



Town of Hubbardston

Open Space & Recreation Plan Update

2024



Town of Hubbardston
2024 Open Space & Recreation Plan Update

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SECTION 1: PLAN SUMMARY

Located in central Massachusetts, just seven miles from Route 2 and within an hour's commute of several important urban areas, Hubbardston is one of a growing list of towns that is struggling to maintain the rural character cherished by residents while accommodating the growth demand that is spreading steadily westward from the Route 495 corridor and northward from Worcester. Hubbardston is on the very edge of the Boston/Worcester metropolis and it must be ready to face the next phase of development.

This update summarizes the demographic and physical changes to the community since the previous plan. It reviews and updates the open space and recreation properties and facilities and incorporates community survey results into the discussion. Finally, it presents a vision of Hubbardston's future recreational and open space ideals, and summarizes needs, challenges, and goals.

The seven-year goals continue to make numerous specific suggestions toward the overall recommendation: that the town strives to achieve a healthful balance between conservation and protection of open space resources and residential and commercial growth, thereby enhancing and protecting the quality of life for the residents who value and treasure Hubbardston's forests, fields, clean water and fresh air. The community aspires to continue to be quiet, safe, and sparsely developed, but with small-town, family-oriented amenities in an unspoiled setting. This overall recommendation, based on survey responses, has remained unchanged since the first open space plan was written.

This update highlights some needs with regard to stewardship and maintenance of public recreation holdings throughout the town and water quality protection issues. Other needs concern development of new recreational opportunities, e.g. bicycle and hiking trails, and improvement of existing facilities, e.g. access for the physically challenged and older adults. A 2023 survey made available to the public on the town website and via paper copies around the community elicited 179 responses, which represents approximately a 10% response rate from the town's 1,553 households. Specific actions are presented in the Seven Year plan (Section 9).

Ultimately, the goal of the Open Space Committee is to preserve key parcels of land for conservation and, where those parcels are to be owned by the town, to manage them appropriately for wildlife, agriculture, recreation, economic development, and aesthetics. In addition, town planning practices also need to take these goals into consideration when developing policy choices for the town in general, regardless of land ownership.

SECTION 2: INTRODUCTION

A. Statement of Purpose

Hubbardston's previous Open Space and Recreation Plans have provided valuable guides for the town as it endeavored to meet the open space and recreational needs of its residents. They were also a necessary requirement to secure funding in the form of state Self-Help Conservation (now LAND grant) and Urban Self-Help Outdoor Recreation (now PARC) grants that have helped the town to achieve some of its goals. The plans encouraged preservation of the town's rural character by advocating conservation of key land parcels for open space, managing them appropriately for multi-use recreation, agriculture, timber harvest and wildlife management, introducing an open space residential bylaw and outlining the need for additional recreational opportunities.

This document is an updated version of those plans. The purpose of this update is: 1) to provide an accurate, current assessment of open space and recreational opportunities and needs for Hubbardston residents, 2) to discuss some of the obstacles and problems the town may be encountering in achieving its stated goals and 3) to create a seven-year action plan that optimizes those opportunities and satisfies those needs.

B. Planning Process and Public Participation

Hubbardston's Open Space and Recreation Plan Update has been undertaken consistent with Massachusetts Executive Office of Energy and Environmental Affairs, Division of Conservation Services (EOEEA) guidelines.

Hubbardston's OSRP Update Committee has been instrumental in leading the open space planning process. This committee consisted of a broad range of participants including representatives from Town departments, recreation leagues, local non-profit organizations, Friends groups, and dedicated community members. All members were selected for their individual knowledge and their ability to reach out to and serve as a conduit to and from their respective constituencies.

Table 1 Ad Hoc OSRP Update Committee Members

Name	Representative of
Rick Jones, Chair	Open Space Committee
Katie Young	Select Board
Kristofer Munroe	Planning Board
Rick Green	Conservation Commission
Jassy Bratko	At large

Mike Stoll	At large
Tim Hawley	Open Space Committee

The Hubbardston Open Space Committee and Ad Hoc OSRP Update Committee have drafted the 2024 OSRP update, with input from the following sources:

- **Information regarding acquisition updates, inventory, and datasets** from Town representatives (primarily the Board of Assessors; the Parks Commission; and the Open Space Committee) and from community conservation and recreation organizations.
- **Two meetings with the OSRP Update Committee** on April 25, 2023 and May 9, 2023. The first meeting included a discussion of the previous OSRP and defining our vision to establish a basis for establishing goals. The second meeting included prioritization of open space needs and developing goals to meet them.
- **One public meeting and an online survey.** The public meeting was held on May 23, 2023 with eight attendees and was primarily focused on generating action steps and recommendations, building on issues discussed at the OSRP Advisory Committee meetings. The online community survey, summarized in Chapter 6: Community Vision and available in Appendix A, was administered from June 10 to July 12, 2023, and received 174 responses. The intents of both the meeting and the survey were to define the aspects of open space that Hubbardston residents value most, evaluate open space needs, prioritize open space actions for the future, and develop general recommendations.

SECTION 3: COMMUNITY SETTING

A. Regional Context

The Town of Hubbardston is located in the hills of northern Worcester County, Massachusetts. Towns bordering Hubbardston are: Gardner and Westminster on the northeast, Princeton and Rutland on the southeast, Barre on the southwest, and Phillipston and Templeton on the northwest. Hubbardston is 19 miles northwest of Worcester and 56 miles northwest of Boston, with the urban areas of Gardner, Leominster, and Fitchburg nearby. This convenient location to urban centers of employment has contributed to the changing demographics of the town. The past years have witnessed the transformation and growth of a rural, small-industry based community into an increasingly suburban, commuter/bedroom community. Figure 1 locates Hubbardston in Massachusetts.

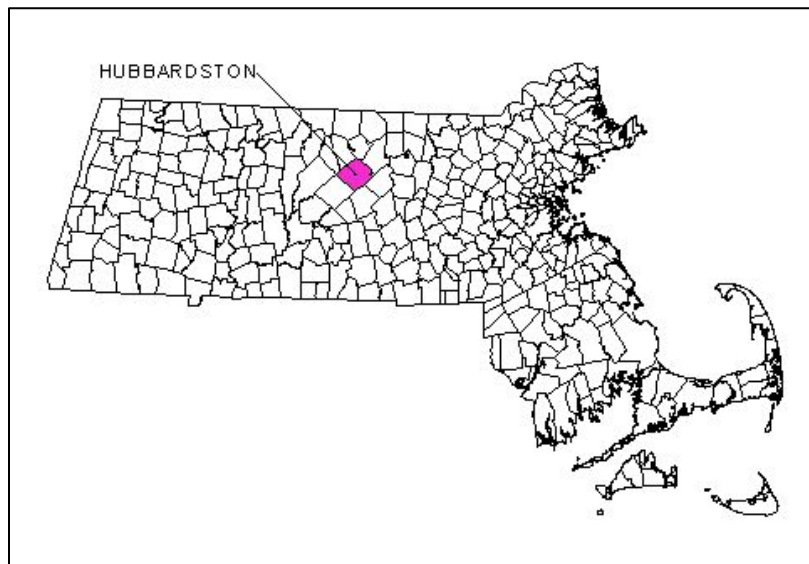


Figure 1 Location in Massachusetts

The hilly terrain and numerous streams found here powered many of the small mills and industries of the nineteenth century. Geographical location and the geological framework of Hubbardston contribute to the production of some of the best drinking water in Massachusetts. The cities of Fitchburg, Gardner, and Metropolitan Boston derive a substantial amount of their drinking water from surface and ground water sources located in Hubbardston.

The town's rich biological diversity is also attributable to its location. The boundary of two eco-regions, the Worcester Plateau and the Lower Worcester Plateau, divides Hubbardston in half. Eco-regions are defined by geology, hydrology, climate, and biological diversity. Where two eco-regions co-mingle, habitats and associated wildlife are much more diverse. Figure 2 provides regional context for the landscape-scale open space lands in Hubbardston and bordering communities.

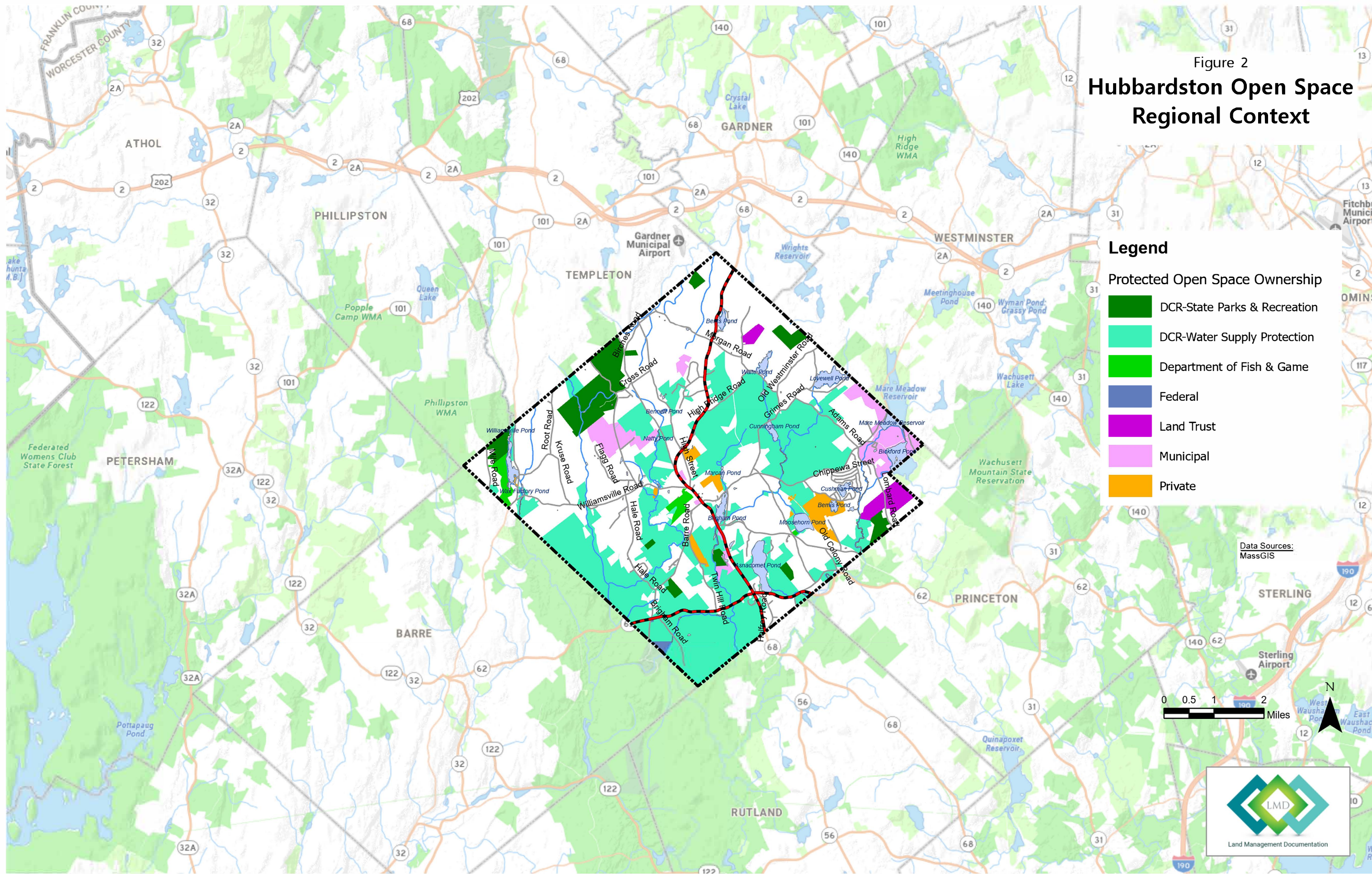


Figure 2
**Hubbardston Open Space
Regional Context**

Legend

Protected Open Space Ownership

- DCR-State Parks & Recreation
- DCR-Water Supply Protection
- Department of Fish & Game
- Federal
- Land Trust
- Municipal
- Private

Data Sources:
MassGIS



B. History of the Community

Early Years

Originally, Hubbardston was part of a district that included Rutland, Barre, Paxton, Hubbardston, Oakham and a portion of Princeton purchased from the Native Americans in 1686. This district was owned by thirty-three individuals who, in 1715, decided to set off in lots a tract six miles square. The area to be known as Hubbardston was called the Northeast Quarter and became a town on June 13, 1767. The little "notch" in the southeast corner of approximately 500 acres was deeded to Princeton in 1810 "for the convenience of the families living there."

Early surveys in the 1700s divided the town into "great farms," "house lots" and reserved land for churches, schools and a town common. The first European settlers came here in 1737 and there was a greater influx of people during the 1760s. The town was incorporated in 1767. The first colonial census in 1776 documented a population of 488 people. Many of the local settlers participated in the Revolutionary War. Hubbardston was sympathetic to Shays' Rebellion and one of the leaders of the rebellion, Captain Adam Wheeler, was from Hubbardston. Eighty men from the town marched to Worcester under Wheeler's command and took control of the courthouse to protest the widespread foreclosures and seizures of property by creditors that occurred during the cash-poor eighteenth century.

Despite the troubled time period, the town grew to a population of 1,113 at the beginning of the next century. This rapid increase in population from 1760 to 1800 was greater in Hubbardston than in any other town in Worcester County.

1800s

The beginning of the 1800s saw the expansion of the town's educational and road systems that were started in the late 1700s. A total of seven school districts were established, each having its own school. Hubbardston's road system expanded toward the neighboring towns to accommodate the great amount of travel through town in all directions. The town's early economy was based on agriculture and lumbering and small-scale chair, boot and shoe manufacturing. The early settlers extensively used the town's numerous waterways for powering the many mills and manufacturing sites located here. Historians describe the community at that time as being poor, sparsely settled and almost wholly agricultural, but having sawmills, potash works and cottage industries such as the making of palm leaf hats. By the 19th century, dairy and berry farming and market gardening were major pursuits in the town, and immigrants from Ireland, French Canada, England, Sweden and Russian Finland had moved into town to work with earlier settlers. Tourism was another active industry in Hubbardston and two hotels were destinations for summer vacationers. This era also saw the coming of the railroad in 1873, a Fire Company in 1829 and a library.

Hubbardston continued to grow, reaching a population high of 1,825 in 1850, but then declined to around 1,400 in 1900. The mid-century Civil War had a large impact, with 120 men joining the Union Army and 44 of them losing their lives. The period from 1850 to 1890 saw many of the original families of the town disappear and the younger population move on, as industrial urban opportunities grew and enticed them to other parts of the county.

1900s

From 1910 to 1930 the rate of population decline slowed, probably due to the influx of immigrants who purchased abandoned farms and worked both at agriculture and industrial employment. In 1940, Hubbardston had a rural population of 55.9%, the second highest in the county.

In 1926, the Massachusetts legislature passed the Ware River Act by which the Ware River was impounded for the purpose of drinking water collection. Funds were appropriated for the construction of a 12-mile long aqueduct from Ware River to Wachusett Reservoir. The Metropolitan District Water Supply Commission (MDWSC) was set up to run the project. Considerable watershed acreage was taken by eminent domain. In addition to large tracts of land that were taken and inundated in the region to the west, some 20,250 acres were taken by the MDWSC in the towns of Hubbardston, Barre, Oakham, and Rutland. The MDC began buying the land in 1928 and continued for the next 10 to 15 years, although the Ware River intake works were completed in 1931. Coinciding with the Great Depression, this action, whereby the MDWSC took ownership of thousands of acres, had a great impact on Hubbardston's economy and population, an impact that continues to this day.

The first half of the 1900s brought two world wars, again resulting in the loss of some of Hubbardston's young citizenry and community change. Yet more dramatic change came about after World War II when automobile ownership became commonplace. Ultimately, it became not only possible but economically feasible for residents to commute to a job in "the city" and enjoy living in a rural environment. Consequently, Hubbardston's population increased as it became a bedroom community to the surrounding urban areas.

Our location continues to attract new families now as it did in the 1700s, but probably for different reasons than entrepreneurial ambitions. Since 1975, Hubbardston has grown dramatically but the number of businesses and services that were available in the nineteenth century did not accompany this growth. At the present time, there are several small industries, retail and service businesses, along with numerous home-based endeavors.

C. Population Characteristics

Population Trends

Between 1990 and 2000 the town grew rapidly and, for at least the second time in its history, it was the fastest growing community in Worcester County. Since 2000, the population growth has slowed dramatically and the population has remained essentially unchanged since 2010, as seen in Table 2.

Table 2 Population Change 1990 - 2022

Community	Population				Change		% Change	
	1990	2000	2010	2022	1990-2000	2000-2022	1990-2000	2000-2022
Hubbardston	2,797	3,909	4,382	4,338	1,112	429	40%	11%
Worcester County	709,711	750,963	798,552	858,898	41,252	107,935	6%	14%

Source: U.S. Decennial Census, 2018-2022 ACS 5-year Census Data

During the early 2000s, the slowing population growth rate may have been influenced by a Rate of Development Bylaw that was adopted in 2001 to restrict the number of new dwelling units to no more than 28 per calendar year. However, in the years since the Great Recession of 2007, growth has not been influenced by this bylaw. As shown in Table 3, the number of new houses each year has remained well below the cap imposed by the bylaw, so it can be inferred that the slowdown in population growth has been due to other factors. The Rate of Development Bylaw was repealed by way of expiration in 2021.

Table 3 New Homes by Year of Completion

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
New Homes	27	22	16	11	5	4	7	8	16	6	12	11	4	4	2	17	6

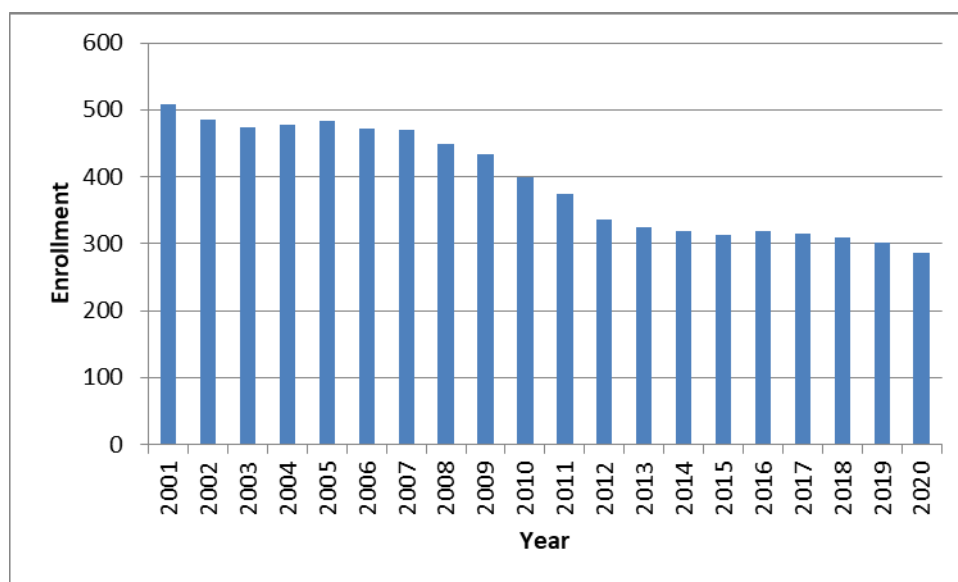
Source: MassGIS/Hubbardston Assessor's Parcel Data

In addition to the overall slowdown in population growth, Hubbardston's demographics have also been changing. Table 4 illustrates that the median age of Hubbardston residents is increasing and it is higher than the state or national average. This implies that younger residents and families are a declining proportion of the population, either due to young families not moving into town or due to the national trend of decreased family size. This can also be observed in the declining enrollment for the Hubbardston Center School (K-6) shown in Figure 3.

Table 4 Median Age

Community	Median Age			
	1990	2000	2010	2022
Hubbardston	32.0	35.9	41.6	42.3
Massachusetts	33.5	36.5	39.1	39.8
National	32.9	35.3	37.2	38.5

Sources: U.S. Decennial Census, 2018-2022 ACS 5-year Census Data

Figure 3 Hubbardston Center School (K-6) Enrollment

Source: Hubbardston Center School Annual Reports

Population Density

The population density of Hubbardston is 103 persons/square mile, an 11% increase from 2000. Population and housing density is greatest in the Hubbardston center area along Route 68 and in the Pinecrest, Dogwood Road and Hale Road neighborhoods. The density reflects zoning regulations and lot dimensions, particularly lot size. Hubbardston has approximately 42 square miles of land and water.

Income and Employment Trends

In 2022, the town's median household income was estimated to be \$114,922 (Table 5 Median Household Income). This is significantly higher than the county, state, or national level and is a fact that is of surprise to many residents who don't consider Hubbardston to be an affluent town. However, the rate of increase in household incomes is significantly lower than that of the county, state, or nation, and

so the town's median income might be expected to equalize with those broader geographies over time. The number of Hubbardston residents with income below the poverty level is significantly lower than the state level.

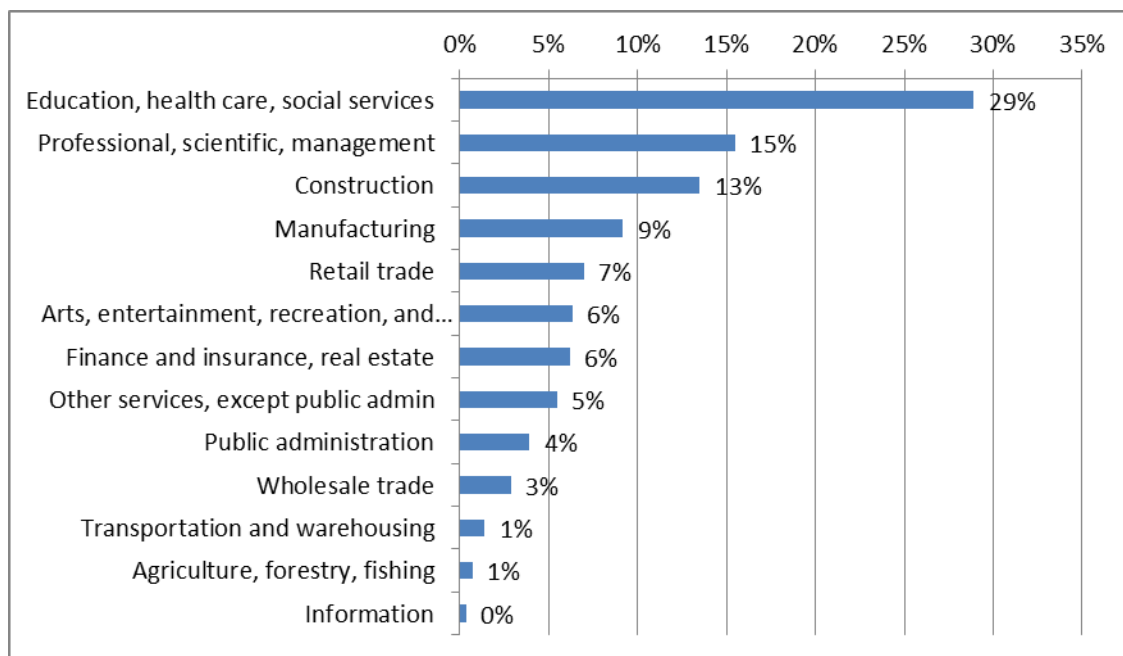
Table 5 Median Household Income

Community	2000	2010	2022	% Change: 2010 to 2022
Hubbardston	\$61,462	\$82,443	\$114,922	39%
Worcester County	\$47,874	\$61,212	\$88,524	45%
Massachusetts	\$50,502	\$62,072	\$96,505	55%
United States	\$41,994	\$50,046	\$75,149	50%

Sources: U.S. Decennial Census, 2018-2022 ACS 5-year Census Data

The vast majority of employed residents commute to work, with a mean travel time of 38 minutes. Although Hubbardston is home to some small and home-based businesses, most residents spend their working hours away from the community. Worcester, Fitchburg, Leominster, and cities along the Route 495 corridor, as well as Keene, N.H., are all accessible points with a multitude of employment opportunities. Anecdotal community information indicates that many residents, especially those in the building trades, travel as far as Boston and environs, as well as other New England states, for lucrative job opportunities. Figure 4 shows that the highest percentages of residents are employed in the education, health care, and social assistance sector, followed by the construction industry and professional/scientific/management industry.

Figure 4 Occupations in Hubbardston in 2022



Source: 2018-2022 ACS 5-year Census Data

A common thread running through the community over the years seems to be a desire to live in a quiet, rural, affordable town while making the necessary sacrifice in commuting time and costs for means of employment. An examination of these social and demographic characteristics points to a community made up of families in which one or both parents work outside of Hubbardston.

Planning for the open space and recreation needs of Hubbardston must continue to balance the needs of the large number of working families as well as those households that are childless and have fewer demanding obligations. Planning must also take into account the change in recreational styles and needs of an increasing population of aging and senior residents.

Environmental Justice (EJ)

As defined in the Environmental Justice Policy of the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA), “*Environmental justice* is based on the principle that all people have a right to be protected from environmental hazards and to live in and enjoy a clean and healthful environment regardless of race, color, national origin, income, or English language proficiency. Environmental justice is the equal protection and meaningful involvement of all people and communities with respect to the development, implementation, and enforcement of energy, climate change, and environmental laws, regulations, and policies and the equitable distribution of energy and environmental benefits and burdens.”

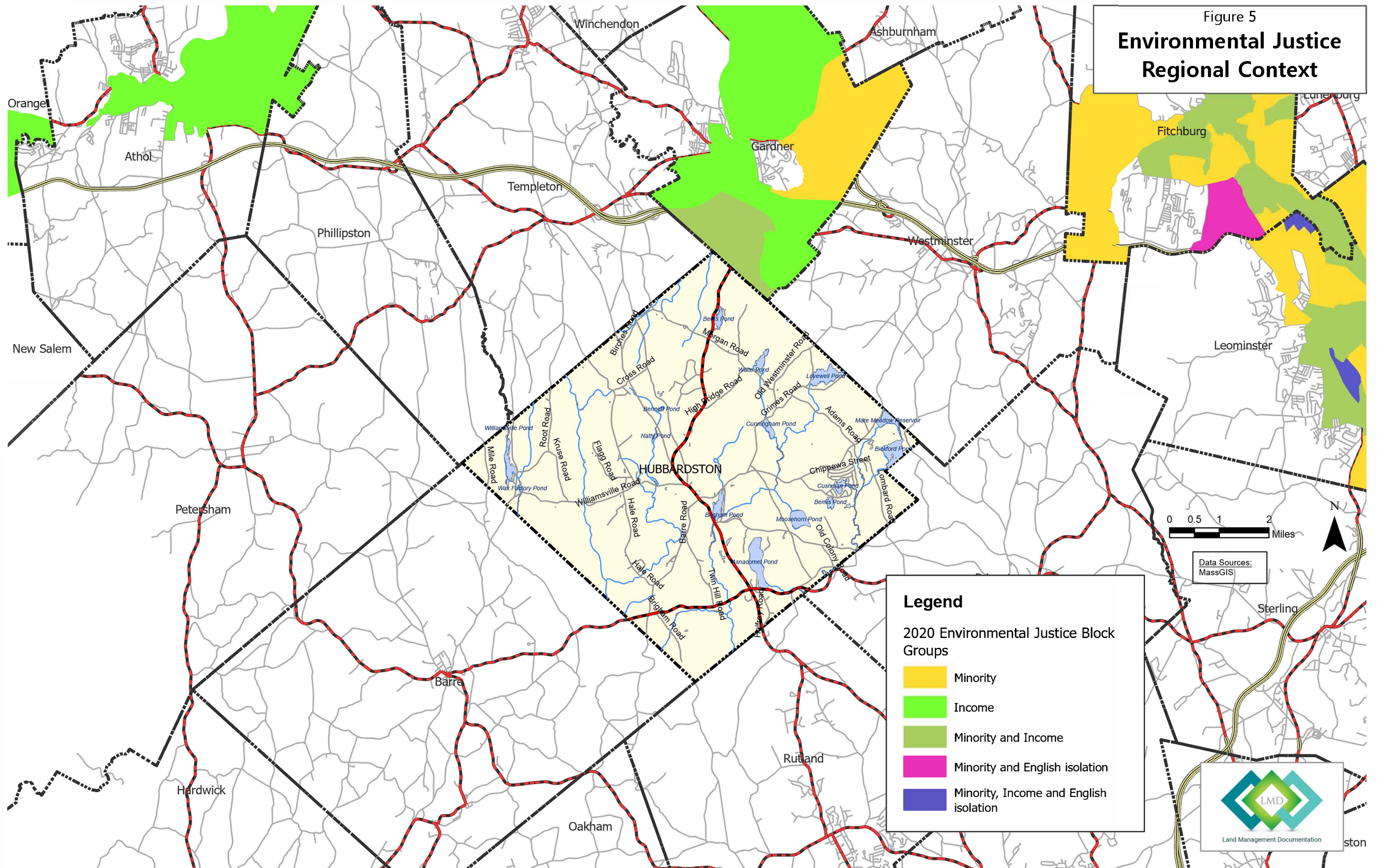
The Policy goes on to define EJ populations as neighborhoods (U.S. Census Bureau census block groups) that meet one or more of the following criteria:

- Median annual household income is at or below 65 percent of the statewide median income; approximately \$50,300 for 2017 (ACS, 1-year Survey, 2017)
- 25 percent or more of the residents are a racial minority
- 25 percent or more of the residents are foreign born; or
- 25 percent or more of the residents are lacking “English language proficiency.”

This demographic analysis provides indications of where higher concentrations of vulnerable residents may be located.

Based on this definition, Hubbardston does not contain any EJ populations. However, in a broader regional context as shown in Figure 5, adjoining communities do contain EJ populations. To the extent that policy choices in Hubbardston might lead to environmental or recreational benefits for nearby EJ populations, this should be taken into consideration.

Figure 5
**Environmental Justice
Regional Context**



Social Capital

Hubbardston has a wide array of social events and organizations that help to establish its community identity. Particularly since few residents have employment within the town, these types of activities can be an important aspect of getting to know your neighbors and finding common interests.

Annual Events

- Frozen Assets (prediction pool for date of ice-out)
- Hubbardston Fair (crafts, exhibitions, food trucks, music)
- Dinghy Dash (cardboard boat regatta)
- Holiday-related parades and events
- Hubbardston Field Day (crafts, exhibitions, food trucks, music)
- Hubbardston Library 5K run
- Hubbardston Light Fight (Christmas display contest)
- Hubbardston town-wide yard sale
- Keep Hubbardston Beautiful Day (town-wide cleanup)
- Nonesuch Night (food trucks, music, entertainment)

Clubs and Organizations

- Boy Scouts of America
- Friends of Senior Center
- Golden Ages Club
- Girl Scouts of America
- Hubbardston Historical Society
- Hubbardston PTO
- Hubbardston Rod & Gun Club
- Lions Club
- Organized team sports and disc golf groups

D. Growth and Development Patterns

Initial Development

As European settlement of the “frontier” pressed westward during the seventeenth and eighteenth centuries, it tended to follow the “paths of least resistance”. In central Massachusetts, where forests were dense and terrain was rough, this meant using the established paths and clearings of Native Americans. These paths often followed streams and ridgelines, originally functional for hunting and gathering from the wild landscape. As settlement became permanent, these original footpaths became cart-paths, and cart-paths became roads. Much of Hubbardston’s current infrastructure still follows these same paths.

The economic framework that drove this settlement, agriculture and cottage industries, also provided the original patterns of development: a vibrant Main Street developed in the center of town, residential villages sprung up around mills and farmhouses dispersed amongst the fields and pastures of Hubbardston’s open land.

Periods of Abandonment and Growth

Hubbardston went through a period of relative abandonment during the nineteenth and early twentieth centuries as the economic forces of the region shifted to centralized industries and wars took men from farms and factories. Times and needs changed significantly following the two world wars. Automobiles were prevalent; most employment was to be found in urban areas. Improved automobile transportation infrastructure and the resultant mobility meant that people could choose to live further from the urban areas in which they worked. Consequently, by the 1950s, consistent with a pattern that was occurring throughout the northeastern United States, many of Hubbardston's residents were commuting to nearby cities for work, and people could choose to live in the outlying areas of town. Single-family homes situated on individual lots became the norm.

Town Evolution – Farm to Residential

Hubbardston has thus evolved from a landscape that was predominantly made up of large expanses of wetlands, second-growth forest, and farm properties with a centrally-located social and business sector to a residential community made up of 2+ acre house lots, many in developments, sprinkled amongst fewer and fewer remaining fragmented, undeveloped parcels. The zoning policy adopted by the town, a minimum of two acres per lot with a 200-foot frontage requirement, has led to a consumptive sprawling growth pattern. On the other hand, Hubbardston's zoning bylaws provide for several growth-management protections, including an Aquifer Favorability Protection District, site plan review for all special permit uses, a general wetlands bylaw to control activities affecting wetlands, and an Open Space Residential Development bylaw. In addition, much of the town is affected by the Watershed Protection Act or Cohen Bill.

Commercial and Industrial Development

Land available for commercial and industrial development in Hubbardston is strictly limited under the current zoning bylaws. The current zoning provides for a commercial-use district along Route 68 north of the center of town and near the junction of Routes 68 and 62. There is the potential for this commercial zone to erode any town-center vitality that may exist, by dispersing the focus of activities away from the town's center. Several small commercial enterprises are already situated along Route 68 at some distance from the town center, beginning the process of strip development. Centralized development in Hubbardston is challenging due to the few roads parallel to or perpendicular to Rt. 68 near the town center. Further restricting centralized development are two parcels owned by the Commonwealth for watershed protection and several minor watercourses.

Plans have been drawn to build a new senior center and/or public safety building north of the town center on Rt. 68, close to the Curtis Recreation Field, but this project has not received approval from the public after multiple attempts.

Demand for Recreation Land and Facilities

The growth in dispersed residential development and in leisure time translates into demand for more land and facilities, including parking, for recreation. The pandemic in 2020-2021 generated a spike in the amount of individual and small group recreation on the Town's trails and unimproved open space areas, however it appears that this temporary increase has been followed by a rate higher than the pre-

2020 baseline level. Additionally, the types of open space uses and recreational patterns are also changing in response to community demographics and other factors.

E. Infrastructure

Rail

The railroad played a major role in the Hubbardston's early infrastructure. The final passenger train was removed from the Boston, Barre & Gardner railroad in 1953. Although the railroad line, now owned by Providence and Worcester Railroad, a Class II mid-sized, freight-hauling railroad, still passes through Hubbardston, it no longer has a significant impact on the long-term development pattern of the town, except with regard to the actual physical location of the tracks and adjoining property affecting land availability.

Commuter Rail

While there are no passenger rails within the Town of Hubbardston, a 2016 project extended MBTA commuter rail service 4 miles west from Fitchburg to Wachusett Station, located at the junction of Route 2 and Route 31 in West Fitchburg. The presence of this nearby station may encourage Boston bound commuters to consider relocating to Hubbardston, where land and home prices are lower than in towns closer to Boston.

A further exploration of rail service in the area is currently underway with the Northern Tier Passenger Rail Study. This study is evaluating options for rail service along the corridor from North Adams to Boston. If any of the options implemented include further expansion of MBTA commuter rail service westward to Gardner, this could have major ramifications for Hubbardston. In addition to providing easier rail access, the presence of an MBTA station in Gardner would trigger a statutory requirement for significant zoning changes allowing multi-family housing and substantial changes to development patterns in Hubbardston.

Although not currently the subject of any formal study, the Worcester-to-Gardner freight line could also be developed for passenger transport, either as a commuter line or as a tourist line. As a commuter line, it would enable travel to the existing Wachusett line or the Worcester line, each of which make numerous stops en route to Boston.

There are four tourist railroads in Massachusetts, only one of which, the Hoosac Line in North Adams, is in the northern half of the state. The Providence and Worcester Railroad runs a Christmas-themed train out of Woonsocket in conjunction with the Blackstone Valley Tourism Council.

Highways

The major routes in and out of Hubbardston are Routes 68 (south to Holden, access to Worcester; north to Gardner, access to Route 2), and Route 62 (east to Princeton, west to Barre). Other busy routes are Elm Street/Barre Road, Williamsville Road, New Templeton Road, and New Westminster Road, which all provide access to abutting towns.

Streets and Roads

Hubbardston's road system has strongly influenced the town's growth and land-use patterns. When Hubbardston entered its long growth period at the second half of the twentieth century, the roads were mostly the well-traveled routes of the prior century. An increase in new road construction began in the 1960s with the development of the Pinecrest area subdivision. Following a lull in the 1970's and 1980's, new road construction resumed with new housing developments such as Blueberry Farms, Rolling Woods and some condominiums. Besides those new roads, the primary focus for the past 25 years or so has been on maintenance and improvement of existing roads and bridges. Residents have long complained about the degenerating condition of the roads in Hubbardston. An influx of increased state roads funds since about 1994 has resulted in an increase in important maintenance projects.

Public Transportation

Public transportation is non-existent in Hubbardston, another factor that should be noted in a discussion of long-term planning with regard to open space. Parking is always an important consideration for recreational areas and has been the topic of debate within the town in regards to the Curtis Recreation Field. Major improvements were made to the parking area after the town received funding from an Urban Self-Help Grant in 2001. However, many users of this facility complain of a lack of parking spaces available when the area is being used for soccer and baseball. The town may need to consider locating future active recreational facilities in other areas of town to alleviate further congestion.

Although the town is a member of the Montachusett Regional Transit Authority/Massachusetts Association of Regional Transit Authorities (MARTA or MART), there is no fixed route service. However, MART provides Councils-On-Aging service to the community for elderly and disabled residents.

Pedestrian and Cycling Options

The majority of Hubbardston's roads are quiet country roads, which inherently lend themselves to both walking and cycling. Runners, walkers, and bikers are frequently seen enjoying most of Hubbardston's roads. Rte. 68, which runs through the center of Hubbardston (Gardner Rd to the north of the center and Worcester Rd to the south of the center) is quite busy and this corridor has limited sidewalks. As you progress outside the center of town on Rte. 68, in either direction, there is ample room to provide space for both pedestrians and bicycling. A Town Center improvement project slated for completion in 2024 is providing ADA-compliant sidewalks, bike lanes, traffic calming measures and other improvements in the Town Center area extending along Rte. 68 from the Curtis Recreational Field to the Hubbardston Center School.

Water and Sewer

There is no public water supply or sewer system in Hubbardston. All residents are served by private or community wells and septic systems.

F. Long-term Development Patterns

Zoning Regulations

Current delineated zones in Hubbardston are: Residential-Agricultural, Town Center, and Commercial [see Figure 6, Zoning Map]. Table 6 describes some of the pertinent requirements of Hubbardston’s zoning regulations.

Table 6 Lot Sizes

Type	Minimum Lot Size (ft ²)	Minimum Frontage (ft.)
Single Family*	80,000	200
2 Family	110,000	250
Multi-Family	special permit	special permit

* Commercial, Town Center, and Single Family Residential requirements are equal.

Hubbardston has attempted to be proactive to help preserve open space through zoning. Important changes to the town’s zoning bylaws since the original 2001 Open Space and Recreation Plan include the adoption of the Senior Residential Bylaw in 2002 that allows clustered senior (age 55 and older) housing development with set-aside conservation land. There are currently two of these senior residential developments; Moosehorn Pond and Madison Green.

The Open Space Residential Development bylaw was adopted in June 2006. It allows denser “cluster” housing on smaller lots, with a certain amount of the property set aside for conservation (per Massachusetts “Smart Growth” policies). As yet there have been no approved developments of this nature but as demand for housing increases in the area this type of development may become more commonplace in the town.

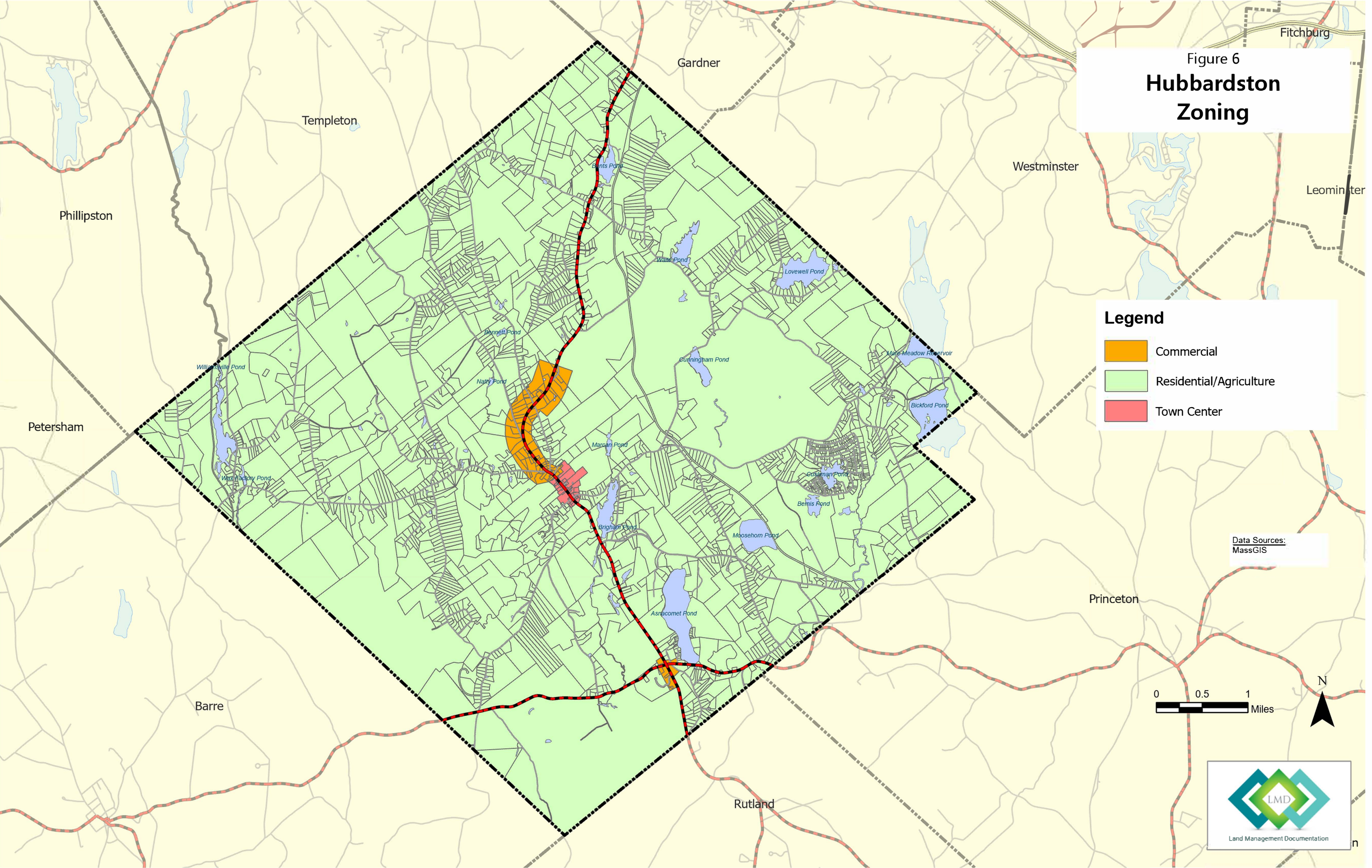
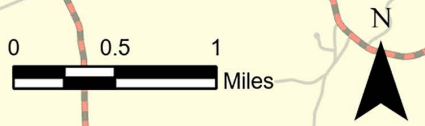


Figure 6
**Hubbardston
Zoning**

Legend

-  Commercial
-  Residential/Agriculture
-  Town Center

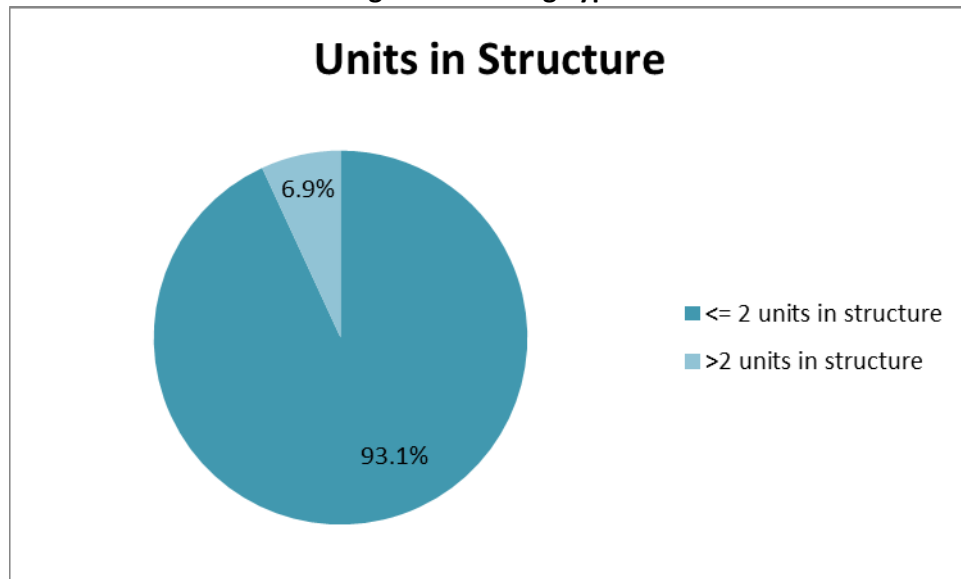
Data Sources:
MassGIS



Housing Stock

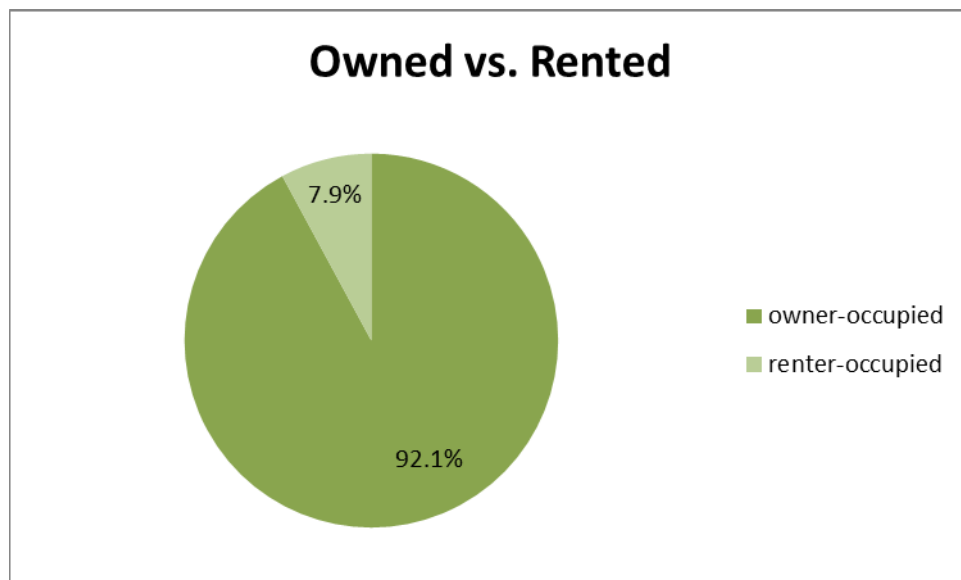
Hubbardston's housing stock is overwhelmingly owner-occupied single-family or duplex homes. Figure 7 shows that 92% of the town's housing is two-unit construction or less; Figure 8 shows that 91% of the occupied units are owner-occupied.

Figure 7 Housing Types



Source: 2018-2022 ACS 5-year Census Data

Figure 8 Housing Ownership



Source: 2018-2022 ACS 5-year Census Data

The majority of the town’s housing stock falls in the range of 30-40 years old. Table 7 shows the approximate age distribution of the town’s homes.

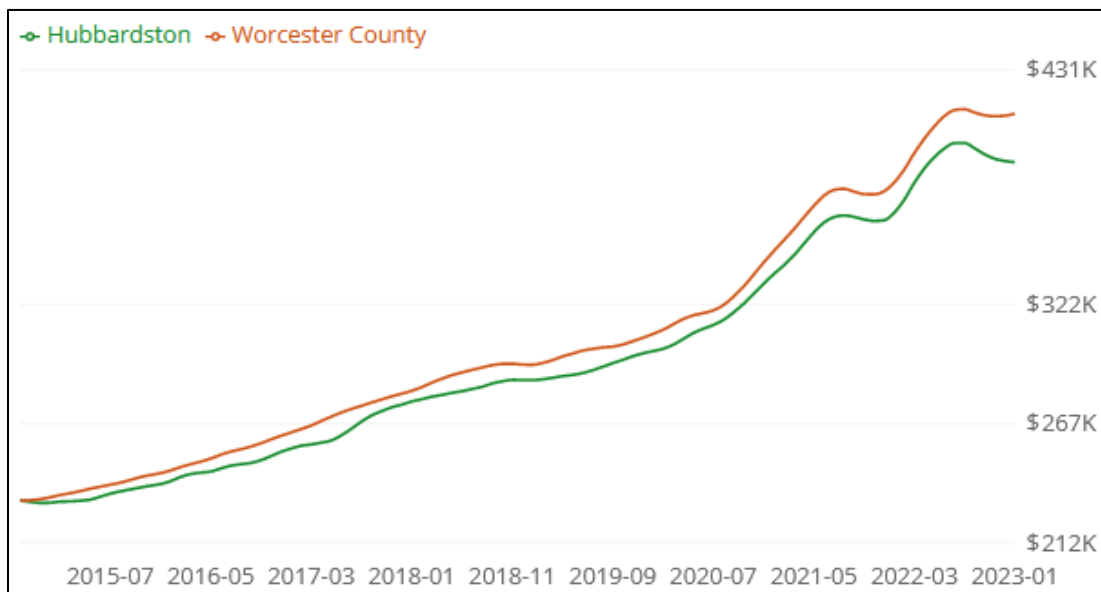
Table 7 Average Number of New Homes Built Per Year that Remain in 2022

Decade	1870s	1880s	1890s	1900s	1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	2010s	2020s
New Homes Per Year	1	3	1	3	1	2	3	3	4	6	16	44	39	25	8	8

Source: MassGIS/Hubbardston Assessor’s Parcel Data

Hubbardston’s housing prices have seen the same rapid increases in recent years that have been experienced in most of the country. Figure 9 shows the trend for the Zillow Home Value Index, which is a blended metric of median price and appreciation rates; this metric has jumped by 25% from mid-2020 to 2023. Despite these substantial increases, prices still tend to be lower in Hubbardston than in Worcester County as a whole, so Hubbardston may continue to be seen as an “affordable” option.

Figure 9 Zillow Home Value Index 2015-2023



G. Summary

Although Hubbardston's geographical and geophysical setting places some limits on its population and economic growth, the town experienced an influx of new residents and new construction from the 1970's through the 1990's. Distance from urban and economic/retail centers ceased to be seen as problematic. New residents were drawn by the affordability of land and housing, the appeal of large tracts of undeveloped open space, and the perceived safety as compared to larger urban landscapes.

Like so many other small towns in Massachusetts, the town found itself increasingly challenged to provide necessary services and meet the needs of the growing community with a budget already strained by state-imposed taxation and spending restrictions. With an eye toward the future, key townspeople, committee and board members, and employees took an active role in developing growth-management bylaws and protecting open space. Since 2004 growth has slowed dramatically but Hubbardston is still positioned on the edge of the Boston and Worcester metropolitan areas, which could lead to renewed development pressures in the future. Additional development pressure could also come from the new Wachusett Train Station in Fitchburg and/or further expansion of a Northern Tier Passenger Rail system.

SECTION 4: ENVIRONMENTAL INVENTORY AND ANALYSIS

One of the primary goals of open space protection is environmental protection therefore an inventory and analysis of the Hubbardston's environmental status is especially important and a lengthy topic. As a town approaches its "carrying capacity" in terms of infrastructure and services to its citizens - police and fire protection, roads and road maintenance, solid waste disposal, clean drinking water, etc. - open space protection is one tool that can be used to decrease expansion of some town services and at the same time remove the pressure on and over-use of the town's existing natural resources. Hubbardston residents often express their desire to live in a rural community. Open space protection provides the balance between infrastructure needs and other human needs for solitude, clean air, clean water, outdoor recreation and a healthy natural environment. For many residents the open space within the town is a primary source of their recreation. The town's geography, natural resource base, and existing protected open space, however, present their own management issues and challenges.

A. Geology, Topography and Soils

The underlying geology of Hubbardston has been one of the primary influences on the natural and man-made landscape seen in town today. Geology affects topography by creating the varying elevations, and affects soil formation by providing some of the parent materials with their different fertility and drainage characteristics. Soils, in turn, affect the type of vegetation supported and the type of development that can occur. Geology, topography, and soils all affect surface and groundwater hydrology, also important to both the natural and man-made environments.

Bedrock Geology

The bedrock geology of Hubbardston was formed approximately 350 to 400 million years ago, during the Devonian and the slightly older Silurian epochs, within the Paleozoic era. This bedrock was originally sedimentary, having been deposited when ancient seas covered the area, but later tectonic events to the west and east folded and heated the bedrock, which then became metamorphic. This bedrock occurs in two distinct formations running north to south through Hubbardston. These are the Paxton formation on the east side of town, and the Littleton formation on the west, with a third formation, the Fitchburg formation, interspersed in the Littleton. These formations are composed of sulfidic mica schist. The rocks are soft, and can break down into clays that can hold water tightly, thus making less water available to residential wells.

Surficial Geology

The surficial geology of the town is more variable than the bedrock geology. In many ways, the topography, soils and hydrology of the town have been more influenced by the surficial geology, created by the most recent geologic event - the great glaciers of the Pleistocene Epoch 10,000-15,000 years ago. These glaciers churned over the landscape and left behind remnants that can still be seen today. River courses follow distinct north-south routes, the same direction as glacial movement, large deposits of

sand and gravel are prevalent from outwash from glacial meltwater, and huge boulders erratically carried from northerly mountaintops are strewn across town.

Most of Hubbardston is covered by unsorted rocks, stones, and soils called “till”. Till is eroded geologic materials deposited as glaciers retreat. Where glaciers scoured over bedrock, bedrock outcrops remained. Where they rode over loose material on top of bedrock, rounded hills, called “drumlins,” were formed. Depressions carved out by the glaciers created today’s ponds, bogs, wetlands, and stream valleys. Since the glaciers, wind and water erosion have left numerous alluvium deposits along flood plains. Figure 10 shows the surficial geology of the town.

Topography

Hubbardston’s terrain is comprised of rolling hills with elevations from 780 feet above sea level along the West Branch of the Ware River to 1,313 feet above sea level at the peak of Canesto Hill, at the Templeton border. The terrain is relatively level in eastern parts of town at around 1,000 feet. Slopes range from 0%, up to 25%, with 8% - 15% predominating. The steep slopes over 15% are more susceptible to erosion, and thus, are a constraint to development. Topographic contour lines are shown on Figure 10.

Soils

Due to glacial deposits of soil materials from distant origins, soils in Hubbardston are partially non-indigenous. However, the parent material of the underlying bedrock has influenced the soils acidity and rusty appearance.

Wetlands cover much of the town of Hubbardston. A look at the town’s soil structure illustrates this well. Approximately 34% of Hubbardston’s soils consist of Bucksport/Wonsqueak and Pillsbury/Peacham Associations, characterized by the poorly- to very -poorly-drained organic soils (mucks). These soils’ qualities, such as wetness, low strength (bearing capacity) and stoniness (Pillsbury/Peacham) severely limit a site’s development capabilities for septic suitability and buildings.

Much of the remaining soils in town consist of well-drained to excessively well-drained soils. Approximately 38% of these soils consist of Peru/Marlow and Woodbridge/Paxton Associations, generally considered significant for agriculture. These areas are gently sloping to very steep, with very deep, well- drained to excessively well-drained soils on drumlins. Formed in compact glacial till, these soils have the following qualities: 1) friable fine sandy loam, 2) sandy loam surface soil and subsoil with moderate permeability over very firm, fine sandy loam, or 3) sandy loam substratum (hardpan) at 15 to 30 inches, with moderately slow to very slow permeability. Use limitations in these associations are related to wetness, slow permeability in the substratum, slope and stoniness. They have a perched, seasonal high water table at 18 to 24 inches. Figure 11 shows the location of prime agricultural soils in Hubbardston.

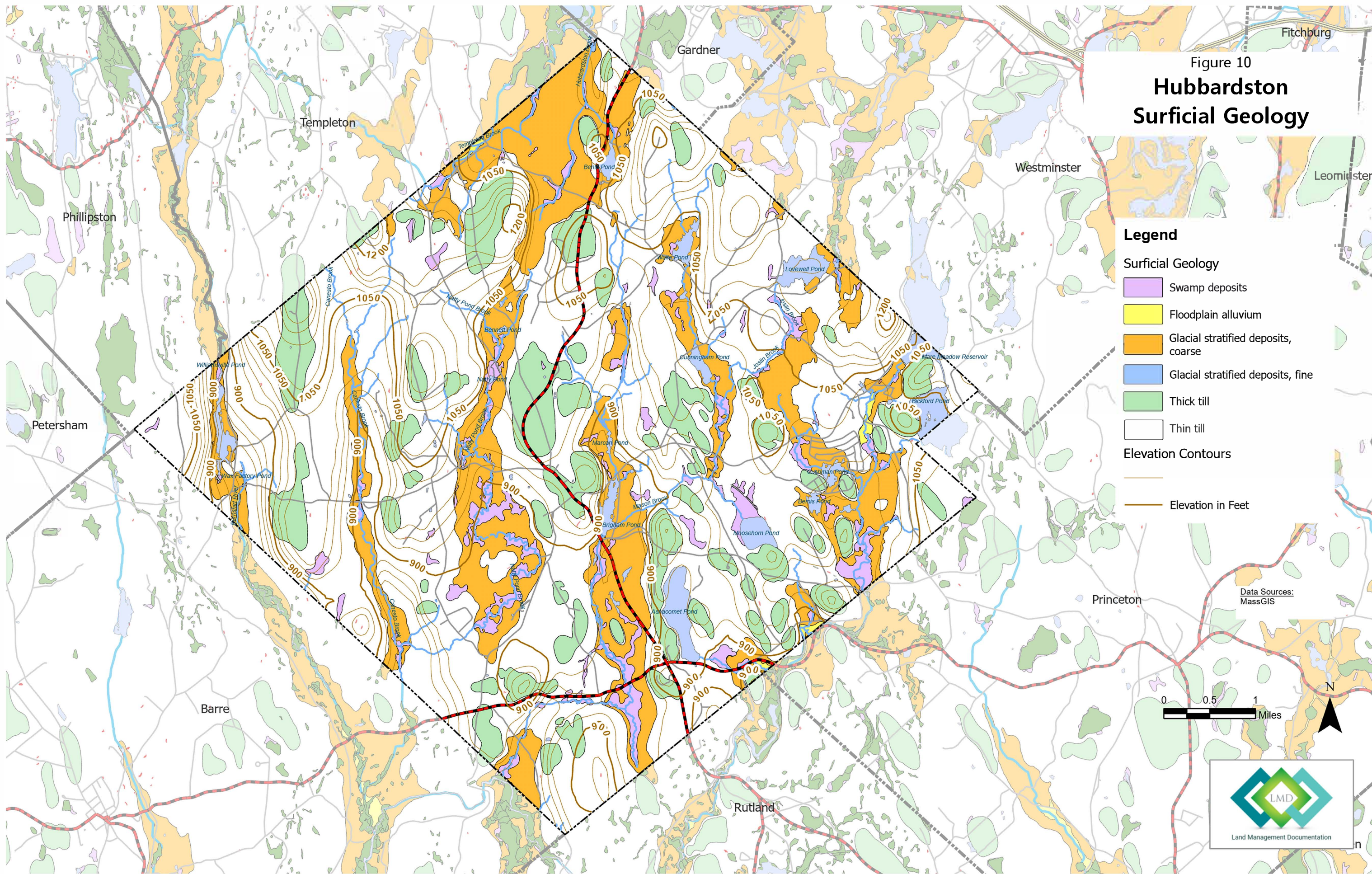


Figure 10
**Hubbardston
Surficial Geology**

Legend

Surficial Geology

- Swamp deposits
- Floodplain alluvium
- Glacial stratified deposits, coarse
- Glacial stratified deposits, fine
- Thick till
- Thin till

Elevation Contours

- Elevation in Feet

Data Sources:
MassGIS

0 0.5 1
Miles



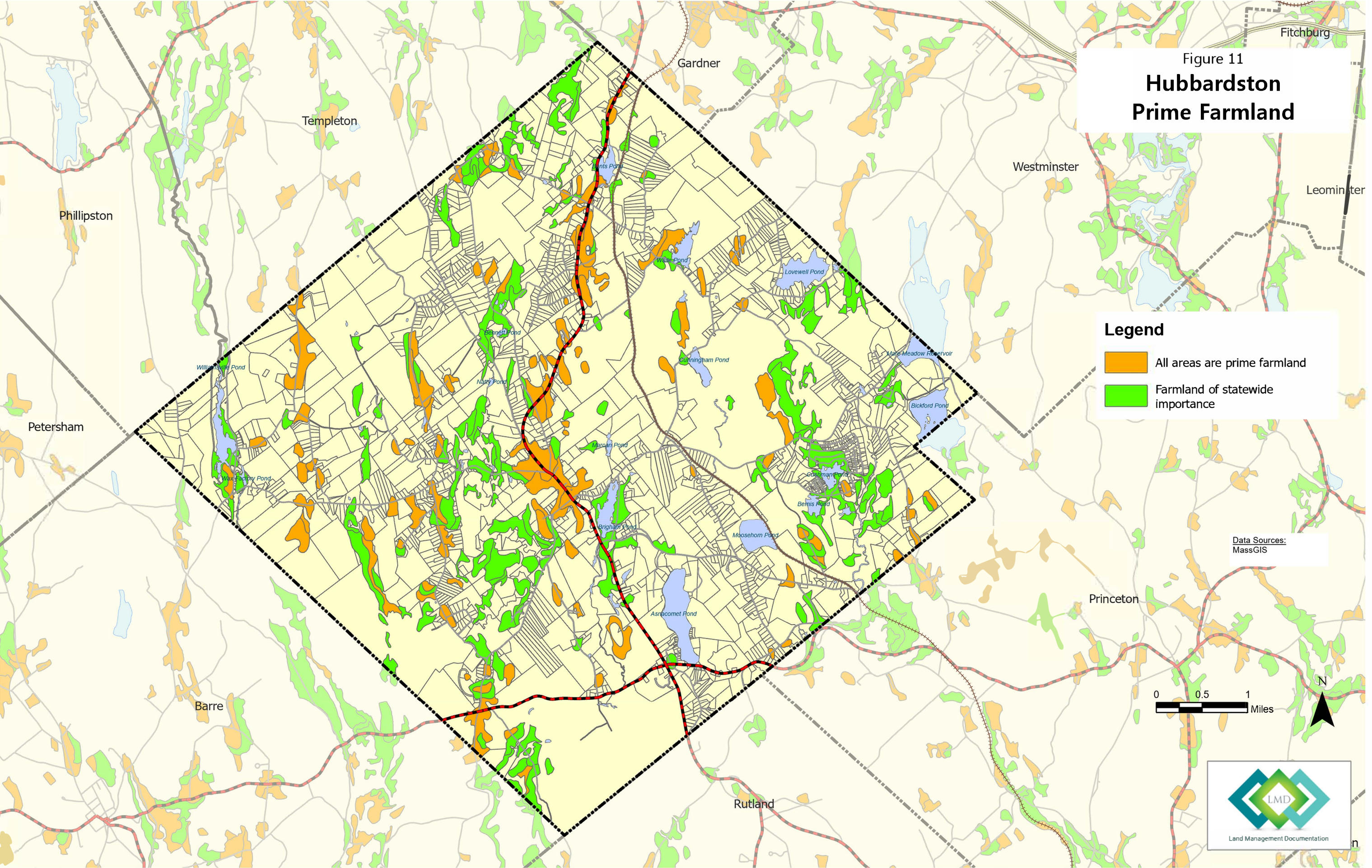


Figure 11
**Hubbardston
Prime Farmland**

Legend

- All areas are prime farmland
- Farmland of statewide importance

Data Sources:
MassGIS

0 0.5 1
Miles



B. Landscape Character

Land Cover

According to land use statistics available from 2016, Hubbardston's land use is dominated by forests, a landscape that is exactly opposite to that of a century ago. Today, over 85% of Hubbardston's land is covered by woodlands, wetlands, and other mixed habitat. Approximately 5% is open land, pastures, and crop land. Approximately 3% of town is under water, and the remaining land is residential/commercial impervious areas and structures. Table 8 shows a summary of land cover by type. Figure 12 graphically denotes the town's land cover types as of 2016.

Table 8 2016 Land Cover

Land Cover Type	Acres	Percent
Bare Land	194	1%
Cultivated	2	0%
Deciduous Forest	8,890	33%
Developed Open Space	832	3%
Evergreen Forest	11,233	42%
Grassland	517	2%
Impervious/Buildings	611	2%
Palustrine Aquatic Bed	85	0%
Palustrine Emergent Wetland	839	3%
Palustrine Forested Wetland	1,658	6%
Palustrine Scrub/Shrub Wetland	179	1%
Pasture/Hay	681	3%
Scrub/Shrub	349	1%
Water	799	3%
TOTAL	26,871	100%

Source: MassGIS in collaboration with the National Oceanic and Atmospheric Administration's (NOAA) Office of Coastal Management (OCM). Land use categories are based on interpretation of aerial multispectral imagery from the 2016 USDA National Agricultural Imagery Program (NAIP) and other environmental resource data.

Land Uses

An alternate way of thinking about land use has also been developed by MassGIS from the same dataset and is presented in Table 9. This categorization scheme cross-references the polygon data developed from the Land Cover classification scheme above with land use codes contained in the municipal assessor data provided to the MA Department of Revenue. The detailed land use codes in the assessor data have been simplified into the 14 categories of generalized land uses shown in Table 9. One item that stands out in this table is the high percentage of tax exempt land due to the large amount of State-owned land in the Ware River Watershed.

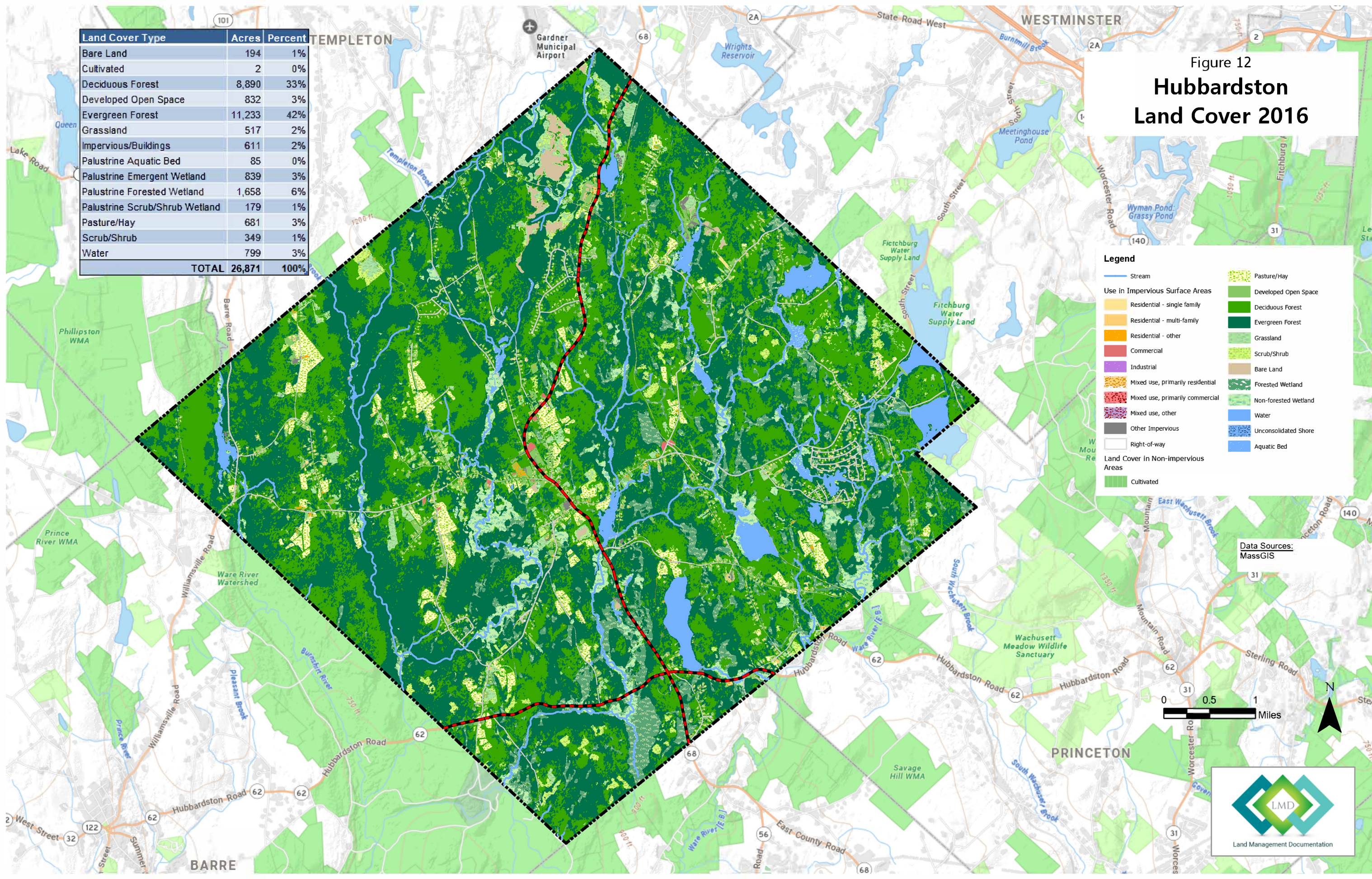


Figure 12
**Hubbardston
 Land Cover 2016**

Data Sources:
 MassGIS



Table 9 2016 Generalized Land Uses

Generalized Use/Tax Status	Acres	Percent
Agriculture	657	2%
Commercial	248	1%
Forest	1,047	4%
Industrial	736	3%
Mixed use, primarily residential	254	1%
Open land	3,055	11%
Recreation	507	2%
Residential - multi-family	459	2%
Residential - other	1,981	7%
Residential - single family	5,215	19%
Right-of-way	600	2%
Tax exempt	11,831	44%
Unknown	94	0%
Water	186	1%
TOTAL	26,871	100%

Source: MassGIS

A third way to visualize land use in Hubbardston is to look more closely at how tax revenues are actually collected by the Town. Inevitably, the implications of open space protection upon the Town's tax base are a large part of the political debate when it comes to public policy choices. The data presented in Figure 13 FY23 Tax Revenue Potential and Table 10 provide a view of Hubbardston Assessor's tax parcels organized into categories germane to municipal planning and policy choices, based on land use codes and other information.

It should be noted that not all forms of the tax exempt land previously listed in Table 9 are created equal. All State-owned lands in Hubbardston are enrolled in one of two Payment In Lieu of Taxes (PILOT) programs as shown in Table 10, which contribute >\$400,000 per year to the Town budget. It is also useful to know that approximately 15% of the Town's land is enrolled in Chapter 61x programs that are taxed at a very low rate.

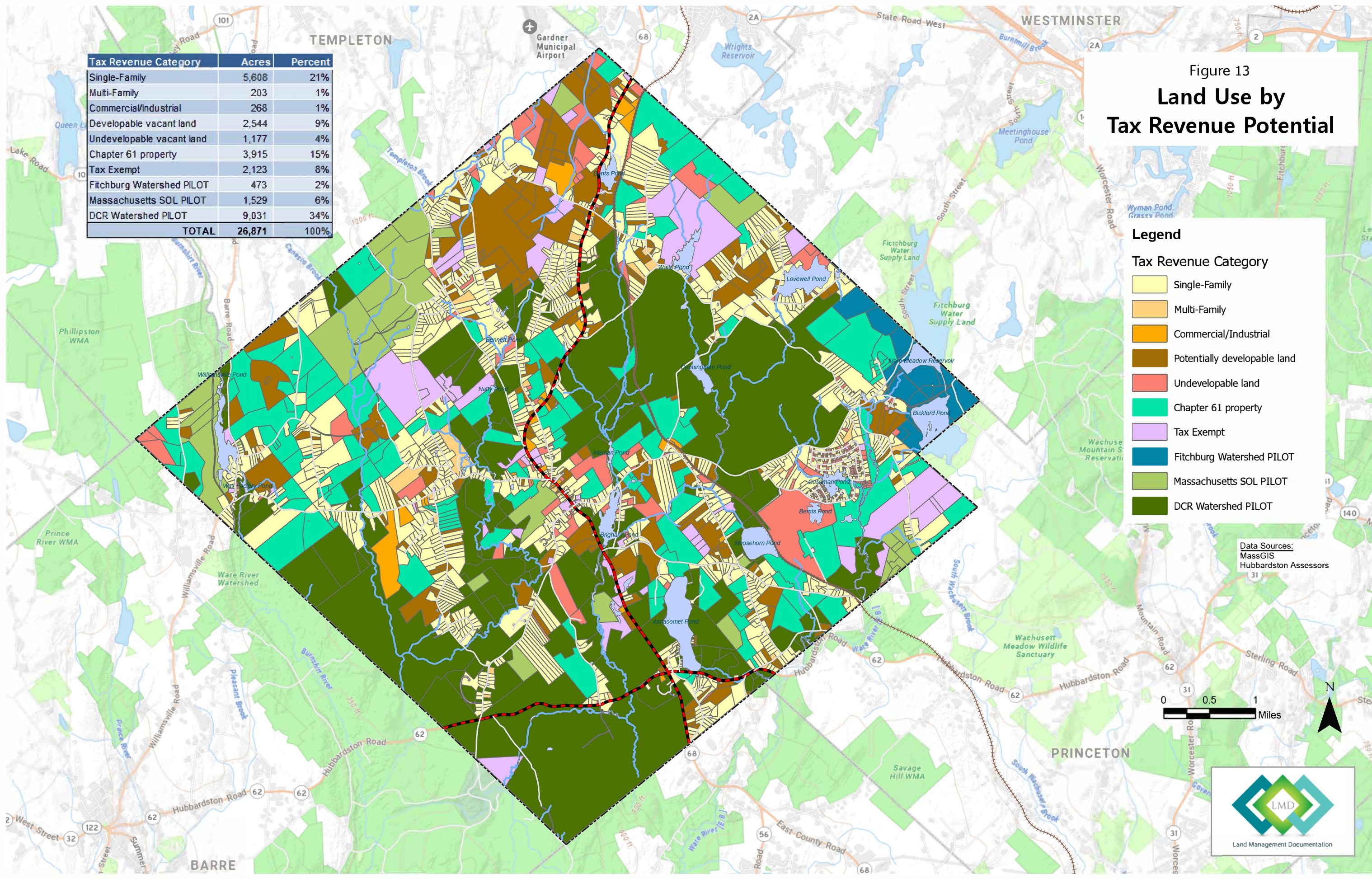


Figure 13
**Land Use by
Tax Revenue Potential**

Tax Revenue Category	Acres	Percent
Single-Family	5,608	21%
Multi-Family	203	1%
Commercial/Industrial	268	1%
Developable vacant land	2,544	9%
Undevelopable vacant land	1,177	4%
Chapter 61 property	3,915	15%
Tax Exempt	2,123	8%
Fitchburg Watershed PILOT	473	2%
Massachusetts SOL PILOT	1,529	6%
DCR Watershed PILOT	9,031	34%
TOTAL	26,871	100%

Legend

Tax Revenue Category

- Single-Family
- Multi-Family
- Commercial/Industrial
- Potentially developable land
- Undevelopable land
- Chapter 61 property
- Tax Exempt
- Fitchburg Watershed PILOT
- Massachusetts SOL PILOT
- DCR Watershed PILOT

Data Sources:
MassGIS
Hubbardston Assessors



The categories of “Developable vacant land” and “Undevelopable vacant land” in this dataset have been interpreted with the use of additional information not found in the Assessor’s database. For example, if a parcel is known to be permanently protected, then it is categorized as “undevelopable”, although that may not be the land use code assigned to it in the Assessor’s records. Likewise, parcels that could be developable under certain planning scenarios, such as former gravel pit properties, are categorized here as “developable”.

Table 10 FY2023 Tax Revenue Potential

Tax Revenue Category	Acres	Percent
Single-Family	5,608	21%
Multi-Family	203	1%
Commercial/Industrial	268	1%
Developable vacant land	2,544	9%
Undevelopable vacant land	1,177	4%
Chapter 61 property	3,915	15%
Tax Exempt	2,123	8%
Fitchburg Watershed PILOT	473	2%
Massachusetts SOL PILOT	1,529	6%
DCR Watershed PILOT	9,031	34%
TOTAL	26,871	100%

Source: FY2023 Hubbardston Assessor database

Watershed Status a Major Factor

One of the reasons that Hubbardston is predominantly undeveloped is because of its placement in the state’s watershed system. The DCR Division of Water Supply Protection (DCR-DWSP) is responsible for the stewardship of over 92,000 acres of critical lands and 45.6 square miles of reservoir surface water within the watersheds of the Quabbin, Wachusett, and Sudbury Reservoirs, and the Ware River in order to protect the municipal drinking water supply for current and future generations. Hubbardston is part of the approximately 60,000-acre Ware River watershed (also wholly or partly situated in the towns of Rutland, Phillipston, Oakham, Barre, Templeton, Princeton, and Westminster), and DCR-DWSP owns approximately 23,000 acres of that total acreage. DCR land acquisition and water supply efforts have created some large, unfragmented and undeveloped tracts of land in Hubbardston. A large acreage is also owned by the City of Fitchburg for water protection as shown in Table 10.

C. Water Resources

Surface Hydrology

Drainage Basins

Hubbardston's surface drainage network of streams, ponds, and wetlands is the direct result of the topography. The drainage network is perhaps the most important environmental feature that should be considered in open space planning. Phil Lewis, a Wisconsin land-use design expert who based his state's open space protection plan on drainage networks, refers to them as a "string of pearls" where rivers and streams are the "string" and ponds, wetlands, endangered species habitats, rich floodplains, historic sites, etc. are the "pearls". Protection of these networks thus provides prime wildlife habitat, recreational opportunities, water supply protection, historic preservation, and other important aspects.

The drainage network can be partitioned into drainage basins, often called watersheds. A watershed is the land area over which water from precipitation collects and flows to a particular stream or river and its tributaries. Drainage basins can be subdivided into smaller sub-basins surrounding a particular river or stream. Hubbardston is located at the "top" of three of the state's twenty-seven major watershed basins: the Chicopee, Millers, and Nashua River Basins. Most of Hubbardston lies within the Chicopee River Basin (Ware River Watershed) (90%), with the remainder of Hubbardston in the Millers River Basin (Otter River Watershed) (9%) and the Nashua River Basin (less than 1%). The Chicopee and Millers River Basins are part of the Connecticut River Drainage System. Drainage basins and other surface hydrology features are shown on Figure 14 Hubbardston Water Resources.

Rivers and Streams

Various rivers and streams in the drainage system make their way through Hubbardston. The Burnshirt River enters Hubbardston from Templeton, to the northwest, and then travels for almost six miles through Hubbardston, combining with Canesto and Natty Pond Brooks and entering the Ware River before flowing into Barre. The East and West Branches of the Ware River are also significant watercourses within Hubbardston. The West Branch originates in Hubbardston and flows for five miles south before entering Rutland. The East Branch begins in Westminster, flows for almost three miles in Hubbardston and continues southward to Princeton. The Ware River ultimately supplies drinking water to Quabbin Reservoir or directly to the Wachusett reservoir through the Quabbin Aqueduct during the nine high-water months from October through June. Diversions of water from the river are conveyed into the Quabbin Reservoir through the two-way Quabbin Tunnel. Water flows west from the Ware River to the Quabbin during the high-water months and east from The Quabbin to Wachusett the rest of the year.

Numerous streams and brooks are tributaries to these rivers, some of which are small and join to form the larger streams. Canesto Brook, Hubbardston Brook, Joslin Brook, Mason Brook, Natty Pond Brook and Templeton Brook are a few of the most significant tributaries.

Ponds

There are fifteen ponds in Hubbardston that range in size from 2 to 127 acres (see Table 11) and a few other small ponds that are smaller than two acres. These ponds are great recreational assets in Hubbardston, providing opportunities for boating, swimming, and fishing and other pastimes.

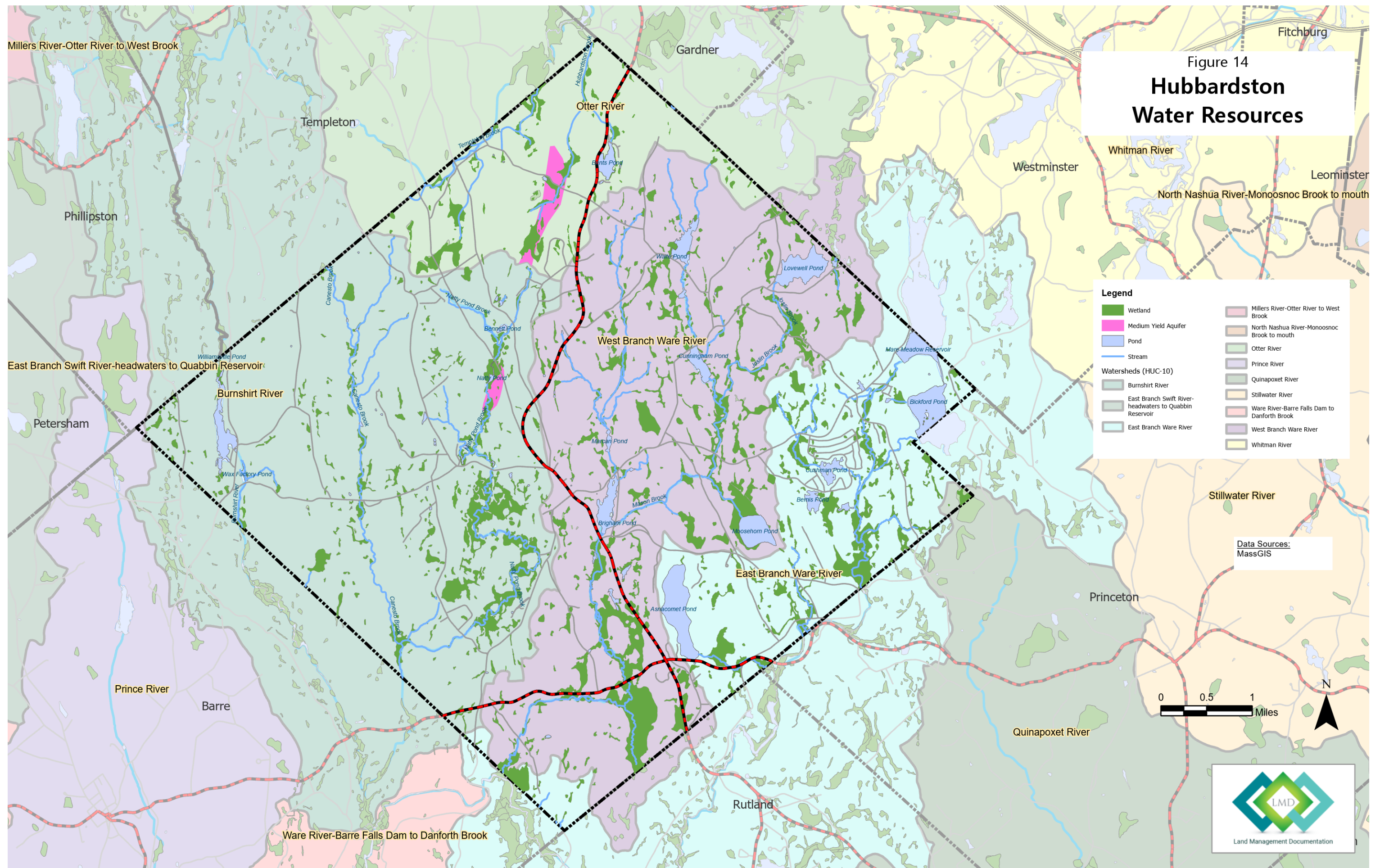


Table 11 Ponds of Hubbardston

Name	Acreage
Asnacommet Pond	127
Bemis (Road) Pond	16.4
Bennett Pond	2
Bents (Sawyers) Pond	28.7
Bickford Pond	163 (Half is in Princeton)
Brigham Pond	46.9
Cunningham Pond	27
Cushman (Perry Hill) Pond	23
Lovewell Pond	81.6
Marcan (Marean) Pond	62
Mare Meadow Reservoir	240
Moosehorn Pond	67.4
Natty Pond	3
Tannery Pond	5
Waite Pond	34.4
Williamsville Pond	57

Wetlands

Wetlands are a very important resource for wildlife habitat, water purification, groundwater recharge, and flood control. Many species of flora and fauna only occur in wetlands. Numerous types of wetlands exist in Hubbardston, comprising approximately 1,200 acres. Figure 12 illustrates these wetlands.

Groundwater Hydrology

Well Yields

Despite the clays in the bedrock, well yields in Hubbardston are adequate for residential development on the minimum required lot size of 80,000 square feet. Aquifers in the town are bedrock aquifers; thus, wells in the town are bedrock artesian wells. The average residential well depth is around 100 to 150 feet deep; although well depths can range up to 400 feet deep when low yields (1 to 1.5 gallons per minute) require some storage capacity. However, well yields in the northwestern section of town are higher, with 20-30 gallons per minute capacity. Thus, well yields in the town are quite variable, but on the average, wells in the town need to be deeper than in other surrounding towns.

Well Water Quality

Because of the iron sulfide in the bedrock formations, sulfuric acid forms when the bedrock decomposes, causing a low pH in ground water of 6.2 to 6.5. The iron and manganese in the bedrock affect secondary standards of taste and odor, causing a rusty appearance in well water. The iron sulfide can also cause a sulfur smell in water from about one out of every six wells in the town. The Paxton formation also contains arsenic, a naturally occurring element under these geological conditions. Radon gas is also likely to be a natural by-product of the geological character of our region. Both arsenic and radon, although present and with potential public health effects under certain conditions, must be evaluated on a structure-by-structure basis.

Aquifers and Recharge Areas

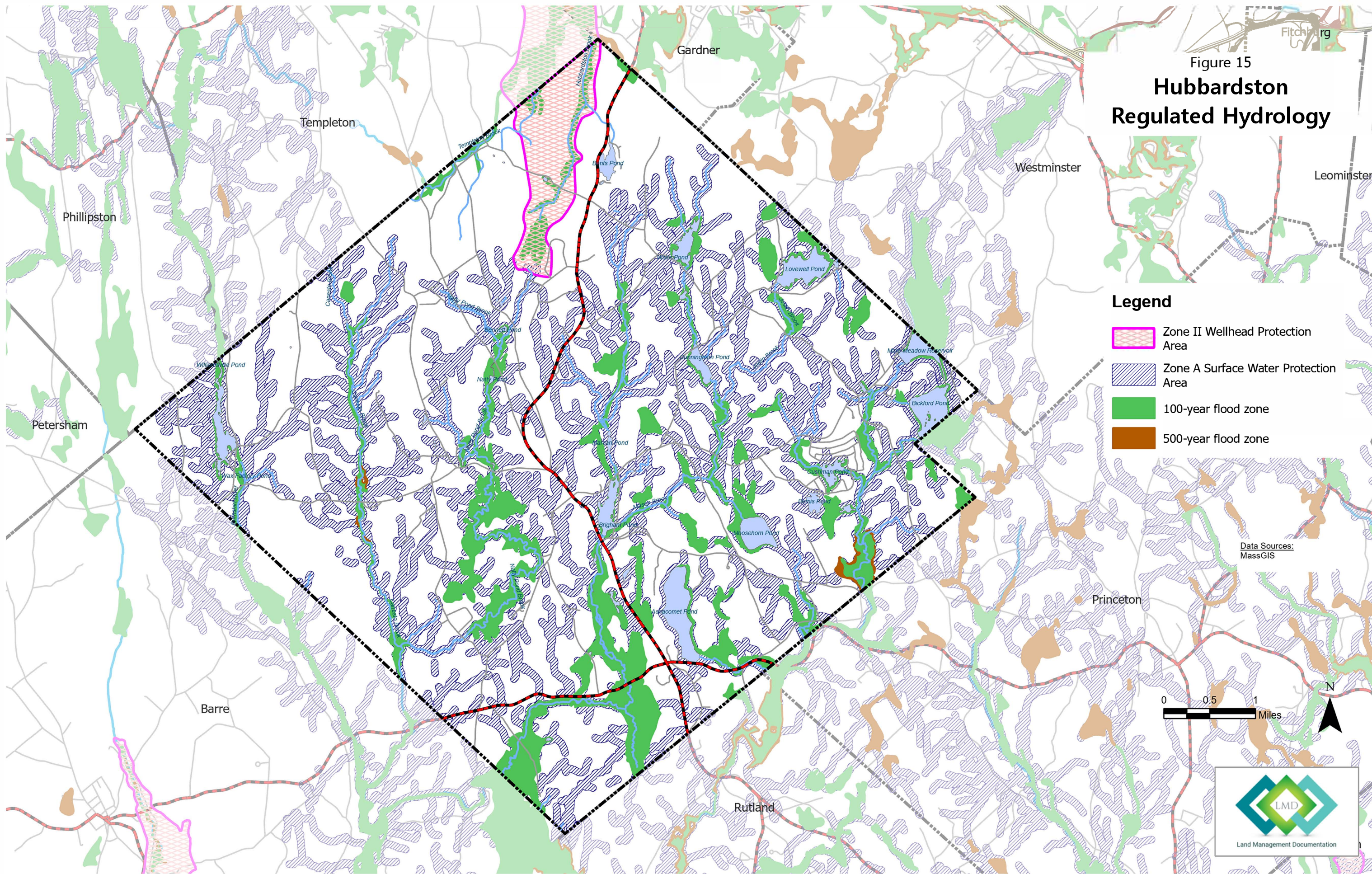
An aquifer is an underground layer of rock, sand, or gravel that contains water in sufficient quantities to supply a well. The stratified glacial deposits in the region's stream valleys form the best aquifers in the Otter River watershed. Templeton and Hubbardston Brooks flow through a landscape characterized by rich sand and gravel deposits that have been extensively mined. The drainage basin for Hubbardston Brook contains a medium-yield aquifer, shown on Figure 14.

Flood Hazard Areas

Floodplains are considered to be the lowlands adjacent to streams, rivers, or lakes that are susceptible to flooding. Floodplains serve two primary functions: channeling of floodwaters downstream, and impeding the flow of floodwater throughout the area. Floodways adjacent to water bodies serve as channels for diverting high waters. At the outer edge of the floodplain, the flood fringe is subject to flooding less often and at more shallow depths.

Floodplains are determined by the frequency of a flood that covers a specified area, e.g. a 100-year floodplain may flood every 100 years. Flood frequencies are calculated by plotting a graph of the occurrence and size of all known floods for a specific area and thus determining how often floods of a particular size will occur.

The 100-year flood plain areas (those designated as Zone A by FEMA flood insurance maps) in Hubbardston occur along all mapped streams and ponds in Hubbardston, although the widths of the floodplains vary with the topology. The most extensive floodplain areas occur along the East and West Branches of the Ware River, and the lands adjacent to Moosehorn Pond, all in the southern portion of town as shown on Figure 15.



Public Water Supplies

Surface Water Supply Areas

Although the town doesn't have its own public drinking water supply, most of the small streams in Hubbardston are tributaries to the Ware River, and ultimately to the public water supply for the metropolitan Boston area at the Quabbin Reservoir. All contributing surface sources are classified by the Department of Environmental Protection as "Outstanding Resource Waters", their highest classification, and much of the town is subject to regulations promulgated in either 310 CMR 22.00, the Massachusetts Drinking Water Regulations, or in 313 CMR 11.00, the Watershed Protection Act. Figure 15 shows the buffer areas surrounding streams that are defined as Zone A Surface Water Supply Protection Areas under 313 CMR 11.00. The associated regulations have an impact on the types of uses allowed in these areas.

DCR-DWSP maintains one Core tributary water quality monitoring station (Site ID 107A) in Hubbardston on the West Branch Ware River at Brigham Road. Water is sampled on a regular basis for coliform bacteria, nutrients, and miscellaneous field parameters.

Some of the watersheds in Hubbardston also contribute to other municipal water systems. The upper reaches of the East Branch Ware River sub-basin on the east side of Hubbardston contribute to the Mare Meadow Reservoir and Bickford Pond. The City of Fitchburg gets drinking water from Mare Meadow Reservoir and has access to Bickford Pond as an emergency back-up supply. According to Fitchburg's 2002 DEP Source Water Protection Report, the city's population grew rapidly between 1907 and 1930 and, due to periodic drought conditions, Mare Meadow Reservoir and Bickford Pond were added to the system. Bickford Pond has never been used and Mare Meadow Reservoir is used approximately four to six weeks each year during periods of high demand.

A very small area on the eastern side of Hubbardston is located in the Quinapoxet River sub-basin. These headwaters flow to the city of Worcester's Quinapoxet Reservoir.

Zone II Wellhead Protection Area

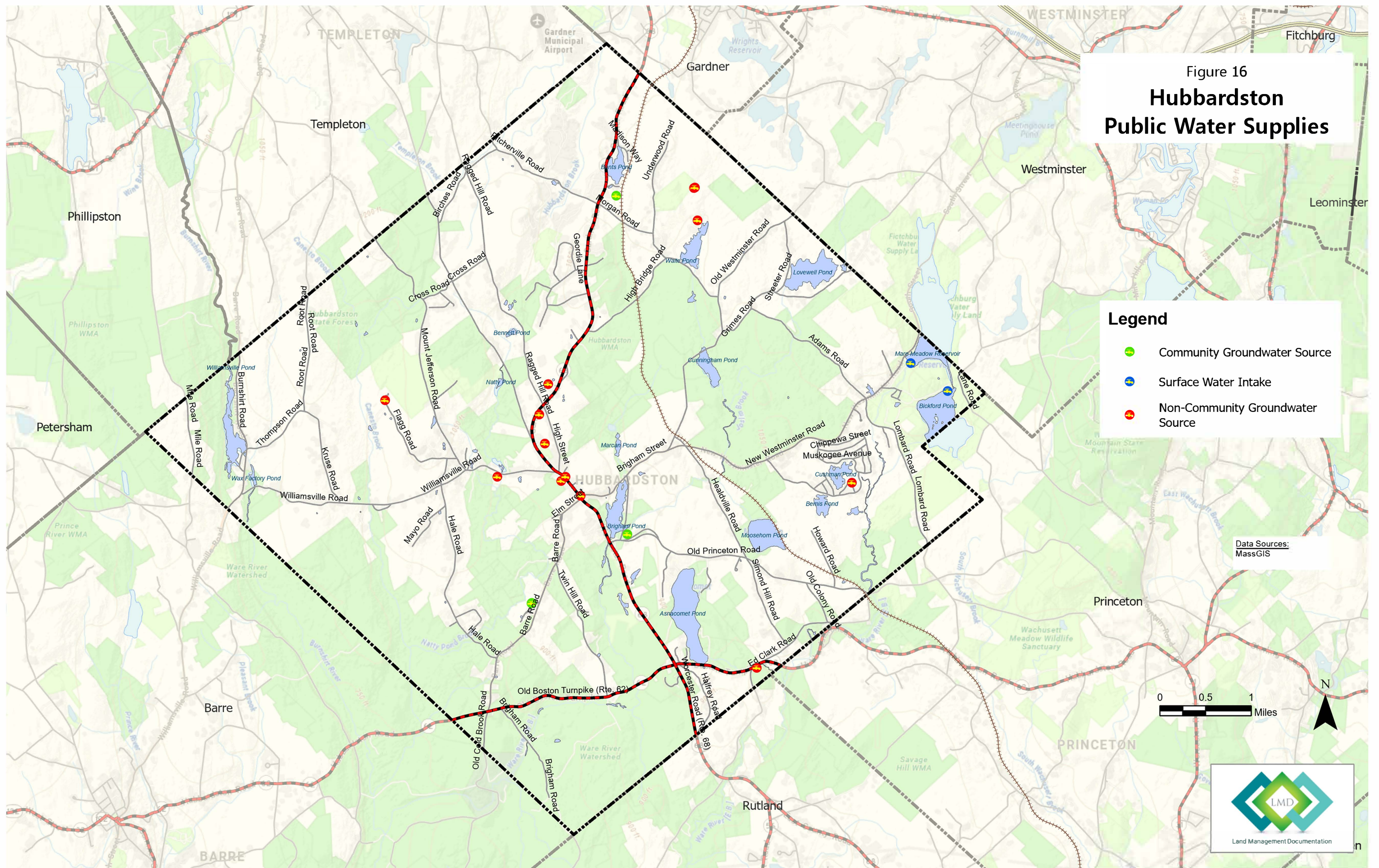
The northern corner of Hubbardston contains a defined Zone II Wellhead Protection Area for the Snake Pond municipal water supply well located to the northwest in Gardner. This area is partially located within former gravel pit excavations and in the vicinity of the headwaters for Hubbardston Brook and Templeton Brook. While the associated State regulations are not directly applicable to the portion of the Wellhead Protection Area located within Hubbardston, protection of groundwater quality in this area is clearly a desirable goal. Hubbardston's Aquifer Favorability Bylaw does in fact encompass this area, and restricts uses that might be detrimental to groundwater quality.

Public Water Systems

Protection of groundwater, water found beneath the surface of the ground within drainage basins, is of vital importance here since all residents obtain their drinking water primarily from drilled wells. In addition to private wells, there are three community public water systems that serve at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents. There are also 9 non-community public water systems within the town that meet the definitions of the Massachusetts drinking water regulations as "a system for provision to the public of piped water for human consumption if such a system regularly serves an average of at least twenty five (25) individuals

daily for at least sixty (60) days per year.” Hubbardston’s Board of Health assists DEP /DSW in the regulation of these non-community public water systems and, along with the State Department of Public Health, regulates private water systems. Locations of the public water systems are shown in Figure 16.

The Department of Environmental Protection maintains several on-line sites, reports, and recommendations with regard to drinking water quality and private and public wells (<https://www.mass.gov/topics/drinking-water>).



D. Vegetation

The plant life of this region is determined by land use, climate, elevation, topography / aspect, and soils/geology. As described earlier, Hubbardston is divided into two eco-regions - the Worcester Plateau and the Lower Worcester Plateau - as defined by these factors. This means that Hubbardston has a diverse variety of trees and plants.

Hubbardston's landscape is dominated by secondary growth forests that have grown back since the time more than 100 years ago when there was substantial clearing of land for timber and agriculture. A majority of these forests are considered "upland," or sites that are fairly dry and well-drained. Oak, hickory, and ash trees dominate the uplands, interspersed with black cherry, basswood, yellow and black birches, and sugar maple. Large stands of white pine are also common in Hubbardston's upland forests. Understory shrubs include witch hazel, striped maple, hazelnut, blueberries, and a variety of ferns and other herbaceous plants.

North-facing slopes and damper, protected areas are dominated by beech, red maple, birch, and green ash. Groves of hemlocks fill valley bottoms, especially at the toes of north-facing slopes. These places are also known to accommodate some balsam fir and red spruce—softwood trees common to more northerly regions, found here at the southernmost limit of their range. Large, forested wetland complexes are very prevalent along Natty Pond Brook, the lower stretches of Joslin Brook, and at the headwaters of the East Branch of the Ware River. These areas have important wildlife and flood control values. Hubbardston woodlands are facing serious threats from three invasive pests: Hemlock Woolly Adelgid, Emerald Ash Borer and the Asian Long Horned Beetle. (See Section 4 G. Environmental Challenges).

Bogs

Hubbardston also has numerous non-forested wetlands and bogs. A large bog is located around Natty Pond, and another just south of Cunningham Pond along Joslin Brook. Bogs provide unique habitats for many species of wildlife, with deep mats of sphagnum moss (that become peat), Labrador tea, pitcher plants and other plant species. Shrub swamps, with thickets of dogwood, willow, and alder, are also very common in the lower and more level valleys in the southern part of town. Shrub swamps often have wet meadows associated with them.

Fields and Open Land

Many open fields remain throughout Hubbardston. Hayfields, pastures, other cropland and open fields are important components of the town's character. These are also key habitats, especially for migrating and nesting songbirds and waterfowl. Some bird species, such as Bobolink and Killdeer, rely on open fields and clearings for nest sites. A number of neo-tropical migrant bird species, many of them declining in population, use early-successional cropland for nesting. These areas, dominated by birch, cottonwood/aspen, and other small saplings, provide great cover and food sources for these birds. Many of these lands are privately owned and managed and working with landowners is one way to help protect these resources for the future.

Vegetation Core Habitats

The Massachusetts Natural Heritage and Endangered Species Program (NHESP) has developed a BioMap identifying site-specific “Core Habitats” that exist in Hubbardston. The map identifies the most critical sites for biodiversity conservation, and a summary of each site highlights characteristic natural communities and their associated plant and animal species. Four core habitats are identified: BM518, which also extends into Rutland and Barre, includes riparian habitat and extensive upland forest along the Ware and Burnshirt Rivers and several brooks; BM609, much of which is in the Hubbardston Wildlife Management Area, contains a variety of wetlands, including a Level Bog (dwarf shrub peatland); BM647, which contains a high-quality example of a classic northern Kettlehole Level Bog (acidic dwarf shrub peatland); BM622, which comprises the shoreline and waters of Bickford Pond.

The BioMap/Core Habitat report for Hubbardston identifies three rare plants that are present in BM518: Bartram’s Shadbush (*Amelanchier bartramiana*), classified as “Threatened,” and Dwarf Mistletoe (*Arceuthobium pusillum*) and New England Blazing Star (*Liatris scariosa* var. *novae-angliae*), both species of “Special Concern.” Two plant species documented in towns adjacent to Hubbardston, Thread Rush and Great Laurel, have not been documented but may be present. Further exploration of likely habitats of rare plants is needed in order to complete the assessment of the town’s important natural resources.

Public Shade Trees

Shade trees exist on all Hubbardston’s roadways. On many of the small back roads, branches of large trees span the road. All cemeteries in town are bordered by shade trees. One public shade tree of note, is a giant Beech tree on the Mt Jefferson public parcel. This tree is located just behind the main parking area. The diameter of the shaded portion of this magnificent tree is approximately 100’!

In addition, there are 2 other main sites with public shade trees in Hubbardston, Curtis Recreation Field and Millenium Park. Shade trees play an important role in beautifying the recreation field and providing much needed shade for spectators. Lilac bushes were planted in the very early years of the field along a boundary line and three maple trees were planted around 2005 using funds from a state grant. Similar funds were used to plant trees at Millenium Park. It is likely that more trees will be deemed beneficial for both locations in future years should funding permit.

Efforts are currently underway to beautify the town center and a Town Center Committee has been formed. Some years ago crab apple trees were planted in locations along Main St. by the town. It is very likely planting public shade trees could be a component of any plans to improve the area.

E. Biodiversity and Wildlife Habitat

Combine Hubbardston’s great structural diversity of habitats with its large expanses of protected, undisturbed land, and it’s easy to see why two of the town’s biggest assets are its fish and wildlife resources, both game and non-game species. State biologists recognize this area for its impressive biodiversity. Sportsmen enjoy its ample fish and game opportunities (see Section 5 E.). Naturalists, birdwatchers, photographers and others appreciate the opportunity to study and observe a variety of wild creatures. Both citizens and visitors alike utilize and benefit from the presence of a rich mix of native animals.

Migrant Birds

Non-developed areas of Hubbardston are utilized as feeding and resting areas for many migrant bird species and for nesting by still more neo-tropical migrant birds that use Massachusetts as their breeding grounds. Passage migrants that occur in Hubbardston and that are considered Threatened or of Special Concern in the state include Northern Parula and Blackpoll Warbler. It is likely, although not confirmed, that Cooper's Hawk and Sharp-shinned Hawk, species of Special Concern, nest in Hubbardston.

Meanwhile, it should be noted that many migrant bird species, although not on the state's endangered species list, are considered to be declining in population and/or uncommon, and therefore merit some attention on the part of town planners. These species include Bobolink, Barn Swallow, sparrow species associated with certain types of grasslands, and warblers that use specialized forest habitat. The town included language in its hay license for the Mt. Jefferson Conservation Area specifying that several hayfields will not be mowed until after July 7 to provide dedicated habitat for Bobolinks. The Open Space Committee reclaimed an overgrown meadow at the Malone Road Conservation Area and will mow it every two to three years to manage it for early successional growth.

Wildlife

Hubbardston is home to many common species of wildlife. White tailed Deer, Coyote, Beaver, Raccoon, Porcupine, and Red Fox are abundant mammals here. Black Bear, Fisher, and Moose are found in small numbers. Native brook trout, large and small mouth bass, perch, and a variety of other fishes live in Hubbardston's waters.

Wildlife Corridors

A healthy community ecosystem includes wildlife corridors and "greenways" that allow animals and birds to travel easily over many miles of terrain and therefore not create isolated "islands" of populations. Wildlife populations that are unable to move about can put too much pressure on a given tract of land, depleting the food resources and thereby starving themselves out of their own living spaces. Further, isolated wildlife populations suffer from lack of genetic diversity. Large migration-enabling tracts of land add to overall species biodiversity, too. Fortunately, Hubbardston's present land use structure provides many opportunities for sheltering wildlife and allowing wildlife movement over large, unbroken tracts of undeveloped areas. Interconnected parcels of woodlands are present throughout much of the town. Hubbardston also shares much unfragmented open space with neighboring towns to the west/northwest and south/southeast. The only section of town that probably blocks movement of many, although not all, wildlife species, is the northeastern corner that abuts the outskirts of metropolitan Gardner.

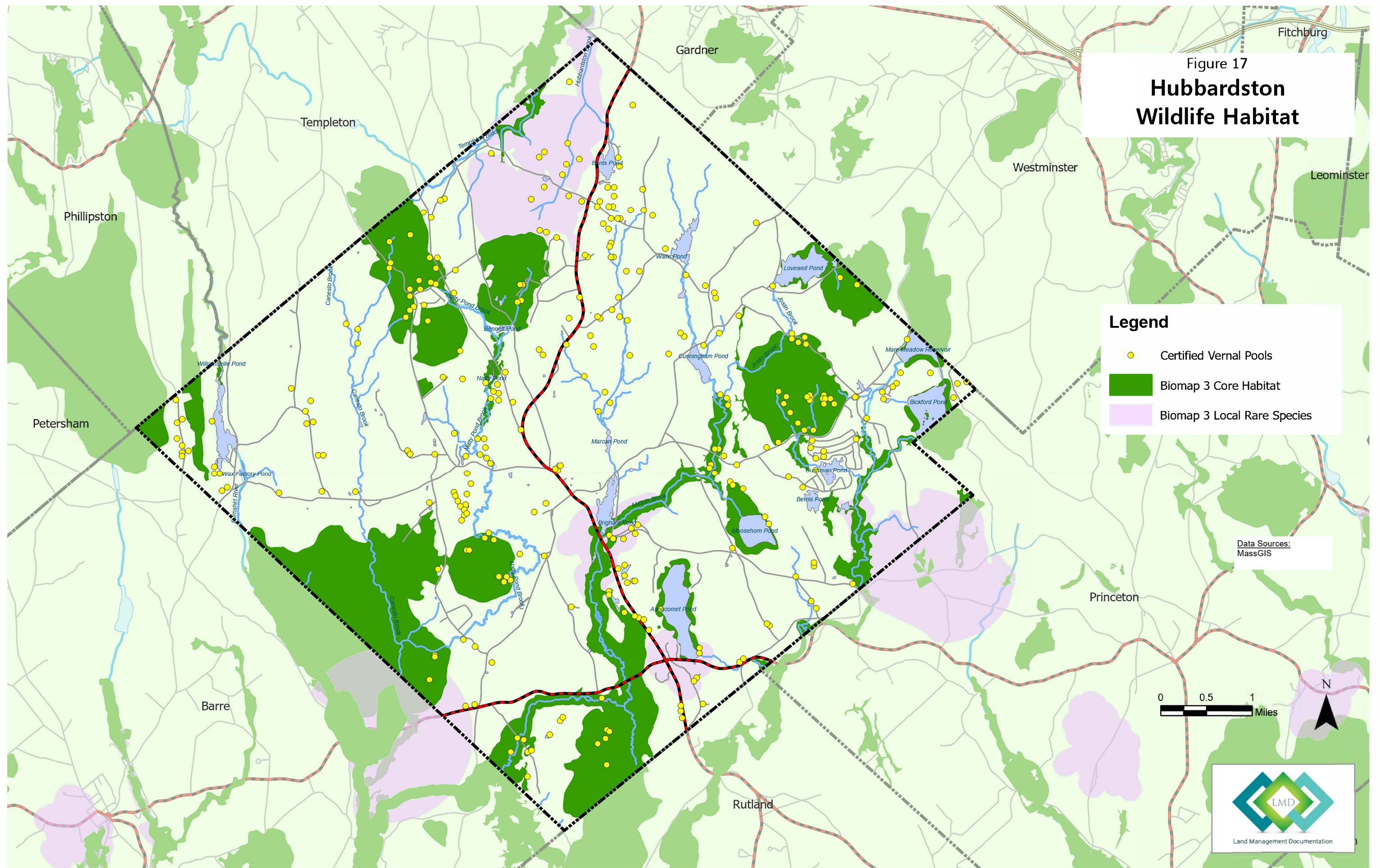
Vernal Pools

Vernal pools, or areas of pooled water that dry up for periods during the year, are prevalent and very well documented resources in this community. The Natural Heritage & Endangered Species Program (NHESP) of Massachusetts Division of Fisheries and Wildlife (DFW) has established criteria for certification of vernal pools. Hubbardston has 311 Certified Vernal Pools, more than any other township in the Commonwealth. Vernal pools host a unique biotic community; they are fish-less and thus lack a heavily predatory trophic system, so many species of animals, especially reptiles and amphibians, rely on these abundant resources for breeding grounds and specialized food sources. Many other animals

whose life cycles are predominantly or entirely terrestrial depend upon vernal pools for nesting materials and food sources (e.g. certain bird species, certain small mammals), for use as watering holes (e.g. deer) , and grazing of emergent vegetation (e.g. moose, small mammals). Vernal pools also act as storage “tanks” for groundwater, allowing surface water to slowly percolate into the ground over time and recharge aquifers. Vernal pools are displayed in Figure 17.

Core Habitat Animal Highlights

In addition to identifying significant plant species the BioMap/Core Habitat project has identified rare and endangered animals associated with the four natural communities cited above. The four locations are: (1) Bickford Pond off of Lombard Road; (2) the wetland area adjacent to Moosehorn Pond; (3) the wetland downstream from Brigham Pond on the west side of Route 68 and (4) the wetland area surrounding Canesto Brook on both sides of Williamsville Road. Core Habitat BM518 lists the status of four invertebrates, three moths and one beetle, which are found there as “Threatened” or of “Special Concern.” Also present in that area are American Bittern (*Botaurus lentiginosus*) (Endangered) and Eastern Box Turtle (*Terrapene carolina*), Four-toed Salamander (*Hemidactylium scutatum*), Jefferson Salamander (*Ambystoma jeffersonianum*) and Spring Salamander (*Gyrinophilus porphyriticus*) and Wood Turtle (*Clemmys insculpta*), all of “Special Concern” status. Core Habitat BM622 is important in supporting Common Loon nesting habitat. The loon is a species of Special Concern in Massachusetts. A rare dragonfly, Beaverpond Clubtail (*Gomphus borealis*), has been found in Core Habitat BM609, and it is likely that other rare vertebrates are also present at this location.



F. Scenic Resources and Unique Features

Figure 18 Scenic & Recreational Resources at the end of this section depicts locations of the many scenic resources and unique environments in the town.

Introduction / Landscape

Like most towns in rural Massachusetts, Hubbardston is primarily forested with numerous fields and farms. Because of its location within the Ware River Watershed there are large tracts of contiguous forests that are permanently protected to preserve the quality of the water flowing into the Quabbin Reservoir. Large tracts of land in the eastern section of town are also conserved to protect the Fitchburg water supply. Indeed, it is probably true to say that Hubbardston's most important resource is its water. Protecting the drinking water supply for millions of people in the metro Boston area and the City of Fitchburg has been the driving force for the slow development or lack of development in the town.

Many of Hubbardston's roads are winding lanes that pass by preserved images of rural New England: woods, open fields, stone walls, ponds, and clapboard houses. In 1975, following the recommendations of the Conservation Commission and the Planning Board, under the provisions of M.G.L Chapter 40, Section 15c, the town approved the designation of the following as scenic roads: Barre Road, Bemis Road, Brigham Street, Flagg Road, Grimes Road, Hale Road, Halfrey Road, Healdville Road, High Street, High Bridge Road, Kruse Road, New Templeton Road, Old Princeton Road, Old Westminster Road, Lombard Road, Mile Road, Mount Jefferson Road, Morgan Road, Pitcherville Road, Ragged Hill Road, Thompson Road, Twin Hill Road, Underwood Road, Upper Intervale Road, Williamsville Road, and Williamsville-Templeton Road. The intention of this designation is to assist with planning along the roadways with regard to preserving aesthetic and natural resources. Repair, maintenance, reconstruction, or paving work on roads with this designation "shall not involve or include the cutting or removal of trees or the tearing down or destruction of stonewalls or portions thereof, except with prior written consent of the Planning Board" and after a public hearing.

Major Characteristics and Geological Features

Hubbardston contains within its borders several natural and managed features that are valuable from a scenic standpoint. The southernmost section of Mare Meadow Reservoir, Barre Falls Dam Reservation, and many of the town's ponds provide attractive waterfront views. There are several points of high elevation that offer outstanding looks toward Mt. Wachusett, the region's most prominent landscape feature. The Mt. Jefferson Conservation Area, which maintains open fields and offers dramatic views of Mt. Wachusett, as well as attractive vistas of church steeples amongst the rolling hills, is a valuable scenic asset to the town. Not as well known, because of its seclusion on the Malone Road Conservation Area, is the view of Mt. Wachusett from the cliffs above Natty Pond. Many of the open vistas in town remain that way because of periodic grazing, mowing, clearing, and stewardship. While a number of our town's most treasured scenic aspects are available on public property, many of the most aesthetically-pleasing viewing points and scenic locations in town are in private ownership. Certain privately-held open-space properties here offer public benefits by contributing to all the positive aspects associated with open space; thus it is wise for the community to work with landowners to ensure the future of the

town's character and scenic resources and with citizens with regard to respect of the rights and privacy of these landowners. Some of Hubbardston's more popular vistas are:

- Mt. Wachusett from upper Mt. Jefferson Road;
- Mt. Wachusett and open meadow from Hale Road;
- Brigham Pond from upper Brigham Road to Evergreen Road;
- Mare Meadow Reservoir from New Westminster Road near Westminster line;
- Mt. Wachusett from George Howard Road;
- Comet Pond from Old Princeton Road.

Cultural, Archaeological, and Historic Areas

Old stone walls crisscross through the forests and tell the story of the town's agricultural past. Most of Hubbardston's agricultural lands have been eaten up by recent housing development but there are still a number of working farms and many small hobby farms. As one resident was noted to say, he moved to the nearest town where he knew he could keep his pigs and no one would complain! The open farmland provides most of the scenic vistas that residents have come to cherish.

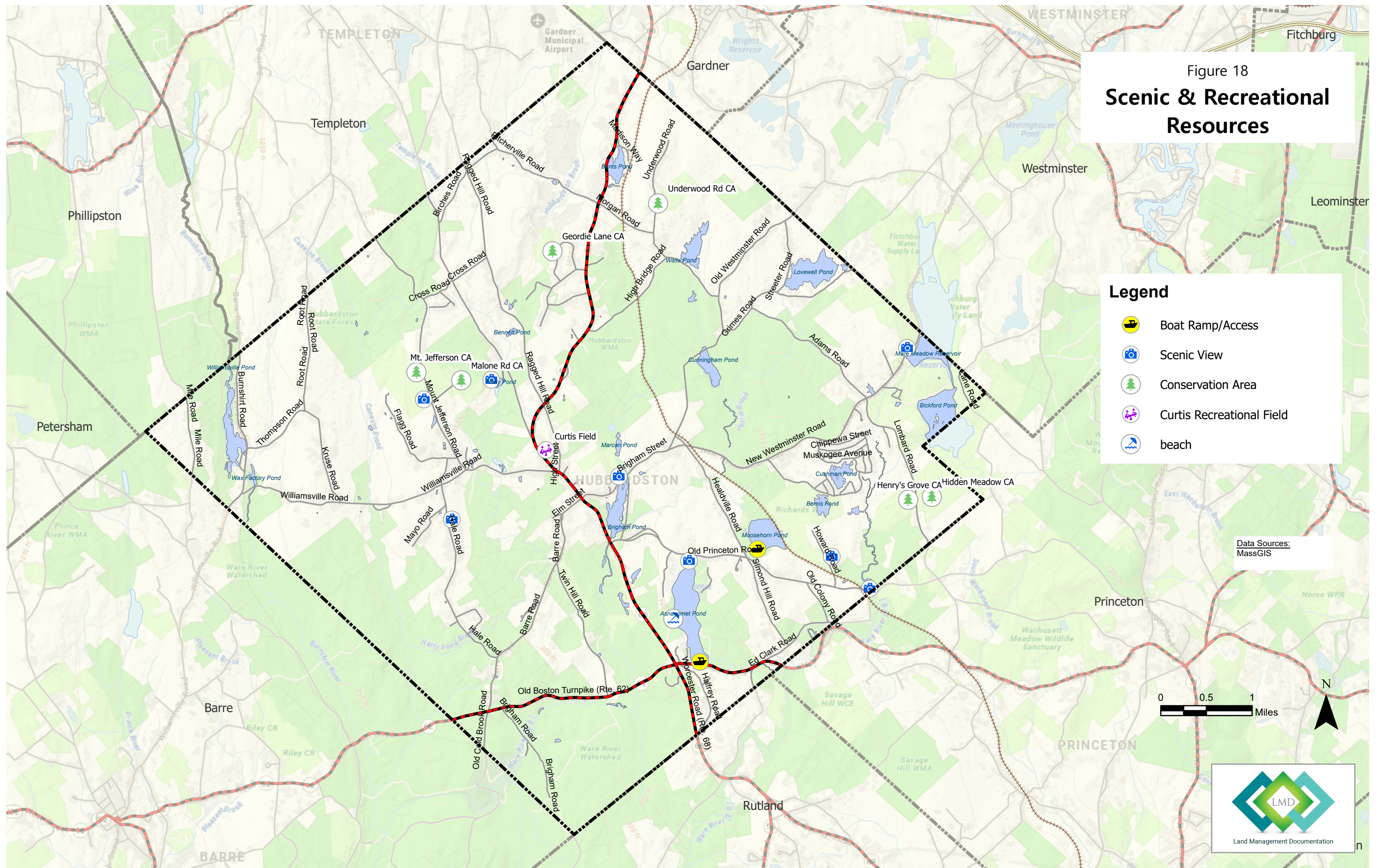
Hubbardston does not have any conservation or recreation property restrictions with regard to historic preservation. Some of the town's sites of historic interest enjoy de facto protection because they are located within the boundaries of areas that are already permanently protected. For example, locations of now-buried pits dating from the town's early mining industry (copperas, an iron-sulfur substance used in making dyes and inks, a wood preservative, and disinfectant for privies), are located on either DCR or state forest properties.

Similarly, much of Hubbardston's extensive network of early mill sites is now within the confines of DCR watershed protection property. Most of the mill site dams and structures were destroyed during severe storms and floods in the 1930s or were dismantled or deteriorated after DCR (formerly MDC) took ownership of land within the watershed, but a few remnant sites remain. Hubbardston's Historical Commission has documented the old mill sites, and there has been some discussion about developing an interpretative trail encompassing at least one remaining mill pond that lies within the Mt. Jefferson Conservation Area/Hubbardston State Forest trail system.

Unique Features

The forests provide important corridors for wildlife, trails for multi-use recreation and a mecca for hunters. Scattered throughout these forests are remnants of the town's commercial past where the rivers and streams that now provide pure drinking water, used to power numerous mills. Numerous old dams mark the sites of former mills. These water bodies are favorite places of relaxation providing havens for fishing, kayaking and swimming.

Hubbardston was the site of a small copperas mine in the mid-19th century. Copperas is an obsolete name for the chemical compound iron sulfate, which usually appears as blue-green crystals or powder. Despite its name, it contains no copper. Copperas had many early industrial uses including dyeing, tanning, and making of ink. It was discovered during construction of the new Templeton road in 1828 and was mined through the 1830s. In 1832, 100 tons were extracted by ten men; by 1837, only 41 tons were removed, and by 1875, operations had ceased. This area is currently part of Hubbardston State Forest.



The northwest section of town is an area of vast gravel reserves that have been heavily mined over the years. Ironically the same area contains one of the town's most important aquifers and is within the Zone II protection area for the City of Gardner's Snake Pond Well. There is also a large area of NHESP priority and core habitat located within the gravel reserves. Thoughtful reclamation of the played out gravel pits and careful planning for future development are vital for this important environmental area.

G. Environmental Challenges

Hazardous Waste Sites

With little industrial/commercial activity, there are relatively few reportable releases or waste sites in Hubbardston, as shown in Table 12. Most of the reported sites have involved petroleum-based spills of fuels or oils and have achieved closure status through either a Response Action Outcome (RAO) or a permanent solution (PSNC, PSC).

The only currently active site in Hubbardston is the Lot 57 site on Pitcherville Rd, which is owned by the Town of Hubbardston. This is a former gravel pit that was also historically used as a shooting range. Site investigations have found limited quantities of lead-contaminated soil in the backstop area of the former shooting range. The site is currently in Phase II of the cleanup process and working its way toward selection of a remediation option that will lead to a permanent solution.

Table 12 Waste Sites & Reportable Releases

RTN	Release Address	Site Name	Notification Date	Compliance Status
2-0021771	PITCHERVILLE ROAD	LOT 57 - TOWN OF HUBBARDSTON	11/15/2021	TIER 2
2-0021144	FRONT OF 35 BURNSHIRT RD	ROADWAY RELEASE	02/07/2020	PSNC
2-0019829	MORGAN ROAD	P&W RAIL GARDNER BRANCH MILE POST 24	03/30/2016	PSC
2-0019178	129 WILLIAMSVILLE ROAD	HYDRAULIC OIL RELEASE	04/24/2014	PSNC
2-0018495	WORCESTER ST @ ELM ST	HYDRAULIC OIL SPILL	02/13/2012	RAO
2-0016423	27 OLD COLONY RD	FORMER CURTIS LUMBER	10/13/2006	RAO
2-0015527	35 MAIN ST	MR. MIKES MINI MART	02/11/2005	RAO
2-0014309	33 MAIN ST	MR MIKES GAS STN	11/09/2000	RAO
2-0013786	54 GRIMES RD	UTILITY POLE NO 21	04/22/2001	RAO
2-0013463	10 MAIN ST	FLEMING PROPERTY	09/18/2000	RAO
2-0012223	PITCHERVILLE RD	ROADWAY RELEASE	05/20/1998	RAO
2-0011908	245 GARDNER RD	RESIDENCE	10/02/1997	RAO
2-0011852	15 OLD BOSTON TPKE	WAIN ROY INC FRM WOODS EQUIPMENT CO	08/22/1997	RAO
2-0011714	12 OLD WESTMINSTER RD	WACHUSETT LUMBER	05/02/1997	RAO
2-0011280	64 WORCESTER RD	HIGHWAY DEPT	06/18/1996	RAO
2-0011206	BRIGHAM ST	HAKALA BROTHERS CONSTRUCTION CO	04/25/1996	RAO
2-0010974	63 WORCESTER RD	DAVID ROY TRUCKING	10/26/1995	RAO
2-0010702	12 OLD WESTMINSTER RD	WACHUSETT LUMBER CO	03/14/1995	RAO
2-0010285	MT JEFFERSON RD	ILLEGAL DUMPING	04/25/1994	RAO
2-0000373	15 OLD BOSTON TPKE	WAIN-ROY INC	04/22/1988	RAO
2-0000260	35 MAIN ST	KENS GROCERY FMR	09/16/1987	RAO

Source: <https://eeaonline.eea.state.ma.us/portal#!/search/wastesite/results?TownName=HUBBARDSTON>

Water Quality Management

A very important environmental concern for Hubbardston, and, indeed, most communities, is water quality protection. Hubbardston's situation is even more important, however, because, as mentioned earlier, much of the town lies within the DEP Class A Water Supply District, contributing to the public drinking water supplies of many Massachusetts residents. Most of Hubbardston, a major feed to the Ware River Watershed, has been designated as an Outstanding Resource Waters region because waters for both Quabbin and Wachusett Reservoirs originate here. These waters are considered exceptional for their socio-economic, recreational, ecological and/or aesthetic values. The waters are valued for their high drinking water quality and have more stringent protection requirements than other waters; no lowering of water quality is permissible.

In the 2004 Massachusetts Water Policy report, the Water Policy Task Force of the Executive Office of Environmental Affairs stated that one of the state's biggest challenges is maintaining sufficient quantities of stream flow so as to sustain ecological and anthropogenic demands. Massachusetts receives 44 inches of rainfall per year that fills our reservoirs and streams, and sustains our aquifers. In dry years, the amount of water remaining in our streams often becomes dangerously low. In the summer months, the thin, discontinuous aquifers of eastern and central Massachusetts and the limited aquifers (mainly fractures in bedrock) of western Massachusetts provide the only source of stream flow. The combination of high summer demand and low stream flows can adversely impact water availability and quality, vegetation and fish counts.

The Task Force Report advises that better use patterns will help minimize the need to develop new sources of water supply, and that we also need to rethink where the water that we use goes. Existing infrastructure often transports precipitation away from where it lands instead of letting it infiltrate. Transporting dirty water far from its source made sense historically, but today, with significant improvements in wastewater treatment techniques and standards, treatment levels often make the water available for reuse or recharge, thereby replenishing the natural stream flows and aquifers in the basin or sub-basin.

The report goes on to state that the Commonwealth also has impaired waters and debilitated aquatic habitat areas. Ensuring clean water requires that we do a better job of limiting point and non-point source pollution. Recent patterns of growth have introduced impacts due to runoff (e.g., changes in temperature and oxygen, suspended solids and bacteria), discontinuous critical habitat areas, and altered habitats. As a result, alarming changes in fish populations are evident in many of the Commonwealth's rivers.

The Task Force believes that the problems described above will only get worse if we continue to grow and manage water in the way we have over the last half-century. During the past 25 years, considerable land mass has been developed, rippling outward from Boston, even as total housing starts have not sufficed to meet the state's housing needs. Assuming growth continues on the basis of recent land use patterns, demand for water and the development of land critical to future drinking, recreational and habitat purposes will increase significantly. In addition, this will eventually undermine the state's ability to ensure sufficient drinking water supplies for new growth and will overextend state resources.

Water quality management is multi-faceted, and several state and federal agencies are responsible for and regulate various aspects of water quality, based upon the types and purposes of water bodies. A huge body of information made up of reports, surveys, sampling, observations, and more are available

through the Massachusetts Department of Environmental Protection, the Department of Conservation Resources Division of Water Management, the US Environmental Protection Agency, and more.

Climate Change

A community resilience study conducted in 2020 as part of the Municipal Vulnerability Preparedness (MVP) program assessed the town's vulnerability to climate change and identified priority action items for improving resilience. The top hazards identified in this study were:

- Winter storms
- High winds
- Extreme temperatures and drought
- Flooding

The top recommendations for actions that could improve resilience and are associated with open space issues included:

- Improve park resources with stormwater control features, shade trees or other shade relief, splash pads, and walking and biking trails.
- Expand outreach and signage at recreational trailheads on tick education and other vector borne diseases
- Develop a comprehensive forest or tree management plan to include a brush fire prevention component
- Assess the vulnerabilities associated with gravel extraction to groundwater
- Restore abandoned gravel pits with vegetation
- Increase the beaver control management program

Environmental Equity

The distribution of open space and recreational amenities, etc. in Hubbardston is relatively uniform, providing approximately equal access to all town members. The town has one main ball field / park area – Curtis Field – which is centrally located. Open space land and access to ponds, trails, and public lands are readily accessible throughout the town as shown in Figure 21.

Non-Point Source Pollution

Topography, surface type, and distance to nearby water sources affect the impact that land clearing, construction, and new and existing roads can have on water quality. Rural roads in particular follow the courses of rivers and streams, and untreated storm water run-off discharges to the water bodies. The run-off from dirt roads and exposed areas of soil due to land clearing carries debris and sediment. Contaminants from vehicles, roadway maintenance activities, and heavy equipment wash into wetlands and waterways during rain-storms and periods of rapid snow melt. In more developed areas, storm water run-off from paved surfaces is often channeled to the nearby waterways at greater velocities, carrying silt, maintenance chemicals, and motor vehicle residue. Excessive debris sediment and storm water velocity can erode stream banks and hillsides, undermining infrastructure and destroying beneficial habitat and vegetation as well.

In winter, rock salt mixed with sand is spread on Hubbardston's public ways to melt ice. Salt is very soluble in water and moves easily into groundwater. Aquifers and recharge areas crossed by highways

or located near uncovered salt storage piles are liable to be contaminated by sodium. Road salt storage, handling and application have the potential to increase levels of water pollution and impact residential wells, which may affect people who have health risks associated with elevated levels of sodium in their diets. Road run-off can drain directly into reservoirs. If the road salt reaches fast-flowing rivers and lakes, however, run-off will usually have little impact.

Although the effects of road salting as a source of non-point source pollution are most commonly associated with groundwater, there are other environmental impacts associated with road salt. Road salt has the potential to cause harm to aquatic life and vegetation such as roadside trees, shrubs and grasses, because elevated levels of sodium chloride in soils generate an osmotic imbalance in plants, which can inhibit a plant's water absorption and stunt root growth. The salt can also interfere with the uptake of plant nutrients and inhibit the plant's long-term growth. Sodium chloride can cause severe injury to flowering, seed germination, roots and stems, as well as damage vegetation up to 200 meters from roads that are treated with deicing salts (Keating, Janis. "Environmental Impacts of Road Salt and Alternatives in the New York City Watershed." Published in Stormwater, May/June 2001; p.9)

Dumps and Landfills

Leachate is the liquid that is created beneath dumps and landfills when precipitation percolates through decomposing solid waste, and it can contain large quantities of both organic and inorganic contaminants. The volume and characteristics of landfill leachate depend on the amount of water that passes through the refuse and the materials that are buried at the site. Unless landfills are covered with impermeable material (such as clay) to prevent precipitation from percolating through them, leachate continues to be produced for many years after dumps and landfills are abandoned. Leachate can seep out of dumps and landfills into surface water or it can percolate downward into groundwater and move in a contamination plume toward a discharge area.

In recent history, Hubbardston had two landfills—at 57 Williamsville Road and 26 Worcester Road (Inventory & Closed Landfills & Dumping Grounds published by Mass DEP Bureau of Waste Prevention) that became inactive as of 1968 and 1955, respectively. Neither of these two old landfills was lined or capped. In later years, the town had a solid waste landfill on the New Templeton Road from 1970-1990. It was unlined, but capped in 1991; closing was certified in December of 1993. Hubbardston's Board of Health monitors six groundwater wells and three gas vents at the New Templeton Road site. The groundwater monitoring program consists of the monitoring well network, sampling schedule, analytical list of parameters to be measured, and a quality assurance/quality control plan. Gas vents are a means of passive gas control and provide a conduit for the escape of landfill gas to the atmosphere. Testing is on a regular basis as required by DEP and will continue for 30 years following the site's closure. It may be extended if the DEP determines that a longer period of maintenance and monitoring is required to adequately protect human health and the environment.

Invasive /Exotic Plant Species

Identification, management, and control of non-native invasive plant and animal species are of environmental concern to open space managers.

The New England Wildflower Society defines exotic and invasive plants as follows:

- Exotic species – a non-native plant or animal introduced into a new location by human activity, either intentionally or by accident.

- Invasive species – a non-native (adventitious) species that is capable of moving aggressively into a habitat and monopolizing resources such as light, nutrients, water, and space to the detriment of other species.

According to the Society, the issue of invasive plants is critical because, second only to loss of habitat, it is the primary cause of the reduction of diversity in native plant populations worldwide. As of today, more than 28% of the world's native plant species are threatened or endangered, including over 200 species in Massachusetts alone. The organization has developed an expansive list that evaluates 85 plant species and includes an annotated list of Invasive, Likely Invasive, and Potentially Invasive species.

Hubbardston is host to many invasive plant species, including Japanese barberry (*Berberis thunbergii*), purple loosestrife (*Lythrum salicaria*), oriental bittersweet (*Celastrus orbiculatus*), multiflora rose (*Rosa multiflora*), and several types of honeysuckle (*Lonicera*).

Many lakes in Massachusetts are afflicted with rampant aquatic plant growth. Some of these plants are native species that are fed by an overabundance of nutrients and some are non-native (exotic) species that have gained access to a water body and proliferated in the absence of natural controls. In addition to affecting water quality with regard to health, invasive species spread rapidly and form dense mats that can make boating, fishing and swimming impossible. As the recreational and aesthetic value of the lake declines, property values around the lake also decrease. The Lakes and Ponds program of DCR explains why nuisance aquatic plants are of concern:

- The spread of invasive species can cause native species to decline, and the animals that depend on them must either relocate or perish. This reduces the biological diversity of the area and disrupts the delicate balance of the environment.
- The aesthetic appeal, recreational value and surrounding property values of a lake or pond may quickly decline as the exotic invasive species takes over.
- Once exotic plants are established, they are almost impossible to eradicate. The United States has invested millions of dollars annually to manage the weeds and repair the damage.

Reduction of nutrients is the long-term control measure at least for the native species. But in some instances for native species and especially for non-native species, management of the water body is the only realistic option. Control measures include a wide range of tools that vary from physical, such as drawdown, to chemical herbicides so long as all controls meet state and federal requirements.

Preventing the spread of non-native species is the single most effective control measure for exotic species.

The major effort on the state level here in Massachusetts is to prevent the spread of such plants. While there are regulations governing the importation of foreign plants, many of the plant species are already established in water bodies throughout the Commonwealth; the prevention strategy involves education and best management practices. Boaters in particular are urged to wash the hulls and clean the propellers of their boats before leaving a water body since most of these plants can be ferried from one water body to another. For those areas where nuisance and exotic plants are established, management techniques range from chemical controls to desiccation by lowering water levels during the winter.

Massachusetts has issued a review of lake restoration practice—Lakes Generic Environmental Impacts Report—that serves as a guide for control measures. The final GEIR for Eutrophication and Aquatic Plant Management in Massachusetts and its companion document, The Practical Guide to Lake Management in Massachusetts, are available on-line at <https://www.mass.gov/service-details/lakes-and-ponds-program-publications>.

Invasive Insects

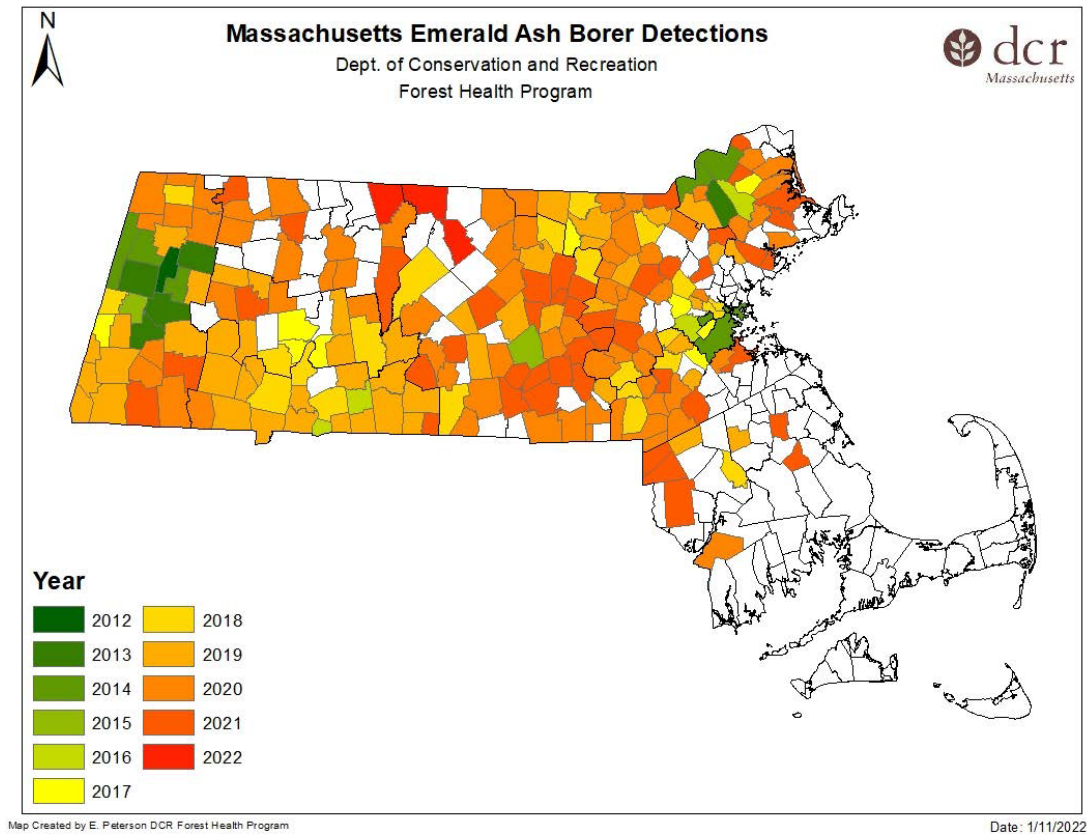
Hubbardston's forests face serious threats from three invasive insects: the Hemlock Woolly Adelgid, the Emerald Ash Borer and the Asian Long Horned Beetle.

The Hemlock Woolly Adelgid is now widespread throughout Massachusetts. While it is not as well established in our town as it is around coastal regions, it will continue to spread if climate conditions allow. In the residential landscape it is a treatable pest, but in the native forests it will likely weaken, and eventually deplete, the hemlocks if conditions permit. It causes a very slow decline and eventual death of hemlocks in a favorable climate.



The emerald ash borer (EAB) was first found in Massachusetts in August 2012 in the town of Dalton. The destructive beetle poses a threat to ash trees statewide and common native hosts in Massachusetts are white ash, green ash, and black ash. There were no reports of Emerald Ash Borer in Hubbardston as of 1/11/2022, however it is clearly established in the surrounding area as shown in Figure 19.



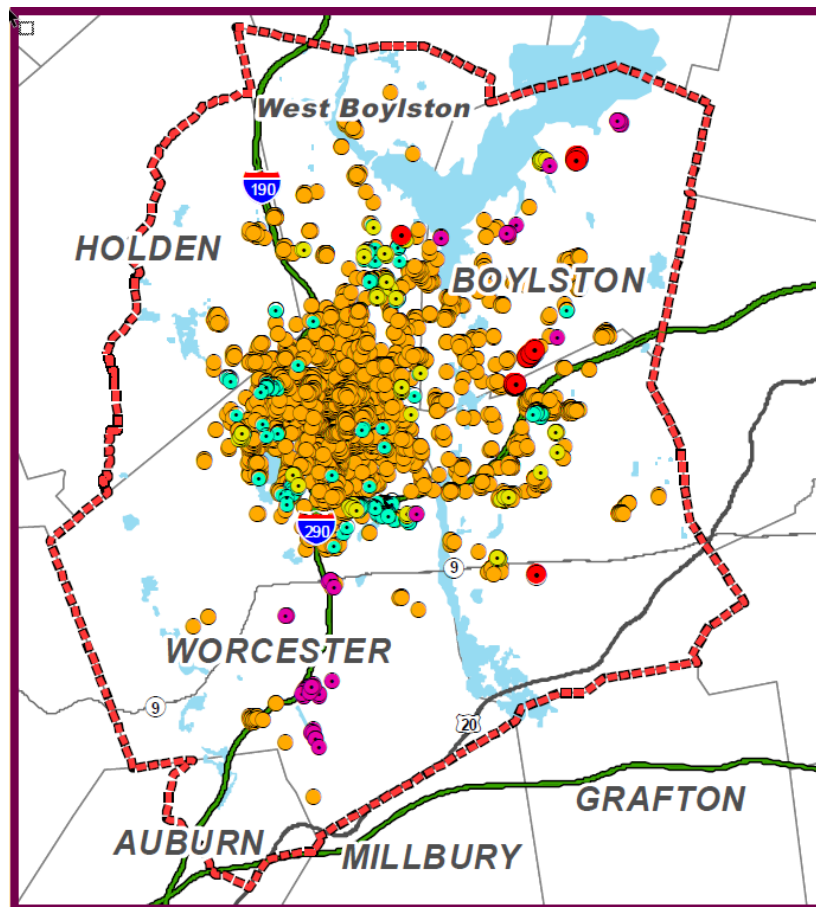
Figure 19 Emerald Ash Borer Distribution

According to the DCR Forest Health Program, the entire state of Massachusetts is quarantined in an effort to slow the national spread of the EAB. The interstate movement of all hardwood species firewood and nursery stock, green lumber and other plant material of any ash species is restricted. Though EAB is already present in multiple counties in Massachusetts, a conscious effort to prevent the movement of ash materials will stop this destructive insect from infecting ash stands in new locations in our state. In Massachusetts' state parks, the transportation of any firewood into or out of a campground is prohibited.

The Asian Long Horned Beetle is perhaps the most serious threat. According to the DCR Forest Health Program, Massachusetts DCR, USDA APHIS, and the US Forest Service are all working together to eradicate ALB from the state. Currently the only effective means to eliminate ALB is to remove infested trees and destroy them by chipping or burning. To prevent further spread of the insect, quarantines are established to avoid transporting infested trees and branches from the area. Early detection of infestations and rapid treatment response are crucial to successful eradication of the beetle.



Although it is relatively contained in the greater Worcester area, the nearest boundary of restricted areas for this pest is only 10 miles away in the town of Holden.

Figure 20 Asian Long Horned Beetle Regulated Area

Source: USDA Asian Longhorned Beetle Eradication Program as of 9/14/2017

Solid Waste/Illegal Trash Dumping / Litter

Another environmental issue in Hubbardston that has some bearing on open space and recreational planning is illegal trash dumping and roadside littering on both public and private lands.

After Hubbardston's sanitary landfill was closed in 1990, town residents had to begin paying flat-rate user fees for private trash removal services with designated town-approved haulers. Since there is an additional fee for disposal of large items such as appliances, furniture and demolition debris, these items tend to become dumped items. Unfortunately, open space, with its sheltered trails and wooded tracts invites illicit and anonymous dumping.

All-Terrain / Off-Road Vehicle Use

According to a 2000 document entitled *Environmental and Social Effects of ATVs and ORVs: An Annotated Bibliography and Research Assessment*, by Patricia A. Stokowski, Ph.D. and Christopher B. LaPointe of the University of Vermont, there are several environmental effects related to off-road

motorized vehicles. Soil and vegetation impacts are widely discussed in the literature, and obvious to even casual observers. Soil compaction and the sheer forces of motorized vehicles create mud holes and gullies that alter hydrologic patterns and intensify erosion. Trail erosion and compaction caused by off-road and all-terrain vehicles reduce the quality of recreational trails and require enhanced management action to develop and maintain safe, usable trails. ATV use has been found to widen and rut forest roads and to increase the sediment load to streams, which may threaten fisheries. ATVs and ORVs offer access to resource areas that are typically less accessible and more remote. ATV use often conflicts with non-motorized uses, such as hiking and cross-country skiing. Additionally, noise and intrusion of the modern world into nature often compromises the enjoyment of many users. Impacts and negative effects increase with more intensive or repetitive use. Also, the fragility of the environment affects the level of impact. Information about this subject is accessible on numerous Internet sites.

All-terrain vehicle use is prohibited on all DCR property in Hubbardston. ATV/ORV use is also prohibited at the Mt. Jefferson and Malone Road Conservation Areas. In spite of prohibitions and designated trails, ATV users persist in using these and many of the other off-limits trails in town. The general public perception is that illegal motorized vehicle use is not enforceable in most cases.

This is an environmental issue that is relevant to the town's open space concerns and a challenge for property stewards.

H. Summary

Of all the environmental issues facing our community, water quality protection is of great importance. Because of Hubbardston's geographical placement within the watersheds of two major drinking water reservoir systems, water quality protection is not only a local concern but is vital with regard to statewide water health and cleanliness. Wise land use and regular monitoring for potential hazards and contaminants are necessary.

Geology, soils, intensity of development, the type of land usage and other factors have a great impact on water quality protection, both now and in the future. Numerous regulatory mechanisms are in place to ensure the safety of public water supplies. However, Hubbardston residents must exercise personal responsibility with regard to waste disposal and private well testing. Reduced developmental pressure and protection of tracts of open space are known to contribute to water quality protection.

Solid waste disposal and illegal dumping are ongoing problems that impact the town's open spaces and water quality and present a huge challenge to the community. Open fields, waterways, and forest tracts, especially along roadsides, attract illegal dumping and littering. Remote and undeveloped pieces of land invite illegal use of motorized recreational vehicles, which can cause damage to soils and vegetation and disturb wildlife and/or other users who may be present.

Protection of wildlife and increased abundance and diversity of wildlife species result from open space protection. The positive environmental effect of open space extends to the residents who enjoy increased opportunities for natural-resource based recreational activities. Open space provides many scenic and aesthetic community features.

Residents of Hubbardston express support of the town's many acres of protected open space and its rural character. Although numerous tracts of land and many streams and water bodies are part of the

town's acreage, there are some particularly attractive and scenic parcels that are in private ownership and may not remain available as open space without outright ownership transfer.

SECTION 5: INVENTORY OF CONSERVATION AND RECREATION LANDS

A. Introduction and Importance of Open Space

The town of Hubbardston has a wide array of conservation and recreation lands. This section outlines the nature of current usage and attempts to characterize the features of the properties. When possible, attempts are made to comment upon the level of protection from destruction or degradation that is afforded to these various parcels.

Unprotected land is owned by a private individual, entity or the town. It could theoretically be developed at any time. Chapter 61 lands have a small measure of protection in that the town has the right of first refusal before the land can be developed and the owner must pay back taxes if development takes place. Permanently protected land is either protected in perpetuity with a legal restriction in the form of a conservation restriction (CR), agricultural preservation restriction (APR), or water preservation restriction (WPR), or is subject to Article 97. In 1972 Massachusetts voters approved Article 97, granting people the right to a clean environment and authorizing the Commonwealth to acquire conservation easements. Article 97 was intended to be a legislative ‘check’ to ensure that lands acquired for conservation purposes were not converted to other inconsistent uses.

The policy of EOEEA (Executive Office of Energy and Environmental Affairs) and its agencies is to protect, preserve and enhance all open space areas covered by Article 97 of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts. The goal of this policy is to ensure no net loss of Article 97 lands under the ownership and control of the Commonwealth and its political subdivisions (i.e., municipalities and counties.) Exceptional circumstances must exist for EOEEA and its agencies to support an Article 97 disposition. Determination of “exceptional circumstances” includes a finding that all options to avoid the Article 97 disposition have been explored and no feasible and substantially equivalent alternatives exist, including the evaluation of other sites for the proposed activity.

The protection of open land is important for many reasons. Uncontrolled growth or taking of land for infrastructure projects can result in degradation of public drinking water sources as well as other very important environmental and aesthetic features. Hubbardston helps provide drinking water for millions of people in metropolitan Boston, Fitchburg and Gardner. Loss of open space results in the destruction of wildlife habitat, destruction of unique scenic and historic resources and the destruction of recreational resources.

There are also economic costs associated with growth. Numerous cost-of-community-service studies prepared by the American Farmland Trust have proven that residential development requires more in service costs than it pays in taxes. Hubbardston is a destination for recreational pursuits such as camping, hunting, skiing, hiking and horseback riding. Loss of recreational areas could help contribute to loss of potential associated income revenue for local campsites, stores and restaurants.

Preservation of open space has natural, social, and psychological benefits. Open land provides visual relief from the developed landscape. Vegetation helps filter out pollutants from air, rain water, and

runoff. Vegetation also mitigates temperature extremes. Trees especially help reduce air pollution through the process of transpiration. In short, protection of open land is important for human / wildlife physical and mental well-being.

Summary and detail sections describing Hubbardston's land and its current uses are presented below.

B. Protection Status Summary

Primarily due to the large amount of acreage in the Ware River Watershed, approximately 12,000 acres, or 45% of Hubbardston's land, is permanently protected open space. Approximately 40% of the Town's area is State-owned land, with another 5% being municipal lands with Article 97 protection or private lands that have restrictions applied in perpetuity. A summary of the lands with permanent protection status is shown in Table 13. All acreage values in this plan are derived from Hubbardston Assessor parcel maps, with acreages calculated in GIS.

Table 13 Open Space Protected in Perpetuity

Type of Protection	Acre	% of Town Area
APR	44	0%
CR	261	1%
WPR	769	3%
Town-Owned, Article 97	66	0%
MA DCR-DWSP	9,078	34%
MA DCR-Parks	1,256	5%
MA Fish & Game	280	1%
Fitchburg Water Supply	465	2%
TOTAL	12,219	45%

An additional 4,000 acres, or 16% of the Town's area, has some limited degree of protection through municipal ownership, or is private land that is enrolled in Chapter 61x tax-advantaged programs. The intent of the three Chapter 61x programs is to assist landowners with keeping their land undeveloped for purposes of forestry (Ch.61), agriculture (Ch. 61A), or recreation (Ch. 61B). Table 14 shows the breakdown of Chapter lands in Hubbardston.

Table 14 Open Space with Limited Protection

Type of Protection	Acre	% of Town Area
Town-owned, undeveloped	305	1%
Chapter 61	1,670	6%
Chapter 61A	1,550	6%
Chapter 61B	650	2%
TOTAL	4,175	16%

The geographic distribution of open space in Hubbardston is shown in Figure 21 Hubbardston Open Space Protection Status. For the most part, open space is fairly evenly distributed throughout the town.

While more than 12,000 acres within the town are permanently protected, there are numerous significant tracts of woodland or other open space that remain unprotected from degradation or destruction. Approximately 3,900 acres have been afforded some measure of protection through Chapter 61 tax programs, but those properties too are subject to sudden changes. Hubbardston is located on the very edge of the Boston metropolis and the next wave of building could have great impact on the town.

Due to Hubbardston's vital location within important water quality protection areas, residents are fortunate to have the recreational benefits that exist. The large acreage owned by DCR and within the Ware River Watershed is permanently protected open space but it should be remembered that recreational uses are controlled by DCR and can be prohibited at any time.

Hubbardston residents may take advantage of a wide array of recreational activities, ranging from individual outdoor challenges and pursuits on both public and private property to team or group sports under the auspices of the Parks Commission. Many residents are fortunate to have undeveloped areas, woodlands, or fields inviting unrestricted foot access "right out their back doors." Allowed uses, even in the highly-regulated Ware River Watershed, are many.

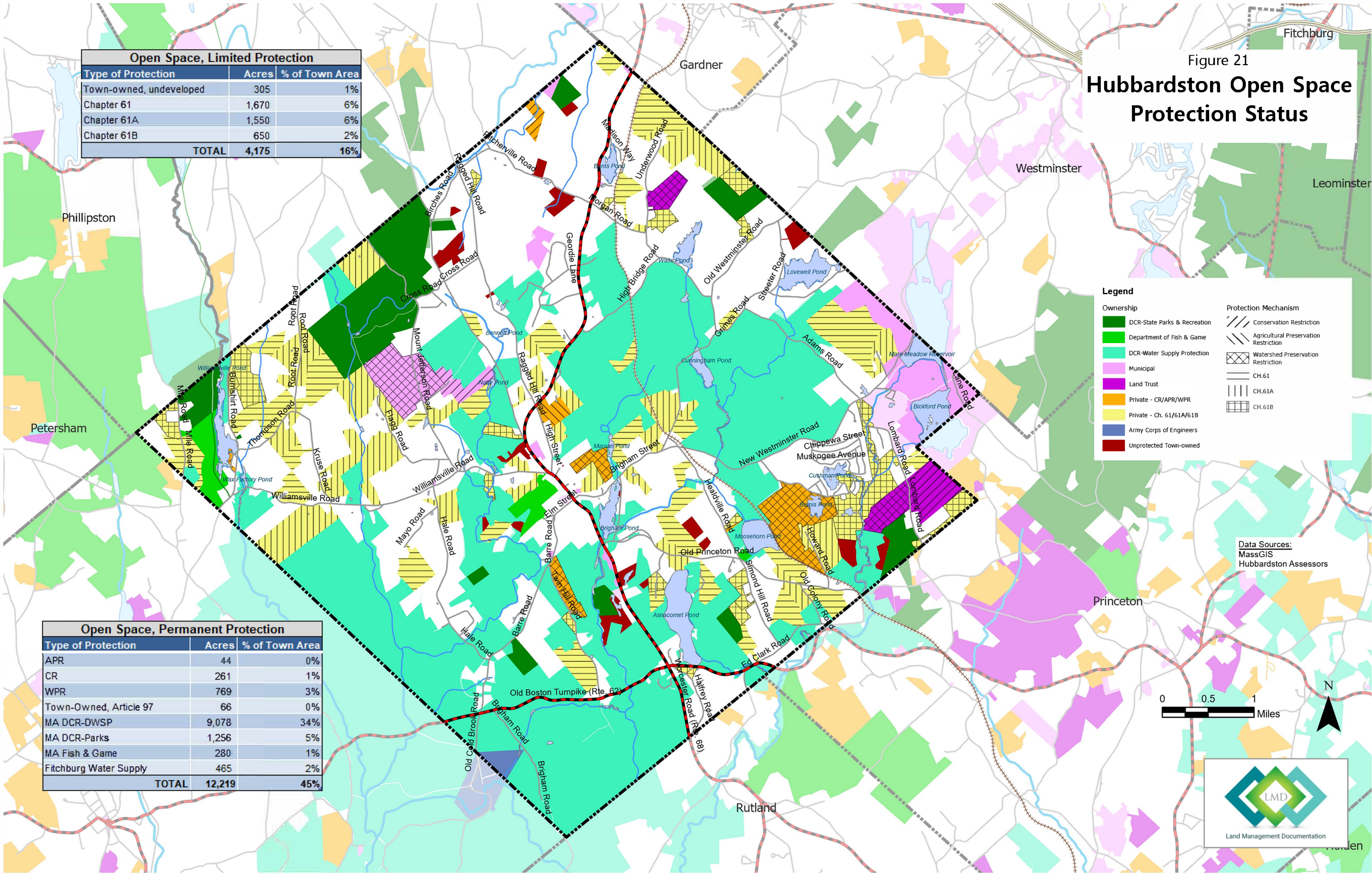


Figure 21
**Hubbardston Open Space
Protection Status**

C. Public Lands

Town-Owned Land

The Town of Hubbardston owns approximately 633 acres of undeveloped open space. This does not include Town-owned properties with buildings. It also does not include small parcels less than 2 acres that the Town acquires periodically through tax takings. Of the 633 acres, 375 acres are permanently protected, and 259 acres are unprotected. Further details on Town-owned open space are presented in Table 15.

Table 15 Town-owned Open Space Properties

Property Name	Acres	Current Use	Potential Uses	Public Access	Degree of Protection
Curtis Recreation Field	12	Active Recreation	Full suite of ball fields, basketball court; skate park; playground; bandstand; walking path	Open to the public. Central location. Excellent parking. No dogs allowed.	Permanently protected under Article 97
Mt. Jefferson Conservation Area	242	Passive Recreation; haying; wildlife management; timber management.	No additional trails are allowed due to restrictions in the WPR.	Open to public for multi-use passive recreation but no ATV's or motorized bikes	Permanently protected under Article 97, also WPR with DCR-DWSP
Malone Rd Conservation Area	73	Passive Recreation, haying, wildlife management.	Potential for additional trails or accessible trail.	Open to public for multi-use recreation passive but no ATV's or motorized bikes	Permanently protected under Article 97, also CR with North County Land Trust.
Geordie Lane Conservation Area	48	Forested, Passive Recreation	Excellent potential for trails and wildlife management.	Open to public for multi- use passive recreation but no ATV's or motorized bikes	Permanently protected under Article 97.

Property Name	Acres	Current Use	Potential Uses	Public Access	Degree of Protection
Lots 3_73, 75, 76 off Pitcherville Rd	34	Forested, old field	Possible groundwater supply source, habitat, water quality protection	Access from Pitcherville Rd	None
Lot 3_57 off Pitcherville Rd	13	Former Town gravel pit, ATV traffic	Remediation site, possible redevelopment	Access from Pitcherville Rd	None
Lots 6_44, 45 off Streeter Rd	30	Forested	Possible housing, habitat, water quality protection	Narrow access from Streeter Road	None
21 Gardner Rd	17	Forested, open field, communications tower	Possible new municipal building site	Access from Gardner Rd	None
Lot 8C_37, Off Worcester Rd behind DPW garage	45	Forested, wetlands, DPW storage	Habitat, water quality protection	Land-locked	None
Lot 8C_33, Worcester Rd across from DPW	18	Forested, wetlands	Habitat, water quality protection	Access from Worcester Rd	None
Lots 2_31, 34, 94, Off New Templeton Rd	42	Forested, wetlands	Habitat, water quality protection	Access from New Templeton Rd	None
Various cemeteries	19	Cemetery	Cemetery	Yes	None
Various other lots	40	Forested, wetlands	Habitat, water quality protection	Typically land-locked, accessible only via State-owned lands	None
TOTAL	633				

Town-Owned Conservation and Recreation Area Descriptions

- Mt. Jefferson Conservation Area**

This 242-acre area was created in 2001 through land purchase using funding from a state Self-Help Conservation Grant, Metropolitan District Commission Watershed Preservation Restriction monies and appropriated town funds.

- **Malone Road Conservation Area**

This 73-acre area was purchased by the town in 2007 with funding secured from a Self-Help Grant, Community Preservation funds, grants from several private foundations and private donations.

Both of the above properties are under the care and control of the Conservation Commission but managed by the Open Space Committee. They are multi-use areas and are managed for passive recreation, agriculture, wildlife management and water protection. Both areas have extensive recreational trail systems that connect with trails on abutting State-owned land, and fields that are hayed under a licensing agreement with a local farmer.

- **Curtis Recreation Field**

This area is 11.5 acres in size and was designed to provide for various organized and casual family recreational activities: baseball and soccer, walking/running/rollerblading (paved pathway around the perimeter of the area), children's play (swing set, etc.), skateboarding (fenced, paved area with ramps). A basketball court was built in 2016. This land is permanently protected under Article 97 due to receipt of an Urban Self-Help Grant for construction of the skate park, walking path and parking lot.

- **Geordie Lane Conservation Area**

This area is a public parcel of land gifted to the town in 2016 through the Conservation Land Tax Credit Program. The land is approximately 48 acres in area and located off Geordie Lane. This land is under the care and control of the Conservation Commission. The Open Space Committee developed a land management plan for this property similar to the one that the committee did for the Mount Jefferson Land. The land has wetlands and glacial ridges and offers significant potential for walking, hiking and similar trails.

City of Fitchburg Water Supply Land

The City of Fitchburg owns protected land around Mare Meadow Reservoir and Bickford Pond, both of which are owned and managed by the Fitchburg Water Department as public water supplies. Recreational use that is compatible with water quality protection is allowed on these properties and is similar to that of the Ware River Watershed.

State-Owned Land

The majority of protected open space lands in Hubbardston that are conservation and recreation assets are State-owned public lands. Most of this acreage is Department of Conservation and Recreation (DCR), Division of Water Supply Protection, formerly MDC. These properties offer many recreational opportunities, but because the major purpose of land protection by DCR is for water quality protection, certain activities such as snowmobiling, mountain biking and horseback riding are regulated, restricted to designated tracts of land, or prohibited.

Ware River Watershed/Barre Falls Dam Area

The Barre Falls Dam Area and DCR Ware River Watershed contain approximately 24,000 acres located within the towns of Hubbardston, Barre, Oakham, and Rutland. The U.S. Army Corps of Engineers owns and manages the dam itself and some immediate surrounding acreage. The area owned by DCR offers

many recreational opportunities: canoeing, bike riding, picnicking, hunting, fishing, hiking, sightseeing, horseback riding, cross-country skiing. The area around the dam owned by USACE has more managed recreational opportunities such as a large picnic area, horseshoes, an 18-hole disc golf course and restrooms. A carry-down canoe site is located near the dam and many other canoe access areas are located on the Ware River above and below the dam. The Barre Falls Dam area is crossed by the Mid-State Hiking trail and has a picnic and restroom area. The recreational benefits offered at this site are an "extra dividend" to the main purpose of this flood damage reduction project. The headwaters of the Ware River and approximately 9,000 acres of the DCR Ware River Watershed are located in Hubbardston.

Maps of the Barre Falls Dam and Ware River Watershed are available, most easily accessed on the Internet. Maps of the Mt. Jefferson Conservation Area/Malone Road/Hubbardston State Forest interconnected system of trails are available at the area trail heads and on the town [website](#).

Hubbardston Wildlife Management Area

The Hubbardston Wildlife Management Area is managed by MassWildlife under a permit agreement with DCR-DWSP. It comprises 360 mixed acres of forest, field, and upland and encompasses Cunningham Pond, a portion of Joslin Brook, and adjoining marshland. The primary purpose of the property is game management and hunting, but other passive uses are allowed.

Hubbardston State Forest

Hubbardston State Forest, which comprises about 1,200 acres, is a section of public land managed by DCR-Parks. Many recreational uses are encouraged on this property and, as it abuts the Mt. Jefferson Conservation Area, the Open Space Committee has worked closely with Mass Parks under a Volunteer Services Agreement to improve the trail system throughout the area. The beach area and boat launch area on Asnacomet (Comet) Pond are also managed by DCR-Parks.

Division of Fisheries and Wildlife

The Division of Fisheries and Wildlife owns approximately 280 acres located along the Burnshirt River/Williamsville Pond in the southwest corner of town, along Natty Pond Brook in the center of town, and manages a canoe/kayak launch on Moosehorn Pond.

D. Private Lands

Lands Protected In Perpetuity

Approximately 764 acres of private land in Hubbardston have restrictions that protect them in perpetuity, as shown in Table 16. These restrictions are in the form of agricultural preservation restrictions (APR), conservation restrictions (CR), and watershed preservation restrictions (WPR).

Each of these restrictions prevents the land from being developed, however other allowable uses of the land are dependent upon the original purpose of the restriction and any terms that may have been negotiated by the landowner at the time. The properties owned by individual landowners are not necessarily open to public recreational use. The properties owned by land trusts are open to some

public uses; at a minimum they encourage passive recreational uses such as hiking or other foot traffic to enjoy the natural resources on the property.

Table 16 Private Lands Protected in Perpetuity

Parcel	Location	Owner	Acres	Restriction Type	Restriction Holder
5_78-79	High St	Private Landowner	44	APR	MDAR
1_43	Grove St	Private Landowner	5	CR	DFW
3_7	Off Pitcherville Rd	Private Landowner	32	CR	Hubbardston ConCom
12_82-86	Lombard Rd	East Quabbin Land Trust	150	CR	DCR-Parks
7_51-52	Twin Hill Rd	Private Landowner	57	WPR	DCR-DWSP
11_23-26	George Howard Rd	Private Landowner	259	WPR	DCR-DWSP
8_A_49	Brigham St	Private Landowner	52	WPR	DCR-DWSP
6_116	Underwood Rd	North County Land Trust	67	WPR	DCR-DWSP
12_70	Lombard Rd	East Quabbin Land Trust	97	WPR	DCR-DWSP

Chapter 61 Lands

Since the previous Open Space Plan, the town has seen a slight overall increase in the total number of properties with Chapter 61, 61A, and 61B status. Table 14 and Figure 21 provide a summary of the current acreage in each program, and the geographic location of chapter lands in Hubbardston, respectively. Note that some chapter properties also have permanent protections applied via CR/WPR/APR, and are tabulated under those categories in Table 16, rather than being summarized as Chapter 61x properties in Table 14.

Although the Chapter 61 enrollment affords some protection for the designated lands, the protection is essentially temporary in nature and not at all a guarantee that holdings are safe from destruction or degradation in the future. The main “potential protection” is guaranteeing the town the right of first refusal to purchase the land at the going rate if the property is offered for sale. If the town opts not to purchase the land, it can be sold to any developer by paying back taxes.

Private Recreation Lands

Hubbardston has some noticeable and important private holdings that are used for recreation by a limited number of “members” or landowners.

Hubbardston Rod & Gun Club

One private recreational holding of interest is the Hubbardston Rod & Gun Club located on Williamsville Road. Comprised of 16 acres abutting other state-owned (DFW /DCR) property and Natty Brook, the Club land includes one structure that is used for numerous non-profit and private functions and a section that has been developed as a baseball field. Much of the undeveloped acreage is wetland and is enrolled in Chapter 61B.

Pinecrest Property Owners Association

The Pinecrest Property Owners Association owns about 180 acres of open woodland and Cushman Pond, which are used for recreation and outdoor enjoyment by Pinecrest residents. There are trails through the wooded portion, as well as a beach and children's play area on the shore of the pond. Although there is no general public access to the pond, the Association maintains a lodge there that may be used for special functions by both Pinecrest and other town residents. In addition, this property has the distinction of housing the largest old barn in town, which was built early in the 20th century and completed around 1918. The beautiful old cobblestone and shingle/wood structure, of historic interest, was used in years past as a site for large community functions after it ended its function as a farm structure. The Pinecrest woodland is also a Chapter 61B property.

Sawyer's (Bents) Pond

Sawyer's (Bents) Pond contributes to the open space landscape of Hubbardston and is one of the town's larger ponds. The pond is privately owned, however, and is open for use only by residents of Silverleaf Hollow and the newly-constructed Madison Greens senior housing condominiums. There are some limited uses of the pond for recreation, e.g. ice-fishing. Interestingly, Sawyer's Pond was used to store salvaged lumber following the 1938 hurricane and flood. Since the pond is shallow, one can catch glimpses of the logs, which were never used, when the water table is low during dry periods. The logs are now rising to the surface and drifting to the brook exiting the pond. They are being removed by Madison Greens to prevent the brook from being blocked.

Peaceful Acres Campground

Located at the end of Flagg Road is a moderately-sized private campground, Peaceful Acres Campground. Although the campground is not well-publicized, it has been here for many years and has steady patronage throughout the summer season. Of interest with regard to the town's open space is the fact that the campground, and other surrounding parcels, abuts the Mt. Jefferson Conservation Area.

Lovewell Pond Sporting Club

Lovewell Pond is a privately owned 83 acre +/- impoundment located in northeastern Hubbardston, MA nearby the Westminster town line. It was originally created by Mr. John Lovewell in 1865, when he purchased "all the land that could be flowed" by the earthen dam he erected on Joslin Brook. By capturing water to power his downstream saw mill, Mr. Lovewell provided native lumber to the Gardner furniture industry. In the late 1800's Mr. Lovewell sold his reservoir and abutting uplands to several individuals who formed the Lovewell Pond Association, which utilized the waters for fishing and hunting. Lovewell Pond Sporting Club, Incorporated (LPSC) was established in 1937 by the former Association of individuals. Today, the LPSC, through its shareholders continues to manage and preserve Lovewell Pond as a private waterbody for fishery and recreational purposes for the exclusive benefit of the corporation's shareholders.

Baseball Field

A private, fenced-in baseball field is located on Barre Road.

Other Private Lands

Hubbardston is home to the Ron Burton Training Village - founded by professional football player Ron Burton Sr. in 1985, and is now continued by his heirs. This 305 acre parcel is the home base for the Ron Burton Training Village Program whose mission is to help youth (predominantly "at risk" youth from under-resourced neighborhoods and situations) to achieve their purpose, despite life's challenges, through education, leadership, physical wellness, social advancement and spiritual growth. It is a year-round program for 7 years with yearly spring, summer and fall training sessions at the "Village". Initially established for boys / young men it now has a program for girls / young women which includes the STEM program.

The 305-acre parcel encompasses 37-acre Waite Pond, approximately 100 acres of forest, open fields, playing fields and courts, obstacle course, myriad gardens, trails, and a host of related program and administrative buildings and parking areas.

E. Natural Resource-Based Recreation

Hubbardston offers thousands of acres of open space where people may enjoy many non-consumptive activities that are dependent upon open, undeveloped tracts of land and clean, unobstructed waterways. While many of these activities are allowed and encouraged, there are many tracts of land in town that are regulated and operate under various restrictions.

Hunting and Fishing

Hunting and fishing are two popular activities that are dependent upon Hubbardston's open space resources. Resource information for sportsmen is shown in Figure 22.

Hunting

Under state regulation, there are specific hunting seasons and bag limits for numerous mammal species, trapping regulations and limits for various fur-bearing mammals, and management of hunting seasons on resident and migratory waterfowl and game birds. Game species populations in Hubbardston are monitored and managed by Mass Wildlife with regard to species' health and the carrying capacity of the animals' habitat.

In addition to native game birds, such as Ruffed Grouse and American Woodcock, The Division of Fisheries and Wildlife (Mass Wildlife) stocks pheasants at the Hubbardston Wildlife Management Area (WMA). The pheasants are stocked from two different sites, both of which are owned by the Department of Conservation & Recreation (DCR), but are part of the WMA per an agreement between Mass Wildlife and DCR. One site can be accessed from a parking area off of Old Westminster Road. The other is accessible from a parking area off of Gardner Road (RT 68), near High Bridge Rd. The areas are stocked once a week, the day and time varies and is not published.

Wood Duck nesting boxes are monitored and maintained at two locations within the town; Joslin Brook, off of New Westminster Road, and at Cunningham Pond.

Fishing

Hubbardston has several ponds and streams that offer excellent fishing and access throughout the year. Comet (Asnacomet) Pond, is a favorite site for ice fisherman as it freezes early, holds its ice late and is a premier spot for taking trout through the ice. Moosehorn Pond, Brigham Pond, and Williamsville Pond are other large ponds offering easy canoe or small boat access and excellent bass fishing. The Mare Meadow Reservoir, which only permits fishing from the shore, is another excellent bass fishing area.

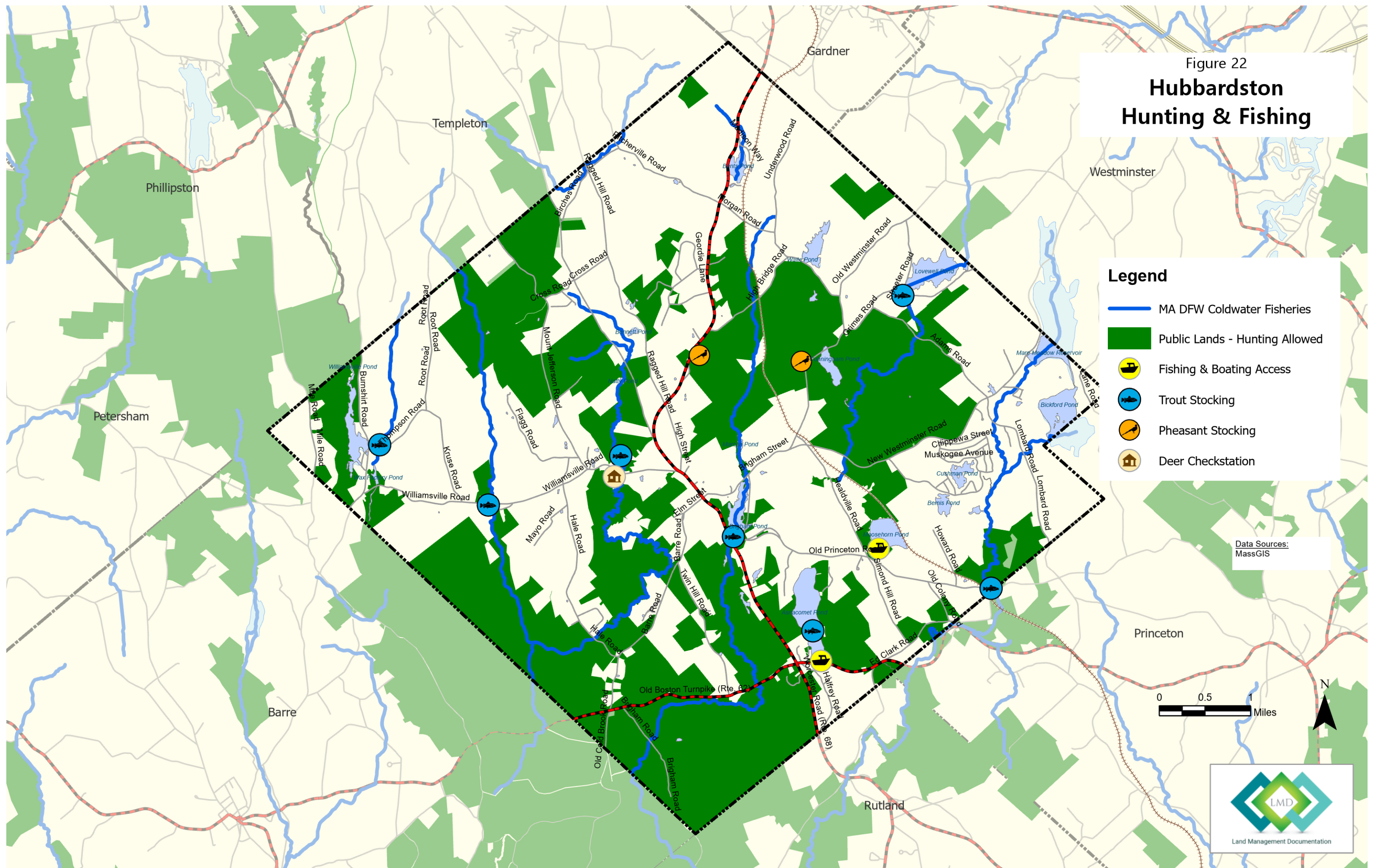
Mass Wildlife stocks hatchery-raised rainbow, brook, brown, and tiger trout in Hubbardston. The waters currently stocked with all, or some, of the above mentioned are: Asnacomet (Comet) Pond, Burnshirt River, East Branch Ware River, West Branch Ware River, Canesto Brook, Joslin Brook, and Natty Pond Brook. All these waters are stocked at least once every spring and Asnacomet Pond is also stocked in the fall. Actual stocking times and locations vary and are not published. The website <http://www.mass.gov/trout> is updated every Friday morning during the spring with the water bodies stocked that week. Past fisheries surveys show that native brook trout were found in the following water bodies:

- Burnshirt River
- East Branch Ware River
- West Branch Ware River
- Canesto Brook
- Joslin Brook
- Natty Pond Brook

Broodstock salmon is no longer stocked in Hubbardston. In 2012 the U.S. Fish and Wildlife Service withdrew its support and resources from the Connecticut River Atlantic Salmon restoration program, including its egg and fry production at the White River National Fish Hatchery and sea run broodstock operations at the Cronin National Salmon Station. These operations were critical components of the Atlantic Salmon restoration program and without them there was no viable chance of success moving forward. Therefore, after nearly four decades of effort, Mass Wildlife has ended its efforts to restore Atlantic Salmon to the Connecticut River. As a result, Mass Wildlife will no longer culture Atlantic Salmon at the Roger Reed fish hatchery or stock Atlantic Salmon fry or smelts into waters of the Commonwealth. This means there are no surplus broodstock salmon for anglers.

Figure 22

**Hubbardston
Hunting & Fishing**

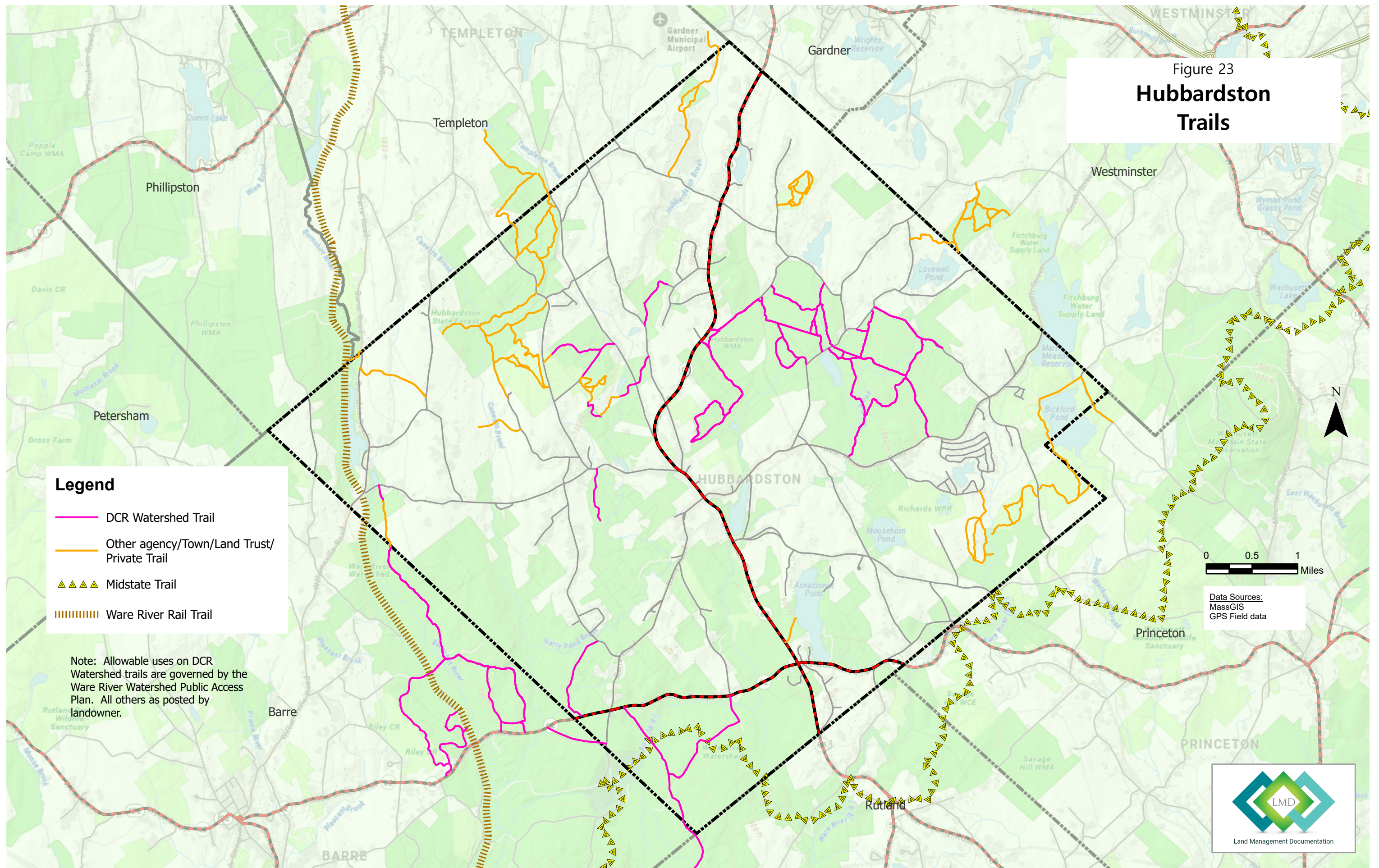


Other Natural Resource-Based Recreation

Other activities enjoyed by Hubbardston residents and visitors alike include hiking, cross country skiing, snowshoeing, mountain biking, horseback riding, bird and wildlife watching, nature and wildlife photography, animal tracking, and swimming. Most aspects of these pastimes are dependent upon undeveloped open space for their enjoyment.

In addition to open space, a common feature of many of these recreational pursuits is the need for an established trail system. Hubbardston contains a patchwork quilt of trails that cross both public and private lands, and these trails are subject to a wide range of jurisdictions and use regulations. The map in Figure 23 Hubbardston Trails shows the more significant trails that are located in Hubbardston and indicates whether they are managed by DCR-DWSP as the Ware River Watershed, or are owned by another entity.

Figure 23
Hubbardston Trails



Recreational Uses on State-Owned Land

Following are descriptions of various uses allowed or prohibited on State-owned land in Hubbardston. It should be noted that use regulations can vary depending upon which State agency manages a particular property. Generally speaking, property managed by DCR-Parks allows the most different uses, while property managed by DCR-DWSP is the most restricted. Land users are advised to consult the most recent regulations available for the land they are visiting.

Approximately 85% of the State-owned land in Hubbardston falls under DCR-DWSP. Uses on this land are governed by the Ware River Public Access Management Plan. The uses described below are in accordance with the 2023 Ware River Public Access Management Plan, which can be downloaded from <https://www.mass.gov/info-details/dcr-watershed-public-access-rules-and-maps#ware-river-watershed->

Prohibited Uses

General public access is allowed in designated areas only. Any activity that injures or defaces State property is strictly prohibited. Prohibited uses that are applicable across all State-owned land in Hubbardston include:

- Operating ATVs, dirt bikes, ORVs, etc.
- Camping
- Fires and cooking, including with gas grills
- Operating personal watercraft/jet skis
- Marking or cutting trails
- Organized sports or fishing derbies
- Operation of drones
- Consuming cannabis or alcoholic beverages
- Collecting/metal detecting
- Target shooting
- Commercial activities

Hunting and Fishing

Hunting and fishing are two popular activities that are dependent upon Hubbardston's open space resources. All DCR properties, the Mt. Jefferson and Malone Conservation Areas, the Hubbardston Wildlife Management Area (owned and managed by Massachusetts Department of Fish & Wildlife, or Mass Wildlife) and Hubbardston State Forest allow licensed hunting and fishing in season.

Barre Falls Dam and the Ware River Watershed allow shoreline fishing and hunting with certain restrictions. Various gated woods roads throughout the Ware River Watershed are opened for hunting access from October 1 to December 31.

Comet (Asnacomet) Pond, a 127-acre cold water pond with public access and a town beach, has long been one of the most popular trout ponds in central Massachusetts. The shoreline is more than 50% developed with year round homes and summer cottages, but the area remains generally scenic. The water is exceptionally clear with a transparency of approximately 25 feet. This pond is extremely infertile and there is very little aquatic vegetation.

Boat access is provided by a paved ramp just off Route 62. There is also good shoreline access here, extending for some distance up the southeastern shore. A paved parking lot adjacent to the ramp has

space for 25 or more cars. In the spring and fall, shore access is also available at the town beach entrance off Route 68.

Horseback Riding

Different regulatory agencies have different policies concerning horse trails on publicly owned lands. Horseback riding is prohibited on the Federal land at Barre Falls Dam. It is permitted at the Mt. Jefferson and Malone Road Conservation Areas, Hubbardston State Forest, and some trails within the Hubbardston Wildlife Management Area.

Equestrian uses on DCR-DWSP land in the Ware River Watershed are confined to designated trails with the following restrictions:

- Riding is allowed on DWSP authorized equestrian trails only.
- Horse feces within sight of any tributary or surface water must be removed from trail by riders.
- Horse wading in, watering in, or disposal of any waste in or adjacent to a tributary or surface water is prohibited.
- Horseback riding is prohibited during “mud season” when all DWSP trails are closed for access. Trails may be closed for operational needs.
- Horseback riding for commercial purposes on state land is prohibited.
- Organized rides for groups up to 25 individuals require a DWSP group access permit issued at least one week prior to the ride.

Although riding during mud season is restricted on DCR/ Ware River Watershed property, it is not specifically restricted at the Mt. Jefferson and Malone Conservation Areas or within the state forests. Individual judgment must be exercised with regard to riding trails during mud season.

Bicycling

On DCR and other public lands within the Ware River Watershed, bicycling—generally mountain-biking and gravel-biking—is permitted on designated roads and trails. After receiving many comments during the drafting of the 2023 Public Access Plan, additional designated trails within the Ware River Watershed were approved.

Bicycling is allowed at the Mt. Jefferson and Malone Road Conservation Areas and Hubbardston State Forest. Individual judgment must be exercised with regard to riding trails during mud season.

Swimming

Since Comet Pond is one of the state’s Great Ponds, use of the pond for hunting, fishing, and boating is open to all state residents. There is also a beach area on Comet Pond that is managed by DCR, and swimming and paddle-boarding are allowed within marked areas. As of this writing, open-water swimming and paddle-boarding are not allowed at Comet Pond, however this has been a contentious issue during the public participation process for the new Public Access Plan. Approximately 83% of the respondents to a 2023 Open Space public survey stated that they had visited Comet Pond at least once per year, and Comet Pond was listed as one of the more frequently used recreation areas in the Ware River Watershed during a 2019 Stakeholder Survey.

Swimming is prohibited at Barre Falls Dam and within the boundaries of the Ware River Watershed Reservation.

Snowmobiling

Snowmobiling is a popular winter-time activity that requires open space. Many residents make use of private properties at their disposal, but within Hubbardston there are very few public trails open to snowmobile use. The Mt. Jefferson and Malone Road Conservation Areas and Hubbardston/Templeton State Forest permit snowmobiling in some areas, although there are no official snowmobile trails. Snowmobiling is allowed on designated trails within the Ware River Watershed, but with one small exception, these areas are outside of Hubbardston town boundaries. A portion of the DCR Ware River Rail Trail passes through Hubbardston's northwest corner near Williamsville Pond. Stewarded by the Cold Brook Snowmobile Club, the abandoned rail bed is a popular snowmobiling route.

All-Terrain Vehicle Riding

There are no public trails allowing the use of all-terrain vehicles within the boundaries of Hubbardston. They are not allowed on any DCR property or state forest land in Hubbardston or at the Mt. Jefferson and Malone Rd Conservation Areas. The use of off-road/all-terrain vehicles on public lands within the Ware River Watershed, including the Corps of Engineers acreage at Barre Falls Dam, is also prohibited.

Although ATV/ORV use is prohibited on the aforementioned DCR Ware River Rail Trail, the old rail bed is often used by ATV/ORV riders. Illegal ATV/ORV use on various trails throughout Hubbardston is a persistent problem with many land owners and open space managers.

Boating

Motorized boating is allowed on Comet Pond and Brigham Pond. A fully improved boat ramp is located at the south end of Comet Pond off Route 62, and an unimproved boat access point to Brigham Pond is located at the south end of the pond off of Route 68. DCR-DWSP limits boat motor size on these ponds to 20 horsepower for two-stroke engines, and 25 horsepower for four-stroke engines. The current draft of the Public Access Plan also indicates that a limited permit program will be developed by DCR to allow Comet Pond shoreline owners to use larger motors.

Non-motorized boating is allowed on all waterways in the Ware River Watershed except for the Restricted Area around the Ware River Intake in Barre. Many residents enjoy using canoes or kayaks on Hubbardston's ponds and streams. There is an access point for non-motorized watercraft at Moosehorn Pond located off Healdville Road. Williamsville Pond has private access, and rustic access of the west side by means of portaging along the Ware River Rail Trail is possible.

"Foot based" Recreational Uses

Miscellaneous recreational uses of public lands by Hubbardston residents include hiking, walking, snowshoeing, cross-country skiing, dog-walking, bird watching, nature study and photography, etc. These activities, because they are by foot access, are permitted on all public lands. When dog-walking on DCR land, dogs must be leashed and fecal matter must be picked up and removed from the area.

Walking and/or running is also encouraged at the Curtis Recreation Field where a paved walking path encircles the central playing fields. This path is not plowed in winter and dogs are not permitted at all on the recreation field.

Under the terms of a Volunteer Services Agreement with DCR, the Hubbardston Open Space Committee(OSC) maintains all authorized trails in Hubbardston State Forest, along with trails in the Town Conservation Areas. In a collaborative venture with DCR, the MassTrails grant program, and an

Eagle Scout project, the OSC completed a signage project in 2022 to improve wayfinding signage and trail marking throughout the trail system. Trail maps for the State Forest/Conservation Areas are available at the parking areas of the conservation areas and on the Town [website](#).

SECTION 6: COMMUNITY VISION

A. Open Space Plan Process

The Hubbardston Open Space Committee began planning the update to our expiring Open Space and Recreation Plan in late 2022. That current plan has been in place since 2018. An internal team of this committee took the lead in determining our process. We proposed that the Select Board approve the formation of an ad hoc committee whose members would be representatives of key town committees and members of the community. The ad hoc committee's purpose was to examine Hubbardston's current resources and constraints and provide direction for creating a vision of the Hubbardston of the future.

In late February, 2023, the Select Board approved the formation of this Ad hoc OSRP Update Committee and its membership that included:

- Town Administrator, and representatives from
- Select Board,
- Planning Board,
- Conservation Commission,
- Parks Commission,
- Open Space Committee, and
- Two at-large community members.

During April and May the ad hoc committee held three public meetings to consider the perspectives of these stakeholders and formulate a 'master' list of attainable goals we would then present to town residents for their input.

The aspirations reflected in this list formed the framework for creation of a comprehensive public survey seeking our community's participation that would, in turn, become the foundation of our Plan's goals and objectives. A 35-question survey was prepared soliciting comment on aspects of Hubbardston's existing open space and recreation resources, desired future additions and improvements, how these enhancements might be achieved, and personal perceptions on quality of life in Hubbardston. Though responses were anonymous, questions obtaining statistical information about the respondents were also included.

The survey was launched on June 10, 2023 and remained open through July 12, 2023. Links to the digital version of the survey were posted on the Town's official website and two moderated Hubbardston social media websites, emailed to residents' whose addresses were available; advertised at the annual Town Meeting, and printed surveys were made available at Town offices and the Senior Center.

We received 174 completed surveys that represent a response rate of roughly 10% of Hubbardston's 1,600 - 1,700 households. This rate is consistent with past surveys, including the town's 2021 Master Plan Survey. It is also congruent with Town Meeting attendance. Full survey results are included in Appendix A. Other sources informing our development of goals were Hubbardston's 2017 Master Plan

survey, our existing Open Space and Recreation Plan, a previous 2014 town-wide survey, and the draft of the 2023 Statewide Comprehensive Outdoor Recreation Plan.

B. Open Space and Recreation Goals

Survey responses were whole-heartedly supportive of continued land conservation and protection efforts in Hubbardston and were analogous to those from previous surveys. Several questions revealed that more than 90% of respondents emphasized the importance to them of Hubbardston's forests, fields, farms, and wetlands; and that these resources enhanced their families' quality of life. Preservation of historical sites and buildings added to their sense of important values.

When asked what aspects of living in Hubbardston were the most important to them in addition to the protection of our natural resources, respondents overwhelmingly felt our rural character and sense of community needed to be retained. The great majority of responses also recognized that environmental protection of these natural resources was important to support wildlife and pollinator habitat, ensure clean air and water, provide carbon storage, and provide for active and passive recreation.

Responses to questions about how we might achieve this vision for the future were more diverse. Perhaps due to small-town budgetary constraints, while not adverse to the town's outright purchase of land, most responses favored working with land trusts, conservancies, and the state to assist in our conservation efforts. It was also clear from the survey that work was needed to educate the community about other available ways to accomplish our goals, including several methods available to private landowners. Moreover, the survey indicated that our existing open space and recreation assets were underutilized, calling attention to the necessity for better communication about our wonderful resources.

The results of our stakeholder meetings and survey provided the basis for establishing the goals that might secure the vision for Hubbardston's future:

- Goal I - Pursue land acquisition/protection for recreation, wildlife habitat, water quality, scenic value, other ecosystem services, and agricultural resources.
- Goal II - Expand and improve recreational opportunities / Improve Existing Public Open Space Assets
- Goal III - Increase public awareness of the benefits of open space and actively promote the town's recreation areas, conservation areas, and trails.
- Goal IV - Protect and expand open space working lands that contribute to Hubbardston's rural economy.

These goals strongly convey the current community interests and build on the work generated from our previous Open Space and Recreation Plan. They support our vision of preserving Hubbardston's rural community character; reinforcing our identity of a town that treasures and protects its natural resources, pursuing opportunities to conserve them for future generations, and ensuring they're accessible for our residents' and visitors' enjoyment and recreation. As we articulate these goals, and the objectives they will drive, we also realize that, as a rural community, we will need to draw on Hubbardston's open space and recreation resources to support the town's economic goals expressed in our Master Plan currently being developed.

SECTION 7: ANALYSIS OF NEEDS

Hubbardston residents cherish the forest and farm land of their town and the region, even though it is becoming a bedroom community. From lifelong residents to the newest members of the community, there is strong appreciation for the quality of life available in this rural setting. There is a growing sense in Hubbardston that the intense need for housing in Massachusetts will lead to an erosion of the town's rural character unless more of the open spaces in town are protected from development. It is incumbent upon the town to clearly identify all the elements that contribute to its rural character, and formulate policies and actions that will protect and enhance the existing quality of life.

A. Resource Protection Needs

Land Conservation

When seeking a balance between protecting the forests and fields that characterize Hubbardston and supporting the need for additional housing, it is useful to view potential land protection opportunities through the lens of an objective evaluation process. The Hubbardston Open Space Committee has developed a process for evaluating the contributions of each parcel to quality of life, drinking water quality, wildlife habitat, and recreation. The first stage of this process is to characterize the conservation benefits of each parcel. Twenty-seven characteristics, or *attributes*, such as proximity to protected land, wildlife habitat, watershed protection value, recreational opportunities (such as trail interconnections), suitability for growing food or timber, and the presence of hazards, of each parcel are analyzed. Each of the twenty-seven attributes is weighted and the combined weighted values of all the attributes yield a numerical score for each parcel that informs decisions about the relative importance of each parcel for land and water conservation. The second stage of the process is to consider the broader, social context; the interests of the landowner, alternative ways of protecting a parcel's conservation values, availability of funding, relationship to other conservation projects, and other, potentially higher-value, uses.

Water Resources

Protection of drinking water quality is an extremely important goal for Hubbardston. Nearly half of the rainfall that lands in Hubbardston each year finds its way to the Ware River and eventually into the homes and workplaces of 3.1 million people, or four out of ten residents of the Commonwealth. Only 54% of the drinking water watershed land for the Ware River is protected (<https://storymaps.arcgis.com/stories/62ba5df14dde44c7a3c1fa0a7eb63f44#n-B5UECa>). The rainfall that does not reach the Ware River is used by trees and agricultural crops or evaporates from the surface of the many ponds, marshes, and streams in Hubbardston. Water from Mare Meadow Reservoir is diverted to supply some of the 40,000 residents of Fitchburg with drinking water and Bickford Pond serves as an emergency supply for Fitchburg.

Permanent protection of our water resources is important. About 40% of Hubbardston's land is owned by the Commonwealth or a municipal water department for use as a drinking water watershed. More than 50% of the town's land is vulnerable to uses that could negatively impact water quality (see Table 10). Chapter 61 enrollments cover 15% of the town. Chapter 61 does not confer permanent protection, so in the long term, much of the land in Chapter 61 must be viewed as developable in addition to the 9% currently classified as developable. The presence of a watercourse and the vulnerability to erosion are two key attributes considered in the Hubbardston Open Space Committee conservation evaluation process.

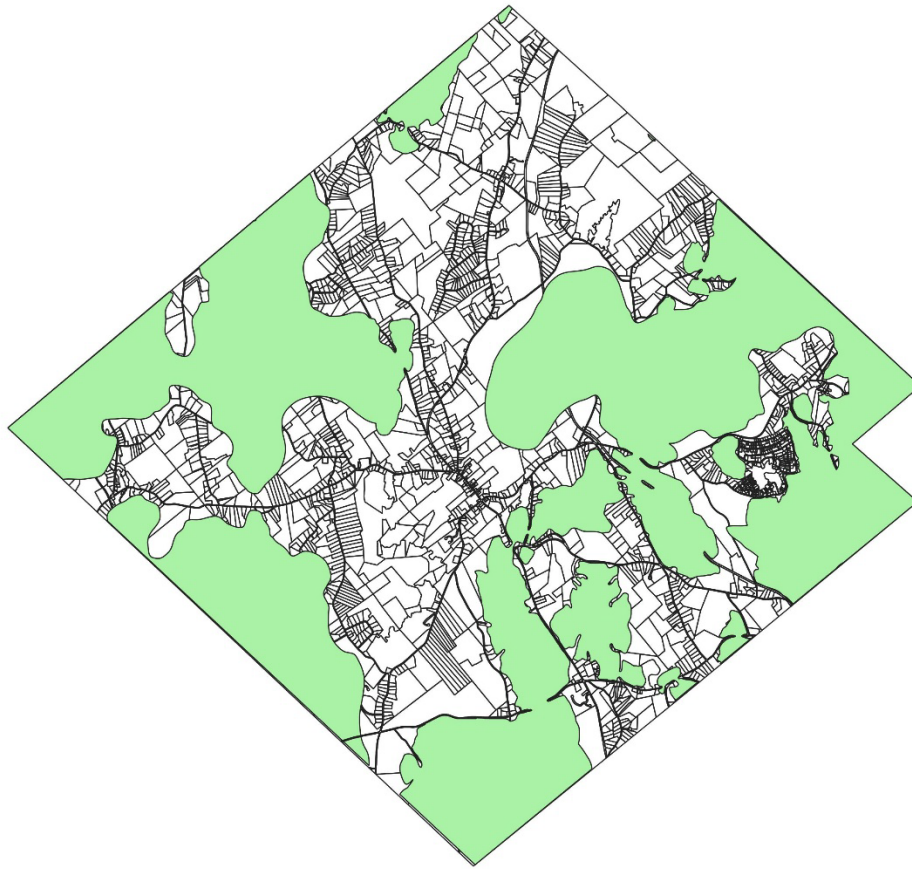
Wildlife Resources

Half of Hubbardston falls within *Critical Natural Landscape* identified by the Nature Conservancy and Massachusetts Division of Fisheries and Wildlife (MassWildlife) "BioMap3" process. These Critical Natural Landscapes are, "Minimally impacted by development and buffers to core habitats ..., both of which enhance connectivity and resilience" (<https://www.mass.gov/info-details/massgis-data-biomap-the-future-of-conservation#downloads->). These critical landscapes span areas predominated by privately-owned land in western and eastern Hubbardston as well as the town-owned Mount Jefferson and Malone Road conservation areas and Hubbardston State Forest. Critical landscapes overlap the extensive areas of MA-DCR watershed land in the southwestern part of Hubbardston and on both sides of Old Westminster Road.

Critical natural landscapes are important for sustaining the habitats of forest interior specialists, such as moose, flying squirrels, wood thrush, black-throated green warbler, and pileated woodpecker. Forest interior specialists are species that are adversely affected by nearby human civilization.

The mix of rural farm and forest land in Hubbardston adjacent to and within the critical natural landscapes provide breeding habitat for other species less common in areas with more intensive human activity. Among these are woodcock, ruffed grouse, black bear, bobcat, fisher, and porcupines. Bobolinks nest in the town-owned fields of the Mt. Jefferson conservation area and haying of three fields is not allowed until after July 7.

Protecting the wildlife species that depend on Hubbardston's extensive forests and its agricultural land means protecting the land where they live. Critical natural landscape status defined by BioMap3 is one of the attributes considered in the Hubbardston Open Space Committee conservation evaluation process.

Figure 24 Critical Natural Landscape in Hubbardston (NHESP/TNC BioMap)

Carbon Resources

Hubbardston's open space is an important resource for removing carbon dioxide from the air and storing it in trees, soil, and wood products. Eighty-two percent (22,309 acres) of the town's surface area is forest or shrub land. The Nature Conservancy (<https://www.maps.tnc.org/resilientland/>) estimates that Hubbardston's forests contain almost 2.8 million tons of carbon and each year can store (sequester) an additional 5,000 tons of carbon. Conversion of each acre of forest to other uses releases about 140 tons of carbon and reduces future sequestration by 0.5 tons per year.

Hubbardston's goals of protecting open space and maintaining the town's rural character align with a state goal to maintain the land's ability to sequester carbon and offset some carbon emissions from human activity. Much of the sequestered carbon on forest land not protected from development would be released to the atmosphere as carbon dioxide if development occurred.

Agricultural Farmland and Forest

Agriculture is culturally important to Hubbardston residents even though only a small portion of the town's land (683 acres, less than 3%) is devoted to agriculture. The agriculture is diverse, including vegetable gardens, the keeping of a few chickens, goats, sheep, and beef cows, a large pick-your-own blueberry orchard, and growing hay for horse owners. The farm land is dispersed throughout the town. There is one industrial-scale chicken farm.

Many residents appreciate the benefits of local agriculture and are supportive of efforts to protect and expand it. The Hubbardston Open Space Committee conservation evaluation process includes the suitability of land for agriculture or forestry.

Public Green Space

Public green space is viewed as several types. The largest form of green space is the land owned by the Commonwealth. Because it is public but not under local control, it is seen as distinctly different from the Mt. Jefferson and Malone Road conservation areas. A third form of public green space is land for ball fields. Lakes and ponds are a fourth type of public open space.

Hubbardston residents support the current town-owned land. The Open Space Committee is active in maintaining trails and the Department of Public Works plows the parking area and regularly mows the trails that are in fields. The Parks Commission coordinates activities on the town recreational field. Protection of additional land and expansion of organized recreational activities is generally viewed favorably by town residents, if it can be done without the use of property tax or payment-in-lieu-of-taxes revenue. The Open Space Committee's conservation evaluation process considers the proximity of each parcel to other publicly-owned land and to residents' homes.

Invasive Species

Emerald ash borer is currently the most destructive invasive species in Hubbardston. Because ash is only one of ten or more common species along roads and in the woods, the impact of emerald ash borer is not widely appreciated. Hemlock woolly adelgid is widespread but so far held in check by occasional severe cold. Invasive plants, such as Asiatic bittersweet and Japanese barberry are recognized as immediate problems only for residents actively managing their land.

Dissemination of additional information about emerging problems, such as beech leaf disease, would enhance public awareness of the issue. This educational effort should also include information about possible management techniques to control invasive species.

Historical Interests

There are numerous historic dams, mostly breached long ago, mill sites, homesteads with foundations, stone walls, and wells scattered through Hubbardston's green spaces. Sites occur on publicly and privately-owned land. The Gates farmstead in the Mount Jefferson conservation area is marked with an interpretive sign. Other woodland sites are unmarked and variably documented. When considering parcels of land for protection from development, the presence of historical artifacts is one of the parcel attributes considered.

Interest in the town's historic sites was noted during the public input process. Additional signage and on-going interpretive walks will partially address this. Additional historical research and documentation of sites would be beneficial but the necessary financial resources are not available.

Zoning

Smart growth concepts would encourage the accommodation of new growth through higher-density residential and/or commercial development in a core area of the town. This would ease the development pressures on current open space lands, allowing for the retention of unfragmented landscapes and rural character. Unfortunately, the absence of public water and wastewater systems makes this a less feasible option for Hubbardston since lot sizes must be large enough to accommodate on-site water and wastewater systems. The fragmentation of existing open space is further exacerbated by current zoning regulations that stipulate minimum lot sizes even larger than those required for on-site water and wastewater systems.

Finding the proper balance between encouraging growth that helps the town's financial viability while still preserving the essential qualities attractive to the residents will be an ongoing challenge. A change in the zoning regulations to encourage cottage industries is being considered. More information needs to be shared and discussed about the positive and negative impacts of current and proposed zoning regulations before informed decisions can be made. Furthermore, the town continues to lack sufficient resources to fully enforce current zoning regulations.

B. Community Needs

Statewide Comprehensive Outdoor Recreation Plan (SCORP) Highlights

A 2023 survey of recreation users in Massachusetts found that 95% consider outdoor recreation to be extremely important. The most common forms of recreation, in decreasing order, were hiking, walking or jogging, swimming at the beach, lake, or river, canoeing/kayaking, birding or other wildlife viewing, dog walking, off-road (rail trails/bike paths) bicycling, visiting historic sites, on-road bicycling, and fishing. Survey respondents indicated that their highest priorities were public support for recreation, protecting land with trails, and protecting fish and wildlife habitat. A separate survey not limited to recreation users found the highest priorities to be more beaches, nature preserves or wildlife viewing sites, and hiking trails.

Aging Access Considerations

In considering recreation for future use it is also important to remember that the population of Hubbardston is aging. This is consistent with statewide numbers. Trails that consider the aging population become important. According to SCORP, picnic areas and historic sites were the top two facilities favored for development among this group.

Hubbardston recently voted not to build a new senior center in the town, due to the impact on property taxes. A new senior center was considered by many residents to be a high priority, especially with the aging population within the town. Claudia Provencal, Director of the Council on Aging, reports that it would be wonderful to have some walking trails for the physically challenged seniors, a horse shoe pit and a patio with a fire pit and BBQ area for outdoor evening activities.

People with Disabilities Access Considerations

Recreational offerings for persons who are physically challenged and/or wheelchair bound are currently limited to Curtis Recreation Fields, the playground at Center School, the Ware River Rail Trail, and Malone Road Conservation Area. As one of the 'Actions' from our previous Open Space and Recreation Plan, the Open Space Committee created a short new trail at the Malone Road Conservation area that is accessible for the GRIT Freedom Chair, an all-terrain, self-powered wheelchair that can be operated by mono- and para-plegics as well as certain others with limited functional use of their limbs.

The Hubbardston Open Space Committee has developed further plans for 2,500 feet of trail surface improvements and re-routing of an existing trail to ensure equitable access to the natural spaces at the Malone Road Conservation Area creating a fully accessible 1-mile round-trip, 'all-persons' trail extending from the parking area on Malone Road to a stunning vista at the Dottie Rock scenic overlook.

This project will result in improvement of trail surfaces, removal of obstacles, and installation of resting points in sections of the Malone Conservation Area trail network making them easily accessible to mobility-impaired persons (both physically or mentally impaired), the elderly, and families, particularly those with small children. Design guidance will be taken from Forest Service Trail Accessibility Guidelines (FSTAG), the Architectural Barriers Act (ABA), and the Americans with Disabilities Act (ADA).

The improvements will include:

- a stone dust trail surface
- trailside amenities including ADA-compliant benches, resting areas, and picnic table
- an observation deck and bench at the Dottie Rock overlook that will allow those using mobility aids to experience the best available view while eliminating an existing safety hazard and enrich the outdoor experience for all users, regardless of physical ability.

Hubbardston's Equal Access to Facilities and Activities Grievance Policy and ADA inventory are included in Appendix C. Using the sample provided in Appendix G of the Open Space and Recreation Planners workbook as a guide, a formal public grievance policy was established by the Board of Selectmen in July, 2019 and posted on the town website and town offices and buildings.

Unfortunately, most of the trails on other town-owned lands do not lend themselves to the physically challenged due to the significant elevation changes inherent with these Hubbardston properties. However, the planned Malone Road project takes advantage of excellent characteristics that will make it a unique outdoor destination experience in our region for residents and visitors:

- Scenic beauty – it is located in a tranquil location with several meadows, a hayfield, and overlooks.
- Good parking
- Newly installed bird houses
- Most important, the trails emanating from the parking area are wide and of relatively low gradients.
- Growth – the trail loop of prime interest lends itself to incremental development permitting the cost of implementing the trail to be spread over several years.
- An inherent aspect of the potential loop is it will permit the user to choose the length / time to complete.
- A Freedom chair accessible trail.
- Plans to create an educational nature component to the trail identifying the biological

characteristics.

Economic Development and Property Tax Burden Needs

Hubbardston has an unusually small commercial or industrial tax base, compared with other small towns. Until recently, the town contained more industrial sites, such as a large sawmill and an agricultural equipment factory. A consequence of this is that the financial support for town services falls primarily on residential property owners. Economic development is one way to mitigate the property tax on homeowners.

The Economic Development Committee explores ways to encourage businesses to locate in Hubbardston in ways that preserves the town's rural character. Consideration of a proposal for an overlay bylaw to ease restrictions on agricultural land began in 2023. Discussions about expanding the commercial zone have been ongoing since at least 2022. The appreciation of the value of Hubbardston's rural character influences these conversations. More information should be compiled and distributed about the benefits of green spaces and creative ways to stimulate economic development while still maintaining the rural character of the town.

Commercial/Industrial Needs

The most-often cited commercial or industrial need is for more restaurants. A popular eatery closed about ten years ago and is still missed. Other most-frequently cited needs were related to agriculture, tourism, such as bed and breakfast services and an outdoor equipment store or an outfitter, health service provider offices, and small stores, especially for groceries.

Perhaps due to the current building boom and low unemployment, community input focused on the consumer perspective and not on the employment perspective. As noted above, Hubbardston has lost significant industrial activity.

Protection of Agricultural Lands

There is strong support for agriculture in Hubbardston and ways to ease some of the challenges faced by farmers would be beneficial. The town has an Agricultural Commission and an Agricultural Advisory Committee, in addition to Open Space and Economic Development committees and the Planning Board. Suitability for agriculture or forest management are attributes considered in the Hubbardston Open Space Committee conservation evaluation process.

Open Space / Recreational Land Usage

Residents expressed interest in more land for ball fields and a swimming area. Two privately-owned ball fields are helping, but there are no tennis or pickleball courts in town. There is also no public ice-skating rink. The only public water body currently open to swimming is Asnacomet Pond. As a great pond, it is open to all residents of the Commonwealth and as currently managed by MA-DCR, no open-water swimming is allowed and the designated swimming area is too small for most adult swimmers. The swimming area and the parking area are too small to accommodate the number of people who would like to use the area. Parking frequently overflows onto the shoulder of Rt. 68.

Recreation access equity and suitability of parcels for intensive recreation are among the attributes considered in the Hubbardston Open Space Committee conservation evaluation process. Greater attention should be given to opportunities for water-based recreation.

Parking at most trailheads is extremely limited. This is especially problematic in the winter due to snowbanks and throughout the year for group walks, hikes, or bike rides. Parking is especially challenging for the trailheads on MA-DCR land. The Town has neither the authorization nor the funding to construct or improve parking on DCR property. Trailhead parking can be better addressed in the future, after connecting trails have been developed and regional connections have been further strengthened.

Need for Nature Activities

It would be particularly advantageous to offer nature activities that would interest young children and teens. The future of land conservation efforts depends on the youth of today to value conservation land in the future. Encouraging our youth to enjoy the outdoors for recreational pursuits not only encourages healthy exercise but also ensures land stewards for the future. The Open Space Committee worked with the Hubbardston Girl Scouts and the Monarch Watch organization to create a certified monarch waystation and tag monarch butterflies in 2016. Having an expanded nature program offered to our town's youth is extremely important.

C. Management Needs

Funding Considerations

Hubbardston has a history of restrained public spending. In the 42 years since Proposition 2 ½ went into effect in 1982, Hubbardston voters have only approved a general override twice, in 1988. Since 1988, twenty-four general override proposals have failed. From 1990 through 2022, thirty debt exclusions have been proposed, and thirteen were approved.

(<https://web.archive.org/web/20111210203956/http://www.mass.gov/dor/docs/dls/mdmstuf/prop2-levycap-refvotes/overrides.xls> and

There is a common perception that property taxes in Hubbardston are high. In fact, from fiscal years 2020 through 2024, Hubbardston maintained the second-lowest tax rate of the five towns in the regional high school district. Compared to the seven communities neighboring Hubbardston, Hubbardston's tax rates have been the lowest in four of the five years since FY2020.

(https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=PropertyTaxInformation.taxratesbyclass.taxratesbyclass_main)

Funding to partner with East Quabbin Land Trust and use \$75,000 of CPA funds to purchase 245 acres abutting other conserved land on the east and west was approved at the 2021 Annual Town Meeting.

(https://www.hubbardstonma.us/sites/g/files/vyhlf3276/f/minutes/june_1_2021_atm_minutes.pdf)

Maintenance Considerations

The Hubbardston Department of Public Works regularly mows nearly one mile of trails that are within fields at the Mount Jefferson and Malone Road conservation areas. DPW also plows a small parking area at Malone Road following major snow storms. A state forest trailhead for Old Cross Trail is also plowed.

Volunteers, consisting primarily of members of the town open space committee and sometimes youth groups such as boy and girl scouts, clear fallen trees and cut encroaching brush along 9.5 miles of trail on town open space and state forest. Open space members also construct trail bridges, harden poorly-drained trail sections, install waterbars, and install signs. The Open Space Committee has a maintenance agreement with MA-DCR allowing the HOSC to maintain trails on Hubbardston and Templeton state forests. Volunteers from the New England Mountain Bike Association (NEMBA) also actively maintain and clear trails on land trust and DCR property.

SECTION 8: GOALS AND OBJECTIVES

The needs identified by this plan touch upon several different topics. Interest in preserving the town's rural character while accommodating its growth is ongoing. Goals and objectives for satisfying these needs overlap, but can be broken down into categories.

Preserving the rural character of the town continues to be a major unifying theme for the concerns expressed by the town residents. This theme encompasses continuing efforts to protect open space, encouraging town government toward sensitive land development and maintaining community support and involvement. The need for continued and improved resource protection and ongoing stewardship of open space lands will guide the town going forward.

The goals outlined below were informed by an analysis of existing conditions, discussions at community meetings, comments and responses to the 2023 OSRP survey, work done by the Ad Hoc OSRP Update Committee, and review of Town planning documents. The four major goals for Hubbardston's open space resources that emerged through the process of developing this OSRP update included:

Goal I: Pursue land acquisition/protection for recreation, wildlife habitat, water quality, scenic value, other ecosystem services, and agricultural resources.

Goal II: Expand and improve recreational opportunities / Improve Existing Public Open Space Assets.

Goal III: Increase public awareness of the benefits of open space and actively promote the town's recreation areas, conservation areas, and trails.

Goal IV: Protect and expand open space working lands that contribute to Hubbardston's rural economy.

In an effort to meet the overall goals, a seven-year action plan with specific objectives and tasks has been developed and follows in Section 9.

SECTION 9: SEVEN YEAR ACTION PLAN

Goal I: Pursue land acquisition/protection for recreation, wildlife habitat, water quality, scenic value, other ecosystem services, and agricultural resources.									
Objectives/Tasks	Lead Party	Funding	Timeframe						
			2024	2025	2026	2027	2028	2029	2030
A. Identify and prioritize land acquisition opportunities, utilizing our Hubbardston Land Conservation Rating System tool.	OSC	Vol	✓	✓	✓	✓	✓	✓	✓
B. Identify potential trail locations and landowners interested in cooperating with establishment of needed trails.	OSC	Vol	✓	✓	✓	✓	✓	✓	✓
C. Partner with land trusts and qualified organizations to secure conservation restrictions.	OSC	Vol		✓	✓	✓	✓	✓	✓
D. Identify potential threats to major south-flowing streams to guide conservation priorities.	OSC	Vol		✓					
E. Develop a land conservation proposal with regional benefits for Forest Legacy or Landscape Partnership consideration.	OSC	Vol		✓	✓	✓	✓	✓	✓

Goal II: Expand and improve recreational opportunities / Improve Existing Public Open Space Assets.									
Objectives/Tasks	Lead Party	Funding	Timeframe						
			2024	2025	2026	2027	2028	2029	2030
A. Expand and improve walking track and other facilities at Curtis Field.	PC	CPA		✓	✓				
B. Expand and improve trail accessibility at Malone Road Conservation Area.	OSC	MTG ARPA		✓					
C. Complete restoration of lawn in front of Gates foundation all the way to the foundation.	OSC	Ryder DPW	✓	✓					
D. Establish a Trail Maintenance / Enhancement Plan for our existing trail system.	OSC	Vol		✓					
E. Improve parking at trailheads with paved aprons and gravel to protect adjacent road surface and provide all-weather access.	OSC/ DPW	CPA DPW		✓	✓	✓			
F. Explore the creation of “Blue Trails” on our waterways.	OSC	Vol			✓				

Goal III: Increase public awareness of the benefits of open space and actively promote the town's recreation areas, conservation areas, and trails.

Objectives/Tasks	Lead Party	Funding	Timeframe						
			2024	2025	2026	2027	2028	2029	2030
A. Offer activities involving the outdoors: hikes, educational walks, etc..	OSC	Vol	✓	✓	✓	✓	✓	✓	✓
B. Create a section of town website to highlight the suggested public information and promotional activities.	OSC	Vol		✓					
C. Improve signage leading to our recreation and conservation areas and at trailheads to assist residents and out-of-town visitors.	OSC/ DPW	MTG CPA		✓	✓				
D. Increase public awareness of environmental issues such as invasive species and the threats they pose to our ecosystem's health.	OSC	Vol		✓	✓	✓	✓	✓	✓
E. Trail bells and whistles/educational	OSC	MTG		✓	✓	✓			

Goal IV: Protect and expand open space working lands that contribute to Hubbardston's rural economy.									
Objectives/Tasks	Lead Party	Funding	Timeframe						
			2024	2025	2026	2027	2028	2029	2030
A. Create mixed-use zoning or an overlay zone that would support agricultural enterprises, eco-tourism, and complementary uses.	PB	DLTA	✓						
B. Strengthen regional and state relationships, including with our representatives, the Executive Office of Energy and Environmental Affairs, DCR, and the Director of Rural Affairs to actively lobby for increased funding (over and above PILOT funds) for open space in communities affected by the taking of land to provide metropolitan Boston's water.	TA		✓	✓	✓	✓			
C. Develop a marketing plan to highlight the economic opportunities that the town's open space and recreation resources provide to potential businesses.	EDC	DLTA		✓	✓	✓			
D. Promote our recreation opportunities and conservation areas regionally to encourage ecotourism.	EDC	DLTA		✓	✓	✓			
E. Require developers to contribute to a land conservation fund for each acre of open space converted to other uses.	OSC	Vol		✓	✓				
F. Advocate for projects that align with State Climate Resiliency & Forestry initiatives	OSC	Grants			✓	✓	✓	✓	✓

Table 18 List of acronyms

Acronym	Name / Organization
ARPA	American Rescue Plan Act
CPA	Community Preservation Act funds
DLTA	District Local Technical Assistance
DPW	Department of Public Works
EDC	Economic Development Committee
MTG	MassTrails Grant
OSC	Open Space Committee
PB	Planning Board
PC	Park Commission
TA	Town Administrator
Vol	Community volunteers

SECTION 10: REFERENCES

The following sources were used in the preparation of this Plan:

- Hubbardston draft Master Plan – 2018-2023
- Previous Hubbardston Open Space & Recreation Plans (last iteration: 2018)
- Hubbardston Housing Production Plan 2017
- Hubbardston Community Resilience Building Workshop 2020
- MRPC Buildout Calculations for Hubbardston
- Massachusetts draft Statewide Comprehensive Outdoor Recreation Plan 2023
- Water Quality Report: 2022 Quabbin Reservoir Watershed/Ware River Watershed
- Ware River Watershed Public Access Management Plan Update 2023
- 2019 Stakeholder Survey – Public Access Issues in the Ware River Watershed System
- Hubbardston Community Survey 2021
- Hubbardston Master Plan Survey 2021
- U.S. Decennial Census
- American Community Survey 5-year census data 2018-2022
- Hubbardston Town Center Public Water and Sewer Feasibility Study 2011

Information was also provided by such local sources as:

- Hubbardston Assessor's Office
- Hubbardston Town Clerk
- Hubbardston Planning Board
- Hubbardston Board of Health
- Hubbardston Historic Commission

Various State of Massachusetts departmental websites: Department of Environmental Protection, Department of Conservation Resources, Department of Fish & Game – Division of Fisheries & Wildlife, Agricultural Resources, Executive Office of Energy and Environmental Affairs, Bio-Map 3, Natural Heritage and Endangered Species Program, and others.

All maps and acreage calculations were prepared from MassGIS data layers, field data collected by the Hubbardston Open Space Committee, and analysis of Town Assessor records.

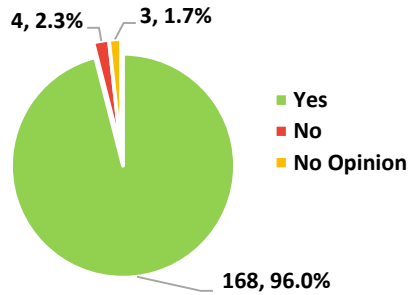
Appendix A

2023 Public Survey Results

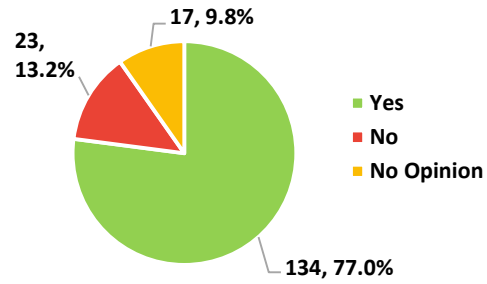
Hubbardston Open Space and Recreation Plan

Public Survey Responses

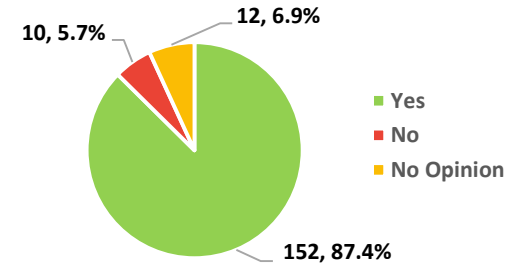
Is preservation of Hubbardston's forests, fields, and wetlands important to you?



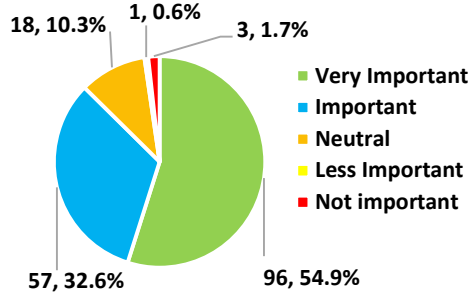
Should Hubb. pursue more opportunities to conserve more land for recreation & natural resource protection?



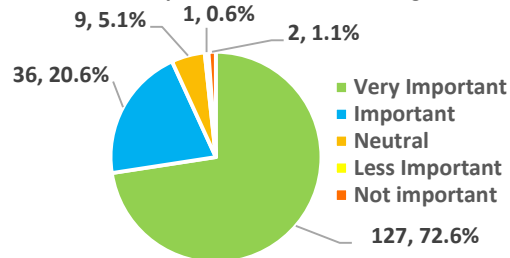
Do the open space and recreation resources in Hubbardston enhance your or your family's quality of life?



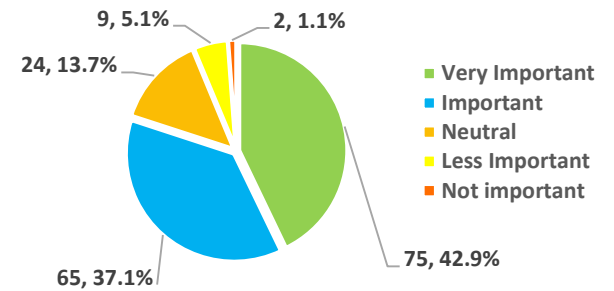
How important to you is it that Farmlands be preserved



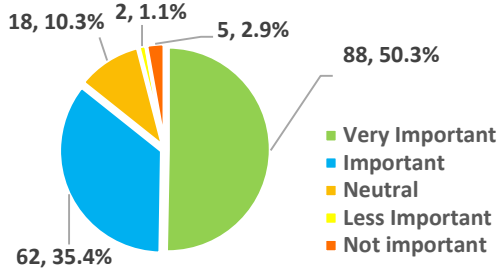
How important to you is preserving forests, fields, and wetlands to cleanse our air and water, provide habitat for wildlife and pollinators, carbon storage



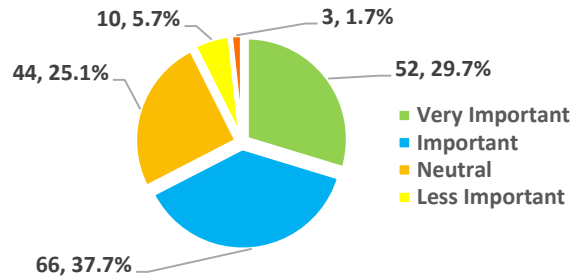
How important to you is it that we preserve open space to meet our active recreational needs



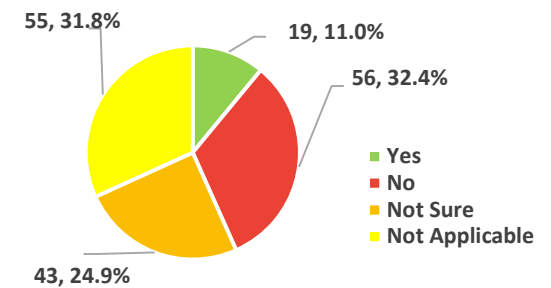
How important to you is it that we preserve forests, fields, and wetlands for their scenic value?



How important to you is it that we preserve places or buildings of historical value?

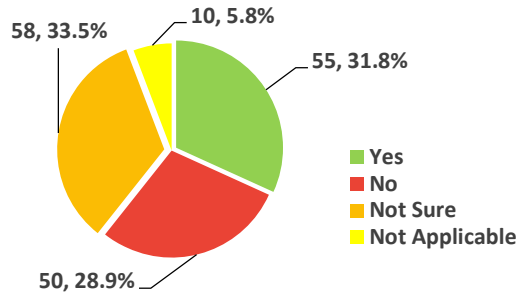


To preserve open spaces in town, would you donate land to the town or land trust?

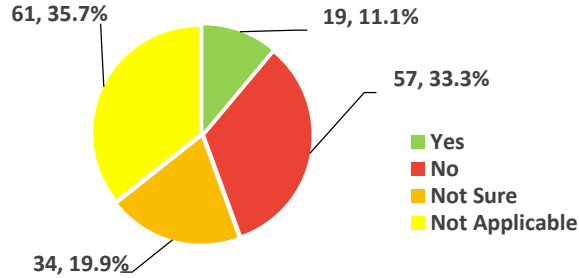


Hubbardston Open Space and Recreation Plan Public Survey Responses

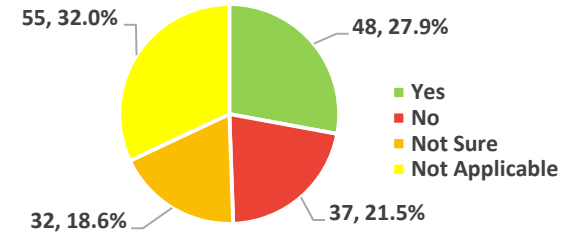
To preserve open spaces in town would you donate money to buy land?



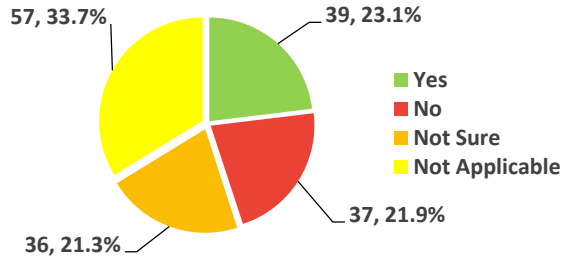
To preserve open spaces in town would you sell land to town or land trust at "bargain price"?



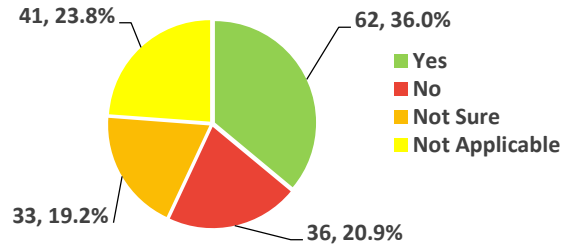
To preserve open spaces in town would you sell or donate a conservation restriction to protect your land from future development?



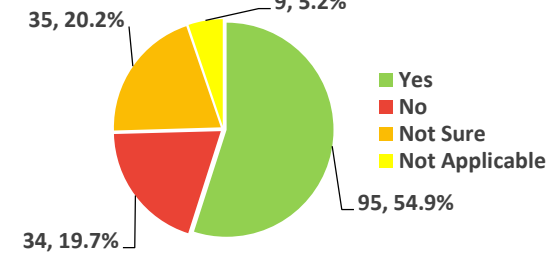
To preserve open spaces in town would you sell land to the town at fair market value?



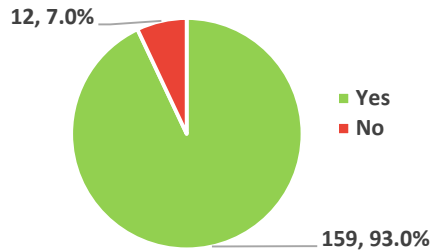
To preserve open spaces in town would you allow or create an easement to allow a trail interconnection?



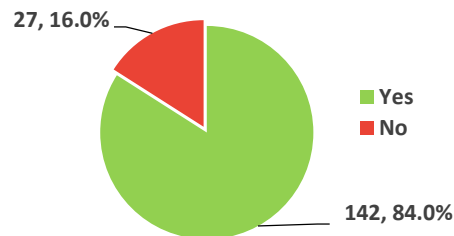
To preserve open spaces in town would you vote for land protection paid for with a combination of grants and higher taxes?



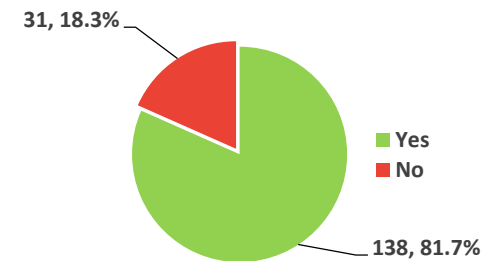
To preserve open space resources do you favor the town partner with land trusts or private organizations to fund preservation?



To preserve open space resources do you favor the town grant conservation restrictions on town land to a land trust, conservancy, or other qualified organization?

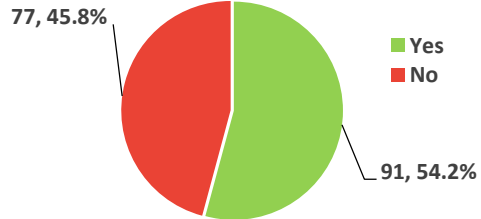


To preserve open space resources do you favor the town purchase of land?

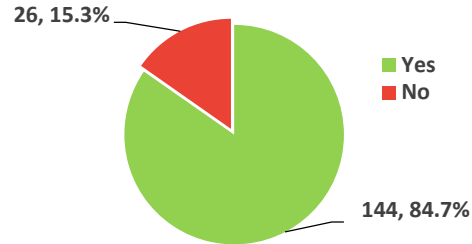


Hubbardston Open Space and Recreation Plan Public Survey Responses

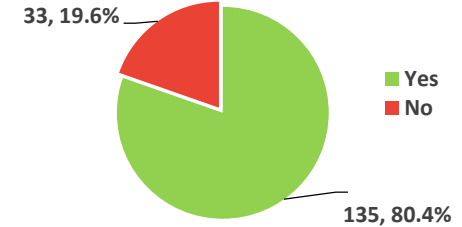
To preserve open space resources do you favor the town create mixed-use zoning combining open space and affordable housing?



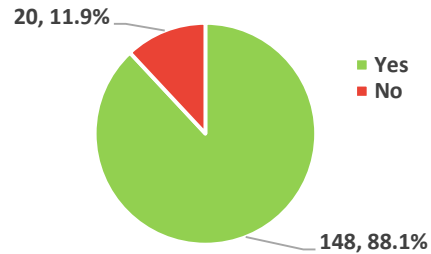
To preserve open space resources do you favor the town require developers to dedicate a portion of the acreage to open space?



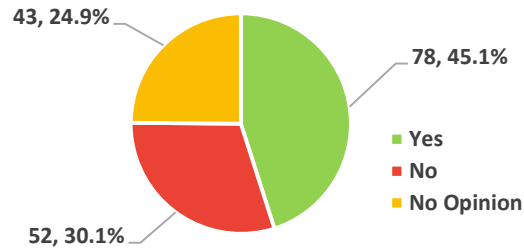
To conserve open space resources in perpetuity do you favor the town Purchase development rights and forbid development, allowing only specified uses such as open space or agriculture.



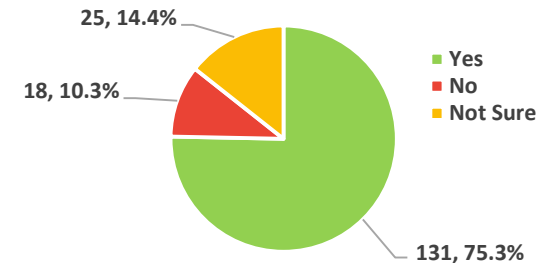
To preserve open space resources do you favor the state provide property tax reduction programs for conserving farm, forest, and recreation land with a conservation restriction?



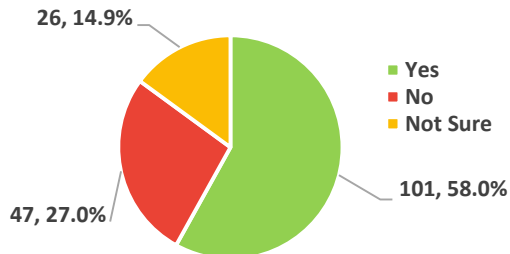
Should zoning regulations be changed to reduce fragmentation of forest and farmland or encourage construction of smaller, less-costly homes?



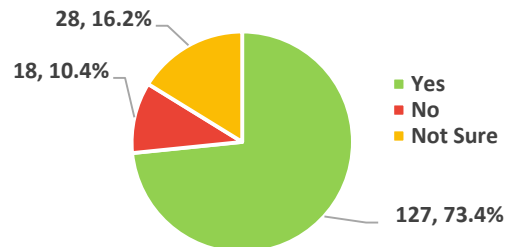
Are you satisfied with the places for children and youth to play and recreate in town?



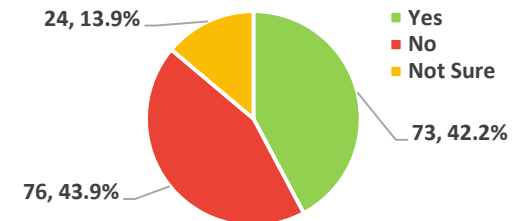
Are you satisfied with the places in town available for recreational use by adults?



Are you satisfied with the general conditions of the recreation facilities?

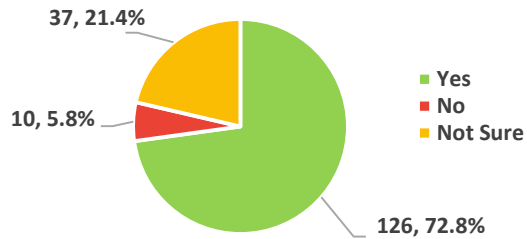


Are you satisfied with the availability of information on recreation areas, conservation areas, and trails?

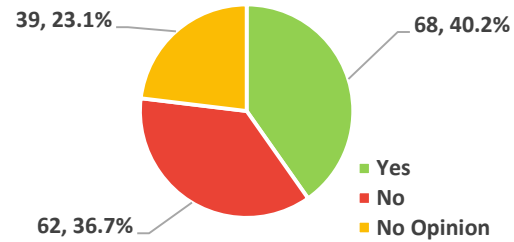


Hubbardston Open Space and Recreation Plan Public Survey Responses

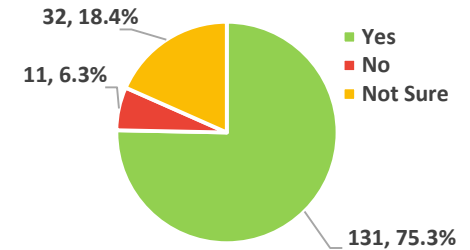
Would you like to see the trails in town interconnected?



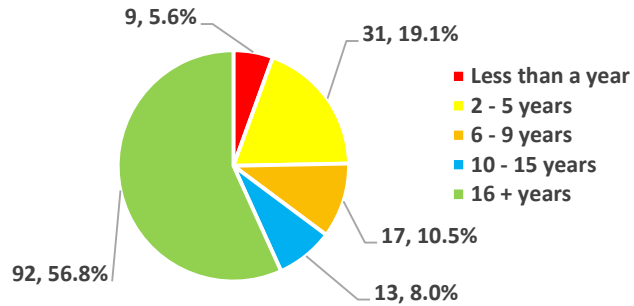
Should the town acquire land for public water or sewer for downtown area to attract and support commercial businesses?



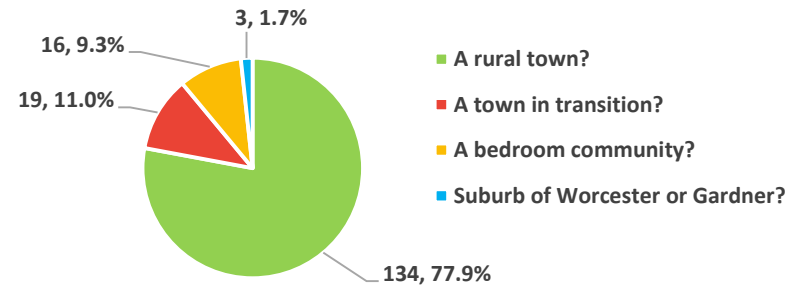
Would you like to see Hubbardston trails interconnect with trails in other towns or the region?



How long have you lived in Hubbardston?



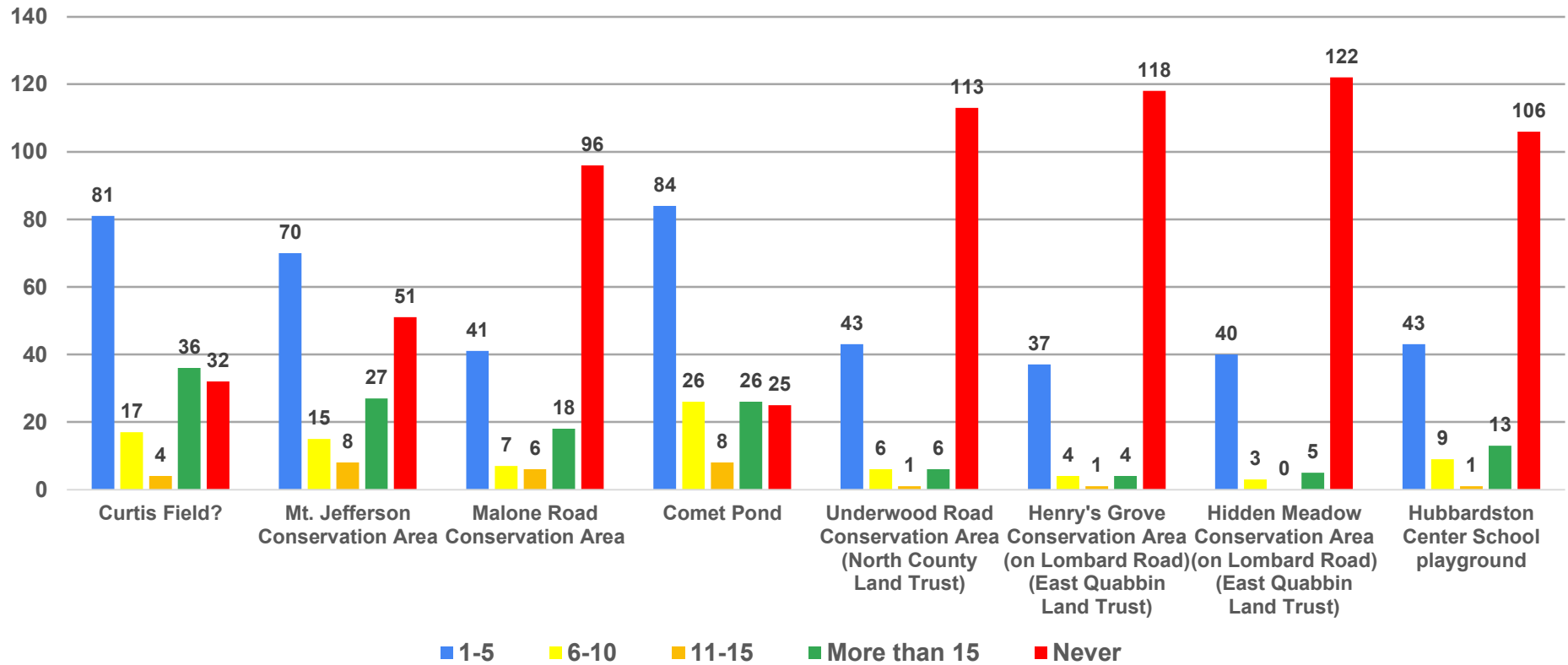
Do you consider Hubbardston:



Hubbardston Open Space and Recreation Plan Public Survey Responses

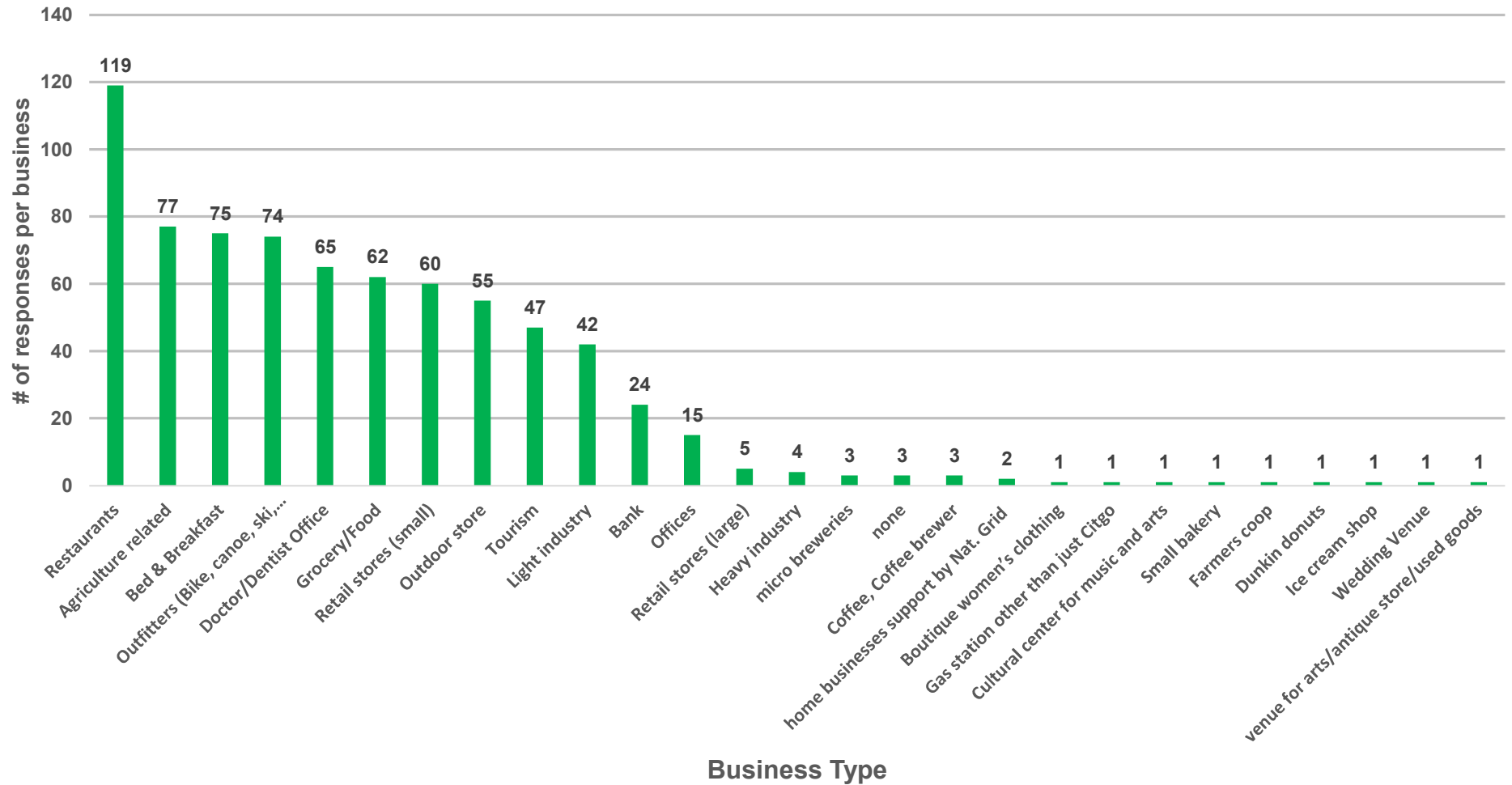
How many times per year do respondents say they visit these recreation areas

(Number of respondents who gave this answer is at top of each bar)



Hubbardston Open Space and Recreation Plan Public Survey Responses

What type of business would you like to see in Hubbardston?



Hubbardston Open Space and Recreation Plan

Public Survey Responses

What three aspects of living in Hubbardston do you like best?

Reasons given	Categories						% of Total
	Natural Resources	Town Character	Town attributes	Community related	Recreation	Total	
open space, undeveloped, green space	49					49	15.3%
Small town, low population, low growth		39				39	12.2%
Forests, woodlands, trees	21					21	6.6%
Nature, scenic beauty, country	21					21	6.6%
accessible, convenience, proximity, commute friendly			19			19	5.9%
Ponds, wetlands, rivers, water	16			16		16	5.0%
the people, neighbors				15		15	4.7%
safety, good police force, low crime			14			14	4.4%
sense of community				14		14	4.4%
Farms, agriculture, local produce		13				13	4.1%
outdoor recreation, fishing, hunting, mountain biking, horseback riding, kayaking					11	11	3.4%
privacy		11				11	3.4%
Trails					10	10	3.1%
low cost-of-living, affordable taxes			9			9	2.8%
community events, field day					7	7	2.2%
no traffic		6				6	1.9%
wildlife	6					6	1.9%
Center School			5			5	1.6%
local businesses			4			4	1.3%
non-commercial		3				3	0.9%
Recreation field					3	3	0.9%
Comet Pond					2	2	0.6%
library			2			2	0.6%
space between houses			2			2	0.6%
good place to raise children			1			1	0.3%
meadows	1					1	0.3%
Total reasons given	114	72	56	45	33	320	
% of Total	35.6%	22.5%	17.5%	14.1%	10.3%		

Appendix B

Public Comments

Appendix C

Equal Access to Facilities and Activities Grievance Policy

ADA Self-Evaluation



Town of Hubbardston

Board of Selectmen Policies

Equal Access to Facilities and Activities Grievance Policy

STEP 1:

The Town Administrator or appointed ADA Coordinator will be available to meet with citizens and employees during business hours. When a complaint, grievance, request for program policy interpretation or clarification is received either in writing or through a meeting or telephone call, every effort will be made to create a record regarding the name, address, and telephone number of the person making the complaint, grievance, program policy interpretation or clarification. If the person desires to remain anonymous, they may.

A complaint, grievance, request for program policy interpretation or clarification will be responded to within ten working days (if the person making the complaint is identified) in a format that is sensitive to the needs of the recipient, (i.e. verbally, enlarged type face, etc). Copies of the complaint, grievance, request for program policy interpretation or clarification and response will be forwarded to the appropriate town agency (i.e. park commission, conservation commission). If the grievance is not resolved at this level it will be progressed to the next level.

STEP 2:

A written grievance will be submitted to the Town Administrator. Assistance in writing the grievance will be available to all individuals. All written grievances will be responded to within ten working days by the Town Administrator in a format that is sensitive to the needs of the recipient, (i.e. verbally, enlarged type face, etc.). If the grievance is not resolved at this level it will be progressed to the next level.

STEP 3:

If the grievance is not satisfactorily resolved, citizens will be informed of the opportunity to meet and speak with the Board of Selectmen, with whom local authority for final grievance resolution lies. EFFECTIVE DATE

This policy was adopted March 2019 and reviewed in September of 2019.

Appendix C: Hubbardston Open Space ADA Inventory

(Note: N/A – not applicable. These areas grayed-out for ease of reading)

Activity	Equipment	Specification or Description	Locations					Notes & Comments
			Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	
Picnic Facilities	Tables & Benches	Located adjacent to accessible paths	Yes	Yes	Yes	No	Yes	
		Access to Open Spaces	Yes	Yes	Yes	N/A	Yes	
		Back and Arm Rests	Yes	Yes	No	No	No	None have arm rests
		Adequate number	2 tables 1 bench	2 benches	1 table 3 benches	3 benches	2 benches	
	Grills	Height of Cooking Surface	N/A	N/A	N/A	N/A	N/A	No Grills at any location
		Located adjacent to accessible paths	N/A	N/A	N/A	N/A	N/A	
	Trash Cans	Located adjacent to accessible paths	No	No	Yes	Yes	None	
	Picnic Shelters	Located adjacent to accessible paths	N/A	N/A	N/A	N/A	N/A	None at any location
Trails		Located near accessible water fountains, trash can, restroom, parking, etc.	Parking	Parking	Parking, trash can	N/A	N/A	
		Surface material	Natural	Natural	Asphalt	N/A	N/A	
		Dimensions	Miles	Miles	.5 mi. x 8'	N/A	N/A	
		Rails	No	No	No	No	No	
		Signage (for visually impaired)	No	No	No	No	No	
Swimming Facilities	Pools	Entrance	N/A	N/A	N/A	N/A	N/A	
		Location from accessible parking	N/A	N/A	N/A	N/A	N/A	
		Safety features i.e. warning for visually impaired	N/A	N/A	N/A	N/A	N/A	
	Beaches	Location from accessible path into water	N/A	N/A	N/A	N/A	N/A	
		Handrails	N/A	N/A	N/A	N/A	N/A	
		Location from accessible parking	N/A	N/A	N/A	N/A	N/A	
		Shade provided	N/A	N/A	N/A	N/A	N/A	

Activity	Equipment	Specification or Description	Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
Play Areas (tot lots)	All Play Equipment i.e. swings, slides	Same experience provided to all	N/A	N/A	Yes	N/A	N/A	
	Access Routes	Located adjacent to accessible paths	N/A	N/A	Yes	N/A	N/A	
		Enough space between equipment for wheelchair	N/A	N/A	Yes	N/A	N/A	
Game Areas: *2 ballfields *1 basketball *1 Skateboard *2 Soccer Fields *1 multi-use	Access Routes	Located adjacent to accessible paths	N/A	N/A	Yes	N/A	N/A	
		Berm cuts onto courts	N/A	N/A	Yes	N/A	N/A	
	Equipment	Height	N/A	N/A	Standard	N/A	N/A	
		Dimensions	N/A	N/A	Standard	N/A	N/A	
		Spectator Seating	N/A	N/A	Yes, for soccer & baseball	N/A	N/A	Ballfields have covered, screened team dugouts
Boat Docks	Access Routes	Located adjacent to accessible paths	N/A	N/A		N/A	N/A	
		Handrails	N/A	N/A		N/A	N/A	
Fishing Facilities	Access Routes	Located adjacent to accessible paths	N/A	N/A		N/A	N/A	
		Handrails	N/A	N/A		N/A	N/A	
	Equipment	Arm Rests	N/A	N/A		N/A	N/A	
		Bait Shelves	N/A	N/A		N/A	N/A	
		Handrails	N/A	N/A		N/A	N/A	
		Fish Cleaning Tables	N/A	N/A		N/A	N/A	
Programming	Are special programs at your facilities accessible?	Learn-to-Swim	No	No	No	No	No	
		Guided Hikes	Yes	Yes	No	No	No	
		Interpretive Programs	No	No	No	No	No	
Services and Technical Assistance	Information available in alternative formats, i.e. for visually impaired		No	No	No	No	No	
	Process to request interpretive services (i.e. sign language interpreter) for meetings		No	No	No	No	No	

			Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
PARKING	Total Spaces	Required Accessible Spaces						
	Up to 25	1 space	Yes	Yes	N/A	Yes	Yes	
	26-50	2 spaces	N/A	N/A	N/A	N/A	N/A	
	51-75	3 spaces	N/A	N/A	N/A	N/A	N/A	
	76-100	4 spaces	N/A	N/A	Yes	N/A	N/A	
	101-150	5 spaces	N/A	N/A	N/A	N/A	N/A	
	151-200	6 spaces	N/A	N/A	N/A	N/A	N/A	
	201-300	7 spaces	N/A	N/A	N/A	N/A	N/A	
	301-400	8 spaces	N/A	N/A	N/A	N/A	N/A	
	401-500	9 spaces	N/A	N/A	N/A	N/A	N/A	
	Specification for Accessible Spaces							
	Accessible space located close to accessible entrance		Yes	Yes	Yes	Yes	Yes	
	Where spaces cannot be located within 200 ft of accessible entrance, drop-off area is provided within 100 ft.		Yes	Yes	Yes	Yes	Yes	
	Minimum width of 13 ft includes 8 ft space plus 5 ft access aisle		Yes	Yes	Yes	Yes	Yes	
	Van space – minimum of 1 van space for every accessible space, 8 ft wide plus 8 ft aisle. Alternative is to make all accessible spaces 11 ft wide with 5 ft aisle.		Yes	Yes	No	Yes	Yes	
	Sign with international symbol of accessibility at each space or pair of spaces		No	No	Yes	No	No	
	Sign minimum 5 ft, maximum 8 ft to top of sign		No	No	Yes	No	No	
	Surface evenly paved or hard-packed (no cracks)		Yes	Yes	Yes	Yes	Yes	
	Surface slope less than 1:20, 5%		Yes	Yes	Yes	Yes	Yes	
	Curbcut to pathway from parking lot at each space or pair of spaces, if sidewalk (curb) is present		N/A	N/A	Yes	N/A	N/A	
	Curbcut is a minimum width of 3 ft, excluding sloped sides, has sloped sides, all slopes not to exceed 1:12, and textured or painted yellow		N/A	N/A	Yes	N/A	N/A	

		Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
RAMPS	Specification						
	Slope Maximum 1:12	N/A	N/A	Yes	N/A	N/A	
	Minimum width 4 ft between handrails	N/A	N/A	Yes	N/A	N/A	No handrails
	Handrails on both sides if ramp is longer than 6 ft	N/A	N/A	No	N/A	N/A	
	Handrails at 34" and 19" from ramp surface	N/A	N/A	No	N/A	N/A	
	Handrails extend 12" beyond top and bottom	N/A	N/A	No	N/A	N/A	
	Handgrip oval or round	N/A	N/A	No	N/A	N/A	
	Handgrip smooth surface	N/A	N/A	No	N/A	N/A	
	Handgrip diameter between 1¼" and 2"	N/A	N/A	No	N/A	N/A	
	Clearance of 1½" between wall and wall rail	N/A	N/A	No	N/A	N/A	
	Non-slip surface	N/A	N/A	Yes	N/A	N/A	
	Level platforms (4ft x 4 ft) at every 30 ft, at top, at bottom, at change of direction	N/A	N/A	No	N/A	N/A	
SITE ACCESS, PATH OF TRAVEL, ENTRANCES							
Site Access	Accessible path of travel from passenger disembarking area and parking area to accessible entrance	Yes	Yes	Yes	Yes	Yes	
	Disembarking area at accessible entrance	Yes	Yes	Yes	Yes	Yes	
	Surface evenly paved or hard-packed	Yes	Yes	Yes	Yes	Yes	
	No ponding of water	Yes	Yes	Yes	Yes	Yes	
Path of Travel	Path does not require the use of stairs	Yes	Yes	Yes	Yes	Yes	
	Path is stable, firm and slip resistant	Yes	Yes	Yes	Yes	Yes	ice & snow in winter
	3 ft wide minimum	Yes	Yes	Yes	Yes	Yes	
	Slope maximum 1:20 (5%) and maximum cross pitch is 2% (1:50).	Yes	Yes	Yes	Yes	Yes	
	Continuous common surface, no changes in level greater than ½ inch	Yes	Yes	Yes	N/A	N/A	
	Any objects protruding onto the pathway must be detected by a person with a visual disability using a cane	Yes	Yes	Yes	N/A	N/A	
	Objects protruding more than 4" from the wall must be within 27" of the ground, or higher than 80"	N/A	N/A	N/A	N/A	N/A	
	Curb on the pathway must have curb cuts at drives, parking and drop-offs	N/A	N/A	N/A	N/A	N/A	

		Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
Entrances	Primary public entrances accessible to person using wheelchair, must be signed, gotten to independently, and not be the service entrance	N/A	N/A	N/A	N/A	N/A	
	Level space extending 5 ft. from the door, interior and exterior of entrance doors	N/A	N/A	N/A	N/A	N/A	
	Minimum 32" clear width opening (i.e. 36" door with standard hinge)	N/A	N/A	N/A	N/A	N/A	
	At least 18" clear floor area on latch, pull side of door	N/A	N/A	N/A	N/A	N/A	
	Door handle no higher than 48" and operable with a closed fist	N/A	N/A	N/A	N/A	N/A	
	Vestibule is 4 ft plus the width of the door swinging into the space	N/A	N/A	N/A	N/A	N/A	
	Entrance(s) on a level that makes elevators accessible	N/A	N/A	N/A	N/A	N/A	
	Door mats less than ½" thick are securely fastened	N/A	N/A	N/A	N/A	N/A	
	Door mats more than ½" thick are recessed	N/A	N/A	N/A	N/A	N/A	
	Grates in path of travel have openings of ½" maximum	N/A	N/A	N/A	N/A	N/A	
	Signs at non-accessible entrance(s) indicate direction to accessible entrance	N/A	N/A	N/A	N/A	N/A	
	Emergency egress – alarms with flashing lights and audible signals, sufficiently lighted	N/A	N/A	N/A	N/A	N/A	
STAIRS and DOORS							
Specification							
Stairs	No open risers	N/A	N/A	N/A	N/A	N/A	
	Nosings not projecting	N/A	N/A	N/A	N/A	N/A	
	Treads no less than 11" wide	N/A	N/A	N/A	N/A	N/A	
	Handrails on both sides	N/A	N/A	N/A	N/A	N/A	
	Handrails 34"-38" above tread	N/A	N/A	N/A	N/A	N/A	
	Handrail extends a minimum of 1 ft beyond top and bottom riser (if no safety hazard and space permits)	N/A	N/A	N/A	N/A	N/A	
	Handgrip oval or round	N/A	N/A	N/A	N/A	N/A	
	Handgrip has a smooth surface	N/A	N/A	N/A	N/A	N/A	
	Handgrip diameter between 1¼" and 1½"	N/A	N/A	N/A	N/A	N/A	
	1½" clearance between wall and handrail	N/A	N/A	N/A	N/A	N/A	

		Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
Doors	Minimum 32" clear opening	N/A	N/A	N/A	N/A	N/A	
	At least 18" clear floor space on pull side of door	N/A	N/A	N/A	N/A	N/A	
	Closing speed minimum 3 seconds to within 3" of the latch	N/A	N/A	N/A	N/A	N/A	
	Maximum pressure 5 pounds interior doors	N/A	N/A	N/A	N/A	N/A	
	Threshold maximum ½" high, beveled on both sides	N/A	N/A	N/A	N/A	N/A	
	Hardware operable with a closed fist (no conventional door knobs or thumb latch devices)	N/A	N/A	N/A	N/A	N/A	
	Hardware minimum 36", maximum 48" above the floor	N/A	N/A	N/A	N/A	N/A	
	Clear, level floor space extends out 5 ft from both sides of the door	N/A	N/A	N/A	N/A	N/A	
	Door adjacent to revolving door is accessible and unlocked	N/A	N/A	N/A	N/A	N/A	
	Doors opening into hazardous area have hardware that is knurled or roughened	N/A	N/A	N/A	N/A	N/A	
RESTROOMS – also see Doors & Vestibules							
Specification							
At least one Sink:	Clear floor space of 30" by 48" to allow a forward approach	N/A	N/A	N/A	N/A	N/A	
	5 ft turning space measured 12" from the floor	N/A	N/A	N/A	N/A	N/A	
	Mounted without pedestal or legs, height 34" to top of rim	N/A	N/A	N/A	N/A	N/A	
	Extends at least 22" from the wall	N/A	N/A	N/A	N/A	N/A	
	Open knee space a minimum 19" deep, 30" width, and 27" high	N/A	N/A	N/A	N/A	N/A	
	Cover exposed pipes with insulation	N/A	N/A	N/A	N/A	N/A	
	Faucets operable with closed fist (lever or spring activated handle)	N/A	N/A	N/A	N/A	N/A	

		Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
At least one Stall:	Accessible to person using wheelchair at 60" wide by 72" deep	N/A	N/A	N/A	N/A	N/A	
	Stall door is 36" wide	N/A	N/A	N/A	N/A	N/A	
	Stall door swings out	N/A	N/A	N/A	N/A	N/A	
	Stall door is self closing	N/A	N/A	N/A	N/A	N/A	
	Stall door has a pull latch	N/A	N/A	N/A	N/A	N/A	
	Lock on stall door is operable with a closed fist, and 32" above the floor	N/A	N/A	N/A	N/A	N/A	
	Coat hook is 54" high	N/A	N/A	N/A	N/A	N/A	
Toilet	18" from center to nearest side wall	N/A	N/A	N/A	N/A	N/A	
	42" minimum clear space from center to farthest wall or fixture	N/A	N/A	N/A	N/A	N/A	
	Top of seat 17"-19" above the floor	N/A	N/A	N/A	N/A	N/A	
Grab Bars	On back and side wall closest to toilet	N/A	N/A	N/A	N/A	N/A	
	1½" diameter	N/A	N/A	N/A	N/A	N/A	
	1½" clearance to wall	N/A	N/A	N/A	N/A	N/A	
	Located 30" above and parallel to the floor	N/A	N/A	N/A	N/A	N/A	
	Acid-etched or roughened surface	N/A	N/A	N/A	N/A	N/A	
	42" long	N/A	N/A	N/A	N/A	N/A	
Fixtures	Toilet paper dispenser is 24" above floor	N/A	N/A	N/A	N/A	N/A	
	One mirror set a maximum 38" to bottom (if tilted, 42")	N/A	N/A	N/A	N/A	N/A	
	Dispensers (towel, soap, etc) at least one of each a maximum 42" above the floor	N/A	N/A	N/A	N/A	N/A	
FLOORS, DRINKING FOUNTAINS, TELEPHONES							
	Specification						
Floors	Non-slip surface	N/A	N/A	N/A	N/A	N/A	
	Carpeting is high-density, low pile, non-absorbent, stretched taut, securely anchored	N/A	N/A	N/A	N/A	N/A	
	Corridor width minimum is 3 ft	N/A	N/A	N/A	N/A	N/A	
	Objects (signs, ceiling lights, fixtures) can only protrude 4" into the path of travel from a height of 27" to 80" above the floor	N/A	N/A	N/A	N/A	N/A	

		Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
Drinking Fountains	Spouts no higher than 36" from floor to outlet	N/A	N/A	N/A	N/A	N/A	
	Hand operated push button or level controls	N/A	N/A	N/A	N/A	N/A	
	Spouts located near front with stream of water as parallel to front as possible	N/A	N/A	N/A	N/A	N/A	
	If recessed, recess a minimum 30" width, and no deeper than depth of fountain	N/A	N/A	N/A	N/A	N/A	
	If no clear knee space underneath, clear floor space 30" x 48" to allow parallel approach	N/A	N/A	N/A	N/A	N/A	
		N/A	N/A	N/A	N/A	N/A	
Telephones	Highest operating part a maximum 54" above the floor	N/A	N/A	N/A	N/A	N/A	
	Access within 12" of phone, 30" high by 30" wide	N/A	N/A	N/A	N/A	N/A	
	Adjustable volume control on headset so identified	N/A	N/A	N/A	N/A	N/A	
SIGNS, SIGNALS, AND SWITCHES							
Specification							
Switches, Controls and Signs	Switches and controls for light, heat, ventilation, windows, fire alarms, thermostats, etc, must be a minimum of 36" and a maximum of 48" above the floor for a forward reach, a maximum of 54" for a side reach	N/A	N/A	N/A	N/A	N/A	
	Electrical outlets centered no lower than 18" above the floor	N/A	N/A	N/A	N/A	N/A	
	Warning signals must be visual as well as audible	N/A	N/A	N/A	N/A	N/A	
Signs	Mounting height must be 60" to centerline of the sign	N/A	N/A	N/A	N/A	N/A	
	Within 18" of door jamb or recessed	N/A	N/A	N/A	N/A	N/A	
	Letters and numbers at least 1¼" high	N/A	N/A	N/A	N/A	N/A	
	Letters and numbers raised .03"	N/A	N/A	N/A	N/A	N/A	
	Letters and numbers contrast with the background color	N/A	N/A	N/A	N/A	N/A	

		Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
SWIMMING POOLS – accessibility can be via ramp, lifting device, or transfer area							
	Ramp at least 34" wide with a non-slip surface extending into the shallow end, slope not exceeding 1:6 with handrails on both sides	N/A	N/A	N/A	N/A	N/A	
	Lifting device	N/A	N/A	N/A	N/A	N/A	
	Transfer area 18" above the path of travel and a minimum of 18" wide	N/A	N/A	N/A	N/A	N/A	
	Unobstructed path of travel not less than 48" wide around pool	N/A	N/A	N/A	N/A	N/A	
	Non-slip surface	N/A	N/A	N/A	N/A	N/A	
SHOWER ROOMS – Showers must accommodate both wheel-in and transfer use							
	Stalls 36" by 60" minimum, with a 36" door opening	N/A	N/A	N/A	N/A	N/A	
	Floors are pitched to drain the stall at the corner farthest from entrance	N/A	N/A	N/A	N/A	N/A	
	Floors are non-slip surface	N/A	N/A	N/A	N/A	N/A	
	Controls operate by a single lever with a pressure balance mixing valve	N/A	N/A	N/A	N/A	N/A	
	Controls are located on the center wall adjacent to the hinged seat	N/A	N/A	N/A	N/A	N/A	
	Shower heads attached to a flexible metal hose	N/A	N/A	N/A	N/A	N/A	
	Shower heads attached to wall mounting adjustable from 42" to 72" above the floor	N/A	N/A	N/A	N/A	N/A	
	Seat is hinged and padded and at least 16" deep, folds upward, securely attached to side wall, height is 18" to the top of the seat, and at least 24" long	N/A	N/A	N/A	N/A	N/A	
	Soap trays without handhold features unless they can support 250 pounds	N/A	N/A	N/A	N/A	N/A	
	2 grab bars are provided, one 30" and one 48" long, or one continuous L shaped bar	N/A	N/A	N/A	N/A	N/A	
	Grab bars are placed horizontally at 36" above the floor line	N/A	N/A	N/A	N/A	N/A	

		Mt. Jefferson Conservation Area	Malone Conservation Area	Curtis Recreation Fields	Clark's Corner	Town Common	Notes & Comments
PICNICKING							
Specification							
	A minimum of 5% of the total tables must be accessible with clear space under the table top not less than 30" wide and 19" deep per seating space and not less than 27" clear from the ground to the underside of the table. An additional 29" clear space (totaling 48") must extend beyond the 19" clear space under the table to provide access	No	N/A	No	N/A	N/A	Tables have 27" clearance from ground, but only 12" clear space on ends. Width is greater than the 30".
	For tables without toe clearance, the knee space under the table must be at least 28" high, 30" wide and 24" deep.	No	N/A	No	N/A	N/A	
	Top of table no higher than 32" above ground	Yes	N/A	Yes	N/A	N/A	
	Surface of the clear ground space under and around the table must be stable, firm and slip-resistant, and evenly graded with a maximum slope of 2% in all directions	Yes	N/A	Yes	N/A	N/A	
	Accessible tables, grills and fire rings must have clear ground space of at least 36" around the perimeter	N/A	N/A	N/A	N/A	N/A	

Appendix D

Review Letters