

TOWN OF WILMINGTON

MASTER PLAN 2001

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WILMINGTON MASTER PLAN

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WILMINGTON MASTER PLAN EXECUTIVE SUMMARY

Committed to the Future

The Town of Wilmington has many assets: strong sense of community, attractive town character, open space, a strong economic base, convenient access, and extensive wetlands and streams that serve as a resource for the town. The town also faces many challenges as regional growth pressures drive additional residential and economic development in town. In order to achieve a shared vision for the future, residents and town government must work together to manage growth in a consistent fashion.

The town and its residents recognize that they must take responsibility for protecting and enhancing the positive assets through this period of change, through commitments to the town's children, to the town's quality of life, and to the irreplaceable natural resources Wilmington shares with its neighbors. This commitment to the future is expressed in many ways, such as the recent investments in a new middle school, recreational facilities, and a new public safety building.

The town has also expressed its commitment to the future through new planning policies, such as conservation subdivision design, affordable housing initiatives, and an innovative multi-town planning project, conducted cooperatively with Burlington, Reading, and North Reading, to develop policies for growth and watershed protection in the region.

The Master Plan also represents a commitment to Wilmington's future, for it will be an important tool for the town as it makes decisions about land use, open space, and development. The Plan represents the efforts of the Master Plan Committee, numerous town officials, and countless community members who participated in the process. While participants represented diverse viewpoints, most townspeople share a common vision for Wilmington's future. At the core of this vision is the conviction that the town must carefully manage future growth so as to protect and enhance its assets, especially its natural resources, its character, and its family-orientation.

A Vision for Wilmington

Wilmington will be an attractive, family-oriented, and environmentally responsible community as it continues to grow. The Town Common will provide the focus for the town's civic and social life; compact, mixed use business districts will allow people to conduct business and interact with fellow residents in attractive, village-style environments. A variety of housing types will provide affordable choices for families, individuals, and seniors. The town will benefit from a network of protected, easily accessible open spaces, including areas for active recreation. Residents, businesses, and the town will work together to conserve water, protect water quality, and reduce disturbance in wetlands and aquifer recharge areas. Pedestrians and bicyclists will be able to reach key destinations throughout the town via a network of trails and sidewalks that will reduce the burden on the town's roadways. Residents will have meaningful opportunities to participate in town government, and the town as a whole will demonstrate consistency in its approach to planning. Decisions will be based on a comprehensive approach to community development that considers the impacts of town actions on both the human and natural environment.

Today's Challenges

Successful planning requires an understanding of how development over the last one hundred years has produced the Wilmington of today. The scattered farming community of the 19th century slowly grew into a streetcar suburb with clusters of development at Wilmington Depot, Silver Lake, North Wilmington, the Town Common, and other natural activity centers. Since 1950, dispersed development has radically transformed Wilmington. Single-family homes were built on farms and forests throughout town; commercial activity spread out along the town's major roadways; and industrial parks were built around the town's borders.

This dispersed development has changed the character of Wilmington. Many residents are concerned that continued growth due to Wilmington's desirability as a place to live will adversely affect the town's positive qualities and environmental resources. The Town has lost 20% of its forested areas since 1990, and residential development can rapidly consume the Town's remaining open spaces. Growth also threatens the Ipswich River, which often runs dry during the summer, in part because of water supply withdrawals. Development can reduce recharge to the underlying aquifer and can impair the water quality of local streams. Wetlands and their buffer zones – critical for aquifer protection, flood control, and wildlife – are threatened by existing and future development. In commercial areas, strip development worsens traffic and degrades town character. The Town's central business district and neighborhood business areas lack vitality. The rising cost of living and the limited housing options for seniors and working families threatens the diversity of the Wilmington community.

Despite the challenges, residents are confident that the town can capitalize on its positive qualities to achieve a positive vision for the future. Public meetings, surveys, and informal discussions during the master planning process allowed residents to describe their vision for Wilmington's future.

The Master Plan

This Master Plan will help the town to manage today's challenges and work toward a shared vision for the future. The Plan represents the efforts of the Master Plan Committee, a diverse group of residents and town officials representing a broad array of interests, and the participation of community members through workshops, surveys, and countless informal discussion. The process used community input to formulate a Vision for Wilmington's future and defines six major town goals. The Committee prioritized those goals based on importance to the community, time sensitivity, and other factors; and it considered a large set of coordinated actions that can be taken to achieve those goals. This plan explicitly endorses some of those actions; others are described and left for future consideration by the town.

The Master Plan is not a rigid framework for future development. Its adoption does not imply that future actions cannot deviate from the recommendations therein. Rather, the Plan presents a set of principles against which future decisions (both large and small) must be evaluated. The prioritized list of goals is very important, for it can help to resolve future conflicts when it seems that various goals are at odds. Town officials and residents must be mindful that private decisions and actions, as well as public decisions at board meetings and town meetings, will affect the achievement of this vision for Wilmington.

The Master Plan does not represent the final stage in planning for Wilmington's future. However, it is a critical step in identifying the challenges facing the town and establishing the values which should influence town policy and decisions. More effort will be required to solidify consensus on the goals and vision of the plan, to revise and implement the recommendations, and to evaluate and update the plan on a regular basis.

Goals for Wilmington

1. Protect and preserve open space and natural resources.
2. Protect water resources, including wetlands, watersheds, and local waterways.
3. Promote the development of vibrant activity centers while maintaining a small-town feel.
4. Increase the diversity of housing and the stock of affordable housing while preserving town character.
5. Encourage appropriate and desirable economic development by promoting a mix of compatible land uses.
6. Improve internal vehicle circulation and pedestrian and bicycle mobility.

Major Recommendations

The Master Plan includes many recommendations; most of which are potential town actions in the areas of zoning, land acquisition, departmental policies, infrastructure investments, and further planning studies. Major plan recommendations are summarized below, organized according to the broad community goals above, in order of priority.

Preserve Open Space

Acquisition of land or development rights is strongly recommended as the best way to preserve priority open space land, including conservation areas and sites for recreation facilities, both of which are desired by community members. The town should evaluate forming a regional land trust in consortium with neighboring towns to allow the town to move faster to secure options on desirable parcels. The Community Preservation Act is a new tool that Wilmington could use to establish a dedicated revenue stream for acquisition of land. Information on the Act is included in the Master Plan. The Committee will continue discussions on this concept.

Zoning mechanisms that encourage more efficient land use practices will help to accommodate anticipated growth without consuming the town's remaining undeveloped areas. The recently-adopted Conservation Subdivision Design bylaw will dramatically further the town's ability to protect open space by giving developers the option and flexibility to arrange homes on a site so as to preserve sensitive natural features and set aside open space for permanent protection.

Protect Water Resources

Wilmington should study the issue of reducing water withdrawals and the net export of water from the Ipswich River basin. The town is currently engaged in a comprehensive

water supply / wastewater planning effort that will address this and other infrastructure and policy questions. This Master Plan does not attempt to resolve those issues but identifies numerous planning issues that should be considered as the town works to resolve its future water and wastewater needs.

The town must consider the growth management implications of sewer construction, because it can allow new construction or increased density in existing residential neighborhoods and in commercial areas. Sewer extensions must be carefully planned to protect the character of existing neighborhoods and not promote additional strip development along the town's major roadways. Planning department policies should encourage the use of on-site septic systems wherever possible and environmentally sound, and the Water Supply / Wastewater Management Plan should investigate carefully the potential for package treatment to serve Neighborhood Activity Centers, smaller industrial areas, and cluster developments.

Water conservation must be a major focus of any water supply plan. The town should establish incentives for water conservation appliances and practices. A water conservation coordinator, the cost of which can be shared with neighboring towns, can provide technical assistance to businesses, manage an education program, monitor compliance, and seek additional funding for water conservation efforts. New sources of supply, outside of the Ipswich River basin should be used to reduce the withdrawal from local wells and the corresponding impact on the Ipswich River during low flow periods. A stormwater management bylaw that requires developers to retain and infiltrate water on-site will help to maintain flows in the River.

Encourage Development at Activity Centers

Vibrant, cohesive activity centers can provide a focus for social and economic activity and contribute to town character and sense of community. The Town Common should be the center of the town's civic life, and increased municipal activity here can enhance that role. This plan recommends that the town keep the Library at the Town Common and place the Town Hall and other public municipal uses at the Town Common. The Master Plan recognizes that a feasibility study for the Library will be completed in the near future, which will determine the best option for library expansion. The study will evaluate the existing site and potential relocation. The study will consider the implications of the various options in a broader context relative to the location of a new town hall/school administration building. The Plan also notes that there has been a municipal facilities plan completed as well.

The Plan also includes numerous recommendations that will promote the development of functional, vibrant "Neighborhood Activity Centers," with the Central Business District (CBD) being the most prominent. Other proposed NACs include North Wilmington and Perry's Corner, (Woburn St. / Lowell St.) A new Neighborhood Activity Center zoning district would permit a mix of uses, including shops, offices, townhouses, and apartments at a density similar to what is currently permitted in the CBD. Design guidelines will ensure that developments enhance town character, promote pedestrian access, provide opportunities for social interaction, and enable further economic development. Success of the NACs also requires managing strip development along the town's roadways through design guidelines, rezoning, or limitations to sewer extensions. The preservation of historic resources is also vital to Wilmington's Town Character. Historic neighborhood designations, design guidelines, and a historical review board will help to protect and enhance the town's historic buildings and other sites.

Increase Housing Diversity and Affordability

Housing affordability concerns in Wilmington are closely linked to the fact that the town's housing stock consists almost entirely of single-family homes. Very limited options are available for "empty-nesters" in Wilmington who generally must either remain in their homes or move out of town; working families and small families also have few affordable options. Greater housing diversity can be encouraged by permitting two-family homes and larger accessory apartments; and by allowing townhouses, condominiums, and senior housing in the Neighborhood Activity Centers and other appropriate areas in town. The Town should consider these options in the future. Where such developments are permitted, conservation measures should be required to balance increased density with preservation of open space and protection of natural resources. The town might also consider enacting an inclusionary zoning bylaw that uses incentives or mandates to persuade developers to include affordable housing in new developments.

Proactive actions might include joint development of affordable housing and other uses on town-owned land. Members of the Housing Partnership could incorporate as a nonprofit Community Development Corporation and pursue development opportunities for senior and affordable housing where it is appropriate. The Community Preservation Act or linkage fees might be considered as mechanisms to support construction and rehabilitation of affordable housing.

Promote Appropriate Economic Activity

Economic development is critical to the fiscal health of Wilmington. Commercial and industrial tax revenues reduce the tax burden on residential homeowners. However, future development of this type must consider the protection of critical environmental resources. Rezoning certain industrial areas to restrict future development to industrial activities that do not use large amounts of water or hazardous materials can reduce the environmental impacts of industrial activity. The Plan recommends the creation of a new Office or Office / Light Industrial zoning district which specifically excludes undesirable industries in environmentally sensitive areas and sites near neighborhoods and activity centers. The town should also develop better definitions in the Zoning Bylaw for permitted uses in industrial districts.

Because strip-style commercial development degrades town character and exacerbates traffic problems, the town should discourage further strip development and should promote focused development in Neighborhood Activity Centers through density bonuses and design guidelines. The town should also work with businesses to develop traffic management programs, such as a shuttle to industrial parks from MBTA stations.

Improve Mobility

Traffic congestion is a daily occurrence in Wilmington, and the town should continue to work to address transportation issues on a regional basis. However, recognizing that increasing road capacity rarely solves traffic congestion problems, this plan recommends town actions that will allow residents to conduct some errands and reach important local destinations without the use of an automobile. A concentration of commercial uses in pedestrian-friendly Neighborhood Activity Centers will reduce the need to drive to multiple destinations. A network of sidewalks and bicycle / pedestrian trails will allow people to reach Neighborhood Activity Centers and other destinations (such as schools, the Town Common, and recreation areas) safely and efficiently. The town should also investigate the feasibility of a multi-town public transit system connecting Wilmington to other area communities.

1 PROCESS AND PRINCIPLES

1.1 History of Master Planning Efforts

The previous Wilmington Comprehensive Plan was completed in 1970 by Professor Charles W. Eliot, a noted scholar and preeminent municipal planner of the time. Professor Eliot prepared the six-volume *Planning for Wilmington*, containing many proposals and recommendations for action to guide the town's growth and development.

Some of the recommendations of the 1970 Master Plan were implemented; many were not. In February 1996, Wilmington Selectmen and the Planning Board established a 40+ member advisory committee to review Eliot's 1970 report and make recommendations regarding its usefulness. The Master Plan Advisory Committee issued its report in January 1997, recommending a comprehensive update of *Planning For Wilmington*. The Committee also recommended hiring a professional planning firm to work with town residents, businesses, and staff to identify long-term goals and to specify actions to meet those goals.

In 1997, Wilmington Town Meeting appropriated \$30,000 to fund a master planning effort. The town hired Planners Collaborative Inc. to conduct public participation process and to prepare the master plan document. The work was conducted in coordination with a project entitled *Planning for Growth in the Upper Ipswich River Watershed*, a four-town planning effort intended to develop growth management tools that will improve the health of the Ipswich River.

1.2 Master Plan Committee and Planning Process

The 24-member Master Plan Committee includes individuals representing the Planning Board, School Committee, Conservation Commission, Housing Partnership, and many other town boards and organizations. The Committee met monthly from November 1999 to April 2001. Please see Appendix 1 for dates of the Master Plan Committee Meetings. The Committee decided to pursue a strong public participation process to solicit opinions regarding goals and vision for the town. The planning process involved public participation, research, presentation of draft recommendations, and review of these recommendations.

The consultant Planners Collaborative worked with the Master Plan Committee and Director of Planning and Conservation Lynn Duncan throughout the process. Planners Collaborative also interviewed town department heads, reviewed town records, and conducted research in both public and private libraries.

1.3 Public Participation

Public inputs into the process are described in the following sections.

1.3.1 Master Plan Committee Survey

Prior to the second Master Plan Committee meeting, Planners Collaborative distributed a survey to members of the Master Plan Committee to solicit input regarding major issues in Wilmington. The results of the survey were discussed at the Committee meeting in January 2000 and provided initial direction for the planning effort.

Committee members were asked to describe the important topics that should be addressed by the Master Plan, potential actions that should be studied, and the main challenges to making progress. Results of the Master Plan Committee Survey are included in Appendix 2. The important topics identified by the Committee included the following:

- Natural resources and the environment
- Open space and recreation
- Housing
- Consistency of town planning and zoning
- Central Business District
- Transportation
- Town character
- Economic development
- Infrastructure
- Education

1.3.2 Open Space Survey

During the summer of 1999, the Open Space and Recreation Committee conducted a town survey regarding open space and natural resources. The 16-question survey generated 1,479 responses, listing goals and priorities for protection of open space and preservation of town character. A copy of the survey and a tally of results are included in Appendix 3.

An overwhelming number of residents characterized Wilmington as a suburb, as opposed to a rural or industrial town; many also feel Wilmington is a town in transition, and that the pace of development in town is too rapid. Responses favored limitations or regulations on residential growth and felt that growth in general business and industrial uses should be restricted or limited to existing sites and developed areas.

Residents say positive aspects of Wilmington are location and access, the small town feel, and the character of fellow residents. Residents were also asked to identify what additional businesses they would like to see in Wilmington; the most common responses were recreation, restaurants, retail stores, and working farms. Negative aspects of life in Wilmington include traffic, rapid growth, and an unattractive business district that does not meet the needs of residents.

The Open Space Survey found strong support for additional undeveloped open space and recreation resources in town. Residents also supported preservation of historical buildings and sites and farmlands. Most respondents felt it was very important to preserve open space for a variety of reasons, including drinking water supplies, town character, wildlife, and recreation needs. Many residents indicated they would vote for the town to buy land and a large number also indicated they would be willing to place a conservation restriction or deed restriction on their land or sell land to the town at fair market value.

Responses were mixed regarding satisfaction with available recreation facilities in Wilmington. The recreational facilities listed most often as being desirable were bike trails, a large park with many facilities, local neighborhood parks, children's playgrounds, an outdoor skating rink, a swimming pool, and a recreation center building.

1.3.3 Visioning Workshop

The Master Plan Committee sponsored the Wilmington Visioning Workshop in February, 2000 to provide Wilmington residents with an opportunity to voice values, concerns and visions for the Town. Over 60 people attended the meeting and participated in large and small group discussions. Participants also contributed in writing. Meeting results were a major source of information regarding public opinion for this plan. Summary results of the Visioning Workshop are included as Appendix 4.

Workshop participants expressed generally positive opinions about Wilmington, describing it as friendly, family-oriented, convenient, and quaint. Wilmington possesses a wide range of qualities valued by its residents, including the following:

- Strong sense of community
- Diverse activities and institutions
- Attractive physical character
- Ample open space, natural resources, and recreation
- Convenient location and accessibility
- High quality schools and town services
- Low tax rate and affordability

Despite the positive qualities of Wilmington, there are major concerns regarding the future of the town. Many residents noted Wilmington is in a state of transition, describing it as "changing," "evolving," and "growing." Some residents stated that the town has already become "overdeveloped," "overpopulated," "crowded," and "congested." Participants generally stated that this change needs to be better managed, and identified a need for more proactive and consistent planning.

The workshop identified many potential goals or objectives to be pursued by the master planning process and the town in general. The issues raised can be organized into the following broad topic areas:

- Watershed Protection / Natural Resources
- Environmental Contamination
- Recreation Facilities
- Town Character and Appearance, including the Town Center
- Cultural and Commercial Amenities
- Planning / Land Use
- Traffic and Mobility
- Housing and Affordability
- Economic Development and Tax Base
- Education/Town Services
- Civic Participation and Input into Decision-Making

1.3.4 Subregional Forums and Roundtables

As part of the Planning for Growth project, Planners Collaborative organized three Subregional Forums to discuss growth issues and potential growth management efforts with four neighboring towns. Subregional forums were held in May 2000 and January 2001.

Planners Collaborative also organized three roundtable meetings in November and December 2000 to solicit input on draft recommendations for both the Wilmington and subregional projects. Participants at these roundtables included town officials, board and commission members, state and regional agencies, advocacy organizations, businesses, and members of the general public. Results of the roundtables were used to refine the recommendations for both projects and initiate the cooperative process needed to accomplish some of the regional recommendations.

1.4 Vision Statement and Goals

The results of the surveys, workshop, forums, and roundtables together describe values, issues of concern, and long-term goals for Wilmington and the subregion.

1.4.1 Wilmington Vision Statement

Based on the results of the public participation process, Planners Collaborative and the Master Plan Committee developed a Vision Statement for the town. Comments on the Vision Statement were solicited during the first subregional forum and via a project web site. The Vision statement is printed on the following page.

WILMINGTON VISION STATEMENT

Wilmington of the future will remain a family-oriented community where residents have opportunities to interact and build relationships through a diverse array of social and cultural activities and institutions. Residents will continue to have a strong sense of community. They will be well-informed about—and take advantage of opportunities to participate in—a well-managed town government where decisions are made in accordance with planning policies identified in a current master plan that has broad community support. These policies will be based on a comprehensive approach to community development that considers the impacts of town actions on both the human and natural environment.

Wilmington will have an attractive and diverse physical character. The Town Common area will be the focus of the community's municipal and public life; a vibrant downtown business district will provide ample shopping opportunities, diverse services, and employment sites for town residents. Residential neighborhoods will maintain their quiet suburban character. Town government and businesses will work together to promote economic development—a vital part of the community—while minimizing its impacts on residents.

The town will work to restore and maintain the valuable natural resources of the region. A network of protected and easily-accessible open spaces, including areas for active recreation, will remain a fundamental component of the town's character, through open space zoning and acquisition of land. Protection and restoration of the Ipswich River will be a basic goal of the town's efforts. Residents, businesses, and the town will work together to protect water quality, ensure an adequate supply of drinking water, and restore streamflows in the Ipswich River. Town by-laws and regulations will discourage tree clearing and wetland disturbance and will require retention and infiltration of stormwater to prevent flooding and increase groundwater recharge. The town will carefully manage activities within aquifer recharge areas and will work to ensure the remediation of contaminated sites. Residents and businesses will share a strong water conservation ethic reinforced by water department policies that promote conservation.

Overall affordability and high-quality schools will continue to make the town a diverse and desirable place to live. A variety of housing will provide choices for families, individuals, seniors, and the young. Pedestrians and bicyclists will be able to access key locations throughout the town via a network of trails and sidewalks that will reduce the burden on the town's roadways.

1.4.2 Goals

Based on the Visioning Workshop, community surveys, Subregional Forums, and discussions, the Master Plan Committee identified a set of widely-supported goals for the town. The six **Community Goals** adopted by the Committee are intended to provide guidance for town actions. Decisions made by town officials and boards should refer to these goals. In the event that goal conflicts arise, the Master Plan Committee adopted a weighted rank order of the goals, based on level of community concern, time sensitivity, and other factors. The rank ordering system is described in the section below, and supporting policies and actions for each goal are listed.

WILMINGTON COMMUNITY GOALS

- Protect and preserve open space and natural resources.
- Protect water resources, including wetlands, watersheds, and local networks of streams, brooks and rivers.
- Promote the development of strong town activity centers while maintaining a small-town feel.
- Use innovative mechanisms to increase the stock of affordable housing in town while accommodating community concerns and preserving town character.
- Encourage appropriate and desirable economic development by promoting mix of compatible land uses.
- Improve internal vehicular circulation and pedestrian mobility.

Many residents are concerned that the town is not addressing many planning issues in a proactive or consistent manner. It was recognized that achieving any other goals, such as those regarding open space, water resources, or town character, requires consistent municipal support and a sound structure for implementing new policies. In order to address this concern, the Committee adopted a set of **Procedural Goals** that outline the institutional conditions necessary in order to effectively implement the Master Plan and achieve issue-specific goals.

PROCEDURAL GOALS FOR WILMINGTON

- Actively plan for and manage growth in Wilmington; consistently implement planning and zoning controls in context of the master plan.
- Improve cooperation, coordination, and communication among Town offices, Town services, and Town trail networks in Wilmington and neighboring towns; protect natural resources (especially the Ipswich River) through sharing of resources.
- Promote citizen involvement in town affairs; promote volunteerism; continue to cultivate the strong sense of community among Wilmington residents.

1.4.2.1 Community Goals—Ranking and Elaboration

The following factors were considered in the rank ordering of goals.

- Perceived level of community concern, based on the sources above
- Time sensitivity
- Relationship to other goals
- Budget requirements and phasing

Planners Collaborative and the Master Plan Committee used a point system to rank these goals and describe their relative importance. A total of 100 points was distributed among the six goals. Thus, the list can be prioritized and the relative importance of various goals can be described.

Protect and preserve open space and natural resources.

22 Points

- Involve citizens in the maintenance of open space and recreation facilities;
- Develop additional recreation facilities and improve existing facilities;
- Acquire public land and development rights;
- Create a community education program to identify public open space and active and passive recreation opportunities.

Protect water resources, including wetlands, watersheds, and local networks of streams, brooks and rivers.

22 Points

- Evaluate alternate scenarios to the existing water use plan;
- Address groundwater contamination from industrial, residential, and commercial land uses;
- Promote water conservation techniques.

Promote the development of strong town activity centers while maintaining a small-town feel.

20 Points

- Enhance role of the town common as social, cultural, and municipal center;
- Increase economic vitality of the Route 38 business district;
- Develop, implement, and enforce commercial design standards; implement streetscape improvements.

Use innovative mechanisms to increase the stock of affordable housing in town while accommodating community concerns and preserving town character.

15 Points

- Work towards achieving state goals for affordable housing
- Consider generational continuity in assessing housing needs and opportunities;
- Identify ways for town to take a more active role in local development opportunities.

Encourage appropriate and desirable economic development by promoting mix of compatible land uses.

12 Points

- Minimize encroachment and impacts on residential neighbors and the environment.
- Promote economic developments that are not major water consumers or users of hazardous materials.
- Provide technical assistance to help businesses improve competitiveness while reducing water usage.
- Promote development of recreational businesses, especially open space or water-based recreation.

Improve internal vehicular circulation and pedestrian mobility.

9 Points

- Reduce neighborhood cut-through traffic;
- Investigate potential for a regional public transportation networks with access to retail opportunities and commuter rail stations;

2 MAJOR RECOMMENDATIONS TO ACHIEVE GOALS

Procedural Goals

- Collaborate with neighboring towns to develop a subregional list of priority open spaces.
- Establish a jointly-funded water conservation coordinator for Wilmington, Burlington, Reading, and North Reading.

Preserve Open Space

- Enact a Conservation Subdivision Design Bylaw.
- Identify and appropriate funds for open space protection
- Purchase open space for recreation (active and passive) and conservation purposes.
- Establish a subregional non-profit land trust to secure funding and acquire land.
- Incorporate regional criteria into open space acquisition priorities.
- Rezone the wedge of land west of I-93 from GI to R-60.
- Promote use of existing open space through public education.
- Continue efforts to upgrade handicap access at facilities and make all recreation programs accessible.
- Consider using artificial surfaces on playing fields.

Protect Water Resources

- Establish a water conservation coordinator position shared with neighboring towns.
- Develop Integrated Water Supply and Wastewater Management Plan.
- Study the potential for a joint wastewater treatment facility with North Reading.
- Protect potential subsurface wastewater discharge locations from development.
- Educate residents about protecting wetland resources.
- Consider implementing a conservation-oriented pricing structure.
- Require installation of water efficient fixtures and appliances before issuing a sewer connection permit.
- Consider providing density bonuses for on-site or local wastewater treatment to discourage sewer connections.
- Expand Groundwater Protection District to include Zone II recharge areas for public water supplies in neighboring towns.
- Enact a town-wide stormwater management bylaw requiring stormwater management systems in all new developments.
- Consider strengthening aquifer protection bylaws.
- Use town leverage to prompt action by the responsible party on noncompliant contaminated sites.

Town Character

- Enact a Conservation Subdivision Design bylaw.
- Establish a mixed-use Neighborhood Activity Center zoning district, similar to the Central Business District. Establish NAC zones in the CBD, North Wilmington, Perry's Corner, and Wilmington Plaza.
- Invest in infrastructure and property improvements that will facilitate redevelopment in the CBD.
- Keep the Library at the Town Common.
- Consider relocating other municipal uses, including the Town Hall to the Town Common when the opportunity arises.
- Discourage increased intensity of use in strip-style development along roadways.
- Downzone undeveloped GB Parcels to R-20.
- Enact a new Office / Light Industrial Zoning District. Consider rezoning the Sweetheart Plastics and Diamond Crystal sites to this new zone, in order to promote economic activity more compatible with the CBD.
- Establish a maximum floor-area ratio within the R-10 and R-20 districts to discourage construction of homes that appear "oversized" for the lot.
- Designate historic neighborhood districts at the Town Common and other historical areas; establish design guidelines and a review board, and require advisory (non-binding) design review.
- Provide funds to study the feasibility of a teen / youth community center located in one of the Neighborhood Activity Centers.

Housing Affordability

- Permit multifamily housing (townhouses and apartment buildings) in Neighborhood Activity Centers and in Conservation Subdivision Design developments.
- Permit duplexes (two-family houses) on lots larger than 30,000 sq. ft. in the R-10 and R-20 zoning districts and throughout the R-60 district.
- Modify zoning bylaws to allow 3-bedroom accessory apartments on lots larger than 30,000 square feet.
- Enact an Inclusionary Zoning Bylaw
- Grant density bonuses for affordable housing in cluster developments.
- Incorporate the Housing Partnership as a Community Development Corporation.
- Acquire land for housing developments and convey it to the CDC.
- Relax parking requirements for multifamily housing located within 1/2 mile of an MBTA commuter rail stop.

Economic Development

- Establish a new Office / Light Industrial zoning district and rezone some undeveloped General Industrial land to this new district.
- Focus non-industrial economic development in Neighborhood Activity Centers.
- Promote development of more space for retail shops and small businesses at or near Neighborhood Activity Centers.
- Revise zoning restrictions on home-based businesses.
- Use the existing low interest loan fund for small local businesses to grow and relocate.

Transportation

- Require pedestrian connections in new developments.
- Secure easements for through-connections of pathways.
- Implement selective regulation and design features to reduce through traffic in selected neighborhoods.
- Cooperate with surrounding towns to plan and develop local multi-town transit services for the area.
- Ensure that new developments are built to accommodate potential future bus service.
- Work with industries to adopt traffic management and vehicle trip reduction programs.
- Reduce parking requirements for housing located near a Commuter Rail stop.
- Reduce parking requirements for businesses located within Neighborhood Activity Centers.

3 LAND USE, TOWN CHARACTER, AND ZONING

3.1 The Wilmington Landscape

3.1.1 Natural History

Wilmington's natural history has great implications for planning in town because some natural features, including wetlands, ledge outcroppings, and hills have been (and are) limitations to development, while other features such as aquifers and waterways are important resources for the town. This section and those following refer to Figure 1, a map of Wilmington.

Wilmington's natural landscape includes many glacial features that formed throughout eastern Massachusetts during the last ice age. Mile-thick glaciers advanced through the area 20,000 years ago, exposing the bedrock and depositing a thin mantle of poorly sorted debris known as till. When the glaciers retreated, meltwater carried huge volumes of sand and gravel into the area. These "stratified drift deposits" filled ancient pre-glacial valleys and formed a relatively flat landscape interrupted by low hills. Wilmington is an excellent example of such an "outwash plain" landscape. Most of town lies between 75 and 120 feet above sea level, although some bedrock hills are 200 feet above sea level.

Following the glacial era, the Ipswich River established its rambling course through the outwash plain. Most of the town drains through five meandering brooks—Lubbers, Mill, Sawmill, Martins, and Maple Meadow—that, collectively, form the headwaters of the Ipswich River. While debate rages regarding the "true" headwaters of the Ipswich, the waterway starts to take on riverine characteristics only at the confluence of Lubbers Brook and Maple Meadow Brook near Woburn Street. Portions of the town also drain into the Shawsheen and Mystic River basins.

The stratified drift deposits in the watershed absorb large amounts of water during the winter and spring and then release it slowly to the river during the summer and fall. Because the area has such low relief, the water table is near the surface in most of town for at least a portion of the year. As a result, extensive wetland systems border the Ipswich River and its tributaries. Nearly one-fifth of Wilmington is currently underlain by wetlands; that fraction was probably even higher before human development and filling of wetlands. Wetlands perform many critical functions in Wilmington, including flood retention, wildlife habitat, removal of toxins and excess nutrients from runoff, and aquifer recharge.

In upland areas, thin soils developed on the rocky glacial till draped over the bedrock. Some deep soils formed in areas where the sandy, well-drained outwash deposits are not affected by a high water table.

Historical Development

Native Americans lived in Wilmington along its streams and ponds. About 1665, the first Europeans moved to the area and established an agricultural community that lasted until the early twentieth century. An early description of the landscape can be found in a 1651 publication entitled *The Wonder-Working Providence of Zion's Saviour in New England...* The author, Captain Edward Johnson, noted that the Ipswich River “riseth from a small pond in the hills, some five and twenty miles in the interior, and abruptly descends into a large and marshy swamp, inhabited only by wolves and bears.” Johnson was probably describing a beaver pond on Sawmill Brook within what is now Burlington. As Larz Neilson, a Wilmington resident, noted in 1955, “the ‘large and marshy swamp’ of course, is Wilmington.”

The town’s wetlands were so extensive that the southern portion of town was commonly known as “The Boggy End.” However, settlers also discovered that the moderate slopes and some lowlands “respond handsomely to faithful cultivation.” Eighteenth century farmers found that cranberries and hops grew vigorously in the wet areas, and apples in the sandy uplands. Settlers also farmed grains, hay, and vegetables. The Baldwin Apple was first cultivated in Wilmington in 1793. Lumber was cut from hardwood trees growing in the wet swampy areas of town. At least seven mills were constructed where there was falling water to power the works, on Martins Brook, Mill Brook, Sawmill Brook, Lubbers Brook, the Shawsheen River, and Revay Brook, near Reading.

Originally, the area now encompassed by the Town was part of Woburn and Reading. Because the land was part of two other towns, the earliest developments were not oriented around a centrally-located village. Rather, Wilmington’s earliest development was characterized by scattered development of widely-separated farmsteads.

Wilmington was incorporated as a town by vote of the General Court in 1730. Even after this time, however, the Town did not develop a strong Town Center. While the first churches were constructed near the current Town Common, a central, nondenominational meeting house was not established until construction of the Old Centre Schoolhouse in 1840. The Town Common itself was not established until after 1875.

The Middlesex Canal opened in 1803 after eight years of construction. The canal was an important transportation facility that carried goods and passengers along its 23 miles from Boston to Chelmsford. Canal construction was an engineering marvel (the “Big Dig” of its day), and portions of the Canal remain visible, including four aqueducts that carried the Canal over streams and brooks. The

Figure 1: Wilmington Geography

Canal fell into disuse after construction of the faster and more reliable Boston and Lowell Railroad in 1835. Two other railroads quickly followed with routes through Wilmington, hastening the demise of the Middlesex Canal as a commercial venture. By 1843, expenses exceeded receipts, and the Canal Company ceased operation in 1851.

The presence of three railroads (Boston and Lowell, Boston and Maine, Salem and Lowell) extending through town stimulated additional development. An 1856 map identified twelve shops, stores, or factories, distributed among three small commercial centers. Two of these were in Central Wilmington, at the railroad station (Church and Main Streets), and along Middlesex Avenue near the current Town Common. The third village area was located at the intersection of Woburn and Lowell Streets, known as “Perry’s Corner.”

In the late nineteenth century, a street railway was constructed from Reading Center to Billerica through Wilmington. It extended along Lowell and Main Streets to the center of town, crossed the railroad on the Burlington Avenue Bridge, turned right at the Middlesex canal towpath, and then followed Shawsheen Avenue into Billerica. A second street railway from Woburn ran along south Main Street and then extended north on Church Street, east on Wildwood Street, and south to Perry’s Corner at the intersection of Woburn and Lowell Streets.

As a result of railroad and streetcar access, Silver Lake became a summer cottage and camp site, attracting residents from Lowell and Boston. The activity associated with Silver Lake stimulated a flurry of real estate investment. Many of the early developments were seasonal cottages situated on tiny lots and narrow streets, often built on filled wetlands. These formed Wilmington’s first modern suburban neighborhoods. Year-round suburban development followed, and the population of Wilmington grew steadily from roughly 1,200 in 1890, to just over 4,000 in 1930.

3.1.2 Recent Development

With the advent of the automobile age in the 1920s, Wilmington’s main roads became important through streets carrying traffic to and from neighboring and distant towns. The construction of I-93 led to significant residential growth in Wilmington. The population increased dramatically: from 1955 to 1970, the population nearly doubled from 9,400 to 17,000. Although the town was hard-pressed to manage increases in demand for services, unprecedented industrial growth helped to stabilize the town’s finances and fund many needed improvements. During this first wave of large-scale commercial development, four industrial centers emerged: Southeastern Wilmington, East Wilmington (Concord Street), Northeastern

Wilmington (Ballardvale St.), and the center of town (Diamond Crystal and Sweetheart Plastics on Burlington Ave.).

Still, a strong town center never developed. The town lacked planning policies that promoted the development of a vibrant, attractive, mixed use districts. Rather, commercial enterprises were established along state highways in auto-oriented strip developments, encouraged by a zoning bylaw that required 125 foot minimum lot frontages in the General Business District, located along the town's major roadways.

Recent residential development has occurred primarily in subdivisions carved out of former forests or farms. As this type of development has spread out from the center of town to more outlying areas, it has changed the character of the formerly open spaces and unpopulated roadways.

3.2 Existing Land Use

3.2.1 Land Use Distribution

As of 1999, about 60% of Wilmington was developed land. Wetlands currently constitute 19% of the town, and 12% of the total land area is permanently-protected open space. Figure 2 is a land use map of Wilmington based on 1999 aerial photos. Table 1 shows land use acreage and percentages for 1991 and 1999 by major use categories.

Table 1 shows that there is a significant amount of open space remaining in Wilmington. Forests still cover 31% of town. Other open spaces—open wetlands, open land, water, cropland, nurseries, and pasture—cover another 10%.

Table 1 also indicates that residential uses dominate Wilmington's developed land. Residential uses cover roughly 4,400 acres, or 40% of the town's land area. Approximately half of this is occupied by small lots (<1/2 acre), and half by medium and large lots greater than 1/2 acre in size. While the land area is roughly equal, the higher density on smaller lots means that most Wilmington residents live on lots smaller than 1/2 acre.

Industrial and commercial uses cover nearly 12% of town.

Figure 2: Wilmington Land Use

Table 1: Wilmington Land Use

Land Uses	1999 Acres	1999 Percent	1991 Acres	1991 Percent	Change, 1991-1999	% Change 1991-1999
Forest, including forested wetlands	3,401.6	30.8%	4,234.0	38.4%	(833.0)	-20%
1/4 to 1/2 Acre Residential	2,326.8	21.1%	2,059.9	18.7%	266.9	13%
> 1/2 Acre Residential	2,048.9	18.6%	1,483.5	13.5%	565.4	38%
Industrial	943.5	8.6%	837.2	7.6%	106.3	13%
Open (non-forested) Wetlands	726.9	6.6%	717.0	6.5%	9.9	1%
Commercial	353.0	3.2%	267.9	2.4%	85.1	32%
Transportation ¹	287.3	2.6%	283.8	2.6%	3.5	1%
Urban Open ²	207.3	1.9%	308.7	2.8%	(101.4)	-33%
Sand & Gravel	201.3	1.8%	211.6	1.9%	(10.3)	-5%
Open land ³	166.5	1.5%	175.7	1.6%	(9.2)	-5%
Waste Disposal and Water Supply	74.3	0.7%	107.2	1.0%	(32.9)	-31%
Spectator Recreation ⁴	69.7	0.6%	77.5	0.7%	(10.8)	14%
Water	68.8	0.6%	68.8	0.6%	-	0%
Participation Recreation ⁵	53.9	0.5%	56.5	0.5%	(2.6)	-5%
Cropland	49.8	0.5%	69.1	0.6%	(19.3)	-27%
Pasture	14.5	0.1%	30.0	0.3%	(15.6)	-52%
Multifamily Residential	15.1	0.1%	8.4	0.1%	6.7	80%
Nursery, Orchard, etc.	6.3	0.1%	18.6	0.2%	(12.3)	-66%
Water-based Recreation	3.3	<0.1%	3.3	<0.1%	-	0%
Totals ⁶	11,018.2		11,018.7			

¹ Airports; docks; divided highway; freight; storage; railroads

² Schools, developed parks and playgrounds; cemeteries; public & institutional greenspace; vacant undeveloped land

³ Abandoned agriculture; power lines; areas of no vegetation

⁴ Athletic fields, stadiums; racetracks; fairgrounds; drive-ins

⁵ Golf; tennis; Playgrounds; skiing

⁶ Some changes in acreage are due to revised land use interpretation of aerial photos.

Source: MassGIS, MAPC, and Planners Collaborative update.

Various methodologies are available to estimate the amount of vacant, developable land in a town. Both Planners Collaborative and the Metropolitan Area Planning Council (MAPC) have estimated vacant developable land, using different methodologies.

Planners Collaborative used a land use-based analysis that discounted wetlands, permanently protected open space, and currently developed land. This analysis indicates there are roughly 1,900 acres of vacant developable land in Wilmington, approximately 17% of the total land area.

The MAPC analysis used a parcel-based methodology that excluded floodplains and the 0-100' Riverfront Zone, but not wetlands. This methodology also assumes if any portion of a site is developed, the remainder of the site will not be developed. As a result, MAPC estimated that there are roughly 1,300 acres of vacant, developable land in Wilmington.

The population growth implications of developable land in Wilmington are addressed in Section 4.3.

3.2.2 Recent Changes in Land Use

The eight years between 1991 and 1999 saw significant changes in land use in Wilmington. During that period, 833 acres of forested land, 7.4% of the town's total area, were converted to developed uses. Roughly 35 acres of cropland and pasture were likewise developed. Approximately 20 acres of land classified as sand and gravel pits, open land, or abandoned land were developed or redeveloped. Overall, 8.5% of the town's land area was converted from undeveloped to developed uses over the past decade. In addition, some abandoned sites and former sand and gravel pits were developed.

Most of the undeveloped land was converted to residential land uses, which grew by 847 acres, or 7.6% of the town's total land area. Over two-thirds of this residential development has been on lots greater than 1/2 acre, in either the R-20 or R-60 zone.

Industrial and commercial land uses have also grown considerably, adding 106 acres and 85 acres, respectively. Overall, 60% of Wilmington is developed and post-1990 development covers 9.2% of the town's area. This rapid and extensive development has stimulated widespread concerns about the impacts of new residential and commercial growth in town. In particular, many residents feel that recent development has affected the character of the town.

3.2.3 Remaining Developable Land

Planners Collaborative used MassGIS land use data, based on 1999 aerial photos, to map potentially developable land remaining in Wilmington. All vacant land was mapped; wetlands and permanently protected open spaces were removed from the analysis. Approved subdivisions were also removed from the analysis since they have a high probability of becoming developed in the short-term. While there are significant limitations on development within the 100-year floodplain, this land was not removed because it is still possible to build in the flood zone. Land currently classified as sand and gravel operations or waste disposal was considered developable because these areas can accommodate new construction based on site conditions. The Planners Collaborative analysis estimates that there are roughly 1,900 acres of vacant developable land remaining in Wilmington.

The results of the developable land analysis are depicted in Figure 3, which also shows parcel boundaries, and in Table 2, which lists total developable land according to its current land use.

Table 2: Remaining Developable Land in Wilmington

Land Use	Remaining Developable Land
Forest	1,546
Sand & Gravel	125
Abandoned Open Land	85
Waste Disposal	66
Urban Open Land	52
Cropland	42
Pasture	11
Nursery	6
Total	1,933

3.2.3.1 North of Salem Street

Figure 3 shows that the largest amount of remaining developable land in Wilmington is located north of Salem Street.

West of I-93

Most notably, the large triangle of land, bounded by I-93 on the east, Salem Street on the South, and Tewksbury to the west, includes nearly 400 acres of forest and forested wetlands, with some cropland and open land. This extensive forested area is contiguous with other undeveloped forest and wetland in Tewksbury, which extends west down towards the Shawsheen River and northeast towards the Wilmington Town Forest. The undeveloped land here in Wilmington is difficult to access, constrained by wetlands, and not proximate to any existing activity centers or nodes, either in Wilmington or Tewksbury. The land is zoned for residential use; a wedge of land along the highway is zoned for General Industrial uses.

This area has tremendous value as a regional open space resource; in conjunction with the land in Tewksbury, it is the largest unfragmented forest area in the subregion. As discussed below in Chapter 7, such unfragmented forest is important habitat for many species of wildlife, including birds such as pileated woodpecker, brown creeper, and ovenbird; and many mammals, including bobcat, fisher, and gray fox. While development on this site will be constrained by wetlands, the large amount of available land may eventually make it a desirable site for a large development. Such development should be clustered so as to minimize land consumption and forest fragmentation. Since large amounts of developable land exist on either side of the town boundary, Wilmington should work with Tewksbury to actively plan for development on this site, by establishing joint guidelines for clustered development.

North of Andover Bypass (Route 125)

East of I-93 and north of the Andover Bypass, there are multiple developable parcels zoned residential and industrial. There are two large properties, both zoned residential, that are currently—but not permanently—protected open space: Camp 40 Acres, a private camp surrounded on three sides by the Town Forest, and the Sciarappa Farm, which has been protected as agricultural land under chapter 61A. Other developable General Industrial land is available around the edges of the existing industrial development.

South of Andover Bypass (Route 125)

South of the Andover Bypass are large sand and gravel pits and forested areas broken up by extensive wetlands. This area is zoned residential and general industrial; zoning district boundaries here are very irregular. Wetlands may impede access to some developable land in the interior of this area. This entire area is also within the recharge area for the Brown's Crossing Wellfield and wells in North Reading. Due to the large amount of restoration required, sand and gravel pits are generally not desirable sites for redevelopment for residential uses, especially under large-lot zoning. Redevelopment for higher-return developments such as office or mixed uses is more likely. Appropriate development here might include mixed uses that have limited potential to degrade water quality in the underlying aquifer. Such uses might include office buildings, a hotel, clustered residential development, or compact commercial development. In order to reduce impacts on the site and protect groundwater, all uses should be clustered. Appropriate locations for such development are at the Andover Bypass / Andover Street intersection, and north of Salem Street at the North Reading border, where it might connect to potential development at the J.T. Berry site in North Reading.

Figure 3: Remaining Developable Land

Corey Property

There is a prominent undeveloped tract (the Corey Property) east of the Andover Bypass / I-93 interchange, south of the Andover Bypass. This property is zoned R-60. Current Mass Highway Department plans for the reconstruction of the highway interchange include an exit ramp directly onto the Corey Property. Its location near the interchange makes it a desirable location for highway oriented uses, such as a hotel. However, it has considerable value as open space and enhances the character of the area, which is a gateway into the town. As development pressures increase along the Andover Bypass, it will be critical to preserve open space frontage along this road in order to prevent the negative impacts of strip-style development, whether industrial or retail.

3.2.3.2 Central Wilmington

In the area south of Salem Street and north of Route 129 (Lowell Street, Main Street, Shawsheen Avenue), the remaining developable land occurs in small tracts, many of them on parcels that are already partially developed. Notable pieces or areas of developable land include the following: northwest of North Wilmington along the railroad tracks (Jefferson Road); and at the intersection of Federal and Woburn Streets. MASSGIS data also indicates that there is developable land behind Wilmington Plaza, although this may be wetland. Strips of developable land also exist along the highway both east and west of I-93; and at the north end of the East Wilmington Industrial Park on Concord Street.

3.2.3.3 South Wilmington

Burlington Border

In the section of town south of Route 129, there are significant large tracts of developable land in multiple parcels within the R-60 and R-20 districts along the border with Burlington and Billerica. Likely sites of development are located in the vicinity of Marion Street and Chestnut Street, because there are large tracts of residentially-zoned upland. This forested land is contiguous with other undeveloped land in Burlington, which that town is taking steps to protect. There are also scattered residentially-zoned tracts, south of Aldrich Road; and perhaps 30 contiguous acres of developable residential land between Lubbers Brook and Hopkins Street.

Perry's Corner

There are a total of roughly 20 developable acres, in separate tracts, in the residential district southeast of Perry's Corner (Woburn and Lowell Streets), although these parcels are broken up by wetlands and may be difficult to access. One notable piece of undeveloped upland is approximately four acres directly behind (south of) the shopping center at Perry's Corner, west of Woburn Street.

Southeast Wilmington

There is also developable land remaining in the GI district in southeast Wilmington. The largest tracts are located east of Main Street where it crosses the railroad tracks, north of Industrial Way, and along the Woburn Border just west of the MBTA tracks. West of Main Street at the Woburn border, there are perhaps 75 acres of developable forest and former waste disposal land. One large parcel that comprises roughly half of this area is owned by the town. Most of the former waste disposal site is privately owned and zoned residential. This area is within the Zone II direct recharge area for the Butters Row wellfield. The existing uncapped landfill is a major threat to the aquifer; future development should be carefully controlled to prevent land uses that have the potential to contaminate groundwater.

3.3 Land Use Controls

The Town of Wilmington can currently guide development through zoning regulations, site plan review, subdivision regulations, and a handful of other land use controls. In addition, there are health and environmental controls that affect land use. Figure 4 is a zoning map of Wilmington.

3.3.1 Residential Districts

About 76% of Wilmington is zoned for residential uses. Principal uses in the R-10, R-20, and R-60 zones are primarily single family homes. Agriculture, earth removal, municipal and educational facilities, religious uses, and conservation land are also permitted in the residential zones. The following residential uses are allowed by special permit: affordable housing developments built or operated by the Wilmington Housing Authority (referred to as “Community Housing Facilities”), and reuse of a school or municipal building for residential uses. With those two exceptions, multifamily residential uses are generally not permitted in the three standard residential zones. Attached homes are allowed in the Planned Residential Development Zone, described below. Philanthropic institutions, nursery schools, hospitals, nursing homes, and public service utilities are also allowed in residential zones by special permit.

3.3.1.1 R-10

The R-10 Zone occurs in the central third of Wilmington. The minimum lot area is 10,000 square feet, and the minimum lot width and street frontage is 100 feet. Buildings must be set back 30 feet from the front of the lot and 15 feet from the sides and rear of the lot. The R-10 zone is largely limited to dense neighborhoods developed in the early twentieth century, prior to zoning.

According to the MAPC buildout analysis, there are currently 18 acres of undeveloped land remaining in the R-10 zone. However, 10 acres are within wetlands or the state-protected outer Riverfront

Figure 4: Wilmington Zoning Districts

Zone; these environmental conditions constrain but do not necessarily preclude construction of single family homes. MAPC has estimated that the remaining developable land within the R-10 district could support 41 single-family homes. It is also likely that increasing housing pressures could bring on increased density as a result of additions to existing homes or wholesale replacement of small houses with larger structures.

3.3.1.2 R-20

The R-20 zone is the predominant residential zone in Wilmington, encompassing roughly 59% of the total land in town. This zone covers most of the central third of Wilmington, as well as some areas in the north and southwest portions of town. The minimum lot area is 20,000 square feet and the minimum lot width and street frontage is 125 feet. Front yard setbacks and side/rear setbacks are 40 feet and 20 feet, respectively. Because it is so extensive, the R-20 zone includes a diversity of developed and undeveloped areas in Wilmington. The zone covers dense neighborhoods in the center of town, recent subdivisions, and large undeveloped tracts. Most of the recent subdivisions built or approved in Wilmington are in the R-20 zone.

According to the recent buildout analysis by the MAPC, there are 787 acres of undeveloped land in the R-20 zone. Most of this land (505 acres) is upland. Development on the remaining 280 acres is constrained (but not necessarily prohibited) by wetlands, and the Riverfront Zone. Title V, which regulates the size and location of on-site septic systems, is also a constraint for residential development on small lots where municipal sewer is not available. As a result, sewer extensions (or the lack thereof) can act as an important growth control measure. MAPC has estimated that undeveloped land in the R-20 land could support nearly 900 single family homes.

3.3.1.3 R-60

The R-60 zone occurs in four areas in Wilmington; at the southern end of town between Main Street and Butters Row, at the west end of town south of Shawsheen Avenue, north of Salem Street along the Tewksbury border, and in northeast Wilmington along the border with North Reading and Andover. R-60 is the town's least dense residential zone; minimum lot size is 60,000 square feet, and minimum lot width and street frontage is 200 feet. The minimum front setback is 50 feet and minimum side and rear setbacks are 25 feet.

The R-60 zone is less developed than the other two residential zones, due in part to large tracts of wetlands, protected open space, steep slopes, and remote locations in the north of town. MAPC has estimated that there are 523 acres of undeveloped land in the R-60 zone. Most of this is upland; only 71 acres are in wetlands or the

Riverfront Zone. MAPC estimates indicate that 300 single-family homes could be constructed in the R-60 zone before it becomes “built out.”

3.3.1.4 PRD

The Planned Residential District (PRD) is intended to promote more compact development on large sites, thus preserving open space and natural resources. Permitted uses are single family attached and detached dwelling units and accessory uses. The minimum lot size is eight acres and the maximum density of dwelling units is three per acre, exclusive of wetlands and floodplain. This allows for greater density than existing zoning in any undeveloped areas in Wilmington. For example, an eight-acre lot that was 20% wetland or floodplain might support 19 units under the PRD, versus 16 under R-20 Zoning or 5 under R-60 zoning. While the PRD generally allows for increased net density, it preserves natural resources by requiring that 50% of the total development must be devoted to common open space. The provision also limits the size of individual buildings and require a 50 foot buffer around the entire site.

The exclusion of wetlands and floodplains from density calculations has important implications for the PRD, because it can act as a disincentive to developers, especially on sites with extensive wetlands.

There are no existing PRD zones. The bylaw requires a tract to be rezoned to PRD in response to a specific proposal by a developer. Because it constitutes a rezoning of land, approval of a PRD requires a 2/3 vote of Town Meeting. This requirement acts as a strong disincentive for proposing a PRD development. The exclusion of wetlands and floodplains from density calculations also presents a clustering disincentive that must be addressed by any potential cluster development or conservation subdivision design bylaw.

3.3.1.5 Accessory Residential Uses

Accessory apartments and the boarding of up to four people in a private residence are permitted as of right under the Wilmington Zoning Bylaw in all residential zoning districts, provided that the property owner resides on the premises. An accessory apartment cannot exceed 1,250 square feet, or contain more than two bedrooms. Boarding of more than four people may be authorized only by the Board of Appeals.

Since the Accessory Apartment Bylaw was approved by the town in 1993, the town has granted 27 permits for such apartments.

3.3.2 Commercial Districts

There are three commercial districts in Wilmington: General Business, Neighborhood Business, and Central Business District.

3.3.2.1 General Business District (GB)

The GB District is the town's basic commercial district. Permitted uses include retail, office, bank, services, funeral home, trades, trade schools, amusement facilities, and parking. Institutional uses (municipal, educational, religious, health care) are also permitted. Restaurants, hotels, veterinary care, and auto-related uses (dealership, body shop, service station, car wash) require a special permit. Residential uses are generally prohibited in the GB district, although community housing facilities and municipal building reuse are allowed by special permit. The minimum lot size for a development in the General Business District is 20,000 square feet, with a minimum lot frontage and lot width of 125 feet. Buildings must be set back from the front lot line by at least 20 feet. Side and rear setbacks are 20'; but where the lot abuts a residential district this setback is increased to 50' to provide a landscaped buffer. The building may cover only 35% of the lot, and at least 20% of each developed lot must be devoted to open space.

The GB district covers a large amount of frontage along the town's major roadways, although it does not represent much of the town's land area.

The GB zone accommodates much of the strip-style development disliked by many Wilmington residents. Buildings must be set back from the street, they cover only a small portion of the lot, and they are surrounded by parking. The open space requirement is usually met at the rear of the lot. Buildings are isolated from one another and are not easily accessible by pedestrians, requiring patrons to drive from one business to another. Traffic problems are worsened by numerous curb cuts. Auto-oriented uses such as garages and car dealerships are permitted throughout the district regardless of the appropriateness of their location. Because of the provisions in the GB Bylaw, even major redevelopment of some areas will not achieve the land use, traffic, or town character goals expressed by Wilmington residents; it will instead exacerbate the land-intensive and auto-oriented nature of the town's commercial activity.

3.3.2.2 Central Business District (CBD)

The Central Business District zoning allows for more intensive uses in a small, well-defined portion of the Town Center. Permitted uses in the CBD include retail, office, services, banks, limited service restaurant, lodges, craft shop, and parking facility. The following uses require a special permit: general service restaurant, hotel, veterinary care, trade school, and amusement facility. In contrast to the General Business District, auto-related businesses and funeral

homes are prohibited, and multifamily housing is allowed by special permit. Community housing facilities and municipal building reuse also require a special permit.

The CBD is designed to permit denser development in the Town Center. As such, minimum lot size is just 10,000 square feet and the minimum lot width is 40 feet. A five-foot front setback allows buildings to face the street in a pedestrian-oriented manner. While there is a required 20 foot rear yard setback, buildings may extend to the lot line where the lot abuts another commercial use. A 20 foot buffer is required where the lot abuts a residential district. Buildings may cover up to 50% of the site and the maximum height is 40 feet. As discussed above, parking requirements in the CBD are less stringent than in the GB district, and can be relaxed even further if there is a municipal lot of at least 60 spaces within 600 feet of the property.

As mentioned above, multifamily residential uses are permitted in the CBD. Such uses are permitted above the first floor of existing buildings, so long as there are no other commercial uses on that floor. New mixed-use (residential and commercial) construction must adhere to the standard CBD requirements, as well as any special permits that apply. New, entirely residential construction is permitted in the CBD on lots that are a minimum of 25,000 square feet. Additional requirements also apply. Maximum density is approximately 10 units per acre, and not more than 12 units are permitted in any one structure. Setbacks for exclusively-residential developments are increased over the standard CBD setbacks to 30 feet in the front and 50 feet in the side and rear. Buildings may cover only 30% of the lot and 40% of the area must be dedicated to open space.

3.3.2.3 Neighborhood Business District (NB)

The Neighborhood Business Zone is a commercial district, limited to a few small areas in town, that provides for less intense use than the General Business District. Retail stores, offices, services, banks, and craft shops are all permitted. Institutional uses are also permitted. Unlike the GB district, however, restaurants, veterinary care, auto-related uses, and parking facilities are all prohibited in the NB district. Lodges and clubs, trade schools, and amusement facilities are allowed only by special permit. In contrast to the GB district, the NB district also permits single family dwellings and accessory apartments. Developments are permitted on lots that are relatively small (10,000 square feet) and with frontages less than the GB district (100 feet). However, the required front setback is 30 feet, presumably to prevent developments from affecting the character of predominantly residential neighborhoods. 30% of each lot must also be dedicated to open space.

The distribution of the NB district is highly limited. Parcels zoned as such are located at Silver Lake, on Shawsheen Avenue at Hopkins Street, on Main Street across from Shawsheen Avenue, at the intersection of Lowell and West Streets, and along Concord Street west of Woburn Street. At each location, the zone includes a very small area of a few parcels at most. The NB zone on Concord Street is currently not being used by any retail or neighborhood businesses, but by small industrial and service businesses located on the lots set further back from the street in the small General Industrial zone there. Neighborhood Business zones serve an important purpose in the community by allowing for small scale, neighborhood-oriented retail uses that permit residents to do some shopping without having to travel into the center of town.

3.3.2.4 General Industrial District

Industrial zones cover 23% of the land area in Wilmington. They are comprise the four major industrial areas mentioned previously (southeastern Wilmington, northern Wilmington, Town Center, and northeast of the Concord Street I-93 interchange. In addition, there are two small GI zones that were presumably created to accommodate existing uses. Such zones occur east of Middlesex Avenue in North Wilmington and off Concord Street west of Woburn Street.

Permitted uses in the GI district are warehouse, bulk material storage and sales, and light manufacturing. Other permitted commercial uses include office, bank, lodge, craft shop, trade school, amusement facility, and parking facility. Extensive uses (agriculture, conservation, earth removal) are also permitted, as are most institutional uses, with the exception of nursery schools and hospitals. Industrial uses allowed by special permit are heavy vehicle dealership and repair and limited and general manufacturing. Retail establishments, limited service restaurants, hotels, veterinary care, and auto repair shops also require a special permit. Residential uses are prohibited throughout the GI district.

Dimensional requirements within the GI district are similar to those in the GB district: minimum lot size of 20,000 square feet, minimum frontage and lot width of 125 feet, and minimum side and rear yard of 20'. In order to reduce the visual impact of industrial uses, the required front yard setback is 50'. A 50' buffer is also required where the lot abuts a residential district. Developers are required to set aside 30% of the lot for open space, and the maximum building coverage is 35% of the lot.

3.3.3 Groundwater Protection Overlay District

About two-thirds of Wilmington is covered by a Groundwater Protection Overlay District. The extent of the GWPD is based on the DEP-approved boundaries of the delineated Zone II aquifer recharge areas. (Runoff and infiltration within a Zone II contributes directly to the recharge of a public water supply aquifer.) The district boundaries are quite irregular in shape and located in almost all parts of town, reflecting the very broad coverage of the aquifers and their contributing areas.

Provisions in the district are intended to prevent contamination and protect water quality. Land uses that involve activities and materials that could threaten water quality are prohibited in the district. Prohibited uses include on-site dry cleaning establishments; landfills and dumps; automobile junkyards; wastewater treatment facilities; and the stockpiling of snow and ice from outside the district. With certain exceptions, the bylaw also prohibits facilities that treat, store, or dispose of hazardous waste.

Certain land uses are permitted only if designed in accordance with specified performance standards. Storage or stockpiling of the following materials is permitted in the district with certain conditions: deicing chemicals, pesticides, fertilizers, liquid hazardous materials, and corrodable or dissolvable materials. Car and truck washes and self-service laundries are permitted only if connected to municipal sewers.

Another set of land uses are permitted in the GWPD only by special permit from the Board of Appeals. These include golf courses, certain medical and research facilities, commercial photographic processing, and the handling of toxic or hazardous materials in quantities greater than those associated with normal household use. Electronic circuit boards manufacturing and metal plating, finishing, or polishing establishments are permitted in the GWPD only with a special permit. A special permit will only be granted if the Zoning Board of Appeals determines that groundwater quality at the downgradient boundaries of the site will not be degraded.

The bylaw stipulates that drainage facilities should be designed to retain treated stormwater runoff on site and recharge it to groundwater to the extent possible. Oil, grease, and sedimentation traps may be required based on the opinion of the Town Engineer. A special permit is required for any use that will render impervious 15% or 2,500 square feet (whichever is greater) of any lot. The bylaw does not establish specific standards for groundwater recharge.

While the Wilmington GWPD bylaw is based on state model language, other communities in Massachusetts have enacted similar bylaws that take additional steps to protect groundwater.

Considering the importance of the Ipswich River Aquifer as a public water supply for Wilmington, Reading, North Reading, and numerous other downstream communities, some of the following additions may be appropriate for the GWPD bylaw:

- Define “household quantities” of toxic or hazardous material. Commonly accepted thresholds are as follows: 275 gallons of oil for heating or emergency use; 25 gallons of hazardous materials; hazardous waste at “Very Small Generator” level, as defined by state regulations (310 CMR 30.353).
- Establish specific guidelines for storage and containment of hazardous materials, inspection procedures, reporting requirements, or groundwater monitoring.
- Prohibit manufacturing of petroleum-based roofing, paving, and construction materials.
- Prohibit underground storage tanks not exempted by section 107(i).
- Establish standards for stormwater runoff rate and groundwater recharge; use Massachusetts Stormwater Management Standards or more stringent requirements
- Establish performance standards for nitrogen management.
- Require a special permit for: subdivisions of more than 3 lots, construction of more than 10 dwelling units, any nonresidential use on a lot greater than 40,000 square feet in size, or any use that discharges more than 2,000 gallons per day of wastewater on site.

3.3.4 Floodplain District

Wilmington has established a Floodplain District to prevent and mitigate the impacts of flooding. The Floodplain District is an overlay district that includes the entire 100-year floodplain as designated by the Federal Emergency Management Agency. Because of Wilmington’s many streams and predominantly low elevation, a large proportion of town lies within the floodplain district.

District provisions are consistent with those of many other towns that have adopted floodplain districts. In general, the provisions prohibit any alteration or development that would alter the existing flood storage volume of the site. Development is allowed by special permit from the Board of Appeals given the following conditions: no net loss of on-site flood storage; the elevation of the lowest floor level must be located at or above the elevation of the 100-year flood (or floodproofed, in the case of nonresidential structures). The driveway onto the site must also be above the 100-year flood elevation.

Agricultural uses, water supply facilities, and maintenance and repair of existing structures are all permitted in the district.

3.3.5 Other Land Use Controls

3.3.5.1 Subdivision Rules and Regulations

Wilmington's subdivision regulations contain provisions governing the division of land and the design of new roads and infrastructure.

The regulations allow the Planning Board to require dedication of land for park purposes, and easements for bike and/or pedestrian paths to provide circulation or access to schools, playgrounds, parks, shopping, transportation, open space and/or community facilities, or for such other reasons that the Board may determine.

Applicants are required to submit drainage calculations showing the route and rate of runoff from the site, based on the 10 or 25 year storms. Drainage should be designed so that runoff flows from the building line onto the street. Lots must be designed to avoid detrimental drainage from one lot to another.

The regulations prohibit disturbance of trees over 12" in diameter within the minimum front, side, and rear yards, or other natural vegetation, without approval from the Planning Board

Utilities must be placed underground. Every new subdivision must be connected to the public water system. Non-residential and multifamily development is required to connect to the municipal sewer system if there is an existing sewer main located downslope and within 2,000 feet of the new development. If a single-family or two-family subdivision is proposed, the requirement is reduced to 1,000 feet. Further requirements are that if a public sewer line is planned downslope and within 1000 feet within 3 years of the date of submission of a definitive subdivision plan, sewer connections must be installed by the developer to all lots which can be connected later to the sewer system. For subdivisions further than 2,000 feet from an existing or planned sewer line, on-site private or communal sewage systems must be installed in front yards wherever practicable, to facilitate connections to an eventual public sewer system.

3.3.5.2 Site Plan Review / Design Standards

Site plan review is required for all businesses, industrial uses, multi-family residential developments, institutional uses, and changes in use. Design standards for many features are identified in the *Rules and Regulations for Site Plan Review*.

Regulations specify the shared parking requirements, and the means to calculate total parking spaces required for buildings that contain two or more different types of activities.

Specific site design standards covered are:

- Encroachment on wetlands or flood plains
- Points of traffic conflict
- Buffer and landscape requirements
- Hazardous or noxious materials storage
- Erosion control
- Construction schedules
- Outdoor lighting
- Parking requirements (including shared parking calculations)

Site design guidelines state that design shall, to the maximum extent possible, maintain existing rates of runoff, preserve existing flood storage capacity, maintain existing vegetative cover, minimize the extent of impervious surfaces, and limit earth removal and fill. The regulations do not identify specific performance standards for any of those design features.

3.4 Observations and Proposed Land Use Plan

Wilmington is a suburban community characterized by diverse land uses and a significant amount of undeveloped land. Residents value the existing character of Wilmington, most notably the established residential neighborhoods, forests and wetlands, and historic areas such as the Town Common. Public opinion favors maintaining the primarily residential nature of the town and preserving undeveloped areas for their scenic, recreational, and environmental benefits. The presence of extensive commercial areas is an important aspect of Wilmington, and public sentiment appears to support promoting additional commercial development in the Central Business District, in order to achieve a more functional and attractive Town Center.

3.4.1 Major Land Use Issues

While generally liked by residents, the diverse landscape of Wilmington also has certain negative aspects. The three most often mentioned by residents are: extensive strip-style commercial development, large industrial areas, and land-consumptive residential developments, discussed in turn below.

Auto oriented commercial development has left its mark throughout Wilmington. Retail and service establishments are not grouped in defined areas, but rather consume nearly the entire frontage along many of the town's major roadways. The signage, vast parking lots, incongruous architecture, and traffic associated with these developments have serious negative impacts on the character of the town. Visioning Workshop participants decried "ugly" signage and the "hodgepodge" nature of development along the town's roadways; they also expressed a desire for a more rational, organized pattern of development. Traffic, unsafe and inconvenient pedestrian conditions, and excess land use are all functional consequences of this style of commercial development. While design guidelines can improve the

appearance of future development, they will not change the fact that there are few areas of significantly higher value to focus real estate investments. In the absence of higher-density zoning or other enticements, developers have little incentive to build at natural activity centers (such as the CBD or Perry's Corner) instead of along roadways where space limitations are less constraining.

Industrial uses in Wilmington are less extensive than commercial areas, but they still have a great impact on town character. Many industrial areas are inadequately buffered from nearby residential neighborhoods. Truck traffic on residential streets is a major issue in town, and the scattered layout of industrial areas discourages the use of transit by employees. Industrial uses have also been shown to affect water quality in town. Numerous spills or releases of hazardous materials have been linked to industrial activity in Southeast Wilmington, East Wilmington, and North Wilmington, areas that are partially underlain by direct recharge areas for public water supply wells in Wilmington, Reading, or North Reading. The contamination resulting from these spills, and the potential effects on human health, have generated great concern among Wilmington residents.

Residential development has also had a significant impact on town character. In particular, the extensive lot clearing associated with recent subdivisions and the loss of open space along town roadways are perceived to be negative developments. Residents feel the town is being rapidly suburbanized, losing the fields and forests that remind the town of its more rural past. Historically, residential development in Wilmington has been significantly constrained by the presence of extensive wetlands. As housing prices increase, however, developers will be driven to build in the remaining open spaces in the northern and southern parts of town. Conventional subdivision development, in which developers carve up a large parcel in order to achieve the maximum density, is a highly land-consumptive form of development. Compared to clustered developments, conventional subdivisions consume more land and have greater visual and environmental impacts, since more land is dedicated to roads and lawns. The pressure for infill development in the small undeveloped or underdeveloped parcels in Central Wilmington will also increase, affecting the character of established neighborhoods.

3.4.2 Planning and Zoning Observations

The sprawling pattern of residential and commercial development described above has been facilitated by the town's zoning code. Bylaws contributing to this problem are those that permit moderate density residential subdivisions in sensitive natural areas and prohibit development of mixed use, pedestrian oriented activity centers. Zoning provisions for the commercial districts mandate the large frontages and setbacks that characterize the strip development that

many residents find unappealing. There are no design guidelines for commercial development and the town and the Planning Board have limited authority under site plan review. The lack of a functional cluster zoning bylaw prevents builders from using conservation-oriented subdivision models that can preserve large tracts of open space on site. The lack of a wetland bylaw also permits development to encroach on sensitive wetland areas, where it is more prone to flooding and failed septic systems.

3.4.3 Proposed Land Use Plan

Results of the Visioning Workshop and other public participation activities indicate that Wilmington residents want to protect the remaining open spaces and to steer development toward a more focused town center and other commercial areas. The challenge is as follows:

- Encourage future development in Wilmington to use land more efficiently; reduce the impact of subdivisions in existing open spaces;
- Encourage attractive, viable, and appropriate redevelopment of underutilized sites; and
- Manage the development of small undeveloped sites in existing residential neighborhoods.

Fortunately, many opportunities exist for achieving land use patterns that are more in concert with the goals of local residents. There are significant undeveloped areas remaining in Wilmington; protection of these open spaces will enhance town character and ensure opportunities for both active recreation and passive enjoyment of natural areas. The town also has multiple intersections, or ‘nodes,’ at which it would be appropriate to focus future development in order to use land more efficiently. Properly designed mixed-use activity centers can also enhance town character, reduce automobile dependence, provide opportunities for social interaction, and foster increased economic activity. Potential activity centers include the Town Center, Wilmington Plaza, Perry’s Corner (Woburn and Lowell Streets), North Wilmington, and the intersection of Andover Street and the Andover Bypass. With some exceptions, these nodes benefit from good highway access, existing business activity, available land, and proximity to residential areas. The Town Center and North Wilmington also have MBTA commuter rail stations.

The strong economic climate in Wilmington provides additional opportunities. The underlying conditions in Wilmington promote development, and returns on development investments have been strong. While the resulting development pressures are a source of concern for many residents, the economic activity within the town can also be harnessed to achieve some of the stated land use goals. Reasonable land use controls that seek to limit or focus development are not likely to dampen significantly the interest in additional

projects. In fact, the positive benefits and attractive return of focused, well-designed development may encourage additional redevelopment projects. Because there is no shortage of commercially zoned land in Wilmington, the town should also consider pruning the General Business districts in order to focus development in designated activity centers. While rezoning might create some nonconforming uses, it will increase the value of the remaining commercially zoned land, providing a greater incentive for property improvements.

The General Land Use Plan, presented in Figure 5, identifies priorities and opportunities for land use in various parts of town. Keep in mind that these planning areas do not necessarily correspond to existing zoning or land use. Rather, it is a plan for guiding future development so as to achieve the goals described in Chapter 1.

The General Land Use Plan consists of seven planning areas:

- **Designated Neighborhood Activity Centers**, including the Town Center, which would be the site of mixed-use, pedestrian-friendly village-style development at scales compatible with the surrounding area. Management of strip commercial development must be pursued as a corollary to promoting NACs.
- **Town Common and Historic District**. This area would be managed to maintain the current civic and historical nature of the area. New municipal buildings, such as a new library or new town hall, would be appropriate uses.
- **Medium-Density Residential Areas**, where construction of single-family homes would be carefully managed and balanced with acquisition of undeveloped sites for neighborhood parks.
- **Low-density Areas**, where cluster development and increased setbacks would be strongly encouraged or required, so as to preserve town character, and open space acquisition opportunities should be actively pursued;
- **Industrial Areas** industrial development would be encouraged here with additional site design guidelines and requirements.
- **Light Industrial / Office Developments** These are areas where additional economic development is appropriate and desirable, but general industrial uses are inappropriate due to environmental concerns.
- An **Open Space Network** consisting of permanently protected woodlands, wetlands, agricultural lands, and recreation areas that contribute to town character, aquifer protection, and wildlife habitat.

Figure 5: Proposed General Land Use Plan for Wilmington

3.4.4 Neighborhood Activity Centers

In Neighborhood Activity Centers (NACs), mixed-use, pedestrian-friendly development would be encouraged and design guidelines would ensure compatibility with the surrounding neighborhoods. Zoning in the NACs would be similar to that recently implemented in the Central Business District. Depending on location, the types of uses that might be appropriate for Neighborhood Activity Centers include the following: convenience stores, specialty retail, restaurants, small offices, services, townhouses, apartments, elderly housing, live/work spaces, and transit stations.

The presence of Neighborhood Activity Centers and appropriate, binding design guidelines would focus development in appropriate areas and would encourage the type of attractive, mixed-use, pedestrian-friendly environments for which residents have expressed a desire. Such nodes will provide an opportunity for social interaction and may permit residents to accomplish some trips without the use of an automobile, thereby reducing traffic. In order to further reduce auto dependence, NACs should be accessible via a pedestrian network of paths and sidewalks, and should also be served by transit (or built in such a way that they can be effectively served by transit in the future). Authority over development in NACs should be implemented through a new NAC zoning district with required site plan review for all developments. Nonconforming uses created by rezoning to NAC would be grandfathered until a change in use.

The primary Neighborhood Activity Centers, where additional development should be encouraged, include the following:

- Central Business District
- Wilmington Plaza
- Perry's Corner (Lowell and Woburn Streets)
- Main Street / Lowell Street
- North Wilmington

The intersection of Andover Bypass and Andover Street may also be an appropriate location for focused development.

Development of Neighborhood Activity Centers would be encouraged and controlled through zoning regulations that would: allow for mixed uses; permit higher density than the existing general business district; require smaller setbacks; reduce parking requirements; and require pedestrian amenities and connections. In order to achieve other stated goals of the town, land use controls in NACs might also provide density bonuses or other incentives for provision of affordable housing or for protection of open space off-site. Design guidelines should encourage shared parking and placing parking lots to the side of or behind buildings. Sidewalks and pedestrian connections from the sidewalk to the primary entrance should be required.

Success of the proposed activity centers is contingent on managing development elsewhere in town. Commercial establishments, both retail, office, and light industrial, are located along many of the town's major roadways. Some of the most inconsistent and disordered collections of buildings are located along Main Street, between Wilmington Plaza and the Town Center, and between the Town Center and the intersection of Lowell Street. Commercial establishments here are generally in individual buildings, isolated in a parking lot, characterized by a disorienting array of signage, and unrelated to any nearby land use. Pedestrian access is difficult and there are numerous unsignalized curb cuts that contribute to traffic problems.

The presence of disorganized commercial development has a negative impact on town character. While the majority of the town is single family homes or open space, the ubiquitous presence of commercial development along many major roads results in the image of an unpleasant and overdeveloped urban area. In nearby towns such as Lexington, well-designed village-style development, despite an increase in density, does not have this negative impact.

Because nearby strip development can affect the character, property value, and economic vitality of Neighborhood Activity Centers and the entire town, management of strip-style commercial development in along adjacent roadways must be pursued as a corollary to promoting development in NACs. The town might seek to manage such development through density limitations, restrictions on sewer extensions or sewer connections, stricter design review, or rezoning to residential uses. All commercially zoned parcels not currently used for commercial purposes (including vacant parcels) should be immediately considered for rezoning to a residential district.

Specific observation and recommendations for the proposed activity centers are given below.

3.4.4.1 Town Center

The Town Center is located at the intersections of Church Street and Middlesex Avenue with Main Street (Route 38). Historically, this area was known as Wilmington Depot because it was the site of the town's first railroad station in 1835. While Wilmington Depot became one of the Town's early commercial centers, subsequent planning and zoning policies did not encourage further village-style growth around the Depot. Most post-WWII commercial growth in Wilmington occurred in auto-oriented developments dispersed along major roadways, rather than being concentrated at the Depot. Regardless, many residents still consider this area to be the town "Center" or "Downtown," although they are quick to state that it does not live up to the widespread hopes for a more attractive, functional, and pedestrian-oriented town center. Improvement and

revitalization of the Center is a principal goal of many residents, and could have a dramatic positive impact on the character of Wilmington.

For purposes of this discussion, the Town Center includes not only the block zoned as Central Business District, but also the transitional areas north and south on Main Street, Church Street and Middlesex Street north to Adelaide Street, and the Sweetheart Plastics / Diamond Crystal industrial properties west of the railroad tracks. The area is zoned CBD; General Business northeast of the railroad tracks; and General Industrial south of the tracks.

At the core of the Central Business District are six buildings that face Main Street at the Church Street intersection. Businesses in the area are primarily service establishments, and have been joined by other services, primarily in small office buildings. The post office, located on Church Street, and several banks draw people to the area. Southwest of the railroad tracks are industrial properties owned by Sweetheart Plastics and Diamond Crystal; the buildings on site are currently partially occupied and used for office space and a distribution facility. A proposal for reuse of the Sweetheart site failed due to environmental concerns. Another proposal for a bakery at the Diamond Crystal is currently under evaluation.

Unfortunately, there are many negative features that degrade the character of the area: lack of a cohesive and attractive visual identity, poor signage, poor sidewalks and numerous curb cuts, and land uses that are not appropriate for a pedestrian-oriented “town center.” There are also many underdeveloped parcels in the CBD area, especially in the transitional areas north and south on Main Street, which include residential, retail, restaurant, auto-service, and builders supply. Most businesses are housed in individual single-story buildings surrounded by large asphalt parking lots.

MBTA is currently constructing a new parking lot on land between Main Street and the railroad tracks, north of Burlington Ave. The current proposal is for a 165-space lot that will include 20 public parking spaces, in compensation for 10 on-street spaces lost as a result of construction. This represents a traffic mitigation-related reduction of 60 spaces from the original proposal. While the parking lot may exacerbate traffic problems in the area during rush hour, the commuters using the station will constitute a significant market for downtown businesses.

The area was rezoned several years ago with the intention of promoting somewhat denser development that would have the character of a downtown area, rather than strip development. The creation of the Central Business District Zoning is a positive first step in encouraging redevelopment of the area. Allowance of mixed uses

and increased density is an excellent way to promote an attractive and economically viable downtown. Moreover, the small setbacks enhance the “village feel” of a development and contribute to a pedestrian-friendly environment.

Unfortunately, few developers have taken advantage of the CBD zoning. Redevelopment of existing properties has been hindered by two major constraints: sewage disposal and parking. The CBD was not served by the municipal sewer system, and all properties had to rely on on-site sewage disposal. Site constraints and failing systems have significantly limited the ability of businesses to expand, and virtually eliminated any opportunity to increase density. In April 2000, the town won approval from the Massachusetts Executive Office of Environmental Affairs to construct a sewer main in Main Street. Businesses in the area will be allowed to connect to the municipal sewer system if one of two conditions is met: a) the property has a documented failing Title 5 system; or b) an alternatives analysis has determined that any type of on-site Title 5 system can not be utilized. The presence of this sewer main will remove significant constraints on development in the area.

Parking

Parking has also been a significant constraint in the CBD. In this district, the Wilmington zoning bylaws require one space for each 400 square feet of retail space or 500 square feet of office space. This requirement is relaxed somewhat if there is a municipal parking lot of at least 60 spaces within 600 feet of the property. (The relaxed requirements are one space for each 600 square feet and 750 square feet of retail and office, respectively.) Restaurants must have one parking space for each seat, and residential uses must have two spaces for each dwelling unit. In the General Business zones adjacent to the CBD, the parking requirements are even tighter; retail services must provide one space for each 250 square feet of floor area and office uses every 300 square feet. In the absence of a municipal lot or shared parking facility, owners of small lots have found it untenable to increase density and provide for parking on site. The town has not been successful in locating and acquiring a site for a municipal parking lot; as a result, no businesses have been able to take advantage of the relaxed parking requirements.

Considering the limited land availability in the CBD, acquiring land for a 60-space lot may not be feasible. The town should modify its strategy for public parking in the Town Center and seek instead to develop multiple, smaller municipal parking lots, rather than a single large lot. Furthermore, shared parking should be incorporated into the bylaw and the MBTA lot should be allowed to satisfy a portion of the parking requirements for businesses whose parking peaks are in the evening or nighttime, such as restaurants.

Parcel Consolidation

Additionally, the 50% open space requirement may also discourage development on smaller lots; for example, it would be desirable for the properties on the northern corner of Church Street and Main Street to form a continuous façade for development that extends deep into the block. Open space requirements preclude such an arrangement in the absence of parcel consolidation. This constraint, however, suggests that the best opportunity for successful redevelopment at the CBD may involve a single developer that can consolidate parcels and implement a comprehensive plan that provides for open space and parking, rather than piecemeal redevelopment of individual sites.

Municipal Investments

The town should also consider making investments in the area to promote redevelopment. The construction of municipal sewer in Main Street is one important such investment, for it will facilitate more intensive uses on the properties in the area. Construction of a municipal parking lot is another way to facilitate redevelopment. Other investments that should be considered include streetscaping and construction of sidewalks. The town might also consider using the Wilmington Redevelopment Authority to consolidate some of the small parcels in the core of the CBD to facilitate a more substantial redevelopment of that block.

Diamond Crystal / Sweetheart Plastics

This Master Plan envisions that the Diamond Crystal and Sweetheart Plastic sites west of the railroad tracks will eventually be redeveloped as a mixed-use extension of the Town Center. Currently these properties, which are within the direct recharge area of the town's public water supply wells, are partially used for light industrial activity and contribute substantial tax revenues to the town. As the Town Center is redeveloped, demand for non-industrial spaces will increase. These sites share the Town Center's excellent commuter rail access and in the right real estate market, might be highly desirable locations for office space, incubator space for small businesses, retail uses, and housing, especially senior and affordable housing. Traffic impacts of such housing uses on this site will be less than if such uses are located elsewhere in town, because residents will be able to walk to stores and the MBTA commuter rail. Residents here will also help to support local businesses.

Although the Master Plan has a mixed-use vision for the future of these sites, it does not recommend rezoning from GI to CBD at this time. Rezoning would create substantial nonconforming uses, and the feasibility and profitability of residential or mixed-use development here is contingent, in part, on the success of redevelopment of the Town Center.

The plan does anticipate that real estate conditions will change, however, and the town should remain open to proposals for mixed use, non-industrial redevelopment at the site and should be ready to work with potential developers. As with the rest of the Town Center, priorities for development west of the tracks should include mixed uses, village-scale architecture, pedestrian-friendly design, and reduction of impacts on adjacent residential neighborhoods.

3.4.4.2 Wilmington Plaza

Wilmington Plaza is a shopping center located north of the CBD on the east side of Main Street. The Plaza is a typical suburban linear strip of stores with parking between the stores and the street. Directly across the street is a large automobile dealer. The land uses north and south of the Plaza and the automobile dealer are strip-style commercial developments with isolated buildings set back from the street in large parking lots. Residential land uses are behind (northeast of) the commercial uses along Main Street.

While Wilmington Plaza is a viable commercial area that serves some of the retail needs of town residents, the style and configuration of the buildings have a somewhat negative impact on town character. In conjunction with the automotive dealer across the street, the very large parking lot results in a vast, auto-oriented landscape. Pedestrian access to the plaza is difficult. Meanwhile, the configuration of buildings and the single-use nature of the site tend to prevent social interaction and informal gatherings. The numerous curb cuts in the area contribute to traffic problems.

Unlike the CBD, however, the site is not significantly space-constrained, and additional development could be accommodated on the site. With appropriate guidelines, this development could contribute to town character. Such redevelopment might reduce the visual impact of the parking area by placing new buildings within the existing lot. It should also ensure safe and convenient pedestrian access from the street as well as internal pedestrian circulation. Also provided should be areas protected from traffic for social interaction and informal gatherings. Mixed uses, including office and residential uses, would also contribute to a diversity of activity at the site. Stronger pedestrian connections between the Plaza and the CBD will also allow some residents to conduct their business on foot. Because of its central location and access to retail areas, the Plaza or adjacent properties might also be appropriate areas for a youth or teen center. In this case, it would be critical to provide safe and direct pedestrian connections between the Plaza and the high school.

3.4.4.3 Main and Lowell / South Main Street

The intersection of Main Street and Lowell Street is a small activity center of mixed retail, office, and auto-oriented uses. There is a gas station / convenience store on the corner and a small, strip-style

shopping center to the east, between Main and Lowell Streets. Although this shopping center fronts on both streets, the through way across the property is poorly defined and lacks sidewalks. The recently constructed Square One Mall north of Lowell Street is occupied by small retail and restaurant businesses. East of the Square One Mall is an auto dealership where operations are currently being phased out. Southwest of Main Street and the railroad tracks is a large parcel, zoned General Industrial and currently used as a distribution facility for XPEDX. East of Cross Street are two small retail and industrial operations, and agricultural land (tree farm) known as the Yentile Property. This property has been identified as a priority parcel for acquisition by the Open Space Committee. North of the Yentile property are athletic fields owned by the Textron Corporation.

The area is currently zoned for General Business uses, except for the area south of railroad tracks, which is General Industrial. The commercial zoning is only one lot deep, and some frontage along Lowell Street is zoned residential (R-10 and R-20). Development is constrained by wetlands along the west side of Cross Street.

Plans have been developed for traffic and streetscape improvements at this intersection. The plans involve reconfiguring the intersection so large trucks can turn from South Main Street onto Lowell Street. Landscaping and sidewalk improvements are also part of this project, which is listed in the State Transportation Improvement Plan for construction in 2003.

While the intersection of Main and Lowell Streets is not a major activity center, it appears to be a desirable site for development, as evidenced by the recent construction of the Square One Mall and by interest in redevelopment of the Cain Property for use as a supermarket. While these development pressures might only be moderate, this intersection is an appropriate location for additional development based on its location, existing mixed uses, and proximity to the Wilmington Depot train station. Additional development here, rather than on South Main Street, could improve town character by creating a defined center of mixed-use activity, in contrast to conventional strip development. Neighborhood Activity Center Zoning should be considered for a limited area at this location, from Cross Street to the Cain Property.

3.4.4.4 Perry's Corner (Woburn and Lowell Streets) and Lowell / West Street

Perry's Corner is one of Wilmington's historical activity centers. An 1856 map of the town indicates that the intersection of Woburn and Lowell Streets was the site of a blacksmith, a wheelwright, and a shoe shop, as well as multiple residences. A stone wall in the open area southeast of the intersection marks the location of the blacksmith's

shop. Later, a streetcar line from Woburn terminated here. Perry's Corner continues to be an important commercial center for the town, although it is not commonly known by that name. Currently, there are two tiers of shopping centers on southeast corner: a smaller building at the corner and a larger set of stores set back roughly 250 feet from the street. The northeast corner of the intersection is vacant, and the northwest corner is occupied by a very large parking lot associated with an office building to the east along Lowell Street. The very large Textron office and light industrial complex is located southwest of Perry's Corner; these buildings are set back from the street and the frontage along the southwest corner of the intersection is landscaped. This open space is a major asset to the area's appearance.

Zoning

Frontage on Perry's Corner is mostly zoned for General Business uses; the southwest corner is zoned General Industrial. The surrounding area is zoned residential. The town recently received approval to construct municipal sewers along Lowell Street. Because sewer construction can promote the type of strip development disliked by Wilmington residents, the town should pay special attention to redevelopment along Lowell Street, to ensure that it contributes to the nodal character of Perry's Corner.

Road Reconstruction

Mass Highway has developed plans to reroute Woburn Street through Perry's Corner. The road is to be straightened and the intersection shifted slightly to the west. This reconfiguration is not expected to significantly affect the amount of developable land available at the intersection. Furthermore, it may provide an opportunity to construct improvements such as sidewalks, treelawns, crosswalks, pathways, and lighting that will contribute to the village character of Perry's Corner. The town should work with MHD to include such elements in the proposed reconstruction. The town should also ensure that road reconfiguration or ensuing development does not damage the historical resources on the southeast corner of the intersection.

Opportunities

From a planning perspective, Perry's Corner is an appropriate and desirable location for compact, pedestrian-friendly, village-style development. There are existing viable businesses at the location, available developable land on the northeast and (possibly) northwest corners, and a large workday population nearby. It is also at the center of a residential neighborhood. Furthermore, the town owns land at the nearby Alderwood Acres providing opportunities for passive recreation. Due to the excellent highway access, there may also be opportunities for businesses that would draw visitors into town and provide opportunities to contribute to the local economy.

Town actions at Perry's Corner could capitalize on these positive aspects and promote redevelopment that will restore the historical importance of this site as a center of commercial, social, and residential activity. These actions should include rezoning, infrastructure improvements, and streetscaping.

Lowell Street / West Street

The viability and character of redevelopment at Perry's Corner will be affected by development elsewhere on Lowell Street, especially at the Lowell Street / West Street intersection, approximately 1/2 mile east of Perry's Corner at the I-93 interchange. Development at West Street has the potential to draw activity away from Perry's Corner.

The Lowell Street / West Street intersection is the site of a small cluster of commercial establishments, including a gas station, services, retail stores, and fast food. The southeast and southwest corners of the intersection are undeveloped, except for a ticket hut on the southeast corner. A proposal for two large office developments was pending as this plan was prepared. This site is primarily attractive for its excellent highway access, and development pressures will continue to be strong. Although the largely undeveloped southeast and southwest corners of the intersection are positive aesthetic elements, the negative character of the commercial development degrades this site's role as a "gateway" into Wilmington.

Town efforts at West Street should be designed to improve the appearance of the intersection while implementing planning tools that reinforce the nodal activity at Perry's Corner. Preservation, rather than development, of the forested, residentially-zoned land on the southwest corner of the intersection will provide a sense of open space at this gateway. Streetscape improvements (trees, sidewalks, and signage) can significantly improve the appearance of this corner. A pocket park with a "Welcome to Wilmington" sign would also be a positive addition to this area. Redevelopment of properties should be encouraged, but additional development on new sites should be strongly discouraged. Any undeveloped commercial sites in the area should be rezoned to R-20 in order to prevent the strip-style development that degrades the appearance of this gateway. Specific sites that should be rezoned include the southeast corner of the West Street / Lowell Street intersection and the vacant, cleared lot on Lowell Street adjacent to the Burger King.

Multifamily residential development is not an appropriate use for the Lowell Street / West Street area, because it is beyond walking distance from Perry's Corner and not likely to be served by public transit in the near future. Residential development is also not advisable within 1/4 mile of the highway due to noise and poor air quality.

Hotel Siting Criteria

Due to its excellent highway access, West Street has been discussed as the possible site of a hotel. Locating a hotel here would not necessarily minimize associated traffic impacts. West Street is located less than 1/4 mile from the I-93 Southbound exit ramp, and the turning and cross-traffic associated with a large development may interfere with ramp operation. Furthermore, visitors to a hotel at West Street would be largely isolated from any other activity in town.

Other potential locations for a hotel would have more positive effects for Wilmington. A hotel at Perry's Corner would encourage additional economic activity; visitors would be an additional market for local restaurants and they could patronize local shops. The activity generated by a hotel within walking distance of restaurants and services would enhance the vitality of Perry's Corner in a way that a hotel at West Street could not. A hotel and restaurant could also serve local residents and employees within walking distance. While the site is not as close to this highway as West Street, the "value added" by location within a designated village center can provide incentive for a developer to find ways to make such an arrangement work.

Lowell Street West of Perry's Corner

The vitality and character of Perry's Corner will also be affected by commercial development to the west on Lowell Street. The installation of sewers in Lowell Street will facilitate additional commercial development here. However, additional strip-style development along Woburn Street will detract, both economically and visually, from compact, village-scale development at Perry's Corner, by diverting development away from the corner and impeding pedestrian access. Strip development also generates more auto trips and associated traffic than does walkable village-style development. The town should take strong steps to shift proposed commercial development from this portion of Lowell Street to Perry's Corner. Multifamily residential development, within walking distance of the corner, could enhance the appearance of this roadway and contribute to activity at Perry's Corner.

3.4.4.5 North Wilmington

North Wilmington is an activity center that sprang up where the Boston and Maine Railroad crossed Middlesex Ave. Currently, the area is the site of the North Wilmington MBTA commuter rail stop and some mixed commercial development. There are approximately 6 acres of vacant developable land along Jefferson Road; and about 8 acres of developable land adjacent to (west of) the railroad tracks south of the existing commercial development.

The area is currently zoned for General Business uses north and west of Middlesex Avenue, and General Industrial uses to the south and

east of Middlesex Avenue. Existing uses include both commercial (retail) uses and some industrial uses in the GI district. There are extensive wetlands in the area, associated with Lubbers Brook, east of the railroad tracks, which will constrain development.

The presence of the MBTA station is an important asset for North Wilmington. Such stations commonly attract small residential developments for people interested in commuting to Boston via train; some small businesses also prefer to locate near MBTA stations. Additional density could be accommodated on the existing sites; and, with the help of strong design standards, residential development in North Wilmington would not have the same impacts on town character as scattered residential development in existing open space.

As with the Town Center, appropriate uses in North Wilmington include retail, offices, and housing, including townhouses and condominiums. Design guidelines should require small setbacks, parking in the rear or on the side, and pedestrian amenities such as sidewalks. Redevelopment of the industrial area for office uses or incubator space should be encouraged, and zoning should be modified to permit such redevelopment.

3.4.4.6 Other Neighborhood Activity Centers

There are other areas in town that contain small numbers of commercial establishments. Additional development may not be appropriate for these sites. However, their contribution to town character and their role as neighborhood centers can be enhanced through town action, in the form of design standards, streetscape projects, and other improvements.

These NACs include a small neighborhood commercial area on Main Street at Silver Lake, and the intersection of Shawsheen Avenue and Hopkins Street, the current site of a convenience store.

3.4.5 Town Common and Historic District

While many New England towns began as a village centered around a town common, Wilmington formed from outlying portions of the adjacent towns, Woburn and Reading. After the town was incorporated in 1730, various religious institutions and commercial ventures located near the intersection of Church Street and Middlesex Avenue. In 1856, “the center” was the site of two churches, a school, a piano factory, the Bond Cracker Bakery, and a handful of shops and stores. In 1864, the center was gutted by a fire that destroyed the Bond Bakery and the Congregational Church. The church was rebuilt, but the bakery relocated to Boston and “the center” never reestablished itself as an active commercial center. Between 1875 and 1899, town resident Otis Buck donated land to the town for use as a common.

The Town Common area subsequently became the social and municipal center of Wilmington. Located at or near the common are Wilmington High School, the Town Library, the Wilmington Arts Center, the Town Cemetery, the Senior Center, and several churches. The area is zoned residential, and there are no commercial uses in the vicinity. The area is characterized by tall shade trees and other mature vegetation, residential structures with historical significance, and the landscaped Town Common, the site of many of the Town's ceremonial and celebratory events. The historic character of the area makes it very important as a civic gathering place and a point of civic pride. There is considerable sentiment supporting preservation of the public and historic character of the Town Common / Church Street / Middlesex Avenue area, perhaps through a historic district designation requiring design review.

The Town Library is a vital component of the Town Common area, because it serves all Wilmington residents. In Wilmington, as in many towns, the library acts as an indoor "Commons," where residents can meet and interact, both formally and informally. The library "anchors" the Town Common area as the center of Wilmington civic life, much as a large department store can anchor an entire shopping mall. As with the Post Office, the library is the only major town facility that draws from a wide segment of society on a more or less regular basis over time. The library's proximity to the high school is also important, for it makes the library a more accessible resource for students. The current library also has fair to good pedestrian access, as it is within walking distance of the Central Business District. The proximity to the Senior Center is important because it provides the opportunity for Wilmington seniors to spend time at both facilities without driving or needing a ride.

The town is currently engaged in a study to determine the most feasible location for new, expanded library. From a planning perspective, keeping the Library at the Town Common (at its present location or on another parcel) is highly desirable because it strongly reinforces the role of the area as the center of Wilmington's civic life.

Many residents have noted that the scattered pattern of land uses in Wilmington reduce opportunities for informal public interaction. Similarly, planning experts have noted the decline in America of "third places"—those public or semi-public spaces that allow and encourage spontaneous social interaction among people, regardless of their age, their income, or where they live. The Town Library is just such a "third place" and its location among other such places (the Senior Center, the Arts Center, the High School) strongly reinforces the role of the Town Common as the center of the town's civic landscape, a "living room" to which residents can come and interact. For this reason, this Master Plan strongly recommends that the

library remain at the Town Common and that this recommendation be considered along with other factors during the feasibility study.

3.4.6 Medium-Density Residential Neighborhoods

As noted earlier, residential areas are the predominant land use in Wilmington, comprising 40% of the town's land area. The oldest homes were built on farmsteads scattered throughout town. Subsequent eighteenth and nineteenth century residents built homes along older main roads such as Main Street, Middlesex Avenue, Woburn Street, and Burlington Avenue. Around the turn of the twentieth century, developers began to subdivide land and build small homes in relatively compact neighborhoods near Silver Lake, the CBD, and North Wilmington. Postwar suburban development occurred primarily in somewhat less dense neighborhoods in the central third of Wilmington, from Main and Lowell Streets north to Salem St. Lot sizes are generally 1/4 – 1/2 acre. More recently, housing activity has shifted the less developed areas in the outlying sections of town, such as southwest of Main Street and north of Salem Street. In these areas, homes are generally on lots greater than 1/2 acre.

There are only two multi-family housing developments in town. A multifamily development for the elderly is located on Deming Way off Burlington Ave. Avalon Oaks, a 204-unit complex, is located on Salem Street just west of I-93 at the Route 125 (Andover Bypass) interchange. Avalon Bay Properties, the developer of Avalon Oaks, recently received approval for a 120-unit complex, to be called Avalon Oaks West, south of Salem Street at Scaltrito Drive, near the Tewksbury border.

Infill Development

While the impacts of residential development on town character are not as dramatic as those of commercial development, the strong pace of recent home construction has generated concern among residents, and pressure for additional residential development is anticipated to continue. A common concern regards the visual impact of increased density in existing neighborhoods as a result of split lots and infill development. These practices can add additional homes to a neighborhood that residents thought was already "built out." This trend toward increasing density can also be taken to an extreme through "mansionization." While not yet an issue in Wilmington, mansionization occurs in towns where the pressure for large homes is so strong, and developable land so rare, that small houses are torn down to make way for much larger houses on the same lot. The incongruous neighborhood that results (a 40-year old cape next to a new 6,000 square foot custom home) can detract from town character.

Construction of municipal sewers will foster additional density in established neighborhoods by enabling new construction or major additions on sites with limitations for on-site waste disposal. Implications for infill development should be carefully considered as the town conducts its Wastewater Management Plan.

The town should carefully manage future development in established neighborhoods. The scale of infill development might be managed by establishing maximum floor-area ratios for new construction and major additions in established neighborhoods. This limit should be compatible with the average FAR of existing houses in the area. This would ensure that new houses do not visually overwhelm existing homes.

Cluster Development

There are also sizeable parcels of undeveloped land, ten acres and larger, throughout the central part of Wilmington. As housing prices rise, pressure to develop these parcels will increase. The town should promote cluster development on these parcels as an alternative to conventional subdivision development. Cluster development can reduce the overall footprint of a subdivision by grouping the houses on the site while protecting sensitive natural areas. Although clustered houses are closer together, development requires less tree clearing and, overall, can have less of an impact on neighborhood character. The town should adopt a cluster zoning bylaw that can encourage developers to consider this model; density bonuses or other enticements should be considered as a means for encouraging developers to include affordable housing or on-site wastewater disposal in their development.

The town can also enhance the character of existing neighborhoods by acquiring land for neighborhood parks and playgrounds.

3.4.7 Low-Density Areas

Residential development also affects less developed sections of Wilmington, where open spaces and farmland have been subdivided and built on. The town can limit the overall amount of development through acquisition of open space. It can also minimize the visual and environmental impact of development through an effective cluster zoning bylaw and other design guidelines, such as those that limit the percentage of a lot that can be cleared of trees. Conservation Subdivision Design (CSD) may be the town's best tool for managing future growth in the low-density area. It limits the overall footprint of development and requires builders to set aside the unbuilt land as protected open space.

The largest area of potentially developable residentially zoned land is located north of Salem Street and west of I-93. This area, the largest unfragmented forest in Wilmington, has tremendous value as a

wildlife and environmental resource. While wholesale preservation of this land is desirable, it is likely that development pressures and resulting real estate values will require some combination of preservation and development. The presence of large wetland systems will also require a creative approach to development. The town should consider an overlay district that would require cluster development in order to minimize the environmental impact of development. Flexibility will be required on the part of both the town and the developer in order to find the appropriate density and location for developable land on the site.

Within this large undeveloped area, there is a large triangle of industrially-zoned land adjacent to and west of I-93, north of the I-93 / Route 125 interchange. The rationale for the industrial zoning in this area is unclear. There is currently no access to this site; creating access would require crossing town-owned groundwater protection lands or highly indirect access through residential neighborhoods in Tewksbury. The land has significant benefits for wildlife and the environment. Development here would also be highly visible from I-93, further contributing to the negative image of Wilmington as an industrial town. Overall, industrial development is not an appropriate use for this piece of land.

The area should be rezoned to R-60 along with the triangle of R-20 land remaining north of the existing development. Because the undeveloped land in Wilmington is contiguous with a similar amount of undeveloped land in Tewksbury, the town should work with Tewksbury to protect open space and actively plan for potential development in the area. A mandatory cluster overlay district should be considered for this area and would be most effective if jointly adopted by both Wilmington and Tewksbury.

3.4.8 Industrial Areas

Industrial developments are located primarily in four areas in Wilmington:

- North of the Andover Bypass (Ballardvale / Andover St.);
- Southeast Wilmington;
- South of the Central Business District and along Main Street;
- On Concord Street at the North Reading border (East Wilmington).

There are also some industrial uses in North Wilmington and a small area of mostly light industry located south of Concord Street, adjacent to Lubbers Brook. With the exception of the facilities in or near the town center, the industrial areas all have excellent access to I-93. The appearance of industrial areas vary widely in regard to setbacks, vegetation, signage, and proximity to nearby uses. The truck and automobile traffic generated by industrial areas also impacts town character, especially if it passes through primarily residential areas.

Southeast Wilmington has numerous industrial establishments fronting on South Main Street south Woburn Street, Eames Street, and Industrial Way. There are minimal buffers between industrial and residential uses; many homes are adjacent to or across the street from industrial facilities. There is little definition to the building patterns here, and the area lacks a focal point for development. Continued development pressure in this area is anticipated, especially with the opening of a new I-93 interchange in Woburn, which will provide more direct access to the industrial area.

In East Wilmington, the industrial park has a very small amount of frontage on Concord Street in Wilmington, although the industrial development continues eastward into North Reading. Residential neighborhoods to the north, off Park Street, are buffered slightly from the industrial development by a wooded strip of land.

In northern Wilmington, industrial development has frontage on the Andover Bypass, Andover Street, and Ballardvale Street. Highway access is excellent, and the town is currently developing plans to improve the Andover Bypass / Ballardvale Street intersection. As with southeast Wilmington, industrial development here is linear, rather than organized around a defined node or activity center. Encroachment on residential areas is not a major problem here, although three small subdivisions have been developed or proposed off Andover Street, east of the industrial development. The most recently-proposed residential development is located on land zoned R-60 and surrounded on three sides by the General Industrial district. The 100-foot setbacks required for the industrial development may not be sufficient to adequately buffer these homes.

The most significant pieces of industrially zoned land in Wilmington are located in the north end of town. Two are located in the area bounded by Andover Bypass, Andover Street, Salem Street, and North Reading. There is undeveloped, industrially zoned land at the northwest and southeast corners of this area. Many residents have raised concerns regarding General Industry in the direct recharge area of the town's public water supply wells. Observations and recommendations regarding this land can be found in the section on Light Industrial / Office below.

There is also a large triangle of industrially zoned land located adjacent to and west of I-93, north of the I-93 / Route 125 interchange. This Master Plan recommends that this land be rezoned to R-60. This site is riddled with wetlands and will be very difficult to access. The area is also environmentally sensitive and visually prominent from the highway. Overall, industrial development is not the most appropriate use for the site. Town action to promote more

appropriate development on this site was discussed in the previous section on Low-Density Residential areas.

3.4.9 Office / Light Industrial

There is a considerable amount of developable land in the area bounded by the Andover Bypass, Andover Street, and Salem Street; this area is currently either forested or sand and gravel pits. Some is zoned GI and some R-60. The rationale for the zoning boundaries is unclear. Development in this area must be carefully managed so as to protect the underlying aquifer. The intersection of Andover Street and the Andover Bypass (Route 125) is a location with excellent highway access and lots of developable land. In particular, the southeast corner of the intersection is largely undeveloped; it is also slightly constrained by wetlands. The developable land here extends through forested areas and sand and gravel pits, eventually reaching Salem Street.

The Andover Street / Andover Bypass intersection (and the adjoining land) is a natural “node” that is likely to attract future development. With the proper zoning and design guidelines, it could accommodate a mixed-use development that might include a hotel; offices; and retail shops, restaurants, and services that serve the large population of local employees. A rezoning of this land might permit only light industry, offices, and other uses, rather than general industrial uses that have greater potential to impact the underlying aquifer.

Specific recommendations for development of this site are beyond the scope of this master plan. However, some general considerations for its development are as follows:

- Permitted uses in the area should be limited to office, light industrial, and mixed uses. General industrial uses should not be permitted.
- Development at the Andover / Andover intersection should be designed to reinforce the nodal character of the intersection. A desirable pattern of density would be highest at the intersection, connecting to less dense development away from the intersection. Buildings at the intersection should face the street, with small frontages. Retail, services, and restaurants should be in the first tier of buildings at the intersection. This will reinforce the character of the intersection as a location, rather than just a spot where two roads meet.
- In order to reinforce this character, setbacks should be increased and vegetative screening required along Andover Bypass and Andover Street beyond 500-750 feet from the intersection. This will prevent the negative visual impacts of further strip development along either road.
- Office buildings and other development that occurs away from the intersection should be connected to the commercial center by pedestrian pathways.

- Development should be arranged to provide generous buffers for Martin's Brook and the Brown's Crossing wellfield.
- Aquifer protection and groundwater recharge must be a primary consideration in reviewing proposals for this area.
- Proposals that involve rezoning some of the sand and gravel pits from R-60 to a light industry / office / mixed-use zone should be considered, based on the potential for the proposal to protect water resources, reduce heavy truck traffic, and contribute to mixed-use development at the Andover / Andover intersection.

3.4.10 Open Space

Forested and marshy wetlands comprise an extensive, sinuous open space network through the town. Many of the large marshy wetlands form large open spaces between neighborhoods. Extensive tracts of undeveloped upland forest are located near the northern and southern borders of town.

While there may be numerous small undeveloped areas scattered throughout Central Wilmington, development has occurred along most streets, diminishing the aesthetic benefits of open spaces along roads. Notable exceptions include Federal Street, Chestnut Street, Salem Street, and the Andover Bypass.

The Town owns large tracts of land along many of the streams in Wilmington, as well as some large tracts of upland near Aldrich Road north of Salem Street. The Town Forest is at the northernmost end of Wilmington against the border with Andover. For a more detailed discussion of existing open space in Wilmington, please refer to Chapter 8 of this report.

The General Land Use Plan (Figure 5) show areas that should be permanently protected from development and given over to public open space uses, including active recreation. Existing publicly-owned or otherwise protected lands form the core of this network, although additional parcels must be acquired to provide for wildlife corridors and trail connections. Chapter 8 provides a much more detailed description of recommendations related to the open space network. The following is a set of actions recommended to increase the open space network and better relate it to other land uses.

- Identify and prioritize open space corridors and critical aquifer recharge areas for protection. See Chapter 8.
- Purchase open space for active and passive recreation and conservation purposes. See Chapter 8.
- Purchase or solicit donation of complete or partial development rights on undeveloped or underdeveloped rural parcels.
- Develop a network of pathways connecting open spaces with residential neighborhoods and activity centers.

3.5 Recommendations for Land Use, Zoning, and Town Character

The recommendations presented in this report reflect many different approaches to achieving the town's goals: creating a new zone to encourage village-scale mixed-use development at activity centers; instituting design standards for development throughout town; and implementing a conservation subdivision design bylaw to reduce the impact of residential subdivisions in undeveloped areas. The plan also recommends adjustments to existing zoning boundaries, so that some GI and GB sites are rezoned to residential or to an office / light industrial zoning district. Although this approach may create non-conforming uses in the short term, it is necessary in order to achieve long term goals related to town character, traffic, and other topics. Regardless of the strength of the land use controls instituted, the town will also need to acquire property in order to prevent development on some parcels critically important for open space, aquifer protection, town character, or other uses.

3.5.1 Enact a Conservation Subdivision Design Bylaw.

Conservation Subdivision Design allows developers to cluster homes on a site in such a way as to preserve sensitive natural and historical features on the property. Conservation Subdivision Design occurs in four steps:

- Identify sensitive natural areas to be protected: wetlands, floodplains, mature woodlands, steep slopes, farmland, meadows, historical features; then
- Locate house sites; then
- Align streets and trails; then
- Draw lot lines.

Individual lots are smaller than those permitted under conventional zoning and the remaining undeveloped land is maintained as protected open space. There are many options for towns considering conservation subdivision design. Recommendations are described below.

Net Density and Open Space

This plan recommends the town adopt a CSD bylaw that will permit developers to construct the same number of units that would reasonably be permitted upon the parcel under a conventional subdivision plan in full compliance with all zoning, subdivision, health, wetland, floodplain, riverfront, and other regulations. Were the bylaw to exclude wetlands or other sensitive areas from the density calculation, the resulting reduction in net density might discourage developers from using the CSD bylaw, especially on the wettest, most sensitive sites.

Determining the "as-of-right" yield requires the developer to prepare a conventional yield plan. A simple sketch plan will likely be

sufficient for this purpose, although the Planning Board should determine the level of detail necessary.

This plan recommends that the bylaw establish no minimum parcel size or number of lots for a cluster development.

Dimensional requirements

This plan recommends that the bylaw not stipulate minimum lot sizes for CSD developments. In general, appropriate minimum lot sizes are roughly the conventional lot size minus the percentage of preserved open space and a 10% allowance for roads. In order to account for local site conditions, that calculation should be used as a guideline but the Planning Board should have the power to grant a reduction of minimum lot size if it will result in a more appropriate design for the site. All reductions in dimensional requirements should be incorporated into open space.

The following dimensional requirements should also be considered in order to provide increased design flexibility:

- Frontage: reduced to 50 feet
- Yard Setbacks: reduced by 50%
- Minimum width at building line: eliminated
- Other dimensional requirements: at the discretion of the Planning Board

The Planning Board should also calculate maximum impervious surface by the entire development, rather than lot by lot, to allow desirable flexibility in both lot and house size.

Preserved Open Space

The bylaw can specify how much (percent) of the site must be preserved as open space. A lower percentage will attract more developers but will not require as much open space preservation. Many other bylaws require a *minimum* open space of 50% of the site.

The bylaw can also specify the percentage of open space that must be upland, in order to ensure that developers do not simply dedicate the unbuildable land to open space.

The bylaw should permit the siting of subsurface wastewater disposal facilities (leaching fields) within the preserved open space.

The Town and Planning Board should work with developers to achieve the most useable and environmentally beneficial pattern of preserved open space. When possible, open space should be contiguous, connected, and useable for passive and / or active recreation. A developer should not be permitted to achieve the minimum open space requirement through a perimeter buffer strip,

because such an arrangement has minimal ecological and recreational benefits.

State law allows three options for the ownership of preserved open space in a CSD:

- Homeowners Association
- Private Land Trust
- Local Conservation Commission

While the latter two options are generally preferable for both the town and a developer, those portions of the site that contain leach fields should be held by a Homeowners Association. Regardless of the ownership of the open space, the Planning Board should work with the Conservation Commission to ensure there is an effective long-term maintenance plan for the property.

Design Standards

The bylaw should incorporate design standards to ensure development compatible with the natural environment. The following standards should be considered:

- The landscape shall be preserved in its natural state, insofar as practical, by minimizing grading and tree removal. Individual buildings should be sited and oriented so as to maintain maximum natural topography and cover. Topography, tree cover, and natural drainage ways shall be treated as fixed determinants of road and lot configuration rather than as malleable elements that can be changed to follow a preferred development scheme.
- Proposed development shall be related harmoniously to the terrain and the use, scale, and architecture of neighboring buildings. Proposed buildings should relate to their surroundings.
- Streets shall be designed and located so as to maintain and preserve natural topography, significant landmarks, and trees. Grading should be minimized. Views onto and off of the parcel should be preserved.
- All open space should be designed to add to the visual amenities of the area by maximizing its visibility for persons passing the site or overlooking it from nearby properties.
- The removal or disruption of historical, traditional, or significant uses, structures, or architectural elements, whether on the site or adjacent sites, shall be minimized insofar as practicable.
- Walkways and bicycle paths should be provided to link residences with recreation facilities, adjacent land, sidewalks, nearby activity centers, and parking lots.
- Shared driveway should be permitted if they will reduce impacts on the site.

Permit Process

This plan recommends that the bylaw require that developers secure a special permit from the Planning Board for a CSD development.

Because special permit requirements can discourage developers from pursuing CSD, it is imperative that the bylaw specify the towns expectations for such developments. It should also stipulate an aggressive schedule for approval, with deadlines for developers as well as the Planning Board.

Mandatory CSD

The town should also consider including provisions in the bylaw that require use of CSD for properties over a certain size (20 acres), or within the Groundwater Protection District, or within a designated open space overlay district. Such an overlay district would be appropriate in the undeveloped land adjacent to Tewksbury.

3.5.2 Establish a Neighborhood Activity Center Zoning District

A new Neighborhood Activity Center Zoning District should be established and selected areas rezoned to this new designation. The NAC would be a mixed-use, village-density district similar to the CBD. Rezoning should be done so that NACs have a limited physical extent (i.e., they should be focused around the node and should not extend along roadways).

The following areas should be rezoned to NAC:

- Central Business District
- Wilmington Plaza
- Perry's Corner
- North Wilmington
- Main St. / South Main St. / Lowell St.

The following principal uses should be permitted in NACs:

- Selected business uses (retail store, office, bank, restaurant, hotel, lodge, service shop, craft shop, trade school, and amusement facilities);
- Governmental, institutional, and public service uses;
- Residential uses (townhouses, apartments, and elderly housing);
- Small light industrial uses in existing facilities;
- Parking (shared parking and off-site parking will be permitted and encouraged).

Nonconforming uses created by the rezoning would be grandfathered until a change in use.

Allowable density should be higher than current GB or NB zoning, and comparable to CBD zoning. Floor / Area Ratio (FAR) should be used as a density control, since it provides additional flexibility, especially in regard to granting density bonuses. A maximum FAR of 1.0 to 2.0 should be considered. The town should consider permitting developers to increase the FAR of a development, at the

discretion of the planning board, in exchange for incorporating affordable housing into the development or preserving off-site open space. Contributions to a town fund for affordable housing or open space would also qualify for density bonuses.

Legally-binding detailed design guidelines for the NACs should be adopted as an adjunct to the zoning bylaw. Guidelines would incorporate the following requirements:

- Buildings should face the street and form a consistent façade;
- A maximum front setback of 10 to 15 feet should be established to facilitate pedestrian access;
- Parking should be to the side or rear of buildings;
- Architectural styles should be consistent with a village atmosphere;
- Side setbacks could be reduced to zero where appropriate;
- “Articulation” should be used to reduce the visual mass of large buildings;
- Signage and lighting should be consistent with a village atmosphere (e.g., limit size of signs, prohibit internally-lit signs);
- Pedestrian facilities should provide connections to nearby businesses, residential neighborhoods, and open spaces (amenities should include covered walkways, benches, lighting, and courtyards);
- Landscaping of open spaces and parking lots will be required.

Height limits of three or four stories should be maintained, although exceptions might be considered by the Planning Board. Corner lots in NACs should also be exempt from the prohibition on development within 25' of the corner, described in section 5.3.1 of the zoning bylaw.

Design guidelines should be enforced through required site plan review conducted by the Planning Board.

The town should develop desired (conceptual) development plans for each of the NACs and encourage developers to use these plans as a guideline for their proposals. The town should also actively pursue the development of small municipal parking lots in appropriate locations (behind buildings and out of wetlands) in each of the NACs and should provide generous parking credits for developments located within walking distance of such lots.

3.5.3 Make Infrastructure and Property Improvements that will Facilitate Redevelopment in the CBD

Construction of sewers in Main Street is a town action that can facilitate redevelopment of the CBD. Other actions the town can take to promote redevelopment include creating an internal circulation roadway through the central block of the CBD, and facilitating the assembly of small property parcels to allow larger-scale development.

Provide for Internal Circulation

A right-of-way for internal circulation is required for an efficient and successful redevelopment of the CBD. The town should examine the potential wetland and land use impacts of constructing a two-lane roadway, with a 35' right-of-way, extending from Main Street, across from the proposed MBTA parking lot, to Church Street, near the existing post office. This roadway would accomplish two objectives: it would relieve pressure on the existing intersection of Church Street and Main Street, and it would provide additional frontage for the development of a village style commercial area. Such frontage, on a small-scale village block, rather than a busy through road, will enhance the success of the CBD.

Parcel Consolidation

The small size of many parcels in the CBD is also an impediment to redevelopment. In the absence of a properly motivated developer, the town should encourage developers to acquire and assemble small properties within the CBD, especially those at the corner of Church and Main Street. Assembly of these parcels will facilitate redevelopment of this key, highly visible intersection. The town should also review the feasibility of using the Wilmington Redevelopment Authority to acquire and assemble these parcels to facilitate development.

Municipal Parking Lot

The town should also acquire land for construction of a municipal parking lot within walking distance of the CBD. This will facilitate redevelopment by relaxing the parking requirements for new construction; it will also enhance the character of any built projects by reducing the amount of paved area. While the existing CBD standards require a 60-space municipal lot in order to relax on-site parking requirements, construction of such a lot may prove infeasible and the town should consider developing multiple smaller facilities.

Streetscaping

The town should evaluate and incrementally implement other design improvements, such as streetscaping. Pedestrian connections will also be critical to the CBD. In planning infrastructure improvements, the town should consider the needs and safety of pedestrians. During the reconstruction of Route 38, the town should seek to retain at least ten feet for creation of a sidewalk and space for street trees. The town should also invest in a pedestrian pathways that will connect the CBD to Middlesex Avenue, Rotary Park, the new Public Safety Building, surrounding neighborhoods, and the open space network.

3.5.4 Rezone Undeveloped GB Parcels to Residential District

Management of strip development must be pursued as a corollary to promoting development in Neighborhood Activity Center. Removal of some commercially zoned land in town will reduce future strip

development and will help focus investment in designated activity centers. Vacant or underutilized commercial sites should be prioritized for rezoning to residential uses. Specific sites that should be considered for rezoning to R-10 or R-20 include the following:

- Yentile Property;
- The southeast corner of the Lowell Street / West Street intersection;
- Undeveloped commercial property north of Lowell Street between West Street and Woburn Street;

In addition, the frontage zoned for neighborhood business along Concord Street at Lubbers Brook should be rezoned to Light Industrial / Office.

3.5.5 Discourage increased intensity of use in strip-style development along roadways

The town should use zoning, infrastructure, and tax mechanisms to discourage increased intensity of use in strip developments and the creation of new strip developments.

3.5.6 Keep the Library at the Town Common

We recommend that the town continue to locate major municipal uses in the area surrounding the Town Common. The presence of the library and the Town Hall at this site will enhance its function as a major municipal activity center.

3.5.7 Enact a new Office / Light Industrial Zoning District

The town should develop a Light Industrial / Office zoning district in order to more effectively discourage inappropriate heavy industrial uses (general manufacturing, heavy vehicle repair, earth removal, etc) where they are likely have negative effects on sensitive environmental resources or nearby residential neighborhoods.

Permitted Uses in this district should include:

- Warehouse;
- Light assembly of finished products;
- Office;
- Municipal and institutional uses;
- Craft shops and trade schools;
- Hotel and restaurant.

Use definitions within the “Classification of Industrial Uses” section of the current zoning bylaw do not include satisfactorily distinguish between uses appropriate and inappropriate for such a district. It is recommended that a new classification for “light industrial” uses be developed; this use category should include activities that use or release negligible amounts of hazardous materials, that do not require large amounts of water, that do not release large amounts of smoke or

process water, and that have minimal impacts on surrounding neighborhoods.

General manufacturing uses not otherwise explicitly permitted should be prohibited. Bulk material sales and storage, auto body and repair shops, car washes, and earth removal should all be prohibited uses.

Candidate locations for rezoning to light industrial include the following:

- Sweetheart Plastic;
- Diamond Crystal;
- The Expedx facility south of Main Street at Lowell Street;
- Selected General Industrial land between Salem Street and the Andover Bypass;
- The industrial park south of Concord Street at Lubbers Brook.

3.5.8 Rezone the Wedge of Land West of I-93 from GI to R-60.

There is a large triangle of industrially zoned land northwest of the I-93 / Route 125 interchange. The rationale for the industrial zoning in this area is unclear. The site is riddled with wetlands. There is also no existing access; creating access would require crossing town-owned groundwater protection lands or highly indirect access through residential neighborhoods in Tewksbury. The land has significant benefits for wildlife and the environment. Development here would also be highly visible from I-93, further contributing to the negative image of Wilmington as an industrial town. Overall, industrial development is not an appropriate use for this piece of land.

This plan recommends that this wedge of land be rezoned to R-60. Coupled with adjacent residentially-zoned land, the undeveloped land in Wilmington is contiguous with a similar amount of undeveloped land in Tewksbury, the town should work with Tewksbury to protect open space and actively plan for potential residential development in the area.

3.5.9 Acquire land for open space, especially neighborhood parks and playgrounds.

In order to provide for recreation needs in existing neighborhoods and minimize the effects of infill and increasing density, the town should purchase open space for small neighborhood parks. See Chapter 8 for additional details.

3.5.10 Establish a maximum FAR within the R-10 and R-20 districts to discourage construction of homes that appear “oversized” for the lot.

Infill development and teardowns can dramatically alter the character of existing neighborhoods. State legislation currently under consideration would permit towns to regulate the interior living space

of single family residences. Should this legislation pass, the town should enact a bylaw that would establish a maximum FAR for existing residential neighborhoods, in order to discourage construction of oversized homes. Such an FAR should be established on a neighborhood basis, according to existing homes, rather than on a zoning district basis.

3.5.11 Designate Historic Districts at the Town Common and other historical areas.

Establish historic districts with non-binding design guidelines and review. Gradually work toward strengthening the design requirements of each district.

3.5.12 Protect Priority Open Spaces

The town should protect land in the designated open space network through acquisition of land or development rights. See Chapter 8. The town should also consider "joint use" of parcels, in which a portion of the site near the road is used for clustered affordable housing while the remainder of the site is protected open space.

3.5.13 Require developers to maintain natural vegetation as a buffer along the street frontage, in order to preserve character.

This requirement can be added to existing zoning provisions. A typical buffer strip is 6 to 10 feet wide.

3.5.14 Require replacement of all large trees (>10" diameter) removed during construction with an equal number of saplings at least 3" in diameter.

This will encourage retention of existing trees, and result in the same tree coverage that existed before development, as the saplings mature.

3.5.15 Invest in sidewalks, pathways, and other pedestrian connections that will link residential neighborhoods to schools, activity centers, and employment areas.

There are a number of destinations, facilities and features mentioned in various places in this plan that should be connected by walkways. Priority should be given to walkways that will increase safety of pedestrian travel, especially for school children. Recreational, school, shopping and employment needs should all be considered in selecting walkway projects. A program for such improvements should continue to be carried out on an annual basis.

3.5.16 Work with Mass Highway Department to include pedestrian and neighborhood enhancements in plans for Perry's Corner road reconfiguration.

There are a number of destinations, facilities and features mentioned in various places in this plan that should be connected by

4 POPULATION AND HOUSING

4.1 Population

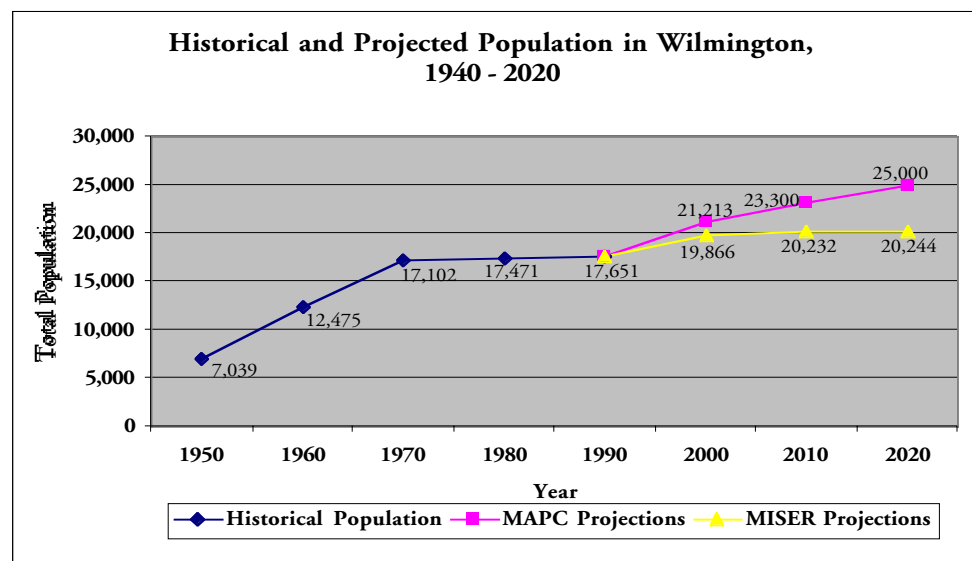
4.1.1 Current Population

The Metropolitan Area Planning Council estimates the Year 2000 population in Wilmington at 21,200 persons. This estimate was prepared in the year 2000. Year 2000 U.S. Census data was not available when this report was prepared. According to the Year 2000 Town Census, the February 2000 population of Wilmington was 21,543. This figure is based on a mail-in census to every household. The town clerk mailed census forms to 6,779 households and realized a return rate of 80%. The estimated population of households that did not return their forms was based on prior town census data. For master planning purposes, we have used 21,350 as a Year 2000 baseline population.

4.1.2 Historical Population

Wilmington's population has grown threefold in the last half century. In 1950 Wilmington was a small farming town of about 7,000 people. The town's population increased by more than 10,000 persons over the following 20 years, and then remained relatively stable over the next twenty, growing by just over 500 persons from 1970 – 1990. The 1990 population was 17,651. Since 1990, the town has grown at rates comparable to those of the 1950s and 1960s; the population grew by more than 3,500 persons (just over 20%) in the last ten years.

Figure 6: Population in Wilmington, 1940 -2030



Source: U.S. Census of Population (1950 to 1990) and MAPC (Metropolitan Area Planning Council) Forecasts (2000 to 2020). MISER (Massachusetts Institute for Social and Economic Research) Forecast for 2010 is also shown.

4.1.3 Population Projections

Population projections for Wilmington were prepared by the Metropolitan Area Planning Council (MAPC). These projections are based on estimates of total regional growth. Regional population growth is distributed among towns in the region based upon MAPC knowledge of employment, developable land, current zoning conditions, and estimates of migration. Projections are shown in Figure 6. MAPC projections indicate that the population of Wilmington could grow 18%, to 25,000, by the year 2020.

Population projections were also prepared by the Massachusetts Institute for Social and Economic Research (MISER). These projections indicate substantially slower growth. MISER projected a year 2020 population of just 20,200, roughly 1,000 persons less than estimates of current population.

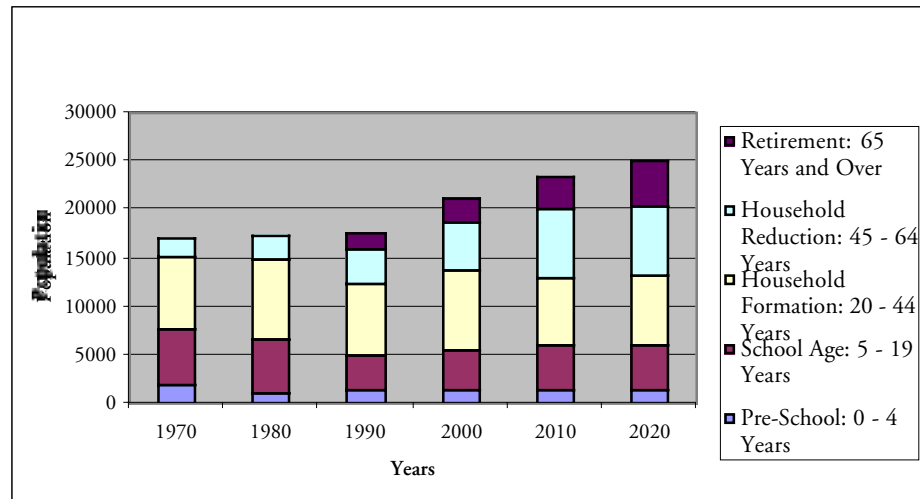
4.2 Demographics

4.2.1 Age Distribution

Age is a key demographic characteristic. Figure 7 shows historical figures and projections for major life cycle age categories. The most significant feature of the age structure is the dramatic increase in the number of residents who are in the “Household Reduction” and “Retirement” stages of life. In 1970, only 12% of the town’s residents were over the age of 45. That figure is now 30%; it is anticipated that in the next 20 years, the proportion of Wilmington residents over the age of 45 will grow to 47%. This demographic shift is the result of people living longer, the baby-boom generation reaching these age groups, and fewer people leaving to retire in other parts of the country.

As the population of Wilmington ages, it is anticipated that average household size will decrease and there will be increased demand for senior centers and services such as housekeeping, medical attention, transportation, and meal preparation. Other implications are that the demand for large houses will be reduced because average household size will decrease. Conversely, demand will likely increase for townhouses, apartments, and elderly housing units that are more convenient and affordable for seniors. If appropriate, affordable housing for these seniors is not available in Wilmington, it is likely that many older Wilmington residents may move to other towns.

Figure 7: Wilmington Population by Life-Cycle Group 1970 -2020



4.2.2 Labor Force

In 1999 there were roughly 11,800 people in Wilmington's labor force. The local unemployment rate at that time was 2.6%, down 2% from the previous year. This is a record low for the last 20 years. Unemployment has been on the decline since a high of 9.1% in 1992.

Table 3: Labor Force and Unemployment, 1983 - 1999

Year	Labor Force	Unemployment	Rate
1983	8,993	521	5.8%
1984	9,266	376	4.1%
1985	9,263	311	3.4%
1986	9,349	303	3.2%
1987	9,364	255	2.7%
1988	9,786	298	3.0%
1989	9,876	390	3.9%
1990	10,294	628	6.1%
1991	10,289	921	9.0%
1992	10,524	958	9.1%
1993	10,588	684	6.5%
1994	10,818	617	5.7%
1995	10,887	526	4.8%
1996	11,163	467	4.2%
1997	11,588	374	3.2%
1998	11,825	327	2.8%
1999	11,823	307	2.6%

Source: Commonwealth of Massachusetts, Division of Employment and Training, Local Area Unemployment Statistics

4.2.3 Households

MAPC has estimated that there are nearly 6,900 occupied households in the Year 2000 in Wilmington, up 24% from 1990. Population has grown only 20% since then, indicating that household size is decreasing. Based on MAPC analysis, the average household size in Wilmington is approximately 3.1 persons, a slight decrease from 1990. Planners Collaborative has also estimated the number of housing units and average household size, utilizing 1990 census data and building permit data from 1991-1999. The number of occupied housing units has been estimated based on the ratio used by the MAPC for their analysis (~98% occupancy).

Table 4: Total Households and Housing Units in Wilmington

	1990	2000 (MAPC)	2000 (Census & building permit data)
Total Housing Units	5,667	6,984	7,069
Occupied Housing Units	5,552	6,864*	6,948*
Total Households	5,619	6,864	6,948
Population	17,651	21,213**	21,350**
Persons/Household	3.14	3.09	3.07

Source: 1990 US Census, MAPC projections

** Occupied housing rate 98.2% (MAPC figure)*

*** Estimate (see Section 4.1.1)*

Table X (below) presents the number of households of various sizes in 1990. It shows that nearly 60% of all households have three or fewer persons; only 20% of the households in Wilmington include five or more persons. Based on the above data regarding decreasing average household size, it is anticipated that the Year 2000 census will show that this trend toward smaller household sizes is increasing.

Table 5: Household Size in Wilmington, 1990

Persons in Household	Number of Households
1 person	624
2 persons	1501
3 persons	1176
4 persons	1284
5 persons	659
6 persons	263
7 or more persons	112
Total	5619

4.3 Housing

4.3.1 Housing Units

There are roughly 7,000 housing units in Wilmington in the year 2000. The housing stock consists primarily of single-family homes; only 5% of the housing units in town are in multi-family structures. Twenty-three percent of Wilmington's housing stock is more than 50 years old, and many older homes are in need of rehabilitation.

Table 6: Housing Age in Wilmington, 2000

Year Structure Built	Units	%
1939 or earlier	1,133	16
1940-1949	505	7
1950-1959	1,209	17
1960-1969	1,235	17
1970-1979	745	11
1980-1990	840	12
1991-2000	1,402	20
Total	7,069	

Source: 1990 US Census and Building Permit Data

Approximately 20% percent of Wilmington's housing stock was constructed over the past decade, consistent with a 24% rise in households. A total of 1,198 building permits for single-family residences were issued since 1990, roughly 120 per year. Avalon Oaks, a 204-unit multifamily development, was constructed in 1998. Table 7 shows that single-family house construction peaked in the early-mid 1990s and has declined somewhat since that time. The slowdown in construction is probably due less to a decrease in demand than it is to a diminishing amount of developable land.

Table 7: New Single Family Home Construction, 1990 – 1999

Year	Number of Units
1990	83
1991	151
1992	145
1993	114
1994	190
1995	122
1996	146
1997	116
1998	62
1999	69
Total	1,198

Sources: 1990 U.S. Census of Population and Housing and PCI 1999 estimates based on Town of Wilmington building permit data (maintained on a fiscal year basis).

4.3.2 Housing Types

Current federal census-quality data regarding housing stock in Wilmington is not available. The figures presented in this section are based on data and trends described in the federal 1990 Census of Housing, and from local building permit data for the years 1990-1999. The data does not account for any residential demolitions between 1990-1999.

Table 8: Housing Types in Wilmington, 2000

Housing Type	No. of Units	%
Single Unit	6,661	94%
2-4 Units	170	2%
5 or More Units	214*	3%
Other	24	<1%
Total	24	100

** Includes 204 apartment units in Avalon Oaks, constructed 1998.*

Source: 1990 US Census, Wilmington Building Permit Data and PCI estimates.

Table 8 shows that the majority of housing structures in Wilmington are in single family homes. Most of these homes were built to house families, and generally have more than three bedrooms. Table 9 shows that, in 1990, over 80% of the housing units had three or more bedrooms.

Table 9: Housing Units by Number of Bedrooms, 1990

Number of Bedrooms	Number of Housing Units
No bedroom	19
1 bedroom	184
2 bedrooms	766
3 bedrooms	3309
4 bedrooms	1119
5 or more bedrooms	270
Total	5667

4.3.3 Tenure

According to the 1990 Census, there were 5,552 occupied housing units in Wilmington. Of these units, 5,146, or 93%, were owner-occupied and 406 were renter-occupied.

Table 10: Residents per Housing Unit, 1990 (By Tenure)

People / Dwelling Unit	Owner-Occupied Units	%	Renter-Occupied Units	%
1 person	489	10%	139	34%
2 persons	1,415	27%	88	22%
3 persons	1,077	21%	104	26%
4 persons	1,194	23%	47	12%
5 persons	614	12%	13	3%
6 persons	256	5%	15	4%
7 or more persons	101	2%	0	
Total	5,146		406	

Source: 1990 US Census of Housing

This data indicates that, not surprisingly, rental housing units in Wilmington tend to be occupied by households that are smaller on average than those who are homeowners. More than half of all rental housing units are occupied by one or two person households, and few rental units are occupied by households greater than four persons. Rental units generally attract smaller households (including seniors), which are less likely to have children.

4.3.4 Cost of Housing

Over the past five years there have been an average of about 390 annual home sales in Wilmington. The five-year median sales price was \$182,500. After recovering from the recession of the late 1980s and early 1990s, sales have fluctuated, while median prices have risen steadily. In the past two years, the number of sales has dropped to 320 from 439, while the median sales price has risen more than 25% over 1997 prices.

Table 11: Number and Median Price of Home Sales 1990 - 1999

Year	Number	% change	Median Price	% change
1990	275	-1	\$162,500	-2
1991	362	24	\$150,000	-8
1992	423	14	\$149,400	0
1993	385	-10	\$160,000	7
1994	455	15	\$157,500	-2
1995	383	-19	\$165,000	5
1996	431	11	\$165,000	0
1997	439	2	\$171,000	4
1998	359	-22	\$192,500	11
1999	320	-12	\$219,000	12

Source: Banker & Tradesman Source: Town Stats: Wilmington, MA; The Warren Group, 1999. Condominium sales and price are included.

Home affordability is a significant concern among many (although not all) Wilmington residents. Participants at the Visioning

Workshop expressed concerns that many children of Wilmington residents and town employees are unable to live in town due to high property values. The desirability of Wilmington has cause both home values and rental prices to rise dramatically.

4.3.5 Affordable Housing

Affordable housing is defined by the state as housing that is affordable to low and moderate income households; that is, households with incomes no higher than 80% of the median income for the metropolitan area. Calculations are based on the assumption that renters pay 30% of their gross annual income for housing, and owners 28% of their gross annual income.

Table 12: Affordable Housing Limits, 2000

	1 Person	2 Persons	3 Persons	4 Persons	5 Persons
PMSA Median income	\$45,850	\$52,400	\$58,950	\$65,500	\$70,740
Low Income	\$22,925	\$26,200	\$29,475	\$32,750	\$35,370
Moderate Income	\$36,680	\$41,920	\$47,160	\$52,400	\$56,592
Maximum Monthly Rent *	\$917	\$1,032	\$1,179	\$1,310	\$1,415
Maximum Purchase Price (single family)*	\$140,000	\$160,000	\$180,000	\$200,000	\$232,000
Maximum Purchase Price (Condo)*	\$114,000	\$134,000	\$154,000	\$174,000	\$190,000

Based on February 1, 2000 data

* For Moderate Income Families

The Commonwealth of Massachusetts has set a goal of 10% affordable housing units within each municipality. Eligible units are defined as affordable units (defined as shown in the table above) subsidized by the federal or state government, with a deed restriction to ensure long-term affordability. Deed restrictions must preserve the affordability of units for at least 15 years for new construction and 5 years for units that were substantially rehabilitated with the assistance of public grants.

In 1969 the State Legislature passed a law commonly known as the "Anti-Snob Zoning Act." This law facilitates the development of affordable housing by allowing subsidized developments to be approved without being subject to local statutory limitations. Approval of such a "comprehensive permit" project requires only a determination by the Zoning Board of Appeals that low and moderate income housing needs outweigh any valid planning objections such as design or open space. Low and moderate housing needs are determined to exist if less than 10% of the year-round

housing stock in a community is subsidized and deed-restricted. While the ZBA can request modifications to a proposed comprehensive permit development, conditions that render the project uneconomical will result in an appeal to the State Housing Appeals Committee, which in nearly all cases supports such appeals. Avalon Oaks on Ballardvale Street was approved through the comprehensive permit process. It contains 204 units, of which 41 are deed-restricted affordable units; the remainder are market rate apartments.

The 1997 Subsidized Housing Inventory, issued by the Massachusetts Department of Housing and Community Development, indicates that there were 159 "eligible" subsidized housing units in Wilmington that year. Town officials indicate that three other units have been added since then, in addition to the 204-unit Avalon Oaks development. Since all of the units in a subsidized development are considered "eligible," there are now 366 eligible units in town, roughly 5.2% of the town's estimated 7,069 housing units. Upon completion of the recently-approved, 120-unit Avalon Oaks West development, there will be 486 "eligible" units in town, or 6.9% of the current housing units.

"Eligible" housing units are the official means of tracking affordable housing in Wilmington, but this number does not necessarily include all the units that may be affordable to low and moderate income residents. For example, it does not include small rental houses, accessory apartments, or other low-cost housing options available at rates comparable to formally affordable units. These types of housing are neither subsidized nor deed-restricted, and are therefore statistically "invisible." Yet, they are an important component of Wilmington's housing supply.

Despite its limitations, the number of official, "eligible" units of affordable housing is nonetheless critical. It allows the town to track the number of long-term dedicated affordable housing units. Additionally, it will hopefully encourage the town to seek more units for affordable housing, to avoid use of Comprehensive Permits in new developments.

The Wilmington Housing Authority operates 85 conventional public housing units (as defined and supported by the State) in Wilmington. Seventy-two of the units are for elderly residents, and 13 are low-income family units. There is a two-year waiting list for elderly units and a 2 to 5 year waiting list for the family units. In addition the Housing Authority administers 18 rental assistance (Section 8) housing units, most of which are in Avalon Oaks.

4.3.6 Elderly Housing

Seventy-two units of housing for the elderly are owned and operated by the Wilmington Housing Authority.

4.3.7 Residential Tax Rate

The 2000 residential tax rate in Wilmington is \$14.36 per \$1,000 assessed value. Table X, based on 1999 tax rate data, indicates that Wilmington has a relatively low residential tax rate in comparison to 14 neighboring towns. The total residential levy in Wilmington is \$16.9 million.

Table 13: Tax Rates of Wilmington and Nearby Towns, 1999

Name of Town	Residential Tax Rate: \$/\$1,000	Commercial Tax Rate: \$/\$1,000	Comm. Value as % of Base Valuation
Burlington	10.90	29.90	37%
Woburn	11.12	24.64	32%
Bedford **	11.97	28.17	26%
Lexington	12.79	24.49	12%
Wilmington *	13.58	30.08	30%
North Andover	14.01	16.79	15%
Wakefield	14.01	24.17	20%
Middleton	14.48	14.48	22%
Tewksbury	14.61	23.89	21%
Winchester	14.64	13.67	6%
Billerica	15.11	34.48	22%
Andover	15.17	21.74	22%
North Reading	15.42	15.42	15%
Reading	15.89	15.89	8%
Stoneham	16.95	19.37	13%
Averages	14.04	22.48	20%

* 2000 tax rates -- commercial \$31.27, residential \$14.36

** Open Space tax rate \$8.98

Although the tax rate can be considered moderate, it may be a burden for fixed-income residents such as seniors. The desire to reduce their tax burden is one motivation for seniors to sell their homes and move into a smaller dwelling. However, seniors who wish to remain in Wilmington have limited options for moving into a local apartment or elderly housing facility. As a result many either remain in their homes or move out of town.

4.3.8 Developable Residential Land

MAPC recently calculated the amount of developable residential land in Wilmington as part of a buildout analysis of the town. The MAPC analysis concluded that there are approximately 1,328 acres of undeveloped, potentially developable residential land remaining in Wilmington. The 100' buffer zone of the Rivers Protection Act and the Floodplain District were considered to be "absolute constraints"

and are excluded from the total. Wetlands, the 100'-200' riverfront buffer, and the groundwater protection district were considered to be partial constraints, since they do not necessarily prevent home construction on a particular parcel. The results by residential zoning district are as follows:

Table 14: Developable Vacant Residential Acres

Zone	Acres
R-10	18
R-20	787
R-60	523
Total	1,328

As noted earlier, Planners Collaborative also conducted an analysis of vacant developable land in Wilmington. This analysis is based on 1999 land use data and includes all upland (not wetland) land that is not permanently protected open space. This approach found that there are approximately 1,933 acres of developable land in Wilmington. The vacant developable land identified by this analysis is depicted on Figure X in the previous chapter.

4.3.9 Residential Buildout Analysis

MAPC completed a residential buildout analysis of Wilmington in the spring of 2000. This buildout analysis determined that, based on population projections described previously, and under current zoning and regulatory conditions, Wilmington will be "built out" by the year 2020. This study utilized the MAPC developable land analysis described above in Section 4.3.8. As previously mentioned, MAPC excluded floodplains and the 100' riverfront buffer from the analysis. Wetlands, the 100-200' riverfront buffer, and the groundwater protection district were considered to be partial constraints, and the lot yield was adjusted accordingly. All future residential units were assumed to be single-family households. The average household size of 3 persons is consistent with projections that household size will continue to decrease. The results of the buildout are presented in Table X.

Table 15: Residential Building Lots and Future Population

Zone	Area	Lots	Future residents
R-10	18	41	123
R-20	787	884	2652
R-60	523	301	903
Total	1,328	1,226	3,678

4.4 Population and Housing Observations

A review of housing patterns in Wilmington suggests that the town needs a greater diversity of housing types. The housing stock is nearly all single family homes, which are becoming less affordable to many young Wilmington residents. There are also few options for Wilmington's seniors. The addition of elderly housing, townhouses, duplexes, more accessory apartments, and small apartment buildings will improve the housing situation in Wilmington. Properly managed, an increase in housing diversity will not have undue negative impacts on town.

A Growing Housing Mismatch

Since the 1950s, Wilmington has been a community populated primarily by families in single family homes. Over the past decade, however, this pattern has begun to change. Senior citizens and “empty-nesters” are becoming a larger segment of the populations; by 2020, nearly half of the population will be over the age of 45, living in households of just one or two persons. Moreover, many young people are forming smaller households as well, living alone, in couples, or with just one child.

In contrast, the majority of the housing stock in Wilmington was constructed for families with children. As a result, there is a growing mismatch between the population and the available housing. While 40% of the households consist of only one or two persons, less than 20% of the housing stock has two or fewer bedrooms. This disparity is anticipated to grow as the proportion of smaller households increases over the next 20 years. Due to the preponderance of single family homes in town (95% of all housing units), small families and empty-nesters have limited options for housing. As a result, many empty-nesters are remaining in houses that are bigger than they need. This trend limits the availability of single family homes for growing families. The resulting strong pressure for new single family homes has stimulated the strong pace of development of open land described in the previous chapter.

The strong housing market and the diminishing amount of buildable land has caused housing prices to rise considerably over the past ten years. Concerns regarding affordability stem from the fact that many residents of moderate incomes, including town employees and children of town residents, are unable to purchase a home in Wilmington. Affordable units include more than just subsidized apartments, although this is the official measure of affordability. For practical purposes, small rental houses, accessory apartments, duplexes, and elderly housing are forms of more affordable housing.

Future Trends

Development pressures are anticipated to continue over the next 20 years. Wilmington remains a desirable place to live as a result of location, open space, affordability (in relation to many other towns), and a strong local job market. If current trends continue, the demand for new housing will be met through construction of more single family homes on undeveloped land. MAPC has estimated that there are approximately 1,300 acres of developable, residentially-zoned land in Wilmington. Under current zoning conditions, this land would accommodate over 1,200 single family home lots. At an average household size of 3.0, there would be nearly 3,700 new residents, resulting in a population increase of 17% over Year 2000 figures.

Under current zoning conditions, most of this development would occur within the R-20 zone, on lots of roughly 1/2 acre. Because it requires less land per house, smaller-lot zoning may result in lower prices for new houses than large-lot zoning. It is nevertheless anticipated that housing prices will continue to rise as the supply of developable land in Wilmington diminishes, due to the continued pressure of regional demand. Increased prices will in turn encourage construction on more marginal lots and difficult sites that, up to now, were not profitable to build on due to environmental constraints. This scenario suggests that continued construction of single-family homes will not make it any easier, for example, for a young couple to buy a home in Wilmington. Nor will it help Wilmington seniors who are looking for other housing options.

The Need for Housing Diversity

The demographic, economic, and aesthetic issues cited above suggest that the town must explore new approaches to meeting its housing needs. Diversity in housing stock must be a major component of any comprehensive strategy. A variety of options is needed to meet the different needs of young families, newcomers, and long-time residents. Increasing the supply of smaller homes, rental apartments, condominiums, and elderly housing would free up some of the single family housing stock in town, relieving pressure on the existing supply and reducing the demand for more houses on undeveloped land. In this way, increased diversity of housing stock can enhance overall affordability while more effectively meeting the needs of residents. Furthermore, smaller units for seniors and empty nesters generate fewer school-age children, resulting in a more positive cost to tax revenue ratio.

The Role of Subsidized Housing

Increasing the stock of subsidized affordable units must be a component of any effort to increase housing diversity. Most such units will be in multi-unit constructions, such as apartments or townhouses, rather than in single family subdivisions. The success of

the 204-unit Avalon Oaks apartment complex (and the developers intent to build another, similar development nearby) suggests that the demand for, and profitability of apartment buildings in Wilmington can support a development with 20% affordable units. However, Wilmington zoning bylaws permit multifamily housing only in the CBD; as a result, Avalon Bay applied to construct both projects through the comprehensive permit process, and the town lost significant authority over the form of the development.

Appropriate Locations for Multifamily Housing

The two Avalon Oaks developments certainly contribute to housing diversity and add to the number of eligible affordable units in Wilmington; however, because of their location they fail to support a number of other planning goals. Separated from any established activity center, the developments require a level of auto dependence that contributes to town traffic problems and detract from the character of the surrounding residential neighborhoods. In contrast, a similar development on Jefferson Avenue in North Wilmington, for example, would allow easy access to the commuter rail and would provide a local market that would encourage new retail businesses or offices to locate there. This activity would, in turn, foster the village atmosphere that many residents feel is currently lacking in Wilmington. This confluence of positive factors (transit access, village character, walkability, proximity to work) can increase the value of residential developments so much that the town may have greater leverage regarding design, affordability, and linkage fees.

Town Actions to Promote Housing Diversity

In order to promote diversity in the housing stock, it is recommended that the town modify its zoning in order to permit a wider variety of housing in appropriate locations in town. Townhouses and senior housing should be encouraged within walking distance of Neighborhood Activity Centers. Apartment buildings should be permitted where they conserve open space, contribute to activity centers, and reduce auto dependence. The most appropriate locations for such developments are in or adjacent to Neighborhood Activity Centers, especially those with commuter rail access. New zoning codes must be carefully crafted, using mandates and incentives, as necessary, to increase the diversity of the housing stock, protect, open space, and reduce traffic.

Housing diversity can also be enhanced by allowing different types of housing within residential neighborhoods. Permitting two-family houses and three-bedroom accessory apartments will allow more residents to own their own home through rental income. These types of units should be limited to lots above a certain size, in appropriate portions of town; and should be subject to design review.

There are also ways that the town can take a more active role in the development of subsidized affordable housing. For example, the town might acquire appropriate sites and a nonprofit developer such as a CDC could develop the site. Density bonuses or other incentives can be provided to encourage developers to include deed-restricted affordable units in new subdivisions.

Improving the existing housing stock is also important, and the town should continue to promote and fund rehabilitation of existing structures.

4.5 Recommendations

The following are specific recommendations under consideration related to housing in Wilmington:

4.5.1 Permit multifamily housing (townhouses and apartment buildings) in the Neighborhood Activity Center zone described in the previous chapter, in Conservation Subdivision Design developments, and on Lowell Street.

Develop comprehensive design requirements for residential development at each activity center and require site plan review for all developments in an NAC.

4.5.2 Consider Enacting an Inclusionary Zoning Bylaw

Require at least 10% (or more) of any housing development over 10 units to be affordable to low and moderate-income individuals, and protected by a long-term deed restriction. Provide incentives, in the form of density bonuses, for developments that have a greater percentage of eligible units.

4.5.3 Relax parking requirements for multifamily housing located within 1/2 mile of an MBTA commuter rail stop.

Reduce the requirement from 2 spaces per dwelling unit to 1.5 spaces per unit.

4.5.4 Modify zoning bylaws to permit duplexes (two-family houses) on lots larger than 30,000 sq. ft. in the R-10 and R-20 zoning districts and throughout the R-60 district.

Require special permit and site plan review, with the Planning Board acting as the Special Permit Granting Authority. Encourage the use of shared driveways.

4.5.5 Modify zoning bylaws to allow 3-bedroom accessory apartments on lots larger than 30,000 square feet.

Require a special permit from the Board of Appeals. Ensure that design review occurs within the special permit process.

- 4.5.6 Consider offering density bonuses for affordable housing in conservation subdivision design developments.**
Determine the density bonus needed to effectively encourage affordable housing.
- 4.5.7 Continue discussions regarding the Community Preservation Act**
Enact a modest surcharge on property taxes to support affordable housing and other goals; apply for state matching funds.
- 4.5.8 Consider Linkage Fees**
Study the impacts, revenue, and feasibility of instituting linkage fees on new industrial and large commercial development to fund housing efforts.
- 4.5.9 Incorporate the Housing Partnership as a Community Development Corporation**
A CDC could develop and operate housing on town-owned land in Wilmington. Developments with both market-rate and affordable units would enhance self-sufficiency / sustainability of the CDC.
- 4.5.10 Acquire land for housing developments and convey it to the CDC.**
- 4.5.11 Pursue opportunities for joint development (mixed use development) of land in NACs.**
Joint Development might involve a multistory building with retail space below and apartments above. The CDC could construct and manage such a development, using revenue from the commercial development to support affordable housing above.
- 4.5.12 Provide funding for the housing rehabilitation program.**

5 EMPLOYMENT AND ECONOMIC DEVELOPMENT

5.1 Existing Conditions

Wilmington has a strong economic foundation. The has about as much employment as it does population, a rarity among Boston suburbs. Wilmington has joined the cities of Waltham, Woburn and Peabody and the town of Burlington as a major employment center in the Route I-95 area. Almost one-half of Wilmington's employment is in manufacturing, another unusual situation. More typically, suburban towns have most employment in trade and services categories. Wilmington has pursued a policy of attracting industry by allowing the creation of modern industrial parks in several parts of town, most notably those with excellent accessibility to Routes I-93 and I-95.

Industrial development is concentrated in the General Industrial zones along I-93 in the northeast and southeast areas of Wilmington. There is also some industrial development north of Concord Street along the border with North Reading. Most of the industrial development, primarily planned industrial parks, is low density in character with modern one and two story buildings.

The Town Assessors Office estimates that there are about 7 million square feet of industrial and research and development space in Wilmington.

5.1.1 Employment

5.1.1.1 Total Employment

In 1998, the last year for which data is available, total employment in Wilmington was 21,300. This represents a 10% decrease from the all-time high employment of 23,400 in 1985. While total employment has fluctuated somewhat, the number of establishments has steadily grown, with a slight reduction during the recession years of 1991 and 1992. Average annual wages for Wilmington employees have also shown steady growth from \$25,594 in 1985 to \$48,902 in 1998 (in current, not constant dollars).

Table 16: Employment and Wages in Wilmington, 1985-1998

Year	Total Employment	Total Annual Payroll	Average Annual Wage	Establishments
1998	21,296	\$1,041,408,327	\$48,902	729
1997	20,290	\$910,865,228	\$44,892	704
1996	19,691	\$822,500,642	\$41,770	695
1995	18,943	\$747,241,512	\$39,447	654
1994	17,752	\$668,847,640	\$37,677	658
1993	17,616	\$643,838,637	\$36,549	623
1992	17,372	\$631,218,275	\$36,335	588
1991	18,176	\$622,137,961	\$34,229	610
1990	19,771	\$638,132,549	\$32,276	639
1989	21,876	\$665,228,952	\$30,409	626
1988	21,299	\$632,849,688	\$29,712	603
1987	23,241	\$655,467,813	\$28,203	561
1986	23,287	\$627,815,188	\$26,959	517
1985	23,396	\$598,812,313	\$25,594	458

Source: Commonwealth of Massachusetts, Division of Employment and Training (ES-202 Series)

5.1.1.2 Employment by Sector

As mentioned previously, manufacturing is the largest sector, followed by trade and services. While manufacturing decreased from its peak of 17,400 jobs in 1985 to 10,600 in 1998, trade and services have shown fairly consistent growth from 3,100 in 1985 to 4,800 in 1998 (trade) and from 800 jobs in 1985 to 3,300 in 1998 (services).

Table 17: Wilmington Employment by Sector, 1985-1998

Year	Total Employment	Manuf-acturing	Trade	Services	Govt.	TCPU	Const-ruction	Agric, Forestry Fish	FIRE
1998	21,296	10,591	4,818	3,287	689	621	613	366	295
1997	20,290	10,444	4,299	3,139	680	593	471	conf	312
1996	19,691	10,403	4,359	2,685	596	618	408	324	284
1995	18,943	10,009	4,116	2,551	563	538	633	283	238
1994	17,752	9,426	4,022	2,241	565	470	479	284	255
1993	17,616	9,607	3,788	2,236	578	441	392	316	250
1992	17,372	10,483	3,120	1,988	548	338	304	343	239
1991	18,176	11,133	3,103	2,047	657	346	314	318	250
1990	19,771	12,088	3,432	2,198	651	340	389	366	282
1989	21,876	13,016	3,478	2,947	682	473	580	conf	346
1988	21,299	13,787	3,162	2,097	718	467	581	conf	154
1987	23,241	15,339	3,358	2,208	706	529	626	conf	132
1986	23,287	15,986	3,140	1,870	710	582	562	conf	124
1985	23,396	17,440	3,134	798	743	401	453	conf	100

Source: Commonwealth of Massachusetts, Division of Employment and Training (ES-202 Series)

TCPU = Transportation, Communication and Public Utilities

FIRE = Finance, Insurance and Real Estate

conf = data suppressed due to confidentiality

Note: Changes in industry definitions occurred in 1988, so data prior to that year are not strictly comparable to the more recent data.

5.1.2 Number of Establishments

According to the Massachusetts Division of Employment and Training, there were approximately 730 establishments in Wilmington in 1998. Manufacturing, while it accounts for most employment, is characterized by relatively few establishments. (See list of major employers.) Eighty-one establishments are retail businesses, according to the 1997 U. S. Census of Retail Trade. According to the 1997 U. S. Census of Accommodation and Food Services, there are 40 restaurants/pubs in Wilmington (not counted as retail trade establishments). The U. S. Census of Retail Trade reports 12 building and garden supply businesses, and 12 gasoline stations. Non-store retailers account for 11 businesses, while motor vehicle and parts dealers, and furniture and home furnishings stores each account for 8 businesses.

5.1.3 Major Employers

Major employers in Wilmington are:

• Analog Devices	2,000 employees
• AGFA BayerCorp	1,000 employees
• Textron Defense Systems	850 employees
• Sanmina Corp	560 employees
• Ametek Aerospace Products, Inc.	480 employees

5.1.4 Commercial and Industrial Tax Rates and Revenue

The Year 2001 tax rate for commercial and industrial development is \$29.52 per \$1,000 of assessed value. 2001 tax rate data, shown in Table 18, demonstrate that Wilmington has a relatively high commercial tax rate in comparison to 14 neighboring towns. Table 18 also shows that commercial and industrial property in Wilmington constitutes an above-average proportion of total base valuation (27%), surpassed only by Burlington and Woburn. Despite the relatively high tax rate, Wilmington continues to be a very favorable environment for industrial development.

The high tax rate and the high proportion of commercial value in Wilmington provide major contributions to the town budget and help to stabilize the residential tax rate.

Total valuation of industrial property in Wilmington is \$418 million, and total valuation for commercial property is \$106 million.

Table 18: Tax Rates of Wilmington and Nearby Towns, 1999

Name of Town	Commercial Tax Rate \$/\$1,000	Residential Tax Rate \$/\$1,000	Comm. Value as % of Base Valuation
Billerica	34.48	15.11	22%
Wilmington *	30.08	13.58	30%
Burlington	29.90	10.90	37%
Bedford	28.17	11.97	26%
Woburn	24.64	11.12	32%
Lexington	24.49	12.79	12%
Wakefield	24.17	14.01	20%
Tewksbury	23.89	14.61	21%
Andover	21.74	15.17	22%
Stoneham	19.37	16.95	13%
North Andover	16.79	14.01	15%
Reading	15.89	15.89	8%
North Reading	15.42	15.42	15%
Middleton	14.48	14.48	22%
Winchester	13.67	14.64	6%
Averages	22.48	14.04	20%

5.2 Future Economic Development

5.2.1 Developable Industrial and Commercial Land

MAPC conducted a buildout analysis of Wilmington in the spring of 2000. This analysis found that there are 450 acres of undeveloped land in Wilmington's General Industrial district, and approximately 16 acres of undeveloped land in the General Business Districts. This represents only 4% of the town's total land area. Land within floodplains and the 0-100' Riverfront buffer is considered to be undevelopable and is excluded from this analysis.

5.2.2 Industrial and Commercial Buildout Analysis

The industrial buildout analysis found that the 450 acres of undeveloped industrial land could support approximately 3.4 million square feet of industrial development, about half of the town's current industrial and manufacturing square footage. At historical ratios of approximately one employee per 400 - 600 square feet of built space, additional industrial development might accommodate 5,500 to 8,500 new manufacturing and research and development jobs. The MAPC analysis also suggested that the remaining 16 acres of land zoned for General Business could support another 170,000 square feet of development. MAPC determined that the Neighborhood Business and Central Business Districts were completely built out. It is possible for further development in these areas under current zoning, and for even more development if zoning is amended to permit greater building densities and compliance with parking requirements through shared or off-site parking.

The buildout analysis does not account for expansion of existing facilities or redevelopment of existing sites. In the commercial districts, especially the CBD, most parcels are “underdeveloped” when compared to the zoning constraints, and some capacity for redevelopment and increased density exists. Commercial development is scaled to market conditions, not necessarily to the zoning envelope, expressed in terms of building height and setback restrictions. Parking and landscaping requirements are also important in determining site buildout.

5.2.3 General Market Conditions

Market conditions are good for continued employment growth in Wilmington. MAPC has forecast a growth of 2,600 jobs in town by the year 2020. For the four town subregion of Wilmington, Burlington, Reading and North Reading, MAPC forecast a growth of about 9,500 jobs by 2020. On the demand side, continued growth in aerospace, high-tech, bio-tech, pharmaceuticals, financial, educational, and medical services in the area north of Boston will exert further pressures to develop industrial and commercial land in Wilmington. Further growth in population and income will increase the potential for retail and personal services. Further growth in overall commercial and industrial activities will increase the potential for business services. Retail and services are the types of activities most suitable for central business district and neighborhood activity center locations.

5.2.4 Prospects for Industrial Growth

Regional economic development in the surrounding region has been strong. The same conditions that attracted employment to this area in the past will continue to attract growth. These include highway accessibility via I-93 and I-95, two commuter rail lines to Boston, Lowell and Lawrence, good airport access and available and serviced industrial land. As mentioned, Wilmington's employment growth is expected to be approximately 12% over the 20 years between 2000 and 2020, according to MAPC forecasts.

The availability of water is a factor that will be a problem for industrial growth. This is especially true for industries that require large amounts of water. Wilmington faces limitations in the amount of water it can provide. Industries may have to re-use process water, or seek sources other than town supplies or existing ground and surface water supplies. Efforts to attract additional economic development to Wilmington should focus on industries that have low water requirements and use minimal amounts of hazardous materials.

5.3 Observations

Participants of the February Visioning Workshop felt that the town should find a way to be proactive in attracting appropriate businesses to Wilmington as a way of increasing the town's tax base. However, many residents are also very concerned about the impacts of industrial and economic development on town character, water resources, and traffic. It will be important for economic development to occur in ways that do not promote excessive growth, consume excessive amounts of water, or noticeably alter the character of the town.

Desirable economic development includes businesses started in Wilmington, possibly by Wilmington residents. These are generally small scale businesses that are suitable for location in the central business district or neighborhood activity centers. Some small scale businesses can be attracted from other towns. One means of accomplishing this is to recruit nearby retail and service businesses, whose markets are primarily local (town-wide), to open a location in Wilmington. For example a florist or a copy shop doing well in Burlington or Reading might be invited to open a branch location in Wilmington. This has traditionally been one means of filling commercial space in business revitalization programs. Recruitment of out-of-town businesses might be done by a town organization, a community development corporation, or the Chamber of Commerce or another non-profit business oriented organization.

Incubator space is another generator of economic activity. Incubator space could also allow Wilmington home occupations to grow. Some incubator space exists at the former Sweetheart Plastics site (now Fulfillment America). Live-work space (artists and craftsmen live-in studios) might also be created in this space, as could some retail and residential uses. The space offered in these two properties is large and could support several types of mixed uses that contribute to increased activity in the Central Business District.

5.4 Recommendations

The following are specific recommendations related to employment and economic development.

5.4.1 Continue to encourage appropriate economic development in order to maintain a stable tax base.

Efforts to attract new economic development should focus on industries or activities with low water usage and minimal use or generation of hazardous materials.

5.4.2 Enact a new Office / Light Industrial Zoning District

The town should develop a Light Industrial / Office zoning district in order to promote "cleaner" uses where heavy industrial uses (general manufacturing, heavy vehicle repair, earth removal, etc) would be

likely to have negative effects on sensitive environmental resources or nearby residential neighborhoods. Candidate locations for office and light industrial uses include the industrial area near the CBD, the industrial areas between Salem Street and the Andover Bypass, and the Concord Street Industrial Park. See Chapter 3, Recommendation 3.5.7 for details.

5.4.3 Focus non-industrial economic development in Neighborhood Activity Centers.

Hotels, restaurants, retail stores, and offices should be located in or near designated Neighborhood Activity Centers to increase economic activity at these locations and promote further investment. Locating these uses at NACs will also facilitate the use of public transit (existing commuter rail or potential future bus service) by employees or visitors.

5.4.4 Discourage development along roadways and at small intersections. Downzone Undeveloped GB Parcels to R-20.

Management of strip development must be pursued as a corollary to promoting development in Neighborhood Activity Center. Removal of some commercially-zoned land in town will help focus real estate investment in designated activity centers. Vacant or underutilized commercial sites should be prioritized for rezoning to residential uses.

The town should limit its support for development projects that do not contribute to focused investment in designated areas. Town-financed subsidies, incentives, and infrastructure improvements should not encourage additional commercial development outside of NACs. Development of hotels and retail enterprises near highway interchanges degrades town character and promotes auto dependence.

5.4.5 Promote development of more space for retail shops and small businesses at or near Neighborhood Activity Centers.

Encourage development of small offices and “incubator” space to house small start-ups.

5.4.6 Recruit small local businesses to occupy space in NACs

Work with economic development organizations, such as the Chamber of Commerce, to recruit the types of local small scale businesses needed to occupy space in the Central Business District and neighborhood activity centers.

5.4.7 Use the existing low interest loan fund for small local businesses to grow and relocate.

Recapitalize this fund with new money from the state as necessary. Establish a community development corporation that would also recruit businesses and loan them start-up funds.

- 5.4.8 Establish linkage fees for industrial and commercial development.**
Work with industry to establish appropriate levels of linkage fees that will not discourage additional development. Use revenues to develop affordable housing, protect open space, and preserve historical resources.
- 5.4.9 Establish partnerships with industry for the purchase of open land to provide more buffering.**
Encourage businesses to donate land to the town and receive tax benefits for same.
- 5.4.10 Work with industries to adopt traffic management and vehicle trip reduction programs.**

6 WATER SUPPLY AND WASTEWATER

6.1 Water Resources

Wilmington lies at the headwaters of the Ipswich River, a regional resource that provides water supplies for 23 cities and towns in Northeastern Massachusetts. The portion of the Ipswich River Aquifer that underlies the Town may well be its most significant natural resource, for it provides a reliable supply of clean water for the town's residents and businesses. The river corridor is also critical wildlife habitat and a unique recreation and aesthetic resource. Unfortunately, the condition of the Ipswich River has been adversely impacted by water withdrawals and development. Recent research suggests that groundwater withdrawals such as Wilmington's are exacerbating low-flow conditions.

Wilmington also extends into portions of two other watersheds: a section of northern Wilmington is in the Shawsheen River Basin, and a small piece of southeastern Wilmington is in the Mystic River Watershed. Figure 8 depicts water resources in Wilmington.

6.1.1 Ipswich River Watershed

The Ipswich River begins at the confluence of Maple Meadow Brook and Lubbers Brook near Woburn Street, and flows easterly for over 30 miles before reaching the Atlantic Ocean at Plum Island Sound. Stream gradients in the basin are low; the river drops an average of 2.5 feet per mile.

The entire watershed is approximately 155 square miles, of which over 74% is forested. The marshes, wet meadows, and forested wetlands along the river provide habitat for a wide variety of flora and fauna, and the river corridor is a valuable recreation resource, providing opportunities for canoeing, fishing, hiking, birdwatching, and passive recreation.

6.1.1.1 Geology and Aquifers

The landscape of the Ipswich River Watershed was formed during the last ice age, which ended approximately 15,000 years ago. Mile-thick continental glaciers advanced across the region like a bulldozer, removing soil and weathered rock and reworking it into a thin cover of highly variable, poorly sorted deposits (containing silt, sand, gravel, and boulders) known as till. Till is common in Wilmington on the slopes and tops of hills, especially in the southwest, southeast, and northernmost sections of town. Figure 9 depicts the surficial geology of Wilmington.

When the glaciers melted, the outwash carried huge volumes of sand and gravel from nearby areas into what is now the upper Ipswich Watershed. This material accumulated in the ancient, pre-glacial valleys that characterize the area and formed thick deposits of

stratified drift. These sand and gravel units underlie approximately 30% of the Ipswich River Basin in thicknesses of generally less than 50 feet, although deposits over 90 feet thick have been reported. Figure depicts the surficial geology of Wilmington. It shows that stratified drift deposits cover the majority of town; they occur on the lower portions of slopes and in lowland areas, where they may be overlain by more recent swamp deposits.

Stratified drift deposits form excellent groundwater reservoirs because they are both porous (can hold a large volume of water) as well as highly permeable (the water moves through the deposits quickly).

The presence of the stratified drift aquifer is critical to the hydrology of the Ipswich River. During the winter and spring, rainwater and snowmelt percolates through the ground into outwash deposits, where it is stored in the tiny spaces between individual sand and gravel particles. During the summer and fall, this water slowly percolates out of the aquifer and into the Ipswich River. This percolation forms the “base flow” of the River, which keeps the water flowing even during long intervals between precipitation events.

Bedrock in the basin is composed of a variety of igneous and metamorphic rocks. The numerous fractures that permeate this bedrock can store water, and bedrock wells in the area generally yield small but reliable quantities of water. The average yield of bedrock wells in the area is approximately 10 gal/min, an amount sufficient for domestic supplies.

6.1.1.2 Wetlands

Wetlands are prevalent throughout the Ipswich River Watershed. They cover about 21% of the land area throughout the basin, and roughly 19% of the land area in Wilmington. The extent of wetlands has been affected by development and filling. In 1970, the year the Massachusetts Wetlands Protection Act was passed, wetlands covered over 25% of Wilmington; it is likely that wetlands were even more extensive prior to the wave of development that occurred between 1950 and 1970, although data are not available.

Wetlands play an important role in the hydrology of the basin. Wetland soils generally have a high organic content, high porosity, and low permeability. Thus, they can store large volumes of water but do not transmit it easily to underlying deposits. Wetlands generally become inundated during floods and in the spring, retarding the magnitude and timing of peak discharges. The water retention functions of wetlands contribute to aquifer recharge, especially during drier years.

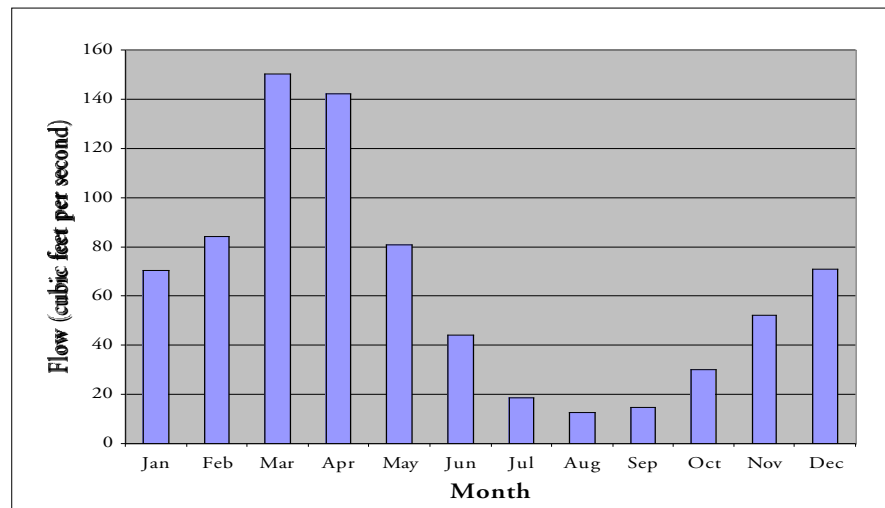
Figure 8: Water Resources of Wilmington

Figure 9: Surficial Geology of Wilmington

6.1.1.3 Streamflow

Mean annual flow from the basin is approximately 120 million gallons per day, or roughly 45 billion gallons per year. Discharge is not constant throughout the year, however. Figure 10 depicts the seasonal variation in streamflow, as measured at the U.S. Geological Survey (U.S.G.S.) stream gauge in Middleton. Streamflow is measured in terms of the volume of water that passes a given point in a set period of time; it is generally expressed in units of cubic feet per second (cfs). Water withdrawals and usage is commonly measured in millions of gallons per day (MGD).

Figure 10: Ipswich River at South Middleton, Average Monthly Flow, 1939 - 1996



Source: U.S.G.S.

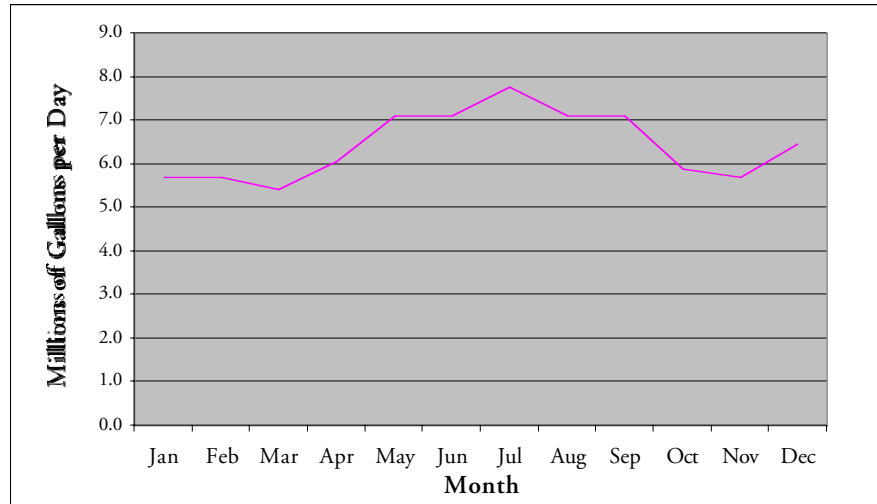
Figure 10 shows that streamflow in the Ipswich River is highest during the winter and spring, and lowest during summer and early fall. When the ground is saturated during the later winter and spring, precipitation runs off directly into surface water and contributes to peak flows during those seasons. During the growing season, precipitation drops off only slightly, but vegetation pulls large volumes of water from the ground through evapotranspiration. More recent research, discussed below in Section 6.1.1.5, indicates that water supply withdrawals, especially groundwater withdrawals, may be exacerbating the problem of low flows.

6.1.1.4 Regional Water Supplies

The Ipswich River Watershed is a vital water resource for over 330,000 people in 23 communities both within and outside of the basin. Basinwide, public water supplies are permitted to use roughly 22 MGD of the annual average discharge of 120 MGD. Approximately 58% of public water withdrawals are taken from the upper one-third of the basin.

Water supplies are drawn from both groundwater and surface water. Groundwater withdrawals in the upper basin average 6.4 MGD over the course of a year, although they are slightly higher during the summer months than in the winter and spring. See Figure 11.

**Figure 11: Monthly Groundwater Withdrawals,
Upper Ipswich River Watershed, 1989-1993**



Source: U.S.G.S., 2000

Surface water withdrawals in the Upper Ipswich River Basin are considerably less than groundwater withdrawals. They average just 0.84 MGD over the course of a year and are primarily limited to the months of December through May, when streamflow is highest.

Overall, only about 10 to 20% of all water withdrawn from the Ipswich River or its aquifer is returned to the basin as wastewater. The remainder is discharged in other basins or sent to the MWRA Deer Island Treatment Facility where it is discharged to the Atlantic Ocean.

6.1.1.5 Low-Flow Issues

Section 6.1.1.3 described seasonal fluctuations in the discharge of the Ipswich River. While the existence of seasonal variability is a natural function of climate, geology, and vegetation, there is mounting evidence that the withdrawal of water for public water supplies are decreasing flows of the Ipswich River enough to cause degradation of water quality, loss of wildlife habitat and diversity, and diminished value of the river as a recreational and scenic resource.

Three of the past six summers (1995, 1997, 1999) have seen especially notable low-flow conditions in the Ipswich River. During these dry years the river stopped flowing at the South Middleton stream gauge and was observed at times to go dry over nearly half its length.

In the Spring of 2000, the U.S.G.S. published a report on the Ipswich River that attempts to quantify the impacts of water withdrawals on streamflow through the use of a computer model of the watershed. The report, entitled *A Precipitation-Runoff Model for Analysis of the Effects of Water Withdrawals on Streamflow, Ipswich River Basin, Massachusetts*, was prepared cooperatively with the Massachusetts Departments of Environmental Protection and Environmental Management. The model, which uses precipitation, land use, hydrology, and water withdrawals as its major inputs, was calibrated using the period 1989-1993 and then used to simulate six alternative water withdrawal and land use scenarios.

Results of the U.S.G.S. model indicate that, in the absence of groundwater withdrawals, streamflows at the South Middleton gauge might be roughly ten times greater than what has been recently observed. The model predicts the low flow that could be expected over a seven day period with a recurrence interval of ten years (the 7-day, 10-year low flow, or 7Q10, a widely-used regulatory statistic); it found that, under existing conditions, one might expect the 7Q10 flow to be approximately 0.5 cubic feet per second at the South Middleton gauge. In the absence of water withdrawals, the low flow to be expected over the same period is over ten times greater: 4.1 cubic feet per second.

6.1.1.6 Impervious Surfaces and Runoff

In addition to water supply withdrawals, impervious surfaces, such as parking lots, have significant impacts on the Ipswich River Watershed. Under natural conditions, a percentage of rainfall and snowmelt percolates into the ground and down into the groundwater aquifer, while the remainder runs off into surface water. When an area is developed, the precipitation that falls on impervious surfaces is commonly directed to a storm sewer system where it is discharged directly to a surface water body such as a stream. Such an arrangement has two primary impacts on the watershed: it elevates peak discharge rates, increasing the incidence of flooding; and it reduces the opportunity for infiltration and aquifer recharge.

Increased peak discharge and volume can have negative impacts on the physical environment of a stream channel. Increased velocity results in greater scouring and redeposition; even small storm events have the capacity to change channel geometry and flow patterns.

The U.S.G.S. research found that the increased runoff and reduction in recharge caused by impervious surfaces have a quantifiable and significant impact on the Ipswich River. Model results indicate that the 7Q10 in an “undeveloped” Ipswich River basin not subject to water withdrawals would be 5.8 cubic feet per second, as compared to

the previously mentioned 4.1 cubic feet per second in a developed basin not subject to water withdrawals.

Impervious surfaces can also have a significant impact on water quality in the watershed. Runoff from paved areas commonly carries motor oil, other hydrocarbons, road salt, solids, heavy metals, pesticides, pathogens, and nutrients into surface waters. These materials degrade the capacity of the River to support wildlife, and may also threaten public water supplies, especially surface water supplies.

While impervious surfaces such as parking lots have more dramatic impacts on the watershed, other types of development also have consequences for the River. Lawns generally allow for less infiltration and recharge than forested areas, and runoff from treated lawns may carry pesticides, herbicides, and nutrients into surface waters.

6.1.2 Shawsheen River

Approximately 10.5% of Wilmington's land area is in the Shawsheen River watershed, which drains northeasterly into the Merrimack River. Sections of town within the Shawsheen basin include the northernmost section of town, the undeveloped area north of Salem Street along the Tewksbury line, and the westernmost portion of town, west of Hopkins Street.

The Shawsheen Basin covers about 78 square miles and is characterized, like the Ipswich River watershed, by low, rounded hills and many wetlands. In its upstream half, the river flows in a well-defined channel that meanders over a 200- to 600-ft-wide grassy flood plain. The lower half, downstream of Wilmington, flows through a gently curving pool and riffle channel that is crossed by several dams.

The Shawsheen is used as a public water supply by the town of Burlington, which diverts water from the River (upstream of Wilmington) to Mill Pond, a storage reservoir near the Wilmington town line. While Mill Pond is within the Ipswich River Watershed, it is strictly an "off-line" storage reservoir and does not discharge to the Ipswich River at all, aside from minor leakage.

Like the Ipswich River, the principal aquifers in the basin are composed of stratified drift deposits along the river and its tributaries that can yield several hundred gallons per minute.

Land uses within the Shawsheen River Watershed section of Wilmington include industrial development along Ballardvale Street and open space (forest, and cropland) elsewhere.

6.1.3 Mystic River

Approximately 8.5% of Wilmington, in the southeast corner of town near Woburn, is located in the Mystic River Aquifer. This section of town drains through the Aberjona River, which starts in Reading, to the Mystic River and eventually to Boston Harbor.

Land uses in the Mystic River Watershed section of Wilmington are primarily industrial.

6.2 Wilmington Water Supplies

The Wilmington public water supply system is operated by the Wilmington Water and Sewer Department. There are approximately 7,000 service connections in the system (6,961 in 1999). All water is obtained from groundwater wells within the Ipswich River Watershed. The Department supplies water to approximately 95% of the town's households; the remainder utilize private wells.

6.2.1 Existing Capacity and Permitted Withdrawals

The Wilmington Water and Sewer Department operates a public water supply system in the town. Water is drawn from stratified drift deposits of the Ipswich River Aquifer. The Department has nine active sources of supply. Two of these are wellfields, and the remainder are individual wells.

Table 19: Sources of Supply, Wilmington Water and Sewer

Well Name	Location	Total 1999 Production (Millions of Gallons)
Brown's Crossing wellfield	115 Andover St.	254
Butters Row well #2	54 Butters Row	246
Barrows wellfield	9 Sewell Road	223
Chestnut St well #1a	242 Chestnut St.	207
Salem St. well	479 Salem St.	146
Chestnut St. well #1	242 Chestnut St.	129
Butters Row well #1	54 Butters Row	84
Town Park well	775 Main St.	32
Shawsheen Ave. well	153 Shawsheen Ave	3
Aldrich Road Well	147 Aldrich Road	inactive

Source: Wilmington Water Department, 1999 Annual Statistical Report

The calculated combined safe yield for all active sources of supply is approximately 7 MGD. The safe yield is strictly an engineering calculation and does not imply that such withdrawal rates are sustainable or not detrimental to the aquifer.

Water is treated at two treatment plants: the Butters Row Water Treatment Plant, and the E.H. Sargent Water Treatment Plant at

Brown's Crossing. The combined treatment capacity of the two water treatment facilities is approximately 6+ MGD.

The town has a storage capacity of 5.2 million gallons of treated, or "finished," water in four tanks. The largest, on Ballardvale Street, was installed in 1989 and has a capacity of 3 million gallons.

The town's water withdrawals are limited by the Massachusetts Water Management Act, which regulates water use in the Commonwealth so as to protect future water supplies and preserve the natural environment. All water utilities that withdraw more than 100,000 gallons per day are required to apply for a permit from the state, which specifies the maximum volume of water that the utility can withdraw. State limits take into consideration the hydrologic and ecological impacts of water withdrawals as well as the importance of water supplies to economic and residential development. Regulators also consider the quantity of water that will be leaving the watershed as drinking water or as wastewater. Keeping water within a watershed, through septic systems or local wastewater treatment facilities, is preferred to "interbasin transfers," as when wastewater is pumped out of a watershed to a regional sewage treatment facility.

Wilmington's Water Management Act Permit authorizes withdrawals of up to 1.3 billion gallons per year, an average of 3.56 MGD. It is anticipated that the withdrawal authorization will increase to 1.35 billion gallons per year (3.71 MGD) in 2004; the water department does not anticipate additional increases after that time.

The water system currently has three physical interconnections with water systems in adjacent towns; these interconnections are for emergency use only and are not utilized on a regular basis. Two connections are with the North Reading System and one with the Tewksbury system. One connection with North Reading is metered; installation of a meter on the second connection is anticipated soon with improvements in North Reading's system. The connection with Tewksbury is not metered. Wilmington also has agreements with Woburn and Burlington to establish emergency interconnections through hydrants if necessary.

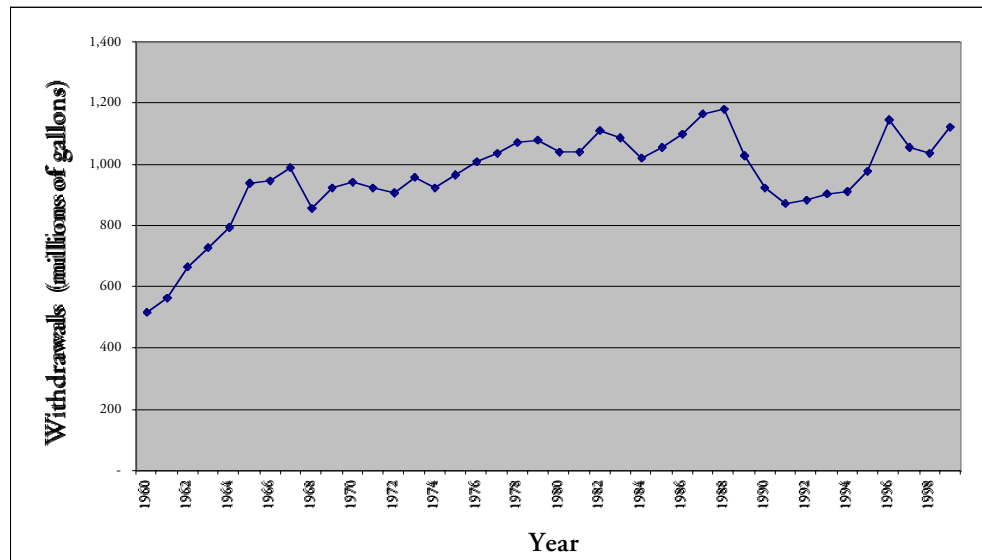
6.2.2 Distribution System

The distribution system consists of approximately 120 miles of water main. The last leak detection survey was completed in May 1998. Repair of leaks discovered during the survey contributed to a significant drop in unaccounted-for water, from 17% in 1997 to 2% in 1999.

6.2.3 Demand

Total water production in 1999 was 1.1 billion gallons, an average of 3.1 MGD. Historical annual demand has fluctuated around 1 billion gallons per year since 1965 (Figure 12). The highest recorded usage was in 1988, when annual production topped 1.18 billion gallons. Annual demand dipped below 1 billion gallons during the early 1990's but has been above that level since 1996. The Water Department anticipates that total annual demand during 2000 will be roughly 1.2 billion gallons.

Figure 12: Wilmington Water Withdrawals, 1960-1999



Source: Wilmington Water Department

6.2.3.1 Residential Demand

In 1999, The Wilmington water supply system served 21,406 residents through 6,715 residential service connections. Residential consumers comprise 96% of all service connections. Total residential consumption in 1999 was 646 million gallons, an average of 1.76 MGD. This constitutes 57% of total consumption. Residential consumption averaged 83 gallons per person per day.

6.2.3.2 Industrial and Commercial Demand

The 218 industrial customers in Wilmington are just three percent of the service connections but account for 40% of total system demand. Industrial uses consumed 450 million gallons of water in 1999, roughly 1.2 MGD. Figure 20 show major industrial and commercial water users. One major user (Analog Devices) accounts for over half of this consumption; in 1997, Analog Devices consumed 219 million gallons (0.6 MGD), a full 20% of total municipal water consumption in the town. Three other major users consumed more than 0.45 MGD; the remainder of the town's industrial and commercial customers consumed less than 10,000 gallons per day (as of 1997).

Table 20: Major Industrial and Commercial Water Users

Business	Average Daily Water Usage
Analog Devices	605,700 GPD
Textron	96,215 GPD
Altron	63,388 GPD
Koch	45,430 GPD
Lightolier	9,600 GPD

6.2.3.3 Municipal Demand / Other / Unaccounted-for Water

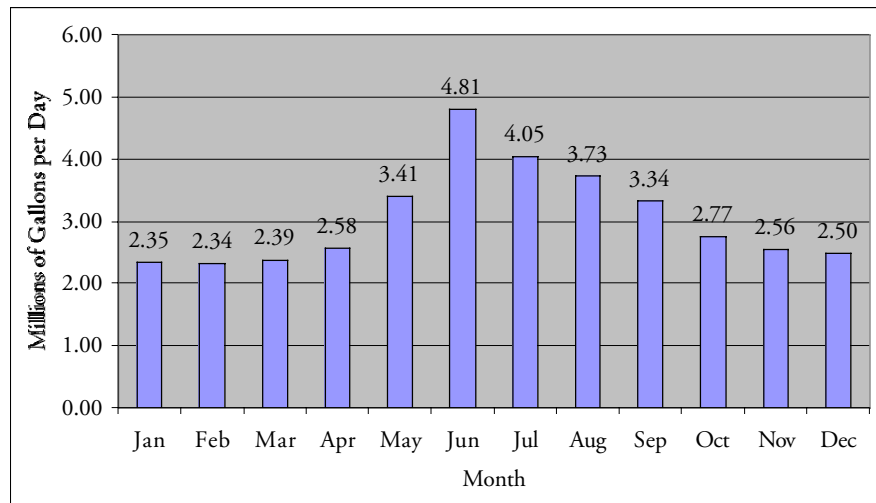
Municipal uses and other sectors consumed just one percent of total production in 1999. Approximately 2% of total production (19 million gallons) was unaccounted for, due to leaks, under-registering meters, main breaks, fire fighting, or other losses.

Unaccounted-for water figures do not include water used during the treatment process. Approximately 5% of total withdrawals are used for backwashing filters at the treatment facilities and is discharged to settling ponds, where it evaporates or infiltrates back into the ground.

6.2.3.4 Seasonal Demand

Total system demand varies widely throughout the year, and summer monthly demand is commonly twice winter monthly demand. Figure 13 shows average daily demand by month for the calendar year 1999. The seasonal pattern is characteristic of long-term trends; demand is highest (above the annual average) from May to September, with peak demands occurring in June and July. Average day demand for June 1999 was 4.8 MGD. From October through April, average day demand is typically less than 3.0 MGD. A large portion of summer increase is attributable to landscaping irrigation.

Figure 13: Monthly Average Day Demand, 1999



Source: Wilmington Water Department

6.2.3.5 Peak Demand

The maximum day demand in 1999 was 5.33 MGD. This figure approaches the combined capacity of the town's two water treatment facilities. Extended periods of demand at this level has negative impacts on the water supply system. It puts undue stress on the well pumps and treatment facilities, and can cause contaminants to be drawn into wells.

6.2.4 Water Rates

The Wilmington Water and Sewer Department charges customers according to the amount of water they use. 99% of all service connections are metered. 100% of all connections at municipal facilities are metered.

Current water rates are \$2.29 per 100 cubic feet (cf) of water.

The Water Department is currently evaluating alternative billing programs to promote water conservation. Options that may be considered include summer rates, different rates for commercial and residential customers, or an inclining block structure, in which the unit price increases as water use increases. Implementation of any of these options must be deferred until the town has replaced its billing system (in progress) and the Water Department installs new remote-read meters (scheduled for 2000 – 2004).

6.2.5 Private Wells

Private wells service just 5% of residences in Wilmington. In 1997, there were 280 private residential wells in Wilmington. Based on an average household size of 2.9 persons, and municipal residential water consumption of 80 gallons per capita per day, it is estimated that these wells withdraw approximately 0.065 MGD.

In 1997 there was one well owned privately and used for industrial purposes; that well, owned by Altron, an industrial user, withdrew approximately 0.1 MGD that year.

6.2.6 Water Conservation

The town was developing a Water Conservation Plan as this report was being written. No major conservation initiatives are currently underway.

6.2.7 Water Quality

The Wilmington Water and Sewer Department has experienced generally good water quality in recent years. The following sections describe two contamination issues that have affected water supplies in Wilmington recently. A more thorough discussion of environmental contamination is included in Chapter 8.

6.2.7.1 Butters Row

Currently, the major water quality concern for the town's wells is the migration of ammonia into the Butters Row wellfield. This contaminant has been attributed to the plume emanating from the Olin Corporation property on Eames Street, where waste products from chemical manufacturing were stored in unlined lagoons from 1953 until approximately 1980. Once in the water system, ammonia can oxidize to nitrate or nitrite. The maximum observed level of ammonia in untreated water is 12 milligrams per liter; in October, 1999, the highest level of ammonia in finished water was less than three milligrams per liter. The EPA standard for ammonia is 30 milligrams per liter. The Water Department is carefully monitoring water quality from the affected wells.

6.2.7.2 Kelly Hill

In 1999, it was also discovered that several private drinking water wells in the Kelly Hill neighborhood contained detectable levels of volatile organic compounds, most notable the industrial solvent tetrachloroethylene (TCE) and the gasoline additive methyl tertiary butyl ether (MtBE). Of the approximately 30 private wells in this area, 13 were tested, and eight were determined to have detectable levels of MtBE or TCE. The source of the contaminants has not been conclusively determined, although the possibilities include several contaminated sites on Main Street, septic system cleaners that contained chlorinated solvents including PCE, and multiple small gasoline spills at nearby residences. The DEP has recommended that all owners of private wells in the Kelly Hill area connect to the municipal water supply due to the contamination of the aquifer. Servicing all of these residents will result in increased demand of approximately 7,000 gallons per day.

6.2.8 Recharge Areas and Aquifer Protection

Because stratified drift deposits in Wilmington are extensive and largely contiguous, the area that contributes directly to the recharge of Wilmington's municipal wells is quite large. This direct recharge area (Zone II) has been mapped and approved by the Massachusetts Department of Environmental Protection. The Groundwater Protection District bylaw regulates land use within the Zone II. A description of the GWPD bylaw is included in Section 3.3.4.

6.2.9 Future Demand

The Metropolitan Area Planning Council conducted a buildout analysis of Wilmington to assess the amount of development that could be accommodated on vacant parcels under existing land use regulations. The buildout analysis estimated that development of all currently vacant parcels in Wilmington will result in increased water demand of approximately 0.625 MGD. This figure, however, is only an estimate; actual future demands will depend on the character of

development and the varying water needs of new or expanded industrial customers.

6.2.9.1 Future Residential Demand

The MAPC analysis found that an additional 1,226 dwelling units could be accommodated on existing vacant residential parcels. Assuming an average household size of 3 persons and average per capita consumption of 75 gpd, residential buildout will result in increased demand of approximately 0.28 MGD. This will result in total residential demand of 2.05 MGD, or 0.75 billion gallons per year. Regional population projections prepared by the MAPC suggest that Wilmington will achieve this population by the year 2020.

6.2.9.2 Future Industrial and Commercial Demand

Current zoning will permit development of approximately 4.65 million square feet of commercial and industrial space in Wilmington. Assuming average demand of 75 gpd per 1,000 square feet of space, industrial buildout will result in increased demand of approximately 0.35 MGD. MAPC employment projections suggest that Wilmington will not reach commercial/industrial buildout until after 2020.

While the buildout analysis provides some indication of the magnitude of future growth, significant variability exists in projections of future demand, especially demand for industrial uses. For example, Analog Devices, which currently uses roughly 0.6 MGD, has expressed an interest in expanding its facility and increasing its water usage by 0.5 MGD. It is likely that other businesses in water-intensive industries might have similar or larger water requirements.

6.2.10 Capacity to Meet Future Demand

The Wilmington Water and Sewer Department is currently limited in its ability to meet increases in demand. The capacity of the existing water treatment facilities is approximately 5.5 MGD. Maximum day demand during peak periods approaches this safe figure; increased peak demands can not be satisfied without the development of additional treatment facilities, sources of supply, and storage facilities.

6.2.10.1 Existing Sources

The calculated safe yield of the existing municipal wells is approximately 7MGD. However, extended withdrawals at this rate have significant impacts on the watershed and the aquifer. Withdrawals at the maximum rate also damage water department equipment such as pumps and filters. Due to these limitations, it is not likely that existing sources will have the capacity to meet any sizeable increases in demand.

6.2.10.2 Permit Constraints

Regardless of the calculated safe yield of the wells, the State of Massachusetts has instituted withdrawal limits intended to protect the hydrology and ecology of the Ipswich River Watershed, as well as to protect the water resources of downstream users. Current demand is within 100 million gallons of the annual limit set by the MA DEP. This means that the water system can accommodate an increase in usage of approximately 0.28 MGD.

6.2.10.3 Additional Sources of Supply

Due to the impact of water withdrawals on streamflow, it is not likely that the DEP will authorize additional withdrawals within the Ipswich River Basin.

The town is currently beginning the process of connecting to the MWRA for water supply. The cost of connecting to the MWRA for water supply is significant. There is an initial cost of \$5 million per 365 million gallons per year. The wholesale unit cost of water is approximately \$ 1,260 per million gallons (\$0.95 per 100 cf).

Development of an active interconnection with the MWRA would also require approval of many state and regional entities, including the Massachusetts Department of Environmental Protection, WISCAP, the Executive Office of Environmental Affairs (EOEA), the Massachusetts Water Resources Commission, the State Legislature, and the Governor. The permitting and approval process could cost \$500,000 or more. The process could be streamlined by conducting a joint water /wastewater planning and permitting process, an approach that would need to be approved by EOEA.

6.3 Wastewater Disposal

6.3.1 Municipal Sanitary Sewer System

The Water and Sewer Department currently operates a sanitary sewer system that services approximately 15% of the properties in town.

The septic system currently serves the following areas:

- Ballardvale Street industrial area
- White Pines Crossing
- Main Street, from Richmond Street to Tewksbury
- The area surrounding Silver Lake
- Woburn Street south of Perry's Corner
- Industrial Way
- Eames Street and Jewel Drive

The system consists of approximately 21 miles of gravity and force main sewers ranging in size from 8 inches to 36 inches in diameter. There are four town-owned pumping stations.

The sewer system discharges to the MWRA system and waste is treated at Deer Island Treatment Facility. In 1999, Wilmington discharged a total of 563 million gallons to the MWRA sewer system, approximately half (51%) of total water consumption. Average discharges were 1.54 MGD. Unlike water consumption, sewer discharges do not show any significant seasonal trend, and may even dip slightly during the summer months when demand for potable water is at its peak.

6.3.1.1 Residential Wastewater

Approximately 1,000 residences are connected to the municipal sewer system; the roughly 3,000 persons that use the sewer system constitute approximately 15% of the total water service population. The remainder of Wilmington residences utilize on-site septic systems. In 1997, residences contributed 11% of total wastewater flows (0.19 MGD).

6.3.1.2 Industrial and Commercial Wastewater

Most of the larger industrial and commercial customers in Wilmington are connected to the municipal sewer system. Businesses account for approximately 52% of total wastewater discharges. One major industrial customer, Analog Devices, accounts for approximately 31% of total sewer discharge, based on 1997 figures. Three other major industrial customers account for an additional 16%, and small businesses just 4%.

6.3.1.3 Inflow and Infiltration

All sewer systems are subject to inflow and infiltration, which occurs when groundwater migrates through leaks in the sewer mains and into the wastewater flow. Infiltration is a major component of wastewater flows in Wilmington; a 1997 study estimated that inflow and infiltration accounted for more than one-third (37%) of wastewater flows exported to the MWRA system. This figure is of concern for two reasons: it exports additional water from the Ipswich River Basin, and it results in greater wastewater volumes that must be treated at the Deer Island Waste Treatment Facility.

The 1997 inflow and infiltration study also found that over 63% of the townwide infiltration occurs at the Silver Lake Interceptor between its outlet point at Woburn Street and its upper reaches in the vicinity of Brand Avenue. It is also estimated that a significant portion of the inflow and infiltration may be occurring through private sewer pipes before they enter the public system. On-site infiltration at Textron and Analog Devices may constitute a full 8% of systemwide infiltration.

6.3.1.4 Sewer Rates

Sewer charges are based on metered water consumption; current sewer rates are \$1.91 per 100cf of water consumed for residential

customers, and \$2.28 per 100 cf of water consumed for commercial customers.

The MWRA assesses the town for two separate components of the sewer system: Capital costs, and Operations and Maintenance. Charges for capital costs are based on the assumption that the entire town will eventually be connected to the sewer system, because the MWRA must plan capital investments based on the largest possible service population. Other factors that go into determining assessment for capital costs include the proportion of residents with sewers to the townwide population, the volume of sewage produced by large industrial customers, and the actual sewer discharges measured at the meter at the Woburn town line. The assessment for Operations and Maintenance is based only on the recorded volume of discharges for the previous period. Combined costs for MWRA sewers are on the order of \$1.5 million per year.

Unlike wastewater that is treated via on-site septic systems, sewer discharges are lost from the Ipswich River Watershed. As a result, the hydrology and ecology watershed will benefit to the extent that wastewater can be kept in the basin through appropriate on-site or local treatment. Because it is partially based on the total town population, the MWRA assessment structure discourages investments in local wastewater treatment facilities that will reduce, but not completely eliminate, the amount of wastewater discharged to the system. The actual sewage flow and number of customers are only two components of the assessment calculation; other costs are fixed, regardless of the efforts made by the town to maintain on site septic systems or construct local municipal systems.

6.3.1.5 Town Policies Regarding Sewer Connections

Public sewage disposal of wastewater is favored by requiring all lots to be connected to an existing sewer line if a proposed subdivision is located up-slope and within 2,000 feet of that sewer line (for non-residential or multi-family residential use). If a single-family or two-family subdivision is proposed the requirement is reduced to 1,000 feet. Further requirements are that if a public sewer line is planned within 3 years of the date of submission of a definitive subdivision plan, and is located up-slope and within 1000 feet, sewer connections must be installed by the developer to all lots which can be connected later to the sewer system. For subdivisions not meeting these criteria, private on-lot or communal sewage systems must be installed, provided they are located in front yards wherever practicable, to facilitate connections to an eventual public sewer system.

6.3.2 On-Site Septic Systems

Approximately 5,500 to 6,000 private single-family residences in Wilmington utilize on-site sewage treatment systems. The most common type of subsurface disposal system is the conventional septic

system. Other systems that may be in use include cesspools (no septic tank or leach field) or tight tanks (sealed tanks that must be pumped regularly). Conventional septic systems consist of a septic holding tank, where solids settle out of the effluent; a distribution system of pipes and junction boxes; and a leaching field, where the liquid waste is discharged into the ground. It is in the leaching field that bacteria and other microorganisms break down the nutrients and pathogens that are present in sewage. For this reason, it is critical that a leaching field is adequately sized, built in soil that will allow downward percolation at a rate that is neither too fast nor too slow, and sufficiently higher than the water table.

Proper maintenance is critical to the long-term function of a septic system. Regular pumping of the septic tank is a basic practice that should be conducted on a schedule dictated by the capacity of the tank and the size of the household. Regular pumping can help to prevent discharge of solids into distribution pipes, where they can clog the soil in the leach field, causing system failure. Clogged leach fields must be excavated and replaced at great expense and disturbance.

Many systems were constructed prior to the promulgation of the state's first environmental codes during the 1960s, and may not be adequately sized or appropriately located by today's more stringent standards. New systems and upgraded older systems provide a significantly higher level of treatment and, if properly maintained, have longer functional lifetimes than older systems. Title 5 outlines several objectives that must be achieved by subsurface disposal systems: maximum stabilization of organic wastes in the effluent; removal of pathogens, nutrients and particulates; groundwater recharge with minimal pollution; and no surficial discharge.

6.3.2.1 Failing Septic Systems

Septic systems that no longer meet Title 5 objectives are considered to have "failed." System failure may be due to a number of factors; these include inadequate size of the system; insufficient depth to groundwater; shallow bedrock; and unsuitable soils. Poor maintenance is also a major factor that contributes to septic system failure. Septic tanks must be pumped out regularly in order to prevent solids from entering the distribution system and clogging the leach field.

Failed systems can release unacceptable amounts of nutrients and pathogens into the groundwater, resulting in environmental problems and public health risks. Septic system failure is not necessarily obvious to the homeowner; many failed systems may appear to be functioning normally while they are actually degrading groundwater quality. Some systems are so dysfunctional that they cause odor problems in the vicinity; this is termed a "gross failure." Because many

homeowners are unaware that their systems have failed, the problem is usually discovered during the sale of a house when state codes require inspection of on-site septic systems prior to title transfer. Systems that are found to be failing must be upgraded prior to sale. Upgrading a septic system may cost \$15,000 - \$20,000 or more, depending on site conditions.

6.3.2.2 Inspections and Failure Rates

There is no mandatory septic system inspection or maintenance program in place in Wilmington. State codes require inspection of residential septic systems upon transfer of title. This requirement has been in place since 1995. All properties in town will be inspected as they are sold; even properties dispensed through probate actions are inspected prior to title transfer. As a result, it is only a matter of time before all private properties in town have been inspected.

The Board of Health notes that the incidence of failing systems has been declining. In 1994, 13% of systems inspected were found to be failing; by 1999, that figure had dropped to less than 10%.

In 1999, the Board of Health issued permits for 22 new septic systems, 17 repairs that brought systems into full compliance, 49 repairs that brought systems into “maximum feasible compliance,” and 10 emergency repairs.

6.3.2.3 Existing Limitations in Wilmington

There are numerous conditions in Wilmington that hinder the construction of septic systems. The water table is high throughout much of town, there are widespread sandy soils, and bedrock is near the surface in many upland areas. Moreover, many houses in Wilmington are built on small lots, where expanding or replacing the leaching field is constrained by site conditions.

Prevailing groundwater elevations are generally high throughout many parts of Wilmington, often year round. A U.S.G.S. monitoring well installed off Route 62 in Central Wilmington indicates that groundwater elevation at that location fluctuates annually from 4.5 feet to 11 feet below grade. Current regulations require a separation of at least 4' between the leaching beds and the seasonal high water table.

Recognizing that not all properties can accommodate a conventional septic system built according to current standards, Title V permits a wide variety of “alternative” on-site treatment systems that may help solve various different site problems, including shallow groundwater, shallow bedrock, and small sites. While requirements vary, many of these systems permit a 50% reduction in the size of the leaching field, a reduction of 2' in the minimum soil depth, or a reduction of 2' in the minimum separation to groundwater. Some property owners

may also deal with shallow groundwater by adding fill to raise the grade of the area, permitting a proper separation between the leaching field and the water table.

6.3.2.4 Septic System Management Program

The town has recently begun participating in a Title 5 betterment program funded by the State Revolving Fund. The program provides low-interest loans to homeowners for the purpose of septic system upgrades. The state has made available \$200,000, which is loaned at an interest rate of 5%; applicants must demonstrate that they have already attempted to get a loan from a bank before they apply to the program. So far, \$50,000 has been used to fund five system upgrades and one sewer connection. Once the entire \$200,000 is lent out, it is possible the town could apply for additional funds from the state.

6.3.3 Comprehensive Water Resources Management Plan

The Town of Wilmington is in the process of developing a Town-wide Comprehensive Water Resources Management Plan, which is subject to review under the Massachusetts Environmental Policy Act. The first phase of this plan, the Needs Report, was submitted to the state in February 2000. One major conclusion of the needs report is that all of the town that is not currently sewered should be considered for sewerage.

6.4 Observations

Water has been a central factor in the development of Wilmington, and must be a critical component of land use and economic development planning. First the extensive wetlands discouraged development, then they nourished the crops of Wilmington's agricultural era. Silver Lake attracted development to the town, but wetlands constrained the spread of neighborhoods. An abundance of clean water fueled industrial growth, but the impacts of such use may require the town to limit future developments. Finally, the town has an important responsibility to other users of the Ipswich River, and potential impacts on downstream water quality and quantity must inform the planning decisions made by the town.

Water Supply: Impacts and Options

Recent research suggests that groundwater withdrawals contribute to low-flow conditions in the Ipswich River. Low flows in the river damage natural communities, views, recreation opportunities, property values, and water quality. The town is close to its limit on permitted withdrawals, and it is not likely that the state will raise this cap by more than a small amount. As a result, the town may need to deny service to potential commercial or residential customers, or find additional sources of water outside of the Ipswich River Basin, probably through the MWRA.

The current water withdrawal limits faced by the town—and the potential impacts they may have on economic development—are of primary importance. Connection to the MWRA water system is one expensive solution to this problem. However, an aggressive water conservation and reuse program may be sufficient to provide an increment of supply. In this situation, conservation measures can provide a dramatic return on the investment because they can delay the enormous capital cost of connecting to the MWRA system. An earnest water conservation effort requires a water conservation coordinator to provide technical assistance and conduct public education. If the town determines that a full-time position is not merited or feasible, the town should seek to share the costs of such a staff member with other towns in the Upper Ipswich River Watershed.

Wastewater Management: Watershed Implications

The fate of the town's wastewater must also be considered in a watershed planning context. The hydrologic impacts of groundwater withdrawals are compounded by the fact that 50% of the town's wastewater is exported from the basin to a regional wastewater treatment facility at Deer Island. Increasing wastewater export from the basin, by expanding the town sewers, will result in more water being exported from the basin and will essentially increase losses from the system, even though withdrawals are remaining constant. Thus, sewer extensions have watershed impacts that must be considered, and on-site or local wastewater treatment must be pursued to the extend possible.

While the potential groundwater impacts of failing septic systems pose a valid concern, extending sewers must be evaluated against alternative approaches to wastewater. The decision issued by the Secretary of Environmental Affairs regarding the Wastewater Needs Report suggests that the town should reconsider the major conclusion of that report. In particular, the Secretary recommended that lots throughout the town should utilize existing on-site Title 5 systems as long as they are functioning properly. While the town's soils are not generally favorable for septic system development, septic system failure can just as often be attributed to poor maintenance. An aggressive septic system maintenance program, in concert with revolving loans for septic system improvements, may significantly reduce the number of failing systems. The secretary also noted that not all Title 5 systems within a designated Zone II for a municipal well necessarily need to be discontinued. These considerations should be incorporated into the town's wastewater planning process.

Developments too dense to use conventional on-site wastewater disposal systems should still be encouraged to use on-site systems. In particular, the desired density to generate village-style economic activity precludes individual on-site systems. However, package

treatment facilities and alternative technologies may allow the wastewater from these developments to be treated and discharged locally.

Municipal Wastewater Options

Local sewage treatment and disposal must also be considered in the water management plan, for it would provide tremendous benefits to the watershed. The enormous capital costs of such a facility, as well as the town's sunk costs in the MWRA sewer system, discourage consideration of this option. However, there may be fiscal scenarios in which such a facility is feasible. The MWRA has stated that it may consider providing some form of financial assistance for local wastewater treatment facilities, although leadership for such a facility must come from within the basin.

The town should investigate the potential for a municipal wastewater treatment facility that would serve a portion of the town. The town sewer system may be collecting more than 2 million gallons of wastewater per day within the next ten years. It may not be feasible to site and construct a facility to treat all of this wastewater, but a plant that treated part of it would still generate significant watershed benefits.

North Reading is currently planning construction of a local wastewater treatment facility that would serve part of the town. Officials from that town have noted that finding land for subsurface discharge of treated wastewater has been a major constraint on the capacity of the proposed facility. One potential discharge location is located south of Route 62 at the Wilmington border.

Wilmington should work with North Reading to study the feasibility of the following scenario: Joint development of a wastewater treatment facility in North Reading, with a capacity of 0.5 to 1.0 MGD, with subsurface discharge locations in both towns. Wilmington should then petition the MWRA to reduce its assessments based proportionally to the businesses and residences within the new sewer district.

At the very least, Wilmington should work with Reading to have the East Wilmington Industrial Park connected to the proposed North Reading System, which will extend along Concord Street to the Wilmington border. Again, the town should petition MWRA to reduce assessments accordingly.

Wastewater Management and Growth Management

Finally, it is important to recognize the role that sewers play in growth management and village center revitalization. As discussed previously, redevelopment of the Central Business District and other sections of Main Street has been hindered by substandard septic

systems and lot limitations. It is anticipated that construction of sewers in Main Street will eliminate this wastewater constraint. For the same reason, the town should ensure that wastewater infrastructure is available to the proposed Neighborhood Activity Centers. Package treatment facilities for these centers should be seriously investigated.

The construction of sewers can also stimulate additional development where it is in conflict with the proposed land use plan outlined in Chapter 3. Construction of sewer mains along roadways will encourage additional strip-style development. In particular, the availability of municipal sewer along South Main Street and Lowell Street (east and west of Perry's Corner) will promote additional development that will undermine the planning focus on well-defined, village-style activity centers at Perry's Corner and Main / Lowell. If sewers are installed in these roadways, the hookup requirements should be extremely strict and planning considerations should be one factor by which a sewer connection permit is evaluated.

In outlying portions of town, sewer extensions can also permit conventional residential subdivisions in locations where lower density development is preferable. Sewers can also allow development of previously unbuildable lots, increasing the density and changing the character of established neighborhoods. The town must carefully consider growth management implications of extending sewers to areas with a high incidence of failing septic systems. Limitations on sewer extensions are an established and accepted planning tool in many communities. Promoting septic system maintenance and the use of alternative Title V systems is preferable to sewers, from a growth management perspective.

6.5 Recommendations

6.5.1 Hire a Water Conservation Coordinator.

The Coordinator would conduct public education and provide technical assistance. Public education should focus on the cost and environmental benefits of reduced watering and water-saving plumbing fixtures. Coordinator would also provide technical assistance to small- and medium-sized businesses to conduct water audits and implement retrofits and other best management practices.

Consider making Water Conservation Coordinator a shared position, funded jointly by other towns within the Upper Ipswich River Watershed (Reading, North Reading, Burlington).

6.5.2 Consider a conservation-oriented pricing structure for water supply.

Consider summer rates, commercial rates, and inclining block rates. Evaluate potential impacts on demand, economic development, and water system revenues.

6.5.3 Require installation of water efficient fixtures and appliances before issuing a sewer connection permit.

Require residential customers to have low-flow toilets and showerheads. For businesses, require water audit by Water Conservation Coordinator and stipulate that priority water conservation measures must be implemented prior to issuance of sewer connection permit.

6.5.4 Consider the use of Impact Fees for new or increased discharge into the municipal sewer system.

6.5.5 Study mechanisms to provide a credit or refund for installation of water-efficient fixtures and appliances.

Consider providing a water bill rebate or tax bill credit for installation of low flow toilets, low-flow showerheads, and "Energy Star" appliances (clothes washer and dishwasher).

6.5.6 Practice water-efficient landscaping and irrigation on municipal properties.

Use drought-tolerant shrubs, trees, and grasses. Allow lawns on municipal properties to go brown during the summer.

6.5.7 Continue to prohibit use of town water for landscaping irrigation in new large developments.

6.5.8 Consider a bylaw to limit the allowable lot area that can be converted to lawn.

The town of Sharon has successfully enforced a bylaw that limits the disturbance on a single family home lot to 50% of the total in the Rural Residential zones. Consider a bylaw that will limit lawn sizes to 66% of the total lot size in the R-60 Zone. Allow the Planning Board to exempt Conservation Subdivision Design developments from this requirement, at its discretion.

6.5.9 Develop Integrated Water Supply and Wastewater Management Plan.

Balance the economic benefits of sewers with environmental concerns regarding interbasin transfers. Rigorously evaluate the appropriateness of sewers and the potential of on-site treatment technologies and local wastewater treatment.

6.5.10 Study the Potential for a Joint Wastewater Treatment Facility with North Reading

Work with North Reading, the MWRA, and the EOEa to find a feasible way to expand the capacity of the proposed North Reading facility to accommodate some wastewater from Wilmington. Establish an "Upper Ipswich Sewer District" that includes portions of North Reading (Concord St., Main St., Martins Pond) and

Wilmington (East Wilmington Industrial Park, Ballardvale St., Andover St., North Wilmington).

- Find and purchase subsurface wastewater discharge site in Wilmington.
- Ask the MWRA to eliminate the Wilmington capital and operating assessment for the portion of town within the new sewer district.
- Seek funding from the State and MWRA to help construct such a facility.
- Investigate the possibility of an MWRA-owned Wastewater Treatment Facility in the Ipswich River Basin.

6.5.11 Protect Potential Subsurface Wastewater Discharge Locations from Development

Identify undeveloped land that has conditions favorable to subsurface discharge of wastewater (deep soils, deep groundwater, etc.). Protect this land from development in order to provide sites for potential future wastewater discharge.

6.5.12 Limit sewer extensions in residential or undeveloped neighborhoods as a means of managing growth.

Sewer extensions will facilitate and encourage development on marginal lots and should be avoided whenever possible. Examples of areas where sewer extension might promote development include the following:

- Large tracts of developable land along the Burlington border
- Open lands north of Salem Street and west of I-93

The town should also seriously consider the impacts of sewer extensions in established neighborhoods, where the availability of municipal sewer may allow development on previously unbuildable lots, thereby changing the density and character of an existing neighborhood.

6.5.13 Provide funding for an aggressive program to reduce infiltration into sewage system.

6.5.14 Continue the septic system maintenance and management program. Seek MWRA grants or loans to support the program.

Currently numerous houses are inspected upon transfer of title each year. Should the rate of inspections decrease significantly due to a slowdown in the real estate market, consider implementing a mandatory septic system inspection program.

6.5.15 Consider providing density bonuses for on-site or local wastewater treatment to discourage sewer connections.

Consider a 20% density bonus for cluster developments that utilize on-site septic system where sewer is available within 2,000 feet.

- 6.5.16 Assign a high priority for open space acquisitions that protect groundwater recharge areas.**
- 6.5.17 Expand Groundwater Protection District to include Zone II recharge areas for public water supplies in neighboring towns.**
- 6.5.18 Enact a town-wide stormwater management bylaw requiring stormwater management systems in all new developments.**
Model the bylaw after the Massachusetts Stormwater Management Standards currently enforced under the Wetlands Protection Act. Require a greater volume of recharge than state standards. Evaluate the potential for establishing set standards for redevelopment projects.
- 6.5.19 Create a municipal stormwater utility to maintain the storm sewer system**
Responsibilities would include the following: clean catch basins, map storm drains, close off illegal connections, etc. Property owners would pay in accordance with the volume of runoff they discharge into the system.
- 6.5.20 Consider strengthening aquifer protection bylaws (currently based on state model bylaw).**
- Require a special permit for: subdivisions of more than 3 lots, construction of more than 10 dwelling units, any nonresidential use on a lot greater than 40,000 square feet in size, or any use that discharges more than 2,000 gallons per day of wastewater on site.
 - Define “household quantities” of toxic or hazardous material. Commonly accepted thresholds are as follows: 275 gallons of oil for heating or emergency use; 25 gallons of hazardous materials; hazardous waste at “Very Small Generator” level, as defined by state regulations (310 CMR 30.353).
 - Establish specific guidelines for storage and containment of hazardous materials, inspection procedures, reporting requirements, or groundwater monitoring.
 - Establish performance standards for nitrogen management.
 - Prohibit manufacturing of petroleum-based roofing, paving, and construction materials.
 - Prohibit underground storage tanks not exempted by section 107(i).
 - In the absence of a townwide stormwater management bylaw, establish standards for stormwater runoff rate and groundwater recharge; use Massachusetts Stormwater Management Standards
- 6.5.21 Encourage Billerica, Burlington, North Reading, and Woburn to enact groundwater protection regulations for Zone II of Wilmington’s wells.**

- 6.5.22 Implement storm drain stenciling program to reduce illicit dumping of hazardous materials.
- 6.5.23 Enact a local wetlands bylaw that establishes regulatory jurisdiction over the 100-foot buffer zone.
Incorporate rules and regulations into bylaw presented at town meeting. A bylaw should grant the town the authority to levy fines for violations.

7 NATURAL RESOURCES

7.1 Geology

Wilmington geology is comprised of ancient bedrock overlain by relatively recent deposits left behind by glaciers. While the surface of the bedrock has significant relief, glacial sand and gravel deposits have filled in the ancient valleys, resulting in a relatively low-relief landscape. Figure 9, in Chapter 6, depicts surficial geology in Wilmington.

Bedrock in the area is primarily igneous and metamorphic rocks of Paleozoic and Precambrian age. Rock types include pegmatite, granite, gneiss, schist, quartzite, and gabbro, which is similar to basalt. These ancient rocks have been heavily metamorphosed and are cut by numerous fractures and small faults. Bedrock is visible as ledge outcrops on the slopes and tops of the low hills in Wilmington. The surface of the bedrock has considerably more relief than the ground surface today; well logs indicate that there is a large bedrock gorge, possibly formed by the pre-glacial Merrimack River, extending northwest-southeast through Wilmington. Although the floor of this bedrock valley is below sea level, it has been filled in by glacial debris, as described below.

The primary influence on the current landscape of Wilmington was the last ice age, which ended approximately 15,000 years ago. Mile-thick continental glaciers advanced across the region like a bulldozer, removing soil and weathered rock and reworking it into a thin cover of highly variable, poorly sorted deposits (containing silt, sand, gravel, and boulders) known as till. Till is common in Wilmington on the slopes and tops of hills, especially in the southwest, southeast, and northernmost sections of town. In areas where the till is thin, bedrock outcrops are common and the soils are shallow but well-drained.

Several sand and gravel eskers have been identified in Wilmington. These deposits were formed by rivers flowing beneath the ice sheet and form linear hills with low relief. Eskers can be found along Andover Street, near the North Intermediate School, North of Aldrich Road, and north of Nichols Street. Several drumlins also occur in town.

When the glaciers melted, the outwash carried huge volumes of sand and gravel from nearby areas into what is now the upper Ipswich Watershed. This material accumulated in the ancient, pre-glacial valleys and formed thick deposits of stratified drift. These sand and gravel units occur in deposits with thicknesses of generally less than 50 feet, although deposits of much greater thicknesses have been reported. Stratified drift deposits predominate in Wilmington and are found extensively on the lower portions of slopes and in lowland

areas, where they may be overlain by more recent swamp deposits. While there may be large bedrock valleys below, the deposition of so much sand and gravel makes Wilmington relatively flat.

Some large blocks of ice left were behind when the glaciers retreated; these melted very slowly and formed depressions known as potholes or kettleholes. These features commonly form ponds, the largest of which is Silver Lake.

Certain types of stratified drift are particularly good sources of sand and gravel. In Wilmington, the kame deposits found in the northeast corner of town near North Reading have been the site of large sand and gravel extraction operations. Aerial photos indicate that these operations are no longer active. Several smaller sites in town have been the site of sand and gravel extraction. Rock was also quarried in the area bounded by Burlington Avenue, Boutwell Street, and Aldrich Road.

7.2 Soils

The 1982 Wilmington Soil Survey identified and mapped the soils in town and grouped the several classes into five “associations” or General Soil Areas. These associations are comprised of related soils that are commonly found under similar conditions, often in close proximity to one another.

Table 21: Soil Associations in Wilmington

Soil Association	# of Acres	% of Town	Underlying Geology	Distribution	Water Table
Deerfield-Hinckley-Windsor	3,980	36%	Stratified Drift	Level areas and moderate slopes	Seasonally high
Muck-Scarboro-Au Gres	2,907	26%	Stratified Drift	Flat lowlands	High
Millis-Woodbridge	1,980	18%	Glacial Till	Shallow to moderate slopes	Seasonally high
Canton-Windsor	1,150	11%	Glacial Till & Kame Deposits	Moderate slopes	Low
Hollis	940	9%	Glacial Till	Moderate slopes	Low
Total	10,957	100%			

Source: Draft Open Space and Recreation Plan

7.2.1 Poorly Drained Wetland Soils

The Muck-Scarboro-Au Gres Association is found throughout Wilmington's wetlands. It consists of very poorly drained hydric soils in low-lying, mucky, level terrain. The water table is at or near the surface for most of the year. Both forested and non-forested wetlands occur on this association. The high water table and poor load-bearing capacity of this soil association is a major limitation to development, especially in regard to construction of leach fields for septic systems.

7.2.2 Well-Drained and Moderately Well-Drained Soils with a Seasonally High Water Table

The Millis-Woodbridge association consists of well-drained and moderately well-drained, very stony soils that developed in glacial till on shallow to moderate slopes. Soils are primarily fine sandy loam and loamy sand and are underlain by a hardpan at a depth of 1.5 to 2 feet. In some areas the water table is within 2 feet of the surface for much of the year. This association also includes some poorly and very-poorly drained soils on level areas that support marshy vegetation and small wooded wetlands. While this soil association is generally favorable for development, the high water table and shallow hardpan present serious limitations for septic systems.

The Deerfield-Hinckley-Windsor Association is the most common soil association in Wilmington. It develops on the stratified drift deposits of sand and gravel that occur throughout the low-lying and moderately sloped portions of town. The association includes well-drained and moderately well-drained sandy and gravelly soils on level or nearly level areas. Soils are commonly affected by a fluctuating water table that is within two feet of the surface for nearly half of the year. This association is generally favorable for development, although the high permeability of the sand and gravel substratum may result in contaminants moving quickly into the aquifer from surface spills or from failing septic systems.

7.2.3 Well-Drained Soils

The Canton-Windsor Association consists of deep, well-drained, and very stony soils derived from sandy glacial till and dry sandy soils formed in thick deposits of sand. This association occurs primarily in the northeast part of Wilmington and comprises approximately 11% of the town. Common vegetation includes white pine and red oak forests. It occurs on moderately sloping hills and does not present serious limitations for development, although it may be subject to erosion hazard if not fully vegetated.

The Hollis Association is mostly shallow, stony, well-drained soils that occur in association with exposed bedrock (ledge) on moderate slopes. Hollis soils are derived from glacial till and are generally less than three feet thick. Erosion hazard is moderate, but the shallow

bedrock presents a significant limitation to residential development or septic system construction.

7.3 Surface Waters

The Ipswich River originates in Wilmington at the confluence of Maple Meadow Brook and Lubbers Brook. Other Ipswich River Tributaries in Wilmington include Mill Brook, Sawmill Brook, Taylor's Pond Brook, and Cold Spring Brook. . The northeast corner of town drains into Martins Brook, which joins the Ipswich River downstream in North Reading. The importance of the Ipswich River as a regional water resource has already been discussed in the previous chapter. As discussed previously, portions of town are in the Shawsheen River Basin and the Aberjona Watershed.

Silver Lake is a 28-acre great pond that is an important recreation resource. There are also numerous small ponds throughout Wilmington.

7.4 Wetlands

Wetlands are prevalent throughout Wilmington and are most commonly found bordering streams or the Ipswich River. Most wetlands occur on nearly level areas within the floodplain; some occupy the lower portions of slopes.

Because of the topographic and vegetative character of the wetlands, they perform important functions for stormwater retention and aquifer recharge. Rather than quickly flowing out of town and contributing to downstream flooding problems, stormwater is retained in wetlands and percolates down into the aquifer. Wetlands also help to remove nutrients and pollutants from water.

Wetlands are protected by the Massachusetts Wetlands Protection Act and the U.S. Clean Water Act. The more stringent state law is enforced by the Wilmington Conservation Commission.

Conservation Commission policies, which are not legally binding, include the following:

- No disturbance of vegetation or soil within 15' of the wetland boundary;
- No construction of structures (except for existing sheds and the like) within 25' of the wetland boundary;
- Altered wetlands must be replaced at a ratio of 2:1 (replacement area/lost wetlands);
- Minor projects at least 50' from the wetland boundary may proceed at the property owner's risk, subject to filing with the Commission;
- All roof runoff from single family home construction must be infiltrated on site.

The Wetlands Protection Act provides Conservation Commission with jurisdiction within designated wetlands and limited jurisdiction within the 100 foot buffer zone. Experience has shown that activities outside the accepted boundary can also diminish a wetland's ability to perform the critical functions described above.

- The buffer zone is an accessory habitat for wildlife within the wetland.
- Erosion from construction sites can negatively impact wetland vegetation and wildlife, while reducing the flood storage and recharge capacity of the resource.
- Disturbance or siltation from nearby construction can make wetlands susceptible to invasive plant species.
- Developments near wetlands commonly encroach on protected resources through incremental filling or dumping.
- Nutrients from lawn fertilizers and septic systems can degrade the water quality in wetlands and waterbodies.

The Conservation Commission has also found that enforcement of existing regulations is difficult, because the Act does not grant towns the authority to levy fines against violators.

Many towns in Massachusetts have used home rule authority to enact wetland protection bylaws that grant additional authority to the conservation commission. For example, a bylaw may authorize a commission to limit activities within the 100-foot buffer zone (or a portion of it), assess fees for professional review of large projects, and levy fines for violations. At the very least, a bylaw might simply make the existing Conservation Commission Policies legally binding.

Some bylaws expand existing buffer zones or establish them for resource areas not assigned buffer zones by the Act. Bylaws that define the buffer zone as a regulated resource place the burden of proof on applicants, who must demonstrate that proposed activities will not impact wetlands or other resource areas.

Consultant fees allow commissions to conduct a more rigorous review of large projects than would otherwise be possible, at no additional cost to the town. Applicants are charged for the consultants that review their project, up to a maximum fee based on the total estimated cost of the project.

A wetlands bylaw may also allow the Conservation Commission to require the applicant to file a performance bond commensurate with the cost of the work proposed within a resource area. This bond is released once the commission has determined work was completed in accordance with the permit.

Specific recommendations for a Wilmington Wetlands Protection Bylaw are included at the end of this chapter.

7.5 Vegetation and Wildlife

Developed land now constitutes just over sixty percent of the town's total area (See Figure 2), but Wilmington is also home to a variety of ecosystems and wildlife. Wildlife is an indicator of the health of the environment and is also a source of joy for children and grownups alike. A diverse wildlife community also has material benefits to the population of Wilmington: birds and fish control the insect population and predators feed on rodent pests. Natural vegetation also contributes to the scenic character of the town and mature woodlands add to the value of residential neighborhoods.

The following sections describe the town's major wildlife habitats, agricultural land, open land, forests, and wetlands and some of the wildlife that is likely to be found in them.

7.5.1 Forest

The vegetation map (Figure 14) identifies roughly 3,400 acres of forest in Wilmington (31% of the town's total area), primarily the Oak-Pine association (2,000 acres) and the Swamp Hardwood association (1,300 acres). There are also small areas of Coniferous Wooded Swamp (12 acres) and Mixed Wooded Swamp (125 acres).

7.5.1.1 Forested Uplands

The Oak-Pine forest type is located in higher and drier areas of Wilmington, on dry outwash soils and sandy tills. Red oak and white pine as well as red maple, aspen, hickory, and gray birch. Common shrubs and herbs include blueberries, wintergreen, club-mosses, and hazel. This habitat is likely to be the most threatened because it is well-drained, moderately-sloped, and otherwise suitable for development.

Some of the common reptiles and amphibians found in the oak-pine forest include spotted salamander, redback salamander, wood frog, American toad, eastern milk snake, and eastern garter snake. Common birds include red-tailed hawk, Cooper's hawk, mourning dove, downy woodpecker, great-horned owl, northern flicker, eastern wood pewee, eastern phoebe, blue jay, American crow, white-breasted nuthatch, brown creeper, gray catbird, scarlet tanager, ovenbird, American goldfinch, yellow-rumped warbler, and Baltimore oriole. Common mammals include Virginia opossum, eastern chipmunk, woodchuck, gray squirrel, red squirrel, white-footed mouse, red fox, coyote, raccoon, river otter, white-tailed deer, and striped skunk.

7.5.1.2 Forested Wetlands

Hardwood swamps, found in the scattered wetland areas of town and along the town's brooks are so dominated by red maples that they are often referred to as Red Maple Swamps. Other common trees include ash, cedar, and black gum. Common shrubs include alder,

Figure 14: Wilmington Vegetation

viburnum, and blueberries. The abundant herbs include sedges, ferns, false hellebore, and skunk cabbage. A stand of swamp white cedar is located to the southeast of Wilmington Cemetery. Wooded wetlands are an important component of the town's remaining forested lands.

Some of the common animals found in the swamp hardwood association include spotted salamander, redback salamander, northern spring peeper, gray tree frog, wood frog, bullfrog, common snapping turtle, painted turtle, northern water snake, northern ringneck snake, and eastern garter snake. Common birds include great blue heron, green heron, wood duck, red-tailed hawk, great horned owl, eastern screech owl, barred owl, downy woodpecker, blue jay, tufted titmouse, American crow, brown creeper, Carolina wren, black-capped chickadee, American robin, northern mockingbird, cedar waxwing, red-eyed vireo, yellow warbler, song sparrow, common grackle, American goldfinch, and Baltimore oriole. Many of the same mammals found in the oak-pine association are also likely to be found in wooded swamps.

7.5.1.3 Forest Fragmentation

Ecologists agree that fragmentation of large forest areas is one of the biggest threats to natural communities and biodiversity in New England. Many wildlife species depend on the interior of forests for much of their life cycle, and the loss of large forests is contributing to the decline of many species of mammals and birds, especially migratory songbirds.

Scientists attribute these declines to two major causes: habitat loss in the migrants' Latin American wintering areas, and fragmentation of the North American forests where the migrants come to reproduce. Some species, both migrants and permanent residents, refuse to breed in small forest fragments even if they contain suitable habitat. Such "area sensitive" species that may be found in Wilmington include hairy woodpecker, brown creeper, veery, ovenbird, and hermit thrush. Predation rates are also higher in small forest patches than larger ones, higher near the edges of large fragments than in their interiors, and highest near settled areas and farmland.

Some consider songbird preservation to be a matter of aesthetic or philosophical concern, but forest birds feed primarily on insects that, if unchecked, can reduce the productivity and economic value of the forest or become pests that feed on ornamental plantings and gardens.

These factors mean that the remaining uninterrupted forests in and near Wilmington are particularly valuable as wildlife habitat. Three relatively large forest areas remain in Wilmington. One 350-acre forest includes the Town Forest (162 acres) and some adjacent forested areas at the extreme north end of town. Another 400-acre

forest is located north of Salem Street along the Tewksbury boundary. It includes extensive wetlands and 95 acres of town-owned land. The third large forest area is located along the Burlington boundary and includes the (town-owned) Wilmington Gardens Conservation Area. There are roughly 300 acres of forest in Wilmington that border additional undeveloped land in Burlington.

Preservation of these remaining large forest areas is critical to maintaining a healthy, diverse population of wildlife in Wilmington. Extensive residential development is the most significant threat to these remaining forest areas. Protection through acquisition or easement is the most effective way to preserve this wildlife habitat. In situations where the town is unable to permanently protect the land from development, zoning tools and other regulatory measures can reduce the impact of development. Conventional subdivision development spreads development out over a wide area, greatly reducing the wildlife habitat value of a site. Even large lot zoning does not prevent these impacts, because it can fragment a large area and results in a large amount of vegetation clearing. In contrast, cluster development, or conservation subdivision design, encourages developers to group houses together on the least sensitive portion of the site, and preserve the remaining land as open space. Consideration should also be given to a bylaw limiting the size of lawns, which have little wildlife habitat value.

7.5.2 Non-Forested Wetlands

The vegetation map identifies 660 acres of non-forested wetlands in Wilmington (6% of the total area) and 80 acres of water. These rich wildlife resources include wet meadows, shallow marshes, shrub swamps, deep marshes, bogs, and ponds.

7.5.2.1 Wet Meadows and Shallow Marshes

There are nearly 350 acres of wet meadows and shallow marshes in Wilmington. Wet meadows are characterized by sedges and cattails, surface water depths to 6 inches in winter and early spring, and exposed but saturated soil surface in summer. Wet meadows typically provide habitat for the northern leopard frog, swamp sparrow, little brown bat, big brown bat, star-nosed mole, and short-tailed shrew.

Shallow marshes, like those associated with Martin's Brook in North Wilmington and along many of the other brooks in town, are characterized by persistent emergent vegetation such as cattails and water depths to 1.5 feet. They provide habitat for the following wildlife species: northern spring peeper, painted turtle, and northern leopard frog. Common birds may include great blue heron, green heron, American black duck, mallard, eastern screech owl, tree swallow, red-winged blackbird, and American goldfinch. Common mammals may include Virginia opossum, little brown bat, muskrat, mink, and raccoon. Many marshes have been colonized by invasive

plants such as purple loosestrife, which may crowd out less aggressive native species. The incidence of invasive species is much higher when wetlands or the adjacent buffer zone has been disturbed due to development.

7.5.2.2 Shrub Swamps

Shrub swamps total roughly 270 acres and are also found along the margins of many of the town's brooks. They are wetlands characterized by woody shrubs such as buttonbush, alder, silky dogwood, and red maple and white ash saplings. They typically provide preferred habitat for the following species: Spotted turtle and Blanding's turtle. Common birds may include black-crowned night heron, common snipe, glossy ibis, common yellowthroat, common grackle, song sparrow, swamp sparrow, and American goldfinch. Common mammals include Virginia opossum, water shrew, little brown bat, eastern cottontail, and raccoon.

7.5.2.3 Deep Marshes

Deep marshes cover 40 acres and are found primarily along Martins Brook and scattered along many of the town's other brooks. They are wetlands characterized by emergent vegetation and floating-leafed plants such as water lilies (*Nymphaea* and *Nuphar*), and water depths to 6 feet. They typically provide preferred habitats for the following species: Painted turtle, spotted turtle, and red-spotted newt. Common birds may include pied-billed grebe, and American coot. Common mammals include the same species found in Shallow Marshes.

7.5.2.4 Bogs

Four bogs, totaling 10 acres, are indicated on the wetlands maps. Bogs contain some of the most interesting plants found in Massachusetts. Especially noteworthy are the carnivorous plants, pitcher plants and sundews, which obtain some of their nutrients from captured insects and spiders. Bogs are usually dominated by floating mats of sphagnum moss. Two of Wilmington's bogs are located on land managed by the Conservation Commission. These are just east of the Route 93 Route 125 interchange. Another is located on private land along Lubbers Brook, upstream of Silver Lake. This bog is within an area identified by the Massachusetts Natural Heritage and Endangered Species Program as an "estimated habitat of rare wildlife". The fourth bog is located on private land along Mill Brook near the boundary with Burlington.

Bogs typically provide habitat for a small number of species including pickerel frog and spotted turtle. Common birds may include palm warbler and Wilson's warbler, and common mammals may include little brown bats, silver-haired bats, water shrew, and raccoon.

7.5.3 Agricultural Land

Agricultural land in Wilmington includes 50 acres of cropland, 6 acres of nursery, 12 acres of cranberry bogs, and 15 acres of pasture. These areas, which cover less than 1% of the town's total area, are reminders of the town's history and important resources for wildlife. Grassland birds, like eastern meadowlarks and bobolinks, formerly used hayfields, meadows, and pastures for breeding in Wilmington. Now the town's once plentiful fields are too small and scattered to attract all but a few passing examples of these grassland specialists. Other resident or migratory bird species use remaining fields for feeding on seeds, insects, and small mammals. Many hawks and owls, such as American kestrels and northern harriers rely on grasslands for hunting small mammals, while other hawks and owls, such as red-tailed hawks and great horned owls, hunt in these fields as well as the town's forested areas. Voles, woodchucks, eastern cottontail rabbits, and various snakes can also be found in fields and pastures.

The remaining agricultural land in Wilmington is located in a few scattered parts of the town. Scirappa Farm is in the northern part of town off Andover Street. Another farmed area is located along the town's boundary with Tewksbury. Small farm fields are also located near Wildwood Street near the Ipswich River and off Chestnut Street and Main Street in the southern part of town, near Maple Meadow Brook. Only one small tree farm is protected from development by an agricultural restriction.

In order to preserve the wildlife value of former agricultural areas, the conservation commission might consider management techniques that will retain the open character of these fields, which would otherwise return to a forested state. Fire and mowing are management techniques that can be used to maintain open fields.

7.5.4 Open Land

Power line corridors and abandoned open land are also areas used by many of the same species of wildlife that use agricultural land. There are just over 160 acres of this type of habitat in Wilmington (1.5% of the total area). Power line corridors are also often used as a movement corridor for wildlife, providing a means of getting from one habitat to another.

7.5.5 Rare Wildlife

The Massachusetts Natural Heritage & Endangered Species Program has identified five rare plant species and four rare insects that occur in Wilmington. Table 212 lists these species and their status.

Table 22: Rare species in Wilmington

Species	Common Name	Status	Year
<i>Arceuthobium pusillum</i>	Dwarf Mistletoe	Special Concern	1903
<i>Arethusa bulbosa</i>	Arethusa	Threatened	1903
<i>Asclepias purpurascens</i>	Purple Milkweed	Threatened	1886
<i>Calamagrostis pickeringii</i>	Reed Bentgrass		1990
<i>Scirpus lingii</i>	Long's Bulrush	Endangered	1992
<i>Acronicta albarufa</i>	Barrens Daggermoth	Threatened	1910
<i>Citheronia sepulcralis</i>	Pine Devil Moth		1910
<i>Crangonyx aberrans</i>	Mystic Valley Amphipod	Special Concern	1982
<i>Demoscerus palliatus</i>	Elderberry Long- Horned Beetle	Special Concern	1933
<i>Nicrophorus americanus</i>	American Burying Beetle	Endangered	1910

Source: Open Space and Recreation Plan

The Atlas of Estimated Habitats of State-listed Rare Wetland Wildlife, published by the state, lists two sites that are known to be habitat for rare species. Rare species priority site #254 is located east of Ballardvale Street in the northern part of town. This undeveloped area, sandwiched in between two industrial developments, is zoned GI and R-20. There is also a rare species priority site (#298) located north of Lake Street on the Tewksbury boundary west of Silver Lake. The Massachusetts Endangered Species Act provides a level of protection for the rare species that use these sites.

There are also two other areas that are *estimated* to be habitats of rare wildlife in Wilmington. One (#2017) is located on either side of Aldrich Road where it crosses into Billerica and the other (#112) is where Chestnut Street crosses Sawmill Brook. These estimated areas are based on population records for rare species and their habitat requirements. The areas are designed for use with the Wetlands Protection Act Regulations and development projects that fall within these areas require the filing of a Notice of Intent form with the Natural Heritage and Endangered Species Program.

There are at least nine certified vernal pools in Wilmington. Vernal pools are critical habitats for salamanders, wood frogs, and a wide variety of other wildlife. They are usually isolated depressions that fill with water in the spring but often dry up by late summer. Salamanders and wood frogs migrate from surrounding forested uplands to these pools in the spring to breed. Without these vernal pools we would lose these animals. It is likely that there are other important wildlife habitats and vernal pools in Wilmington. An effort to have volunteer amateur or professional naturalists search for such locations, so that they can be protected as future development

occurs should be encouraged. A wetlands bylaw can also be written to provide additional protection for vernal pools.

7.6 Environmental Hazards

Serious concerns exist in Wilmington regarding the potential impacts of environmental contamination. There are numerous known contaminated sites in town and considerable concern about unknown or potential environmental threats associated with industry or transportation of hazardous materials.

The primary responsibility for monitoring and enforcement of environmental laws lies with the state Department of Environmental Protection (DEP). Participants at the Visioning Workshop suggested that the town should explore ways to take a more active role in the prevention and cleanup of contamination. This section examines the cleanup process and reviews existing sites in Wilmington, in order to identify ways that the town can facilitate the cleanup of contamination.

7.6.1 Contamination Issues

The Massachusetts Contingency Plan (MCP) lays out a detailed process for reporting, assessing, and cleaning up spills or releases of hazardous materials. During the first year after the report of a spill, DEP requires the responsible party to institute risk reduction measures to stabilize the site or fully remediate smaller and less complex sites. An assessment of the site is also generally conducted during the first year. Sites that are not completely remediated within a year are designated as Tier 1(A, B, or C) or Tier 2, based on risk to the public and the complexity of the clean-up effort. DEP oversees cleanup activities on Tier 1A sites; specially-trained Licensed Site Professionals from the private sector can manage cleanup activities all other sites. If a responsible party fails to provide a required submittal to DEP within a specified time frame, it is deemed non-compliant and assigned a “Default Tier 1B” status so long as it remains noncompliant.

There are five phases to the MCP process:

- Phase I: Initial Site Investigation, including classification
- Phase II: Comprehensive Site Assessment
- Phase III: Identification, evaluation, and selection of alternatives
- Phase IV: Implementation of selected remediation alternative
- Phase V: Operation, maintenance, and monitoring

Phases II and III may be abbreviated or eliminated on smaller and less complex sites.

According to the Massachusetts Department of Environmental Protection, there are 28 sites in Wilmington where a spill or release of hazardous materials has been reported but not yet remediated. There

are also 10 sites where a spill or release has been recently reported; these sites have not yet been classified by the DEP. There are 6 sites where contamination has migrated onto a property from another property. There are 71 sites that are closed and considered by the DEP to have been sufficiently remediated so as to eliminate significant risks.

7.6.1.1 Central Wilmington

There are 12 sites in Central Wilmington where a spill or release has occurred but not yet remediated. These sites are listed in Table 23.

Table 23: Contaminated Sites in Central Wilmington

Address	Name	Contaminant	Status	Phase
52 Main St	Silver Lake Pharmacy	Fuel spill	Non-compliant (Default 1B)	No Phase
101 Main St	Former Gas Station	Fuel spill	Non-compliant (Default 1B)	No Phase
103 Main St	Former Gas Station	Fuel spill	Non-compliant (Default 1B)	Phase II
205 Main St	Exxon Gas Station	Fuel spill	Tier 1C	Phase III
273 Main St	Hess Service Station	Fuel spill	Tier 2	Phase II
275 Main St	Wilmington Ford	Solvents and fuel	Tier 2	Phase II
312 Main St	Joe Barry's Oil	Oil spill	Tier 2	Phase IV
315-319 Main St	JJT Realty Trust	TCE, PCE	Tier 1C	Phase III
324 Main St	Fred's Service Station	Oil spill	Tier 2	Phase II
586 Main St	None	Oil	Tier 1C	No Phase
603 Main St	Wilmington Sunoco	Oil	Non-compliant (Default 1B)	Phase II
1 Burlington Av	Sweetheart Cup site	TCE, MtBE	Tier 1C	Phase II

In addition to these, there are two spill or release sites that have not yet been classified. In 1999, hazardous materials were reported at 212 Main Street and oil contamination on Adelaide Street. There are also two sites in Central Wilmington where contamination has migrated onto a property from upgradient. This is the case at 1 Lowell Street and at the MBTA commuter rail station; at both locations, hazardous material has entered the property from off site.

There are four sites in Central Wilmington where the responsible party has failed to make the required submittals to DEP. These sites are at Wilmington Sunoco, Silver Lake Pharmacy, and former gas stations at 101 and 103 Main Street. All of these sites are currently

deemed noncompliant and have been assigned a Default Tier 1B status.

There have been no major contamination events in Central Wilmington, but numerous small spills and releases have degraded groundwater quality over a wide area. In the Lower Main Street area, DEP has found very high concentrations of contaminants in the subsurface. Because it is denser than water, this contamination will sink through the sand and gravel and into the bedrock aquifer. Samples collected downgradient of the Lower Main Street sites suggest that there is not a definable plume of contamination migrating through the stratified drift within the Mill Brook subbasin; this finding suggests that the contamination is primarily migrating downward into the bedrock. Risks associated with the contamination along Lower Main Street are primarily associated with the potential for private bedrock wells to capture some of the contamination. Private wells should be tested regularly and residents should be switched to town water if solvents or other contaminants are detected.

The contamination in the Silver Lake area is primarily associated with gasoline spills at former gas stations. DEP investigations suggest that the contamination is migrating easterly and will eventually discharge to Lubbers Brook, posing little threat to surface waters of Silver Lake.

7.6.1.2 Southern Wilmington

Due in part to the heavy concentration of industry, there are 17 active sites of spills or releases in Southern Wilmington. One of the town's two Tier 1A sites is located here, the Olin Facility, where ammonia is leaching into the aquifer. This site was discussed in Chapter 6.

Table 24: Contaminated Sites in Southern Wilmington

Address	Name	Contaminant	Status	Phase
730 Main Street	ICI Resins	Hazardous Material	Tier 2	Phase III
730 Main St	None	Oil	Preclassified	None
945 Main St	Jimmy's Garage	Oil	Tier 1B	Phase II
51 Eames St.	Olin	Hazardous Material	Tier 1A	Phase II
98 Eames St	United Tool and Die	Hazardous Material	Tier 1C	Phase II
100 Eames St.	None	Hazardous Materials	Preclassified	None
804 Woburn St	Analog Devices	Oil & Hazardous Material	Non-compliant (Default 1B)	Phase II

820 Woburn St	None	Hazardous Material	Tier 2	Phase IV
820 Woburn St	None	Oil	Preclassified	None
856 Woburn St.	Ritter Trucking	Oil & Hazardous Material	Tier 2	Phase II
888 Woburn St	None	Hazardous Materials (two releases)	Preclassified	Phase III
891 Woburn St	None	Hazardous Material	DPS	None
65 Industrial Way	AGFA Corp	Hazardous Material (two releases)	Tier 2	Phase II
80 Industrial Way	Former Plating Facility	Hazardous Material	Tier 2	Phase II
80 Industrial Way	Former Plating Facility	Hazardous Materials (two releases)	Preclassified	None

Despite the large number of sites, there is only one site currently deemed non-compliant: the Analog Devices Facility, where spill of oil and hazardous materials was reported in January 1989.

In addition to the sites listed above, there are 3 sites where contamination has migrated onto the property from upgradient. These sites are: 90 Industrial Way, 891 Woburn St., and two lots on Old Main Street.

7.6.1.3 North Wilmington

Table 25: Contaminated Sites in North Wilmington

Address	Name	Contaminant	Status	Phase
100 Ainsworth Road	McDonough Construction	Oil and Hazardous Material	Non-compliant (Default 1B)	None
255 Andover St.	None	Hazardous Material	Tier 1C	Phase II
319 Andover St.	Sweeney Transportation	Oil and Hazardous Material	Non-compliant (Default 1B)	None
Ballardvale St.	None	Hazardous Material	Non-compliant (Default 1B)	None

There are three noncompliant sites in North Wilmington: McDonough Construction, Sweeney Transportation, and an

unnamed site on Ballardvale Street. In addition, contamination has been found at 16 Upton Drive, where it is suspected that it migrated onto the property from upgradient sites.

7.6.1.4 Other Sites

Table 26: Other Contaminated Sites in Wilmington

Address	Name	Contaminant	Status	Phase
316 Lowell St	Mobil Station	Oil	Tier 2	Phase II
50 Fordham Rd	General Electric Co	Hazardous Material	Tier 1A	Phase IV
Middlesex Turnpike & Salem St	Redimix Corp		Non-compliant (Default 1B)	None
I-93 @ Lowell St	None	Oil	Non-compliant (Default 1B)	None
Rte 93	Tanker Spill	Hazardous Material	Pending	None
96 Chestnut St	None	Oil	Preclassified	None
McDonald Rd	None	Hazardous Material	Preclassified	None

Table 26 shows there are two more noncompliant sites along I-93. The town's other Tier 1A site is at the General Electric facility on Fordham Road. This site is in Phase IV, which means that the selected remediation alternative is being implemented.

7.6.2 Underground Storage Tanks

According to the MAPC water supply report, Wilmington has 58 commercial underground storage tanks with a total volume of 448,380 gallons. Nearly half of the USTs are over 15 years old. There are 173 fuel tanks totaling 276,175 gallons; 70% are 15 years or older. Corrosion and subsequent leakage can release fuel that may contaminate groundwater and surface water.

7.7 Observations

Despite extensive development in Wilmington, the town has retained many important natural resources: an extensive network of wetlands, large forested areas, and some remaining agricultural lands. The undeveloped areas in Wilmington provide many benefits. They provide wildlife habitat, open spaces for passive recreation; and land for flood retention and aquifer recharge. Additional development is likely to further deplete flows in the Ipswich River (due to faster runoff and less recharge) and will affect the quality and quantity of water available to the public water supply. Large forested areas also contribute to the character of town. Most residents value the fact that there are some undeveloped roadways and forested areas in

Wilmington. Large forests and wetlands can also help to moderate the temperature of the region, mitigating the heat reflected by large cleared and paved areas on hot summer days.

Undeveloped Land

There are three major forested areas remaining in Wilmington: near the town forest and Fosters Pond; west of I-93 and north of Salem Street, along the Tewksbury border; and southwest of Chestnut Street near Burlington. The habitat value of these areas is contingent on their remaining largely “unfragmented,” that is, not broken up by roads or subdivisions. Because they connect to open spaces in adjacent towns, these areas are also important components of a regional open space network that also includes land in North Reading, Andover, Tewksbury, Burlington, and Reading. The fact that these areas have not yet been developed is largely due to their locations away from the center of town, difficult site access, and less-than-optimal site conditions (wetlands in the north and steep slopes in the south). As the supply of developable land in Wilmington continues to decline, pressure to develop these areas will increase. Inappropriate development of these areas will result in forest fragmentation and impacts to wetlands or buffer zones. The increased cost of accessing and building on these sites may drive developers to construct more extensive developments in order to recoup their investments.

Protection of the forested areas through acquisition or easement is the most effective way to preserve this habitat. If permanent protection is not possible, requiring cluster development or conservation subdivision design can reduce the impact of residential development.

In addition to the extensive forestlands in the north and south of Wilmington, there are numerous smaller natural areas that may be developed in the near future. These areas are vital for their habitat and aesthetic value. Habitat for rare and endangered wetland species is located throughout Wilmington. An effort to map rare habitat or species would help guarantee better protection for these sites.

Wetlands Bylaw

Because much of the valuable open areas and wildlife habitats are associated with wetlands, ponds, and streams, the town should also consider taking stronger steps to protect wetlands, buffer zones, vernal pools, and other water resources. Such measures will prevent the incremental damage to local environmental resources that, cumulatively, can have a devastating impact on natural systems.

The Wetlands Protection Act provides Conservation Commission with jurisdiction within designated wetlands and limited jurisdiction within the 100 foot buffer zone. Experience has shown that activities

outside the accepted boundary can also diminish a wetland's ability to perform the critical functions described above.

- The buffer zone is an accessory habitat for wildlife within the wetland.
- Erosion from construction sites can negatively impact wetland vegetation and wildlife, while reducing the flood storage and recharge capacity of the resource.
- Disturbance or siltation from nearby construction can make wetlands susceptible to invasive plant species.
- Developments near wetlands commonly encroach on protected resources through incremental filling or dumping.
- Nutrients from lawn fertilizers and septic systems can degrade the water quality in wetlands and waterbodies.

The Conservation Commission has also found that enforcement of existing regulations is difficult, because the Act does not grant towns the authority to levy fines against violators.

Many towns in Massachusetts have used home rule authority to enact wetland protection bylaws that grant additional authority to the conservation commission. For example, a bylaw may authorize a commission to limit activities within the 100-foot buffer zone (or a portion of it), assess fees for professional review of large projects, and levy fines for violations. At the very least, a bylaw might simply make the existing Conservation Commission Policies (described above in Section 7.4) legally binding.

Some bylaws expand existing buffer zones or establish them for resource areas not assigned buffer zones by the Act. Bylaws that define the buffer zone as a regulated resource place the burden of proof on applicants, who must demonstrate that proposed activities will not impact wetlands or other resource areas.

Consultant fees allow commissions to conduct a more rigorous review of large projects than would otherwise be possible, at no additional cost to the town. Applicants are charged for the consultants that review their project, up to a maximum fee based on the total estimated cost of the project.

A wetlands bylaw may also allow the Conservation Commission to require the applicant to file a performance bond commensurate with the cost of the work proposed within a resource area. This bond is released once the commission has determined work was completed in accordance with the permit.

Appeals to a local wetland bylaw must be heard in appeals court rather than by the DEP. Because of the prohibitive cost of appeals court, this rule affects proponents and opponents equally, and provides incentive for these parties to find creative solutions to their

differences, rather than simply appealing the Conservation Commission Decision.

While a wetlands bylaw is not likely to prohibit development on many sites, it will add an additional level of review and will require developers and property owners to be more careful with the environmental resources of which they are the steward. Wetlands bylaws are common in Massachusetts towns, and all of Wilmington's neighbors in the Upper Ipswich River Watershed have such a bylaw.

Environmental Contamination

Environmental contamination is a serious concern among Wilmington residents. The Massachusetts DEP is currently working with responsible parties to remediate the sites that present the greatest threat to human health. However, many contaminated sites are currently non-compliant and cleanup is not moving forward. Considering the level of concern among town residents regarding these sites, the town should explore ways that it can use its leverage to prompt responsible parties to action.

7.8 Recommendations

7.8.1 Enact a Conservation Subdivision Design bylaw.

Conservation Subdivision Design developments are more cost-efficient and land efficient than conventional subdivisions. CSD gives developers the flexibility to arrange houses on a parcel creatively, so as to minimize the impact on sensitive natural and historical resources. Because houses are clustered, developers have to build fewer roads and less infrastructure, thereby saving costs. There is some evidence that houses in well-designed CSD developments fetch a premium because of the nearby open space.

This plan recommends the town enact a Conservation Subdivision Bylaw that will allow developers to build approximately the same number of houses on a site as they would under conventional subdivision development. Recommendations for a CSD bylaw are included in Chapter 3.

7.8.2 Educate residents about protecting wetland resources.

Provide outreach regarding the damage caused by illicit wetland filling, dumping, and fencing. Encourage citizens to act as “watchdogs” for illegal wetland activity. Publicize a phone number for citizens to report illegal wetlands activity.

7.8.3 Consider enacting a local wetlands bylaw.

Adoption of a local wetlands protection bylaw was discussed, but the Master Plan Committee did not reach consensus on this issue. Should the town debate such a bylaw in the future, the following items should be considered:

- Establish regulatory jurisdiction over the 100-foot buffer zone.
- Incorporate rules and regulations into bylaw presented at town meeting.
- Provide authority for the Town to levy fines for violations.
- Establish Protected Resource status for 100 foot buffer zone; applicant must file NOI and receive Order of Conditions for any activity within buffer zone.
- Establish application fees for administration.
- Establish no-build and no-disturbance (“no-touch”) zones in buffer zone.
- Establish Protected Resource status for Isolated Vegetated Wetlands larger than 500 square feet.
- Establish Protected Resource status for Vernal Pools.
- Mandate 2:1 replication for wetland alteration, or 1:1 replication and other mitigation (conservation easement, donation to open space fund, etc.).
- Establish consulting fees to pay for professional review of proposed construction plans. Applicants will pay into a revolving fund; the fund will support professional review of the plans, and any unused fees will be returned to the applicant (after a monitoring period, if applicable). Establish maximum consultant fees based on the total estimated cost of the project (0.5% of project cost).
- Authorize the Conservation Commission to grant Variances in the case of an overriding public interest or when it is necessary to avoid restrictions so severe as to constitute a taking.

7.8.4 Provide resources for Conservation Commission to survey undeveloped areas for vernal pools or rare wildlife habitat.

7.8.5 Identify and prioritize open space corridors and critical aquifer recharge areas for protection.
See Chapter 8 for details.

7.8.6 Purchase or solicit donation of complete or partial development rights on undeveloped or underdeveloped rural parcels.

7.8.7 Use town leverage to prompt action by the responsible party on noncompliant contaminated sites:

- Pressure responsible parties to achieve compliance with MCP before issuing a sewer connection permit
- Withhold building permits from industrial properties seeking increased water supplies until site is brought into compliance with MCP.
- Provide tax incentives for remediation and redevelopment of contaminated land within Neighborhood Activity Centers.

- 7.8.8 Promote redevelopment of remediated sites where the DEP has made a determination of No Significant Risk.
- 7.8.9 Pressure DEP to allocate additional resources for monitoring and compliance efforts in Wilmington.
- 7.8.10 Educate users of local wells
 - Provide information about known sources of contamination
 - Provide information about testing resources
 - Help to interpret test results
- 7.8.11 Ensure that all underground storage tanks in Wilmington are in compliance with recent EPA regulations. Enact a Board of Health bylaw to enable the town to levy fines for noncompliance.
- 7.8.12 Rezone undeveloped General Industrial land within GWPD to Light Industry or office in order to minimize threat to aquifer from releases of hazardous materials.
- 7.8.13 Expand Groundwater Protection District to include Zone II recharge areas for public water supplies in neighboring towns.

8 OPEN SPACE AND RECREATION

8.1 Open Space

Wilmington residents highly value undeveloped lands and recreation facilities because they contribute to town character, provide opportunities for exercise, and help protect the town's water supply. Undeveloped land can provide a buffer between industrial and residential uses, and open spaces are also useful for education and nature study. While the town has a significant stock of permanently-protected open space, many residents would like to see more land added to the town's inventory. Important criteria for open space acquisition are recreation, town character, natural resource preservation, and aquifer protection. Residents have also expressed a need for more active recreation areas such as playing fields.

The official Wilmington Open Space and Recreation Plan was drafted in 1987 by IEP, Inc. A new Open Space and Recreation Plan has been drafted but not finalized; preliminary results from that report are included in this Plan. An Open Space Survey was distributed town-wide in late 1999 and generated nearly 1,500 responses. The results of this survey were summarized in Chapter 1.

8.1.1 Total Undeveloped Land

Land use data, based on aerial photography interpretation, indicates that slightly more than 40% of the town is undeveloped. Roughly one half of the undeveloped area is wetlands.

8.1.2 Protected Open Space

Approximately 1,197 acres of land in Wilmington are permanently protected open space. Figure 15 shows various categories of protected and unprotected open space. "Permanently Protected" means that the land is owned by the town (or another public or private entity) and restricted by deed to open space for aquifer protection, recreation, or other uses. "Limited Protection" means the land may be currently undevelopable due to a nonpermanent development restriction such as an agricultural restriction. "Unknown Level of Protection" means that the site is currently dedicated open space but that there are no legal mechanisms for preventing development.

8.1.2.1 Town-Owned Open Space and Recreation Land

The town owns nearly 700 acres of land dedicated to open space or recreation uses. Table 27 is a list of properties and facilities grouped according to the town entity with jurisdiction over the land.

Table 27: Town-Owned Open Space and Recreation Land

Public Conservation	Acres
Town Forest	154
Wilmington Gardens Wildlife Preserve	53
Ipswich River	34
Central Park	34
Alderwood Acres	23
Allen Park	22
Hathaway Acres	22
Lubbers Brook Acres	21
Lucaya Estates	21
Cormier Park	20
Corum Meadows	17
Berry Bog	17
Concord Street/Lopez Road	11
Silver Lake Pines	10
Jewel Acres	8
Lawrence Street Acres	7
Federal Gardens	6
Martins Brook	6
Glen Acres	5
Shawsheen Pines	4
Total	495
Recreation Department	
Berry Bog/Town Hall	20
Rotary Park Fields	7
Town Beach at Silver Lake	5
Total	32
School Department	
Boutwell School/West Intermediate/Middle School	41
Shawsheen School	21
Wilmington High School	17
North Intermediate School	14
Wildwood School	8
Woburn St. School	10
Whitfield School	10
Total	101
Water Department	
Town Park	60
Salem St.	100+
Andover Bypass	125
Total	285+
OTHER (unknown jurisdiction)	
Silver Lake	28
Blanchard St. Property	26

Figure 15: Open Space in Wilmington

Public conservation lands are owned by the town and managed by the Conservation Commission. Only passive recreation uses are permitted on public conservation lands; developed recreation areas are prohibited. These properties are considered to be permanently protected due to the difficulty of removing land from conservation status. The process requires that the Conservation Commission determine the land is no longer needed for conservation purposes, and this decision must be ratified by a two-thirds vote of Town Meeting and a two-thirds vote of the State Legislature.

Recreation department lands are mostly developed recreation areas with playing fields and other facilities. Many recreation areas also include some undeveloped natural areas. Roughly 12 acres of the Berry Bog / Town Hall property, and portions of the Rotary Park property are undeveloped woodlands and wetlands. There are also natural areas (woodlands, wetlands, and ponds) at many of the schools, and the Town Park is mostly undeveloped save for a parking lot and ballfield. There is little room for expansion of facilities at existing recreation lands due to wetlands or other natural constraints.

8.1.2.2 Privately-Held Open Space

Some private organizations and companies also own land in Wilmington dedicated to open space and/or recreation uses. These properties, which do not have any permanent open space protection, are listed in Table 28.

Table 28: Privately-Held Open Space in Wilmington

Ownership	Acres
Camp 40 Acres	44
Middlesex Canal Association—Butters Row	23
Regional Health Center—Salem St.	10
Textron Corporation Baseball Field, Lowell St.	9
AGFA Corporation Baseball Field—Ballardvale St.	5
Total	91

8.1.2.3 Chapter 61 Lands

Chapter 61 is a mechanism that permits landowners to dedicate farm and forest land to undeveloped uses (agriculture or forestry) and receive a tax break. Land so classified is assessed (and taxed) at its agricultural value, rather than at a higher market potential use value. A landowner can remove the protection at any time, but must then pay five years worth of “rollback” taxes—the difference between the two assessments (agricultural and market potential).

Only one small 5.48 acre parcel on Andover Street, used as a tree farm, is under 61A protection. The Sciarappa Farm, a 64-acre property on Andover Street was until recently under 61A protection, but it has been removed, in anticipation of development.

8.2 Recreation Resources

Land use data indicate there are approximately 138 acres of land dedicated to recreation in Wilmington. Approximately 80 acres are “spectator recreation,” (stadiums or fields with bleachers) and 54 acres are for “participatory recreation.” The Town Beach at Silver Lake is roughly 3 acres.

The National Recreation and Park Association (NRPA) has established a classification system for open space and recreation facilities, and has developed guidelines for town park planning. Town recreation facilities can be classified as mini parks, neighborhood parks, or community parks, as follows. Overall NRPA recommends a total of 6 to 10 acres of active and passive recreation space per 1,000 population.

Mini Parks

Mini parks are small (<1 acre), specialized facilities that serve a concentrated or limited population or specific group such as tots or senior citizens. They should be located within 1/4 mile of population centers such as dense neighborhoods, apartment complexes, or elderly housing. NRPA recommends 0.25 – 0.5 acres of miniparks to serve 1,000 persons.

Neighborhood Parks

Neighborhood parks are developed areas used for field games, playgrounds, skating, picnicking, and wading pools. Neighborhood parks should be fifteen acres or more in order to serve a population of up to 5,000 persons, in a service area of up to 1/2 mile. They should be easily accessible to neighborhood residents, with safe bike and pedestrian access. A neighborhood park should have 1 – 2 acres of land for each 1,000 persons served.

Community Parks

Community parks are defined as areas of diverse environmental quality. They may include large recreational facilities, such as athletic complexes or swimming pools, or they may be an area of natural quality for passive outdoor recreation (walking, wildlife viewing, picnicking, etc.). Community parks serve multiple neighborhoods, or an entire town, depending on their features and location. NRPA recommends 5 – 8 acres of community parks for each 1,000 persons in town.

8.2.1 Town Facilities

Table 29 is an incomplete list of Town-owned recreation sites in Wilmington. “Developed acres” represents the amount of land dedicated to active, organized recreation, such as playing fields, playgrounds, tennis courts, lawn, etc. Wooded and wetland areas that provide opportunities for passive recreation are not considered developed.

Table 29: Wilmington Recreation Facilities, 1987

Name	Acres	Developed Acres	Under Control of	Facilities
Town Forest	153	0	Conservation Commission	Natural wooded area, undeveloped land
Town Park	52	3?	Water Commission	Softball fields, playground, natural wooded area, wetlands
Boutwell School	41	13	School Dept	Tennis courts, basketball hoops, playground
Silver Lake	28	0	Town of Wilmington	Swimming, skating, fishing
Shawsheen School	20	13	School Dept	Softball & soccer fields, tennis courts, basketball hoops, playground
Town Hall	19	8	School Dept	Baseball, football, soccer, bicycling, playground, basketball
High School	18	14	School Dept	Tennis courts, basketball court, football & hockey fields, baseball fields, track
North Intermediate School	14	10	School Dept	Softball & soccer fields, tennis courts, basketball hoops, playground
Woburn Street School	10	8	Town of Wilmington	Baseball fields, tennis courts
Wildwood School	17	6	School Dept	Tennis courts, basketball hoop, playground
Rotary Park	7	4	Town of Wilmington	Baseball field, pond, open area
Town Beaches	4	4	Recreation Department	Swimming, sun bathing, picnicking
Town Common	2	2	Town of Wilmington	Benches, flowers, open area, gazebo
Total	378	88		

Source: Wilmington Open Space and Recreation Plan, Wilmington, MA; IEP Inc., 1987

There are roughly 88 acres of developed recreation facilities in Wilmington, roughly four acres for each 1,000 persons in town. Overall, there are approximately 18 acres of developed and undeveloped recreation lands for each 1,000 persons in Wilmington. This includes large forested areas in the Town Forest and Town Park. While the total number of developed recreation acres does not indicate a problem, the type and location of these facilities is less than optimal. Most recreation areas are large, town-wide facilities. There are no mini-parks in Wilmington, and very few neighborhood parks or playgrounds. A need has been identified for more smaller parks, as well as more playing fields to meet the burgeoning demand for organized sports. Development of mini-parks, playgrounds and small neighborhood parks should be linked to residential development in the Neighborhood Activity Centers. At the very least, there should

be one neighborhood park within 1/4 mile of each major activity center.

The Draft Open Space and Recreation Plan identifies three sections of town not adequately served by recreation facilities. These are: Map R2 (Precinct 5), Map R1 (Precinct 6), and the eastern section of Precinct 3 (around maps 56, 57, 72, 73).

While many of the active recreation facilities are at least partially accessible to people in wheelchairs, none of the public conservation lands are handicap accessible. Many towns have invested in accessible trails and viewing areas that provide an opportunity for all residents to enjoy open spaces.

Some residents, committee members, and officials, have noted that the Town Forest is underutilized. Many residents are unaware of the recreation opportunities at the Forest. In particular, there is no trail map, discouraging many potential visitors from enjoying the resource. The Draft Open Space and Recreation Plan suggested that the town could also develop features that will attract residents to the Forest. The highest point in town is located within the Town Forest, overlooking Martin's Pond. An observation tower here would provide sweeping views of Wilmington and the surrounding area.

8.2.2 Other Recreation Facilities

Privately-owned recreation facilities in Wilmington include Camp 40 acres and the Ristuccia Exposition Center.

8.2.2.1 Camp 40 Acres

Wilmington Junior Camps Inc., a non-profit corporation dedicated to youth groups, runs Camp 40 Acres, a camping and recreation facility. The camp, in the northernmost portion of Wilmington, encompasses approximately 43 acres. It is surrounded on three sides by the Town Forest, and on the other side by residential neighborhoods in Andover.

There is a main cabin, an outdoor pavilion, plus several lean-tos and campsites, which cover 5 acres. The rest of the land is forested or fields. There are 7 miles of trail, a ropes course, and an athletic field. Future additions may include a basketball court, a volley ball court, and a horseshoe pit. There is a vernal pool on site and a 270-foot artesian well, which provides potable water for the campers.

8.2.2.2 Ristuccia Exposition Center

This is the Boston Bruins practice facility, as well as the home of several youth hockey teams. It is located on Main Street (near Wilmington Plaza).

8.2.3 Recreation Organizations

In addition to the Town Recreation Department and the School Department, there are several other organizations that operate recreation programs in Wilmington. They are:

- Little League Baseball
- Figure Skating Club
- Adult Softball League
- Pop Warner Football
- Youth Traveling Basketball
- Youth Hockey
- Youth Soccer

8.2.4 Regional Open Space and Recreation Resources

In addition to local recreation facilities and open spaces, there are parks, trails, or other features, in Wilmington or nearby, with regional significance. These include the Middlesex Canal, Harold Parker State Forest, and a planned network of bikeways.

8.2.4.1 Middlesex Canal

The Middlesex Canal extends through Wilmington from Billerica to Woburn. It runs roughly parallel to, and generally south of, the MBTA railroad but turns south along Maple Meadow Brook from the Town Park to Woburn. The Canal originally ran from Charlestown to Lowell and was an important transportation facility when it operated in the early nineteenth century. The canal consisted of a thirty-foot wide trench and a ten foot wide towpath. Today, the 27-mile canal, abandoned for over 100 years, is in various states of decay. In some places it has been obliterated by development, in other places overgrown with vegetation. Some segments of the Canal have been restored, although not always with a great deal of historical accuracy (the Massachusetts Highway Department lined portions of the channel with stone riprap). The extant remains of the canal in Wilmington are designated as a National Historic Engineering Landmark.

The canal remains visible in Wilmington except near the Central Business District, where it has been obscured by development. Near Butters Row and north of Lake Street, the canal channel still has water in it. Aqueducts that carried the canal over Maple Meadow Brook and Lubbers Brook are also still extant.

The Middlesex Canal Commission was established by the State Legislature in 1978 for the purposes of planning, developing, and building a Middlesex Canal Heritage Park. The Commission is currently engaged in the process of developing plans for stabilization and restoration of the Canal, and construction of a pathway along portions of the Canal. The Commission's Master Plan, adopted in 1996, calls for various restoration and interpretive efforts in Wilmington, including the following:

- Stabilize the structure of the canal to prevent further deterioration.
- Reconstruct or restore the segment of the canal between Shawsheen Avenue and Lake Street (including removal of the riprap placed by the state).
- Control vegetation in restored segments of the canal.
- Develop a walking path or “Bi-way” (bicycle and pedestrian trail) along restored segments of the Canal.
- Install signs where the canal route crosses local streets, whether the canal is visible or not.
- Install interpretive signs along the canal route.
- Construct a pedestrian bridge over Maple Meadow Brook to enhance access to the canal and conservation areas.
- Reconstruct the Sinking Meadow Aqueduct at Lubbers Brook and use it as a pedestrian bridge.
- Establish a bikeway that uses local streets to approximately follow the route of the Canal through Wilmington. (Potential Route: Main St to Butters Row to Chestnut to Boutwell to Shawsheen).

The Canal Commission Master Plan notes that certain extant segments of the canal are currently in private ownership and are therefore unavailable for use. These privately-owned segments include the following:

- From town-owned land at the Woburn border to the Town Park on Main Street.
- Butters Row to the Central Business District
- From Lake Street to the Shawsheen River

The Canal Commission has proposed to develop a multi-use pathway along portions of the restored canal. The town should also pursue opportunities to integrate canal pathways into a network of walking and biking paths through Wilmington, although wetlands may be a constraint. Acquisition of land or easements over privately-owned segments of the canal would permit development of a linear park and pathway. For example, a pathway might lead along the course of the canal from the CBD to the Town Park. The Canal pathway would continue south to town-owned land on the Woburn border, where another trail might be built to allow access to Mill Pond and the surrounding conservation lands in Burlington. Northwest of the CBD, development of a canal pathway might allow pedestrian access from the Center to Shawsheen School and Silver Lake while avoiding the heavily-traveled Main Street and Shawsheen Avenue. While there are significant obstacles to developing such an extensive pathway (wetlands and private ownership of the canal, in particular), the concept merits further investigation. Acquisition or easements on privately-owned segments of the Canal should be investigated as soon as possible before the land is developed. The town should take an active part in planning the canal improvements with the Middlesex Canal Commission.

Restoration of the Canal may provide important educational opportunities for Wilmington students. The canal could be integrated into lessons about history, trade, engineering and geology. Opportunities should also be developed for students to participate in the restoration or maintenance of the Canal.

8.2.4.2 Harold Parker State Forest

Located in North Andover, the Harold Parker State Forest has over 25 miles of trails and wood roads and 11 ponds. Activities at the Forest include biking, boating, camping, fishing, hiking, horseback riding, hunting, picnicking, cross-country skiing, and swimming.

8.2.4.3 Regional Trail Systems

There is an effort underway between Wilmington and Andover (Bay Circuit Alliance) to develop trails that will connect to the Bay Circuit Trail. Proposed trails run from the Wilmington Town Forest through Camp 40 Acres and across the Andover line to trails in the Andover town forest.

8.2.4.4 Regional Bike Path System

Wilmington and four neighboring towns have been selected to receive a regional bike facilities grant under the Intermodal Surface Transportation Efficiency Act (ISTEA) Enhancement Program. Administered by Massachusetts Highway Department, the grant will fund planning and construction of bicycle facilities in Wilmington, Reading, North Reading, Wakefield and Lynnfield. North Reading is the lead town in this effort. Most of the facilities planned will probably be improvements to accommodate bicycles on local roads. It is possible that some improvements would be off-road paths through parks or on separate right-of-way. Improvements in Wilmington will not be identified until the study is complete. Master Plan recommendations for pedestrian and bicycle connections are included in Chapter 11.

8.3 Open Space and Recreation Needs

The Draft Wilmington Open Space Plan identifies resource protection, community, and management needs related to open space and recreation. Some of the relevant needs identified by the Plan are listed below. Mechanisms for addressing these needs are also abbreviated, as follows: A=acquisition; R=regulatory measures (zoning, wetlands protection bylaw); I=improvements; E=education. P=procedural

Resource Protection needs

- Protect land in Wilmington's water supply recharge areas, including land in neighboring towns. (A,R)
- Protect land in water supply recharge area for neighboring communities. (A,R)

- Encourage efficient and environmentally sensitive subdivision development that preserves open space (R)
- Reduce wetland encroachment and fragmentation caused by development (R)
- Protect greenways along stream corridors (A, R)
- Protect Priority Habitats identified by the Massachusetts Natural Heritage and Endangered Species Program (A,R)

Community needs

- Provide recreation facilities in underserved areas (A, I)
- Connect existing conservation areas (A, I)
- Connect schools to conservation areas and/or stream corridors (A, I)
- Connect active recreation areas to greenway corridors (A, I)
- Connect Wilmington's open spaces with those of neighboring communities. (A, I)
- Provide trails and facilities that are accessible to the disabled and elderly. (I)
- Provide environmental education outreach to schools. (E)
- Create a nonprofit able to seek out donations to meet the above goals and able to move quicker than local government to acquire land. (P)

Management needs and potential changes of use

- Establish Conservation Commission jurisdiction on property deeds of all conservation parcels. (P)
- Transfer town-owed lands along stream corridors or wetlands to the Conservation Commission. (P)
- Improve cooperative management of conservation lands abutting neighboring towns. (P)
- Improve pedestrian and bike accessibility of roads where greenway corridors are divided by railroads and highways. (A,I)
- Improve awareness of existing conservation lands and recreational facilities. (E)
- Improve awareness of need to acquire and/or protect environmentally sensitive areas. (E)
- Improve conservation trail markings and conditions (I)
- Increase citizen involvement in Conservation Commission's land stewardship activities. (P)
- Increase cooperation between Conservation Commission, Recreation Department, and School Department to link passive and active recreation areas. (P)

8.4 Criteria for Open Space Protection

Established criteria will help the town to prioritize its efforts in regard to open space protection. Participants at the Visioning Workshop identified many different priorities for open space protection. Criteria include recreation, protection of natural resources (including aquifers and groundwater), and preservation of town character.

Opportunities for the development of trails or wildlife corridors is another important criteria. Other considerations are cost, potential for development, and location. While there is no precise science for establishing priorities for open space acquisition, the following sections will describe the criteria in more detail.

8.4.1 Recreation

Participants at the Visioning Workshop expressed a strong desire for more recreation facilities in Wilmington. Residents and town staff report that there are not enough sites available for all the organized sports in Wilmington. According to the Director of the Wilmington Recreation Department, properly equipped playing fields are a priority in town, specifically those for Youth Soccer, Little League Baseball, and Pop Warner Football. Existing recreation lands can support no more active recreation fields. Since development of recreation facilities is restricted on resource conservation lands, the town will need to acquire more land in order to develop additional active recreation fields where they are needed.

As mentioned previously, the Draft Open Space and Recreation Plan identifies sections of town underserved by parks and recreation facilities. These are: Map R2 (Precinct 5), Map R1 (Precinct 6), and the eastern section of Precinct 3 (around maps 56, 57, 72, 73). Special efforts should be made to develop active recreation facilities in these areas or to develop better pedestrian and bicycle connections to nearby recreation facilities.

Chapter 3 of this plan recommends development of Neighborhood Activity Centers with mixed uses including townhouses, senior housing, and apartments. Neighborhood parks and playgrounds will be very important to the quality of life for residents of these Activity Centers. Rotary Park near the CBD is a good neighborhood park. It includes a ballfield as well as passive recreation areas. Development plans for the Centers should include spaces for small parks and the town should pursue acquisition of land for this purpose.

8.4.2 Protection of Natural Resources

Wetlands, aquifers, and floodplains are currently protected through existing regulations (Wetlands Protection Act, GWPD, floodplain bylaw). Regulatory protection of these resources will be enhanced by a Wetlands Protection Bylaw. Because there are so many mechanisms to limit development in these resource areas, acquisition priority should be given to upland parcels where development is less restricted. In particular, the Town should protect areas within the 100-200' Riverfront Zone. Where wetlands must be crossed to access developable upland parcels, acquisition of wetlands may also be a valuable strategy for protecting both upland and wetland resources.

Because forest fragmentation has significant negative impacts on wildlife, preservation of the remaining large contiguous tracts of forest in Wilmington should also be a major priority. These areas include the area north of Salem Street and west of I-93, the area from the Town Forest to the Andover Bypass, and large undeveloped tracts near the Burlington Border. If preservation of these large areas is not feasible, a cluster development or conservation subdivision design bylaw should be enacted to reduce the footprint of residential development.

A diversity of habitats is also important to wildlife. To this end, the town should seek to preserve restricted habitats and the surrounding areas, through acquisition or easement. Examples of threatened habitats include agricultural fields, pastures, bogs, and open land in Wilmington.

Healthy wildlife communities also require corridors that allow travel between various habitats. A continuous network of open spaces along streams and wetlands already exists as a result of wetland regulations and town purchases. Additional measures may be necessary to ensure that these wildlife connections are preserved.

8.4.3 Town Character and Historic Preservation

The appearance of Wilmington is significantly affected by development along local roadways. Of special concern for open space considerations are residential areas where new houses along roads can change the character of an area from rural to suburban. Because roadside development has already occurred throughout much of town, preservation of the remaining undeveloped roadways is critical. Roadways where the presence of undeveloped or sparsely developed land contributes to town character include Concord Street, Federal Street, Wildwood Street, Woburn Street, Andover Bypass, Andover Street, Chestnut Street, Marion Street, and South Main St.

8.4.4 Trails Networks

A corridor-oriented open space system allows the creation of trails. Several protected corridors already exist. Acquisition of land or easements by the town will permit additional interconnection of these corridors. Trails are important for connecting residential areas with schools, recreational facilities, and shopping areas. The Middlesex Canal may be an important trail corridor, although wetlands and ownership obstacles must be overcome in order to develop an extensive pathway. Chapter 11 includes additional discussion regarding recommended trail and pathway networks.

8.5 Protection Strategies

The Draft Open Space and Recreation Plan describes various strategies for protection of open space. The plan describes easements, protective covenants, and disposition of future interests in land.

Easements may be either positive, such as those that grant access for a multi-use pathway across private land, or negative, such as those easements that may prohibit future subdivision or development of a parcel. Easements can be removed if the necessity for the easement no longer exists, although this may be difficult. Removal of conservation easements requires approval of the state legislature.

Covenants are an interest in land enforceable through payment of damages, such as performance bonds. Chapter 61A is a form of protective covenant. The damages required are five years of rollback taxes when the land is taken out of the program.

Future interest in land may be absolute or otherwise. A property owner might convey land to the town or other organization, but retain control until death.

The Draft Open Space and Recreation Plan suggests that formation of a nonprofit land trust may provide significant advantages for the protection of open space. Donation of land or easements to a land trust would allow the grantor to obtain tax benefits not possible if the land was granted to the town. The Town would hold an executory interest in the land and would assume control were the land trust to cease to exist. The town should also investigate innovative strategies to enhance use and protection of privately-owned recreational facilities, such as those held by AGFA and Textron.

Public education is a critical component of any protection strategy. Since any approach will require some expenditure on the part of the town, public education is critical to ensure the support of voters.

8.6 Observations

Over 40% of Wilmington land area remains undeveloped. Almost half of this (1,933 acres) is potentially buildable upland that is not permanently protected open space. Development of all this land would have significant negative impacts on water resources, town character, wildlife, and historic features. Wilmington also has significant needs for developed recreation facilities for organized sports. The town owns roughly 1,000 acres for conservation and resource protection purposes (including aquifer protection).

Preservation of additional open space is a major goal of Wilmington residents, based on results of the Visioning Workshop and the open space survey.

Wetlands

Much permanently protected open space in Wilmington is in wetlands or floodplains critical for aquifer protection. Many other factors also limit development in wetlands. Site conditions are

generally unfavorable for construction, the Wetlands Protection Act limits the amount of fill permitted, and the Groundwater Protection District bylaw prohibits certain uses. Strengthening regulatory controls on wetlands, through a Wetlands Protection Bylaw, may effectively work as the primary protection strategy for wetlands and floodplains.

Acquisition of land or development rights should be used as a supplemental form of protection for critical parcels, such as those needed to develop a trail or greenway network. The streams that cross Wilmington, with their associated wetlands, offer a major opportunity to create a connected system of open space, and recreation facilities including trails. Some of these trails could connect residential areas with recreational areas and commercial activity centers. This was recognized in the 1970 Comprehensive Plan for Wilmington, and in the current Draft Open Space and Recreation Plan.

Uplands

In contrast, upland areas are also critical to natural resource protection but have far fewer development controls. Uplands, not wetlands, will be under the greatest pressure for development over the next 20 years. For this reason, acquisition of undeveloped upland parcels should be aggressively pursued. Zoning measures can also help to reduce the impact of development on open space resources; a Conservation Subdivision Bylaw and a lot clearing bylaw will help to do just that.

Residents and town officials have also identified a need for more developed recreational facilities such as playing fields. These facilities should be located so as to serve those areas that the Draft Open Space and Recreation Plan identified as underserved by active recreation areas. The town should also take steps to develop more recreational facilities (especially neighborhood parks and playgrounds) near Neighborhood Activity Centers and create pedestrian and bicycle links from NACs to playing fields.

Management Issues and Opportunities

Many Wilmington residents are unaware of the amount and location of land owned by the Town. Much of the resource preservation land is underutilized due to lack of knowledge regarding ownership, trails, facilities, and features. A public education campaign could encourage residents to visit town-owned properties and enjoy the natural resources they have to offer. Citizens who use parks and open spaces are much more likely to support acquisition of additional land. The lack of knowledge could be addressed by a map of all town-owned lands open to the public, with a list of possible activities. Signage at the entrances to public lands will also help to raise awareness and promote use. Small parking lots should be available.

Some residents noted that they do not use the Town Park and Town Common because the trails are poorly marked and not mapped. A map and simple trail signage could address this issue. Some parks use a simple two-color signage system for trails: a visitor sees red dots on the trees if she is heading away from the main entrance, green dots if she is heading toward the main entrance. At the very least, this would assure visitors that they could not get irrevocably lost while going for an afternoon's stroll.

Facilities that attract residents to open spaces are also important. The Draft Open Space and Recreation Plan suggests that an observation tower could be built at Wilmington's highest point on top of a hill in the Town Forest, overlooking Martin's Pond. A capital campaign should be begun to finance such a tower. Observation platforms or boardwalks through wetlands bordering the Ipswich River will also raise awareness of natural resource and encourage residents to support open space protection.

Youth and Open Space

The town can also take steps to foster an appreciation for open space among Wilmington youth. Exposing students to natural areas will raise their environmental awareness, foster a sense of environmental responsibility, and encourage them to spend more time out of doors. Schoolteachers should be encouraged to use town-owned lands as "outdoor classrooms." The Middlesex Canal, in particular, offers tremendous opportunities to integrate many lessons into one field trip. Projects that permit students to participate in maintenance and improvements along the Canal and elsewhere will benefit both youth and the town. Physical educators might also organize more outdoor activities in the town's open space.

Handicap Access

Few of the active recreation areas and none of the resource conservation lands are accessible to residents and visitors with handicaps. Development of wheelchair-accessible trails should be a major priority for management of these areas. The Town should ensure that improvements made as part of the Middlesex Canal Restoration and Stabilization project enhance the accessibility of those segments of the canal in Wilmington. The Draft Open Space and Recreation Plan has also identified potential locations for accessible trails on resource conservation lands. Funding for construction of these trails will be necessary; volunteer labor from the community might reduce the cost of such improvements.

Regional Open Space Protection

As part of the Planning for Growth in the Upper Ipswich River Watershed Project, Wilmington has collaborated with the Towns of Burlington, Reading, and North Reading to develop criteria for subregional open space protection. These criteria mirror the criteria

for open space protection listed above. The Town should consider subregional goals and the needs of neighboring towns as it prioritizes open space protection.

The Planning for Growth effort has also identified a potential greenway network that connects protected open spaces in Burlington, Wilmington, Reading, and North Reading, using river and stream corridors, utility rights-of-way, and the Middlesex Canal. Such a greenway will be a natural resource that will benefit residents of all four towns. An efficient subregional trail or bikeway system might also allow residents to reach important destinations (employment centers, commuter rail stations, shopping areas) without contributing to traffic problems.

The Planning for Growth Project has recommended the formation of an Upper Ipswich River non-profit land trust for the purpose of preserving open space and protecting water resources in the four towns. The land trust would work with member towns to identify regionally-important open space parcels that should be prioritized for preservation. The trust could act as a receiving entity for donated parcels (conferring significant tax credit advantages on the grantor). It could also move quickly to hold available land while member municipalities appropriate funds to purchase the property. A subregional open space trust will demonstrate the regional cooperation sought by state and federal officials during funding decisions, and would aid the towns in securing matching funds.

Start-up of a subregional non-profit land trust will require initial contributions from each of the member communities. A subregional arrangement will generate significant economies of scale, for each town will realize benefits similar to those generated by a strictly local land trust. The Executive Office of Environmental Affairs has also suggested it might provide limited staff support for the trust. As soon as possible, Wilmington should evaluate the benefits of a subregional land trust and consider committing funds.

8.7 Recommendations

- 8.7.1 Purchase open space for active and passive recreation and conservation purposes.**
- 8.7.2 Incorporate regional criteria into open space acquisition priorities**
Work with neighboring towns to adopt regional criteria for open space protection and develop a regional "wish list" of priority parcels.
- 8.7.3 Consider establishing a subregional non-profit land trust to secure funding and acquire land.**
 - Work with Burlington, Reading, and North Reading to establish a non-profit land trust

- Allocate funds to support start up of such a trust
 - Use the trust as a receiving entity for donated land
 - Use the trust to secure land while funding allocations are made.
- 8.7.4 Identify and appropriate funds for open space protection.**
- Appropriate funds at town meeting for specific parcels
 - Authorize bonds to support creation of an open space fund to give the town flexibility in acquiring open space parcels as they become available.
 - Pursue matching grants from the state. Demonstrate that parcels for acquisition meet subregional goals for open space protection
- 8.7.5 Continue discussions regarding adoption of the Community Preservation Act.**
- Enact modest property tax surcharge to support open space and other community goals; apply for matching funds from the state.
- 8.7.6 Promote use of existing open space through public education.**
- Publish Conservation Commission / Open Space newsletter
 - Install signs identifying conservation and other town-owned land
 - Develop map and guidebook of conservation areas.
 - Publish maps of Town Park and Town Forest.
 - Install a simple trail signage system at Town Park and Town Forest to make residents more comfortable visiting those areas.
 - Recruit knowledgeable community members to give talks in schools and libraries and lead nature walks on conservation lands.
- 8.7.7 Publicize benefits of open spaces to generate support for acquisition efforts.**
- Publish a map of proposed greenway / trailway systems to promote support for open space acquisition.
- 8.7.8 Link existing conservation areas to surrounding neighborhoods.**
- Install signage to announce public ownership.
 - Improve access through additional entrances and trails.
- 8.7.9 Involve Wilmington youth in Open Space protection and maintenance efforts.**
- Enlist youth, through school and youth groups, to participate in signage, trail mapping, trail construction and maintenance.
 - Incorporate the Middlesex Canal into school curricula.
- 8.7.10 Contact owners of corridor parcels and priority habitats; describe benefits of donating land to the non-profit land trust.**

- 8.7.11 Petition for authority to impose linkage fees for new industrial developments.**
Contribute to open space fund, based on estimated construction value. (Must demonstrate linkage between industrial development and open space.)
- 8.7.12 Establish Conservation Commission jurisdiction on property deeds of all conservation parcels.**
- 8.7.13 Enact conservation subdivision design bylaw**
A Conservation Subdivision Design bylaw will allow developers to use less land-intensive models for residential development and permanently protect land as open space. Allow developers to donate common open space to subregional land trust in order to receive tax benefits. See Recommendations in Chapter 3 for details.
- 8.7.14 Provide additional resources for construction and maintenance of existing active recreation facilities.**
- Apply for self-help and DEM Trailways funds for trail maintenance and markings.
- 8.7.15 Continue efforts to upgrade handicap access at facilities and make all recreation programs accessible.**
- Use municipal funds, state self-help grants, and volunteers to add handicap accessible nature trails at Boutwell, West Intermediate, Shawsheen, and Wildwood Schools.
 - Use municipal funds, state self-help grants, and volunteers to add handicap accessible trails to the Town Forest, Berry Bog, and Cormier Park conservation areas.
- 8.7.16 Use municipal funds, state self-help grants, and volunteers to improve playground facilities and Silver Lake Beach**
- 8.7.17 Consider using artificial surfaces on playing fields**
Artificial surfaces will allow the same field to be used more intensively, reducing the need to acquire more land for additional recreational facilities. While initial capital costs may be higher for a single field, that field may do "double-duty" and maintenance costs are also reduced.
- 8.7.18 Negotiate agreement with AGFA or Textron to use their fields in exchange for maintenance responsibilities**
- 8.7.19 Use drought-resistant grasses and water-conserving landscaping practices at recreation facilities.**
- 8.7.20 Explore ways to reduce the use of pesticides and herbicides at recreation facilities.**

- 8.7.21 Work with neighboring towns to develop joint management plans for contiguous open spaces.**
Connect Ipswich River Conservation Area in Burlington to Wilmington Wildlife Preserve. Improve access from Foster Pond in Andover to Wilmington Town Forest.
- 8.7.22 Develop “Adopt a Conservation Area” program**
- 8.7.23 Develop a walking / bicycling trail network for connecting open spaces with other open spaces and with commercial and residential areas.**
- 8.7.24 Install “pedestrian crossing” signage where greenway corridors cross roadways.**

9 CULTURAL RESOURCES

9.1 Historic Resources

The first European settlers came to what is now Wilmington in 1665, during the early years of the Massachusetts Bay Colony. Although the area currently occupied by Wilmington was at that time part of other communities, the town was formally incorporated in 1730. It continued to grow thereafter and was on the route of the Middlesex Canal and three railroad lines constructed during the nineteenth century. As a result, there are numerous historical resources in Wilmington. These include historic homes, structures (such as the Middlesex Canal), mill sites, and old farmsteads. These historic resources contribute to town character and are important educational tools for teaching Wilmington students about local and American history.

9.1.1 Early History

In 1665, Will Butter established a homestead at the corner of what is now Chestnut Street and Mill Street. At that time, Mill Street continued southwest uphill and into what is now Burlington. The Butter family was soon joined by Abraham Jaquith, who settled at Aldrich and Forest Streets, and Richard Harnden, who built a home at what is now 67 High Street. These homes no longer exist. Shortly thereafter, Roger Buck built two homesteads. One of these homes, known as the Ephriam Buck Homestead, is located at 216 Wildwood Street and is the oldest existing home in Wilmington today (construction began in 1671). The second-oldest home in Wilmington was built by William Butters II on the Butters property at Chestnut and Mill Streets.

Shortly after the first settlers came to Wilmington, they began constructing grist and saw mills where they could along the town's streams. Mill sites in Wilmington include the following:

- Nod Mill; 1695; Martins Brook, south of Salem Street; destroyed by fire in 1892
- Hartshorn Mill; Revay Brook near Kilmarnock St
- Snow Grist Mill (2 mills); Mill Brook, near Middlesex Avenue
- Clapp's Mill, Mill Brook above Chestnut Street; the mill is gone but the archaeological site has been preserved.
- Harnden Mill; 1720; Lubbers Brook near Harnden Street.
- Unnamed Mill; 1685; Shawsheen River at Shawsheen Ave; no longer in existence.

The oldest roads in town are Mill Street, Woburn Street / Andover Street, Salem Street, Main Street, and Middlesex Avenue

9.1.2 Historic District

Wilmington's Historic District is centered around the Town Common. It also includes most of the properties along Middlesex

Avenue from the Common north to past the First Congregational Church. The district was designated in 1993. According to the Chairwoman of the Wilmington Historic Commission, there is a desire to add expand the historic district to include the Victorian-style homes on Church Street and Middlesex Avenue between the Town Common and the Central Business District.

9.1.3 Historic Houses, Structures, and Locations

In addition to the Town Common area, there are other parts of town where concentrations of historic homes, structures, or properties may merit designation as historic districts. In fact, within the next two years, the Historical Commission expects to designate the area along Rte. 62 from Wilmington High School to the Public Safety Building as a Victorian district. Another possible area is at Buck's Corner, along Woburn Street at the intersection with Wildwood, where there are several 18th century homes and farmhouses still intact. In addition, the Wilmington Open Space Committee has identified the open field at the corner of Woburn Street and Federal Street (part of the original Buck's homestead) as a property that should be acquired or otherwise preserved to protect the town's aesthetic and historic character.

In terms of structures, the Historical Commission has two priorities. The first is to ready the new Wilmington Museum, housed in the Harnden Tavern, for visitors. Part of the museum will be dedicated to exhibits, while the rest will demonstrate a house set up in typical period style. Part of an ongoing exhibit will display pieces of the extensive collection of Arthur Bond, a resident genealogist who, beginning in the late 19th century assiduously collected original documents dating from as early as 1713. The collection, purchased by the Historical Commission in 1995, contains hundreds of documents and photographs, including the town's original seal, the muster list of the men who fought at Lexington and Concord, and several pre-Revolutionary highway documents. In addition, Bond conducted a photographic survey of the town in the 1898, complete with typed research notes.

The second priority is to prepare the West Schoolhouse, on Route 129, for some as-yet-undetermined use, perhaps as meeting space or a school museum.

Historical Commission activities this year include updating the town historic areas map and presenting several residents, who decided to formally highlight their homes' historical significance, with official town plaques to hang by the door. According to the Historic Commission Chair, the town's Historic House Plaques Program has distributed plaques to 80% of the town's historic structures dating from the 17th, 18th, and early 19th centuries.

The Historical Commission is considering installing a series of Historic Mile Markers along Woburn Street identifying locations of important events or significant structures. In addition to the above-mentioned sites, markers might include the following sites, which include National Register Properties and those sites that are most significant to Wilmington history:

Table 30: Key Historical Structures in Wilmington

Name of Structure	Year Built	Address
William Butters II House	1682	165 Chestnut St.
Lt. Jonathan Jones House	1720	405 Andover St.
Squire William Blanchard, Jr. House	1724	200 Middlesex Ave.
Olde Burying Ground	1731	Middlesex Ave.
Nichols Homestead	1760	187 Middlesex Ave.
Captain Joseph Bond, Sr. House	1795	191 Middlesex Ave.
Scalekeeper's Office	pre-1840	Middlesex Ave.
Otis Buck-Adams House	1850	127 Middlesex Ave.
West Schoolhouse	c. 1875	Shawsheen Ave.
South School House	c. 1894	Chestnut Street
Hudson-Roman House	1897	161 Church St.
Frederick H. Roberts Estate	1912	153 Burlington Ave.

Source: People and Points of Historical Interest in Wilmington, Massachusetts

Clapp's Mill

Clapp's Mill is a historically significant site located on Sawmill Brook upstream of Chestnut Street, at the Burlington town line. The site extends across the town line and the two towns have been recently working to develop a plan to preserve this site. The Mill site is currently on the Massachusetts Historical Commission list as an archeological resource survey site, but the town hopes to secure a National Register Conservation Area designation.

Colonel Joshua Harnden Tavern, 1770

Since 1999, the Colonel Joshua Harnden Tavern has been the home of the Wilmington Museum. The structure was taken by eminent domain in 1973 and put on the National Register in 1975, prompting the creation of the Wilmington Historical Commission itself.

John Hathorne House, 1737

Located at 280 Woburn Street, the house, as well as the rest of the structures on this 5-acre property are "in mint condition" according to the Historical Commission. The property consists of a wooden-pegged house, a 4-holed outhouse, and original barn, complete with wooden harnesses and wheel from the barn's days as a slaughterhouse.

Town Pound, 1814

The Town Pound is a small structure formerly used to detain stray animals. It consists of a 5-foot wall of stones surrounding an area ten yards on a side. Located on Glen Road behind the Congregational Church, it is now one of the last of its kind in the country.

Middlesex Canal

From 1793 to 1853, the Middlesex Canal was used to haul a variety of cargo, including passengers, fabric, and granite, from Boston to Concord, NH, and stops along the way. The 23-mile canal is a tremendous resource for the town. The Middlesex Canal Commission has also been recently moving forward with plans to restore portions of the canal and develop walking trails along the path of the waterway, to the extent possible. The canal, constructed over 200 years ago, can be used to teach children and adults first-hand about earlier methods of transportation and engineering, and to provide town residents and visitors with a trail network for (primarily) passive recreation. The canal is registered as a National Historic Civil Engineering Landmark.

9.2 Cultural Resources

9.2.1 Cultural Organizations

There are numerous organizations that contribute to the cultural life of Wilmington. A few notable such organizations are described below.

9.2.1.1 Council for the Arts

Since its inception in 1980, the Council for the Arts has devoted much time and energy to increasing interest and awareness for the Arts in Wilmington. Programs include concerts on the Town Common, museum passes, and library presentations. Funding comes from the Massachusetts Cultural Council.

9.2.1.2 Wilmington Arts Center

Located in the 1842 Town Hall across from the Common, the Wilmington Arts Center is the home of the Wilmington Arts Council and is where the Council holds functions. Art classes, 'moving' exhibits, and the annual winter tree festival are among various cultural events held in the building.

9.2.1.3 Religious Institutions

There are 7 churches in Wilmington. They are:

- | | |
|------------------------------------|-------------------|
| • Congregational Church | 220 Middlesex Ave |
| • First Baptist Church | 173 Church Street |
| • Jehovah's Witnesses Church | 1 Bridge Lane |
| • St. Dorothy's Catholic Church | 11 Harnden Street |
| • St. Elizabeth's Episcopal Church | Forest Street |
| • St. Thomas Villanova Catholic | 126 Middlesex Ave |
| • United Methodist Church | 87 Church Street |

9.2.1.4 Fraternal Organizations

There are several fraternal organizations that contribute to the social and cultural life of the community. They are:

- | | |
|--------------------------------------|------------------|
| • Aleppo Temple Shrine | 99 Fordham Road |
| • American Legion Post 136 | Bay Street |
| • Knights of Columbus | 27 School Street |
| • Veterans of Foreign Wars Post 2458 | Middlesex Ave |
| • Masonic Temple | Church Street |

9.2.1.5 Special Interest and Service Organizations

There are a number of special interest and service organizations that also contribute to the social and cultural life of Wilmington. They are:

- Friends of the Library
- Kiwanis Club
- Chamber of Commerce
- League of Women Voters
- Elks Club
- Lions Club
- 4-H Wranglers
- Rotary Club
- Community Fund
- Women's Club
- Garden Club
- Aim Group
- Friends of Harnden Tavern

9.2.1.6 WCTV

Wilmington Cable TV (WCTV) operates three channels broadcasting public information and events, educational programs, and town government affairs. WCTV also broadcasts a community bulletin board. The three channels broadcast from 8 am to midnight or 1 am every day. The government channel covers Town Meeting and Meetings of the Board of Selectmen and rebroadcasts them on 6 nights following each meeting. School Committee Meetings are also covered and rebroadcast, as are important town events such as the 4th of July Celebration.

Local church services are broadcast after being videotaped by church members. Local sports are covered with weekly sports shows prepared by middle school students. Other sports, cultural and educational shows are prepared by local residents and broadcast.

WCTV works with the schools, offering after-school instruction on use of TV equipment and program and broadcast preparation. The station also works with local civic and service organizations, such as the Lions Club and Senior Center, to publicize their activities. A membership of about 300 volunteers is maintained. Volunteers pay \$10 individual or \$20 family annual dues, and receive instruction on the use of TV equipment in the station studio.

While short skits have been prepared and broadcast, longer plays or any materials involving copyrights are not broadcast. WCTV has an active outreach program and seeks to provide a broad base of important informational services to the community.

9.2.2 Entertainment

The Wilmington Arts Center on Middlesex Avenue is a focus for entertainment and arts in town. Live music performances and art exhibits are held there, as are rehearsals for live theater events staged at Wilmington High School. Art and music classes are also given at the Arts Center.

The Shriners Auditorium and Convention/Exhibition Center on Fordham Road is a regional facility offering a variety of shows and expositions including for example, rodeos, circuses, antique shows, banquets, arts and crafts shows, boxing matches, and expositions. About 25 events covering 50 days are held each year, including meetings of Shriners. The facility has a convertible auditorium with 4,150 seats or 37,000 sq. ft. of exhibition space. It has parking for over 2,000 vehicles.

Wilmington residents also travel to nearby communities for entertainment. Woburn and Burlington both have multi-screen cinema complexes. Live performance theaters are located in Andover, Lowell, Medford, Somerville and Boston.

9.3 Observations

Many residents have expressed concern that recent development is detracting from the historic character of Wilmington. Development along formerly rural roadways contributes to this concern. Construction of new homes in older neighborhoods can also change the character of those areas, especially when new homes are not consistent with the scale or style of existing houses.

Youth Community Center

Participants at the Visioning Workshop noted that Wilmington lacks a community center for teens and youth. St. Thomas of Villanova church currently has a youth center, which is used primarily by pre-teens. While many residents have suggested that a youth center is necessary, more research is necessary to determine whether teenagers would use such a facility and what features it should include. An incremental feasibility study might be employed to assess demand for a youth center and what amenities it might include.

If it is determined that demand is sufficient to justify development of a youth center, the following concepts should be incorporated into the planning process. Construction of such a facility should be integrated into the development plans for Neighborhood Activity Centers, and the youth center should be linked to the rest of town by a network of sidewalks and pathways that allow teens to safely access the center without the use of a car. The Wilmington Plaza area should be investigated as a possible site for a teen center because it is relatively close to the High School and has retail stores that are important to youth. An outdoor gathering area, studio space, and performance space should be considered as potential amenities.

9.4 Recommendations

9.4.1 Enact historic neighborhood designations and require advisory (non-binding) design review.

Design review would entail advisory review for large modifications to existing structures and non-residential development. The Historical Commission might also establish guidelines for recommended styles and paint colors. The following areas should be candidates for historic district designation:

- Buck's Corner (Woburn Street / Federal Street)
- Route 62 Victorian area
- Chestnut Street.
- Blacksmith's shop in southwest quadrant of Perry's Corner

9.4.2 Continue to work with the Town of Burlington to obtain National Register Conservation Area designation for the Clapp Mill.

9.4.3 Develop a Historic Preservation Plan to protect the town's historic and archaeological resources.

9.4.4 Continue to support the Wilmington Council for the Arts and Art Center in their program and facility needs.

9.4.5 Provide funds to study the feasibility of a teen / youth community center located in one of the Neighborhood Activity Centers.

- Publicize existing youth facilities
- Create ad hoc committee to study the issue
- Conduct a survey of youth to determine interests and needs

- Consider joint development with private non-profit youth organizations (e.g., YMCA)
- Make recommendations to capital planning process
- Consider including youth facilities at the new library.

9.4.6 Seek means of preserving the 1814 Town Pound.

10 MUNICIPAL RESOURCES AND FACILITIES

10.1 Schools

The Town of Wilmington operates eight public schools.

Table 31: Wilmington School System, Capacity and Enrollment

School Name	Grades	Capacity	2000-2001 Enrollment
Boutwell	N - K	300	175 ¹
Wildwood	N - K	254	186
Woburn Street	1 - 3	575	508
Shawsheen Elementary	1 - 3	575	473
North Intermediate	4 - 5	420	330
West Intermediate	4 - 5	420	298
Wilmington Middle School	6 - 8	1,150	929
Wilmington High School	9 - 12	960	800
SpEd O.O.T. ²	All years		45
Total	N - 12	4,654	3,744

Sources: Massachusetts Department of Education and Wilmington Public School Administration

N=Nursery School

¹There are 4 Kindergarten classes, each of which is a half-day program. The classes are back to back in two classrooms.

²Special Education Out of Town services place special needs children in a variety of learning environments, including the S.E.E.M. Collaborative and private placements.

10.1.1 Enrollment and Capacity

Total enrollment for Fall 2000 is 3,744 students, an increase of almost 300 students (9%), over 1998 enrollment figures. The public schools system has recently undergone extensive renovations, redistricting, and redistribution. Classes are now distributed as follows: two schools for nursery school and kindergarten classes, two for grades 1 – 3, and two for grades 4 - 5; one middle school (grades 6 – 8); and one high school (grades 9 – 12). The town is divided into east and west districts for each age range up to middle school. Information in this chapter reflects Fall 2000 student numbers and classroom organization unless otherwise noted.

10.1.1.1 Elementary Schools

Current enrollment at the elementary schools is 340 for nursery and kindergarten classes, roughly 970 for grades 1 through 3, and approximately 630 for grades 4 and 5.

10.1.1.2 Middle School

Wilmington Middle School, housing grades 6 – 8, has a capacity of 1,150 and an enrollment of approximately 930. This includes an alternative special education class for which students come to evening

classes. The school is divided into three 'houses': Challenger House, Discovery House, and Explorer House. The school is designed this way to make the environment feel smaller and less overwhelming. The Middle School is located on Carter Street.

10.1.1.3 High School

Wilmington High School has a student capacity of approximately 960. Additional space is potentially available in areas used previously as drafting and shop space and which is currently used for storage. Following renovation, these locations could conceivably be used as classroom space.

The School Committee expects high school enrollment to rise in the next few years. Fewer children are leaving the public school system to attend either the technical high school or other private schools. Additionally, with education reform starting to judge schools based on their dropout rates, the high school is making greater efforts to keep students in school. An alternative high school program has been implemented where students (who, in this case, frequently work during the day) take classes in the evening to get credit towards their diplomas. In 1999, the Wilmington drop out rate was 0.3%; the state average that year was 3.6%.

Wilmington is also a member of the Shawsheen Valley Vocational Technical High School District, which includes Bedford, Billerica, Burlington, Tewksbury, and Wilmington. In 1999, 235 Wilmington residents were among the high school's 1,135 students. That same year, some 800 adults enrolled in the school's continuing education programs. Many students who study here receive college credit for their work through agreements the school has with area colleges.

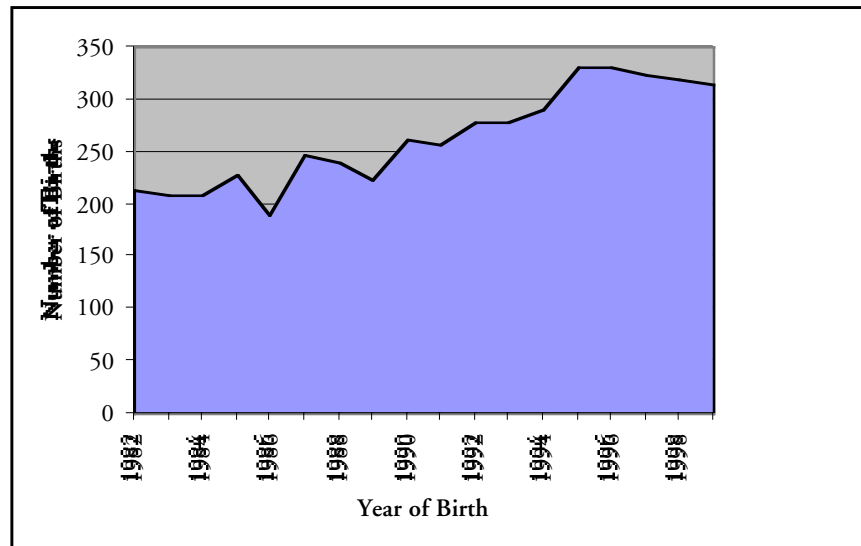
10.1.2 Enrollment Projections

Fluctuations in school enrollment are linked to birth rates and immigration into Wilmington.

10.1.2.1 Births

As elsewhere, the birth rate in Wilmington has fluctuated over the years. Births increased between 1986 and 1995, and have slowly decreased since then. The result of this is a recent increase in school enrollment. Many of the 330 children born in 1995 will be entering kindergarten this fall. Based on these numbers, until 2009 more and more students will enter the middle and high schools.

Figure 16: Wilmington Births, 1982 – 1999



Source: Wilmington School Committee

10.1.2.2 Enrollment Trends

There has been considerable growth in Wilmington enrollments since the 1980s. From the 1989 to 1999, fall enrollment rose from 2,800 students to 3,700 students, an increase of nearly 900 students (32%). Fall 2000 enrollment is slightly over 3,700 students, or 18% of the Wilmington population.

10.1.2.3 Projected Future Enrollment

Projections suggest enrollment will rise to 3,900 students in 2001 and 4,200 students in 2004.

10.2 Cultural and Social Facilities

10.2.1 Wilmington Memorial Library

The library owns nearly 93,000 books, with an annual circulation of 170,000. Holdings include books, books-on-tape, CDs, newspapers, magazines, and videos. There average 400 visitors a day to the library; 70% of Wilmington residents have library cards. The library has 42 adult and 272 children's programs, including a children's reading session on the Town Common. Residents of Wilmington can also borrow passes for Boston museums, use the Internet, or hold meetings, although space is limited. The library catalog, program schedules, and regional holdings are all available on the library's web site.

The library has limited access for persons with disabilities, due to size constraints. There is ramp access at street level with an automatic door, and an elevator to the second floor where there is an accessible bathroom. Access is most difficult in the aisles and around tables.

The library is currently undergoing a feasibility study for either renovation of the existing building or construction of a new library. The feasibility study also takes into consideration need for dedicated community meeting space. Because the Library contributes significantly to the role of the Town Common as the civic and municipal center of Wilmington, this plan strongly recommends keeping the Library at the Common, if at all feasible. See Chapter 3 for additional details.

10.2.2 Meeting Facilities

There is limited space for community meetings in Wilmington. Some meeting space is available at the library, though library activities have priority, making scheduling in advance necessary. Meeting space is also available at the Fourth of July Building, St. Thomas of Villanova Catholic Church, and will be available in the new Wilmington Middle School.

10.3 Senior Center

The Buzzell Senior Center, located in the old Boutwell School at 15 School Street, offers a wide variety of programs and classes for Wilmington seniors. Services include a Home Delivered Meals program, the Homebound Library Program, health screenings and other medical help, tax preparation help, and a van to transport seniors to appointments, shopping, and to and from the Senior Center. Classes and social events include line dancing, knitting, woodworking, and Bingo.

There are four full-time employees at the senior center, including a Director, an outreach respite care worker, a van driver, and a secretary. There is also one part-time AARP employee, about 30 regular volunteers, and approximately 125 volunteers throughout the year.

The Center is open Monday through Friday from 9-4:30, although occasionally special events keep the Center open into the evening or on some Saturdays. The Senior Center Director sees permanent weekend hours in the Center's future to handle the increase in visitors and programs. The director also mentioned constraints of the site and hopes to expand in order to provide multiple programs simultaneously. The projected increase in the proportion of seniors in Wilmington's population (discussed in Chapter 4), suggests that demand for more services at the Senior Center will continue to increase.

10.4 Public Safety

10.4.1 Public Safety Building

The town recently constructed a Public Safety Building at 1 Adelaide Street next to the existing police station. The new 36,000 square foot

building will combine both police and fire departments, comprising shared and enlarged office space, conference/training rooms, fitness room, common areas, and larger bays for fire trucks. In addition to creating a central dispatch office, this new space will allow greater communication and coordination among departments.

10.4.2 Fire Department

The Wilmington Fire Department consists of a permanent force of the Chief, Deputy Chief, five lieutenants, 28 fire fighters, and two civilian dispatchers. In 1999, the Department responded to nearly 2,500 calls, of which 61% were ambulance/rescue calls, 14.4% were service calls, 13% were false alarms, and 2.2% were motor vehicle accidents.

Currently the Department has 4 shifts, with 8 firefighters per shift. According to Fire Chief Daniel Stewart, this is inadequate to respond to town needs. Service would be dramatically improved with the addition of 16 firefighters, or 4 additional firefighters per shift. Another issue for the Department is that response time to the north of town can be up to 8 minutes; ideal response time is no more than 4 minutes. In order to improve service, the Department has requested funds to build a 2-bay substation in north Wilmington proximate to the intersection of Route 62 and I-93. The municipal facilities plan recently prepared by Archetype Architects also identified the need for a substation in North Wilmington. In addition, the Department would like an additional rescue pumper (a multi-purpose fire engine equipped with jaws-of-life).

10.4.3 Police Department

The Wilmington Police Department has a roster of 43 officers. In 1999 the Department responded to nearly 20,000 incidents, down 500 incidents from 1998. The number of stolen cars in Wilmington is at a 20-year low, but incidents of breaking and entering and armed robbery have increased. The Department has recently embarked on a community-policing program, assigning police officers to different neighborhood districts. This program also includes familiarizing residents with their 'neighborhood patrol person' through block parties and other neighborhood social events. The Department provides community policing education to Wilmington residents through the Citizens' Police Academy.

Table 32: Crime in Wilmington, 1999

Total Crimes Reported	54
Rate per 1,000 persons	3.1
Violent Crimes	84
Rate per 1,000 persons	4.8
Property Crimes	357
Rate per 1,000 persons	20.3

Source: Wilmington Annual Report, 1999

10.5 Public Works / Utilities

10.5.1 DPW

The Department of Public Works has six divisions; 1) highway, 2) tree, 3) cemetery, 4) parks and grounds, 5) engineering and 6) water and sewer. In addition the Department manages contracts for solid waste disposal and mosquito control. It also oversees a town program of stream maintenance, in which college students are hired to remove debris from the beds and banks of Wilmington's many streams.

10.5.2 Solid Waste

Wilmington is a member of NESWC – the North East Solid Waste Community – along with 22 other communities. Established in the mid 80s, NESWC bought a waste-to-energy incinerator in North Andover and hired Wheelabrator to run it. The incinerator has a capacity of about 1,500 tons a day and disposes of 10,000 tons of Wilmington refuse per year.

BFI, which picks up Wilmington's trash curbside, also picks up the town's recycled materials, which it recycles at one of several area recycling facilities. Wilmington currently recycles glass, plastic, newspaper, aluminum, and yard waste, and recycled waste constitutes 30% of total waste (by weight). The town is considering expanding the program to include cardboard when the current contract expires.

NESWC's 20-year contract with the incinerator will be up in 2005. Member communities have begun investigating alternatives to the North Andover Incinerator.

10.5.3 Gas and Electricity

These utilities are provided directly to Wilmington customers by Boston Gas, and the Reading Municipal Light Company.

10.5.4 Telephone and Cable TV

Telephone service is currently provided by Verizon. AT&T Broadband currently provides cable television service in Wilmington.

10.6 Observations

Participants at the Visioning Workshop expressed general satisfaction with municipal facilities and services in Wilmington. Maintaining the high quality of the schools is a major priority. Some residents feel that school buildings and facilities are in need of additional maintenance and repair.

Chapter 3 discussed the aging demographics of Wilmington. By the year 2020, nearly half of all Wilmington residents will be over the age of 45, and roughly one fifth will be over the age of 65. The Senior Center provides important services to seniors as well as social and recreational opportunities. The demand for these services will

increase, and the town should ensure that there is adequate funding for the Senior Center and its activities.

10.7 Recommendations

10.7.1 Ensure adequate funding for the Senior Center and senior-related services

10.7.2 Seek to keep the Library at the Town Common

The Town Library is a vital component of the Town Common area, because it serves all Wilmington residents. In Wilmington, as in many towns, the library acts as an indoor “Commons,” where residents can meet and interact, both formally and informally. The library “anchors” the Town Common area as the center of Wilmington civic life, much as a large department store can anchor an entire shopping mall.

The town is currently engaged in a study to determine the most feasible location for new, expanded library. This Master Plan strongly recommends that the library remain at the Town Common and that this recommendation be considered along with other factors during the feasibility study. Other municipal uses, as feasible, should also be located at the Town Common.

11 TRANSPORTATION

As every resident knows, auto traffic can be a major problem in Wilmington. Drivers experience serious congestion on many of the town's roadways, especially Main Street, Lowell Street, and Middlesex Avenue. Much of the traffic is non-local; drivers pass through Wilmington on their way to or from Tewksbury, Billerica, and other neighboring towns. Other trips are made by people on their way to the major employment centers in southeast Wilmington and northern Wilmington. "Out-of-towners" are not responsible for all of the town's traffic, however. Because residential and commercial areas in Wilmington are spread out, and pedestrian and bicycle facilities are inadequate, residents must use automobiles for most trips: to schools, playing fields, shopping centers, commuter rail stations, and employment sites.

Participants at the Visioning Workshop recommended that the town invest in alternative means for residents to move around town, including pedestrian and bicycle paths and a local bus system. It is also possible to reduce auto use by locating land uses so that residents do not need to use a car for every trip. The Neighborhood Activity Centers described in Chapter 3 will help to reduce auto dependence by locating residential developments (townhouses and apartments) within walking distance of shopping, offices, and public transportation. Studies have demonstrated that, on average, households located within walking distance of public transportation (including commuter rail) own fewer cars and drive less than households located elsewhere.

This chapter examines existing transportation networks in Wilmington and identifies ways to mitigate traffic by reducing auto use. This chapter includes limited recommendations for roadway or intersection improvements.

11.1 Roads

The road network in Wilmington includes local roads, collector streets, arterials, and one interstate highway (I-93).

11.1.1 Traffic Volumes and Accident Frequency

Daily traffic volumes are shown on Figure 17. The highest volumes occur on I-93, which carries almost 140,000 vehicles per day. Lowell Street carries about 26,000 vehicles per day near its intersection with I-93. Main Street through the center of town carries about 17,000 vehicles per day. South of Lowell Street volumes are about 12,000 per day on Main Street.

Table 33: 1999 Accident Reports by Location

Street Name	Number of Accidents
Main Street	147
Lowell Street	74
I-93	58
Middlesex Avenue	58
Woburn Street	37
Glen Road	26
Shawsheen Avenue	23
Salem Street	22
Ballardvale Street	18
Church Street	16
Concord Street	13
Burlington Avenue	12
Butters Row	12
Clark Street	9
Hopkins Street	9
Aldrich Road	7
Chestnut Street	7
West Street	6
Route 125	5
Upton Drive	4

Source: Wilmington Police Department

Note: These numbers represent the number of accidents reported to the Wilmington Police Department. Only those locations with greater than 3 reports during 1999 are listed here.

Although data are not compiled by intersection, the Police Department reported that Wilmington's worst traffic accident intersections are:

- Main St. / Cross St. / Butters Row
- Main St. / Burlington Ave. / Church St.
- Main St. at Wilmington Plaza
- Main St. / Richmond St.
- Woburn St. / Lowell St.
- Middlesex Ave. / Glen Rd. / Wildwood St.
- Middlesex Ave. / High St.
- Route 125 / Ballardvale St. / Andover St.

11.1.2 Parking Regulations

The Wilmington Zoning Bylaw requires new development to provide on-site parking based on the size and use of the development. Parking requirements are listed on Table 34.

Figure 17: Traffic Volumes in Wilmington

Table 34: Parking Requirements, by Land Use

Land Use	Number of Spaces
Residential	2 spaces / dwelling unit
Hotel, Motel, or Lodging House	1.25 spaces / bedroom
Education	1 space / staff position; 1 space / 5 persons of rated capacity of the largest auditorium; and 1 space / student vehicle which can be expected at only one time on the premises
Hospital and Nursing Home	1 space per bed
Retail and Service Business	1 space per 250 s.f. of g.f.a.
Business or Professional Office	1 space per 300 s.f. of g.f.a.
Industrial Use	1 space per 800 s.f. of g.f.a.
Permanent Storage Facility	1 space per 1,000 s.f. of g.f.a.
Restaurant, Place of Worship, other place of assembly	1 space per 3 seats or 35" of counter
Auto Service Station	3 spaces per service bay

Source: Wilmington Zoning Bylaw

s.f. = square feet

g.f.a. = gross floor area

Shared Parking

When land or building uses occur in joint or mixed-use developments, the minimum number of parking spaces is calculated differently. After multiplying the minimum parking requirement for each individual use by the percentage dictated in the Parking Credit Schedule Chart (pg. 46 of Bylaw), parking requirements are determined by the land use with the highest resulting value.

CBD parking specifications

Parking requirements for the CBD are consistent with other areas of town with exceptions for commercial and office uses. Retail and service business uses in the CBD are required to provide less parking than in other commercial districts—one space per 400 square feet of gross floor area (other districts require one space per 250 square feet). Similarly, office uses are required to provide one parking space per 500 square feet of gross floor area.

The Wilmington Zoning Bylaw allows further reduction of parking requirements in the CBD if there is a public parking lot with a capacity of at least 60 spaces, within 600 feet of the lot in question. The reduced rates are one space per 600 square feet and 750 square feet of gross floor area in retail/service and office uses, respectively. No business has been able to take advantage of this clause, however, because the town has not found a site to develop a 60-space lot. It may be more feasible to develop multiple smaller lots around the perimeter of the CBD.

Dimensional Requirements

Required angled parking dimensions are 9 feet by 18 feet, while those for parallel parking spaces are required to be 8 feet by 22 feet.

11.2 Pedestrian and Bicycle Facilities

Participants at the Visioning Workshop stated that pedestrian mobility and safety were very important issues in Wilmington.

11.2.1 Sidewalks

Sidewalks are required in all new subdivisions. The town has a program of constructing sidewalks on main roads that need them, with priority given to streets that school children use to walk to school. Recently-constructed sidewalks extend from Richmond Street to Boutwell Street via Shawsheen Ave. and Carter Lane, and from Lowell Street towards the high school via Parker Street and Adams Street. The DPW also constructed short sections of sidewalk on Glen Road and Middlesex Avenue.

11.2.2 Trails

There are several trails on school grounds, used primarily as “nature trails” for educational purposes. There are relatively short trails on about 20 town-owned recreation and conservation sites, and on several privately owned recreation areas. There are also trails along portions of Mill Brook, Maple Meadow Brook, and Martins Brook. The greatest potential to create additional trails is the Middlesex Canal route and along Mill Brook, Maple Meadow Brook and Lubbers Brook and the Ipswich River. There is considerable potential to connect some of the existing trails with each other and to destination areas such as commercial and institutional uses. Trails are used primarily for recreational and environmental educational uses but there are some portions that would serve pedestrian shopping or personal business trips.

Many Wilmington residents have expressed a need for bike trails in Town. Half of the responses to the 1999 Open Space Survey identified bike trails as needed recreational facilities, more than any other response. One quarter of respondents identified hiking/skiing trails in their choice of the top five recreational facilities needed, scoring 7th out of 19 types of facilities.

11.3 Public Transportation

Wilmington is served by two MBTA commuter rail lines and The RIDE, a paratransit service for the elderly and disabled. There is no local, general-purpose bus service in Wilmington.

Both commuter rail lines begin at North Station in Boston. One line extends to Lowell and stops at the Anderson/Woburn Station in Woburn and the Wilmington Station in the CBD. This line carries about 10,000 passengers per day, with approximately 1,600 trip ends

at the Wilmington Depot daily (roughly 800 round trips). The MBTA is currently constructing a 100+ space parking lot east of Main Street in the CBD. The Anderson / Woburn Station is a large multimodal facility with direct access from I-93 via a new exit ramp. The Haverhill commuter rail line makes station stops at Reading, North Wilmington (where there are 20 parking spaces) and Ballardvale, approximately one mile north of Wilmington in Andover. It carries about 8,700 passengers per day, with approximately 300 trip ends at North Wilmington (150 round trips).

The RIDE is a dial-a-ride service for elderly and disabled residents, operated by the MBTA. The Senior Center also operates a shuttle van as part of its services for senior citizens. The van takes seniors to and from the Senior Center, and provides other needed travel to medical appointments and shopping. Day trips to out-of-town destinations for seniors are also provided with the van.

Many participants at the Visioning Workshop expressed a desire for a local public transportation (bus) system that would allow residents to move around town without the use of an auto. Bus service in Wilmington might operate as a one-way loop route that stops at key destinations in town. Further investigations are needed to evaluate the feasibility of local bus service. Consideration should be given to a multi-town bus service that includes nearby towns such as Reading, North Reading, Burlington, and Woburn.

11.4 Key Destinations

Transportation planning in Wilmington must be informed by an understanding of key destinations in town. A pedestrian and bicycle pathway system or bus service should be designed to provide direct and safe access to these destinations. It is especially critical to develop safe pedestrian and bicycle routes to schools, playing fields, and other youth destinations. The following is a partial list of key destinations in or just outside of Wilmington:

- Public schools, specifically the elementary schools, the middle school, and the high school;
- Athletic fields not located at schools (e.g., Town Hall);
- Neighborhood Activity Centers: CBD, Wilmington Plaza, Perry's Corner, North Wilmington;
- MBTA commuter rail stations at the CBD, North Wilmington, the new Anderson / Woburn Station in North Woburn, and Ballardvale Station in Andover;
- Industrial Parks: Southeast Wilmington, East Wilmington, and Ballardvale Street / Andover Street;
- Silver Lake;
- Town Common;
- Recreation areas: Town Park, Town Forest, conservation lands along Ipswich River, streams, and the Burlington border.

11.5 Observations

Wilmington needs to employ a multifaceted approach to enhancing mobility and reducing traffic. At the Visioning Workshop, participants identified a real need for alternative ways to move around town. Alternative means of transportation are important not only as traffic-reduction tools. The number of seniors in town is increasing and some may be unable to drive. Bus service and sidewalks are critical to ensuring that these residents can continue to lead active lives and access facilities and services important to them.

A town-wide network of sidewalks, pathways, and bike trails will permit residents to move around town without an auto. In particular, it will enhance the mobility of students and youth otherwise dependent on their parents for transportation. It may also allow residents to reach employment in Wilmington or neighboring towns on foot or by bicycle. Secure bike storage at the MBTA commuter rail stations will encourage residents to ride to the train. It will also enable out-of-towners to take the train to Wilmington and bike to their place of employment, rather than drive.

Bus service is another alternative mode of transportation that reduces traffic. Wilmington might employ a bus loop that stops at some of the town's key destinations: Wilmington Plaza, the CBD, Southeast Wilmington Industrial Park, Perry's Corner, North Wilmington, and Ballardvale Street. In order to enhance ridership and distribute costs, the Town might explore developing a multi-town bus system in conjunction with neighboring towns. Key destinations outside of Wilmington might include Industriplex and new Anderson / Woburn Station in Woburn, Burlington office parks and commercial malls and plazas, downtown Reading, Concord Street in North Reading, Route 28 in North Reading, and the Ballardvale rail station in Andover. This service could also be operated as a loop. Some multi-town bus systems operate two buses running opposite directions on the same loop.

In addition to providing alternative modes of transportation, the town can use zoning mechanisms to encourage development that requires less auto dependence. The Neighborhood Activity Centers, described in Chapter 3, would help to reduce auto dependence by locating numerous compact land uses within walking distance of one another. In particular, it is important to locate townhouses, apartments, and senior housing close to shopping and transit (commuter rail station or bus stop). Research has shown that compact, mixed-use developments generate fewer off-site vehicle trips than conventional subdivisions, because residents can conduct many of their daily trips on foot. A resident of a townhouse in North Wilmington might start the day by walking to the coffee shop, walk to the commuter rail station, take the train to work and back, stop at the grocery store (on foot), and walk back to her townhouse.

Municipal uses should also be clustered so as to facilitate pedestrian and bicycle access. As noted in Chapter 3, the town should keep the library located at or near the Town Common, where it is easily accessible to the High School and Senior Center. Similarly, if the Town Hall is relocated it should be centrally-located and accessible via trails and sidewalks.

Development patterns that reduce auto dependence will also enhance the diversity and affordability of living in Wilmington. Many families who live near public transportation (such as commuter rail) find that they need only one car; the resulting \$5,000 annual savings could make a difference for families trying to stay in Wilmington. The cost of owning a car makes it especially important that affordable units are located near a Neighborhood Activity Center. While Avalon Oaks and Avalon Oaks West (described in Chapter 4) contribute to the economic diversity of Wilmington, the location of the developments requires that residents own at least one, if not two cars.

11.6 Recommendations

11.6.1 Require pedestrian connections in new developments

Revise site plan review standards to require on-site pedestrian connections. Ask developers to construct on-site pathways and establish rights-of-way that connect new developments to adjacent residential areas and nearby activity centers. Require a formal pedestrian way from the public way (sidewalk) to the main entrance of commercial development.

11.6.2 Secure easements for through-connections of pathways.

Identify locations where trail connections must cross privately-held land in order to efficiently link key destinations. Work with property owners to secure easements.

11.6.3 Continue safety improvements and sidewalk construction and repair on arterial and residential roads.

Provide increased funding dedicated to sidewalk construction and repair.

11.6.4 Implement selective regulation and design features to reduce through traffic in selected neighborhoods.

Traffic calming and restrictions on through traffic should be considered for neighborhoods where traffic is a problem. A separate traffic study will be necessary to determine where such measures are appropriate and what techniques will be most effective.

11.6.5 Cooperate with surrounding towns to plan and develop local multi-town transit services for the area.

- Identify key destinations within Burlington, Wilmington, Reading, North Reading, and possibly Woburn.
- Study the capital and operating costs of multi-town bus service.
- Consider operating two buses running opposite directions around a loop.
- Investigate state and federal funding sources, including Federal Transit Administration Access to Jobs and other TEA-21 programs.
- Explore cooperative relationships with local employers.

11.6.6 Ensure that new developments are built to accommodate potential future bus service.

Incorporate space for a bus stop into development at each Neighborhood Activity Center and Key Destination. Ask the MBTA to provide a pullout for southbound buses at the new parking lot in Wilmington Center.

11.6.7 Work with industries to adopt traffic management and vehicle trip reduction programs.

Explore possibilities for industries to establish a Transportation Management Association (TMA) to provide services for their employees, such as bus links to commuter rail and rapid transit stations.

11.6.8 Consider the needs of elderly and handicapped residents when planning pedestrian and transit projects.

Provide curb cuts, ramps, and other amenities as necessary to ensure access for elderly and handicapped residents, especially in Neighborhood Activity Centers.

11.6.9 Reduce parking requirements for housing located near a Commuter Rail stop

The current zoning standards require 2 spaces for each housing unit within a residential development. Households located near a commuter rail stop (Wilmington or North Wilmington) are likely to need fewer cars because they can access public transportation and shopping on foot. Reduced parking requirements result in developments that use land more efficiently; reduced site costs may also encourage developments at the Town Center and North Wilmington Neighborhood Activity Centers.

The town should reduce parking requirements should be reduced to 1.5 spaces per housing unit for developments within 1/2 mile of a commuter rail stop.

11.6.10 Reduce parking requirements for businesses located within Neighborhood Activity Centers.

- Allow shared parking for developments within NACs.
- Require one space per 400 square feet of retail uses and one space per 500 square feet of office uses.
- Reduce parking requirements further for businesses located within 600 feet of at least 30 municipal parking spaces. Reduced requirements would be one space per 600 square feet and 750 square feet of floor area for retail and office space, respectively.
- Seek to develop multiple smaller municipal parking lots at NACs, rather than a single 60-space lot.
- Allow similar reductions for office and industrial space located within 1/2 mile of an MBTA commuter rail stop.

11.6.11 Continue to improve arterial and residential roads with Chapter 90 funds.

12 IMPLEMENTATION

12.1 Regional Cooperation Actions

Several topics require regional (multi-town) cooperation. They are:

Wastewater Treatment. Wilmington and North Reading could reasonably share a wastewater treatment facility which discharges into the Ipswich River Watershed, thus substantially aiding in recovering river flows. Inter-town cooperation and state aid are clearly required for this to happen.

Water resource protection. Wilmington needs to protect the Zone II areas of Reading and North Reading that are located within Wilmington. Reading, North Reading, Burlington, and Woburn need to protect Wilmington's Zone II areas that are located within these communities.

Open Space and Recreation. Wilmington needs to cooperate with Burlington, Billerica, Tewksbury, Andover, North Reading, Reading and Woburn in creating continuous open space corridors and trails across town boundaries. Some of these situations are related to waterways, such as the Ipswich River and Middlesex Canal, and some to relatively large tracts of land, such as the Town Forest.

Transportation. In order to create bus services Wilmington needs to cooperate with Reading and North Reading. Burlington, Woburn and the south part of Reading have MBTA bus services, but the rest of Reading and North Reading do not. There is a potential to design bus services covering and shared by adjacent towns.

12.2 Procedures and Schedule for Master Plan Amendments

The Master Plan should be completely updated at least every ten years. It should be selectively amended on an as-needed basis every two to three years. Amendments should be reflected both in relevant text, graphics and implementation measures. Amendments should be based on changing town conditions, funding opportunities, and shifting town values and goals. These should be monitored each year to determine if changes have occurred. The Master Plan and amendments to it should be adopted by Town Meeting, requiring only a majority, not a super-majority (2/3 vote).

It is important for the Master Plan to correspond to zoning and other major implementation controls. Any proposed zoning changes should be evaluated against the Master Plan for conformity. If it is determined that proposed zoning changes do not conform to the plan, yet seem professionally desirable and publicly supported, the Master Plan should be amended to reflect the proposed zoning

changes. If proposed zoning changes are not professionally desirable, Town officials should not support them.

12.3 Institution Building for Master Plan and Town Development (including the role of the Master Plan Committee)

In order for the Master Plan to have the status it needs for success, some institution building should be undertaken. The Master Plan Committee should be established as a continuing body in Wilmington, and should meet on a regular basis to evaluate progress, and discuss and suggest amendments. Committee membership can change, depending on individual's inclination to continue to volunteer, and the Board of Selectmen's desires in appointing committee members.

A working group of town officials should be appointed by the Town Manager to relate town departmental activities and needs to the Master Plan. This group would determine whether departmental activities and proposed budget and administrative needs were consistent with the plan, and would coordinate any issues related to the concerns of the plan, between departments where appropriate. The working group should meet three times a year under the leadership of the Town Manager. Both the working group and the Master Plan Committee should have the authority to prepare and propose amendments to the Master Plan.

APPENDIX 1

Master Plan Committee Meeting Dates

29 November 1999
3 January 2000
20 March 2000
18 July 2000
7 August 2000
2 October 2000
6 November 2000
4 December 2000
8 January 2001
12 February 2001
27 March 2001

APPENDIX 2

Results of Master Plan Committee Survey

The Master Plan Committee conducted the following survey at the beginning of the Master Planning Process in order to assess the primary issues of concern, goals, and potential actions. Results are on the following pages.

1.) What's Important?

Describe those issues or topics that are most important to you. For example, these may include: the town center, historical character, natural resources, water resources, schools, economic strength, public facilities and services, town management, location and others. If possible, list in order of importance.

2.) What are Areas for Action?

Considering your response to Question 1, describe the areas where you feel action may be required. What elements of the town need attention? What aspects of Wilmington should be strengthened, maintained, or eliminated? What things should the town obtain or nurture? You may want to identify major actions that you feel the town should consider, such as: the purchase of land or development rights, zoning changes, encouraging or discouraging certain activities, building new facilities, or expanding the capacities of municipal systems.

3.) What Are the Challenges?

Describe the challenges that may present roadblocks to taking the actions you described in Question 2. For example: lack of public involvement, town political structure, financial constraints, regulatory issues, economic constraints, lack of regional cooperation, and others.

Summary Results of the Wilmington Master Plan Committee Survey

Compiled by Planners Collaborative from written responses and from discussion during
Master Plan Committee meeting on 3 January 2000.

ISSUES AND AREAS FOR ACTION

KEY:

General Topics

- Issues of Concern
- Action Ideas

Natural Resources and Environment

- Protection and preservation of natural resources
- Protection of water resources: wetlands, rivers, lakes, and ponds
- Reliability of water supply: quality and quantity
 - Take a regional approach to water and wastewater
 - Consider municipal or regional wastewater facility
 - Identify secondary water sources
- Sewers; impacts of on-site septic and sewerage
 - Develop town-wide sewer master plan
- Hazardous waste
 - Inventory hazardous waste locations?
 - Improve pollution prevention programs and bylaws

Open Space and Recreation

- Open space is threatened by development; "Fierce competition for open space."
 - Acquire more property for natural resource protection, aesthetics, and active recreation. Develop park at Silver Lake?
 - Identify alternative sources of funding and protection (state grants, purchase of development rights, etc.)
 - Develop more community facilities for active and passive recreation; expand recreational opportunities on town-owned land; promote use of existing open space

Housing

- Diversity and affordability of housing stock
 - Ensure diverse housing alternatives
 - Consider the need for elderly housing and age-restricted developments. Consider zones for adult communities or villages.
 - Improve older housing stock.
 - Promote low-cost housing?
- Affordable housing developments are a major issue
 - Must be proactive. Need to plan for and manage the development of mixed, affordable, and dense residential developments; identify areas where impacts to environment and existing neighborhoods will be minimized; recommend those areas to developers.
 - Create a bylaw for alternative/affordable housing developments.
 - Consider scattered site housing for affordable housing.
 - Discourage high-density housing development

Consistency of Town Planning and Zoning

- Consistency in growth planning; rezoning has been done on a piecemeal basis. Previous plans have succumbed to growth pressures; rezoning occurred by exception at town meeting; plans did not provide for certain development pressures (multifamily, affordable)

- ❑ Need to make implementation a major component of master plan
- ❑ Need to address ongoing pressures to rezone R-60 land
- ❑ Fine-tune industrial zoning; multiple uses: office, research, light industrial, etc.
- ❑ Simplify restaurant zoning bylaw
- ❑ Address zoning issues in "hot areas": R-60, Rte 129, Rte 38 South.
- ❑ Eliminate hammerhead lots
- Inconsistency between planning process and town meeting
 - ❑ Improve communications between town government and citizens
 - ❑ PRD decisions should be by planning board, not town meeting
 - ❑ Limit "zoning by exception" at town meeting

Town Center / Business District

- Wilmington does not have a traditional New England Town Center.
 - ❑ Relocate "Town Center" to Wilmington Commons--Senior Center, Veterans Monument, potential site for new Town Hall, etc.
 - ❑ Recommission Rte 38 as Central Business District and shape planning policies accordingly
- Orderly economic development in central business district
 - ❑ Provide incentives for property owners and developers?
- Zoning issues in central business district
 - ❑ Higher density?
 - ❑ Residential? Develop multifamily and/or affordable housing near central business district?
- Parking; Many small lots cannot be improved due to parking requirements
 - ❑ No public parking--reduce 60-space requirement for public lots?
 - ❑ How can MBTA parking lot be used to meet central business district parking needs?
- MBTA station and parking lot
 - ❑ Minimize negative impacts of station
 - ❑ Develop transportation center at MBTA station
- Sewers; larger developments need sewers.
 - ❑ Extend throughout central business district?
- Town Center appearance, streetscape, and amenities
 - ❑ Improve pedestrian-friendliness
 - ❑ Remove or replace Butters Row Bridge?
 - ❑ Relocate utilities underground?
 - ❑ Provide an area for gatherings--playground, benches, picnic areas, paths, etc.

Circulation / Traffic / Public Transit

- Traffic
 - ❑ Consider traffic impacts of development of town business center, new highway interchange, and new industrial development in Wilmington and Reading.
 - ❑ Traffic signals at both ends of Glen Road and at Wilmington Plaza?
 - ❑ Consider traffic in a *regional* context
- Public transit
 - ❑ Consider transit in a *regional* context.
 - ❑ Develop local transit service to MBTA commuter stations and elsewhere
 - ❑ Develop complete transportation/transfer center in town center (at MBTA station?)
 - ❑ Consider issues of access and transit when evaluating affordable housing.
- Pedestrian and bicycle mobility

- ❑ Ensure safe and easy pedestrian and bike access in town center and throughout town.
- ❑ Begin "aggressive sidewalk building program"; connect remote areas to town commerce, parks, and transportation. Develop bike paths

Town Character-- Residential, Rural, Historical

- General Town Character; maintain primarily rural/residential character.
 - ❑ Need to revitalize and beautify all of Main Street
 - ❑ Improve Rte. 38 Northbound entrance to town.
 - ❑ "Welcome to Wilmington" signs
 - ❑ Improve Rte 38 and Rte 62--sidewalks, landscaping.
- Character of business districts
 - ❑ Standardize business appearance with codes (for signs, upkeep, maintenance, etc.), and common attributes (landscaping, pennants, fences, etc.)

Economic Development

- Ensure jobs, skills, and access
- Impacts on town and environment are a concern
 - ❑ Develop a zoning process that addresses the needs of the town without making the regulatory process a disincentive to developers.
 - ❑ Emphasize reuse of underutilized commercial and industrial properties, rather than development of raw land.
 - ❑ May want to "put the brakes on."

Infrastructure, Public Services, and Facilities

- Roads
- Utilities
- Speedy Emergency Vehicle Access
- Library; consider improvements
- Town Hall
- DPW
- Establish town resource center for social services

Education

- Physical facilities
 - ❑ Rehabilitate elementary schools
 - ❑ Provide for increased high school population
- Curriculum and other educational opportunities
 - ❑ Expand curriculum
 - ❑ Open schools for evening and weekend meetings and events

Other

- Family Orientation
- Safety and Security
- Health Care
 - ❑ Consider access to health care, especially for elderly.
- Recycling, Solid Waste, Composting
 - ❑ Provide year-round curbside pickup of recycling and yard waste

CHALLENGES

The following is a summary of responses to question 3 of the survey, "What are the Challenges?"

Planning, cooperation, and implementation

- Need to develop comprehensive, long-term view.
- Need to foster regional cooperation
- Need to develop common vision and goals; establish "win-win" scenarios; special interest groups and personality conflicts can cause residents to lose sight of overall objectives
- Local property owners resistant to change
- Public apathy and cynicism is a problem; more public education is needed to stimulate public involvement; support for bylaw passage is commonly lacking at town meeting
- Need to enlist cooperation and participation of state and utilities.

Funding challenges and competing needs

- Limited funding
- Proposition 2 1/2 constraints (Contrast between what is approved at Town Meeting and how much voters are willing to pay at ballot box.)
- Competing needs: Schools and public safety needs may supercede other desired improvements (town hall, DPW, etc.)
- Financial constraints and lack of strong constituency may limit land purchases for watershed protection and recreation

State constraints

- Chapter 774 (affordable housing mandate) limits town's ability to regulate affordable housing developments

APPENDIX 3

Open Space Survey – Tally of Results

Percentages are based on a total number (1,479) of surveys returned.

	<u>Yes</u>		<u>No</u>		
1. Is Wilmington:					
a.) rural?	267	(17%)	1184	(77%)	
b.) a suburb?	1023	(64%)	127	(8%)	
c.) industrial?	443	(28%)	243	(14%)	
d.) a bedroom community?	399	(27%)	486	(33%)	
e.) in transition?	865	(54%)	234	(15%)	
2. Is there enough recreation space?	425	(29%)	987	(67%)	
3. Is there enough undeveloped open space?	326	(22%)	1090	(74%)	
4. How important is it for you to preserve: [5 = Very 4 = Somewhat 3 = Neutral 2= Less 1= Not]					
	5	4	3	2	1
a.) historic buildings/arch.?	569 (38%)	468 (32%)	282 (19%)	67 (5%)	30 (2%)
b.) historic places?	622 (42%)	493 (33%)	231 (16%)	67 (5%)	29 (2%)
c.) farmlands?	669 (45%)	408 (28%)	246 (17%)	77 (5%)	26 (27%)
d.) water/conservation	1160 (78%)	235 (16%)	54 (4%)	18 (1%)	5 (----)
e.) open space for recreation?	814 (55%)	380 (26%)	139 (9%)	40 (3%)	13 (----)
5. Is the rate of development: too rapid? 1064 (71%) just right? 284 (19%) too slow? 148 (10%)					
6. Which growth policy to you favor for: [5 = None 4 = Regulate in undeveloped areas 3 = Regulate in already developed areas 2 = Redevelop existing sites 1 = Growth evenly spread]					
	5	4	3	2	1
Residential?	407 (28%)	423 (29%)	336 (23%)	101 (7%)	154 (10%)
Gen'l Business?	145 (9%)	219 (15%)	590 (40%)	358 (24%)	81 (5%)
Industrial?	348 (24%)	154 (10%)	420 (28%)	357 (24%)	131 (9%)
7. What kind of additional businesses would you like to see in Wilmington?					
Restaurants	591 (40%)		Offices	189 (13%)	
Working farms	493 (33 %)		Recreation	721 (49%)	
Grocery/food	195 (14%)		Retail Stores	535 (36%)	
Hotel	169 (11%)		None	250 (17%)	
Industry	114 (8%)		Other	38 (3%)	
8. What do you like most about living in Wilmington? (Top 3 answers:)					
			Location/access:	263	
			Small town/country feel/Quiet:	233	
			Family/people/spirit/safe:	164	

9. What do you like least about living in Wilmington? (Top 3 answers:)

Traffic: 244

Rapid growth/development: 184

Town Center/Route 38: 94

10. How important is it to you for the town to acquire and preserve undeveloped open space for:

	5	4	3	2	1
Birdwatching	244 (17%)	249 (17%)	486 (33%)	168 (11%)	86 (6%)
Drinking water	1172 (79%)	200 (13%)	112 (8%)	4 (--%)	3 (--%)
Greenspace	710 (48%)	462 (31%)	185 (13%)	32 (2%)	18 (1%)
Hiking	333 (23%)	400 (27%)	428 (29%)	126 (9%)	79 (5%)
Town's character	775 (52%)	394 (27%)	160 (11%)	29 (2%)	19 (1%)
Nature study/ed.	422 (29%)	436 (29%)	364 (25%)	70 (5%)	30 (2%)
Other passive rec.	357 (24%)	446 (30%)	413 (28%)	81 (5%)	31 (2%)
Wildlife habitat	530 (36%)	356 (24%)	311 (21%)	88 (6%)	35 (2%)

11. How satisfied are you with the places available in town for recreational use by:

[5 = Very Satisfied 4 = Satisfied 3 = Neutral 2 = Dissatisfied 1 = Very Dissatisfied]

	5	4	3	2	1
Children/youth?	146 (10%)	436 (29%)	378 (26%)	269 (18%)	92 (6%)
Adults?	76 (5%)	320 (22%)	603 (41%)	336 (23%)	101 (7%)
Seniors?	132 (9%)	235 (16%)	661 (45%)	197 (13%)	79 (5%)
Disabled?	58 (4%)	166 (11%)	704 (48%)	214 (14%)	111 (8%)

12. Please check off the top five recreational facilities you think Wilmington needs:

(11) Baseball/softball fields	232 (16%)	(5) Outdoor skating rink	511 (35%)
(17) Basketball courts	156 (11%)	(8) Picnic areas	397 (27%)
(1) Bike Trails	724 (49%)	(14)Public access for boating	170 (11%)
(4) Children's playgrounds	559 (38%)	(7) Recreational center bldg.	425 (29%)
(16) Fishing	158 (11%)	(12)Rollerblade/skatebd. Pk.	230 (16%)
(15) Football/soccer fields	166 (11%)	(13) Sledding	186 (13%)
(10) Golf course	274 (19%)	(6) Swimming pool	432 (29%)
(9) Hiking/skiing trails	379 (26%)	(18) Tennis courts	125 (8%)
(2) Large park/many facils.	654 (44%)	Other (not reported consistently)	
(3) Local neighborhood pks	569 (38%)		

13. How important is it to you for the town to acquire open space for the activities above?

Very: 504 (34%) Important: 524 (35%) Neutral: 132 (9%) Less: 31 (2%) Not: 33 (2%)

14. To preserve open spaces in town, would you:

	<u>Yes</u>	<u>No</u>
Contribute or sell a conservation restriction?	654 (44%)	407 (28%)
Rewrite your deed to limit future use?	508 (34%)	528 (36%)
Contribute land to the town?	226 (15%)	753 (51%)
Donate money to buy land?	436 (29%)	647 (44%)
Sell land to town at "bargain" price?	227 (15%)	789 (53%)
Sell land to town at fair market value?	532 (36%)	501 (34%)
Vote for the town to buy land?	1080 (73%)	153 (10%)

15. How long have you lived in Wilmington?

0-3 yrs: 128 (9%) 3-10 yrs: 321 (23%) 10-20 yrs: 286 (20%) >20 yrs: 674 (48%)

APPENDIX 4

Summary Results of Wilmington Visioning Workshop 10 FEBRUARY 2000

The Wilmington Visioning Workshop provided an opportunity, at the outset of the town's master planning process, for citizens of the town to voice their values, concerns, and visions for their community. Through a group survey and in small group sessions, participants were asked to characterize their town, state what they value about Wilmington, identify important issues and challenges, and express goals for the future. The "raw data" gathered during the workshop has been condensed on the attached sheets. Following are summaries of key elements of the meeting.

SUMMARY

When asked to describe Wilmington in one or two words, participants generally described the town's character and sense of community. Responses were largely positive; residents characterized the town as "family-oriented," "friendly," "neighborly," "small," "quaint," and "convenient." Opinions as to Wilmington's level of development varied widely; descriptions ranged from "semi-rural" to "suburban" to "urban." Participants noted that Wilmington is in a state of transition, describing it as "changing," "evolving," and "growing," and some expressed their concern that the town has already become "overdeveloped," "overpopulated," "crowded," and "congested." In small-group discussion, residents generally stated that this change needs to be better managed, and identified a need for more proactive and consistent planning, which is the purpose of the Master Planning and Planning for Growth efforts.

Workshop participants expressed a broad set of values they feel are represented in Wilmington. These values can be grouped into the following broad categories:

- Strong sense of community
- Diverse activities and institutions
- Attractive physical character
- Ample open space, natural resources, and recreation
- Convenient location and accessibility
- High quality schools and town services
- Low tax rate and affordability

Many participants indicated that they value the "sense of community" in Wilmington and, specifically the people that comprise the community. They described the town as "family-oriented," "neighborly," "friendly," and "a nice place to raise kids." Many feel that their fellow residents share a "social conscience," "commitment," and "pride." Participants noted they feel that many of their fellow residents share their interests, and that participation in town affairs, organizations, recreation, and activities provides important opportunities for social interaction and contributes to a strong sense of community. Residents also value the physical character of the town, especially the "small town" feel. Open space is important to many of the workshop participants, who indicated they value undeveloped lands for their natural resource value as well as the recreational opportunities they provide. The town's recreation facilities were also mentioned as an important positive quality of Wilmington.

Some participants also identified qualities of Wilmington that are valued in a more practical way. Many responses noted that the town's location provides access to the urban amenities of Boston and regional employment centers without the congestion and density associated with city life. Some participants also noted they value the town's accessibility to the ocean and more rural areas in Massachusetts and New Hampshire. Some participants also indicated their high level of satisfaction with the quality of the school system and town services in general. Also noted as important qualities were the stable, low tax rate and the town's overall affordability.

Issues and Goals

During the small group discussions, participants identified a wide variety of issues of concern and stated many potential goals or objectives to be addressed by the master planning process and the town in general. The issues raised can be organized into the following broad topic areas:

- Watershed Protection / Natural Resources
- Recreation Facilities
- Town Character and Appearance, including the Town Center
- Cultural and Commercial Amenities
- Planning / Land Use
- Traffic and Mobility
- Housing and Affordability
- Economic Development and Tax Base
- Education/Town Services
- Civic Participation and Input into Decision-Making

Watershed Protection / Natural Resources

Participants expressed a high level of concern for water resources, open space, natural resources, and environmental protection. Also expressed was an appreciation of the town's responsibility to protect the Ipswich River Watershed, and many participants felt that stronger measures should be taken to address issues of water quality, contamination, and wetlands protection. They expressed concern over the potential impacts of water withdrawals on the Ipswich River and the impacts of development, especially that which occurs within and near wetlands. Some participants also noted that environmental contamination from industry was a serious concern. Others remarked that the dwindling supply of open space in Wilmington has serious implications for the character of the town.

Generally, participants felt the town should increase its commitment to environmental protection through the protection or purchase of open space, the promotion of water conservation, stronger wetlands protection policies (and enforcement), and increased efforts to remediate environmental contamination. Many felt that the town could take a stronger role in promoting water conservation among both residential and commercial users, and should seek ways to return wastewater to the watershed. Many participants felt that the protection of open space—for aesthetics, recreation, and watershed protection—should be a top priority of the town, and some identified specific parcels that should be considered for protection. One resident envisioned the formation of an Ipswich River Consortium, comprised of multiple towns, that could work together to secure funding and purchase land.

Recreation Facilities

Many participants stated that, while they were pleased with the town's existing recreation facilities and programs, more were necessary. The expressed need was for additional facilities for active recreation, especially for children. Some suggested that the town should explore the possibility of expanded recreation facilities at Silver Lake or the creation of a town park. The recently built Ipswich River Park in North Reading was cited as a desirable type of facility. Some residents also expressed a desire for more walking or bridle trails, potentially along streams and possibly connecting to a regional trail system.

Town Character / Town Center / Cultural and Commercial Amenities

While Wilmington residents have many positive feelings about the strong sense of social community in Wilmington, they feel that the character and appearance of the town are in need of attention. In particular, many participants felt that strip development and ugly signage along the state routes through town has resulted in negative aesthetics and a feeling of being overbuilt. Participants generally lamented Wilmington's lack of a traditional town center, stating that the Main Street Business district presented a poor image of the town. Many residents feel the town lacks diverse opportunities for shopping and dining; others expressed an interest in more cultural amenities and activities for children.

Maintaining Wilmington's small-town character is important to many of the workshop participants. Recommendations for this included instituting commercial design standards that would require streetscape improvements, rear or side parking, and signage improvements. When asked about the Town Center issue, many participants agreed that the town should start thinking of the Town Common area as the Town Center and Main Street as the business district. Suggestions for strengthening the role of the Town Common area included development of a municipal/civic "campus" and the development of additional programs and activities in the area. A community gathering place and a teen/youth center were identified as important elements of a future Town Center. Some participants argued that further development of the Common area should be accompanied by improvements in the business district area, and proposed that the MBTA station could be a "magnet" for economic revitalization in the area.

Planning / Land Use / Growth Management

Residents expressed concern over spotty implementation of the town's land use policies. Participants mentioned the practice of "constant rezoning" and a perceived domination of the municipal agenda by commercial interests as factors that have contributed to many incompatible land uses. Some questioned whether the Planned Residential Development bylaw actually works and suggested exploration of other innovative bylaws, including cluster zoning.

Participants voiced their desire for proactive land-use policies that will maintain the centrality of public/civic uses and control the spread of commercial and industrial uses. The new I-93 interchange was cited as a potential trigger for major growth pressure that must be managed proactively. Residents also voiced their support for inter-town cooperation in growth management.

Traffic and Mobility

Participants were generally dissatisfied with the level of auto traffic in Wilmington, the lack of sidewalks and other pedestrian/bicycle amenities, and the lack of useful public transportation.

Goals expressed for traffic management generally involved the development of alternative forms of circulation, such as a sidewalk and trail network for pedestrians and cyclists, and a public transportation system internal to the town.

Housing and Affordability

Many residents expressed concern over the rising price of housing and the declining affordability of Wilmington, especially for seniors and first-time homebuyers who are children of Wilmington residents. Most feel additional housing diversity is desirable and support the town's role in facilitating the development of affordable housing and promote the development of senior housing / assisted living.

Economic Development / Tax Base

Some participants voiced concerns that industrial developments in town may be overbuilt and too close to residential areas; others suggested that the town is not attracting the right kinds of businesses. Most agreed that the town should carefully plan for future industrial development and should provide an attractive environment for business while addressing the concerns of residents.

Education and Town Services

Many participants stated that educational facilities and programming were very important to the town. Most participants had observed a strain on municipal service and competition for limited funds among schools, public works, the library, and other services.

Civic Participation and Input into Decision-Making

Some participants noted a lack of town cohesiveness and participation in town government. Others expressed concern about perceived laxness in the enforcement of environmental and planning regulations and about the general level of responsiveness of town government.

Residents suggested a campaign of public education and public involvement, and encouragement of volunteerism. Some suggested a charter change to representative town meeting.