

7.0 OPEN SPACE & RECREATION

INTRODUCTION

Holden's beloved character is made possible by the expansive open space and recreation opportunities carefully maintained by the Town. Without due planning, the pressure for Holden to grow can undermine the very recreational opportunities, resources, and experiences that the community values. Holden features miles of hiking and biking trails that run through the Town forests and around agricultural fields, waterbodies for fishing, swimming, and boating, and an impressive selection of recreation facilities and classes. This Master Plan chapter aims to provide a guide for future actions to ensure the continued preservation of open space and the enhancement of recreational opportunities in Holden. The planning process identified key trends impacting the availability of open space and recreation opportunities in Holden:

- Population expansion calls for additional recreational opportunities.
- Population expansion places pressure on the

preservation of open space resources.

- Environmental and policy conditions are calling for more resilient municipalities which is dependent on the maintenance of open space habitat networks.

Consequently, the chapter incorporates and builds off of the natural resources inventory included in the Town's Open Space and Recreation Plan (OSRP) completed in 2012, and identifies, updates, and incorporates other relevant information to the Town's open space and recreation resources. It is noted that the Town is currently in the initial phases of preparing to update its OSRP¹. As Holden continues to work towards maintaining an up-to-date Open Space and Recreation Plan, funding opportunities to meet designated goals included in this and other plans will become more accessible and feasible. Once this process is complete the Town will be well equipped to think strategically and plan for its future.

¹ Open Space and Recreation Plans are approved by the Massachusetts Division of Conservation Services (DCS) for a period of seven years.



Poutwater Wildlife Management Area (CMRPC, 2019)

Open space is undeveloped land that is either publicly or privately owned. It encompasses areas that are often in a predominantly natural state or those lands in states that have been altered in order to maximize resource-based uses such as farms, orchards, silviculture, hiking trails, and other similar uses. Examples of publicly-owned open space would be Department of Conservation and Recreation (DCR) land, the Mass Central Rail Trail, Water District land, and some state and municipally-owned undeveloped land. Examples of privately-owned open space include farms, forest lands, and passive recreation areas. Open space lands do contribute to recreation opportunities. However, these recreation activities are categorized largely as being passive activities, such as hiking, which have little to no development impacts on the landscape.

Recreational open space is land used for active recreational purposes. Recreation facilities provide opportunities for a range of athletic and

family-oriented activities, increasing engagement and social cohesion throughout the community. Land used for active recreation does not qualify technically as open space because these parcels are often developed and consequently are covered in part with paved surfaces in order to provide facilities such as tennis courts, basketball courts, and parking areas. In addition, athletic fields require active management regimes which tend to include significant fertilizer applications and tend to be installed with fencing and outbuildings, furthering their development impact on the landscape. Since this plan deals with both open space and recreation, it presents an approach to obtain the benefits of developing new and maintaining existing recreational facilities, without losing scarce valued environmental assets.

In order to promote and encourage adequate access and amount of open space and recreation facilities in Holden, the Holden Master Plan Committee has developed the following goals to be included in this Open Space and Recreation chapter. A more

complete description of these goals and their associated actionable objectives can be found at the end of this chapter.

- Preserve important land resources, scenic views, and agricultural resources.
- Protect lands for active and passive recreation.
- Establish a wider, more connected open space network.
- Efficiently manage and maintain open space and recreation areas.
- Conserve Holden's surface and groundwater for wildlife, recreation, and other uses.
- Educate community members about conservation tools.
- Improve public awareness of Holden's open space and recreation resources.

PRIOR PLANNING AND ENGAGEMENT EFFORTS

Master Plan (2008)

In the 2008 plan, the Open Space and Recreation Chapter laid out a series of goals and objectives related to needs as identified by Town officials and residents. Four major goals related to open space and recreation were derived from this planning process. While some of objectives associated with these goals have been addressed over the last decade, others remain incomplete. The Town included the following recommendations for open space and recreation in the 2008 Plan. The goals are presented as first priority, second priority, and third priority. To date seven of the goals have been completed. Appendix A contains a benchmark review of the goals from the 2008 Holden Master Plan. (Community Preservation Associates, et.al., 2008)

Completed Goals:

- Inventory unprotected open space.
- Encourage additional use of tax incentives for private open space.
- Pursue adoption of conservation related bylaws and policies.
- Develop an indoor recreation facility for winter use.
- Designate funds in an Infrastructure Investment Fund (IIF) sub-account for the preservation of open space.
- Develop an outreach plan for owners of unprotected land.
- Protect important habitat areas.
- Pursue creation of an Open Space Fund.

Incomplete or In Progress Goals

- Create an Open Space and Recreation Plan and submit to the State for approval.
- Protect land in open space opportunity areas to help preserve Town's character.
- Expand trail systems with a vision of creating an interconnected Town-wide system.
- Create skate park/ice skating rink.
- Increase utilization of Eagle Lake.
- Seek permanent protection of Chaffins Recreation Association (CRA) Field.
- Seek permanent protection of the Fox and Coon Club property.
- Increase awareness and use of protected Open Space by public.
- Pursue creation of new trails and linkage between existing protected Open Space Lands.

Holden Hazard Mitigation Plan (2017)

New England weather is renowned for its mercurial and dramatic nature. Late summer hurricanes, major winter blizzards, and summer droughts are all part of climactic atmosphere in Central Massachusetts. These occur frequently enough to be familiar scenes to residents of Holden. The intersection of these natural hazards with the built environment can transition these routine events

into classified natural disasters. Since many towns historically developed along waterways as a corridor for transportation and power, they have evolved into riverine floodplains. The historical development pattern of Central Massachusetts makes the likelihood of devastating impacts from a natural disaster more likely. This plan identifies the natural hazards facing the Town of Holden, assesses the vulnerabilities of the area's critical facilities, infrastructure, residents, and businesses, and presents recommendations on how to mitigate the negative effects of typical natural hazards.

The 2017 Hazard Mitigation Plan recommends that future open space and recreation planning incorporates hazard mitigation activities and recommendations.

Holden Municipal Vulnerability Preparedness Plan (2018)

In 2017, the Town of Holden was awarded a \$16,000 Municipal Vulnerability Preparedness (MVP) program grant. Through the MVP program, Holden began the process to plan proactively for resiliency and implement key climate change adaptation actions. This planning process is critical to protect vulnerable infrastructure and critical environmental areas in Town, such as open space. This process involved the development of an MVP Core Team, which met on March 20, 2018 to determine initial concerns and worked to identify stakeholders within the municipality and set goals for the process. Those stakeholders were then invited to participate in a Community Resilience Building (CRB) workshop on May 7, 2018. The CRB methodology is an "anywhere at any scale" format that draws on stakeholders' wealth of information and experience to foster dialogue about the strengths and vulnerabilities within the Town. Workshop participants interacted at both large and small group levels, using an iterative process to gather input, synthesize ideas across groups, and ultimately develop a set of priority resilience and adaptation actions.

During the Community Resilience Building workshop, participants were asked to identify the top four natural hazards of concern for the Town

of Holden. Discussion of the top hazards built on earlier conversations that took place at the MVP Core Team Meeting, as well as Town conversations that have formed the basis for the Town's Hazard Mitigation Planning. Summer precipitation events were identified as one of the Town's top hazards. Winter storms and Nor'easters with associated wind and ice were identified as a second hazard. Impacts of extended drought, such as those seen during summer 2016 were identified as a third hazard. Finally, heat effects, particularly the increase in extremely hot days (over 90 degrees Fahrenheit) predicted over the next several decades, were seen as a fourth major hazard. Open space in Town was identified as a major environmental concern and challenge related to climate resilience. (Fuss & O'Neill, 2018)

Town of Holden Open Space and Recreation Plan (OSRP) (In Progress)

The Open Space and Recreation Plan (OSRP) provides an overview and analysis of the Town's significant natural and scenic resources, inventory of conservation and recreation lands, and concrete steps to improve open space and recreation opportunities. The Plan was initiated in 2009



Mason Park (CMRPC, 2019)

and was conditionally approved by the Office of Energy and Environmental Affairs (EEA) in 2012 and has since expired. (CMRPC, 2009) The Town of Holden intends to update its OSRP in the coming year. Recommended objectives include water resource and land protection, preservation of the Town's rural character, increased outreach and education, and developing connections between existing networks and already protected land. The 2012 OSRP identified four goals for the protection and promotion of open space and recreational resources, including:

- Preserve aesthetic and natural resources in Holden, including wildlife, wetlands, scenic vistas, unique natural areas, and historical resources.
- Provide attractive recreation resources and facilities in Holden.
- Promote passive recreation and open space resources.
- Develop and implement funding sources.

EXISTING CONDITIONS

Open space areas and recreation facilities provide numerous social and ecological benefits. They contribute to quality of life and community character, provide a center for community activities, protect and enhance nearby property values, attract businesses, and can otherwise minimize excessive Town spending. Well maintained and managed open space can significantly improve quality of life by protecting water supplies, providing natural means of stormwater infiltration, reducing localized flooding, improving air quality, and through many other means.

Protecting open space is an ongoing process requiring management plans, active pursuit of additional properties to conserve, and ensuring adequate resources are established to maintain and purchase these areas. When possible, this process should be done at a landscape level, thereby allowing decision making processes to encapsulate regional

needs and maximize benefits of increased wildlife corridors and expanded connectivity. Working to conserve lands with these thoughts in mind will increase biodiversity and increase habitat patch size. Preserving and protecting large contiguous patches can be expected to result in greater core habitat area, thereby increasing the ecological integrity.

Holden contains an abundance of open space resources. Map 7 - 1 depicts Holden's open space inventory. Currently, there are over 10,321 acres of permanently protected open space and recreation lands in Town (Table 7 - 1).

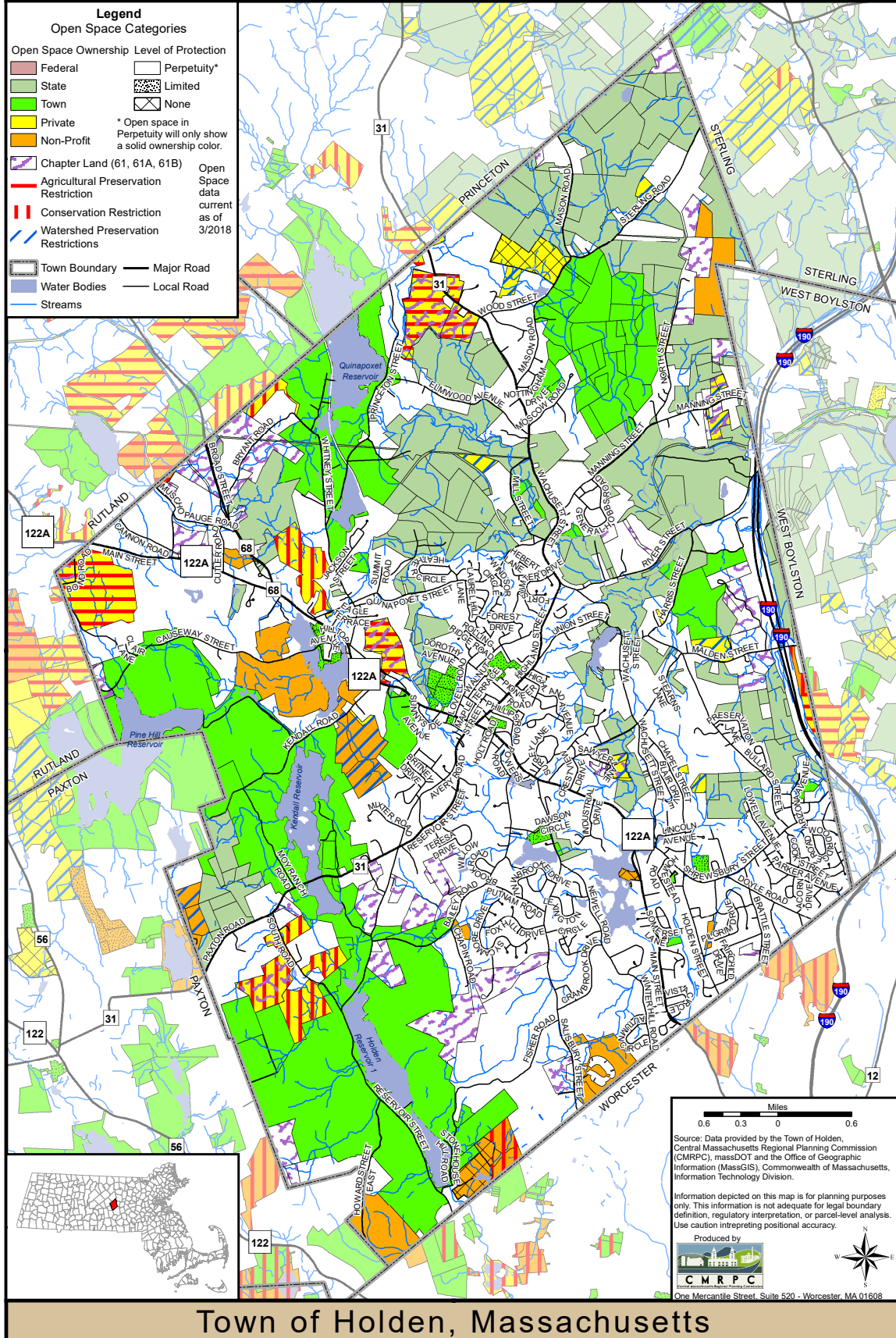
Table 7 - 1: Acres of open space in Holden, grouped by type of protection. (MassGIS and Holden assessing, 2018)

Protection Type	GIS Acres	Percent of GIS Acres
Perpetuity	10,458.69	97.49%
None	156.57	1.46%
Limited	110.36	1.03%
Unknown	2.78	0.03%
Grand Total	10,728.40	100.00%

Over 110 acres of open space have limited protection, and slightly more than 150 acres make up the open space that is not protected. The majority of open space in Holden is protected in perpetuity. Lands legally protected in perpetuity are designated as such in a deed or other official documentation. Table 7 - 2 indicates level of access and level of protection for all open space in Holden.

Of the 10,728 acres of open space in Holden, the majority (41.15%) is municipally owned (Table 7 - 3). Lands that are owned by a municipality are held by Holden and the City of Worcester. Land held by the City of Worcester accounts for 9.74% of municipally owned open space in Holden. The State of Massachusetts owns the second largest amount of open space (39.99%). Private landowners own slightly less than 10% of all open space. Meanwhile, land trusts and nonprofits make up 8.53% and 0.66% respectively.

Open Space Map 2019 MASTER PLAN



Date: 6/12/2019 Document Path: H:\Projects\O_Holden_GIS\Subprojects\yn134_master_plan\yn134_MP_05_OpenSpace_1x17.mxd

Table 7 - 2: Acres of open space, grouped by amount of access and protection.
(MassGIS and Holden assessing, 2018)

Level of Protection	GIS Acres
Limited	
Full Public Access	92.39
Limited Public Access	17.98
None	
Limited Public Access	156.57
Perpetuity	
Limited Public Access	4,692.16
Full Public Access	4,446.17
No Public Access	1,227.96
Unknown	92.41
Unknown	
Full Public Access	2.78
Grand Total	10,728.40

Table 7 - 3: acres of open space in Holden, grouped by ownership. (MassGIS and Holden assessing, 2018)

Owner Type	GIS Acres	GIS Acres (% of Total)
Municipal	4,415.02	41.15%
State	4,290.53	39.99%
Private	1,037.51	9.67%
Land Trust	914.78	8.53%
Private Non-Profit	70.57	0.66%
Grand Total	10,728.40	100.00%

Open Space Destinations

In addition to protected and semi-protected rural lands, Holden is home to a number of open space and recreation destinations. These sites are noted for their active and passive recreation opportunities, natural beauty, as well as their contributions to preserving natural resources in the Town.

Mass Central Rail Trail

The Mass Central Rail Trail (MCRT) is maintained by Wachusett Greenways. This trail was constructed on the former rail road bed in large part by volunteers. The trail is used for hiking/walking, biking, cross country skiing, and snow shoeing, handicap accessible. Wachusett Greenways also hosts Historical Mill tours. In 2006 the Holden

Department of Public Works (DPW) spent many man and equipment hours on the Rail Trail between River Street Holden and West Boylston at the Wachusett Reservoir. The 104-mile Massachusetts Central Rail Road between Boston and Northampton was destroyed by a hurricane in 1938 and was never rebuilt. The MCRT is envisioned as a non-motorized recreational rail that will follow the entire length of this right-of-way, which encompasses 25 communities and divides the state.

Approximately 47 miles of the MCRT are now open, with more trails scheduled to open. Long trails such as the MCRT provide many aspects that can lead to increased quality of life, such as recreation opportunities and alternative transportation corridors. Currently, 13 of the trail’s existing 47 miles of trail are located in Sterling, West Boylston, Holden, and Rutland. A trail section that starts in the Oakdale part of West Boylston and continues along the Quinapoxet River for 3.4 miles and ends in Holden was completed in 2003. Wachusett Greenways is planning to make this 3.4-mile section part of a trail network in central Massachusetts that stretches over 30 miles from Sterling, through West Boylston, Holden, Rutland, west to Coldbrook Springs in Oakham, and eventually through South Barre to Hardwick. A separate trail in Holden, also spearheaded by Wachusett Greenways, connects Trout Brook Park conservation land with Sterling Road. It is approximately 3.5 miles in length and was completed prior to 2003.





Porcupine Hill sign (GMRPC, 2019)

Porcupine Hill and Potter Hill Sanctuary

The Potter Sanctuary and Porcupine Hill properties are located off Paxton Road in Holden. Parking is provided in two locations, each of which is marked by a blue White Oak sign, on the right side of the road when heading toward Paxton from Holden. These parcels were formerly the Nature Training School owned by the EcoTarium (formerly the Worcester Science Center). This land totals 86 acres and provides nice walking trails, which range from flat to gently sloping.

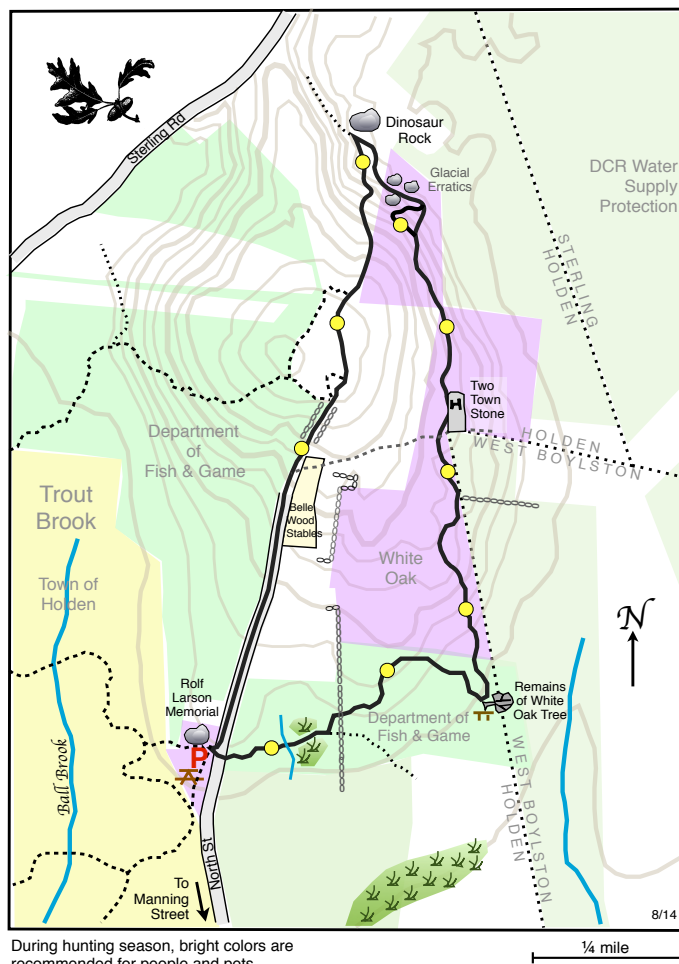
Oak Hills

Oak Hills is located off Salisbury Street just northerly of Jordan Road. Parking is located in a small parking lot off Salisbury Street, marked by a blue White Oak sign on the 10-acre White Oak Waterman property. The Oak Hill land consists of a number of smaller parcels and a large parcel obtained by White Oak when the Oak Hills open space subdivision was created. This open space totals approximately 90 acres with several trails over variable terrain, including a nice loop trail circling the property.

North Street

The North Street property consists of two parcels containing approximately 95 acres of forested land. This land formerly contained a large white oak

White Oak Trail North Street, Holden



White Oak Trail Map (White Oak Trust, retrieved 2019)

tree, for which the organization was named, along the trail. The White Oak Trail begins on the right (east) side of North Street across the street from a small parking lot with a map kiosk and crosses a number of protected open space properties, finally terminating at the end of North Street.

Holbrook Forest

The Holbrook Forest parcel is located off Fisher Road in Holden containing a small parking lot and map kiosk marked by a blue White Oak sign. This property contains a flat trail which connects to substantial additional open space including Kinney Woods and the recently acquired Holbrook land located off Salisbury Street. There is available parking for five vehicles located on site, and there is signage for Holbrook Forest on Salisbury Street.

Asnebumskit Ridge Trail sign (CMRPC, 2019)



Holden Town Forest

The Holden Town Forest, located on Harris Street, is managed by the Holden Conservation Commission and covers 153 acres. The Town Forest was deeded by a former resident as a wooded lot. It has attractive hiking trails which continue onto adjacent DCR land. The gradients are likely too steep for those with disabilities. There is limited off-street parking available.

Asnebumskit Trail

The Asnebumskit Trail and parking lot are located off South Road in Holden, and marked by a blue White Oak sign. The trail exists within an easement which was granted through the Durham conservation restriction. This trail is quite steep, but provides a connection to additional open space in the City of Worcester and the Town of Paxton.

Recreation Areas, Facilities, and Programming

The Holden Recreation Department provides exceptional and creative programs, services and facilities (such as Town Pool, ball fields and playgrounds) that foster community spirit and involvement while enhancing the quality of life for people of all ages in Holden. Recreation Department staff host a number of programs throughout the year. In order to register for programming, residents must purchase recreation passes. Passes are made available to non-residents as well.

Before and After School Programs

Before and after school programs are offered by the Recreation Department at the Davis Hill Elementary School, the Dawson Elementary School, and The Mayo Elementary School. The programs provide activities for children from 7:30 to 9:00 AM and again in the afternoon from school dismissal until 6:00 PM.

Example Classes and Activities

The Holden Recreation Department offers a variety of class and activities to the public. To illustrate the variety of age groups and activities targeted, select examples of these opportunities are presented below.

Babysitter Training: Babysitter's Training Class, called BLAST - Babysitter Lessons and Safety Training - for boys and girls ages 11 - 14. This is an American Academy of Pediatrics course that covers how to handle the basics of infant and childcare, how to react responsibly to medical emergencies and injuries, perform first aid for common childhood injuries and illnesses, and set up and run your own babysitting business.

Kids Cake Decorating: This is a unique and fun event where children will learn basic cake decorating skills that can be used well after the event is over. Children aged 10 to 15 years old will be provided with a six-inch vanilla cake to decorate and a box to take it home. Instruction will be provided by a Certified Wilton Method Instructor from Let's Cake Decorate. Cake, frosting and use of decorating tools are included in the price. No prior experience is necessary.

Kids Night In: This program for children in grades 2 to 6 will incorporate two activities that are needed for a fun and relaxing "Night In". This is a great way for children to take time to relax and recharge. The first hour will include making a craft of relaxing eye masks and having a small snack. The second hour will be playful yoga designed to help children build strength,

flexibility, concentration, focus, compassion, and self-esteem through Yoga postures. Kids will have fun as they improve their posture, coordination and balance.

Example Fitness Classes and descriptions

In addition to the educational and life-skill classes described, the Recreation Department offers a wide array of fitness classes as well. (Holden Recreation Department, 2019) These include a range of yoga, various cardio and strength workouts, and other organized workout activities.

Cardio Kickboxing and Kettlebell: The instructor will incorporate the benefits of kickboxing and the use of kettlebells in one class. Participants should feel empowered and get moving with non-contact, cardio kickboxing moves. Kettlebells will be used in between choreographed kickboxing moves to work major muscles, melt away fat, tone core and increase strength.

Cardio, Core, and Yoga (CCYO): This combination class will keep participants motivated because each week the program is a new challenge. It will include a cardio portion; a core toning workout; and the remainder of the class will be yoga. Resistance bands, weights, small balls, chairs and noodles are incorporated to keep these classes fresh and fun. The instructor will also discuss facts about what burns fat calories. All fitness levels are welcome. Participants of all levels of fitness abilities will benefit from CCYO.

Kid's Yoga – Let's Play: These classes are fun and full of imagination, cultivating compassion and kindness. The classes will increase creativity and confidence, the ability to stay in the present moment with full awareness, increase focus, learn how to stay grounded and centered, tapping into peace, strength, inner power and flexibility. We will explore movement and stillness to cultivate mindfulness, balance and calm. We will use breathing visualization to soothe

and restore the connection between body, mind and spirit.

Summer Camps

Sport skills camps include tennis, swimming, basketball, and general sports and games. Other offerings include poolside crafts and drama. The Recreation Department offers half-day and full-day summer programming for youth as well, which include a variety of the activities listed throughout the course of the day. (Holden Recreation Department, 2019)

Organized Sports:

Organized sports (such as basketball, soccer, volleyball, and golf lessons) are coordinated by the Recreation Department and hosted at local schools.

Recreation Facilities

Table 7 - 4 details recreation facilities and locations in Holden. This table is beneficial in illustrating the distribution of different recreation facilities throughout Town. As shown, there are several areas throughout Town that provide access to a variety of active recreation facilities and associated equipment. These include a variety of playgrounds, ball fields, and swimming locations. Different amenities at Dawson Recreation Area include an outdoor pool and tennis courts.

The National Recreation and Park Association (NRPA) recognizes the importance of establishing and using park and recreation standards as:

- A national expression of minimum acceptable facilities for the citizens of urban and rural communities.
- A guideline to determine land requirements for various kinds of park and recreation areas and facilities.
- A basis for relating recreational needs to spatial analysis within a community-wide system of parks and open space areas.
- One of the major structuring elements that can be used to guide and assist regional development.

- A means to justify the need for parks and open space within the overall land-use pattern of a region or community.

The purpose of these guidelines is to present park and recreation space standards that are applicable nationwide for planning, acquisition, and development of park, recreation, and open space lands, primarily at the community level. (National Recreation and Park Association, 2019) These standards should be viewed as a guide. They address minimum, not maximum, goals to be achieved. The standards are interpreted according to the particular situation to which they are applied and specific local

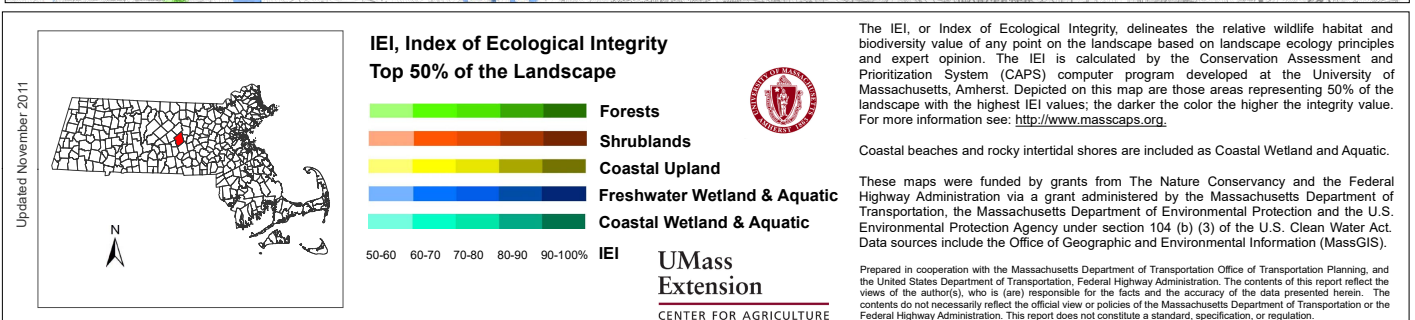
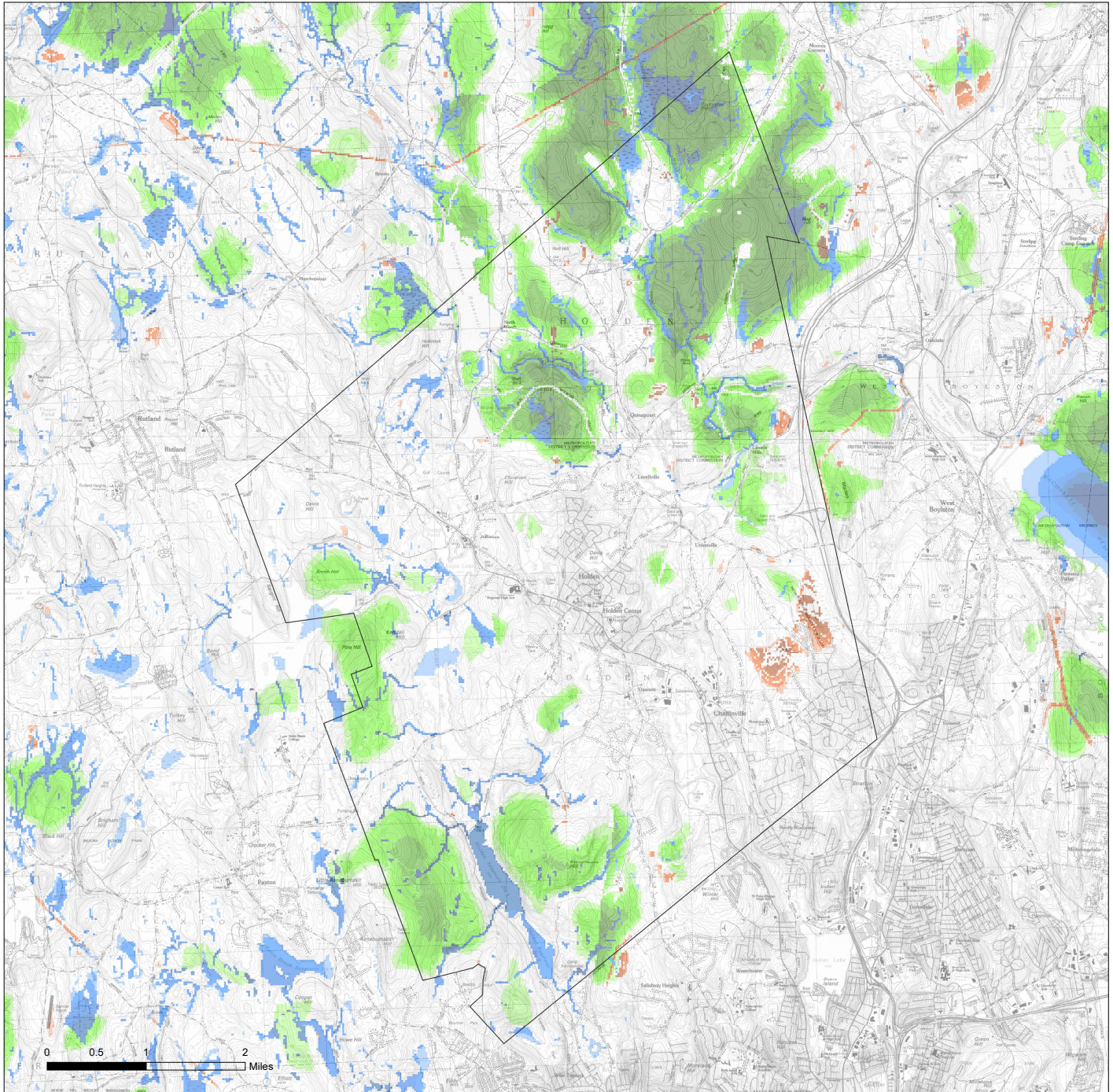
needs. A variety of standards have been developed by professional and trade associations which are used throughout the country. The standard derived from early studies of park acreages located within metropolitan areas was the expression of acres of park land per unit of population. Over time, the figure of 10 acres per 1,000 population came to be the commonly accepted standard used by a majority of communities. Other standards adopted include the “percent of area” approach, needs determined by user characteristics and participation projections, and area use based on the carrying capacity of the land. The fact that some of the standards have changed substantially is not an indication of their obsolescence. Changes are a measure

Table 7 - 4: Recreation facilities and locations in Holden

Site Name	Owner	Location	Facilities
Trout Brook Conservation Area	Holden	Manning St.	Soccer field, trails, picnic area, pavilion, lodge, restrooms
Mason Park	Holden	Off Mason Street	Trails
Town Forest	Holden	Harris St.	Trails
Jefferson Park	Holden	Princeton Street	Benches
Kimball Park	Holden	Wyoming Drive	Trails
Winthrop Oaks	Holden	S. Main & Colonial Dr.	Playground
Mayberry Park	Holden	Bullard & Shrewsbury	Benches
Eagle Lake Town Beach	Holden	Causeway Street	Picnic area, swimming beach, changing rooms, beach volleyball court, playground, basketball court, nature trail
Dawson Recreation Area	Holden	Salisbury Street	Two outdoor pools, changing rooms, soccer field, baseball field, playground, paddleball court, 2 basketball courts, 4 tennis courts
Municipal Light Department	Holden	Holden Street	Soccer field, playground, basketball court
Chaffin Men’s Club Fields	Non-profit	Main Street	2 baseball fields
Eagle Lake Sanctuary	Non-profit	Causeway St.	Trails
Davis Hill School	Holden	Jameson Rd.	Baseball field, softball field, 3 soccer fields, 2 playgrounds
Dawson School	Holden	Salisbury Street	Playground, 2 baseball fields
Senior Center	Holden	Main Street	Baseball field
Jefferson School	Holden	Main Street	Softball field, playground
Mayo School	Holden	Bullard Street	Baseball field, 2 playground, soccer field
Mountain View School	Holden	Shrewsbury Street	Baseball field, softball field, soccer field, 2 tennis courts, 1 basketball court
Wachusett Regional HS	Reg. Dist.	Main Street	Track, football field, baseball field, softball field, 4 tennis courts

Map 7 - 2: CAPS Index of Ecological Integrity (IEI)

CAPS Index of Ecological Integrity (IEI) Town of HOLDEN, MA



of the growing awareness and understanding of both participant and resource (land, water, etc.) limitations.

Inventory of Open Space

Regional Open Space

The amount of open space lands as designated by the available MassGIS data later shows a number of contiguous open space lands in Towns adjacent to Holden. In particular, there are wide spans of open space that cross over into Sterling, Princeton, Rutland, and Paxton. These areas of open space create the potential for linkages of protected lands that can be used for recreational and wildlife habitat protection depending on ownership and permitted uses.

In November 2011, the Landscape Ecology Program at the University of Massachusetts Amherst (UMass) completed its first comprehensive, statewide assessment of ecological integrity using the Conservation Assessment and Prioritization System (CAPS). (University of Massachusetts Amherst, 2019) (McGarigal, 2011) CAPS is an ecosystem-based (coarse-filter) approach for assessing the ecological integrity of lands and waters and subsequently identifying and prioritizing land for habitat and biodiversity conservation. The Landscape Ecology Program at UMass defines ecological integrity as the ability of an area to support biodiversity and the ecosystem processes necessary to sustain biodiversity over the long term. CAPS is a computer software program and an approach to prioritizing land for conservation based on the assessment of ecological integrity for various ecological communities (e.g., forest, shrub swamp, headwater stream) within an area. This process results in an Index of Ecological Integrity (IEI) for each point in the landscape based on models constructed separately for each ecological community. IEI maps depicting the top 50% of lands with the highest ecological integrity have been completed for all cities and towns in Massachusetts.

Map 7 - 2 is the CAPS Index of Ecological Integrity for the Town of Holden. Based on the CAPS product and resulting map for Holden, there are areas of

particularly high ecological integrity located in the northern and southern most corners of Town. The areas located in the northern sections of Holden are linked to additional parcels with high calculated IEI leading into Princeton, Sterling, and parts of West Boylston.

Town Owned Land

There are 61 parcels of Town-owned open space in Holden totaling 1,045 acres (Table 7 - 5). Of all Town-owned open space, 932 acres are protected in perpetuity. Areas protected in perpetuity include the Holden Town Forest (151.39), Winthrop Oaks Conservation Area (6.25 acres), Trout Brook Conservation Area (664.89 acres), Kimball Park

Table 7 - 5: Town-owned open space in Holden, categorized by protection level, with acreage per location. (MassGIS, Holden assessing, 2018)

Location and Protection Level	GIS Acres
Limited	110.36
Grove Cemetery	41.33
Davis Hill Elementary School Playground	16.57
Eagle Lake Town Beach	12.8
Mountainview Middle School Athletic Fields	12.55
Dawson Elementary School Playground	12.25
Holden Jr High School Athletic Fields	6.39
Jefferson School	5.18
Park Avenue Cemetery	2.01
Center Cemetery	1.28
Perpetuity	932.31
Trout Brook Conservation Area	664.89
Holden Town Forest	151.39
Holbrook Forest	24.08
Holden Water Supply Land	18.44
Mill Street Water Supply Land	17.24
Town Wells	16.02
1706	11.62
Kimball Park	9.56
Town Forest	7.86
Winthrop Oaks Conservation Area	6.25
Former Rice School Athletic Facilities	2.56
Dawson Recreation Area	2.4
Unknown	2.78
Former Chaffins School Playground	2.78
Grand Total	1,045.46

(9.56 acres), Dawson Recreation Area (2.39 acres), the former Rice School Athletic Facilities (2.56 acres), Town wells (16.024 acres), Holden water supply land (18.44 acres), and Mill Street water supply land (17.24 acres). Several parcels include hiking and walking trails, as well as field space for active recreation. These parcels and others should continuously be considered for updated recreation facilities and passive recreation opportunities. In comparison, 110 municipally owned acres of open space only have limited protection. These parcels

include Grove Cemetery, Davis Hill Elementary School Playground, and seven other parcels. A breakdown of protection areas and their acreage can be found in Table 7 - 5.

State Owned Land

The Commonwealth of Massachusetts owns roughly 4,290 acres in Holden. A breakdown of protection areas and their acreage can be found in Table 7 - 6. This land is split in ownership between the Department of Fish and Game (DFG) and the

Table 7 - 6: State-owned open space in Holden, including department, level of protection, and acreage.
(MassGIS, Holden assessing, 2018)

Property	Access	Municipal OS	% of Total Muni. OS
City of Worcester		3283.93	75.85%
Worcester Water Supply Land	Full Public Access	1711.72	39.54%
Kendall Reservoir Water Supply Land	Full Public Access	992.17	22.92%
Quinapoxet Reservoir	No Public Access	282.15	6.52%
Maple Spring Pond	No Public Access	231.18	5.34%
Kendall Reservoir	Full Public Access	53.57	1.24%
Holden Reservoirs	Full Public Access	13.14	0.30%
Town of Holden		1045.46	24.15%
Trout Brook Conservation Area	Full Public Access	664.89	15.36%
Holden Town Forest	Full Public Access	151.39	3.50%
Grove Cemetery	Full Public Access	41.33	0.95%
Holbrook Forest	Full Public Access	24.08	0.56%
Holden Water Supply Land	Unknown	18.44	0.43%
Mill Street Water Supply Land	No Public Access	17.24	0.40%
Davis Hill Elementary School Playground	Full Public Access	16.57	0.38%
Town Wells	No Public Access	16.02	0.37%
Eagle Lake Town Beach	Limited Public Access	12.8	0.30%
Mountainview Middle School Athletic Fields	Full Public Access	12.55	0.29%
Dawson Elementary School Playground	Full Public Access	12.25	0.28%
Unidentified	Full Public Access	11.62	0.27%
Kimball Park	Full Public Access	9.56	0.22%
Town Forest	Unknown	7.86	0.18%
Holden Jr High School Athletic Fields	Full Public Access	6.39	0.15%
Winthrop Oaks Conservation Area	Full Public Access	6.25	0.14%
Jefferson School	Limited Public Access	5.18	0.12%
Former Chaffins School Playground	Full Public Access	2.78	0.06%
Former Rice School Athletic Facilities	Full Public Access	2.56	0.06%
Dawson Recreation Area	Full Public Access	2.4	0.06%
Park Avenue Cemetery	Full Public Access	2.01	0.05%
Center Cemetery	Full Public Access	1.28	0.03%
Grand Total		4329.39	100.00%

Department of Conservation and Recreation's Division of Water Supply Protection (DCR WSP). The DCR WSP manages nearly 3,877 acres in total. This land is split between the Quabbin Aqueduct and the Wachusett Reservoir Watershed. All land managed by DCR WSP in Holden is protected in perpetuity and allows limited public access. The Department of Fish and Game manages the remaining 400 plus acres of State-owned open space in Holden. These lands are located at Poutwater Pond and the Quinapoxet River. These lands are protected in perpetuity as well. However, unlike open space in Holden managed by the DCR WSP, DFG lands are publicly accessible.

Land Trusts

Land trusts in Holden own a total of 914 acres of open space. The White Oak Land Trust owns over 40% of all open space owned by Land Trusts. A complete breakdown of ownership can be found in Table 7 - 7.

Table 7 - 7: Open space locations in Holden owned by land trusts, with acreage given. (MassGIS, Holden assessing, 2018)

Land Trust Name	GIS Acres	Percent of GIS Acres
White Oak Land Conservation Society	369.16	40.36%
Massachusetts Audubon Society	358.36	39.17%
Greater Worcester Land Trust	181.73	19.87%
Ellen Maynard Trust	5.52	0.60%
Grand Total	914.78	100.00%

Conservation Restrictions

A conservation restriction (CR) is a permanent deed restriction, recorded with the Registry of Deeds that binds all current and future owners of the property placed under a CR. The conservation restriction (or easement) is a restriction to particular specified uses or from development. The restriction runs with the land and is recorded in a deed instrument. Conservation Restrictions can be placed on a parcel of land for a specified number of years or in perpetuity. This restriction identifies the property's important ecological features and the public benefit derived from preserving the

natural condition of the land. This tool aims to retain the property in its natural state or in agricultural, farming, or forest use; to permit public recreation; or to restrict development activities. The property owner retains ownership of the land and may sell or pass on the preserved land with all restrictions in place. Any title search of a property will reveal the existence of a CR and all future owners will be bound by it. Conservation restrictions, sometimes called development restrictions, must be granted voluntarily, however, the Conservation Commission and/or Planning Board can encourage this mechanism as a way of maintaining privately owned land in a natural state. When a landowner places a property under a CR, he or she has permanently protected that property and ensured that the CR last forever, legally known as "in perpetuity." The restrictions placed on the property through the CR allow the landowner to determine how the property will be used into the future. The CR allows the property owner to retain title, pass the property on to heirs, or even sell the property.

A landowner can determine which part(s) of their property would be restricted in the future by the easement. It is quite possible, or even common, to withhold some land (i.e., 1 to 2 building lots for children) from the easement, and yet protect the remainder of the property from development (this is an example of conservation-based development). The details of what rights are restricted and what are permitted, and where these restrictions will apply, are worked out between the landowner and the holder of the easement when drafting the CR. In addition to knowing the property will remain protected against development, the owner can derive tax benefits from the CR. These can include reduction of federal income taxes (if the CR is donated), reduction of estate or inheritance taxes, and possible deduction in real estate taxes.

There are currently 12 parcels in Holden that contain conservation restrictions, totaling 401 acres of permanently protected land. The majority of land (163 acres) is held by the Town of Holden Conservation Commission (Table 7 - 8).

Table 7 - 8: Conservation restriction parcels in Holden, organized by property owner (massGIS, Holden assessing, 2018)

Conservation Restrictions	GIS Acres
City of Worcester	75.52
Holden Reservoir Watershed CR	74.69
Nicks Woods	0.83
City of Worcester Department of Public Works and Parks	44.68
Wadsworth Brook Conservation Area	24.13
McShea CR	10.97
Robbins CR	9.57
City of Worcester Water Department	26.77
Muschopauge Brook Project	26.77
Town of Holden Conservation Commission	163.99
Holden Hills Country Club CR	98.22
Kinney Woods	52.45
Malden Hill Conservation Area	13.33
White Oak Land Conservation Society	160.38
Durham CR	84.33
Brooks CR	32
Holbrook Forest	24.08
Dearborn/Gustafson CR	19.98
Grand Total	471.34

Agricultural Preservation Restrictions

The Agricultural Preservation Restriction (APR) program allows for farmland to be protected from future development. An APR is a specific type of Conservation Restriction that is administered by the Massachusetts Department of Agricultural Resources (MDAR). Established by the Legislature in 1977, this program is the cornerstone of the Commonwealth's farmland protection efforts. This voluntary program which is intended to offer a non-development alternative to farmland owners of "prime" and "state important" agricultural land who are faced with a decision regarding future use and disposition of their farms. Towards this end, the program offers to pay farmland owners the difference between the "fair market value" and the "agricultural value" of their farms in exchange for a permanent deed restriction which precludes any use of the property that will have a negative impact on its agricultural viability. The main objective of the APR program is to protect productive farmland

through the purchase of deed restrictions and revitalize the agricultural industry by making land more affordable to farmers and their operations more financially secure. If the Town adopts the Community Preservation Act (CPA) (discussed in **6.0 Historic and Cultural Resources**) it can use funds to purchase Agricultural Preservation Restrictions, document agricultural resources, repair barns, and acquire farmland.

Additional tools for supporting the preservation of farmland that Holden could utilize include: Agricultural Preservation Overlay Districts, which preserve farmland by requiring clustering of residential properties on smaller lots; Scenic Roads Bylaws and Scenic Overlay Districts, which promote and protect farm views; adaptive Reuse Bylaws that encourage adaptive reuse of barns if the structures are no longer in agricultural use; and Transfer of Development Rights, which direct growth away from farmland that should be preserved to locations suited to higher density development.

There are 10 APRs in place in Holden totaling over 452 acres detailed in Table 7 - 9. These properties do not offer public access. A list of open space lands organized by type of restriction can be found in Table 7 - 10.

Lands Not Protected from Development

Private open lands can be offered various levels of protection. The designation of private parcels as Forest lands (Chapter 61), Farm lands (Chapter 61A), or Private Recreation lands (Chapter 61B) restricts the use of land in exchange for significant reduction in taxes. Lands that are taxed under the exemptions allowed by MGL Chapters 61, 61A, or 61B have extremely limited protection because it can be taken out of the program if the owner sells the property or if the owner changes their mind.

Should the owner decide to sell the property and take it out of restricted status, the Town has the right of first refusal to purchase the land. This right of first refusal lasts up to a year after removal from the Chapter programs. Land may be taken out of Chapter 61, 61A or 61B classification by notifying the Town and paying a withdrawal penalty

Table 7 - 9: Open space land in Holden, organized by type of restriction (MassGIS, Holden assessing, 2018)

Protection	GIS Acres	% of GIS Acres
Agricultural Preservation Restriction	451.99	36.21%
Dourdeville Denise APR	4.11	0.33%
Malden Brook Farms APR	15.83	1.27%
Maynard Farm	5.52	0.44%
Oldakowski Jozefa APR	122.42	9.81%
Perkins APR	5.11	0.41%
Robinson APR	38.17	3.06%
Sandstrom APR	260.83	20.89%
Conservation Restriction	471.34	37.76%
Brooks CR	32.00	2.56%
Dearborn/Gustafson CR	19.98	1.60%
Durham CR	84.33	6.75%
Holbrook Forest	24.08	1.93%
Holden Hills Country Club CR	98.22	7.87%
Holden Reservoir Watershed CR	74.69	5.98%
Kinney Woods	52.45	4.20%
Malden Hill Conservation Area	13.33	1.07%
McShea CR	10.97	0.88%
Muschopauge Brook Project	26.77	2.14%
Nicks Woods	0.83	0.07%
Robbins CR	9.57	0.77%
Wadsworth Brook Conservation Area	24.13	1.93%
Easement Conservation Restriction	1.39	0.11%
Worcester Water Supply Land	1.39	0.11%
Watershed Protection Restriction (WPR)	323.65	25.93%
Davenport WPR	15.01	1.20%
Dourdeville & Carnright WPR	3.84	0.31%
Dresser & McCandless WPR	14.54	1.16%
Eagle Lake Wildlife Sanctuary	134.9	10.81%
Fleming WPR	17.82	1.43%
Foley WPR	1.86	0.15%
Heath WPR	16.35	1.31%
Kaplan WPR	17.71	1.42%
Keskula WPR	25.84	2.07%
Lundquist & Swanson WPR	3.72	0.30%
Porcupine Hill Sanctuary	40.22	3.22%
Stafford WPR	12.4	0.99%
Wisner WPR	19.43	1.56%
Grand Total	1248.38	100.00%

tax. However, such land may not be sold for, or converted to, residential, commercial or industrial use while taxed under the classification without written notification of the municipality in which it is located. The Town has 120 days to exercise its right of first refusal option to purchase the land. Should this time period pass and/or the Town states in writing that it will not act on its option, the land may be developed for alternative use(s), removing it from its “open” status as forest, farm or recreation land.

Chapter 61 Forest lands: Forest lands require a minimum of 10 contiguous acres under a minimum 10-year management plan certified by the State Forester. Once the application has been received and approved, the classification statement functions as a lien upon the land for taxes levied under the provisions of MGL Chapter 61. The landowner must refile every 10 years or the land shall be removed from classification by the Town Assessor. A much-reduced property tax is payable once per year during the management period.

Chapter 61A Farm Lands: Farm land requires a minimum of five contiguous acres “actively devoted” to agricultural or horticultural use. These classifications include animals, fruits, vegetables, and forest products. To qualify as “actively devoted” a minimum of 500 dollars in gross sales income during the prior two years is required. One must apply to the Town Board of Assessors for consideration, and the status must be renewed every year. A reduced property tax is applied if approved. Holden possesses 697 acres of Chapter 61A farmland.

Chapter 61B Private Recreation: Private Recreation land must have a minimum of five acres that is left wild and/or maintained for wildlife habitat. It must be available for recreational purposes to the public or a private non-profit group. Landowners can enact a fee for this use. One must apply to the Town Board of Assessors for consideration and the status must be

renewed every year. A reduced property tax results if approved.

General Vegetation and Wildlife

Holden’s vegetation ranges from standard field crops, such as hay, feed corn and sweet corn to a variety of natural species including typical forest mixed wood species and typical vegetation associated with wetlands, swamps and bogs. Farming has greatly diminished in the Town. There are very few if any active vegetable farms and there are a few livestock farms on the outskirts of the Town. Woodlands are comprised of oaks, maples, white and red pines, hemlocks, spruce, hornbeam, ash, chestnut, walnut, beech, birch, and alders. Low-bush blueberries, mountain laurel and wild lily of the valley can be seen at higher elevations and mosses, ferns, and jewelweed abound in low-lying areas.

The Asian longhorned beetle (ALB) (*Anoplophora glabripennis*), an insect native to China, Japan, Korea, and the Isle of Hainan, is a destructive pest of hardwood trees. It attacks many healthy hardwoods trees including maple, horse chestnut, birch, poplar, willow and elm. In addition, nursery stock, logs, green lumber, firewood, stumps, roots, branches, and wood debris of a half inch or more in diameter are subject to infestation. The beetles lay eggs in the tree and feed on the tree, eventually killing the tree. A new generation of ALB is produced each year. If this pest moves into the hardwood forests of the United States, the nursery, maple syrup, and forest product industries would experience severe economic losses. In addition, urban and forest ALB infestations will result in environmental damage, aesthetic deterioration and a reduction in public enjoyment of recreational spaces.

An infestation of ALB has been identified in areas of Worcester, Holden, West Boylston, and Shrewsbury, Worcester County, Massachusetts. DCR issued an Order to prevent the spread of ALB, suppress, control and eradicate ALB in any area of Worcester County and Massachusetts on August 8 and August 20, 2008. (Massachusetts Department of Conservation and Recreation, 2008) These orders identify the affected areas, indicate an indefinite quarantine period, regulated articles and regulated

activities. Treatment includes the removal of host trees and injection of pesticides to surrounding host trees. Eradication efforts have begun but it is still vital to monitor and prevent the spread of the beetle which could result in detrimental effects to protected open space in Town. The status of the ALB is currently monitored by the United States Department of Agriculture.

Please see **5.0 Natural Resources: Invasive Species** section for a more detailed discussion.

Environmental Challenges **Stormwater**

Increased development has resulted in erosion and sedimentation depositing into many of Holden's water resources, leading to eutrophication and thereby significantly increasing vegetation growth and decreasing amounts of dissolved oxygen. In effect, this process acts as a limiting factor to sustainable fish populations. The Town has worked with the White Oak Land Conservation Society to drawdown Eagle Lake during winter months to reduce vegetation. This measure will only address the situation temporarily. As a preventative solution, the Town is pursuing the adoption of Stormwater Management Regulations which will increase the erosion controls, stabilization efforts, and filing requirements for all construction projects within the Town.

Through its recent MVP planning process, the Town identified the need to develop public education and outreach on appropriate operation and maintenance (O/M) of stormwater best management practices on private properties. Identifying a legal authority to enforce established O/M requirements emerged as a top priority. The MVP process also highlighted the need for consistent and regular maintenance of stormwater Best Management Practices (BMPs) and related infrastructure. Should these features not be maintained properly, they run the risk of not functioning which can lead to increased risk for flood events and reductions in water quality. Untreated stormwater can have significant environmental effects for tributaries receiving flows if that stormwater carries sediment loads, pathogens, or other pollutants of concern. Other important stormwater-related items the Town might choose

to engage in include assessing green infrastructure opportunities for stormwater management and developing a list of specific priorities as well as reviewing and updating Town regulations and update as necessary to support green infrastructure and low-impact development and encourage green infrastructure to be incorporated into all roadway projects.

Chronic Flooding

Culverts and stormwater infrastructure are recognized as a vulnerability Town-wide. The Quinapoxet Culvert/Tannery Brook Culvert is of particular concern, and there is a general recognition that many culverts were not designed to accommodate historic patterns of precipitation and runoff, which are rapidly transforming as a result of climate change. As precipitation events become more intense and less predictable, undersized culverts are expected to pose a greater threat of failure and flooding.

Sedimentation

The Holden Conservation Commission's Wetlands Bylaw aims to protect the wetlands, water resources and adjoining land areas in Holden by controlling activities determined by the Holden Conservation Commission likely to have significant or cumulative effect upon resource area values, including but not limited to public or private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention and storm flowage, water quality, water pollution control, fisheries, wildlife habitat, rare species habitat including rare plant species, agriculture, aquaculture, and recreation values deemed important to the community.

In the Fall of 2018, the Town of Holden received permission to temporarily empty the water in Trout Brook Pond in order to remove sediment and debris. This project served to increase the ecological integrity of an important open space area in the Town of Holden.

ISSUES AND OPPORTUNITIES

The issues and opportunities in the following section were identified through a review and analysis of priorities identified in previous reports, current data, as well as needs expressed as part of the Master Plan public outreach efforts. Through these outreach efforts, Holden residents voiced their ideas, needs, and concerns about open space and natural resources in Town. Map 7 – 3 depicts open space opportunities identified in this planning process. Among the many responses, several themes stood out, which include:

Desire for better outreach including maps, wayfinding, and other information about open space access

Desire for indoor recreation facilities

A general shortage of fields regionally, and that all fields in Holden are fully utilized
Concerns about valuable open space at risk of development

Better Americans with Disability Act (ADA) accessibility

Eagle Lake

In conversations with Town residents and staff, the status of Eagle Lake emerged as a top factor impacting the current status of open space and recreation opportunities in Holden. Eagle Lake was formed more than 200 years ago when the Asnebumskit Brook was dammed in order to power a nearby water mill located close to Jefferson Mill. Despite its heavy industrial use and source of power to a saw and gristmill, the lake was considered an important natural resource and source of beauty to residents and visitors. Over time and as a result of other damming projects, the flow of water into Eagle Lake was significantly reduced. This reduction

in flow is likely responsible for the then observed amounts of silt and mud that formed.

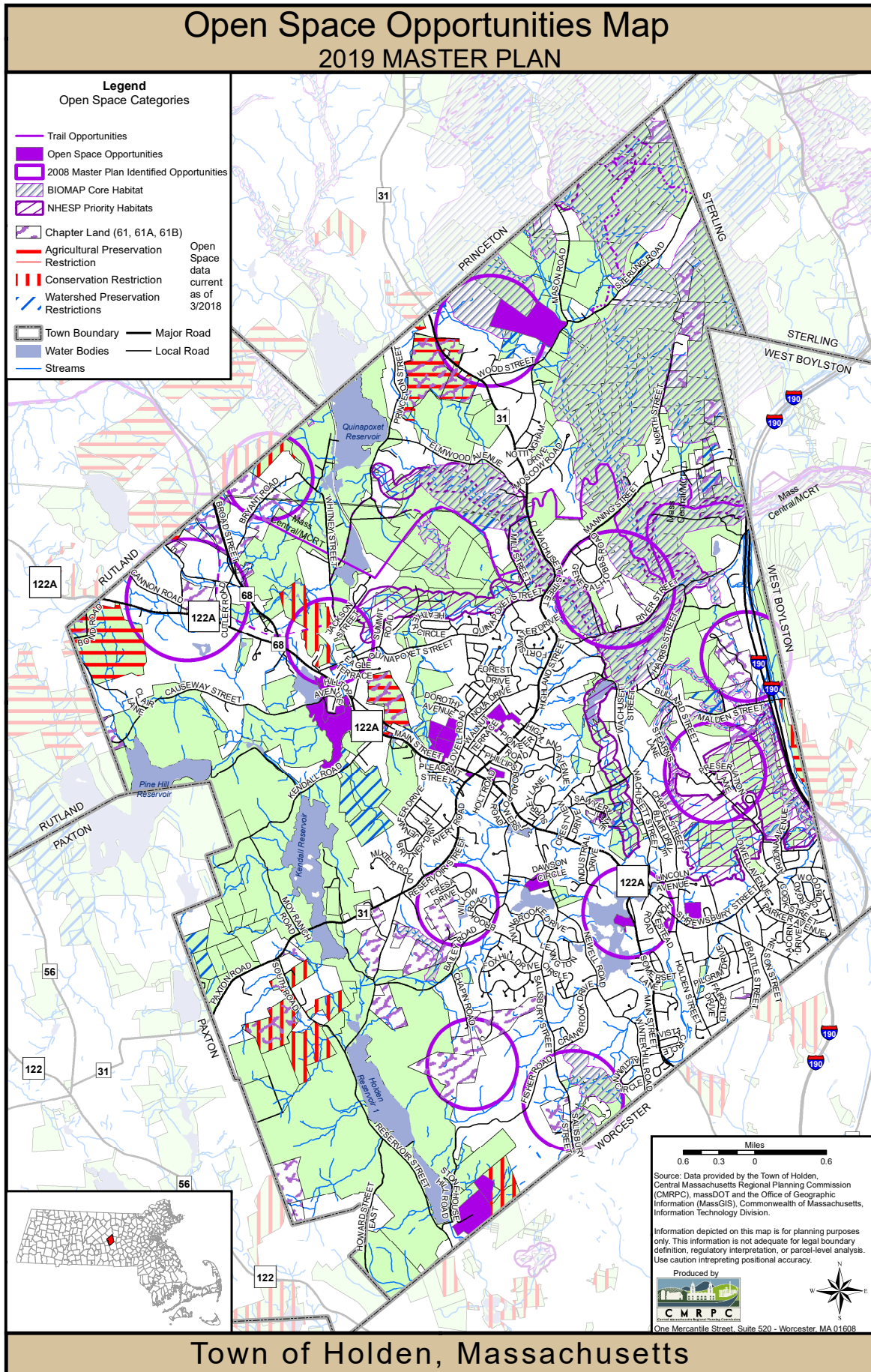
By the mid-1970s, ownership of the Eagle Lake Recreation Area and surrounding infrastructure were acquired by Jefferson Industries. During this time period, actions were made to further reduce the water level in Eagle Lake. Simultaneously, the integrity of the mill dam had deteriorated significantly. After concerned citizens began to speak out in opposition of proposed development projects on the site, the Town bought Eagle Lake in 1985. Ownership of the Dam infrastructure was split between the White Oak Land Conservation Society and Jefferson Industries, with Jefferson industries retaining ownership over the downstream portion of the dam. In 1993, the Town engaged in a significant project to mitigate leakage and general threat to Town infrastructure associated with Eagle Lake.

As recently as 2017, the White Oak Land Conservation Society filed a Notice of Intent to permanently draw down Eagle Lake by 4.5 feet. This action followed a Notice and Dam Safety Order issued by the Office of Dam Safety. In response, the Holden Conservation Commission issued an Order of Conditions, indicated that lowering Eagle Lake by 4.5 feet would reduce its total volume by 88%. Extensive community input and volunteer efforts coordinated by the Friends of Eagle Lake and the White Oak Land Conservation Society resulted

in significant maintenance to the dam in order to meet requirements. To advocate on behalf of Town residents, the Eagle Lake Citizens Committee was approved by the Board of Selectmen on September 5, 2017. The Committee was chartered with three main goals:

1. To identify recreational value of the Town's Eagle Lake and Eagle Lake Recreation Area.
2. To identify costs for restoring Recreation Area and ongoing maintenance costs.
3. To address Eagle Lake Dam concerns.

Map 7 - 3: Open Space Opportunities



These efforts resulted in a number of suggestions and strategies which are summarized below. (Holden Eagle Lake Committee, 2018). In coordination with the owners of the dam, it is recommended that the Town be involved in determining and pursuing the most appropriate course of action.

Lake Preservation and General Lake Health

1. Town withhold permission to permanently lower Eagle Lake, since the Town has responsibility to safeguard and defend Town property (Eagle Lake and Recreation Area).
2. Revisit agreements with City of Worcester regarding the amount and timing of water diverted to Worcester. Consider enforcing such agreements or renegotiate. Employ assistance or influence from downstream entities, such as West Boylston and Department of Conservation and Recreation (formerly Metropolitan District Commission), the authority responsible for the Wachusett Reservoir receiving drinking water from Eagle Lake.

Eagle Lake Recreation Area Condition

1. Town restore Eagle Lake Recreation Area, thereby preserving recreation areas for our growing population. An appropriate annual budget should be set for maintenance (DPW) and programs (Recreation Department) to reflect the value to the Town and its citizens.

Eagle Lake Dam Infrastructure

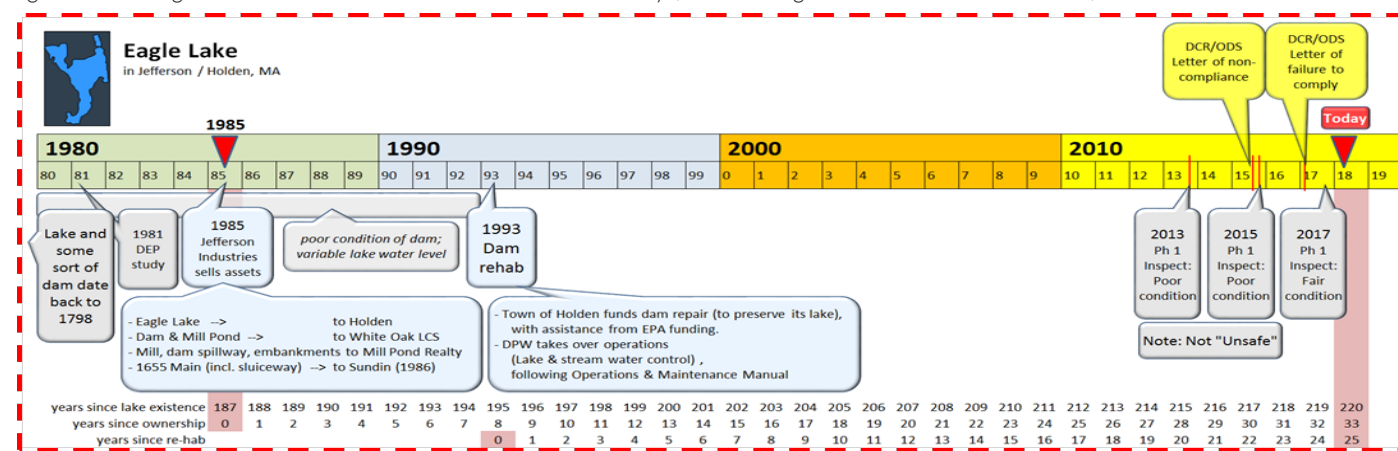
1. Town to press current dam owners to complete the Office of Dam Safety (ODS)-mandated repairs identified in the 2015 Dam Safety Order (and 2013/2015 inspection reports), as well as any additional repairs identified in the most recent inspection report in November 2017.

Additional options to discuss include restoration of the stream habitat and the creation of relevant recreational facilities in the restored area.



Eagle Lake (CMRPC, 2019)

Figure 7 - 4: Eagle Lake dam conditions from 1980 to today (Holden Eagle Lake Committee, 2018)



Open Space Priorities

Holden is fortunate to have so much permanently protected land, but unplanned development could reduce opportunities to protect significant habitats and make connections between already protected open spaces. Holden will have to begin to aggressively protect existing open space and add to its permanently protected areas if it wishes to maintain its character.

The best strategies for maintaining the Town's character and environmental health will be:

- To facilitate preservation of farmland through the state's APR program.
- To protect rare landscape elements, such as wetlands, vernal pools, riparian zones (the areas along streams, rivers, and wetlands), state designated "priority habitats," BioMap2 areas, and large forested tracts.
- To retain large contiguous or connected areas that provide habitat for a diversity of wildlife (Guidelines published by the Environmental Law Institute call for at least 20% to 50% of a town to be protected natural habitat. They also recommend 137 acres (55 hectares) as a minimum contiguous size for a natural area Environmental Law Institute, 2003).
- To protect riparian buffers in order to preserve/improve water quality and wildlife habitat (The Environmental Law Institute recommends a 330-foot (100-meter) riparian buffer to provide for wildlife habitat functions. A 25-meter buffer will provide nutrient and pollutant removal and a 50-meter buffer will provide bank stabilization).
- To minimize the introduction and spread of invasive, non-native species (Many non-native species of plants and animals are known to disrupt the functioning of native ecosystems and contribute to a decrease in biodiversity).

The Open Space Opportunities Map included in this chapter highlights areas in Town that ought to be considered for future acquisitions as well. This map prioritizes areas of interest indicated in the 2008 Master Plan, lands currently enrolled in Chapter Programs, and core and primary habitats. The map highlights 11 areas of Town where Town funds might be used to purchase additional lands for continued conservation preservation efforts or increased recreation facilities.

As the Town continues to pursue an updated OSRP additional funds will become accessible for purchasing these and other lands for open space and recreation. The Town has also established an Open Space Stabilization Fund in order to provide the Town means to purchase properties for open space as they enter the market. Over the past three years the Town has allocated roughly \$50,000 each year in its annual budget to this fund. The Open Space Stabilization Fund has not yet been used.

Current and Future Demand

As part of the master planning process, CMRPC distributed a survey to all Town residents. Only 3.34% of survey respondents indicated that recreational services represent Holden's greatest need. Select survey questions focused specifically on open space and recreation needs in Town. Survey respondents indicated that water bodies, fields and open space, and forested lands are the three most important natural features in Holden. Local water resources are primarily used for boating, fishing, and general viewing as based on survey results. To this end, when asked what opportunities Holden residents would like to see more of in Town, nearly half (48.59%) reported that additional canoing and kayaking locations would be beneficial. Over 60% of those surveyed answered that additional hiking trails are the most needed additional recreational opportunity in Holden. Dedicated bikes routes and indoor sports facilities both ranked highly for this question as well. As Holden's population continues to grow, particular emphasis should be

² BioMap2 is a program of the Natural Heritage and Endangered Species Program of MassWildlife and is designed to guide strategic biodiversity conservation in Massachusetts by focusing land protection and stewardship on the areas that are most critical for ensuring the long-term persistence of rare and other native species and their habitats, exemplary natural communities, and a diversity of ecosystems.

placed on ensuring that adequate open space and recreational facilities are supported in order to meet community needs. The NRPA Standards for Recommended Recreation Facilities can be found in Table 7 - 10.

There are currently 18 general sports fields in addition to multiple sport-specific fields located in Holden. The Town has a field management plan to ensure field longevity and condition. Fields are “rested” in a cycle that allows them to be replenished and not overused. Two fields are offline at any given time. While no specific recommendations regarding building new fields are included at this time, it is recommended that the Town continue to monitor field use and changing need in order to meet demand and continue to provide adequate and necessary community resources.

Several capital improvements that are currently recommended include: painting pickleball lines on two tennis courts at Dawson Recreation Facility; painting and applying sealcoat to the basketball courts at Dawson Recreation Facility; renovating soccer and baseball fields at the Mayo Facility; and installing landing impact material on playgrounds.



Oak Hills Trail (CMRPC, 2019)

Table 7 - 10: NRPA Recommended Recreation Facilities

Activity/ Facility	Recommended Space Requirements	Recommended Size and Dimensions	Recommended Orientation	No. of Units per Population	Service Radius	Location Notes
Badminton	1620 sq. ft.	Singles – 17'x44' Doubles – 20'x44'	Long axis north-south	1 per 5000	¼ - ½ mile	Usually in school, recreation center or church facility. Safe walking or bike access.
Basketball			Long axis north-south	1 per 5000	¼ - ½ mile	Same as badminton. Outdoor courts in neighborhood and community parks, plus active recreation areas in other park settings.
Youth	2400-3036 sq. ft.	46-50'x84'				
High School	5040-7280 sq. ft.	50'x84'				
Collegiate	5600-7980 sq. ft.	50'x94' with 5' unobstructed space on all sides				
Handball (3-4 wall)	800 sq. ft. for 4-wall 1000 for 3-wall	20'x40' Minimum of 10' to rear of 3-wall court. Minimum 20' over-head clearance	Long axis north-south. Front wall at north end.	1 per 20,000	15-30 minute travel time	4-wall usually indoor as part of multi-purpose facility. 3-wall usually outdoor in park or school setting
Ice Hockey	22,000 sq. ft. including support area	Rink 85'x200' (minimum 85'x185') Additional 5000 sq. ft. support area	Long axis north-south if outdoor	Indoor – 1 per 100,000 Outdoor – depends on climate	½ - 1 hour travel time	Climate important consideration affecting no. of units. Best as part of multi-purpose facility.
Tennis	Minimum of 7,200 sq. ft. single court (2 acres for complex)	36'x78'. 12' clearance on both sides 21' clearance on both ends.	Long axis north-south	1 court per 2000	¼-1/2 mile	Best in batteries of 2-4. Located in neighborhood/community park or adjacent to school
Volleyball	Minimum of 4,000 sq. ft.	30'X60'. Minimum 6' clearance on all sides	Long axis north-south	1 per 5000	¼ - ½ mile	Same as other court activities (e.g. badminton)
¼ Mile Running Track	4.3 A	Overall width – 276' Length – 600.02' Track width for 8 to 4 lanes is 32'.	Long axis in sector from north to south to north-west-south-east with finish line at northerly end.	1 per 20,000	15-30 minutes travel time	Usually part of high school, or in community park complex in combination with football, soccer, etc.

Beach Areas	N/A	Beach area should have 50 sq. ft. of land and 50 sq. ft. of water per user. Turnover rate is 3.	N/A	N/A	N/A	Should have sand bottom with slope maximum of 5 % (flat preferable). Boating areas completely segregated from swimming areas.
Baseball						
Official	3.0-3.85 A minimum	Baselines – 90' Pitching distance 60' ½' foul lines – min. 320' Center field – 400'+	Locate home plate to pitcher throwing across sun and batter not facing it.	1 per 5000 Lighted 1 per 30,000	¼ - ½ mile	Part of neighborhood complex. Lighted fields part of community complex.
Little League	1.2 A minimum	Baselines – 60' Pitching distance – 46' Foul lines – 200' Center field – 200' – 250'	Line from home plate through pitchers mound run east-north-east.			
Field Hockey	Minimum 1.5 A	180' x 300' with a minimum of 6' clearance on all sides.	Fall season – long axis northwest to southwest. For longer periods north-south	1 per 20,000	15-30 minutes travel time	Usually part of baseball, football, soccer complex in community park or adjacent to high school.
Football	Minimum 1.5 A	160' x 360' with a minimum of 6' clearance on all sides.	Same as field hockey.	1 per 20,000	15-30 minutes travel time	Same as field hockey.
Soccer	1.7 – 2.1 A	195' to 225' x 330' to 360' with a minimum 10' clearance all sides.	Same as field hockey.	1 per 10,000	1-2 miles	Number of units depends on popularity. Youth soccer on smaller fields adjacent to schools or neighborhood parks.
Golf-driving Range	13.5 A for minimum of 25 tees	900'x690' wide. Add 12' width for each additional tee.	Long axis southwest-northeast with golfer driving toward northeast.	1 per 50,000	30 minutes travel time.	Part of a golf course complex. As separate unit may be privately owned.

Softball	1.5 to 2.0 A	<p>Baselines – 60 ‘</p> <p>Pitching distance- 46’ men. 40’ women.</p> <p>Fast pitch field Radius from Plate – 225’ between foul lines.</p> <p>Slow Pitch – 275’ (men) 250’ (women)</p>	Same as baseball	1 per 5,000 (if also used for youth baseball)	¼ - ½ mile	Slight differences in dimensions for 16” slow pitch. May also be used for youth baseball.
Multiple Recreation Court (basketball, volleyball, tennis)	9,840 sq. ft.	120’ x 80’	Long axis of courts with primary use is north-south	1 per 10,000	1-2 miles.	
Trails	N/A	<p>Well defined head</p> <p>Maximum 10’ width</p> <p>Maximum average grade is 5% not to exceed 15%.</p> <p>Capacity Rural trails – 40 hikers/day/mile.</p> <p>Urban trails – 90 hikers/day/mile.</p>	N/A	1 system per region	N/A	
Archery Range	Minimum 0.65 A	<p>300’ Length x Minimum 10’ wide between targets.</p> <p>Roped clear space on sides of range minimum 30</p> <p>Clear space behind targets minimum of 90’x45’ with bunker.</p>	Archer facing north = or – 45 degrees.	1 per 50,000	30 minutes travel time	Part of regional or metro park complex.

Combination Skeet and Trap Field (8 Stations)	Minimum 30 A	<p>All walks and structures occur within an area approximately 130' wide by 115' deep.</p> <p>Minimum cleared area is contained within 2 superimposed segments with 100-yard radii (4 acres).</p> <p>Shot-fall danger zone is contained within 2 superimposed segments with 300-yard radii (36 acres).</p>	Center line of length runs northeast-southwest with shooter facing northeast.	1 per 50,000	30 minutes travel time	Part of regional/metro park complex
Golf						
Par 3 (18 hole)	50-60 A	Average length vary 600-2700 yd.	Majority of holes on north-south axis	--	½ to 1 hour travel time	9 hole course can accommodate 350 people/day.
9-hole standard	Minimum 50 A	Average length ~2250 yards		1/25,000		18 hole course can accommodate 500-550 people/day.
18-hole standard	Minimum 110 A	Average length 6500 yards		1/50,000		Course may be located in community or district park, but should not be over 20 miles from population center.
Swimming Pools	Varies on size of pool and amenities. Usually ½ to 2 A site.	<p>Teaching-minimum of 25 yards x 45'</p> <p>even depth of 3 to 4 ft.</p> <p>Competitive – minimum of 25 m x 16 m.</p> <p>Minimum of 27 square feet of water surface per swimmer.</p> <p>Ratios of 2:1 deck vs. water.</p>	None-although care must be taken in siting of lifeguard stations in relation to afternoon sun.	<p>1 per 20,000</p> <p>(Pools should accommodate 3 to 5% of total population at a time.)</p>	15 to 30 minutes travel time	<p>Pools for general community use should be planned for teaching, competitive and recreational purposes with enough depth (3.4m) to accommodate 1m and 3m diving boards.</p> <p>Located in community park or school site.</p>

GOALS, OBJECTIVES, AND ACTION ITEMS

The Master Plan recommends the following action items based on the goals and objectives crafted with careful consideration of the public outreach results, analysis of current conditions, and progress achieved since 2008. The action items accompanying the objectives will also be reflected in the Implementation Chapter (Chapter 11).

GOAL 7.1: PRESERVE IMPORTANT LAND RESOURCES, SCENIC VIEWS, AND AGRICULTURAL RESOURCES.

Objective 7.1.1: Develop a systematic approach to ensuring high quality and plentiful open space and recreation opportunities.

- **Action Item 7.1.1.1:** Undertake strategic purchases of open space to increase local and regional landscape connectivity and enhance the ecological integrity of Holden's landscapes.
- **Action Item 7.1.1.2:** Identify priority recreation areas in need of upgrade, repair, maintenance, or further evaluation; fund necessary improvements.
- **Action Item 7.1.1.3:** Use the first right of refusal process to identify and evaluate lands that are withdrawn from Chapter 61, 61A, and 61B; implement permanent restrictions as appropriate.

GOAL 7.2: PROTECT LANDS FOR ACTIVE AND PASSIVE RECREATION.

Objective 7.2.1: Continue actions that enable the town to acquire and fund open space and recreation opportunities.

- **Action Item 7.2.1.1:** Finalize updates to the Town's Open Space and Recreation Plan.
- **Action Item 7.2.1.2:** Seek funding through the Parkland Acquisitions and Renovations for

CAPITAL ITEMS

Restore Eagle Lake Recreation Area swimming facilities.

Install improved launching point for kayaks and canoes at Eagle Lake.

Install landing impact material at playgrounds.

Renovate the soccer/baseball field at Mayo Elementary School.

Implement the recommendations in the CMMPO Regional Bicycle Plan in coordination with all planned roadway improvements.

Install and improve ADA compliant parking spaces at trailheads and other recreation areas, and ADA-friendly trails to accommodate accessibility for all.

Install ADA-friendly trails to accommodate accessibility for all.

Develop and implement wayfinding program for recreational trails.

Communities (PARC) program to develop a new outdoor recreation facility or park.

- **Action Item 7.2.1.3:** Seek funding through the Local Acquisitions for Natural Diversity (LAND) program to develop additional passive recreational opportunities.
- **Action Item 7.2.1.4:** Continue to encourage the use of Agricultural Preservation Restriction (APR), Chapter 61A, and deed restrictions to retain farmland and ensure its viability.
- **Action Item 7.2.1.5:** Explore Community Preservation Act (CPA) as a means of purchasing APR, documenting agricultural resources, repairing barns, and acquiring farmland.

GOAL 7.3: ESTABLISH A WIDER, MORE CONNECTED OPEN SPACE NETWORK.

Objective 7.3.1: Maximize wildlife habitats and increase wildlife biodiversity through an expansion of properties used for open space.

- **Action Item 7.3.1.1:** Promote preservation of important landscape resources.
- **Action Item 7.3.1.2:** Protect large forested areas to avoid fragmentation and maintain biodiversity.
- **Action Item 7.3.1.3:** Identify key privately-owned open space parcels (including those with limited public access; pursue acquisition or access rights).

Objective 7.3.2: Expand recreation areas to provide adequate access and use opportunities for all populations.

- **Action Item 7.3.2.1:** Identify key privately-owned parcels suitable for recreation; pursue acquisition or access rights.

GOAL 7.4: EFFICIENTLY MANAGE AND MAINTAIN OPEN SPACE AND RECREATION AREAS.

Objective 7.4.1: Develop a system to monitor the maintenance and upgrade needs of open space and recreation facilities.

- **Action Item 7.4.1.1:** Increase opportunities and areas for passive recreation such as community gardens and walking and biking trails.
- **Action Item 7.4.1.2:** Increase opportunities and areas for active recreation such as ballfields, additional hiking and biking trails, playgrounds, and summer recreational programs.
- **Action Item 7.4.1.3:** Continue to revisit and work towards implementing the goals of the current Open Space and Recreation Plan.
- **Action Item 7.4.1.4:** Evaluate phased growth and housing production to ensure that future development is manageable.

GOAL 7.5: CONSERVE HOLDEN'S SURFACE AND GROUNDWATER FOR WILDLIFE, RECREATION, AND OTHER USES.

Objective 7.5.1: Improve natural resource management strategies to make Holden more resilient.

- **Action Item 7.5.1.1:** Preserve Holden's surface and groundwater for wildlife, recreation, and other uses through strategies that protect riparian buffers.
- **Action Item 7.5.1.2:** Minimize the introduction and spread of non-native species.
- **Action Item 7.5.1.4:** Incorporate nature-based solutions into future planning and development.
- **Action Item 7.5.1.5:** Develop public education and outreach on appropriate operation and maintenance (O/M) of stormwater BMPs on

private properties. Identify legal authority to enforce established O/M requirements.

- **Action Item 7.5.1.6:** Continue to apply for the 604(b) Water Quality Management Grant to preserve and enhance existing water quality.

GOAL 7.6: EDUCATE COMMUNITY MEMBERS ABOUT CONSERVATION TOOLS.

Objective 7.6.1: Regularly engage with Holden residents on topics related to the environment to encourage conservation and public support.

- **Action Item 7.6.1.1:** Develop an education campaign or program to build awareness of available natural resources and benefits.
- **Action Item 7.6.1.2:** Collaborate with land trusts and other environmentally-focused organizations to promote conservation benefits.

GOAL 7.7: IMPROVE PUBLIC AWARENESS OF HOLDEN'S OPEN SPACE AND RECREATION RESOURCES.

Objective 7.7.1: Increase interactions with Holden residents to promote sustainable use of open space and recreation areas in town.

- **Action Item 7.7.1.1:** Develop an outreach campaign to promote and increase awareness of the benefits provided by protected open space.
- **Action Item 7.7.1.2:** Continue to develop partnerships between conservation groups, land trusts, and the Town of Holden.



What does Holden
think about Open
Space and
Recreation?

OPEN SPACE & RECREATION

Holden Community Survey Results

WHAT FUTURE DO YOU WANT FOR EAGLE LAKE?

"Buy the dam at Eagle Lake, the town already owns the beach and the water. The 2 month pool is a waste of taxes"

"Eagle Lake used to be cleared for skating."

"A healthy Eagle Lake"

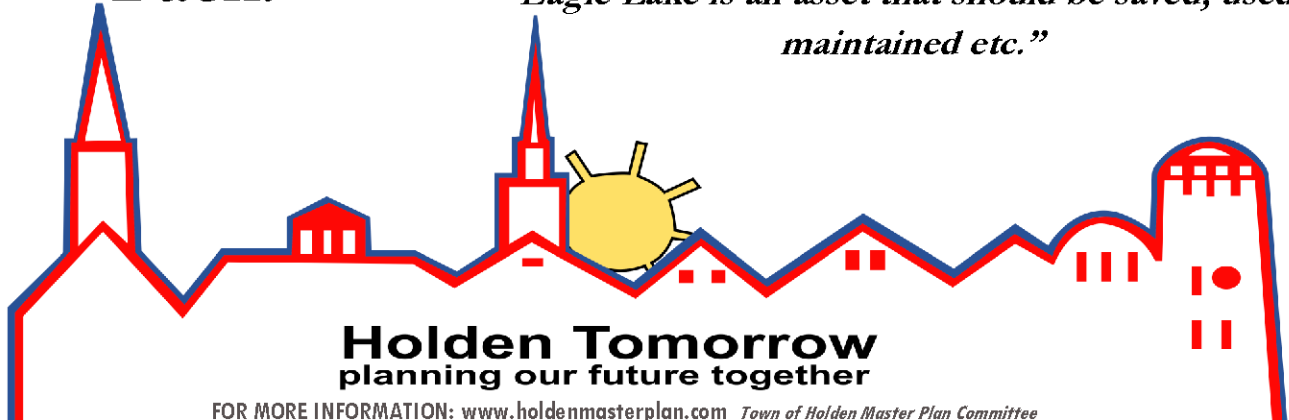
"Save Eagle Lake!"

"Replace the playground equipment at Eagle Lake that the rec department removed without town permission"

"Clean lake swimming, the way Eagle Lake Used to be"

"Bring Eagle Lake Back!"

"Water activities/Beachfront. None of our ponds in Holden have a sandy beach front that could accommodate summer water/beach fun. We only have overgrown ponds for fishing or small boating. Eagle Lake is an asset that should be saved, used, maintained etc."



Holden Tomorrow
planning our future together

FOR MORE INFORMATION: www.holdenmasterplan.com Town of Holden Master Plan Committee