

SECTION 3

COMMUNITY SETTING

The Town of Wendell contains rural landscapes that have been affected by its human inhabitants over the past several thousand years, whether for early settlement or habitation or the more recent trend in this century of planned housing development. Planning for open space in Wendell must account for the complex relationships between people, the open spaces, and the natural resources upon which they depend. Continued growth without consideration of the natural systems that need to be protected, such as wildlife habitat, preservation of native flora and fauna, and broader protection of complex ecosystems, will reduce the quality of life for future generations.

The information provided in this section, Community Setting, inventories and assesses the human and land use components of the landscape, detailing present, past, and potential future uses, based on current development trends. Subsection A, Regional Context, gives a snapshot of Wendell today, and identifies the ways in which the location of the Town within the region has affected its growth, its quality of open space, and its recreational resources. Subsection B, History of the Community, looks back at the manner in which the human inhabitants settled and developed the landscape. Using statistical information and analysis, Subsection C, Population Characteristics, shows the reader who the people of Wendell are today and how population and economic trends may affect the Town in the future. Finally, Subsection D, Growth and Development Patterns, describes specifically how the Town of Wendell has developed over time and projects the potential future impacts that current zoning may have on open space, drinking water supplies, and municipal services.

A. REGIONAL CONTEXT

Regional Context concentrates on the location of the Town of Wendell relative to natural and socio-economic resources and demonstrates the significant influence that physical location can have on Wendell's community characteristics. This includes the quality and quantity of open space in the Town as well as its recreational resources. Regional Context also considers the impact that different land uses, located within the Town of Wendell and in surrounding communities, have on regional open space and recreational resources. Finally, potential regional strategies for environmental and open space protection are offered.

The Town of Wendell (32 square miles) lies in the eastern part of Franklin County in the rugged highlands east of the Connecticut River. It is bounded by Erving on the

north, Orange and New Salem on the east, Shutesbury on the south, Leverett on the southwest, and Montague on the west. The principal highway serving Wendell is State Route 2, the Mohawk Trail Scenic Byway, a major east-west highway passing along Wendell's northern border and paralleling the Millers River, which is also the boundary between Wendell and Erving. U.S. Route 202 is accessible in the neighboring Town of New Salem, and provides access to points north such as Orange and Athol, and points south such as Belchertown. Route 2A provides access to Route 2 and points east, as well as access to Orange Center. Routes 47 and 63 are accessible from the neighboring Towns of Montague and Leverett, and are used to commute south to Amherst, South Deerfield, and other communities. (See the Regional Context Map at the end of this section.)

A.1 Natural Resources Context

In order to plan for the protection of open spaces, natural resources, and rural character, the Town of Wendell should consider the roles these resources play across the landscape. A pond, for example, may be regionally important due to the presence of rare species habitat, or because the pond helps to link a regional chain of wetlands that support amphibian population movements or serve as a water source for vertebrate species. Wendell's major natural resources and topographical characteristics include its abundant contiguous forestland, high elevations, and the Millers River. The regionally important natural resources include the Quabbin Wilderness, and the Millers, Chicopee, and Connecticut River watersheds. Wendell residents also enjoy the presence of Lake Wyola and the Sawmill River, located in neighboring Shutesbury and Leverett. The Sawmill River is significant because of its scenic value along a major area highway, N. Leverett Road, and because it contains spawning Atlantic salmon. Lake Wyola is a great site for swimming, boating, and fishing, and is in a part of the area which has played an important role in Wendell's heritage. Regionally important local resources present both opportunities and challenges to open space planning.

A.1.1 Contiguous Forestland

Forests constitute the most abundant and one of the most important natural resources in Town of Wendell, and include many large tracts of uninhabited or roadless land, providing Wendell its rugged and rural character. Some of this land lies within Wendell State Forest and the Whetstone Wood Wildlife Sanctuary. Many acres of forestlands, particularly in the southern portion of Town, are privately owned.

Wendell State Forest, located south of the Millers River, covers 7,638 acres of rolling forested hills, streams, ponds, old roads and trails. The Department of Conservation and Recreation, Division of Forest and Parks manages Wendell State Forest for recreation, forest products and wildlife habitat protection. It is one of the most popular recreation and wilderness areas used by residents of Wendell and surrounding towns.

The Whetstone Wood Wildlife Sanctuary, owned by the Massachusetts Audubon Society, is comprised of 1,886 acres of mostly forested land in Wendell, 200 acres in

the Town of Orange and an additional 94 acres in the Town of New Salem. The land is managed as a sanctuary for the protection of wildlife habitat.

Bear Mountain, located in northwest Wendell, lays claim to being part of the largest contiguous forested area in Town, and consists of several thousand acres of forest suitable for all forms of wilderness recreation. Nearly all of the land surrounding Bear Mountain itself is part of the Wendell State Forest. There is a seven-mile stretch of unspoiled riverbank along the Millers River, which is partially contiguous with the unbroken woodlands of Bear Mountain. As a natural major riverbank-forest edge, it ranks as one of the three best examples in Massachusetts.

A.1.2 Elevation

Wendell's high elevations are derived from the region's geological history, which is explained in more detail in Section 4, A.2. In short, as result of this history, all the main hills in Wendell and its near vicinity consist of schist outcrops with elevations of about 1,200 feet. Elevation has played a significant role in the Town's development. During the late-1800s, Wendell Center was a cool summer destination for tourists and for residents of the industrial towns along the Millers River, which helped to sustain the community with economic activity. Like other hill towns in the region, agricultural use of the soils was mostly limited to grazing cattle, sheep, and supporting dairy farming. Pasture was more common than cropland. Wendell's topography coupled with the high level of industrial activity along the Millers River to the North, helped to maintain Wendell as a sparsely populated community. The low density of its population has been a draw for new residents for the past half-century. The very rural nature of Wendell, caused in part by its being separated from lowland uses, has likely contributed to the abundance of wildlife. This topographical characteristic is even more significant because of the presence of the Quabbin Reservation to the southeast.

A.1.3 Quabbin Reservoir and Surrounding Lands

The Quabbin Reservoir and surrounding lands are mostly owned by the Commonwealth of Massachusetts and managed by the Department of Conservation and Recreation (DCR), Office of Water Supply Protection. These lands provide an important ecosystem service for the people of the metropolitan Boston area by helping to maintain the quantity and quality of their drinking water supply. An indirect benefit of these more than 56,000 acres of protected land is the wildlife habitat it supports. Nowhere else in Massachusetts can you find a larger block of contiguous forestland permanently protected from development. The contiguous forested areas in Wendell, together with interspersed wetlands, extend the habitats of many mammals and birds, which require larger home ranges, including: Black Bear, Fisher, Mink, River Otter, Bobcat, Moose, Bald Eagle, Sharp-shinned Hawk, Cooper's Hawk, Northern Goshawk, Red-shouldered Hawk, Broad-winged Hawk, Red-tailed Hawk, Turkey Vulture, American Kestrel, Peregrine Falcon, Wild Turkey, Great Horned Owl, Barred Owl, Long-eared Owl, Northern Saw-whet Owl, Pileated Woodpecker, Belted Kingfisher, Northern Harrier, Great Blue Heron, along with many other upland bird species and waterfowl.

A.1.4 Millers, Chicopee, and Connecticut River Watersheds

The three major watersheds in Eastern Franklin County—the Millers, Chicopee, and Connecticut River watersheds—converge just south of Wendell Center. (For the location of these watersheds, see the Water Resources Map at the end of Section 4: Environmental Inventory and Analysis.) The relative importance of the first watershed lies in the impact of the Millers River on the development of Wendell and surrounding communities and vice versa. Although the Millers River fluctuates between sluggish and rapid flows, there is an average drop of 22 feet per mile. This feature made the Millers River and its main tributaries a magnet for manufacturing and hydroelectric power generation, which provided the impetus for industrial activities in neighboring towns in the late 1700s. While much work has been done to clean up the watershed in recent years, resulting in the river’s contamination has been upgraded from dangerous to elevated, the effects of PCB contamination of sediments in the Millers River will undoubtedly continue to have a negative long-term impact on the recreational potential of that resource for the Town of Wendell and surrounding communities.

The Chicopee watershed contains the Quabbin Reservoir and is therefore important for its contributions to wildlife and scenic values, as well as for the associated land use regulations that control development density around its tributaries. The Chicopee River watershed is comprised of four major river systems, including the Swift River, which is the source of the Quabbin Reservoir. Nineteen percent of the Town of Wendell drains into the Quabbin Reservoir via tributaries of the Swift River, all located in the southeastern section of Wendell.

The Connecticut River watershed is important to Wendell due in part to the presence of anadromous fish and the Silvio O. Conte National Fish and Wildlife Refuge. The southwestern section of Wendell is located in the Connecticut River watershed. The Skerry, Plympton, Fiske, and Red Brooks drain seventeen percent of the Town of Wendell via the Sawmill River, which flows southwest through the Towns of Shutesbury, Leverett and Montague, to its confluence with the Connecticut River. The Connecticut River watershed is the largest river ecosystem in New England. As an American Heritage River, the Connecticut can receive special attention from federal agencies for the cultural, economic and environmental values of the River. The Connecticut River watershed (including the watersheds of the Millers and Chicopee Rivers) was designated the “Silvio O. Conte National Fish and Wildlife Refuge” by an act of Congress in 1991. This refuge was the first of its kind, encompassing an entire watershed ecosystem and is a benchmark in environmental conservation.

A.1.5 Major Landscape Level Patterns

The major landscape level patterns existing in and around the Town of Wendell include large patches of contiguous forest, hills, wetlands and beaver ponds; both clusters of built environments and scattered residential development; and river corridors that focus

the energy of the watershed's water flows and the movement of its human inhabitants. These patterns have impacted development of the landscape, but in some cases they are also the result of human use of the land.

Wendell's large contiguous areas of forest land are very attractive to statewide conservation efforts because land in Wendell and neighboring communities is much less expensive than in other parts of the state due to this area's relatively low development pressures. This condition is likely temporary, which has prompted regional land protection initiatives that seek the permanent protection of the remaining large parcels of open space. Hills and wetlands produce unique patches of wildlife habitat that offer resources to wildlife, and by their nature limit human development. Wendell consists of a matrix dominated by mixed forests, hills with steep slopes and wetlands including beaver-modified areas, which provide changes in aspect, soils, and microclimates that help to ensure a continuous diversity of plant and animal life.

Currently, Wendell has clusters of houses in villages and also homes spread out across town. This reflects both historical development patterns and new trends. Both farming and the post-World War auto-dependent development patterns are probable reasons for people living far apart from each other. More recently, the characteristics of the soils combined with Title 5 requirements have impacted the development patterns in town.

The Millers River to the north and the Sawmill River to the south (located in Shutesbury and Leverett) are two westward flowing rivers, in two separate watersheds. Both rivers have played a significant role in the community's development and are now known for mostly scenic, wildlife, and recreation values. They accompany commuters traveling on Route 2 in the north and on North Leverett Road in the south. In both cases, land uses abutting and upstream of these waterways have an impact on the quality of the water. The Millers River still acts as the disposal system for residential and industrial waste streams, albeit in a manner that complies with all permitting. It is a river that is plagued with contaminants (polychlorinated bi-phenyls (PCBs) and mercury) that disallow the full and free use of the Millers River resources by residents and tourists. The Sawmill River begins at the outflow point of Lake Wyola, and is therefore affected by land uses around Lake Wyola. It is unknown at this time what role Wendell has in contributing to the quality of the water in Lake Wyola.

The degree of forest continuity, integrity of hilltops and wetlands, pattern of residential development, and the purity of the water in the Millers and Sawmill Rivers all are beyond the control of any one community. Wendell should promote the conservation of all its significant open space and natural resources, but if surrounding towns fail to protect land, plan growth, or continue to clean the Millers River, Wendell's impact on the resources that disregard political boundaries (water, wildlife populations, scenic views, trails, etc.) will be less than it could be. Wendell should therefore take an active role in the conservation of regionally important natural resources, whether they occur in Wendell or not.

A.2 Socio-Economic Context

The Town of Wendell is a small rural hill town. Historically, farming, logging, and manufacturing all had an influence on the development and growth of the Town of Wendell, as have waterpower, the railroad, and the Mohawk Trail. Wendell's industrial development has been tied to the use of the Millers River and other smaller fast flowing streams. However, the second half of the 19th century saw a significant decline in manufacturing and population in Wendell. Shortly thereafter, Wendell experienced the loss of its small tourism industry as a summertime destination for urban residents. Beginning in the mid-1920s the automobile played a key role in transforming Wendell, with its residents traveling to other towns in the region to earn their livelihoods.

With the "return to the land" movement in the 1970s, Wendell experienced an influx of new residents. Cottage industries began to develop with Wendell becoming the home of many craftspeople, artists, musicians, etc. Today, many of Wendell's residents enjoy an integrated work/home life. This can be seen in either highly visible ways such as the Diemand Farm, or in subtle ways with home-based crafters/artisans. Residents also commute to neighboring towns such as Amherst, Greenfield, Orange, and Montague or further to earn their livelihoods, while some combine a home-based business with a commute elsewhere to work, or telecommute.

Like many of the hilltown communities found along the western and the eastern edges of Franklin County, Wendell has had a relatively low level of pressure to develop its open spaces for residential development. The 2002 Wendell Open Space Plan had predicted that this trend was going to shift. This prediction has not materialized, perhaps due to a decrease in area employment opportunities or higher fuel prices greatly increasing the cost of commuting long distances for employment. Regardless, land protection should still be a high priority. Nearly 60% of the nation's forests are privately owned by families and individuals 55 years of age or older. A large amount of open space is about to change hands as aging landowners relinquish ownership to heirs or buyers. Without adequate advance estate planning on the part of these landowners as well as open space planning on the part of the community, the rural character of Wendell that we all cherish could be seriously threatened.

The Town of Wendell and its residents have multiple options available for protecting open space and recreation resources in advance of these changes. By working in cooperation with state agencies or one of the many local land trusts, a landowner may sell or donate development rights through a conservation restriction (CR). There are numerous options available for land conservation that can be tailored to the individual while retaining private ownership and use of the land. CRs are permanent and remain in effect when the land is sold or inherited and the land use would continue to contribute to the tax base. In addition, developers can build a Conservation Development that would provide both additional housing and protected land.

Over the past decade there have been a variety of governmental and non-governmental efforts to revitalize the economy in the North Quabbin region by supporting local

agricultural and forestry related businesses. State environmental officials, non-profits, and concerned area residents have been working together in forums such as the North Quabbin Regional Landscape Partnership to coordinate regional land conservation efforts with programs aimed at supporting the viability of local agriculture and forestry. One such program, the North Quabbin Woods, focuses on supporting forest based economic enterprises by supporting local eco-tourism and marketing of locally made wood products, as well as education related to sustainable forestry. Another program based in the Pioneer Valley, Communities Involved in Support of Agriculture (CISA), provides marketing support for local farmers. The annual North Quabbin Garlic and Arts Festival, the Wendell Old Home Day and the Wendell Holiday Fair provide a showcase for local farmers and artists. Natural-resource-based economic revitalization projects have a symbiotic relationship with regional land conservation efforts. Enhancing the viability of natural-resource-based enterprises also helps to support the economic viability of related land conservation, while protecting farmland and forests supports the continuation of these industries in our region.

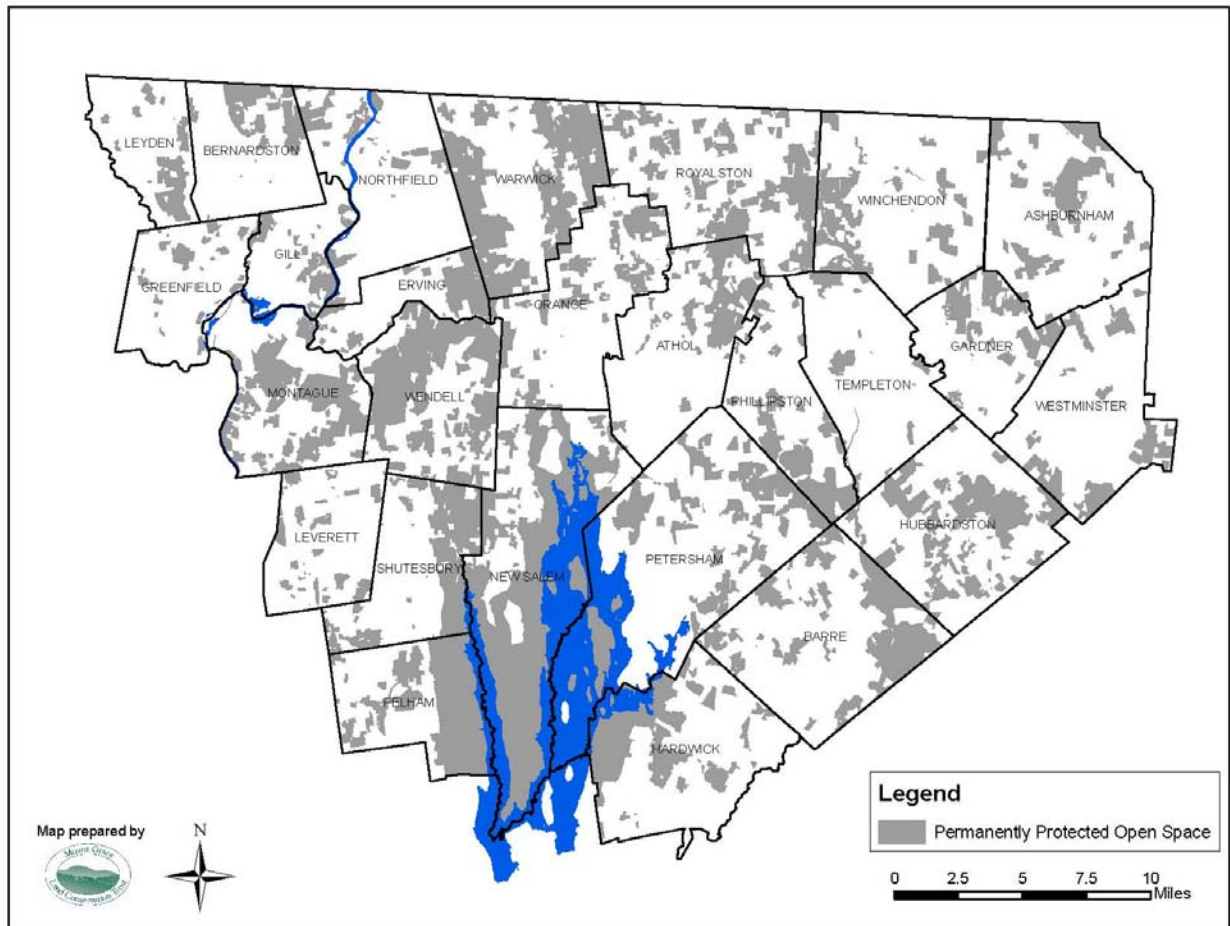
A.3 Regional Open Space and Recreation Opportunities and Issues

A parcel of land that is permanently protected from development can create real value for a community by being a potential site for recreational activities, by maintaining rural character, by conserving the forest habitat, by conserving habitat for wildlife and fisheries, and by protecting the integrity of first and second order streams, which are the most extensive and vulnerable water resources within a watershed. If the parcel of land is located within the recharge areas of the public water supply it can also contribute to protecting wells from contamination by point and non-point source pollution. When abutting parcels of land are permanently protected over time, based on a plan, the result can be a network of open spaces covering thousands of acres. When land is protected in such a manner as to link the open spaces of each community together, this can create a regional greenway.

Currently, Wendell is part of a potential regional greenway. There is a circular belt of permanently protected open space that stretches northwest from the 60,000-acre Quabbin Reservation through New Salem, Wendell, and western Orange into Warwick. The eastern half of the circular belt continues up to the state line through Royalston, and then extends south to Tully Mountain in North Orange, Tully Lake, Birch Hill and Harvard Forest in Petersham. Another network connects the western part of the belt in Erving and western Orange through Wendell, Montague, and Sunderland to the Connecticut River. Within these networks of open spaces there are eleven state forests or reservations that are popular for activities such as camping, fishing, hiking, and swimming. These include, in addition to Wendell State Forest, the Orange State Forest which lies to the east of Wendell, the Erving and Warwick State Forests which lie to the north, Montague State Forest which lies to the west, and the Shutesbury and New Salem State Forests which lie to the south of Wendell. According to the Mount Grace Land Conservation Trust, these lands together are the single largest continuous tract of protected land in southern New England (see Figure 3-1 on the following page).

Other protected open space and natural resources in the region that Wendell residents may take advantage of include the Town's Fiske Pond Conservation Area and the Metacomet-Monadnock (M&M) Hiking Trail, which passes through Wendell State Forest and along the Millers River. The Quabbin Reservoir, Lake Wyola, Lake Mattawa, Laurel Lake, Tully Lake, Wendell State Forest, Millers River, various wildlife management areas controlled by the Division of Fisheries and Wildlife, and the Northfield Mountain Recreation Area are also among nearby regional attractions used by outdoor enthusiasts throughout the region and the State. Clearly, there are many critical natural and recreational resources that can only be conserved for current and future generations by the permanent protection of land encompassing resource networks that cross town boundaries. In addition, because of the presence of this potential greenway, there may be more opportunities for the Town of Wendell to protect key parcels that add to this regional resource.

Figure 3-1: Large Blocks of Permanently Protected Open Space in the North Quabbin Region



Source: Mount Grace Land Conservation Trust, September 2010.

A.4 Regional Strategies for the Protection of Open Space, Natural and Recreational Resources

Actions aimed at improving and protecting the quality of open space, natural, and recreational resources in Wendell and surrounding communities must take place at different political levels. At stake is the future of the region's wildlife, fisheries, recreational, and scenic resources and all the values associated with them. Regional efforts are needed because regional planning agencies, land trusts, and watershed/landscape planning groups together can attract political and funding resources which individual towns may not be able to attract. Towns, on the other hand, have the power to implement changes in land use patterns directly through zoning and open space protection.

The main regional issues developed in this first part of Section 3, Regional Context include: 1) the presence of large corridors of protected open space; 2) current land protection opportunities presented by a sluggish local economy and population growth relative to other parts of Massachusetts; 3) the need for continued monitoring and clean-up of the Sawmill and Millers Rivers; and, 4) the need for addressing the potential negative impacts of sprawling development patterns on the open space, natural, and recreational resources in Wendell and surrounding communities.

Land protection opportunities currently exist within the Town of Wendell because of the presence of large blocks and corridors of protected open space. Regional groups like the North Quabbin Regional Landscape Partnership (NQRLP), local land trusts, and the Millers River Watershed Council have the attention of state conservation agencies like the Department of Conservation and Recreation. This is because these groups represent many local constituencies and the region currently is one of the last areas in the State with large contiguous forested blocks with significant biodiversity. According to the Mount Grace Land Conservation Trust, the Nature Conservancy has identified the North Quabbin as one of the two areas in Massachusetts most suitable for designation as a large-scale priority region within which land protection at the landscape scale could be accomplished. The Town of Wendell continues to work with this group and others to identify and sponsor land protection efforts that conserve regional open space and recreation resources in Wendell.

A variety of state and regional studies have been done which can help the Town of Wendell to further identify local land protection priorities. The Massachusetts Natural Heritage & Endangered Species Program produced a BioMap report in 2001 and Living Waters report in 2003 that identify priority habitats and continually update the resources every two years. Harvard Forest issued a reported entitled Wildlands and Woodlands: A Vision for Massachusetts Forests in 2005, recently updated in 2010, that presents a strategy for protecting the state's forests including both unmanaged areas and managed woodlots. The report identified potential wild land reserves and recommended the formation of Woodlands Councils to develop a "bottom up and voluntary approach that provides structure and guidance for those who aspire to conserve and manage their forests as part of a coherent program." The NQRLP conducts ongoing programs that

help local officials and residents incorporate information and strategies from these projects into local planning efforts.

The Franklin Regional Council of Governments Regional Open Space Plan was completed in 2000, and was created as a comprehensive approach to planning for open space on a regional level. The final report includes local and regional strategies for open space protection in Franklin County.

The Commonwealth has completed The Statewide Comprehensive Outdoor Recreation Plan (SCORP), Massachusetts Outdoors 2006, an update of the SCORP 2000, five-year plan. SCORP plans are developed by individual states to be eligible for federal Land and Water Conservation Fund (LWCF) grants and serve as a tool for states to use in planning for future needs and uses of outdoor resources for public recreation and relaxation. This plan notes the significance of Wendell State Forest as part of the protected land in the region as follows:

Another profound element of the protected land supply pattern in this region is the extensive state forest and wildlife management area system extending north from Mt. Toby, through the Wendell State Forest, and up through Erving, Northfield and Warwick.

The SCORP also provides information about use of and demand for outdoor recreational resources in the Connecticut River Valley region that may be relevant to Wendell's open space and recreational planning efforts. When assessing resource use in this region, the SCORP notes that rivers and streams, historic and cultural sites, lakes and ponds, forests, coastal beaches and shorelines, and mountains, all have 40% participation rates or greater. When reporting on satisfaction levels of users of resources in this region, residents report being most satisfied with historic and cultural sites, mountains, and trails and greenways resources. Somewhat lower than statewide levels of satisfaction were reported in this region for rivers and streams, and lakes and ponds. Connecticut Valley Region residents who use these rivers and streams were least satisfied overall. This regional information may be relevant for Wendell in improving river access as well as for assessing levels of use of town waterways by town and area residents for recreational use, and determining strategies for balancing these uses with water quality and other ecological concerns. Wendell State Forest should also be valued for its trail access for regional as well as local residents, as well as for hiking, mountain biking and other outdoor activities. When considering new recreational projects, the Town may want to consider the following response from regional residents about future needs and interest from the SCORP:

In contrast to demand (or present use patterns), respondents in this region place the highest priority for new facilities on road biking (14.5%), walking (13.9%), swimming (13.8%), playground (11.3%), hiking (10.0%), and mountain biking (10.3%).

The Franklin Regional Council of Governments completed a corridor management plan in 2009 for the 29-mile eastern portion of the Mohawk Trail Scenic Byway from

Greenfield to Athol. The vision for this Mohawk Trail East Scenic Byway Corridor Management Plan is “to expand economic, tourism and recreational opportunities along the Byway while educating people about the Byway and preserving its unique scenic qualities, natural resources, historical structures/places, industrial and agricultural heritage and community character.”

Clean-up of the Millers, Connecticut and Chicopee River watersheds is currently being addressed by the Executive Office of Energy and Environmental Affairs and the Department of Environmental Protection. The Millers River Watershed Council also provides opportunities for concerned residents to assist in this effort by helping to monitor local streams and clean up the banks of the Millers River. Wendell may also opt to consider changes to its zoning that would help to protect the quality of the water in the Millers River. Ideally, surrounding communities in the watershed would also make similar efforts to protect water quality.

Planning for the protection of critical natural resource systems requires both regional and local planning. Local Planning Boards, Conservation Commissions, and Open Space Committees must be willing to champion changes to zoning and targeted open space protection that would ensure the long-term protection of vulnerable natural, open space, and recreational resources.

B. HISTORY OF THE COMMUNITY

Wendell began as an isolated hill town with secondary access to a regional corridor along the Mohawk Trail. It was incorporated in 1781, approximately 25 years after the area was settled. Wendell was originally composed of a tract of land taken from the northern part of Shutesbury and that part of Ervingshire that lay south of the Millers River. In 1803, a tract known as the Benjamin Hill Gore and a one-mile wide strip from Montague were added. Colonists to Wendell came predominantly from Shutesbury, New Salem, and eastern Massachusetts. These families were associated with the Shutesbury Meeting House until 1781, when Wendell established its first Congregational Church.

Improved transportation routes during the period from 1675 to 1775 also encouraged settlements. The Montague-New Salem route over Wendell Center Hill, and the Jennison-Rockwell Hill Road from New Salem to Lockes Village (Shutesbury), were two very important travel ways. These were followed by roads connecting the Millers River to the Town center and an east-west branch along Farley Road through what became Mormon Hollow. The establishment of the Congregational Meeting House in Wendell Center created a central point for a radial axis of roads. The Jennison-Rockwell Hill Road was also a main focus for travelers. It is along this road that the Ballard Tavern was built in 1820.

B.1 Federal Period (1775-1830)

Farming was the main source of livelihood for 50 years after the Town was incorporated, although the many fast-running streams provided sawmill sites for lumber cut from Wendell's forests. In 1754, a gristmill was built on Locke's Pond (now Lake Wyola) and a sawmill was built on Osgood Brook. The larger production sites grew along the Millers River. Only those colonists who had acquired productive land stayed through the mid-nineteenth century, i.e., for about 100 years. Place names and street names reflect this history. These names are those of mid-nineteenth century residents, e.g., Jennison Road, Farley Road, Mormon Hollow Road, Fiske Pond, and Bowen's Pond.

In addition to cultivating the soil and using the forest, various occupations were represented in Wendell. The 1810 census listed a tanner and one, possibly two, shoemakers. There were 95 looms in Wendell in 1810 yielding 5,865 yards of linen cloth, 4,869 yards of woolen cloth and 4,137 yards of cotton cloth. With the rise of machine looms, this type of industry was doomed. By about 1830, straw and then palm leaf was braided into hats throughout the winter. An agent would pick up completed hats and pay for them by the piece. Wendell's population in 1790 was 519, and rose to 983 in 1810.

B.1.1 Historical Resources

Archaeological resources in Wendell include several pre-historic sites along the banks of the Millers River. A survey of historical structures in Wendell identified 29 existing structures built during this period of early settlement. Nearly all the early houses are sited askew to the present roads. All these early houses are in isolated positions with the house sited at its best angle to the land.

There are two, two-story "mansion" houses in Wendell. The Nathan Putnam-L. J. Baker house (#34)¹ on Locks Village Road may be c. 1785. The Dwight Gates house (#40) on the corner of Depot Road and Farley Road may date to 1803. The D. Lavery-J. Holston house (#54) on Depot Road, built in 1778, burned down recently and was replaced by a modern house.

Fifteen other early houses (from c.1770) comprise the oldest existing structures in Wendell. Stylistically, they are two variants of the typical small eighteenth century house used all over New England, that is, the hall and parlor houses (#22 and #26) and thirteen of the smaller Cape Cod-type structures (#'s 18,19, 20, 22, 31, 39, 41, 42, 48, 53, and 58).

¹ This is the number affixed to the Massachusetts Historical Commission forms compiled by the Historical Commission of the Town of Wendell and the identifier used on the Massachusetts Historical Commission's on-line data base, the Massachusetts Cultural Resource Information System (MACRIS), <http://mhc-macris.net/>. This number is also used to indicate the location of the property on the Sketch Map of Historic Homes and Sites in Wendell that is included at the end of this section.

The houses designated as the oldest are the Martin Armstrong-L. Wyman hall and parlor house (#22) on West Road and the Addison Leach-W. Barrows Cape Cod house (#33). Two existing houses on Wickett Pond Road—the T. Howe–Wetherby house (#18) and the E. Locke house (#19)—are also very old, as is the Daniel Ballard house (#29) on Jennison Road. The Town Common dates from 1780 and the Town Cemetery dates from approximately the same year, with the first stone dated 1782. The cemetery’s iron fence was erected before 1871.

Six Federal style houses remain in Wendell. An early one is the Aaron Fisher one-story five bay center entrance house with a side gable (#51). This house dates to about 1805 and has been minimally altered. About the same time, Timothy Taft’s house (#36) was built, a three bay side entrance two-story side gable Federal style. The Samuel French-T. Harrington house (#14) (c. 1811) burned down and was replaced by a modern house. The Ballard Tavern (#30) on Jennison Road is a seven bay two-story side gable structure with two entrances on the facade. Built in 1820 as a stagecoach stop or tavern, it is reputed to have had a ballroom on the second floor, a typical installation of the early nineteenth century. The structure has retained its Federal characteristics in its overhangs and trim. The Parsonage (#15) on Montague Road was built in 1823. It too retains much of its Federal characteristics.

There are several interesting stone structures in Wendell that most likely date back to this period. A rock-walled pound at the junction of Montague Road and Bullard Pasture Road was probably constructed to contain stray town animals. At the corner of Jennison and Old Stage Road lies the foundation of a livery stable, used as an overnight stay for stagecoaches that ran through Wendell.

The 1800 census records 139 families living in 111 houses. Surprisingly, there are more houses remaining from this period in Wendell than those built later.

B.2 Early Industrial Period (1830-1870)

The railroad arrived in Wendell in 1848. Built along the Millers River, the area close to the railroad station became know as Wendell Depot. The railroad stimulated the development of a second commercial focal point for Wendell citizens. In addition to being near the railroad, the Depot was also near the Mohawk Trail. Consequently, the Depot grew and developed as a trade and travel spot through the turn of the century. A dam was built and hydroelectric power from it ran a lumber mill. It was purchased by an electric company around 1900 and was destroyed by the flood associated with the 1938 hurricane.

There were changes in the economy in Wendell during this period. Manufacturing came to Wendell in the form of three chair manufacturers, a hat manufacturer, a high quality carriage builder, a boot and shoe factory, and a boat builder. The population in Wendell in 1840 was 875.

B.2.1 Historical Resources

The 1840s saw the embellishing of the Common with the construction of the civic buildings in Wendell Center. Built at the corner of New Salem Road and Morse Village Road in 1845, the Baptist Church (#11-later to become the Town Hall) was moved to the present location in the 1920s, and the Congregational Church (#2) and the original Town House (#6) were built both in 1846. There are similar coordinated groups of structures in Sunderland and Shutesbury. The Town House was badly damaged by a tornado in 2006 and consequently ordered torn down by the Selectboard.

During this period, the Greek Revival architectural style was being incorporated across the nation. Several houses in this style face the Wendell Common (#3,5 and #9) and others are located on the roads leading away from the Common (#8 and #12). Two houses (#10 and #12) have the wide flat corner boards, heavy fascia or frieze, and a high roof plate. The others have the sunken center corner or pilaster similar to that of the churches (#2 and #11) and the Town House (#6). There are other structures that can also be described as Greek Revival although they are of a simpler style. These are the George Robinson house on Depot Road (#52), built between 1858 and 1871, and the J.C. Brown-B. Styles house (#56), which is near the Depot. Additionally, there are small barns (#37 and #61) and one barn in Wendell Depot (#63) that has been converted into a house, all of which can be classified as being in the Greek Revival Mode.

Several notable industrial sites date from this period. The one in the best condition is the site of the village of Stoneville, along the Millers River west of Wendell Depot. Built in 1851, it was the location of J.E. Stone and W. Washburn's piano and billiard case factory, which remained in operation until the end of the nineteenth century. This site has qualified for National Historic Register status because it is one of the few nineteenth century industrial sites where the entire village is undisturbed.

The Mormon Hollow Historic Area located along Mormon Hollow Brook includes a large number of nineteenth and possibly eighteenth century foundations and a cemetery. Only two of the gravestones are readable, with dates 1795 and 1797. The foundations include some buildings and a possible gristmill and may be linked to the short-lived Mormon settlement that gave the area its name. This area holds a wealth of information about Wendell's history, since the sites are essentially undisturbed. Other foundations and the cemetery are on private land. The cemetery land has been taken by the town for back taxes. Hopefully, for preservation, this land will remain in town hands, supervised by the Wendell Historical Commission.

South Cemetery (#802) is a significant feature and contains stones in good repair dating from 1833. There is also a small cemetery on Morse Village Road (#804) that holds three victims of a small pox epidemic who died in early March of 1833. In addition, it holds two members of the Sawyer family who died later of other causes.

B.3 Late Industrial Period (1870-1915)

In 1881, the Farley Paper Company factories and the Warren Truss Bridge, which spanned the Millers River, were constructed. Across the river in Erving, the little center for the Farley Mills was built. The mills burned, were rebuilt, and then business declined. In 1892, knitting looms were put into the basement, employing 20 people. The finishing work (mittens, woolens and worsteds) was done in local homes.

With the decline in manufacturing, commercial activity changed to boarding houses and hotels for those traveling to and through the area. Hotels could be found at the Depot as well as Wendell Center. In 1885, at Wendell Center, there were two churches, a town hall and a hotel called the Summit House, which was visited by tourists wishing to escape the heat of the summer months. In contrast, early photos showed that Wendell Depot remained an economic center. The population in Wendell in 1870 was five hundred and thirty-nine (539).

B.3.1 Historical Resources

Houses built during this period were mainly Queen Anne style of varied gable and fancy shingles. Most of these houses (#'s 38, 62, and 25) were probably built as summer residences in the 1880's. One house on Farley Road (#44) was possibly built for employees of the Farley mills. An interesting house of this time is the Mary Merchant house (#45) on Mormon Hollow Road dating to 1875. A full two-story house, it is one of the more grand houses in Wendell. Three other houses are of note from the period, the rebuilt Alms house (#16), the Howe site on Davis Road (#50) and the Bezio house (#47).

B.4 Early Modern Period (1915-1940)

After World War I, the center continued as a strong civic area with the building of a new library in 1921. Wendell Depot continued as a vacation spot available for tourists traveling on Route 2 (the Mohawk Trail) from Boston to Albany. A Civilian Conservation Corps (CCC) camp was established in 1933 near the Montague line. There the CCC dammed Lyons Brook to form Ruggles Pond. Since the middle 1920s, the automobile has been the deciding factor in transforming the character of the Town. Residents began to travel outside of Wendell to earn and spend money. Beginning during this period, the automobile took people to jobs in Erving, Orange, and Athol, which did not cause the population to change greatly. During the early modern period, the population continued to decline. In 1927 there were 397 people living in Wendell. Just three years later the population dropped to 351.

B.4.1 Historical Resources

A new library was built in Wendell in the Center in 1921, and the Baptist Church was moved to its present location and remodeled to become the Town Hall. Several hunting camps (#17 and #28 in Table 3-1) were built, but generally, during this period, construction was at a minimum.

Table 3-1: Significant Historical Structures and Sites in Wendell

*MHC#	Location	Historic Name
A.1	Town Common	Town Common
A.2	3 Morse Village Road	Central Congregational Church
A.3	24 Center Street	George Washington Fleming
A.4	11 Wendell Depot Road	Harrington House Barn
A.5	11 Wendell Depot Road	Luke Osgood Leach
A.6	7 Wendell Depot Road	Town House, Wendell Center School, and then Town Offices demolished in 2007 following damage from tornado was replaced by the Library
A.7	2 Lockes Village Road	Formerly Wendell Free Library, now Senior Center
A.8	6 Lockes Village Road	James Clark-Marcus M. Hopkins
A.9	2 Center Street	F. Howe-Lyman Gould
A.10	2 Center Street	Henry Green's Store
A.11	6 Center Street	Baptist Church – now Town Hall
A.12	8 Center Street	Otis Chittenden and Edwin Gates
A.13	10 Center Street	J. Forbes Store
14	11 Montague Road	Samuel French - T. Harrington – Recently burned and replaced
15	18 Montague Road	The Parsonage
16	54 Montague Road	Site of Alms House
17	25 Montague Road	Leach "Camp" – Demolished and not replaced
18	78 Wickett Pond Road	T. Howe-Wetherby
19	131 Wickett Pond Road	E. Locke
20	146 Montague Road	E. Beaman-Hiram Blaire
21	Approx. opposite 175 Montague Road	(stonewall and chimney) D.J.M.A. Jewett House
22	32 West Street	Martin Armstrong-L. Wyman
23	66 West Street	A. Dexter-Nathan Hudson
24	95 West Street	Eli Ames-Mrs. Clarissa Darling
25	125 West Street	Mary McGrath
26	102 West Street	W.E. & C.C. Stebbins
27	166 West Street	C.W. Darling-W. Fisk
28	199 West Street	Unknown
29	75 Jennison Road	Daniel Ballard House
30	70 Old Stage Road	Ballard Tavern
31	475 New Salem Road	Captain Nathan Putnam – S. Butler
32	324 Lockes Village Road	A.K. Haskell
33	114 Locke Hill Road	Addison Leach-W. Barrows
34	60 Lockes Village Road	Nathan Putnam-Luther Baker
35	55 Lockes Village Road	Mrs. Cameron-Miss Needham
36	38 Lockes Village Road	Miss Sarah Taff (Taft)
37	38 Lockes Village Road	Aaron Roger's Shop
38	50 Wendell Depot Road	McCleod House
39	68 Wendell Depot Road	Clark Rice
40	7 Farley Road	Dwight Gates

*MHC#	Location	Historic Name
41	132 Farley Road	W.I. Strong
41	11 Stone Cutoff Road	G.K. Freelove-C.Stone
43	47 Stone Cutoff Road	G. Flemming
44	7 Posk Place Road	Unknown
45	58 Mormon Hollow Road	Mary Merchant House (Mariette Merchant)
46	62 Mormon Hollow Road	Chester Merchant House
47	79 Mormon Hollow Road	Bezio's
48	126 Mormon Hollow Road	Alonzo Flemming
49	178 Mormon Hollow Road	Clifton Reed Barn
50	47 Davis Road	Site of Howe House, Barn, Shop
51	97 Wendell Depot Road	Aaron Fisher
52	149 Wendell Depot Road	George W. Robinson House
53	41 Bear Mountain Road	Captain Henry Sweetzer – in danger of falling down
54	197 Wendell Depot Road	D. Lavery-J.C. Holston – Recently destroyed by fire and replaced by a modern house
55	269 Wendell Depot Road	L. Leonard-Leach & Bowin (sic)
56	444 Wendell Depot Road	J.C.Brown-B. Styles
57	435 Wendell Depot Road	C. Washburn-S.H. Putnam
58	4 Old County Road	W. Leach-S. Stephens
59	105 New Salem Road	James Clark-S.Lilly
60	466 Wendell Depot Road	Putnam Store
61	1 Elm Street	Barn
62	1 Elm Street	Jefferson House
63	6 Elm Street	Barn – House
64	8 Elm Street	D. Putnam Residence – Destroyed by fire
65	10 Elm Street	Barn for Dexter House – Recently demolished
66	11 Morse Village Road	Old School House
67	Montague Rd – approx. opposite intersection w/Bullard Pasture Rd	Town Pound
A.801	Opposite North Common	Center Cemetery
802	Intersection of Locke Hill and Jennison Roads	South or Lockes Village Cemetery
B. 803	Off Farley Road	Mormon Hollow Cemetery, now town-owned land
804	On discontinued section of Morse Village Road	Small Pox Cemetery
900	Where Farley Road crosses the Millers River	Farley Bridge
XXX	On Millers River opposite Stoneville in Erving	Old Stoneville Factory Site**

Source: Town of Wendell, MA. Open Space and Recreation Plan – 2002 and input from Open Space Committee members.

*This is the number affixed to the Massachusetts Historical Commission forms compiled by the Historical Commission of the Town of Wendell and the identifier used on the Massachusetts Historical Commission's on-line data base, the Massachusetts Cultural Resource Information System (MACRIS), <http://mhc-macris.net/>. An "A" prefix indicates the site is part of the Wendell Center Complex. A "B" prefix indicates the Mormon Hollow Area. The 800 numbers indicate cemeteries.

**The Old Stoneville Site has been determined eligible for listing in the National Historic Register by the U.S. Dept. of the Interior.

C. POPULATION CHARACTERISTICS

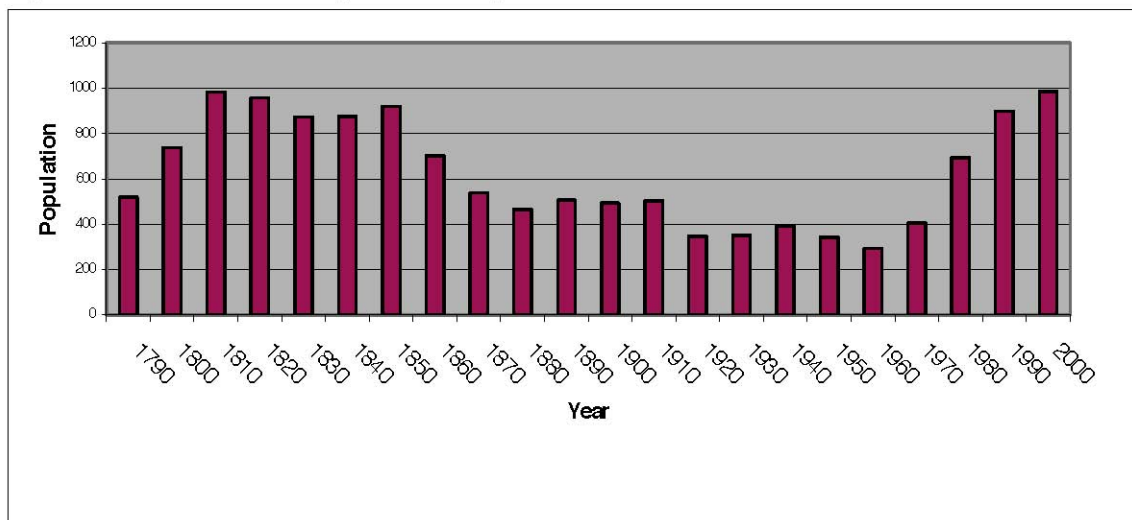
In this section, Population Characteristics, the Town of Wendell's needs for open space and recreational resources are assessed based upon an analysis of demographic and employment statistics. The demographic information includes changes in total population, changes in different age groups in Wendell, and changes in development patterns. In small towns like Wendell, the traditional sources of employment figures rarely provide an accurate description of economic base and labor force. However, these sources have been combined with informal surveys of local officials and employers and anecdotal information to provide a more accurate representation of the local economy.

C.1 Demographic Information

C.1.1 Population and Population Change

The population of the Town of Wendell began a slow decline beginning around 1870 and continued until it reached a low in 1960 with a mere 292 residents (see Figure 3-2). Beginning around 1970, Wendell began to see an influx of new residents and its population began to increase dramatically.

Figure 3-2: Historical Population Figures for the Town of Wendell 1790-2000



Source: 1970, 1980, 1990, and 2000 US Census of Population.

In just twenty years, between 1970 and 1990, there was a 122% rise in Wendell's population, with a 71% increase between 1970 and 1980, and a 30% increase between 1980 and 1990. This growth exceeded that of all towns in Franklin County except for Shutesbury.²

² U.S. Census Bureau – Decennial Census of Population and Housing.

Table 3-2 shows more recent population growth for Wendell compared with Franklin County and Massachusetts. From 1990 to 2000, according to U.S. Census data, Wendell’s population grew by 87 residents or 9.7%. This increase ranked Wendell eighth (out of twenty-six towns) in Franklin County in terms of population growth. Wendell’s population growth during this decade was more than the growth rate for both Franklin County (at 2.1%) and the State (at 5.5%). In order to understand what has been happening with population growth since 2000, the best available data is from the U.S Census annual population estimates, which show a population growth of 1.6% from 2000 to 2009 for Wendell. This is slightly higher than the growth rate for Franklin County during this timeframe (.1%), but in line with Massachusetts growth rate estimate of 1.6%. Population density in Wendell in 2009 was 31.1 persons per square mile, based on a total area of 32.2 square miles and an estimated population of 1,002.³

Table 3-2: Population Growth for Wendell, Franklin County, and Massachusetts 1990, 2000 and 2009

Location	1990 Census Population	2000 Census Population	% Change 1990 -2000 Population	2009 Estimated Population	% Change 2000 -2009 Population
Wendell	899	986	9.7%	1,002	1.6%
Franklin County	70,092	71,535	2.1%	71,778	0.3%
Massachusetts	6,016,425	6,349,097	5.5%	6,593,587	3.9%

Source: U.S. Census Bureau – Decennial Census of Population and Housing 1990, 2000; U.S. Census Bureau Population Estimates, 2009.

It is important when analyzing this data to note that population growth has been generally stagnant in the region and the state in recent years. According to U.S. Census data, Franklin County experienced its greatest population increases in the 1970s and 1980s. By the 1990s, the population growth slowed to a more modest rate of about 2% for the decade and has continued at a rate of less than 1% into the new millennium. There are several factors that can contribute to population stagnation. The Pioneer Valley has been a net-exporter of domestic migrants since 1990, having generally lost a higher proportion of its residents than the state as a whole.⁴ A decreasing average family size is another factor that contributes to population stagnation. The average persons per family in Franklin County decreased 2.6% from 1990 to 2000, showing that family size is on average decreasing in the region. During the same decade, the persons per family in Wendell decreased 5.2%, which was twice the rate of Franklin County.⁵

The town has continued to attract new residents in recent years in the face of a regional and state population slowdown. New residents may be attracted to Wendell due to affordable housing compared with other regions, abundant natural resources, and other factors related to the quality of life in town. Development pressure may increase in

³ MassGIS 2005 land use data; U.S. Census Population Estimates Program 2009.

⁴ The Massachusetts Regional Benchmarking Project, University of Massachusetts Donahue Institute Economic and Public Policy Research Unit in collaboration with the UMass Lowell Center for Industrial Competitiveness, December 31, 2005.

⁵ U.S. Census Bureau Persons Per Family 1990, Average Family Size, 2000 (P17).

Wendell in the near future due to the planned availability of broadband communications, making it easier for residents to work from home, and farther from places of employment, and potentially allowing for an increase in new businesses. The town may see this as an opportune time to protect valuable resources and plan for the potential impacts of future growth on town services and land.

Age distribution data from the 2000 U.S. Census data divides the age of residents into age groups, or cohorts. This information can provide insight into the demand for different types of services within town. Table 3-3 shows a breakdown of these cohorts and how they have changed from 1990 to 2000, according to U.S. Census Data. Based on 2000 U.S. Census data, there is a fairly even distribution of residents within town based on age, with the highest concentrations in the young and middle-aged groups.

Table 3-3: Wendell Age Distribution, 1990 and 2000

	Total Population	% 9 Years & Under	% 10-19 Years	% 20-24 Years	% 25-44 Years	% 45-64 Years	% 65-74 Years	% 75 Years & Over
Wendell								
1990	899	13.8%	17.8%	3.3%	44.9%	15.4%	2.3%	2.4%
2000	986	11.2%	17.2%	4.6%	30.6%	31.8%	2.4%	2.1%
Franklin County								
1990	70,092	14.5%	12.6%	6.4%	34.2%	17.7%	8.2%	6.3%
2000	71,535	11.5%	14.3%	5.4%	28.5%	25.9%	6.7%	7.5%
Massachusetts								
1990	6,016,425	13.1%	12.6%	8.4%	33.6%	18.6%	7.7%	5.9%
2000	6,349,097	13.0%	13.3%	6.4%	31.3%	22.4%	6.7%	6.8%

Source: U.S. Census Bureau, 1990 Census STF3A and 2000 Census SF3.

The cohort with the most town residents according to 2000 data is the 45 to 64 year olds, at 31.8%, which increased 16 percent from 1990. The increase is similar to that of both Franklin County and the State over this decade. It should be noted that about half of this largest segment of the population in Wendell is made up of “Baby Boomers”, those born between the years of 1946 and 1966, a period that experienced a widespread population boom. As this segment of residents approach retirement age, some may start to work fewer hours, with more time available for recreation. Therefore, recreational programming should be offered for common interests of this age group. There may be residents in this age group with more time available than younger workers for volunteer opportunities such as trail maintenance or other events that may combine social and recreational opportunities while contributing to town needs.

The second largest cohort was the 25 to 44 year olds, at 30.6% in 2000. This age group decreased 14.3% from 1990. The County and State also showed decreases among this age group during this time period (-5.7% and -2.3% respectively), however the decrease in Wendell was much more significant (-14.3%), and reflects the aging of the Baby Boomer population into the 45 to 64 year cohort. The 25 to 44 years old cohort, often referred to as “Generation X”, generally has less population than the Baby Boomers. However, in Wendell in 2000, even with this decrease from the decade before, the 25 to

44 year old cohort still contained almost 1/3 of the population, very close to the same percentage as the 45 to 64 year olds in town.

Children of Baby Boomers generally represent another corresponding population boom although not as big as the one in their parents' generation. These residents were born in the 1980s and 1990s, so were between 5 to 20 years old in 2000. The youth population from 10 to 19 years was the third largest cohort shown in 2000 in Table 3-3, with 17.8 % of residents. This age group remained relatively constant from 1990 to 2000, with just a .6% decrease.

However, it should be noted that some conditions in town have changed since this 2000 data was collected. School enrollment data shows a decreasing number of children from Wendell at the Swift River School from 1999 to 2009⁶. In 1999 there were 102 Wendell students from pre-Kindergarten (ages 3 through 5) through grade 6, and by 2007 this number had dropped to 50, where it remained in 2009. This data indicates that there are fewer children in town than what was shown in 2000 Census data. It should also be noted that youth that would have been in the 10-19 age group in 2000 that have stayed in town would now (in 2010) be in their late teens and early twenties. Therefore, the youth concentration shown as 10 – 19 year olds in Table 3-3 appears to have shifted up in more recent years. It has been noted by town residents that there are 19 to 24 year olds that have not moved away to college, so are still living in town, and that they have recreational needs within town. Once 2010 U.S. Census data is available, it will be interesting to note whether or not this data reflects this trend in town, with a higher percentage of residents in the 20-24 age category and a lower percentage in the 10-19 age group.

The library currently offers programs including yoga, a playgroup, a program for “Teens and Tweens”, language for children, and knitting. However, it has been noted that a separate facility to serve as a recreation center with a ping pong table and classes targeted to this 19 – 24 year old group could respond to the needs of these young residents living in town. Other needs that this center could meet include a sound-proofed area for playing music and additional storage needs. A recreational center could serve the needs of multiple age groups within town by offering music classes and playgroups to families with young children, for example, or educational or volunteer opportunities for older residents.

Open space and recreational programming should take into account all segments of the population. This could mean, for example, providing family oriented events and activities, providing accessible walking paths, park areas with benches, and arts and leisure programs for seniors, and creating access to safe spaces for recreation for youth of all ages.

⁶ Based on available school enrollment data from Wendell Town Reports for the following years: 1999, 2000, 2001, 2003, and 2007, and personal communication with Christine Heard, School Secretary, August 2010.

When identifying the best location for the development of new open space and recreation resources, the town should consider where population growth will occur and which parts of the local citizenry require specific needs. As will be seen in Section 3.D, Growth and Development Patterns, future growth depends in large part on zoning, soil and groundwater related constraints, and on which lands are permanently protected from development. Town Officials could identify key parcels in Town that might be future parks and walking trails that are close to current neighborhoods. Officials could be looking for opportunities to conserve land in Wendell that protect valuable scenic and natural resources and provide public access to trail networks and open spaces.

C.1.2. Economic Wealth of Residents and Community

Measures of the income levels of Wendell residents as compared to the County and State are helpful in developing a demographic profile that provides general information about the ability of town residents to pay for recreation resources and programs and to contribute financially to open space protection. The most recent available income data is 1999, shown in Table 3-4 from the 2000 U.S. Census.

Table 3-4: 1999 Per Capita and Median Household Income for Wendell, Franklin County, Massachusetts and the U.S.

Location	1999 Median Household Income	1999 Per Capita Income
Wendell	\$43,846	\$19,701
Franklin County	\$40,768	\$20,672
Massachusetts	\$50,502	\$25,952
United States	\$41,994	\$21,587

Source: 2000 U.S. Census of Population.

Per Capita Income is determined by dividing the total amount of income earned in the area by the total number of the residents (which includes residents who may not be generating much income, such as children and the elderly). The 1999 per capita income in Wendell was \$19,701, lower than for both the County (\$20,672) and the State (\$25,952) for that year.

Median Household Income is another statistic for understanding the wealth of the community. Median income figures describe the middle income among residents, thus eliminating any extreme numbers (either the very wealthy or very poor) from influencing the overall figure. Median household figures include data for families, for households of non-related people, and for individuals living alone. The 1999 median household income for Wendell was \$43,846, which was higher than the County (\$40,768), and the United States (\$41,994), but significantly less than the State (\$50,502) for that year. This economic measure shows that households in the middle of the income spectrum are higher than in most towns in the County, a positive indicator of the wealth of the community.

1990 U.S. Census data showed that in 1989 Wendell had a lower median household income than Franklin County whereas the median household income was greater than

that for the County according to 2000 Census data. This shows that over this decade, the median household income in Wendell has improved relative to the County, which is a positive indicator of improving economic status of town residents.

Overall, the economic wealth in Wendell is comparable to other rural towns in Franklin County and has generally improved since the 2002 Open Space and Recreation Plan was completed. This provides information about residents' ability to pay for open space and recreational programming in town. However, considering recent increases in fuel and food prices as well as an overall national and regional economic downturn, the town might explore ways to offer convenient and free or low cost access to activities and public land for those in town that do not have disposable income available for these purposes. It is also wise to note that with changing economics and development pressures over time, recreation and open space needs may also change. Proactive planning to prioritize goals and resources will help ensure that the town will be prepared for changing conditions.

Although Wendell's resources today are clearly both its people and its natural landscapes, the status of its finances could be affected by an interdependent relationship that exists between the two. The costs of the community services provided to residents are paid for partially with the tax revenues generated by different kinds of property, both developed and undeveloped. Some developed uses like housing have been shown to be a net loss to the community due to its high demand for services, such as Education and Public Works. Protected open space on the other hand, while generating less total tax dollars, has been found to demand less in services for every dollar it generates. Commercial and Industrial development have also been found to generally pay for themselves with a positive net impact on municipal coffers.⁷ One reason that towns encourage economic development is to have enough different types of land uses to share the tax burden. The impact of different land uses is explored in more detail in Subsection D, Growth and Development Patterns.

C.2. Employers and Employment Statistics

C.2.1. Labor Force: Wendell residents who are able to work

The labor force is defined as the pool of individuals 16 years of age and older who are employed or who are actively seeking employment. Enrolled students, retirees, stay-at-home parents and other persons not actively seeking employment are excluded from the labor force. Labor force is available on an annual basis from the Massachusetts Department of Workforce Development. Data for Wendell for the first six months of 2010 show that there were 581 workers in town.

The unemployment rate describes the percentage of people in the labor force who are presently not employed, but who are actively seeking employment. According to

⁷ Does Farmland Protection Pay? The Cost of Community Services in Three Massachusetts Towns, American Farmland Trust, 1992.

Massachusetts Executive Office of Labor and Workforce Development⁸, the unemployment rate in Wendell during the first six months of 2010 was 7.5% with 44 residents unemployed. This data shows that the town of Wendell had a lower rate than both Franklin County (9.1%) and Massachusetts (9.3%) during the first 6 months of 2010.

C.2.2. Employment in Wendell: People who work in town (residents and non-residents)

The average annual wage for workers in Wendell in 2008 was \$27,196 according to Employment and Wage (ES-202) data from the Executive Office of Workforce Development⁹. This was lower than the 2008 average annual wage for Franklin County (\$35,204) and the 2008 average annual wage for Massachusetts (\$56,784). This information provides a perspective of income and wealth in the community that may encourage the town to consider offering free or low cost recreational activities and access to open space.

Table 3-5: Employment in Wendell 2001-2008

Year	Establishments	Total # Employees
2001	15	228
2002	15	254
2003	13	271
2004	13	267
2005	18	232
2006	16	210
2007	18	193
2008	17	228

Source: Massachusetts Executive Office of Workforce Development, ES202 data.

Table 3-5 shows the number of establishments and total employees for Wendell employers between 2001 and 2008 (the most recent data available). This includes residents as well as those who reside elsewhere but commute to Wendell for work. The number of establishments in Wendell has had an overall upward trend over the past 6 years, increasing from 15 in 2001 to 18 in 2007, then reduced to 17 in 2008 with the closing of Lake Grove School at Maple Valley; nonetheless, the number of places of employment is still low. The total employees started at 228 in 2001, increased between 2001 and 2003 (19%), decreased from 2004 to 2007 (-29%) to 193 total employees, but then increased to 228 again in 2008 (18%).

⁸ Labor Force and Employment data, Executive Office of Labor and Workforce Development, 2006 not seasonally adjusted data; updated February 28, 2008.

⁹ Employment and Wage (ES-202) data is from the Massachusetts Executive Office of Labor and Workforce Development and is derived from reports filed by all employers subject to unemployment compensation laws, both state and federal. http://lmi2.detma.org/Lmi/lmi_es_a.asp. Average Annual Wage is calculated by multiplying annual weekly wage by 52 weeks.

The information in Table 3-5 comes from ES202 data from the Executive Office of Workforce Development, which also provides information about the main industry sectors in town. Over the past 6 years, categories that showed Wendell workers included Trade, Transportation & Utilities, Wholesale Trade, Professional Business Services, and the Service Providing Domain. There has not been much change in the categories when analyzed over this period. It is important to note that data is kept confidential if a place of employment has fewer than three reporting units total, or if with three or more units, one unit accounts for 80% or more of the total. This means that for a given year a sector may not show up in the data, and that the total given for number of employees and number of establishments for each reported sector do not sum to the industry total given.

Table 3-6 shows the top 10 employment destinations of Wendell residents in 2000, according to Journey to Work data from the 2000 U.S. Census of Population and Housing. This information shows where residents are commuting for their jobs. The table shows that many residents work within town, at 17.6%. The majority of the employment destinations are in Franklin County (51%), which includes Wendell. Amherst, Athol and Northampton are also in the top 10 destinations.

Table 3-6: 2000 Wendell Journey to Work Data by Towns

Rank	Wendell Resident Employment Destination	Number of Employees	% of All Employed Wendell Residents
1	Wendell	102	17.6%
2	Amherst	70	12.1%
3	Montague	62	10.7%
4	Greenfield	52	9.0%
5	Athol	36	6.2%
6	Orange	26	4.5%
7	Northampton	24	4.2%
8	New Salem	22	3.8%
9	Deerfield	21	3.6%
10	Whately	12	2.1%
	Other	151	26.1%
Total Employees		578	100.0%

Source: U.S. Census Bureau – 1990 Census of Population and Housing.

Table 3-7 shows the travel time for workers residing in Wendell based on 1990 and 2000 U.S. Census data. Most workers commute between 20 and 29 minutes, with the next highest commute time between 30 and 39 minutes. This makes sense given the data in Table 3-6 showing that most residents work within Franklin County. The data also indicate an increasing number of at-home workers who live and work in Wendell. The number of residents working at home has doubled from 4.9% in 1990 to 9.9% in 2000, representing almost 10% of the total workers in town. This increase in at-home workers is significantly greater than the increase in the state for this 10-year time period. This may be partially a result of limited employment opportunities within Wendell, and will continue to be a factor if fuel prices continue to be high. The

increase in at-home workers is a recent trend found in many communities due to changes in the workplace and advances in telecommunications. As internet options continue to become more available, Wendell should expect the number of at-home workers to continue to increase. Progress in telecommunications will also increase opportunities for small businesses to develop in more rural areas such as Wendell.

Table 3-7: Travel Time to Work, 1990 and 2000

Geography	Total Workers*	Work at home	Less than 10 Min.	10 - 19 Min.	20 - 29 Min.	30 - 39 Min.	40 - 59 Min.	60 - 89 Min.	90 or More Min.
Wendell									
1990	474	4.9%	7.4%	17.3%	27.2%	22.2%	11.6%	9.1%	0.4%
2000	578	9.9%	9.7%	13.3%	22.8%	22.5%	10.4%	8.5%	2.9%
Franklin County									
1990	34,674	4.7%	21.8%	32.1%	17.8%	11.5%	7.7%	3.2%	1.1%
2000	37,053	5.1%	16.3%	30.0%	19.1%	14.2%	9.7%	3.3%	2.3%
Massachusetts									
1990	2,979,594	2.5%	15.6%	31.3%	18.7%	15.5%	10.7%	4.7%	1.0%
2000	3,102,837	3.1%	12.6%	27.4%	18.6%	16.3%	13.0%	6.5%	2.4%

* Employed workers 16 years and over.

Source: U.S. Census Bureau, 1990 Census STF3A and 2000 Census SF3.

C.2.3. Major Employers and Home Based Businesses

Through interviews with Town officials and residents, it has been determined that employment in Wendell is limited to a few visible employers and many less visible home based businesses. The Town of Wendell itself employs three full-time, three part-time (with benefits) and 85 part-time (non-benefited) employees. There are two United States Post Offices located in Wendell with a total of 6 employees (two full-time and 4 part-time), three of whom live in Wendell. Wendell State Forest employs 3 full-time year-round employees and one seasonal employee. The Swift River Elementary School is located on the border of Wendell and New Salem and serves the towns of Wendell and New Salem. The school employs a total of 27 full-time employees and 10 part-time employees, eleven of whom are residents of Wendell. The Deja Brew is a restaurant/pub with live music that is attached to the Wendell Country Store that employs local workers. The recent closing of the Lake Grove School at Maple Valley, formerly the largest employer in Town, resulted in the loss of 120 jobs, although only a small number of Wendell residents had been employed there.

The Diemand Egg Farm is probably the most widely known and most visible farm in Wendell. The Farm, which began in 1936, currently employs three family members full-time and four employees part-time. Just prior to Thanksgiving, the farm employs approximately 14 additional individuals for a two-week period to assist in processing turkeys. The Diemand Farm produces eggs, chickens, turkeys, turkey products including potpies and turkey burgers, hay, cordwood and lumber. The Diemand Farm has opened a farm store on the property that sells poultry products, beef, and prepared foods such as soups, casseroles, etc., and baked goods.

Other family-run farms in Wendell include the Rocky Road Farm that specializes in Highlander beef cattle, pigs and maple syrup and Cold Brook Farm, which produces vegetables and also has beef cattle. Other small farms in Wendell include Sugarbush Farm, which produces maple syrup, hay and beef cattle; Companions of Health, which produces organic herbs, garlic, and shitake mushrooms; Mycotopia Farms, which produces shitake, oyster, and other saprophyte mushrooms and offers classes; and Isle of View Farm, which grows vegetables using eco-friendly methods on multiple sites in Wendell and sells them at area Farmers Markets. A Food Production and Gardening Coordinator position was passed at the Annual Town Meeting in June 2010; and a job description was approved at a Special Town Meeting October 6, 2010.

Many residents in the Town of Wendell are self-employed. The types of employment range from farming to art/crafts, construction, and business related. Most home-based businesses in Wendell are consistent with the community's character. They generally are small in size and have a minimal impact on the landscape and natural resources of the community. A home-based business may not be readily recognizable as a business operation to people driving past. It may be the primary occupation for the business-owner or a part-time business venture. Home-based commercial enterprises can include a wide variety of businesses, such as child-care provider, professional consultant, or artist. Technological changes and shifts in employment trends have changed the work environment to allow more opportunities for individuals to work at home. Table 3-8 includes a listing based on available information, but is not a complete listing of all home based businesses in town. Out of respect for the privacy of individuals, the actual names of businesses are not included.

Table 3-8: Types of Home Based Businesses in Wendell

Arts/Crafts Related Businesses:	Computer Related Businesses:
Jewelry	Software Services
Blown Glass	Video/Documentary Production
Photographers	Auto Related Businesses:
Sign Maker	Auto Repair
Fine Arts/Crafts	Auto Salvage
Musician/Music Venue	Towing Service
Potter	Business Related:
Custom Clown Shoes	Accounting Services
Dance Instructor	Attorneys
Yoga Instructor	Marketing
Construction Related:	Organizational Consulting
Electrician	Other:
Contractors	Herbalist
Plumbing & Heating	Acupuncture
Masonry	Machine Shop
Structural Engineering	Midwife Services
Excavating	Forester
Restoration	Geothermal Drilling
Carpenters	Pest Control
Lightning Rod Installers	Shiatsu/Massage Therapy
	Catering
	Landscaping

Source: Online search by industry; review of Yellow Pages; input from Wendell Open Space Committee members.

C.3 Analysis

Recreational programming should be available to all, but given the demographic and economic factors of the Town of Wendell, there should be specific efforts to target activities towards youth as well as for those the middle age group and Baby Boomers. These activities might be housed in a facility located on the Common, maintaining a community center that would be intergenerational. This would continue to foster the strong sense of community expressed by residents as important to the quality of life in Wendell. Walking and hiking were noted as the primary recreational activities for respondents of the 2008 Open Space and Recreational Survey with most of this activity concentrated in Wendell State Forest and on local roads. Designated walking/hiking paths interconnecting the various neighborhoods through protected areas might be considered. The town may also want to consider supporting other free or low cost outdoor activities, such as bird watching, bicycling, and canoeing – all of which were reported as very popular activities in the 2008 Open Space and Recreation Survey. These can be supported through low cost measures such as benches along walking trails, road signage, river access, bike paths, and more.

D. GROWTH AND DEVELOPMENT PATTERNS

D.1 Patterns and Trends

The Town of Wendell is a sparsely populated community with a history of cyclical population changes over the past two hundred years. Historic development patterns originated with early agricultural activities and the construction of Wendell's first European built roadways. More recent patterns and trends appear to involve a different model of population change and several new patterns of residential development.

Early development patterns that are still present today were most likely influenced by the necessary separation of farmhouses, early roadways, and civic and industrial activities. The pattern of farmhouses dispersed across the landscape is seen in many Franklin County communities. A second pattern was the concentration of houses along the Town's early roadways. Those roadways included Wendell Depot, Jennison, Montague, Morse Village, New Salem, Farley, and Lockes Village Roads, which were the main thoroughfares between Wendell Depot, New Salem, Montague and Lockes Village as early as 1775. The main concentrations of residential and past commercial development occurred in village centers originating from a clustering of civic and industrial activities. These include Wendell Center, Mormon Hollow, Farley, and Wendell Depot.

More recent development patterns appear to have been impacted by changes in population over time and the adoption of zoning. Between 1790 and 2000 the population of Wendell went through increases and decreases with the lowest level in 1960. Then, from 1960 to 2000 U.S. Census data show a dramatic increase in population to 986 residents, more than 3 times what it was in 1960 (292 residents). (See Figure 3-2 in subsection C.1.1 of this section). In more recent years, according to U.S. Census Bureau Population Estimates, the population increase has been slightly more in Wendell than Franklin County from 2000 to 2009, but remained relatively constant, with an increase of 16 residents (see Table 3-2 in subsection C1.1).

The land use figures presented in this section are based on data provided by MassGIS. MassGIS classifies land uses based on aerial photograph interpretation conducted by the Department of Forestry's Resource Mapping Project at the University of Massachusetts, Amherst. Statewide data including all municipalities are available for 2005, 1999, 1985, and 1971.¹⁰ Initially, analysis was conducted through manual interpretation of the aerial photos. In 2005, the land use data was created using semi-automated methods. MassGIS uses 38 land use classifications in the 2005 data, an increase from the 21 codes in the 1999 dataset. It is important to note that readers should exercise caution in comparing land use data over the years. Such comparisons can provide only an estimation of the trends in land use change over the years. Due to different data

¹⁰ The first statewide land use maps were created in 1953-54 from 1951-52 aerial photos. These maps were never digitized. They are available in the Map Collection Archives at the W.E.B. DuBois Library at the University of Massachusetts, Amherst.

collection and analysis methodologies used over the decades, direct comparisons cannot be made with precision between the various datasets.

By comparing MassGIS land use maps available from 1985 and 1999, the predominant land use change in the Town of Wendell during that period was the construction of residential developments on greater than three-acre parcels. The most recent MassGIS land use data available from 2005, show a significant reduction since 1999 in acres of low density residential development on lots of .5 acres or more (-249 acres or -44%). An analysis of these data suggests that this change appears to be largely the result of more sophisticated mapping techniques used in 2005, rather than actual changes of land use on the ground. According to the 2005 data, residential land represents 1.5% of the Town's total land area.

Residential development has tended to occur in three main development patterns. Some are located around historical residential concentrations like Mormon Hollow, Farley, Locke Hill and Lockes Village. Others are found in new concentrations along roads that between the early 1900s and 1985 had few homes. These include Stone Road and New Salem Road north of Morse Village Road. The rest tend to fill in the previously undeveloped parcels along already well-populated roadways, including Jennison Road, Lockes Village Road, and Wickett Pond Road. Another development pattern that occurs today is the small farm or summer farm where residents supplement their farm incomes with part-time jobs. All of this type of large lot residential development has so far been in the form of approval-not-required (ANR) lots.

The current Zoning Bylaw in Wendell designates one zoning district in Wendell for rural-residential and agricultural uses. Industrial, commercial and business enterprises and their related facilities may be located, expanded, or constructed within the town by special permit. The zoning requires a minimum lot size of three acres and 200 feet of frontage. (See the Zoning Map at the end of this section.)

The 2002 Open Space and Recreation Plan identified changes needed to the zoning to discourage sprawl. With a three-acre minimum lot size, each new site that is developed requires more space in comparison to other communities that have a smaller lot size requirement, leaving less land available for open space and limiting the options for new development. The current conservation development bylaw is intended to encourage the preservation of open space by allowing more dwellings in a given acreage than in a conventional subdivision plan. This bylaw has not been applied. The Wendell Planning Board is working on replacing the current conservation bylaw with a new bylaw. Section D.3, Long-Term Development Patterns, discusses this proposed approach and its predicted impact on development patterns in more detail.

In the Subsection C, Population Characteristics, it was shown that the cohort with the most residents in Wendell was age 45 to 64 according to 2000 Census data. If these residents have stayed in Wendell and are still a high percentage of total residents in town, in 2010 they would be aged 55 to 74. These residents would fall right within the Baby Boomer category (born between 1946 and 1966). Therefore, planning for the

needs of this aging population in the near future, town residents may want to consider housing options with less maintenance to accommodate this age group.

D.2 Infrastructure

D.2.1 Transportation

The road layout in the Town of Wendell is essentially the same as it was 100 years ago. Roads follow the drier ridges (such as West Road and Lockes Village Road), as well as hugging streams (Depot Road and Mormon Hollow Road, for example). The Town's active policy of discontinuing roads in the late 1980s resulted in fewer current town roads than a century ago. This policy is one way in which the town has taken control over where new development will and will not occur.

Half of the 45 miles of town roads in Wendell are paved, and half are dirt. Two-thirds of the development in Town has taken place along the paved roads, where homes traditionally have been placed close to the road. The life of the Town is apparent from the roads, which are in themselves a large area of open land in the Town of Wendell. Another type of open land occurs under power lines. The major north-south route running through Wendell is Depot and Locks Village Roads. The east-west route is Montague/Morse Village/New Salem Roads. Both the north-south route and the east-west route pass through Wendell Center. An additional route running roughly northwesterly is the Mormon Hollow/Farley Roads. This route originates near Wendell Center linking it to Millers Falls and Route 2. Running along Wendell's northern border is State Route 2 (the Mohawk Trail Scenic Byway), which is accessible from either Farley or Depot Roads.

There are no designated bicycle or pedestrian facilities in Wendell. There are no sidewalks and only three crosswalks. There are no public transportation systems in Wendell. However, the senior population and those people with disabilities may access Demand Response transportation services through the Franklin Regional Transit Authority (FRTA).

D.2.2 Water Supply

The Town of Wendell is currently served by private wells, except for a cluster of public buildings in the center of Town with a common well. A high proportion of residences rely on shallow wells that have a more variable yield, occasionally running dry, and with a greater chance of contamination than deeper wells.

Potential aquifers lie in areas of sand and gravel deposits. Sites on similar deposits of sand and gravel in Wendell would typically contain groundwater deposits capable of yielding a minimum of 120 gallons per minute and could be adequate for a municipal water supply. Most of the rest of Wendell is overlain by very sandy, stony glacial till. Potential well yields from material of this kind are low, generally less than ten gallons

per minute. The Water Resources description in Section 4, Environmental Inventory and Analysis, identifies the presence of at least three aquifers that could be used for drinking water sources in the future.

There is also a potential for town drinking water supplies to be developed from surface water impoundments. Ten potential reservoir sites were identified in 1974 by the U.S. Department of Agriculture in a survey of the Millers River watershed. These sites were identified from topographic maps and the areas of potential open water impoundments were calculated. Four of these locations are along Whetstone Brook, three along Osgood Brook (including Bowens Pond), two along Lyons Brook (including Ruggles Pond) and one along Mormon Hollow Brook. In the Sawmill River watershed, six potential and existing reservoirs were identified in the southwesterly corner of Wendell by the U.S. Department of Agriculture (1975) in a survey of the Connecticut River watershed. These include upgrading existing sites on Fiske Pond and Tyler Pond and four new sites, three on Plympton Brook and its tributaries and one on Red Brook about 2,000 feet north of the Leverett town line. In the Swift River watershed in the southeasterly corner of Wendell three potential reservoir sites were identified by the U.S. Department of Agriculture (1973) in a survey of the Chicopee River watershed. Two of these are on the west branch of the Swift River and one is at the outlet of Sibley Swamp. No detailed plans were presented for these since they were on land then owned by MDC (and now owned by DCR's Office of Water Supply Protection) and presumably would reduce the amount of water reaching the Quabbin Reservoir.

Depending on the heights of the dams and the areas of the impoundments created, most of these reservoirs could supply between 100,000 and 1 million gallons of water per day (U.S. Dept. of Agriculture -1974). Assuming a maximum population of 6,000 people and a liberal water usage of 75 gallons per person per day, one reservoir could conceivably come close to meeting Wendell's water needs.

D.2.3 Septic Systems

Sewage disposal in Wendell is by private systems, except for the cluster of public buildings in Wendell Center which shared a common system. The effectiveness of the private systems is variable and depends on topography, water table, and soils. Dependence on private sewage disposal requires that housing be restricted to soils and slopes that can reasonably be expected to handle on-site sewage systems. Soil types are critical for determining this capacity, and many soils in Wendell are wet, are shallow to bedrock, or are coarse and stony which provide very little filtration to septic leachate since water passes through coarse soils very quickly. While not precluding development in Wendell, the density and total amount of new development in the near future will in large part be determined by the soils and their ability to pass percolation tests.

In many communities across the region, development follows infrastructure improvements. However, given Wendell's lack of a community drinking water supply or sewer collection system, the relationship between development and infrastructure

appears to be a conditional one. If the soil, drainage, and topographical characteristics of the land are favorable, development will occur. If technology were to remain static, as it may in the near future, development may be limited to those areas that are already developed. As population increases and the land most accessible to development becomes scarce, developers may adopt new and/or alternative septic technologies that would allow for the construction of homes in areas once thought to be beyond consideration.

D.3 Long-term Development Patterns

Long-term development patterns will be based on a combination of land use controls and population trends.

D.3.1 Land Use Controls

Local land use controls in The Town of Wendell include the Zoning Bylaw, Board of Health Regulations, the Right to Farm Bylaw, and state watershed protection regulations. The portions of Wendell located in the watershed for the Quabbin Reservoir that drains into the Swift River are subject to watershed protection regulations (M.G.L. Ch. 92, Sections 104, 107A, & 108; and 350 CMR 11.00). The current Zoning Bylaw includes common driveway requirements, provisions for secondary dwellings, back lot development and conservation development. Further, the Wendell Planning Board is currently working on replacing the current conservation development bylaw requirements with a new approach.

Zoning District. The entire Town of Wendell is one zoning district, Rural Residential and Agricultural. (See the Zoning Map at the end of this section.) It allows a number of other uses by special permit. In 1990, according to the U.S. Census, there were 346 housing units. The Town Clerk recently reported that there are only four two-family homes (approximately 1 percent of the total) and no three-family homes in Wendell. In 2000, according to the U.S. Census, there were 378 occupied housing units in Wendell. 320 of these, or 85%, were owner occupied and the remaining 58 (15%) were occupied by renters.¹¹

Table 3-9: Selected Features for the Rural Residential and Agricultural Zoning District

Dimensional Requirement	Single-Family House	Two-Family House	Three-Family House
Min. Lot Area	130,680 sq. ft. (3 acres)	130,680 sq. ft. (3 acres)	174,240 sq. ft. (4 acres)
Min. Lot Frontage	200 feet	200 feet	200 feet
Min. Front Yard	50 feet	100 feet	100 feet
Min. Side Yard	25 feet	25 feet	25 feet
Min. Rear Yard	25 feet	25 feet	25 feet

Source: Town of Wendell Zoning Bylaw, December 2009.

¹¹ 2000 U.S. Census Summary File 1 Data: QT-H2. Tenure, Household Size, and Age of Householder.

It is assumed that even though Wendell has some commercial and industrial uses that are allowed by special permit, future development will be primarily of a residential nature. The industrial uses that have been mapped by MassGIS include an egg farm and a junkyard.

Having one zoning district potentially provides both positive and negative impacts on the conservation of Wendell's natural resources. On the one hand, a three-acre minimum lot size will mean that fewer people can ultimately become residents. It may also mean that with every new resident in Town, people will be spending more time driving (fuel and pollution costs). It could also encourage human activities to spread out more quickly, cover more ground overall, and venture more closely to interior forest cores than if people were given opportunities to purchase homes in areas where the houses were closer together, as in Wendell's village centers, though many people do not like near neighbors.

Common driveways are allowed, but must meet minimum requirements. Two of the requirements are that a common driveway does not serve as access to more than three lots and that its length does not exceed six hundred forty eight feet. Secondary dwellings of limited occupancy (2 persons) are allowed with primary dwellings that are 10 years old. The secondary dwelling provision provides a new housing option.

Backlot Development Bylaw. The stated purpose of the Backlot Development Bylaw is to encourage efficient, economic use of the backland to protect the Town's rural character, health, safety, welfare, and wildlife habitats. The cost of the bylaw is the reduction in backland interior forest. The minimum requirements for use of this bylaw are:

- Four acre minimum lot size;
- Fifty-foot minimum access way width with frontage on an existing public way;
- Access way cannot cross a wetland;
- Access way cannot exceed 1000 feet in length; and
- No more than two back lots may be created out of any parcel less than 25 acres and up to four lots are allowed for parcels greater than 25 acres.

Current Conservation Development Bylaw. The purpose of the Conservation Development Bylaw is to encourage the preservation of common land for conservation purposes and to allow more efficient provision of municipal services while developing a residential subdivision. The minimum requirements of this bylaw include:

- Minimum area of ten acres;
- The maximum number of dwellings may exceed by 20 percent that which is allowed in a conventional subdivision plan with approval of the Planning Board;
- Lots shall be for single and two-family housing;
- At least 35 percent of the lot shall be set aside as common land;
- Individual lots must be greater or equal to one-half acre;
- A lot must have at least 50 feet of frontage.

Applying this bylaw using a 30 acre parcel as an example results in the following calculation of the number of allowed lots. If, for example, steep slopes or wetlands were on two acres of the parcel, we would remove these from consideration. Of the remaining 28 acres, 35 percent would be set aside as common land. On the 18.2 acres left over, a developer could have a maximum of ten lots, given the 20 percent limit. The same 28-acre land area in a conventional subdivision would require roughly 15 percent of the land for roads and drainage. This would result in roughly 24 acres to develop into eight, three-acre lots. Twenty percent more than eight is equal to ten lots. It remains to be seen whether an increase of two house-lots and the reduction in the land and overall cost of infrastructure would attract developers to apply unconventional means.

Coupled with population increases, Wendell's land use controls will result in sprawl pattern of development. Although the three-acre minimum lot requirement of the zoning district and the back lot and conservation bylaws will reduce the total number of people that could live in Wendell, they also encourage human activities to spread out across the landscape. This is potentially in conflict with residents' interest in wildlife habitat protection. To address this problem, the planning board is proposing a new Conservation Development bylaw.

Proposed Conservation Development Bylaw. The proposal is intended to allow development, while maintaining a working landscape and a viable wildlife corridor connecting the Quabbin watershed through Wendell to the Connecticut and Millers River watersheds. Wendell undertook this planning project because both its Community Development Plan (2004) and Open Space Plan (2002) noted that Wendell's pattern of growth might not be the right fit for Wendell. Also, the Conservation Development bylaw had not been used and could be replaced with a more appealing and up-to-date approach to housing development.

Under the proposal, two development options are available. New primary dwellings are allowed at the rate of no greater than one in any seven year period on either: 1) a lot in existence on the date of adoption or 2) a new lot divided from a lot in existence on date of adoption. The idea is to slow suburban sprawl. Alternatively, landowners who want to create more lots more frequently would use the proposed bylaw. Both development options would be considered "by right" in the revised Zoning Bylaws. This second development option is conducted under the Site Plan Review process, and is available for projects on one or more lots anywhere in Wendell, or may be conducted on only part of a single lot.

Under the proposal, the second development option the project acreage is divided into two sections. One section, 75% of the land, would include areas determined to have the most significance for forest and timber management, biodiversity, wildlife habitat and corridors, historical importance, agriculture, visual assets, or recreational use. This section would be set aside with a permanent Conservation Restriction approved by the Planning Board. The other section, the remaining 25% of the total acreage, may be developed with greater flexibility and streamlined reviews.

The flexibility and streamlined review includes the following: (1) the limits on lot size and frontage are removed; (2) common driveways of any length may provide access to the dwelling units in the development, saving the legal, financial and environmental costs of a standard subdivision road; and (3) secondary dwellings may be included among the units right from the start (not requiring the primary dwelling in place for 10 years).

The proposal has a formula for determining the number of potential dwelling units that takes into consideration frontage, total acreage, and acreage with development constraints. The applicant identifies the total project acreage and the acreage that has development constraints (water bodies, wetlands, 100-year FEMA defined flood plains, or slopes over 25%). Half the acreage with development constraints is subtracted from the total lot acreage before determining the number of dwelling units. The formula provides credits (to allow more dwelling units) if 10% or more of the base units are affordable housing as defined by M.G.L. chapter 40B; if there is significant public access to and linking through the project area that provides a significant recreational benefit consistent with specific objectives in the most recently adopted Open Space and Recreation Plan; or for protecting 85% of the original project area.

The protected land is identified and protected with these steps:

- (1) The applicant meets with the Planning Board and prepares a conservation analysis of the project area. The conservation analysis identifies areas of significant value in the project area.
- (2) The Planning Board consults with the Conservation Commission and Open Space Committee and the most recently adopted Master Plan and Open Space and Recreation Plan, and prepares a conservation finding. The Planning Board will generally assume that land farther away from the town road, open fields, land in agricultural use, adjoining or near existing protected land and land identified as Priority Open Space in the Wendell Open Space and Recreation Plan should have priority for protection from development.
- (3) The applicant delineates the whole area to be set aside from “development” and drafts a conservation restriction consistent with the conservation finding to ensure that the appropriate delineated land is permanently protected from development. The conservation restriction can allow activities consistent with a working landscape, like tree cutting, agriculture, hunting, fishing, gathering, and trails, or it could limit one or more of those activities, if appropriate. If necessary, the protected land could contain a septic system or play area, subject to Planning Board approval.

Board of Health Regulations. The Wendell Board of Health (BOH) adopted regulations concerning wells and underground disposal system construction as of July 23, 2001 for the purpose of protecting the health of the residents and the environment. The BOH amended these regulations several times in recent years, first extending their scope beyond the parameters of Title 5 and later in January 2006 reducing the rules to the scope of the state law.

The BOH states in its regulations that they will apply to “any subsurface wastewater disposal system located within the Zone of Contribution of a public water supply well, located in an area of private well supplies, located within the watershed of all potential municipal water supplies, or any other pond in the Town of Wendell, or located within the watershed of any stream which drains into said lakes, ponds, or reservoirs”. Research presented in “A Hydrogeologic Investigation of Wendell, Massachusetts,” Master of Science Thesis by Timothy L. Limbers, Department of Geology and Geography, UMass Amherst, dated September 1994 indicates that several potential municipal water supplies may exist within the Town.

Subsurface discharge of wastewater effluent can contaminate public and private supply wells with different types of chemicals and impact local surface waters. Nitrate contamination of drinking water is a serious public health problem also associated with the use of household and industrial chemicals, pesticides, solvents, and other toxic substances. Subsurface wastewater disposal, without nitrogen removal, is a major source of nitrate-nitrogen loading in the ground water and surface waters. The BOH states that by controlling nitrate-nitrogen loading in the groundwater, eutrophication rates of local surface waters will be reduced.

Wells: The following rules apply to the location and construction of all new wells unless the Board of Health grants a specific exemption:

- Well construction and destruction shall be done in accordance with the Department of Environmental Protection’s Private Well Guidelines.
- Wells shall be located a minimum of fifty feet from center line of any public roads or rights of way, and a minimum of ten feet from any lot line.
- Wells shall be located not less than 100 feet from a sewage disposal field (leaching facility either currently in use, abandoned or reserve area).
- Wells serving multi-unit dwellings and more than one dwelling must have a flow equal to at least 2 gallons per minute per dwelling unit or dwelling as measured by the well driller’s test.
- In establishing the location of a well, applicants must identify actual or potential sources of contamination within 200 feet of the well site and locate wells to avoid all potential sources of contamination.

Percolation Tests and Soil Evaluations: Percolation Tests and Soil Evaluations for all new systems will be conducted year-round, except when mottling does not manifest itself in the particular soil type. In such case the Board of Health may require additional testing to determine the Estimated Seasonal High Water Table, such as the installation of a 4” diameter monitoring well. If the observed or the estimated seasonal high water table is 12” or less below ground surface, then the test site is not suitable for new construction.

Leach Fields: The following rules apply to the location and construction of all new leach fields unless the Board of Health grants a specific exemption:

- Leach fields must be a minimum of 100 feet from wetlands and other surface water features as defined by 310 CMR 15.000 and the Wendell Wetlands Protection Bylaw.
- Sewage disposal fields and reserve areas shall be located not less than 100 feet from public and private water supplies, and a minimum of 25 feet from any lot line.
- In order to maximize equal distribution, when gravity feed systems are used (all systems where effluent is delivered to the distribution box by gravity flow from the septic tank), the maximum leaching trench or pipe length shall not exceed 50 feet as measured from the beginning of the perforations.
- No swales, interceptor drains, curtain drains or other means of lowering the ground water elevation shall be allowed for new construction. Such means may be allowed only for the repair and replacement of existing systems and then only where, in the opinion of the Board of Health, no feasible alternative exists.

Right to Farm Bylaw. The town of Wendell passed a Right to Farm Bylaw at its Annual Town Meeting in June 2009. This General Bylaw encourages the pursuit of agriculture, promotes agriculture-based economic opportunities, and protects farmlands within the Town of Wendell by allowing agricultural uses and related activities to function with minimal conflict with abutters and Town agencies. This Bylaw re-states and emphasizes rights accorded to Massachusetts under existing state law and applies to all jurisdictional areas within the Town. (See Appendix for the full text of the Right to Farm Bylaw.)

Watershed Protection. DCR's Office of Water Supply Protection regulates specific parcels of land that are located adjacent to tributaries that empty into the Swift River (pursuant to M.G.L. Ch. 92, Sections 104, 107A, & 108; also 350 CMR 11.00) (see the Water Resources Map at the end of Section 4). In some cases, the regulations prohibit development and in others it regulates the density of development.

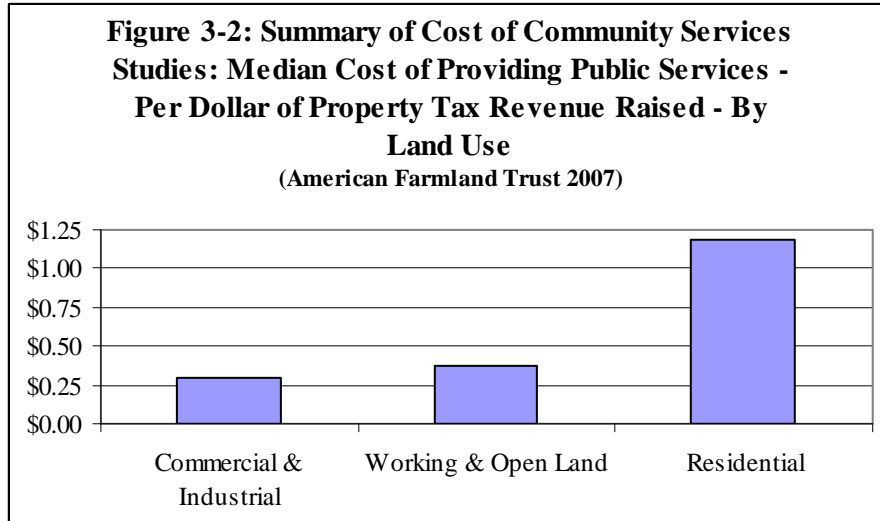
The land within the Swift River watershed that is regulated by DCR includes land associated with surface water or tributaries. All land within 400 feet of a tributary or surface water, within its floodplain or area of bordering vegetated wetlands (bvws), and lands above aquifers are under DCR's jurisdiction.

No alterations of the land are allowed within two hundred feet of the bank of any tributary or surface water. In addition, hazardous waste may not be generated, stored, disposed, or discharged within this area. The following uses are prohibited in all other areas including the second two hundred foot buffer of tributaries or the banks of any surface water, floodplains, bvws, and aquifer areas:

- The disposal of pollutants from either privately or publicly owned sewage treatment facilities;
- Placement of a leaching field less than four feet above the maximum water table level;
- Use/Storage of petroleum, pesticides, and other hazardous materials in excess of normal residential uses and then only when strict storage regulations are followed;
- Storage and disposal of solid waste, de-icing materials, and road salt, other than a reasonable volume produced by normal residential uses;
- Outdoor uncovered storage of manure;
- Operation of junk and salvage yards and boat or motor vehicle washing areas;
- The rendering impervious of more than ten percent (10%) of any lot or two thousand, five hundred (2,500) sq. ft., whichever is greater;
- The excavation of gravel and sand to a depth greater than six feet above the high water table, except where incidental to the construction of permanent structures;
- Any activity such as altering the bvw's, which could negatively impact the quality of the water in the watershed;
- The construction of any dwelling which exceeds a density of two bedrooms per acre or any use which may generate more than two hundred and twenty gallons of sanitary sewage per acre per day; and,
- The construction of any dwelling, which exceeds a density of one and a third bedrooms or one bedroom per acre on land above aquifers with yields of 100-300, or over 300 gallons per minute, respectively.

D.3.2 Costs of Growth

The challenge for Wendell will be to find a model for growth that protects vital natural resource systems like aquifers and their recharge areas and at the same time promotes a stable property tax rate. In designing the model it is important to understand the measurable values of different land uses. For instance, permanently protected open space (e.g. farmland/forest), residential, and commercial /industrial development each have a different fiscal impact depending on the relationship of property tax revenues generated to municipal services consumed. There is a process by which the fiscal value of these three different land uses are compared within a town to determine whether a use has a positive or negative fiscal impact. This process is called a Cost of Community Services (COCS) analysis. Figure 3-2 demonstrates the summary of more than 120 COCS studies.



Source: American Farmland Trust; 2007.

Although protected open space typically has a low assessed value and thus generates low gross tax revenues, municipal expenditures required to support this use are typically much lower than the tax revenue generated. In 1991, the American Farmland Trust (AFT) conducted a Cost of Community Services (COCS) analysis for several towns in Franklin County. A COCS analysis is a process by which the fiscal impacts of different land uses within a town are compared to determine whether a use has a positive or negative net fiscal impact. The results of the 1991 AFT study showed that protection of open space is an effective strategy for promoting a stable tax base. It found that for every dollar generated by open space, the municipal services required by that land cost on average only 29 cents, resulting in a positive fiscal impact to the town. In 1995, the Southern New England Forest Consortium (SNEFC) commissioned a study of eleven southern New England towns that confirmed the findings of the earlier AFT study. These findings were confirmed by other COCS analyses across the country conducted over the last two decades. For every dollar of property tax revenues received from residential property, the amount of money expended by the town to support homeowners is over a dollar, while farm/forest and commercial/industrial property provide a positive fiscal impact.

Patterns of commercial and industrial uses vary considerably between towns, and positive fiscal impact is only one of several important factors that need to be considered when encouraging this type of development. It is just as critical for communities to consider the impact of commercial and industrial development on quality of life. Viewed in this light, the best types of commercial and industrial development to encourage might have some of the following characteristics: locally owned and operated; use of a large amount of taxable personal property; “green industry” that does not use or generate hazardous materials; businesses that add value to the region’s agricultural and forestry products, and businesses that employ local residents. It is also important to consider that successful commercial and industrial development often generates increased demand for housing, traffic congestion and pollution. Therefore,

the type, size and location of industrial and commercial development require thorough research and planning.

The COCS studies also found that there is a correlation between a town's population characteristics and the cost of community services. Towns that have larger and growing populations generally experience greater losses on their residential development. The study concluded that a "well balanced" land use plan would, in the long run, develop a stable tax base.

The challenge for Wendell and other communities is to define what "well balanced" looks like in their community. A land use plan that supports a stable tax base would also need to respect the capacity of the natural resource base. It might allow for the development of commercial and light industrial uses in a way that encouraged local entrepreneurship and business expansion, concentrated residential development where infrastructure already exists, and protected open space, farmland, and significant scenic, ecological, and historic resources.