use street right-of-way for site .
- ◊ Combined facility coordinates total public safety effort.
- ◊ Reduces cost over separate facilities by approximately $800,000

### High School

- ◊ Initial minimum costs
- ◊ Converts electric heat to gas fired equipment.

## Disadvantages

### Public Safety

- ◊ Acquisition of property not definitive.

### High School

- ◊ No Department of Education reimbursement.
- ◊ High long term costs.
- ◊ No educational improvement.
- ◊ Devaluation of current capital asset.
- ◊ Employs portable classrooms and other adhoc measures to address overcrowding.
- ◊ Millions spent on modular classrooms which have a limited life expectancy.
- ◊ Would not resolve accreditation issues.

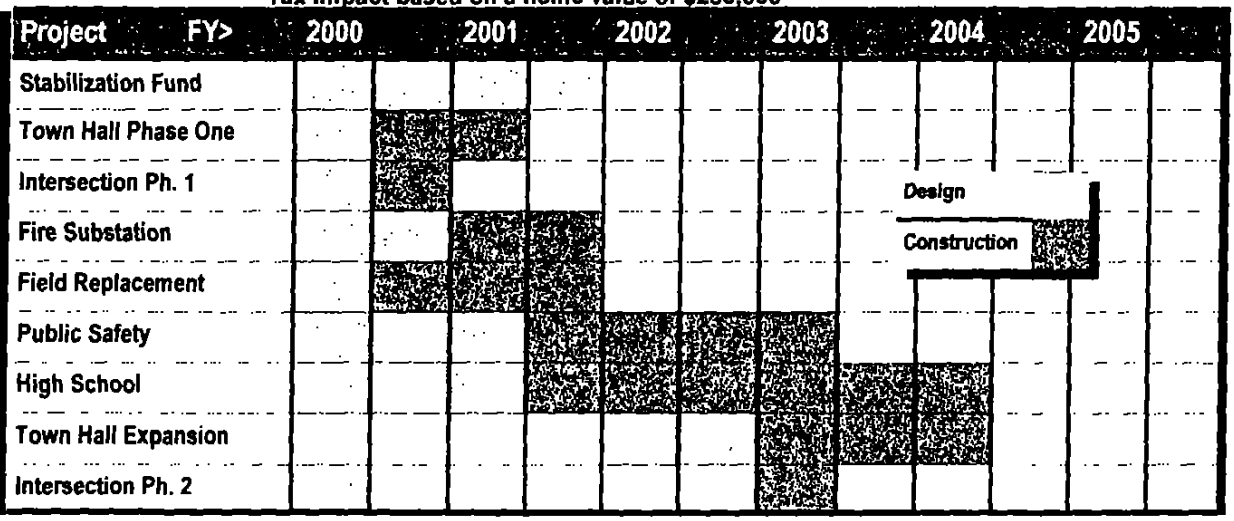
# C-2 High School No Action Minimal Renovation Public Safety at Upper Field

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ 5.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 15.00 | $ 15.00 | $ 15.00 | $ 13.13 |
| Intersection Ph. 1 | $ - | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ 6.25 |
| Fire Substation | $ 2.75 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 27.50 | $ 24.72 |
| Field Replacement | $ - | $ 30.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ 15.94 |
| Public Safety | $ 5.50 | $ 5.00 | $ 42.50 | $ 70.00 | $ 127.50 | $ 120.00 | $ 115.00 | $ 110.00 | $ 74.44 |
| High School | $ - | $ 12.50 | $ 77.50 | $ 142.50 | $ 270.00 | $ 265.00 | $ 260.00 | $ 255.00 | $ 160.31 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total by Year | $ 8.25 | $ 65.00 | $ 205.00 | $ 317.50 | $ 547.50 | $ 527.50 | $ 487.50 | $ 472.50 | $ 328.84 |
| Change from prior year | $ 8.25 | $ 56.75 | $ 140.00 | $ 112.50 | $ 230.00 | $ (20.00) | $ (40.00) | $ (15.00) | |

Tax impact based on a home value of $250,000

## Projects Schedule




## Scenario Description

This scenario uses the existing High School with minimal renovations. The focus of the work is on improving the infrastructure of the High School. The disruption that will be cause by the construction is greater than the renovations and additions scenario. While the supply of fields is not optimum the relocation of them would not be necessary. The schedule would not be impacted by the fields but it will be longer due to phased construction. The Public Safety Facility is a combined Fire and Police Facility located at the Upper Field on the High School property. The location of a combined Public Safety Facility is dependent on providing the best response times for the Fire Department. This location would be the second highest rated location for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The combination of these alternatives creates a scenario where the High School and Public Safety are not interdependent. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase involves the extension of the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# C-2 High School No Action Minimal Renovation Public Safety at Upper Field

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine locations of fields and acquire property or interest in property. |
| **Public Safety** | Requires that fields be replaced prior to construction. |
| **High School** | Requires that renovations be phased to accommodate ongoing High School use. |
| **Town Hall Expansion** | Requires that Fire Department move out. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.86 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| Stabilization Fund | NA | 1,000,000 | NA | 1,000,000 | | |
| Town Hall Phase One | | 1,000,000 | 120,000 | 1,120,000 | none | |
| Intersection Ph. 1 | NA | 250,000 | 150,000 | 400,000 | none | |
| Fire Substation | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| Field Replacement | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| Public Safety | 47,209 | 8,200,000 | 738,000 | 8,938,000 | none | 125,576 |
| High School | 201,000 | 27,320,000 | 2,600,000 | 29,920,000 | 29,919,960 | 534,660 |
| Town Hall Expansion | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| Intersection Ph. 2 | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

Fire Substation includes additional personnel costs

No Reimbursement for schools under this scenario

## Advantages

### Public Safety

- ◊ Good Location for public safety. Site serves 80% of the population within five minutes.
- ◊ Access to multiple roadways.
- ◊ High visibility on main roadway
- ◊ Combined facility coordinates total public safety effort.
- ◊ Reduces cost over separate facilities by approximately $800,000
- ◊ No acquisition costs for site.

### High School

- ◊ Initial minimum costs
- ◊ Converts electric heat to gas fired equipment.

## Disadvantages

### Public Safety

- ◊ Public Safety complex reduces land area at High School .
- ◊ Requires waiting for fields to be replaced before construction.

### High School

- ◊ No Department of Education reimbursement.
- ◊ High long term costs.
- ◊ No educational improvement.
- ◊ Devaluation of current capital asset.
- ◊ Employs portable classrooms and other adhoc measures to address overcrowding.
- ◊ Millions spent on modular classrooms which have a limited life expectancy.
- ◊ Would not resolve accreditation issues.

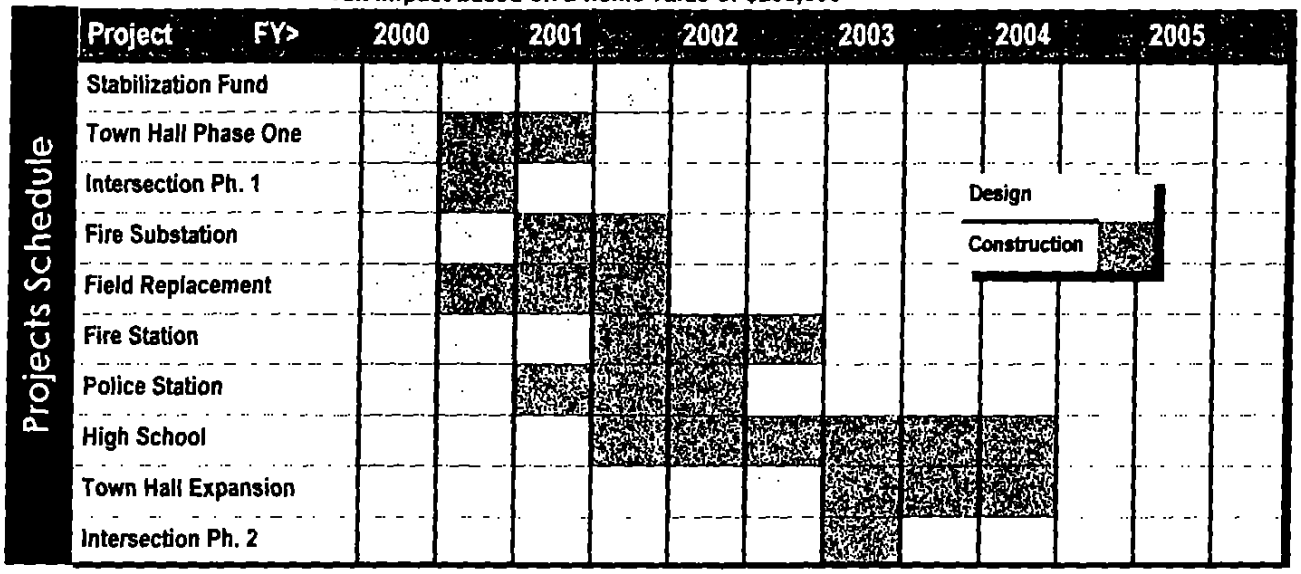
# C-3 High School No Action Minimal Renovation Fire Station and Police Station Separate

## Projects & Tax Impact

| Project FY> | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average |
|---|---|---|---|---|---|---|---|---|---|
| Town Hall Phase One | $ - | $ - | $ 5.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 15.00 | $ 15.00 | $ 11.25 |
| Intersection Ph. 1 | $ - | $ 2.50 | $ 10.00 | $ 10.00 | $ 10.00 | $ 10.00 | $ 7.50 | $ - | $ 6.25 |
| Fire Substation | $ 2.75 | $ 12.50 | $ 35.00 | $ 32.50 | $ 30.00 | $ 30.00 | $ 27.50 | $ 27.50 | $ 24.72 |
| Field Replacement | $ 33.00 | $ 27.50 | $ 25.00 | $ 22.50 | $ 22.50 | $ - | $ - | $ - | $ 16.31 |
| Fire Station | $ 2.75 | $ 30.00 | $ 75.00 | $ 72.50 | $ 67.50 | $ 65.00 | $ 62.50 | $ 60.00 | $ 54.41 |
| Police Station | $ - | $ 2.50 | $ 22.50 | $ 52.50 | $ 50.00 | $ 47.50 | $ 57.50 | $ 55.00 | $ 35.94 |
| High School | $ - | $ 12.50 | $ 77.50 | $ 142.50 | $ 270.00 | $ 265.00 | $ 260.00 | $ 255.00 | $ 160.31 |
| Town Hall Expansion | $ - | $ - | $ - | $ 15.00 | $ 50.00 | $ 45.00 | $ 42.50 | $ 40.00 | $ 24.06 |
| Intersection Ph. 2 | $ - | $ - | $ - | $ 5.00 | $ 20.00 | $ 20.00 | $ 17.50 | $ 17.50 | $ 10.00 |
| Total by Year | $ 38.50 | $ 87.50 | $ 250.00 | $ 372.50 | $ 537.50 | $ 500.00 | $ 490.00 | $ 470.00 | $ 343.25 |
| Change from prior year | $ - | $ 49.00 | $ 162.50 | $ 122.50 | $ 165.00 | $ (37.50) | $ (10.00) | $ (20.00) | |

**Tax Impact based on a home value of $250,000**

## Projects Schedule




## Scenario Description

This scenario uses the existing High School with minimal renovations. The focus of the work is on improving the infrastructure of the High School. The disruption that will be caused by the construction is greater than the renovations and additions scenario. While the supply of fields is not optimum the relocation of them would not be necessary. The schedule would not be impacted by the fields but it will be longer due to phased construction. The Fire and Police Facilities are separate. The Fire Facility can be located at the Upper Field or at a property along Prescott across from the Upper Field. The location of the Fire Department is dependent on providing the best response times . The above locations would be the highest rated for the Fire Department serving 80% of the town within 5 minutes. Located along a major roadway the site is also highly visible. The Police Station site would be along Route 125 behind the Atkinson and Middle Schools. This location was seen as a benefit to provide greater security in the heart of the Middle and elementary schools. The separate facility scenario is seen as less favorable due to increased costs of two buildings and the reduction in Public Safety coordination opportunities. The Fire Substation is an immediate need to address "Outcountry" population growth in concert with the replacement of the main station. Planned with the Fire Substation is the realignment of the Foster, Boxford intersection. This is viewed as an opportunity to take advantage of town ownership of a key parcel at the intersection before the Substation is constructed. Town Hall is addressed in two phases to immediately provide more efficiently and better access for the public. In the future after the Fire Station moves out Town Hall will be more completely renovated. The second intersection phase will extend the improvements up both Foster and Boxford. The intention of this portion of the project is to provide safe passage for school children to the planned school at Foster Farm.

# C-3 High School No Action Minimal Renovation Fire & Police Station Separate

## Actions / Notes

| | |
|---|---|
| **Stabilization Fund** | Fund $500,000 each year for two years. |
| **Town Hall Phase One** | Upgrade and replacement of HVAC. Make ADA accessible. |
| **Intersection Ph. 1** | May require additional land acquisition beyond Fire Substation property. |
| **Fire Substation** | Requires land acquisition. Requires additional manpower and equipment. |
| **Field Replacement** | Determine locations of fields and acquire property or interest in property. |
| **Fire Station** | Requires that fields be replaced prior to construction if the upper field is used.<br>Requires land acquisition and realignment of Osgood for Triangle site. |
| **Police Station** | Requires approval of school for use of 125/Atkinson property. May affect Atkinson plans. |
| **High School** | Requires that renovations be phased to accommodate ongoing High School use. |
| **Town Hall Expansion** | Requires that Fire Department move out. |
| **Intersection Ph. 2** | Work includes sidewalks and other improvements to facilitate school at Foster Farm. |

## Costs

| Project | Square Feet | Construction & Acquisition Cost | A & E Fees Soft Costs | Total Cost | Town Cost w/ Reimbursement | O & M @ 2.86 /Sq.Ft Annual |
|---|---|---|---|---|---|---|
| Stabilization Fund | NA | 1,000,000 | NA | 1,000,000 | | |
| Town Hall Phase One | NA | 1,000,000 | 120,000 | 1,120,000 | none | |
| Intersection Ph. 1 | NA | 250,000 | 150,000 | 400,000 | none | |
| Fire Substation | 11,300 | 2,557,000 | 336,000 | 2,893,000 | none | 960,058 |
| Field Replacement | NA | 1,000,000 | 10,000 | 1,010,000 | none | |
| Fire Station | 22,517 | 4,485,074.37 | 705,197.89 | 5,190,272.26 | none | 59,895 |
| Police Station | 28,932 | 5,132,596.04 | 834,332.65 | 5,857,925.69 | none | 76,959 |
| High School 0.0 | 201,000 | 27,320,000 | 2,600,000 | 29,920,000 | 29,919,960 | 534,660 |
| Town Hall Expansion | 25,099 | 2,800,000 | 160,000 | 2,960,000 | none | 66,763 |
| Intersection Ph. 2 | NA | 1,200,000 | 50,000 | 1,200,500 | none | |

No Reimbursement for schools under this scenario

Fire Substation includes additional personnel costs

## Advantages

### Public Safety

- ◊ Good Location for public safety. Site serves 80% of the population within five minutes.
- ◊ Access to multiple roadways.
- ◊ High visibility on main roadway
- ◊ Combined facility coordinates total public safety effort.
- ◊ Reduces cost over separate facilities by approximately $800,000
- ◊ No acquisition costs for site.

### High School

- ◊ Initial minimum costs
- ◊ Converts electric heat to gas fired equipment.

## Disadvantages

### Public Safety

- ◊ Public Safety complex reduces land area at High School .
- ◊ Requires waiting for fields to be replaced before construction.

### High School

- ◊ No Department of Education reimbursement.
- ◊ High long term costs.
- ◊ No educational improvement.
- ◊ Devaluation of current capital asset.
- ◊ Employs portable classrooms and other adhoc measures to address overcrowding.
- ◊ Millions spent on modular classrooms which have a limited life expectancy.
- ◊ Would not resolve accreditation issues.

# Appendix D
# Interim Reports to Town Meeting
# 1997 Analysis
# 1998 Goals and Objectives

# Appendix E
# Zoning Tables

# TABLE 1
## SUMMARY OF DIMENSIONAL REQUIREMENTS

Notes: Superscripts refer to the footnotes on pages FN1.1 through FN1.2

| | R1 | R2 | R3 | R4 | VR[14] | R5[6,7] | R6 |
|---|---|---|---|---|---|---|---|
| **LOT AREA MIN S. F.** | 87,120 | 43,560 | 25,000 | 12,500 | 11,000 | 43,560[7] | 130,680 |
| **Height Max. (ft)** | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| **Street Frontage Min. (ft.)** | 175 | 150 | 125 | 100 | 85[13] | 150 | 150[13] |
| **Front Setback Min. (ft)** | 30 | 30 | 30 | 30[8] | 25 | 30 | 25 |
| **Side Setback Min. (ft.)** | 30 | 30 | 20 | 15 | 15 | 25 | 15 |
| **Rear Setback Min (ft.)** | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| **Floor Area Ratio Max.** | N/A | N/A | N/A | N/A | N/A | 0.75:1 | 0.25:1[15] |
| **Lot Coverage Max** | N/A | N/A | N/A | N/A | N/A | 20% | 20% |
| **Dwelling Unit Den-sityMax/Acre** | N/A | N/A | N/A | N/A | 4/Acre[12] | Multi family[12] Town-house[7] | 9/Acre[12] |

| | B1 | B2[7] | B3 | B4 | PCD*** | VC | GB | I-1 | I-2 | I-3 | I-S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LOT AREA MIN S.F.** | 25,000 | 25,000 | 120,000 | 80,000 | 250,000 | 90,000[9] | 25,000 | 80,000 | 80,000 | 435,000 | 50,000 |
| **Height Max. (ft)** | 35 | 35 | 35 | 60 | 35*** | 40[17] | 45 | 55 | 55 | 55 | 55 |
| **Street Front-age Min. (ft.)** | 125 | 125 | 300 | 200 | 300 | 200 | 125 | 150 | 150 | 150 | 150 |
| **Front Setback Min. (ft)** | 30 | 25 | 100 | 50 | 100*** | 50[1,17]** | 25 | 50 | 50 | 100[10] | 30 |
| **Side Setback Min. (ft.)** | 20[2] | 25[2] | 50[3] | 50[3] | 50*** | 25[17]** | 25[2] | 50[3] | 50[3] | 200[10] | 20[2] |
| **Rear Setback Max (ft.)** | 30[2] | 30[2] | 50[3] | 50 | 50*** | 25[17]** | 35[2] | 50[3] | 50[3] | 200[10] | 30[2] |
| **Floor Area Ratio Max.** | 0.30:1 | 0.75:1 | 0.40:1 | 1.50:1 | .75:1 | N/A | N/A | 0.50:1 | 0.50:1 | 0.50:1 | 0.50:1 |
| **Lot Coverage Max** | 30% | 35% | 30% | 25% | 25% | 25% | 35% | 35% | 35% | 35%[11] | 35% |
| **Dwelling Unit DensityMax/ Acre** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

**Notes:**

* **Two (2) stories not to exceed 40 ft.**

** **Refer to Sections 8.1(13) and 8.4(6)**

*** **Refer to Section 15.4 for further explanation**

**Superscripts refer to the footonotes on pages FN1.1 through FN1.2**

# SUMMARY OF USE REGULATIONS

| *Permitted Use* | *Residential* | *Commercial* | *Industrial* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | R 1,2,3 | R4 | VR | R5 | R6 | B1 | B2 | B3 | B4 | PCD*** | VC | GB | I-1 | I-2 | I-3 | I-S |
| Agricultural Use* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes |
| Art Gallery | No | No | No | No | SP | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | No |
| Auto Service Station | No | No | No | No | No | No | Yes* | Yes* | No | No | No | Yes* | No | Yes* | No | SP |
| Auto & Vehicle Repair Body Shop | No | No | No | No | No | No | No | No | No | No | No | Yes | No | Yes | No | No |
| Bus Garage | No | No | No | No | No | No | No | No | No | No | No | Yes | No | Yes | No | Yes |
| Business & Other Offices | No | No | No | No | Yes | No* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Car Wash | No | No | No | No | No | No | No | No | No | No | Yes | Yes | No | Yes | No | No |
| Cemetary | Yes | Yes | Yes | Yes | Yes | No | No | No | No | Yes | No | No | No | No | No | No |
| Congregate Housing | No | SP | No | No | No | No | No | No | No | SP | No | No | No | No | No | No |
| Continuing Care Retirement Center | Yes* | No | No | No | No | No | No | No | No | No | No | No | No | No | No | No |
| Day Care Center (1985/22) | SP | SP | SP | SP | SP | SP | SP | SP | SP | SP | SP | SP | SP | SP | SP | SP |
| Eating and Drinking Establishment | No | No | No | No* | SP* | No* | Yes | Yes | No* | No | Yes | Yes | No* | No* | No* | SP |
| Funeral Parlor | No | No | No | No | SP | No | Yes | Yes | No | No | Yes | Yes | No | No | No | No |

# SUMMARY OF USE REGULATIONS

| *Permitted Use* | *Residential* | *Commercial* | *Industrial* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | R 1,2,3 | R4 | VR | R5 | R6 | B1 | B2 | B3 | B4 | PCD*** | VC | GB | I-1 | I-2 | I-3 | I-S |
| Golf Course | Yes | Yes | Yes | Yes | Yes | No | No | No | No | Yes | No | No | Yes | Yes | Yes | Yes |
| Guest House | No | Yes | Yes | Yes | Yes | No | No | No | No | Yes | No | No | No | No | No | No |
| Independent Eldetly Housing | Yes | No | No | No | No | No | No | No | No | No | No | No | No | No | No | No |
| Indoor Place of Amusement or Assembly | No | No | No | No | No | No | Yes | Yes | No | No | Yes | Yes | No | No | No | No |
| Indoor Ice Skating Facilities | No | No | No | No | No | No | No | No | No | No | No | No | SP | No | SP | No |
| Lumber, Fuel Storage or Contractor's Yard | No | No | No | No | No | No | No | No | No | No | No | Yes | No | Yes | No | Yes |
| Manufacturing* | No | No | No | No | No | No | No | No | No | No | No | No | Yes | Yes | Yes | Yes |
| Medical Center* | No | No | No | No | No | No | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | No |
| Motel or Hotel | No | No | No | SP | No | No | No | No | Yes* | Yes | No | No | No | No | No | No |
| Multi-family Dwellings and Apts. | No | No | Yes** | Yes | Yes* | Yes | SP | No | No | Yes | No | No | No | No | No | No |
| Municipal Rec. Areas | Yes | Yes | Yes | No | Yes | No | No | No | No | Yes | No | No | No | No | No | No |
| Nonprofit School | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| New Car Sales* | No | No | No | No | No | No | No | Yes | No | No | No | Yes | No | No | No | No |
| Nursing & Convalescent Homes | SP | SP | SP | SP | SP | No | No | No | Yes | SP | No | No | No | No | No | No |

# SUMMARY OF USE REGULATIONS

| *Permitted Use* | *Residential* | *Commercial* | *Industrial* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | R 1.2,3 | R4 | VR | R5 | R6 | B1 | B2 | B3 | B4 | PCD*** | VC | GB | I1 | I2 | I3 | IS |
| One Family Dwelling | Yes | Yes | Yes | Yes | Yes | Yes | No | No | No | Yes | No | No | No | No | No | No |
| Personal Services Establishment | No | No | No | No* | SP* | Yes | Yes | Yes | No* | No | Yes | Yes | No* | No* | No* | No* |
| Place of Worship | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Printing & Reproduction | No | No | No | No | SP* | No | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Private School for Profit | SP | SP | SP | SP | SP | No | Yes | Yes | Yes | SP | Yes | Yes | Yes | Yes | Yes | Yes |
| Professional Offices* | No* | No* | No* | Yes* | Yes* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Public Building or Use | SP | SP | SP | SP | SP | Yes | Yes | Yes | Yes | SP | Yes | Yes | Yes | Yes | Yes | Yes |
| Public Garages & Accessory Buildings | No | No | No | No | No | No | No | No | No | No | No | No | No | No | Yes | No |
| Public Service Corp. | No | No | No | No | SP | No | No | No | No | No | No | No | No | No | Yes | No |
| Public Sanitary DiSPosal Site | No | No | No | No | No | No | No | No | No | No | No | No | No | No | Yes | No |
| Public Storage of Equipment | No | No | No | No | No | No | No | No | No | No | No | No | No | No | Yes | No |

# SUMMARY OF USE REGULATIONS

| *Permitted Use* | *Residential Use* | *Commercial* | *Industrial* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | R 1,2,3 | R4 | VR | R5 | R6 | B1 | B2 | B3 | B4 | PCD*** | VC | GB | I-1 | I-2 | I-3 | I-S |
| Recreation Area | SP | SP | SP | SP | SP | SP | SP | SP | SP | Sp | SP | SP | SP | SP | SP | No |
| Research & Development Facilities | No | No | No | No | No | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Retail Establishment | No | No | No | No* | SP | Yes | Yes | Yes | No* | SP | Yes* | Yes* | No* | No* | No* | No* |
| Rooming House | Yes* | Yes* | Yes* | Yes* | Yes* | No | No | No | No | Yes* | No | No | No | No | No | No |
| Taxi Depot | No | No | No | No | No | No | Yes | Yes | No | No | Yes | Yes | No | No | No | No |
| Townhouses | No | No | No | Yes | Yes | No | SP | No | No | No | No | No | No | No | No | No |
| Two-family Dwelling | No | Yes | Yes | Yes | Yes | Yes | No | No | No | Yes | No | No | No | No | No | No |
| Veterinary Hospital & Kennel | No | No | No | No | No | No | No | No | No | No | No | No | No | Yes | No | No |
| Warehousing & Wholesaling | No | No | No | No | No | No | No | No | No | No | Yes | Yes | No* | Yes | No* | Yes |

* See detailed District Use Regulations

** Only with the provision of publicly owned and maintained sewers or Town approved and accepted private sewers, (see Footnote 12 of Table 2 - Dimensional Regulations) and with no more than five (5) dwelling units per structure.

*** Refer to Section 15.4 for further explanation.

SP With Special Permit only

NOTE: This chart is for summary information purposes only and is nor a substitute for the detailed district use regulations contained in Section 4 of this ByLaw

# Appendix F
# Zoning Organization Report