

# **Town of Millis Open Space and Recreation Plan (OSRP)**

**June 26, 2019**





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This Plan was prepared by the Metropolitan Area Planning Council (MAPC)

Funding for this Plan was made possible through a grant made to the Town of Millis from the Massachusetts Executive Office of Energy and Environmental Affairs. Additional funding was provided from District Local Technical Assistance (DLTA) and Planning for MetroFuture Technical Assistance (PMTA) made available by the Metropolitan Area Planning Council.

Cover image – Richardson's Pond, photo by MAPC

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Image – Oak Grove Farm, photo by MAPC

## Section 1: Plan Summary

The 2019-2026 Town of Millis Open Space and Recreation Plan (OSRP) provides a fresh perspective on the previous 1999 Open Space and Recreation Plan. This plan has been prepared to guide Town staff, committees, and boards working to support open space and recreation in the Town of Millis. This plan offers opportunities for improving open space and recreation assets in the Town, and for continuing the strong record of conservation and habitat protection that has always been a key feature of the community. This plan was prepared by the Metropolitan Area Planning Council (MAPC), the regional planning agency serving the 101 cities and towns of Metropolitan Boston. MAPC prepared this plan and a corresponding Municipal Vulnerability Preparedness Plan under the direction of a Core Team comprised of Town leadership and staff from the following: Board of Selectmen, Town Administrator, Public Works/Highway Department, Fire Department, Police Department, Recreation Department, Millis Public Schools, Conservation Commission, Community Preservation Committee, Recreation Committee, Energy, and the Charles River Watershed. This planning process occurred concurrently with a Municipal Vulnerability Preparedness process and the resulting Municipal Vulnerability Preparedness Plan for the Town of Millis has been coordinated with this plan. During the planning process, MAPC facilitated two public forums, coordinated four Core Team meetings, created a survey that was completed by about 200 people, and met with staff from the Town of Millis.

The Town of Millis open space assets are closely linked to the Charles River and the municipal border it shares with this natural asset. The watershed associated with the Charles River has featured up-river water storage areas that are vast in acreage and owned by the Army Corps of Engineers. These protected flood storage areas set the context for other conservation lands, agricultural properties, and recreational facilities in the Town. An inventory of these areas is included in the OSRP. The inventory serves as both a promotional tool for the amenities available and as a base for the Seven-Year Action Plan, Section 9 of this plan, which highlights open space and recreation priorities for the next seven years. The Seven-Year Action Plan provides detailed steps for achieving goals and objectives including the responsible parties, timeframe, and potential funding sources. Once approved by the Massachusetts Executive Office of Energy and Environmental Affairs, the OSRP allows the Town of Millis to apply for specific types of grant funding for projects related to open space and recreation. The specific types of grants include the Local Acquisitions for Natural Diversity (LAND) program grants which can be used for land acquisition and improvement of parks and other open spaces.

This community-based open space and recreation planning process has reaffirmed that preserving Millis open space and natural areas is important to the community (92% of 478 community survey respondents agree or strongly agree), that Millis needs to proactively plan for the recreational needs of its residents (94% of community survey respondents agree or strongly agree), that the Millis open space and recreation amenities contribute positively to quality of life (88% of community survey respondents agree or strongly agree), and that Millis needs to proactively preserve open space (86% of community survey respondents agree or strongly agree).

The Town of Millis has developed (11) eleven goals on which the OSRP is based:

- **Goal #1: Preserve and protect the Town's drinking water sources.** (70% of community survey respondents feel this is very important, 23% of the community survey respondents feel this is important, for a total of 93% feeling it is at least important)

- **Goal #2: Improve existing playing fields and playgrounds.** (58% of community survey respondents feel this is very important, 26% of the community survey respondents feel this is important, for a total of 84% feeling it is at least important)
- **Goal #3: Protect the Town's remaining farms.** (56% of community survey respondents feel this is very important, 28% of the community survey respondents feel this is important, for a total of 84% feeling it is at least important)
- **Goal #4: Protect surface water quality and natural habitats.** (47% of community survey respondents feel this is very important, 34% of the community survey respondents feel this is important, for a total of 81% feeling it is at least important)
- **Goal #5: Preserve and protect the Town's heritage and natural character.** (45% of community survey respondents feel this is very important, 36% of the community survey respondents feel this is important, for a total of 81% feeling it is at least important)
- **Goal #6: Promote awareness and appreciation of open space through education and outreach.** (41% of community survey respondents feel this is very important, 38% of the community survey respondents feel this is important, for a total of 79% feeling it is at least important)
- **Goal #7: Improve access to existing Town-owned recreation and conservation land.** (35% of community survey respondents feel this is very important, 43% of the community survey respondents feel this is important, for a total of 78% feeling it is at least important)
- **Goal #8: Add or improve open space connections through regional greenways and trail networks.** (37% of community survey respondents feel this is very important, 38% of the community survey respondents feel this is important, for a total of 75% feeling it is at least important)
- **Goal #9: Improve accessibility of facilities for all residents, including residents with special needs.** (35% of community survey respondents feel this is very important, 39% of the community survey respondents feel this is important, for a total of 74% feeling it is at least important)
- **Goal #10: Construct new playing fields and playgrounds.** (48% of community survey respondents feel this is very important, 19% of the community survey respondents feel this is important, for a total of 67% feeling it is at least important)
- **Goal #11: Strengthen climate resilience through Town open spaces.** (32% of community survey respondents feel this is very important, 34% of the community survey respondents feel this is important, for a total of 66% feeling it is at least important)

## **Section 2: Introduction**

### **Statement of Purpose**

The purpose of this plan is to provide a framework and recommendations for residents of Millis to proactively plan for and manage the future of the Town's natural resources and to balance the pressures of commercial, industrial, and residential development that will impact the natural systems of the Town.

### **Why was this Plan written?**

The Town of Millis 2019 Open Space and Recreation Plan continues the Town's dedication to conservation, protection of natural resources, and support for attractive open space and recreation amenities. The Plan refreshes and replaces the previous 1999 plan which was completed 20 years ago. The Plan will serve to guide the Town's decision making around open space and recreation planning and implementation for the next seven years.

The purpose of the Plan is to provide the residents of Millis with a clear understanding of the current open space and recreation assets and needs in the Town and to outline a clear and deliberate approach through prioritized actions that seek to balance conservation, development, recreation, investment, and fiscal responsibility. The Plan is designed to provide clearly defined open space and recreation priorities and goals, developed through a participatory public process, to ensure that the needs of the Millis community are met.

This Town of Millis 2019 Open Space and Recreation Plan has been compiled in accordance with the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA), Division of Conservation Services (DCS) requirements and guidelines. In order to be eligible for state and federal grant aid offered through the EOAA, an approved Open Space and Recreation Plan is required.

### **What is Open Space?**

Open space is land that is undeveloped, usually without buildings or structures, and that is accessible to the public. Open space is typically divided into two categories: conservation lands and recreation resources.

Conservation land is usually left in its natural state and it is often, but not always, open to the public. Conservation lands may include animal and plant habitats, water resources/aquifer protection, and other natural, historical or cultural features.

Recreation involves activity. Active recreation activities include team sports, tennis, swimming competitively, golf, etc. taking place in or on developed facilities. Passive recreation is defined as any activity that can be performed outdoors with a minimum disturbance to an area's natural resources. For example, hiking, picnicking, canoeing, ice-skating, cross country skiing, swimming in a natural water body, and informal sports activities on an open field are considered passive activities. Conservation lands may offer passive recreation opportunities.

This Plan inventories both active and passive recreation areas, as well open spaces such as cemeteries that serve as historical/cultural features. An Inventory of Millis recreation and open space resources is in Section 5.

### **Planning Process and Community Participation**

The Town of Millis supported the development of this Plan through the guidance and supervision of a Core Team comprised of Town leadership. The overall process and Core Team meetings were managed and coordinated by the Millis Energy Coordinator. The OSRP was prepared in conjunction with a Municipal Vulnerability Preparedness (MVP) Program process. The Core Team also advised this concurrent planning process. This allowed the OSRP to be a part the community engagement of leadership at the MVP Workshop held for that process.

The MVP/OSRP Core Team consisted of the following members (in alphabetical order):

- David Baker, Millis Community Preservation Committee
- Michael Banks, Chairman, Millis Recreation Committee
- Loring Barnes, Vice Chair, Millis Board of Selectmen (BOS)
- Rick Barrett, Millis Fire Chief
- Karen Bouret, Millis Operations Support Manager
- John Engler, Director of Operations and Facilities, Millis Public Schools
- Kris Fogarty, Millis Recreation Director
- Mike Guzinski, Millis Town Administrator
- Ram Charan Khalsa, Millis Conservation Commission
- Lisa Kumpf, Charles River Watershed Association
- Jim McKay, Director Millis Public Works/Highway Department
- John McVeigh, Millis Director of Public Health
- Chris Soffayer, Millis Chief of Police
- Camille Standley, Planning Board/Conservation Committee Staff
- Bob Weiss, Energy Manager, Town of Millis
- Julie Wood, Charles River Watershed Association

The process was facilitated by the Metropolitan Area Planning Council (MAPC) which provided project management, technical analysis, and community engagement services to prepare the plan. The preparation of the plan was made possible by grants from the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs and MAPC Technical Assistance. During the process, the Core Team met regularly with Metropolitan Area Planning Council (MAPC) staff to review and contribute to the elements of the plan and assist with community engagement. In cooperation with the Town of Millis, MAPC organized and facilitated two community forums on February 7<sup>th</sup>, 2019 and May 9<sup>th</sup>, 2019.

Extensive outreach helped to promote the events and raise awareness of the Open Space and Recreation Plan process. Event flyers were placed in public buildings including Town Hall. The events were further advertised on the Town of Millis website. Both forums were held at the Board of Selectmen Meeting Room in Town Hall. At the February Forum, MAPC planners provided an introduction to the Open Space and Recreation Plan, presented an overview of Millis demographic and land use trends, and shared the initial open space inventory. The presentation also included an overview of the climate vulnerabilities identified as part of the MVP process. Members of the public in attendance were engaged in a Strength, Weakness, Opportunity, and Threat (SWOT) exercise and asked to prioritize and edit an initial listing of open space and recreation goals and objectives. The presentation was also recorded by local cable access, Millis

Community Media, and made available for online viewing after the original broadcast of the event.

Between the two community forums, an online community survey was developed and received over 200 responses. Millis residents and open space stakeholders were provided an opportunity to communicate open space, conservation and recreation priorities and opinions through the survey, available from March 13<sup>th</sup>, 2019 through May 15<sup>th</sup>, 2019. The online survey was available through the Town's website. Paper copies of the survey were also made available at Town Hall.

This community-based open space and recreation planning process has reaffirmed that preserving Millis open space and natural areas is important to the community (94% of community survey respondents agree or strongly agree), that Millis needs to proactively plan for the recreational needs of its residents (90% of community survey respondents agree or strongly agree), that the Millis open space and recreation amenities contribute positively to quality of life (87% of community survey respondents agree or strongly agree), and that Millis needs to proactively preserve open space (87% of community survey respondents agree or strongly agree).

At the May Forum, an initial draft of the Open Space and Recreation Plan was presented and the draft seven-year action plan was reviewed. Feedback received at the forum has been incorporated into the draft Open Space and Recreation Plan. Full documentation of all community feedback received throughout this process is included in Appendix 1: Public Comments.

### **Enhanced Outreach and Public Participation**

The Executive Office of Energy and Environmental Affairs (EOEEA) and other state agencies have been implementing an Environmental Justice (EJ) Policy since 2002 to help ensure that all Massachusetts residents experience equal protection and meaningful involvement with respect to the development, implementation, and enforcement of environmental laws, regulations and policies and the equitable distribution of environmental benefits. This policy was instituted because the Commonwealth realized that low to moderate income residents in densely populated older industrial areas often lack open space and recreation resources and may live near old, abandoned, and/or contaminated sites that can pose risks to public health and the environment.

Environmental justice is an integral consideration in all EEA programs, to the extent applicable and allowable by law. The Environmental Justice Executive Order No. 552 requires Secretariats to take action in promoting environmental justice. The Executive Order requires new environmental justice strategies that promote positive impacts in EJ communities. For example, EOEEA has now amended the LAND program regulations to incorporate environmental justice in the award scoring system. Similarly, the Riverways and the Massachusetts Environmental Trust will work with EOEEA to develop systems for incorporating environmental justice as a criterion for awarding grants. The EOEEA also has determined to target its resources to more effectively create, restore, and maintain open spaces located in neighborhoods where EJ populations reside.

Environmental Justice Populations in Massachusetts are determined by the following criteria:

- Households earn 65% or less of the statewide household median income; or
- 25% or more of the residents are minority; or
- 25% or more of the residents are foreign-born; or
- 25% or more of the residents are lacking English language proficiency

By these criteria, 137 municipalities in the Commonwealth of Massachusetts include an Environmental Justice Population, as identified through analysis by MassGIS. The Town of Millis is not one of these communities and does not include an Environmental Justice Population. The most recent analysis completed by MassGIS (Bureau of Geographic Information), using data from the 2010 Census and ACS 2010 5-year Estimates, identifies no block groups within Millis that meet one or more of the environmental justice criteria, including foreign-born, minority population, and income. A map of the Environmental Justice block groups in Millis is included in Section 3: Community Setting.



Image – Tangerini Farm, photo by Tangerini Farm

## Section 3: Community Setting

### Regional Context

The Town of Millis is a small, suburban industrial town located in western Norfolk County, Massachusetts approximately 26 miles southwest of Boston, 32 miles east of Worcester, and 32 miles north of Providence, Rhode Island. Millis is bordered by Medway on its west, Holliston and Sherborn on the north, Medfield on the east, and Norfolk on the south. Refer to Map 1: Regional Context on the following page.

The Town includes a total land area of 12.3 square miles, or 7,848 acres, and is located entirely within the boundaries of the Charles River Watershed. The Town includes a large amount of land that is part of the Charles River Valley Natural Storage Area. Much of this land is owned and managed by the United State Army Corps of Engineers. The Town is located within the Southern New England Coastal Plains and Hills Ecoregion, an area comprised of plains with a few low hills. The Town includes about 2,627 acres of agricultural, open space, conservation, and recreational land. Within this acreage, 2,268 acres or 28.9% of the total land area of Millis is protected in perpetuity including *BioMap2* Core Habitat and *BioMap2* Critical Natural Landscape.

Access to major highways is via Route 109 and Route 115. Interstate 495 is located eight miles southwest of Millis via Route 109 (west) and Route 1 (south). Interstate 95 is located eleven miles east of Millis via Route 109 (east). Public transit service, rail and bus service, is limited with no direct service MBTA train or bus routes. The nearest MBTA commuter rail stop is located in the Town of Norfolk. Nearby commuter rail service is also available in the nearby towns of Needham, Walpole, and Franklin.

### Regional Planning Context

Millis is one of 101 cities and towns that are served by the Metropolitan Area Planning Council (MAPC), the regional planning agency for the Greater Boston area. Millis is a member of the South West Advisory Planning Committee (SWAP), one of eight MAPC subregions. Council membership consists of community representatives, gubernatorial appointees, and city and state agencies that collaborate around issues of regional importance. MAPC's professional planners, GIS specialists, demographers, and others provide extensive technical assistance to member communities through the development of comprehensive plans and recommendations in areas of housing, transportation, economic development, public health, environment, and more.

MAPC is currently facilitating a planning process to update the regional plan, *MetroCommon* 2050. The current plan, *MetroFuture*, was adopted in 2008 and is still in use by MAPC to coordinate local planning efforts. Once completed and adopted the new regional plan will be used for this type of coordination. *MetroFuture* guides the work of MAPC agency-wide and every project MAPC undertakes works towards reaching these goals. Many *MetroFuture* goals are applicable to the 2019 Millis Open Space and Recreation Plan, including:

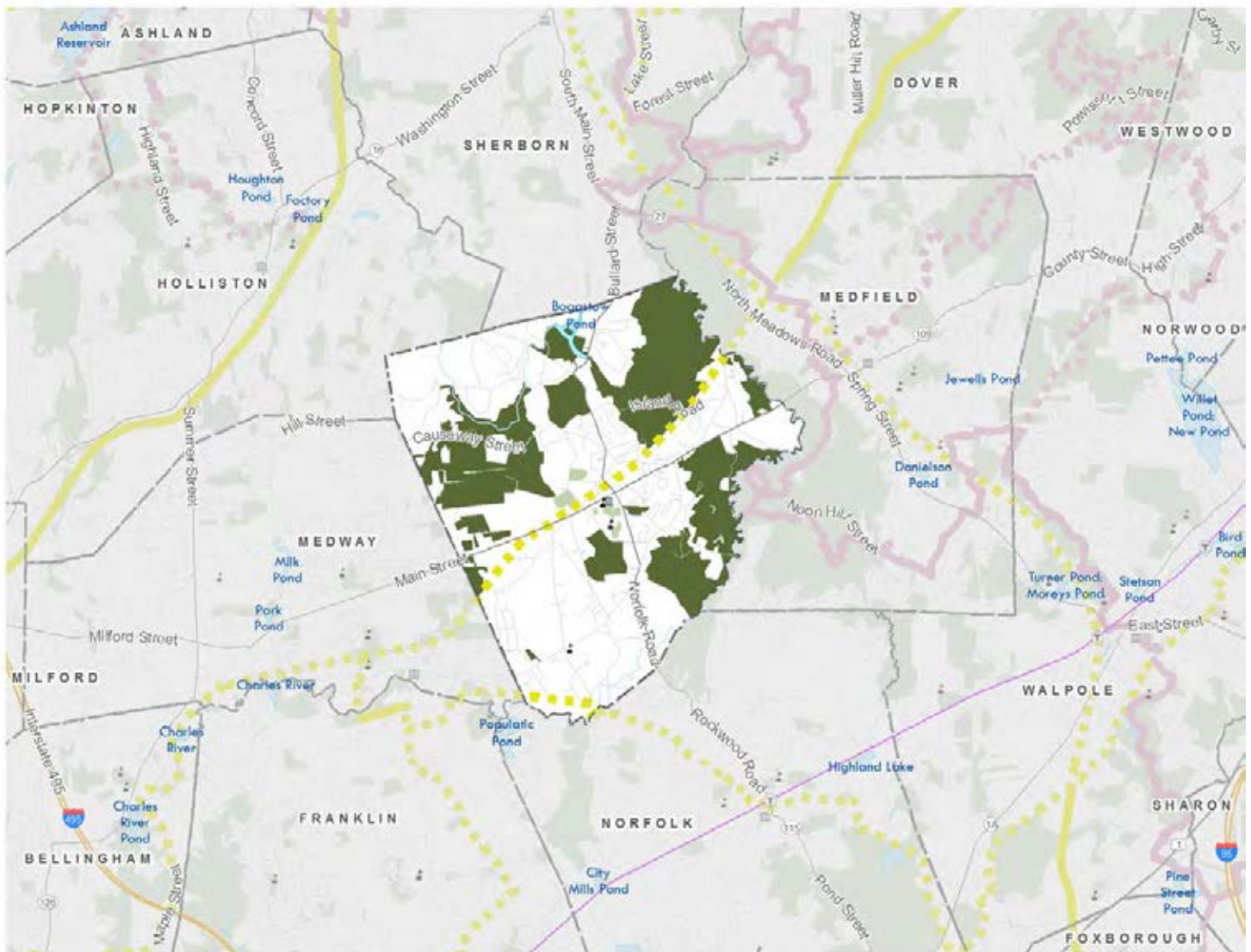
- **Goal 7:** Cities, towns, and neighborhoods will retain their sense of uniqueness and community character.
- **Goal 8:** Historic resources will be preserved and enhanced.
- **Goal 9:** The region's landscape will retain its distinctive green spaces and working farms.

- **Goal 11:** The region will be prepared for and resilient to natural disasters and climate change.
- **Goal 23:** All neighborhoods will have access to safe and well-maintained parks, community gardens, and appropriate play spaces for children and youth.
- **Goal 25:** Most residents will build regular physical activity into their daily lives.
- **Goal 42:** The region's agricultural economy will grow through a focus on sustainable farming and by bringing more locally produced foods to the market.
- **Goal 61:** Water resources will be carefully budgeted and sustainably managed so that clean water is available for appropriate uses and development.
- **Goal 62:** The region's rivers, streams, lakes, and ponds will have sufficient clean water to support healthy populations of native fish and other species, as well as recreational uses.
- **Goal 63:** The ecological condition of wetlands will improve, and fewer wetlands will be lost to development.
- **Goal 64:** The region will retain its biodiversity and will have healthy populations of native plants and animals, and fewer invasive species.
- **Goal 65:** A robust network of protected open spaces, farms, parks, and greenways will provide wildlife habitat, ecological benefits, recreational opportunities, and scenic beauty.

In addition to regional planning documents, neighboring municipalities have local plans that represent an opportunity for inter-municipal collaboration. In the immediate vicinity of Millis, the Towns of Medway and Norfolk have recently completed Open Space and Recreation Plans. A full listing of neighboring Town's Open Space and Recreation Plans and Plan dates includes:














- Town of Medway (2018)
- Town of Norfolk (2017)
- Town of Medfield (2016)
- Town of Franklin (2013)
- Town of Holliston (2013)
- Town of Sherborn (2007)

# Map 1: Regional Context



Document Path: K:\Data Services Projects\Current Projects\Open Space, Parks\Milis\GIS\Map 1 - Regional Context.mxd

## Millis Open Space/Recreation Sites

- |   |  |   |                                  |
|---|--|---|----------------------------------|
|  | Open Space (Not Permanently Protected) |  | Greenway Route                   |
|  | Permanently Protected Open Space       |  | Regional Walking Trail           |
|  | Open Space in Surrounding Communities  |  | Greenway Route (Planned)         |
|  | Schools                                |  | Regional Walking Trail (Planned) |
|  | Town Hall                              |  | Rivers and Streams               |
|  | Commuter Rail Stations                 |  | Lakes and Ponds                  |
|  | Operational Commuter Rail              |   |                                  |



The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

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Data Sources:  
Metropolitan Area Planning Council (MAPC)  
Massachusetts Geographic Information System (MassGIS)  
Massachusetts Department of Transportation (MassDOT)

November, 2018



## **History of Community**

This brief summary of the history of Millis has been compiled from the facts provided by the Town of Millis on both its web page and in the Millis Master Plan, 2000 and the Millis Historic Commission through its web page ([millishistory.org](http://millishistory.org)). The earliest inhabitants of what is now known as Millis were the Muckquit subgroup of the Nipmuc Native American tribe. The Muckquit had a permanent village on the south shore of Lake Winthrop, in what is now Holliston (northwest of Millis). These first inhabitants disappeared around 1700 due to years of exploitation by early European settlers and the introduction of new diseases brought with them. In 1640 land known as Bogastowe was given to Edward Alleyne. As an early settlement, Millis was originally part of the Town of Dedham. In 1650, land was granted west of the Charles River to the inhabitants of the Village of Medfield, which was also part of Dedham until 1651. The land was first used as hay fields and pasture. The first permanent European settler in what is now Millis was George Fairbanks, who built a farm at South End Pond in 1657 called Palisades. In these early years, several other residents built homes along Exchange Street, Island Road, Ridge Street, and Causeway Street. In 1713, pioneers of Medfield applied for a grant to create a new town, once approved, the land west of the Charles River was incorporated as the Town of Medway. The first settlement was in the easterly part of the town, East Medway, which is now known as Millis. During this time, a first Meeting House was built. Development spread across Exchange Street and south of Main Street. By about 1750, the town had established a cemetery, a town pound, and a tavern. Medway Village and West Medway were subsequently settled and built up. As time passed, the seat of government was located in West Medway.

In the 1800's progressed, factories such as the Holbrook Bell Foundry were begun in Millis. In 1885, a petition was made by the residents of Medway to separate East Medway from Medway and to rename it Millis. At that time, traversing the natural barrier known as Black Swamp was nearly impossible. This created a barrier to travel and governance, particularly during spring Town Meeting. This natural barrier coupled with the fact that East Medway already had its own system of schools, churches, roads and industry, led to the General Court's approval of the petition, and to the incorporation of the Town of Millis on February 24, 1885. Millis is named after Lansing Millis, one of the original founders of the Town. He was a businessman and railroad executive from New York who purchased two properties for use as a dairy farm. He served as the town's first Town Meeting moderator and Chairman of the Board of Selectmen. His dairy farm was Oak Grove Farm, now a prominent asset in the Town's open space and recreation inventory.

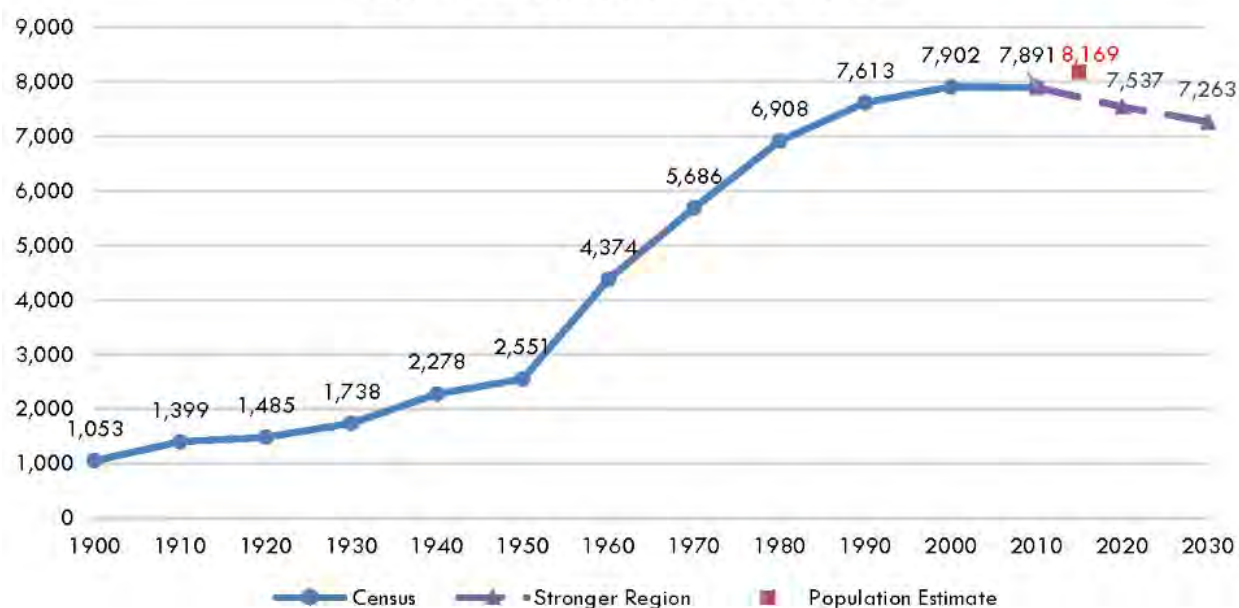
In its earliest period after incorporation, the Town of Millis had a population of about 350 residents. The primary occupations in Town were farming or working for one of the industries in town beginning with two cotton mills and the textile trade and evolved to include several brickyards, the Holbrook Bell Foundry, a blacksmith shop, an organ factory, a paper mill, Lacroix Canning and Bottling Factory, Hutchinson Bleachery and Dye Works, an ice factory, the J.M. Herman Shoe Company, the Cliquot Club Beverage Company, and the American Felt Company. The Cliquot Club plant was established by Lansing Millis. At that time, convenient train and street car service was available to Boston. This accessibility, along with the fresh air and water of the Millis countryside, led to the establishment of a number of resort hotels that catered primarily to Boston's Jewish community. These early patterns remained relatively steady until the time following World War II. The population of the Town of Millis increased sharply, as it did in many other places, and the town's character shifted from rural and industrial to suburban. This pattern of suburbanization has continued in the Town of Millis and many communities like it to this day. Many things have changed about Millis, notably much of the original industry and resorts are now gone, but the natural assets of the Town remain.

## Demographic Context

### Population Trends

The analysis of population trends in Millis was developed for the recently completed Housing Production Plan, 2018. According to the 2010 U.S. Census, the residential population of Millis was 7,891. The Millis population has increased in each decade through the 20<sup>th</sup> century, but has remained relatively stable from 2000 to 2010, declining less than 1% from 7,902 residents in 2000 to 7,891 residents in 2010. The most recent American Community Survey (ACS) 5-Year Estimates from 2012-2016 estimated a slight growth in population to 8,176 residents in Millis. The Town estimates an overall population of 8,629, according to the 2017 Town Clerk Data. The population density of the Town is about 1 resident per acre or about 700 residents per square mile.

### Millis Population 1900-2030



Source: U.S. Census, American Community Survey, MAPC Stronger Region Projections

Historically, the population trend has been one of more substantial growth, but that period of growth appears to have slowed. After a period of limited growth from 1930 through 1950, the population grew by 70 percent from 1951 to 1960 to a population of 4,374 residents. From 1960 to 1970, the population increased by 1,312 residents for a total population of 5,686. From 1970 to 1980, the population increased by 1,222 for a total population of 6,908. The growth began to slow from that period forward with a total population of 7,613 in 1990 and a total population of 7,902 in 2000.

The Metropolitan Area Planning Council (MAPC) has prepared population projections through 2030 for the Metro Boston region. These projections are based on two scenarios: Status Quo, based on the continuation of existing rates of births, deaths, migration, and housing occupancy; and a Stronger Region that assumes higher population growth, greater housing demand, and a larger workforce. Specifically, the Stronger Region scenario assumes that in the coming years:

- The region will attract and retain more people, especially young adults, than it does

today;

- Younger householders (born after 1980) will be more inclined toward urban living than were their predecessors, and less likely to seek out single family homes; and
- An increasing share of senior-headed households will choose to downsize from single family homes to apartments or condominiums.

These population projections appear to be confirmed by current regional trends in population growth and migration patterns, so the Stronger Region scenario is used to project population and demographic changes as part of this plan. However, these projects appear to diverge from the estimated population today. MAPC's population projections for the Stronger Region scenario showed a 2020 population in Millis of 7,537 and a 2030 population in Millis of 7,263. The projections show a population in decline, but the estimated population figures from both the Town Clerk and US Census show a population continuing to grow, albeit at a rate that is slower than in the past.

The age distribution trends in Millis show a pattern of an aging population. Specifically, the 5-19 year old cohort is projected to decrease from 22% of the total population in 2010 to only 15% of the population by 2030. Likewise, the 35-49 year old and 50-64 year old cohorts will decrease overall. The 20-34 year old cohort will remain steady or increase slightly from 14% of the population in 2010 to 15% in 2030. Over the same time period, the population over 65 years old is projected to increase from 13% of the population to 28%.

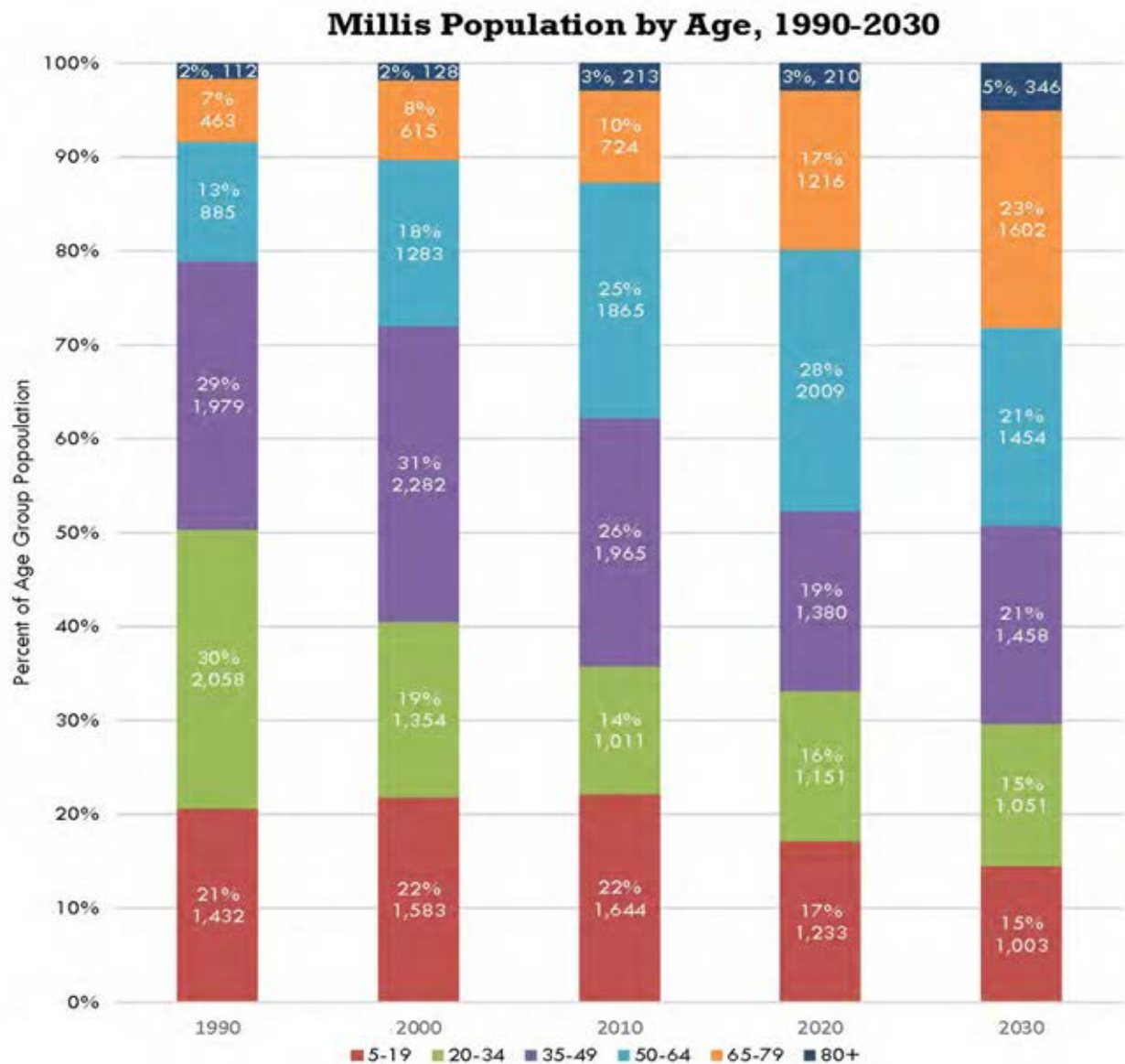
Although all age groups benefit from access to natural and recreation spaces, different age groups tend to use natural and recreation spaces at a different frequency, intensity, and range of activities. For example, the facilities required by a large youth sports organization differ significantly from those enabling individual passive recreation activities pursued by older residents.

In general, most recreational opportunities for children require parental supervision. For children under five, this recreation is most convenient when it is close to home and neighborhood playgrounds or private residential space often serve this function. This age group also needs structured preschool programs that focus on teaching basic skills. For older children, adults often seek places to take their children for walks or seek programs for their children that provide family recreational opportunities.

Adolescents are typically served recreationally through school and after-school sports programs. This can pose difficulty for those not interested in participating in traditional programs that are structured or involve adult supervision, or for those activities requiring financial contributions that are not affordable. For adolescents who are interested in being more actively involved in determining their activities, they may prefer programs like rock climbing, adventure programs, skateboarding, hiking, band concerts, cook outs, dances, or other activities.

The needs of senior residents are divided between the younger, more active seniors and the less mobile senior population that may have additional medical considerations. The latter may generally require therapeutic recreational services. More active seniors tend to enjoy walking,

golf, bocce, tennis, swimming, or other activities. It will be especially important for the Town to consider the needs of older adults as the senior population continues to grow.



Source: U.S. Census, American Community Survey, MAPC Stronger Region Projections

The needs of residents with impairments or varying abilities may also represent a broad spectrum of considerations. Some residents with varying abilities can participate in regular recreational programs without any modifications, while others may require some assistance or programs specifically geared toward those with varying abilities. Physical barriers are a key factor for consideration and are evaluated in the ADA Access Self-Evaluation and Transition Plan of this plan found in the Appendix 3: ADA Accessibility Self Evaluation. Along with the evaluation, the plan also includes recommendations for improving accessibility by removing physical barriers and enacting programmatic changes, such as training staff on how to be inclusive for all residents.

The Town of Millis is not very racially and ethnically diverse with about 93% of the 2010 population, the majority of residents are White, Non-Hispanic. The next largest racial and ethnic group is Asian/Pacific Islander, Non-Hispanic with about 3% of the 2010 population.

In addition to overall population trends, it is also important to examine trends in the households in Millis that could inform the open space and recreation planning. A household consists of all the people who occupy a housing unit, they may be related or unrelated. Household numbers increased in Millis between 1990 and 2010 from 2,767 to 3,013. The most recent American Community Survey (ACS) 5-Year Estimates from 2012-2016 estimated a slight growth in households to 3,075 residents in Millis. MAPC's household projections for the Stronger Region Scenario show an increase in the number of households by about 5% to the year 2030. This overall projection also fits with broader trend of shrinking household size. Due to continued declines in household size, the number of households is expected to grow faster than the population. This corresponds to trends in the broader MAPC region and the state between 2000 and 2010. Reasons for decreased household size range from families delaying having children, having fewer children, and smaller households in the oldest age cohorts as baby boomers age. The average household size in Millis in 2010 was 2.59. In Millis, the majority of households (58%) are married couples, either with or without children. The remaining 42% of households in Millis are comprised of single parents, other family living arrangements, residents living alone, or other non-family living arrangements. Households with children represent 39% of the households in Millis.

### **Environmental Justice Population Characteristics**

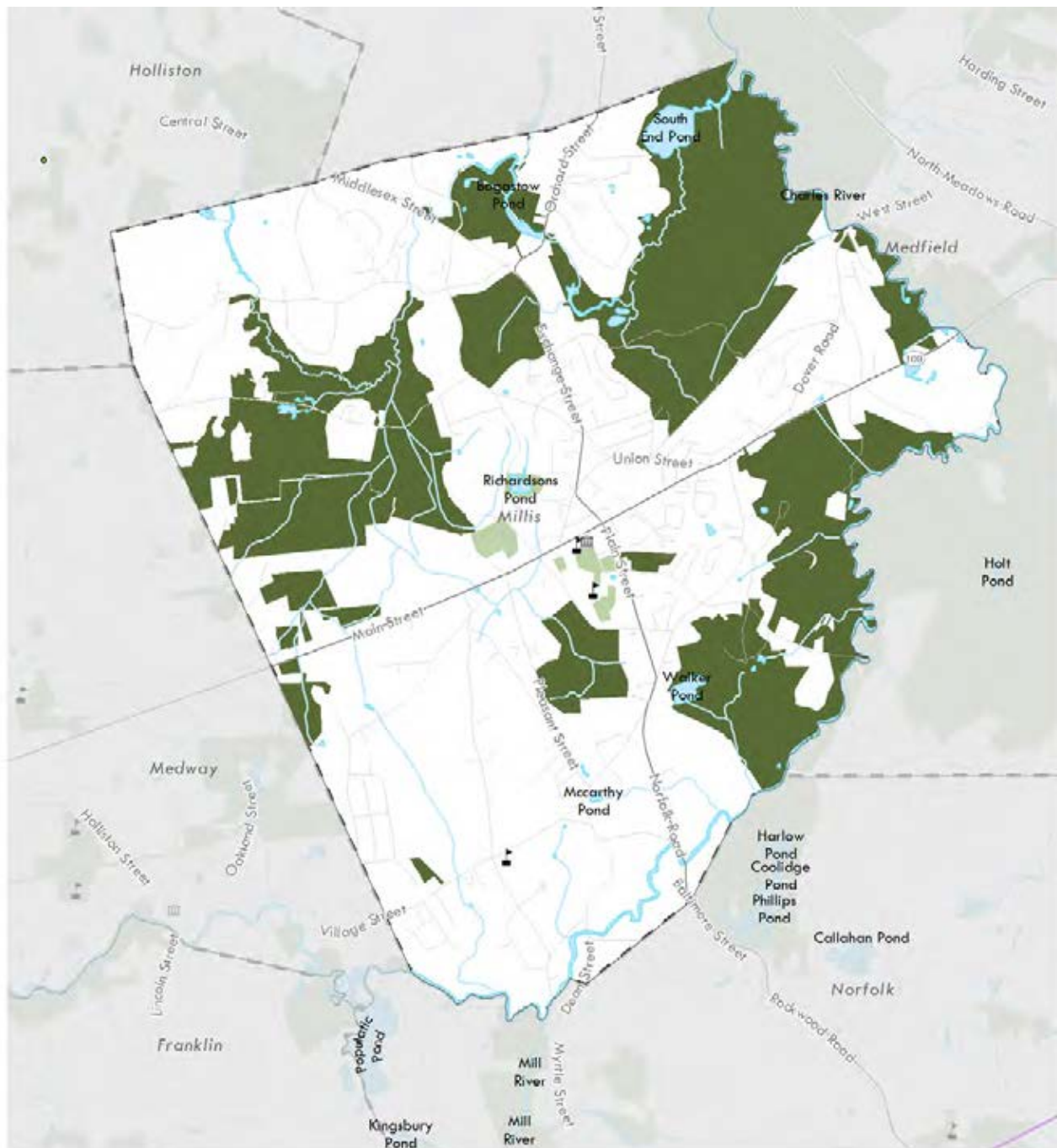
In 2002 the Commonwealth of Massachusetts developed an Environmental Justice Policy. Environmental justice is "based on the principle that all people have a right to be protected from environmental pollution and to live in and enjoy a clean and healthful environment."

Massachusetts uses three criteria to identify Environmental Justice (EJ) communities, including income, race & ethnicity, and English language proficiency. The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) defines EJ populations as neighborhoods (U.S. Census Bureau census block groups) that meet one of more of the following criteria:

- Median annual household income is at or below 65% of the statewide median income;
- 25% or more of the residents are a minority;
- 25% or more of the residents are foreign born; or
- 25% or more of the residents are lacking English language proficiency.

The most recent analysis completed by MassGIS (Bureau of Geographic Information), using data from the 2010 Census and ACS 2010 5-year Estimates, identifies no areas within Millis that meet the environmental justice criteria, including foreign-born, minority population and income. A map of the Environmental Justice Populations data in Millis is below.

**Map 2: Environmental Justice Map**



**Environmental Justice Populations**  
[Note: Low Concentration in Millis]

- English Proficiency
- Income
- Minority Population
- Income & English Proficiency
- Minority Population & English Proficiency
- Income and Minority Population
- Income, Minority Population, & English Proficiency

**Municipal Infrastructure**

- Schools
- Town Hall
- Commuter Rail Stations
- Commuter Rail Lines

**Natural Features**

- Rivers and Streams
- Water Bodies
- Open Space (Not Permanently Protected)
- Permanently Protected Open Space
- Surrounding Open Space

0 0.5 1 Mile

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Data Sources:  
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Massachusetts Department of Transportation (MassDOT)

November, 2018



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### **Growth and Development Patterns**

MAPC categorizes Millis as a maturing New England Town. This type of community is generally characterized by a mixed-use town center surrounded by compact neighborhoods. They generally have a large amount of vacant developable land and new growth is often in the form of residential subdivisions.

The historic growth and development patterns are summarized based upon the recently completed Housing Production Plan and previous Millis Master Plan. The original settlement of the Town was based on farming and grazing and was relatively sparsely populated and settled at that time. In the 1800's and early 1900's, the industrial base in Millis had grown, which brought new residents and more dense settlement patterns. The Town of Millis has established dense and walkable development at its most historic locations, clustered along Main Street (Route 109). The Town Center is located between the Great Black Swamp and the wetlands along the Charles River. As the industrial base of region shifted away from towns such as Millis, employment focused more on Boston and the improving access to the Town, along with its natural amenities, made it an attractive location for residential growth. This confluence of growth and development trends links the population and housing growth of the Town of Millis over the period from about 1950's onward. Given the nature of the Town's most predominant land use, single family residential, and the time period it was mostly built, 1960-2000, the majority of growth and development pattern over this period in Millis and elsewhere have been car-dependent and spread throughout the town and region. During this same time period, auto-oriented commercial uses were developed along Route 109 to serve local and regional traffic.

The largest proportion of land use, by percent of town area, is low density residential. It comprises 37.5% of the land area of the town. The second largest proportion of land use is open space and conservation land at 32.8% of the land area. Vacant land (13.9%), unclassified (6.9%), multiple-use land (3.9%), and light industrial (2.8%) comprise the three next largest proportion of land use in the Town and round out the top five uses by land area. In the largest use, low density residential, the majority of residential units are single-family homes, comprising nearly 80% of the housing units in the Town of Millis. Compared to neighboring communities such as Norfolk, Dover, Sherborn, Hopkinton, or Wrentham, the Town of Millis has a lower percentage of housing stock in single-family homes. Smaller multifamily housing, two-family and three to four unit buildings comprise about 13% of the Millis housing stock, and larger multifamily housing accounts for about 8% of the housing stock.

About two-thirds of the housing stock was built after 1960, reflecting the population growth of the town over that same time period. Sixty-eight percent of the Town of Millis 2010 population is attributed to population growth between 1960 and 2000, and grew at an average rate of 28% each decade during that period. Nearly one-tenth of the housing stock is newer and was built in the year 2000 or after.

### **Recent and Anticipated Development Activity**

The vacant land of the Town continues to be subject to development pressure. According to MassBuilds, Millis currently has three projects in the development pipeline. The South End Farm development on Orchard Street near Sherborn includes 49 single family residential lots. The Hickory Hills Subdivision is located on Acorn Street and includes 37 single family residential lots. The Town has also issued a permit for construction of a 324 unit age-restricted development at the site of the former Glen Ellen Country Club that would include 108 single family residential lots and 216 multifamily residential units.

The Town of Millis does include several Economic Opportunity Priority Development Areas identified by MAPC for targeted investment in the region:

- Millis Center East, near the old Clicquot Factory
- Millis Center West, near Millis Town Library
- Hammond Lane
- Millis West Industrial Park
- Village Street
- Regency at Glen Ellen (development process underway)
- Acorn Street (development process underway)
- Ridge Farm
- South End Development (identified for both development and preservation)

### **Recent Open Space Projects**

The Town of Millis recently undertook an “Athletic Fields Master Plan” with consultant CDM Smith completed in August of 2014. The study included potential field layouts for several town-owned open space properties and an “Analysis of Oak Grove, Cassidy and Sisto Field Properties Playing Fields.” The effort was led by the Town’s Recreation Committee.

In addition, the Community Preservation Committee has completed several projects using Community Preservation Act Funds related to open space including restoration of the Millis Bandstand, and improvements at the Millis Playground. The Community Preservation Act (CPA) helps communities preserve open space and historic sites, create affordable housing, and develop outdoor recreational facilities. The CPA is funded through a local option surcharge on property tax bills and a state match on those surcharges. Many of the goals and strategies of the OSRP align directly with the Millis Community Preservation Committee’s Project Evaluation Criteria and Application Guidance, revised and adopted in 2014. The Category Specific Criteria that relate to Open Space and Recreation include:

- Protects wildlife habitat and Town biodiversity;
- Preserves the character of the Town;
- Provides opportunities for recreation and environmental education;
- Protects or enhances wildlife corridors, promote connectivity of habitat or prevent fragmentation of habitats;
- Provides connections with existing trails or potential trail linkages;
- Protects current and future drinking water quantity and quality;
- Preserves important surface water bodies, including wetlands, streams, vernal pools or riparian zones;
- Preserves a priority parcel in the open space and/or master plan;
- Supports multiple recreation uses and expands the range of recreational opportunities available to Millis residents of all ages;
- Serves a significant number of residents;
- Promotes the creative, safe, environmentally friendly, and healthful use of railways and other corridors for non-motorized transportation use.

### **Long Term Development Patterns**

The Town of Millis Zoning By-Law was most recently amended November 5, 2018. The Town of Millis is divided into nine zoning districts including:

- Residential – Town (R-T)
- Residential – Suburban (R-S)
- Residential – Village (R-V)
- Residential – Village-Center (R-V-C)
- Commercial – Village (C-V)
- Commercial – Village Two (C-V-2)
- Industrial – Park (I-P)
- Industrial – Park Two (I-P-2)
- Village – Business (V-B)

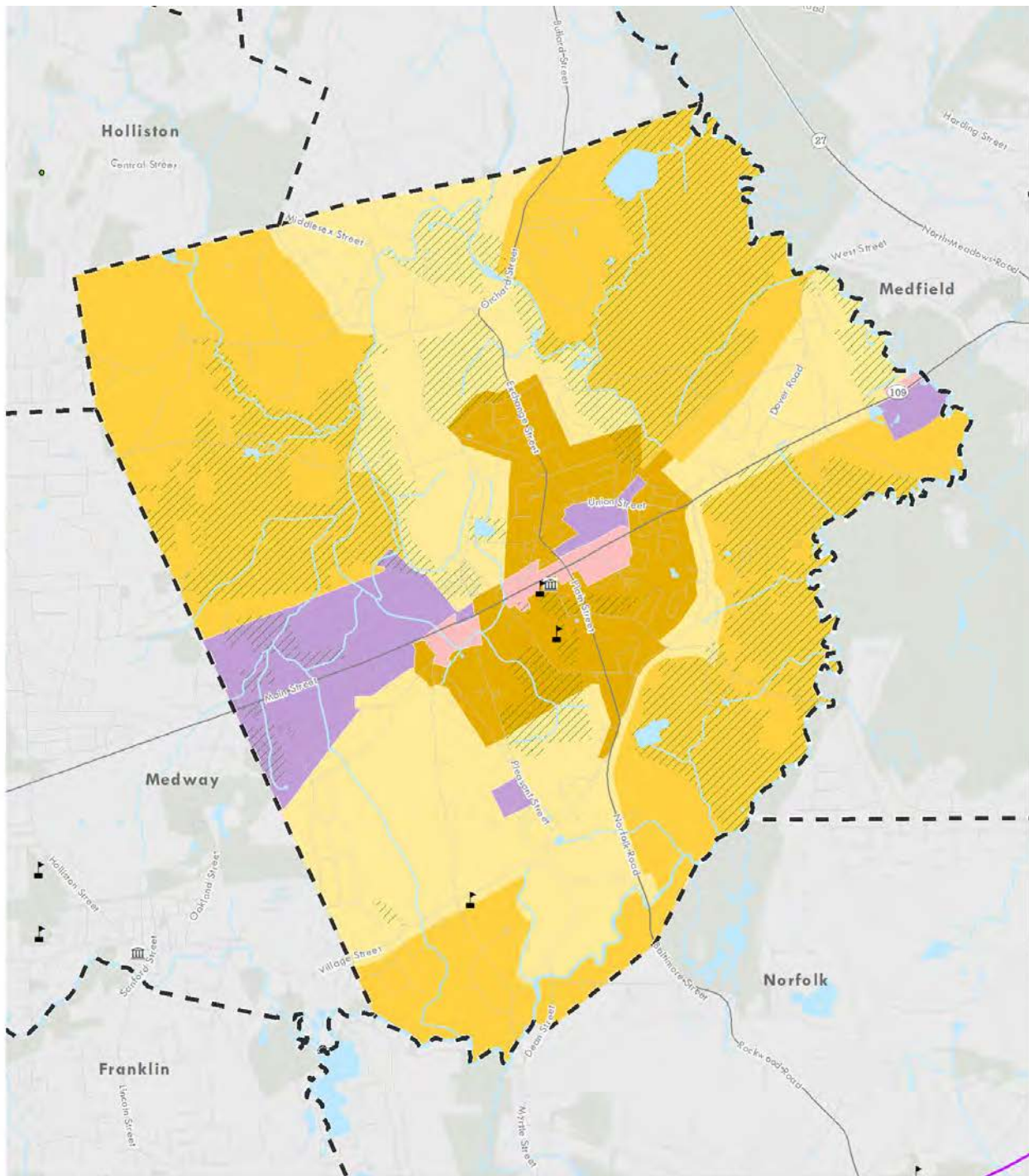
The Town of Millis Zoning By-Law also includes overlay districts with the following descriptions:

- Ground Water Protection District Zone A
- Ground Water Protection District Zone C and Watershed Protection District
- Special Flood Hazard District
- Zone I 400 Ft. Radius from Wells, Public Well Water Supply
- Zone II (Arrow Points to Zone)
- Mixed Use Development Overlay District



Image – Millis Town Hall, photo by MAPC

### Map 3: Zoning



#### Town of Millis Zoning

- Commercial- Village
- Industrial- Park
- Residential- Suburban
- Residential- Town
- Residential- Village

#### Municipal Context

- Schools
- Town Hall
- Commuter Rail Station
- Commuter Rail Line
- Open Space and Recreation Areas



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Image – Pleasant Meadows Farm, photo by MAPC

## **Section 4: Environmental Inventory and Analysis**

### **Topography, Geology, and Soils**

This description builds from the 1999 OSRP and the 2000 Millis Master Plan. The Town's approximate area of 7,848 acres includes considerable variation in the natural terrain. The area is comprised of plains with a few low hills. The maximum topographic relief is 130 vertical feet. The highest point in the Town is 243 feet above Mean Sea Level on Walnut Street near Middlesex Street at the northern end of the town near the shared boundaries of the towns of Holliston, Sherborn, and Millis. The lowest point in the Town is 113 feet above Mean Sea Level near a location on the Charles River as it flows north from Millis into Sherborn.

The glaciers that covered the land in New England over 10,000 years ago, impacted the topography, geology, and soils of Millis today. The bedrock in Millis is mainly Dedham, Quincy, and Biotite granites. The average soil depth is 10 to 15 feet; it ranges from more than 70 feet to zero, at rock outcrops; bedrock is found at or close to the surface on about one percent of the area in Millis. Surficial deposits, primarily sand and gravel with several areas of glacial till, are the result of glacial ice and meltwater actions as the glaciers retreated. The ice movements brought boulders, stones, and finer materials which blanketed the surface. When the ice melted, streams of water eroded the surface beneath the ice producing surface depressions, piles, and ridges of sorted materials and channels. The aftermath of glaciation produced the streams, ponds, ridges, and hills found in Millis today.

Millis is located entirely within the Charles River Watershed. A central upland ridge runs essentially north south through the town. Surface drainage on the eastern and southern portions of the town flows directly to the Charles River. Surface drainage from the western part of the town flows through the Great Black Swamp and Bogastow Brook, Bogastow Brook then discharges through South End Pond to the Charles River at the northeastern corner of the town. Topographic features within the Town of Millis also include the Maple Swamp and the substantial Millis-Medfield marshes.

According to the United States Department of Agriculture Natural Resources Conservation Service, Norfolk and Suffolk County Soil Resource Report with survey data from September 2018, the most prevalent soils in Millis include:

- Sudbury fine sandy loam, 2 to 8 percent slopes
- Saco silt loam, 0 to 3 percent slopes
- Scarboro and Birdsall soils, 0 to 3 percent slopes
- Hinckley loamy sand, 3 to 8 percent slopes
- Hinckley loamy sand, 8 to 15 percent slopes
- Swansea muck, 0 to 1 percent slopes
- Freetown muck, 0 to 1 percent slopes

According to the Soil Resource Report, commonly individual soils on the landscape merge into one another as their characteristics gradually change. Identification and classification of soils is based on patterns related to the geology, landforms, relief, climate, and natural vegetation of the area, as well as characteristics of soil profiles that were studied where they noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable the identification of soils.

These soil compositions are consistent with the description of the soils from the 1999 Open Space and Recreation Plan highlighting four primary soil associations found in Millis in the areas that saw the earliest development, such as Town Center. These soils have good suitability for development and agriculture. The most prevalent soil association in Millis is the Windsor-Hinckley-Sudbury Association. The second most prevalent soil association in Millis is the Muck-Marsh-Scarboro-Ridgebury Association. These soils are largely found in low elevation areas of the Town including wetland areas such as the Great Black Swamp and Charles River floodplain. These areas are not well-suited for development. The next most prevalent soil association is the Gloucester-Acton Association found at the highest elevations of the town. These areas may include stones, boulders, and bedrock and are best assessed site by site for appropriate suitability. The least prevalent soil association is the Scituate-Essex Association. These areas are best suited for agriculture or recreation.

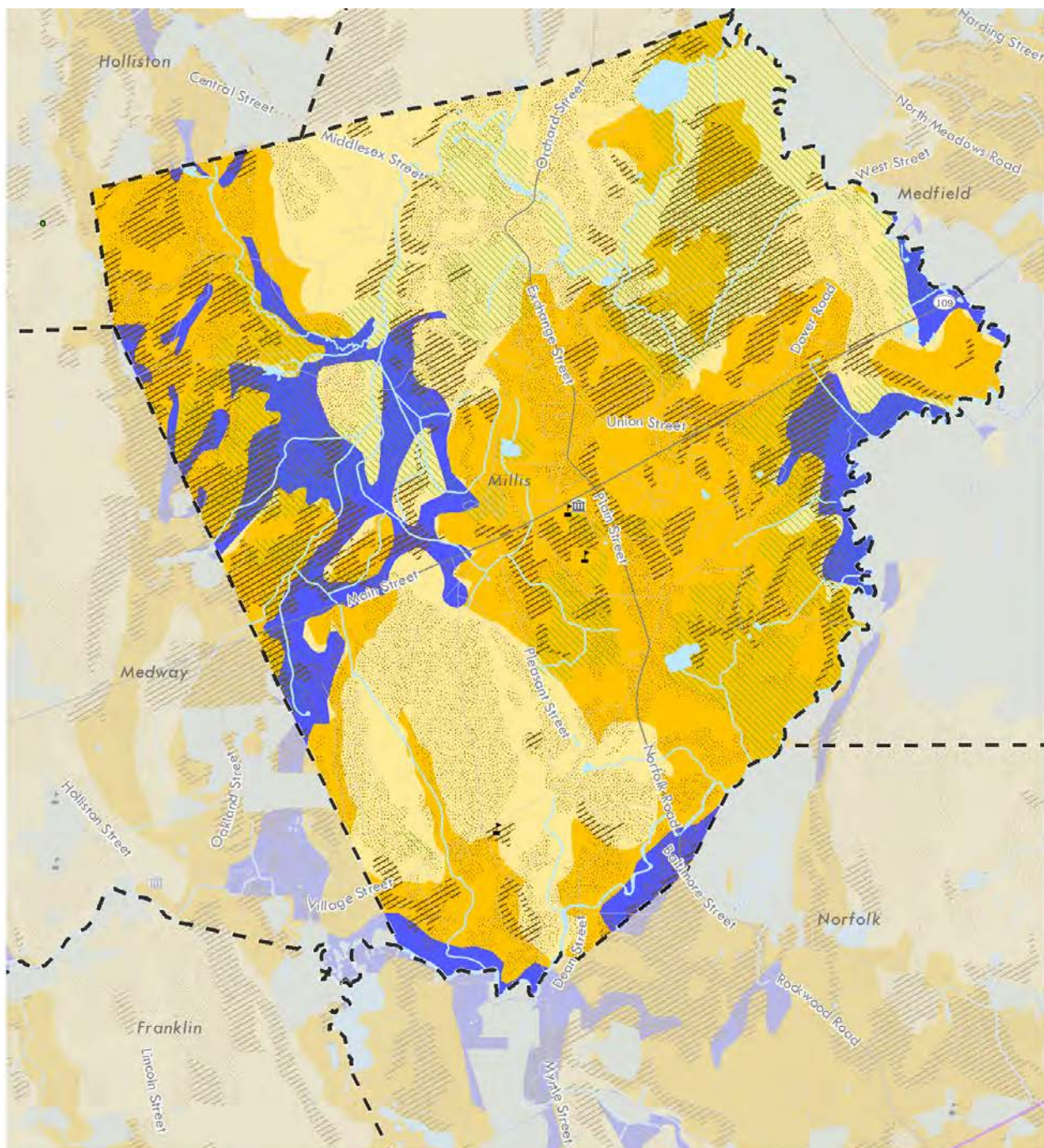
### **Landscape Character**

The landscape and natural character of Millis is varied and provides notable and interesting features. The forested areas provide framed views, shade and environmental benefits. The marshes and wetland offer large natural habitat areas, the Charles River provides substantial scenic resources and view sheds that define the Town's character. Nearly 60% of Millis is covered by tree canopy, the tree canopy and forest exist on both public and private land and are mainly comprised of central hardwoods (oaks), and some elm-ash-red maples, and red and white pine, as predominant tree species. The forested areas in Millis are Southern New England Forest and include tree species of Balsam Fir, Black Spruce, Eastern White Pine, Northern White Cedar, Paper Birch, Quaking Aspen, Red Spruce, White Spruce, Tamarack, American Beech, Red Maple, Northern Red Oak, Bear/Scrub Oak, Black Cherry, Sugar Maple, Bigtooth Aspen, Pitch Pine, American Basswood, Bitternut Hickory, Black Oak, Chestnut Oak, Shagbark Hickory, Black Oak, Chestnut Oak, Shagbark Hickory, and White Oak. Forest species that are threatened include Black Ash and Eastern Hemlock. MA Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program identifies Species of Conservation Concern in Millis as Britton's Violet, Great Laurel, and Long's Bulrush. In addition to large forested areas, the town has large surface water, floodplain and wetland areas including the Charles River, Bogastow River, South End Pond, and Richardson's Pond.



Image – Forested area at Oak Grove Farm, photo by MAPC

**Map 4: Soils and Surficial Geology**



**Soil Characteristics**

- Statewide/Unique Importance
- Prime soils
- Surficial Geology**
- Sand and Gravel
- Till or Bedrock
- Floodplain Alluvium

**Municipal Infrastructure**

- Municipal Boundary
- Schools
- Commuter Rail Stations
- Commuter Rail Lines
- Town Hall

**Natural Features**

- Rivers and Streams
- Lakes and Ponds
- Open Space and Recreation
- Surrounding Open Space



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United States Geological Survey (USGS)  
United States Department of Agriculture (USDA)

## **Scenic Resources and Unique Environments**

The Charles River provides many noteworthy views and view sheds and vistas on the eastern border of the Town. The river and connecting tributaries are characterized by scenic meanders and low lying vegetation that offer open views and prime locations for viewing wildlife. Millis also has several agricultural properties that offer attractive views of rolling hills and seasonal crops. Properties with equestrian activities also offer attractive views with riding stables and pastures lined with fences. Town-owned assets are also designated as scenic locations in Millis including several scenic roads and conservation areas, such as the Cassidy Farm and the Pleasant Meadows Farm Conservation Area.

The following roads in Millis have been designated as “Scenic Roads.” This designation requires a recommendation of a roadway from the Planning Board, Conservation Commission, or Historical Commission, a public hearing, and a Town Meeting vote. Once designated, any change to trees over a certain size or stone walls requires a permit from the Planning Board and typically a public hearing before any changes can be made within the roadway right-of-way. In 1974, the following roadways received Scenic Roads Designation: Causeway Street (from Ridge Street to the Medway town line), Orchard Street (from Walnut Street to the Holliston town line), Forest Road (from Village Street to the Medfield town line), Island Road (from Ridge Street to Exchange Street, and from Exchange Street to Dover Road). In 1975, the following additional roadways received Scenic Roads Designation: Ridge Street, Acorn Street, Himelfarb Street, and Myrtle Street. In 1976, the following additional roadways received Scenic Road Designation: Baltimore Street, Dean Street, Larch Road, Pleasant Street (from Village Street to the Charles River), and Spencer Street.

## **Cultural, Archeological and Historical Areas**

Information regarding cultural, archaeological and historical areas in Millis was gathered from the Millis Historical Commission and the 2014 Millis Historical Commission Master Plan. The following properties are currently listed on the National Register of Historic Places Oak Grove Farm House, John Partridge House, Prospect Hill Cemetery, and Ellice School House. The Oak Grove Farm is a historic property comprised of a 2 ½-story farmhouse and 108 acres of surrounding farmland. Lansing Millis and his family lived in this house from 1879 to 1883. The property was purchased by the Town of Millis in the 1980's and is a central feature in the open space inventory of the Town. The John Partridge House was built in 1650 and is one of the oldest homes in Millis. It is located at 315 Exchange Street and was built by John Partridge Senior. The Prospect Hill Cemetery was established in 1714 and has remained active for over 300 years. The cemetery is about 18 acres with over 2,800 graves with about 2,000 headstones and monuments. The Ellice School is located at 185 Pleasant Street and was built in 1849 as a district school for the Town of Medway.

Additional properties in Millis are listed in the Massachusetts Cultural Resource Information System (MACRIS). The Niagara Engine house was built in 1878 and predates the incorporation of the Town of Millis. The Town of Medway constructed the firehouse on Plain Street to house a hand tub fire engine known as Niagara No. 4. When the Town of Millis was incorporated in 1885 the engine and engine house were purchased from Medway and renamed Niagara No. 1. Niagara Hall recently underwent a complete exterior restoration project that was funded through the Millis Historical Commission and use of Community Preservation Act funds.

In 1922, the Town of Millis purchased 21 acres of land from Henry Hosmer to create a Town Park. The park known as “Hosmer Field” was to become the center campus of Millis Public Schools.

In 1931 a bandstand was constructed on Hosmer Field and it was recently restored with Community Preservation Act Funds.

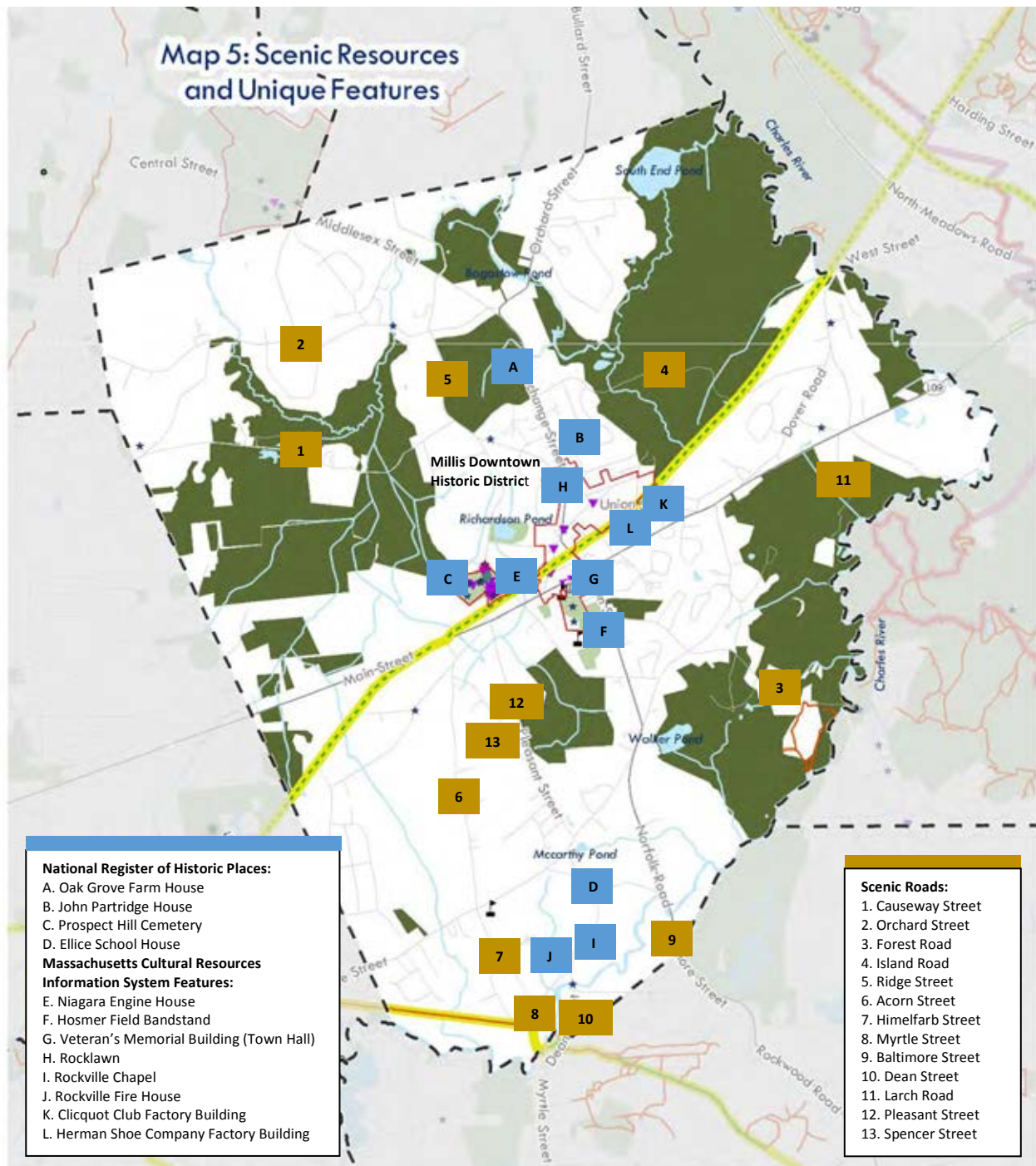
Veteran's Memorial Building (Town Hall) was built as the Millis High School in 1913. The building was renovated to house town offices and a senior center in 1997. Rocklawn at 270 Exchange Street was built by Lansing Millis for his daughter in 1887. The Rockville Chapel is located at 244 Pleasant Street and was dedicated in 1877. The Rockville Fire House is located at Pleasant Street and Myrtle Street and was constructed in 1924. On Curve Street, several prominent and historic factory buildings remain including the Clicquot Club Company and Herman Shoe Company. The oldest of the factories is the original Clicquot facility built in 1881. It is currently home to the Anne and Hope Warehouse and Outlet Center.

The Lansing Millis Memorial Railroad Station was originally built in 1886 with private funds at the request of Charles Millis, the son of the town's founding father. The Queen Anne style stone structure was originally a train depot on the New York and New England Railroad and also housed the town offices and public library. Once rail operations ended, the building was leased for commercial purposes and remains a commercial use today.

A historic landscape feature is the King Philip Trees at 119 Dover Road. It is a cluster of tupelo trees near the Charles River at the east end of Millis marking the site of a Native American celebration of their victory over white settlers during the King Philip War in the 17<sup>th</sup> century. The trees still exist and are marked by a sign on Dover Road, though they are obscured by overgrowth and housing development.

In addition to individual sites of significance, the Town of Millis includes one local historic district, the Millis Downtown Historic District, which was listed as a historic district in September of 2006. The district encompasses the streets of Curve, Daniels, Exchange, Irving, Main and Union, is located at the center of the Town, and includes 169 contributing resources within the Village Center. According to the Millis Historical Commission, two other potential local historic districts should be given future consideration, the Bogastow Historic District and Rockville Historic District. The Rockville Historic District is near the southern edge of the Town and represents early industrial and mill activity in the Town, as well as older homes. The Bogastow Historic District would contain sections of north and west Millis near the intersection of Union and Exchange Streets and to the north and west. This area represents a cohesive historic district with homes dating back to the incorporation of the Town. Other historic and landscape features in the Town include historic field stone walls and historic bridges.

## Map 5: Unique Features



### MA Historical Commission Inventory

- Local Historic District
- National Register of Historic Places
- Preservation Restriction
- Burial Ground
- Object
- Structure
- Other

### Local Context

- Schools
- Town Hall
- Shared-Use Path - Proposed
- Shared-Use Path, Existing
- Existing
- Greenway Route
- Regional Walking Trail
- Commuter Rail Stations
- Commuter Rail Lines

### Natural Features

- Rivers and Streams
- Lakes and Ponds
- Open Space
- Protected in Perpetuity
- Surrounding Open Space

0 0.4 0.8 Mile

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## **Water Resources**

One of the most important defining characteristics of Millis is its rivers and wetlands. The Charles River and its tributary, Bogastow Brook, surround the Town on one-third of its boundary. The Town shares a border with the Charles River between Medfield and Norfolk. The rivers and wetlands are all prone to flooding in severe storms or localized flooding during more frequent, minor storms. The Army Corps of Engineers in the 1970s and 1980s had the foresight to protect several thousand acres of land in the upper Charles River basin for flood protection both locally and regionally down river. About a quarter of the land area in Millis is covered in open water or wetlands.

It is a critical regional watershed and major river. This river corridor offers extensive opportunities for natural view sheds, preserved habitats, and flood storage areas. Millis has other important surface water features including Bogastow Brook flowing through the northern portion of the town and entering the Charles River wetlands near South End Pond. In addition to the South End Pond, other surface water features include the Bogastow Pond, Richardson's Pond, Walker Pond, and McCarthy Pond. All of these features are protected under the Massachusetts River Protection and Wetlands Protection Acts. At least 30% of Millis land is wetland, including both forested and non-forested wetlands. Much of this land in the Town is owned and protected by the U.S. Army Corps of Engineers and retained to provide flood control and protection in the Charles River Watershed.

## **Watersheds**

Millis is located fully within the Charles River Watershed. According to the Charles River Watershed Association (CRWA), the Charles River Watershed is about 80 miles long and flows directly through 23 towns and cities in Eastern Massachusetts. It begins in Echo Lake in Hopkinton and ends in the Boston Harbor. The Charles River drains an area of 308 square miles, its watershed. Its watershed is comprised of 35 towns and cities. It is one of the most densely populated watershed in New England. The Charles River drops approximately 350 feet as it travels to the sea and has 19 dams along its length. There are 20 species of fish found in the Charles River. More than 8,000 acres of wetlands in the Charles River Watershed have been protected in perpetuity as part of the U.S. Army Corps of Engineers Natural Valley Storage Project undertaken in 1974. A sizable part of this acreage occurs in the Town of Millis.

The Charles River Watershed Association (CRWA) is one of the country's oldest watershed organizations. It was formed in 1965 in response to public concern about the declining condition of the Charles River. The CRWA strives to develop a sound, science-based understanding of interactions in the watershed, define long term and cutting-edge solutions to watershed problems, promote sustainable watershed management practices with government agencies and private entities, and advocate for the protection, revitalization, and expansion of public parklands along the Charles River. CRWA initiatives over the last five decades have dramatically improved the quality of water in the watershed and fundamentally changed approaches to water resource management. Staff from CRWA participated in this OSRP process and were part of the MVP/OSRP Core Team.

## **Surface Water**

The Charles River basin meanders through extensive wetlands in its middle, including the Town of Millis. Some towns in the upper and middle Charles River basin discharge water through Massachusetts Water Resources Authority (MWRA) sewer connections. Millis is among the municipalities that rely on septic systems or local treatment plans for wastewater and return

almost all of their water to groundwater and surface water systems in the Charles River basin. The sewer collection system in Millis is maintained and operated by the Department of Public Works, serves more than two-thirds of Millis residents, and includes 5 sewer pump stations, 3 meter stations and a Scada System. In addition to the Charles River along its eastern border, the Town of Millis includes several other surface bodies of water for a total of about 10 ponds.

The largest of the ponds is the South End Pond. It is located in the northeastern end of town at the lower end of the Bogastow Brook near the Charles River. It covers an area of about 28 acres and is over 10 feet deep in some areas. The pond is setback from surrounding roads or development and is remote, quiet, and scenic.

Bogastow Pond and Brook are another major surface water feature located in the north-central area of the town. It was once a very active mill site. The Bogastow Brook is a tributary of the Charles River and connects to at an elevation of about 110 feet above sea level, about 30 miles east of the origin of the Charles at Echo Lake at about 350 feet above sea level. Another surface water feature is Richardson's Pond near the corner of Ridge and Curve Streets. This feature is mostly man-made, with a pond area of about 5 acres that is shallow. Walker Pond is in the southeastern area of town and originally established as an ice pond. It is about 8 acres in area and about 3 feet deep. McCarthy Pond, at the corner of Village and Pleasant Streets, is about 2 acres in size and 3 to 4 feet deep.

The Town continues to address stormwater management issues arising from federal and state permitting requirements, in particular the requirements of Municipal Separate Storm Sewer Systems (MS4) Permits. These requirements include an enhanced stormwater management program to protect the run-off to the Charles River, maintain street cleaning, catch basin cleaning of 1,100 catch basins, and infrastructure management. A management program and stormwater utility fee for the Town were approved by Town Meeting voters in November 2017. This reliable source of revenue will allow the Town to continue efforts to manage the impact of stormwater run-off and surface water quality for Millis.

### **Aquifer Recharge Areas**

Information is sourced from the *Water Resources and Aquifer Yields in the Charles River Basin*, U.S. Geological Survey Water-Resources Investigations Report. Groundwater levels in the Charles River basin are controlled by the hydraulic properties of aquifers and by the rate of recharge to and discharge from the groundwater system. Water levels experience variation seasonally and annually. In the Charles River Basin, there are 15 stratified-drift aquifers. Millis is served by two stratified-drift aquifers, one under the eastern portion of the town, the Millis/Medfield Aquifer and one under the western portion of the town, the Bogastow Brook Aquifer. Surface Water Protection Zones correspond with these locations in Millis. In Massachusetts, most groundwater recharge occurs from late winter to early spring from precipitation and melting snow and ice. The amount of recharge depends on the amount, rate, and duration of precipitation, soil types, the amount of vegetation, and air temperature. The water supply system in Millis is maintained and operated by the Millis Department of Public Works and includes 2 storage tanks, 6 water production wells, 2 high pressure booster pumps, 47.5 miles of water main, and a Scada System.

The town has six potential locations for wells with two that are operational. Town Well Site #3 (Forest Road/Birch Street) is operational and has a safe yield of approximately 660,000 gallons per day. Town Well Site #4 (South End Pond/Orchard Street) is operational and has a safe yield of approximately 570,000 gallons per day. Other Town Well Sites are not currently in operation at the Town Sanitary Landfill, Town Well Sites #1 and #2 (Water Street), Causeway and Grove

Streets, and Town Well Site #5 (Paine Estate along the Charles River/Norfolk Road). Groundwater Protection Districts were established by the Town in 1986 to protect aquifers from any activities that would cause contamination.

### **Wetlands**

The Town of Millis has several significant wetland areas that mirror the location of the aquifers. One substantial wetland area is on the eastern portion of the Town along the edges of the Charles River with the largest area in the northeastern portion of town near the South End Pond. Another wetland area is on the western portion of the Town. The wetland area near the South End Pond is a 2,473 acre Core Habitat featuring Wetland Core, Aquatic Core, Priority Natural Communities, and Species of Conservation Concern according to the Natural Heritage and Endangered Species Program of the MA Division of Fisheries and Wildlife. They describe Wetland Cores as the least disturbed wetlands in the state within undeveloped landscapes – those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (natural hydrologic conditions, diverse plant and animal habitats, etc.) and are the most likely to retain these function in the future. This area includes a 1,057 acre Wetland Core that is the 6<sup>th</sup> largest in the state and the 4<sup>th</sup> largest in the ecoregion of Millis.

These wetland resources include low areas with short tributaries of the Charles River, such as the area south of Village Street, the area around McCarthy Pond, and the area at the outlet of Walker's Pond. In addition, the western and northwestern portions of Millis are dominated by the Great Black Swamp. The Bogastow Brook connects the Great Black Swamp to the Charles River Floodplain. These areas are important for flood storage, wildlife habitat, and aquifer recharge.

### **Flood Hazard Areas**

The wetland areas previously described within the Town of Millis are flood prone lands. These areas are part of a larger regional system that includes thousands of acres of undeveloped wetlands, which lie along the Charles River and form a natural reservoir that store floodwaters in times of excess precipitation. Much of the acreage of these areas is protected for use as flood storage area. According to the U.S. Army Corps of Engineers, these wetlands comprise huge volumes of natural storage that soak up water like sponges. Potential development on these wetland areas threatened to eliminate the storage area of the natural reservoir. If development had been left unchecked, floodwaters that would normally settle in the natural water storage area would rush downstream, causing flood damage to existing development in the lower reaches of the river. The natural valley storage areas reduce flood levels by retaining his excess water. A 1972 study of the Charles River watershed showed a need to protect the natural valley storage areas from further development. The study recommended that the federal government purchase and preserve these lands as a viable means of flood control. The U.S. Army Corps of Engineers purchased the first acres in May 1977. The Charles River Natural Valley Storage areas total approximately 8,095 acres. These lands are located in Millis, Medfield, Norfolk, Franklin, Holliston, Needham, Sherborn, Bellingham, Dedham, Dover, Medway, Newton, Wrentham, Walpole, Natick, and Boston. Millis has 1,731 acres of Charles River Natural Valley Storage. In addition to its primary purpose of flood damage reduction, project lands are used for recreation and fish and wildlife management. Hiking, canoeing, snowmobiling, fishing, hunting, and cross country skiing are some of the more popular activities. Of the 8,095 acres, the Massachusetts Division of Fisheries and Wildlife manages 2,640 acres affecting nine parcels.

## **Vegetation**

The vegetation in Millis is generally a mixture of wooded uplands, grassy meadows, and wetlands. It is part of the Eastern Deciduous Forest that reaches north to southern New England. The vegetation can be described by five categories of habitat, upland forest, forested wetland, scrub-shrub wetland, emergent wetland, and aquatic.

The upland forest includes wooded areas with mostly oak and hickory trees and stands of mature white pines and other hardwoods. Nearly 60% of Millis is covered by tree canopy, making it an important asset and liability to the Town with climate change. With climate change, trees may become more stressed from flooding, drought, and overall warming temperatures/longer growing seasons. New tree pests and diseases are a vulnerability for the Town's forests and trees and oaks, maples, ash, and white pine were the identified as trees of concern. According to the 2012 United States Department of Agriculture (USDA) Plant Hardiness Zone Map (the most recent map published by the USDA) the Town of Millis lies in hardiness zone 6a, which indicates an average annual minimum winter temperature in the zone between -10 to -5 (F). There are numerous tree species that are appropriate for urban plantings in zones 6 or colder. It is important to note that site-specific soil and light conditions as well as any overhead or underground utility limitations should be assessed to determine the appropriate tree species for a particular site.

Forested wetlands are typically dominated by red maple trees, usually bordering a river or stream. The trees are generally small and have a dense understory of bushes and shrubs such as speckled alder, highbush blueberry, sweet pepperbush, and Viburnum species. Other tree and shrub species include elms, poplars, and willows.

The scrub-shrub wetland areas contain woody species in saturated soil or standing water including willows, buttonbush, meadow sweet, hardhack, and dogwood. Emergent wetland areas are more herbaceous and semi-woody plants in standing water including cattails, purple loosestrife, reed, bluejoint, and sedges. Aquatic habitats include plants, either bottom-rooted or floating, which have vegetation supported on the water surface including white water lily, bladderwort, and duckweeds.

## **Fisheries and Wildlife**

A former chairman of the Millis Conservation Commission, George Trumbour III, offers these observations about wildlife sightings throughout the Town. The South End Pond is a great place to view waterfowl, great blue herons, ospreys and hawks, and is also a good spot for frogs, dragonflies and aquatic plants. Oak Grove Farm is an excellent place to view many different species of birds, deer, and other animals. Richardson's Pond is the best spot to view great blue herons feeding in the shallows of the pond. Also seen here is a family of Kingfishers. These birds are fascinating to watch as they hover and then dive from above into the water and come up with a small minnow. Causeway Street is unique and is a favorite spot to view wildlife. From the old stone bridge, that the Black Fly Brook flows under, to the Medway end. Here we have a pristine wetland marsh that harbors waterfowl. Otters, muskrats and occasionally beavers can be seen here. In the ponds on the side of the road, turtles, frogs, waterfowl and other birds can be observed. Many fascinating water plants are seen here. What makes this place special is that the terrain allows you to view these animals from the roadside and they do not frequently run or hide from you. This gives you the chance to watch their behavior as they go about feeding and such. Millis has over half of its border defined by the Charles River. This gives us numerous sites and possibilities to view wildlife. A canoe float trip, either up or down stream, from one of the

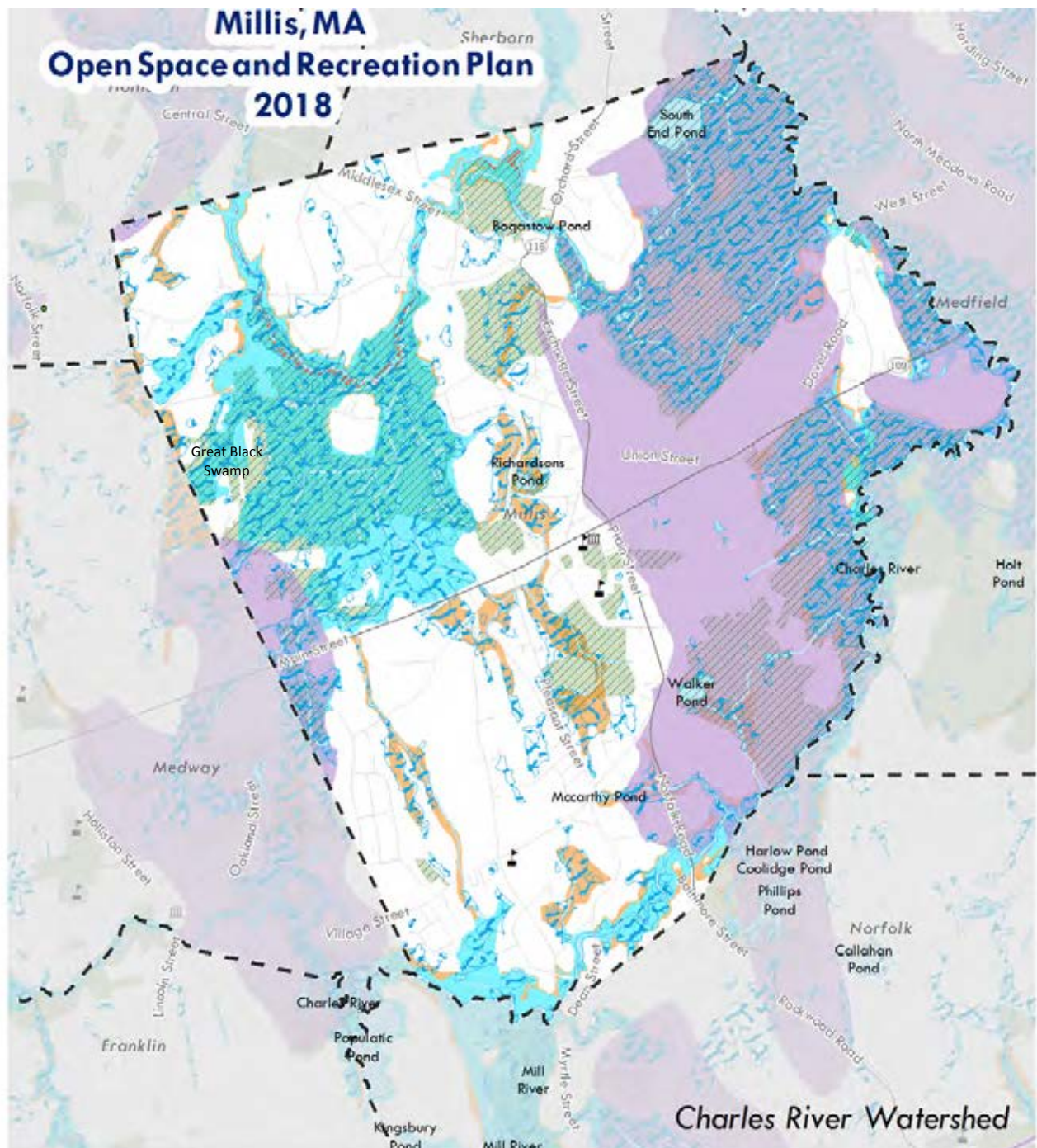
excellent launch sites gives you the opportunity to experience terrain varying from wooded embankments to vast open marshes. These trips can be anywhere from a few hours to an all day excursion. Numerous birds, animals and aquatic plants can be observed. Birds common to the area of Millis include Goldfinch, Cardinals, and Grosbeaks, Junco's and Mourning Doves, Downey, Hairy, Red Bellied woodpeckers, and Wild Turkey.

The power lines off of Myrtle and Dean Streets are two places in town that most people would overlook as an area or opportunity to view wildlife. Walking the dirt service road at dusk or early in the morning, rabbits, deer, foxes, hawks, owls and other birds of prey can be seen. Most of the raptors are in the trees that line the edge of the cut path of the power lines. They will sit there, watching the low cut vegetation for rodents and small song birds. On the Myrtle Street side of the power lines, about ¼ mile from the access point on the right, heading toward Medway, is a medium sized marsh that has a family of beavers living there. The dam they have made can, at times, flood the dirt road. There are two wetland areas that give easy access and great viewing opportunities. Along Route 109 at the Medfield Town line, you can stand on the bridge and scan the tree line looking for hawks. In the small marsh on your left coming down the hill, many ducks can be observed here. This area is a prime spot for viewing mother ducks with their young broods going about their business of feeding, in the late spring. The second area is off of Route 109 near the car wash and bowling alley. On your right hand side, heading toward Medway, look into the marsh near the top of the hill. Located on your left in the old dead pine trees is a Great Blue Heron rookery. There are often active nests at this site.

In the wooded uplands, there is a large stand of mature white pine trees and hardwoods. These trees are used by many species of Hawks and Owls. The owls are hard to spot, but can be heard hooting in the evening or early morning hours. The Hawks usually can be seen in the trees overlooking the fields where they hunt for small animals or birds. This is a prime area for viewing woodpeckers, Chickadees and flickers. Other animals seen on these areas include chipmunks, squirrels, rabbits, woodchucks and deer. The open meadows and grasslands are prime areas for spotting many different species of birds. Some of which are American Robins, American Goldfinches, Tree Swallows, sparrows and many others. The marshy wetland areas are used by Red Wing Blackbirds, Tufted Titmice, Blue Jays, Cardinals, Gross Beaks and Cedar Waxwings.

The Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program identifies Species of Conservation Concern in Millis as the Eastern Pondmussel, Triangle Floater, Two-striped Cord Grass Moth, Spatterdock Darner Dragonfly, Blue-spotted Salamander, and the Eastern Ribbon Snake.

**Map 6: Water Resources**



**Millis Infrastructure**

- Open Space and Recreation Areas
- Schools
- Commuter Rail Stations
- Commuter Rail Lines
- Surrounding Open Space
- Town Hall

**FEMA Flood Hazard Designation**

- More than 1% Annual Chance of Flooding
- Regulatory Floodway
- 0.2% - 1% Annual Chance of Flooding

**Water Resources Features**

- Rivers and Streams
- Lakes and Ponds
- Wetlands
- Surface Water Protection Zone A
- Surface Water Protection Zone B
- Surface Water Protection Zone C
- DEP Approved Zone IIs



The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis.

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Data Sources:  
Metropolitan Area Planning Council (MAPC)  
Massachusetts Geographic Information System (MassGIS)  
Massachusetts Department of Transportation (MassDOT)  
Massachusetts Department of Environmental Protection (MassDEP)  
Federal Emergency Management Agency (FEMA)  
United States Geological Survey (USGS)  
Massachusetts Water Resources Commission (WRC)  
United States Fish and Wildlife Service (USFWS)

November, 2018

## **Environmental Challenges**

Environmental challenges are not prevalent or unique in Millis, but are present through a variety of risks, including groundwater contamination from underground storage tanks, dredging and filling of wetlands, change of drainage patterns through earthwork and development, and mining.

### **Hazardous Waste Sites**

In the 1980's the Town closed two wells, Town Well #1 and #2 due to chemical contamination highlighting the risk of groundwater contamination. The Town of Millis owns a closed landfill at the end of Island Road that is maintained by the Millis Department of Public Works. The site rests on deposits of glacial sand which form an island surrounded by wetland. The landfill was closed in 1988 and fully capped in 1998. The Town also includes private properties which are not serviced by the town sewer system and which use private septic systems.

### **Mining**

More than a dozen gravel pits were once in operation or previously excavated in Millis. The mining operations extracted sand and gravel. One prominent sand and gravel operation, Tresca Brothers Concrete, Sand & Gravel remains active on Route 109 at the border with Medfield, directly adjacent to the Charles River.

### **Flooding**

Flooding is one of an immediate concern in Millis. It is reported by citizen's to be widespread with a few areas that are of significant concern, the Causeway, the Route 109 Bridge over the Charles River at the boundary of Millis and Medfield, and the Dover Road Bridge over the Charles River. Participants both in Millis and Medfield in their Climate Resilience Building workshops were concerned about the integrity of the bridge on Route 109 and the potential flooding of the Charles River in that area which would bisect an important transportation and emergency access corridor. Causeway Street is prone to flooding by a tributary to the Charles River. Insufficient culverts, excessive precipitation, and beavers were identified as main concerns in this area.

Though Millis has 1,731 acres of Charles River Natural Valley Storage Area (land owned and/or managed by the Army Corps of Engineers as flood storage land), the wetlands in the Charles River watershed have undergone stress related to changing precipitation regimes. These include the drought of 2016 and the excessive precipitation of 2018-2019 that has left wetlands submerged for approximately six months. This combined with potential toxic contamination from flooding raised concerns about the integrity of the wetlands services and flood storage capacity in the future. With increased stress during extreme changes in precipitation, wetlands could transform to more open water systems, creating a loss of land and further inland flooding.

### **Development Impact**

In the context of Millis new development could be associated with several related impacts, disruption of natural habitat, increase in issues associated with stormwater management, and increase demand for drinking water supplies.

Millis has been working diligently to comply with National Pollution Discharge Elimination System (NPDES) requirements to reduce non-point source pollution and phosphorous loading into the Charles River and the tributaries feeding it. Stormwater infrastructure capacity remains a top concern for participants. Many participants noted insufficient and undersized culverts, capacity of the stormwater infrastructure to handle extreme precipitation events and the need to create new

regulations for stormwater reduction on new development. As costs are increasing for NPDES compliance for the Town and the aged stormwater infrastructure that exists, participants noted the importance of natural infiltration to minimize costs and stress to the infrastructure, including incentives and retrofits to achieve more natural infiltration. Water quality and aquifer contamination from runoff are important concerns.

The drought of 2016 stressed many municipal drinking water supplies, including Millis's, though supply is not generally a concern, future climate projections could cause stressors to this functioning system. Concerns around drinking water were mostly around flooding and well pump station resiliency. Specifically, participants were concerned of aquifer contamination and/or bacterial exposure during flooding and the viability of pump stations before and after emergencies/extreme weather events with electricity loss.



Image – Richardson's Pond, photo by MAPC

## **Section 5: Inventory of Lands and Conservation and Recreation Interest**

### **Introduction to the Inventory**

One of the foundations necessary to be able to make decisions about future needs for open space and recreation is to have an accurate account of existing lands and facilities. This section contains an inventory of all conservation, open space, and recreation lands, both publicly and privately owned. Information on ownership, management responsibility, level of protection, and primary use of the property are included in this inventory. The inventoried properties are shown in the inventory table are depicted on the Open Space and Recreation Inventory Map.

The open space and recreation resources of a community are critically important to its quality of life, community character, and environmental health. The protection and stewardship of these assets via past, future, and current Open Space and Recreation Plans is a crucial element in retaining the importance of these resources as a community is shaped by other changes.

Open space has many different definitions and can mean different things to different people. The Open Space and Recreation Planners Workbook defines open space as “conservation land, forested land, recreation land, agricultural land, corridor parks and amenities such as small parks, green buffers along roadways or any open area that is owned by an agency or organization dedicated to conservation.” A broader definition of open space can and should include undeveloped land with conservation or recreation potential.

Open space and parks are critical to the quality of life in a community and provide a wide range of benefits. Access to parks can contribute public health benefits, enhanced property values, and improved environmental quality including air quality, water quality, and the mitigation of urban heat island effects. Public health benefits include reducing the incidence of childhood obesity by providing safe places for kids to be active. Open spaces and parks also serve as important meeting places for neighbors to get to know one another.

Determining where the open space and recreation land is located in the Town of Millis is a foundation for fully understanding what resources the Town has and how best to manage them. Once this land has been identified, it is important to ensure its protection and maintenance into the future to help guarantee that many more generations of residents can enjoy them. According to the Division of Conservation Services, land within a community is permanently protected if it is managed by the local Conservation Commission or Recreation Department, by Executive Office of Energy and Environmental Affairs (EOEEA) agencies, by a nonprofit land trust, or if the municipality received state or federal monies for the improvement or purchase of the land. Typically, land owned by other Town departments or the local school system should not be presumed to be permanently protected.

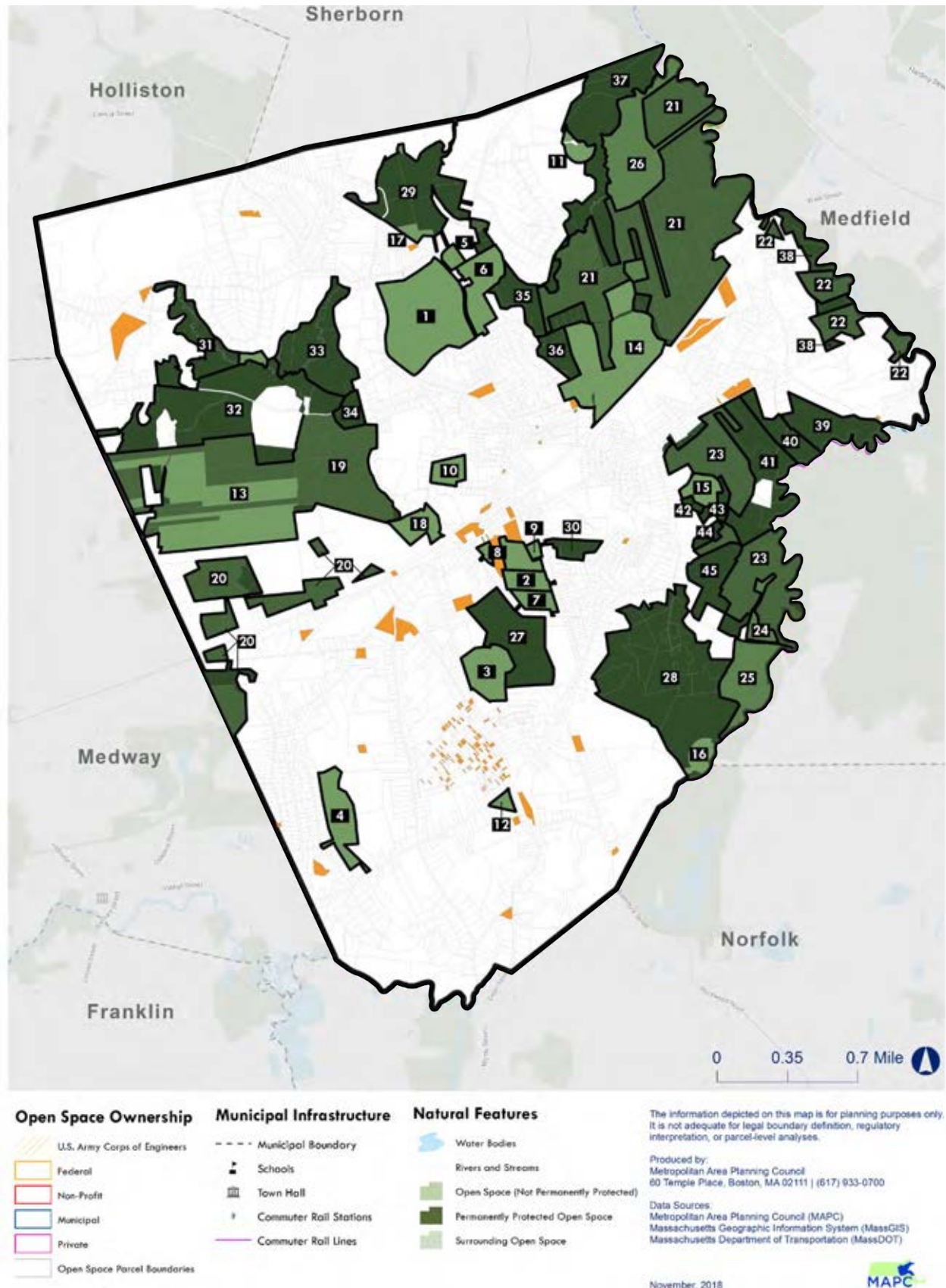
### **Inventory of Conservation, Open Space and Recreation Resources**

The inventory matrix below includes 14 Town-owned sites covering about 411 acres of open space, recreation, and conservation land owned and managed by the Town of Millis. These sites comprise the primary open space and recreation resources of the Town. Additional publicly or privately owned sites exist in the Town for conservation, flood protection, or agriculture and include 12 areas covering about 1,419 acres. An additional 689 acres of privately owned land is restricted for flood protection through easements by the US the Army Corps of Engineers.

The column headings of the inventory are defined below:

- **Site Key** – Locates the property on *Map 7: Inventory*.
- **Name** - Names the open space property.
- **Ownership** - Indicates the owner of the property.
- **Management Agency** - Indicates the agency or department responsible for managing and maintaining the property. May be the same as the owner.
- **Current Use** - Details the main use for the site and its facilities.
- **Condition** - Identifies the site condition (excellent, good, fair, or poor). Town-owned open spaces and parks were surveyed to obtain a general sense of the condition of the property and any facilities located on it.
- **Recreation Potential** - Indicates the recreational use of sites. For land not used for recreational purposes, potential for recreational activities is identified. Conservation land is generally deemed to have limited recreation potential except for passive recreation such as hiking and walking. Small tax title lands and sensitive environmental areas are presumed to have no recreational potential.
- **Public Access** - Indicates if the public can access the site. All Town- and State-owned sites are publicly accessible.
- **Type of Public Grant Accepted** - Identifies the funds used for the acquisition of or upgrades to the site, including grant funds.
- **Zoning District** - Identifies the zoning district in which the site is located.
- **Degree of Protection** - Indicates if the site, either by virtue of its ownership, existence of deed restrictions, or by the fact that it has received state or federal funding, is protected from conversion to some other use. Levels of protection are described in more detail later in this section.
- **Acres** - Gives the site's acreage or an approximation in cases where specific information was not attainable. One acre is 43,560 square feet or 1/640 of a square mile.

## Map 7: Inventory



Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
<b>Town-owned Land – Parks</b>											
1	<b>Oak Grove Farm</b>	Town of Millis	Oak Grove Farm Commission	Playground, soccer fields, baseball/softball fields	Good	Additional playing fields	Full	Municipal (Town override 1984)	R-S	Permanent	108.2
2	<b>Town Park Fields</b>	Town of Millis	Millis Department of Public Works	Playground, baseball/softball fields, tennis courts, basketball court	Good	Additional playing fields	Full	Unconfirmed	R-V	Permanent	13.2
3	<b>Pleasant Meadows Farm</b>	Town of Millis	Millis Conservation Commission	Passive recreation/Conservation	Fair	No changes anticipated	Full	Municipal (Town override 1998), MA Self Help Grant	R-V	Permanent	32.5
4	<b>Village Street Conservation Area</b>	Town of Millis	Millis Conservation Commission	Passive recreation/Conservation	Fair	No changes anticipated	Full	Unconfirmed	R-S	Permanent	35.4
5	<b>Dewey Property</b>	Town of Millis	Millis Department of Public Works	Passive recreation/Conservation	Fair	No changes anticipated	Full	Municipal (Town override 1998)	R-S	Permanent	5.5
6	<b>Cassidy Property</b>	Town of Millis	Board of Selectmen/Millis Conservation Commission	Passive recreation/Conservation	Fair	Playing fields	Full	Municipal (Town override 1998), MA Self Help Grant	R-S	Permanent	36.4

Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
<b>Town-owned Land – School Parks</b>											
7	<b>Millis High School Fields</b>	Town of Millis	Millis School Department	Baseball field, football field, track	Fair	No changes anticipated	Limited	Unconfirmed	R-V	Limited	11.5
8	<b>Clyde Brown Field</b>	Town of Millis	Millis School Department	Open recreation field	Fair	Additional playing field	Limited	Unconfirmed	R-V	Limited	17.7
9	<b>Gerry Sisto Baseball Field</b>	Town of Millis	Millis School Department	Baseball field	Fair	No changes anticipated	Limited	Municipal (Town override 1957)	R-V	Limited	3.3
<b>Town-owned Land - Conservation</b>											
10	<b>Richardson's Pond</b>	Town of Millis	Millis Conservation Commission	Passive recreation/ Conservation	Fair	None	Full	Unconfirmed	R-S	Permanent	13.0
11	<b>South End Pond</b>	Town of Millis	Millis Conservation Commission	Passive recreation/ Conservation	Fair	None	Full	Unconfirmed	R-T	Permanent	9.0

Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
12	Pleasant Street Conservation	Town of Millis	Millis Conservation Commission	Passive/ Conservation	Fair	None	Full	Unconfirmed	R-T	Permanent	4.5
13	Conservation Area – Charles River Natural Valley Storage Areas	Town of Millis	Millis Conservation Commission	Conservation	Fair	None	Limited	Unconfirmed	R-T	Permanent	131.8
14	Conservation Area – Charles River Natural Valley Storage Areas	Town of Millis	Millis Conservation Commission	Conservation	Fair	None	Limited	Unconfirmed	R-T	Permanent	107.0
15	Conservation Area – Charles River Natural Valley Storage Areas	Town of Millis	Millis Conservation Commission	Conservation	Fair	None	Limited	Unconfirmed	R-T	Permanent	14.6
16	Apple Knoll Farm	Town of Millis	Millis Conservation Commission	Conservation	Fair	None	Limited	Unconfirmed	R-T	Permanent	10.6
17	Bogastow Brook	Town of Millis	Millis Conservation Commission	Conservation	Fair	None	Limited	Unconfirmed	R-T	Permanent	6.1

Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
<b>Town-owned Land – Cemeteries</b>											
18	Prospect Hill Cemetery	Town of Millis	Millis Department of Public Works	Cemetery	Good	None	Yes	Unconfirmed	R-S	Permanent	18.5
<b>Publicly-owned Land - Conservation</b>											
19	Charles River Natural Valley Storage Area – Great Black Swamp	US Army Corps of Engineers	MA Division of Fisheries and Wildlife	Conservation/ Flood Control	-	None	Yes	Federal	I-P	Permanent	211.7
20	Charles River Natural Valley Storage Area – Great Black Swamp/Main Street	US Army Corps of Engineers	MA Division of Fisheries and Wildlife	Conservation/ Flood Control	-	None	Yes	Federal	R-T	Permanent	91.6
21	Charles River Natural Valley Storage Area – Bogastow Brook	US Army Corps of Engineers	MA Division of Fisheries and Wildlife	Conservation/ Flood Control	-	None	Yes	Federal	R-T	Permanent	358.1
22	Charles River Natural Valley Storage Area – Charles River	US Army Corps of Engineers	MA Division of Fisheries and Wildlife	Conservation/ Flood Control	-	None	Yes	Federal	R-S	Permanent	44.4
23	Charles River Natural Valley Storage Area – Maple Swamp	US Army Corps of Engineers	MA Division of Fisheries and Wildlife	Conservation/ Flood Control	-	None	Yes	Federal	R-T	Permanent	143.8

Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
<b>Privately-owned Land – Conservation</b>											
24	Cedariver	The Trustees of Reservations	The Trustees of Reservations	Passive/ Conservation	-	None	Yes	-	R-T	Permanent	11.0
25	Cedariver	Mass Land Conservation Trust	The Trustees of Reservations	Passive/ Conservation	-	None	Yes	-	R-T	Permanent	45.5
26	South End Pond/ Bridge Island Meadows	The Trustees of Reservations	The Trustees of Reservations	Passive/ Conservation	-	None	Yes	-	R-T	Permanent	90.1
<b>Privately-owned Land – Restricted</b>											
27	Tangerini's Farm	Tangerini Real Estate Trust	Tangerini Real Estate Trust/Trustees of Reservations	Conservation	-	None	Limited	-	R-V	Permanent (CR)	67.3
28	Apple Knoll Farm	Apple Knoll Orchards LLC, Dorothy Iorio	The Trustees of Reservations	Conservation	-	None	Limited	-	R-T	Permanent (CR)	262.1
29	Bogastow Brook	Herbert Temple III	The Trustees of Reservations	Conservation	-	None	No	-	R-S	Permanent (CR)	88.6
30	Collelo Conservation Land	James Collelo	The Trustees of Reservations	Conservation	-	None	No	-	R-V	Permanent (CR)	12.1

Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
31	<b>Charles River Natural Valley Storage Area – Great Black Swamp</b>	Multiple Parcels and Owners: Crowley, Finks, Fusco, Gelasco, Graci, Meehan, Merski, Odoardi, Peros, Rose, and Wallace	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	107.9
32	<b>Charles River Natural Valley Storage Area – Great Black Swamp</b>	Gregory and Jennifer Sieczkiewicz	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	210.2
33	<b>Charles River Natural Valley Storage Area – Great Black Swamp</b>	Multiple Parcels and Owners: Caruso, Cramer, Ferguson, Holden, Marshall, Shields, Simpson	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	131.5
34	<b>Charles River Natural Valley Storage Area – Great Black Swamp</b>	Ferguson	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	13.5
35	<b>Charles River Natural Valley Storage Area – Bogastow Brook</b>	Multiple Parcels and Owners: Hall, Hubbard, Kelleher	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	43.8

Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
36	<b>Charles River Natural Valley Storage Area – Bogastow Brook</b>	Multiple Parcels and Owners: Brooks, Bruno, Clark, Hindmarsh, Miller, Peeples, Quinzani, Reardon	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	31.0
37	<b>Charles River Natural Valley Storage Area – South End Pond</b>	Multiple Parcels and Owners: Cassidy, Constable	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	79.5
38	<b>Charles River Natural Valley Storage Area</b>	Multiple Parcels and Owners: Horgan, Gittens Liddell, McCarter	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	17.9
39	<b>Charles River Natural Valley Storage Area</b>	Tresca Brothers Sand and Gravel	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	40.2
40	<b>Charles River Natural Valley Storage Area</b>	John Simmons	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	23.8
41	<b>Charles River Natural Valley Storage Area</b>	Fin Fur and Feather Club Inc.	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	75.9

Site Key	Name	Ownership	Management Agency	Current Use	Condition	Recreation Potential	Public Access	Type of Public Grant Accepted	Zoning District	Degree of Protection	Acres
42	Charles River Natural Valley Storage Area	Multiple Parcels and Owners: Allen, Bosse, Curran, Geary, Holohan, Monteiro, Neytchev, Portanova, Souza, Tiberi	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	13.9
43	Charles River Natural Valley Storage Area	Multiple Parcels and Owners: Whelan	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	20.8
44	Charles River Natural Valley Storage Area	Gregory and Julie Dowd	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	9.3
45	Charles River Natural Valley Storage Area	Dorothy Iorio	-	Conservation	-	None	No	-	R-T	Limited (Chapter 61)	45.0

## **Levels of Protection**

The level of protection for a particular parcel of land is important information for future planning purposes, it is important to identify the degree of protection for each parcel that has been identified as open space or conservation land in the inventory. Knowing the level of protection may highlight the susceptibility of some properties, which are assumed to be open space, to development. This knowledge can help in identifying those open space and recreation areas that require additional effort in order to ensure their long-term preservation and protection. The following designations regarding level of protection are used in the inventory.

### **Permanently Protected**

Properties in this category are considered to be legally protected for perpetuity. A site is considered to be permanently protected if it is recorded in a deed or other official document. Such land is to be considered protected in perpetuity if it is deeded to and managed by the local Conservation Commission or Parks & Recreation Department and thereby subject to Article 97, if it is subject to a conservation restriction or easement in perpetuity, if it is owned by one of the state's conservation agencies and thereby subject to Article 97, if it is owned by a nonprofit land trust, or if the municipality received federal or state assistance for the purchase or improvement of the property. Private land is considered protected if it has a deed restriction in perpetuity or a conservation restriction has been placed on it.

Article 97 of the Massachusetts Constitution protects publicly-owned lands used for conservation or recreation purposes. In order for a property to be sold, transferred, or converted to a different use, Article 97 requires a 2/3 vote obtained at Town Meeting in support of the disposition, a 2/3 vote of the Massachusetts Legislature in support of the disposition, demonstration of compliance with applicable funding sources, and the municipality must file an Environmental Notification Form (ENF) with the Massachusetts Environmental Policy Act (MEPA). Given the extensive nature of this process and the rarity with which the disposition process occurs, these public recreation and conservation lands are assumed to be permanently protected.

### **Limited Protection**

Properties in this category are considered to have limited protection if they are legally protected for less than perpetuity (i.e. short term conservation restriction) or temporarily protected through an existing functional use. These lands could be developed for other uses when their protection expires or when their functional use is no longer necessary or viable. In general, this includes all land owned by other municipal departments or commissions, including lands managed by the Town for non-recreational purposes.

### **No Protection**

Properties in this category are considered to have no legal protection. This category includes land that is totally unprotected by any legal or functional means. This land is usually privately owned and could be sold without restriction at any time for another use.

## Section 6: Community Vision

### Description of Process

The Open Space and Recreation Plan was drafted through a community-based process that was facilitated concurrently with a Municipal Vulnerability Preparedness (MVP) process. The dual perspectives of these processes provided the opportunity to identify unique insights for both plans and to link the closely related topics. A Core Team was assembled of Town leadership to direct both planning processes. The OSRP was presented and discussed at the MVP Workshop held in Millis on January 8<sup>th</sup>, 2019. A Community Meeting was also facilitated and focused directly focused on the OSRP on January 29<sup>th</sup>, 2019. A second and final Community Meeting was facilitated and focused on the OSRP on May 9<sup>th</sup>, 2019. Additionally, an online Community Survey was offered between the two community meetings to broaden engagement with the community. The survey was available from the beginning of March 2019 through the middle of May 2019 and received 478 responses from the community. All of the feedback received at these meetings and through the online survey has been thoughtfully considered and integrated into this OSRP.

As part of the community survey overarching community values were articulated and weighed by the community. These community values are the center point of the community vision in Millis and underpin the open space and recreation goals. The statements from the survey are listed below with the support that was voiced for each:

- **Millis needs to proactively plan for the recreational needs of its residents.** 94% of the survey respondents either strongly agreed or agreed with this statement.
- **Preserving Millis open space and natural areas is important to me.** 92% of the survey respondents either strongly agreed or agreed with this statement.
- **Millis existing open space and recreational amenities contribute positively to overall quality of life.** 88% of the survey respondents either strongly agreed or agreed with this statement.
- **Millis needs to proactively preserve open space.** 86% of the survey respondents either strongly agreed or agreed with this statement.

The eleven goals that have been articulated and prioritized through this process build from these shared community values and are outlined below.

### Statement of Open Space and Recreation Goals

This community-based open space and recreation planning process has reaffirmed that preserving Millis open space and natural areas is important to the community (92% of 478 community survey respondents agree or strongly agree), that Millis needs to proactively plan for the recreational needs of its residents (94% of community survey respondents agree or strongly agree), that the Millis open space and recreation amenities contribute positively to quality of life (88% of community survey respondents agree or strongly agree), and that Millis needs to proactively preserve open space (86% of community survey respondents agree or strongly agree).

The Town of Millis has developed (11) eleven goals on which the OSRP is based:

- **Goal #1: Preserve and protect the Town's drinking water sources.**
- **Goal #2: Improve existing playing fields and playgrounds.**
- **Goal #3: Protect the Town's remaining farms.**

- **Goal #4: Protect surface water quality and natural habitats.**
- **Goal #5: Preserve and protect the Town's heritage and natural character.**
- **Goal #6: Promote awareness and appreciation of open space through education and outreach.**
- **Goal #7: Improve access to existing Town-owned recreation and conservation land.**
- **Goal #8: Add or improve open space connections through regional greenways and trail networks.**
- **Goal #9: Improve accessibility of facilities for all residents, including residents with special needs.**
- **Goal #10: Construct new playing fields and playgrounds.**
- **Goal #11: Strengthen climate resilience through Town open spaces.**



Image – Charles River in Millis, photo by MAPC

## **Section 7: Analysis of Needs**

### **Introduction**

An assessment of needs was performed by synthesizing the background and inventory information with the open space and recreation goals and objectives. Conservation needs and recreation needs may overlap on the same property, but are distinct considerations. Conservation needs relate to the natural systems of the Town and resources that are finite and irreplaceable, such as the water supply aquifers, clean surface water, wildlife habitats, and scenic vistas. Recreation needs may shift relative to the population of the Town and are based on the demands of the population, expectations for quality of life and lifestyle, and may shift and adapt to those needs over time.

Millis is fortunate to have more than 1,900 acres of protected parks, open space, and conservation land across the 45 areas delineated on the inventory. Comparisons with national standards suggest that Millis has ample park space to meet the needs of the community. For example, the National Recreation and Park Association (NRPA) provides benchmarks based upon different park and recreation agencies and municipalities surveyed across the country. While the benchmarks they provide are not intended to be used as standards, they do provide a useful comparison. The 2019 NRPA Key Findings show that municipalities average 10.1 acres of parkland per 1,000 residents. Millis has about 31 acres of parkland per 1,000 residents (if only including parks and playgrounds from the inventory), and 194.8 acres of parkland per 1,000 residents (if all conservation and flood protection areas are included). The 2019 NRPA Key Findings also show that municipalities average 2,181 residents per park. Millis has about 1,369 residents per park (if only including parks and playgrounds from the inventory).

### **Community Needs**

#### **Athletic Fields**

Since the 1999 Open Space and Recreation Plan there has been growth in all sports at all levels in Millis. Overuse and overscheduling of existing fields has been a vocal concern of residents in the past decade and has been raised as a concern through this planning process. Specific concerns include the overuse of the high school grass field and the non-regulation school track. In 2013, residents of Millis voiced concern for playing fields through a citizens' petition to the Board of Selectman. In 2014 the Millis Fields Committee was charged by the Board of Selectmen to develop a use priority for town fields, a financial policy, a determination of field capacity, and if necessary, recommendations for new fields with a determination of costs. As part of this process, the committee identified the following fall school programs, girls soccer, boys soccer, football (three levels), cross country, and golf. The following spring school programs were also identified, soccer, track and field, tennis, baseball and softball. Millis recreation programs also include adult soccer, adult softball, summer basketball, tennis, and summer sports camps. The Millis Soccer Club program, Millis Youth Baseball/Softball programs, and Millis Flag Football Club were also identified as users of the fields. The Town of Millis has undertaken efforts to improve the quality and availability of athletic fields in the Town. A consultant, CDM Smith was asked to create an athletic field master plan as part of these efforts in 2014. The master plan assessed the existing and future recreation needs and evaluated existing and proposed fields.

The 2014 Millis Athletic Field Master Plan by CDM Smith identified 15 town athletic fields that support the baseball, soccer, track and field, football and other athletic activities in the town. The following general observations were made about the fields in that report:

- Several fields support multiple use activities, regardless of the season

- Many of the existing athletic fields are undersized and do not meet current Massachusetts Interscholastic Athletic Association standards.
- Most fields are not facing optimal solar orientations to prevent sun glare during play.
- Athletic field facilities and amenities, where present, are antiquated and in need of improvement. Additional facilities, particularly increased bathrooms, would increase the level of service to all users.

## **Charles River Recreation**

### ***Route 115 Canoe Launch Site***

This site is on Route 115, near the Millis Norfolk town line. This launch site is located on the downstream side of the river. The entrance is just over the bridge going south. This site gives access to one of the best downstream floats on the Charles River. From this point you can float down the river to another launch site at Forest Road. The only problem with this site is at low water conditions. You may have to wade the river for a few yards till you pass the shallow flat stretch, before there is enough water to float along. This stretch of river is relatively free of fallen trees in the water so it is an easy trip for beginners. The current is also rather weak so if you plan on paddling back up stream, the task is not so daunting. Take your time and enjoy the sights, and you can do this trip down and back in under 4 hours. There is ample parking for 5 or 6 cars.

### ***Forest Road Canoe Launch Site***

This site is on Forest Road, on the downstream side of the road at the bridge between Millis and Medfield, on the Millis side of the river. This is a new site just improved by the Army Corp of Engineers. The stretch of river downstream gives a good long float trip downstream to the launch site on Route 109. The water here is deep with high embankments. This stretch will take you from a wooded shoreline to an extensive marsh type of habitat. This float is a good half day trip one way, to RT109. The current is lazy and you will have to paddle to make any progress. One problem with this stretch (first ¼ mile) is the amount of fallen trees in the river. This can be daunting at times, but experienced paddlers should have no problem navigating them. There is ample parking for 6 to 8 cars.

### ***South End Pond Canoe Launch Site***

This pond is located off of Rte. 115 near the Sherborn town line, by way of a dirt road. This is a great place to spend a few lazy hours fishing, or just floating along the shoreline. From this pond you can canoe up the Bogastow Brook, from its inlet for a short distance. The stream does get rather narrow and you will find turning around with a canoe longer than 12 feet rather difficult. From the pond you can also access the Charles River by paddling through the outlet stream. This can be tough to do in low water conditions, but will let you float some of the upper Charles and then you can return to the pond. At this site, you will have to carry your canoe and items for a short distance, because the road is gated to protect our public water supply well. Park along the road and don't block the gate.

### ***Route 109 Canoe Launch Site***

Although on private property, a potential canoe launch exists where the Charles River is traversed by the Route 109 Bridge. It may be possible to secure rights for a public canoe launch through an easement with the property owner.

## **Universal Access**

Aside from convenience and location, many different groups within a community struggle to feel included or accommodated in park and recreation spaces. It is important that Millis parks provide active, healthy, and engaged recreational opportunities for all users. In Millis, the demographics and community discussion point to the aging population and seniors as the group most in need of future accommodation. Seniors, particularly seniors that live alone, are more vulnerable to social isolation and physical and mental health issues that may be associated with lower levels of activity. Parks, open space, and recreational facilities provide settings where seniors can interact with others, get active and exercise, and enjoy the benefits and beauty of the natural surroundings. The needs of elderly residents are generally divided between the younger, more active senior citizens and the frail elderly. The frail elderly generally require therapeutic recreational services. More active seniors tend to enjoy walking, golf, tennis and swimming. Elderly residents may also have similar needs as residents with disabilities in terms of their ability to access recreation facilities. As it relates to open space areas, seniors and those with disabilities would benefit from more benches, paved pathways around parks, sufficient shade trees, and more age-appropriate programming such as bocce, shuffleboard, corn hole, and walking groups.

Different age and user groups within the Town each have particularized needs, which can be accommodated through good planning and design. The use of Universal Design concepts in parks provides accessibility for those with disabilities and enables multi-generational play between youth, teens and seniors. The Center for Universal Design at NC State University provides the following seven guiding principles for Universal Design:

1. **Equitable Use:** The design is useful and marketable to people with diverse abilities
2. **Flexibility in Use:** The design accommodates a wide range of individual preferences and abilities.
3. **Simple and Intuitive Use:** Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. **Perceptible Information:** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities
5. **Tolerance for Error:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. **Low Physical Effort:** The design can be used efficiently and comfortably and with a minimum of fatigue.
7. **Size and Space for Approach and Use:** Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

In order to best serve elderly residents and other individuals with mobility limitations, both the design of internal park layouts and the pathways residents take to access them should be evaluated and improved if necessary.

## **Maintenance**

Management and maintenance of the Town's open space and recreation facilities is critical to the utility of these resources. Maintaining safe and secure access by residents, maintenance of grounds and fields, maintenance of equipment, and protection against vandalism are a few of the many issues which must be addressed on a routine schedule by the Town. Funding for management and maintenance of open space and recreation facilities must be evaluated when considering the acquisition of future resources. The athletic fields in town are in high demand and overused, leading to maintenance issues with the fields unable to rest in many locations to allow for restoration and regrowth of natural turf. Some fields need drainage improvements to mitigate

impacts of overuse. Poor turf coverage and compacted soil from overuse can lead to hazardous conditions for players. The current field conditions cannot support the ongoing level of play.

### **Programming**

According to the 2014 Millis Athletic Field Master Plan, Millis has not adopted a field use policy that outlines the required levels of maintenance needed in order to support the desired level of play. The Town currently funds and maintains the fields through several different department and organizations, including the Department of Public Works, Recreation Department, School Department, Oak Grove Farm Commission, youth groups, public volunteer groups, and others.

### **Access**

Athletic fields and active recreation is generally grouped together at two primary sites – the Millis Schools and Oak Grove Farm. The grouping of athletic fields provides convenient access between fields. Pedestrian access is available at many locations. However, some areas require improvements for proper pedestrian access and compliance with the Americans with Disabilities Act (ADA). Most sidewalks adjacent to and near athletic fields meet the ADA accessibility requirements, but enhancements are needed in the playing and spectator areas, and parking lots. All fields would benefit from a greater number of parking spaces and more formalized parking lots and layouts. This would also improve accessibility.

### **Resource Protection Needs**

The majority of the open space and recreation lands in Millis are already permanently protected in perpetuity from future development. Many of the protected sites are located within large and environmentally sensitive areas, such as the BioMap2 habitat areas and the Charles River Valley flood storage areas.

### **Management Needs**

In its 2014 study, the Fields Committee recommended a centralized model for scheduling and maintenance efforts. The study identified that the Town currently lacks a central scheduling agency for all of the Town athletic facilities. The fields are owned, maintained, and scheduled by several different agencies (Oak Grove Farm Commission, Millis Schools, etc.), which can lead to difficulties in coordination of use and scheduling of athletic events.

### **Specific Field Needs**

In the 2014 Athletic Fields Master Plan, the following specific field needs were identified by park location. The field needs draw from the field inventory, on-site evaluations, interviews with stakeholders, and community input for CDM Smith to develop a list of specific deficiencies and accompanying recommendations for each field.

#### **Town Park Fields**

- Re-grade playing surfaces to correct drainage problems. Fields would also require topdressing and overseeding.
- Replace sections of fence with bent posts.
- Refinish spectator seating.
- Increase maintenance practices to eliminate bare patches and improve playing surface.
- Complex would benefit from additional parking.

#### **Millis High School Fields**

- Baseball field is small (i.e., does not meet MIAA size requirements) and is not facing optimal orientation.

- Football field has poor drainage on the southern end and is not facing optimal orientation.
- The track is cinder and does not meet current MIAA regulations.
- The track and a drainage ditch on the southern end pose possible tripping hazards.
- Due to the close proximity of the baseball and football fields, participant and spectators risk injury from participant play and errant balls from either field.
- There is no formal access to the spectator seating and press box is not ADA compliant. There is flooding near Frog Pond during rain events.
- Fencing, dugouts, and backstop would benefit from mow strips.

#### **Clyde Brown Field**

- The existing drainage system targets the field as a collection point for stormwater runoff from the parking lot and roadway and the current field layout promotes the constant and regular wet conditions of the playing surface.
- The current condition of the natural turf demonstrates a lack of rest time between practices and games. This condition also demonstrates field use following rain events and before the turf has sufficiently dried.
- Turf has several large bare patches, which are associated with significant wear from overuse and poor field drainage.

#### **Gerry Sisto Baseball Field**

- Scoreboard posts, dugouts, and spectator seating should be refinished.
- No formal access to the spectator seating. Create an ADA accessible pathway from the roadway.
- Field orientation is not optimal.
- Due to poor drainage, the infield becomes muddy during rain events. Drainage improvements and re-grading that convey excess water could alleviate this issue.

#### **Oak Grove Farm**

- The dugout fencing posts are bent at the southern softball field.
- The northern softball field has a large dip in left outfield along the third base line, which creates a trip and safety hazard.
- Turf is worn in the outfield of the southern softball field.
- Both fields exhibit signs of excessive weed growth and have experienced wet conditions caused by poor drainage.
- Adjacent roadways are in poor condition and dust presents a nuisance and potential hazards on windy days.
- The soccer fields appear to have been damaged recently by vehicles driving on turf.
- Existing parking on Island Road lacks a formal layout and is not large enough to meet current needs.
- Close the wooden guardrail access on the corner of Exchange and Island Road to prevent vehicles from driving on existing fields.
- Re-grade the dip between softball fields to eliminate a tripping hazard.
- Replace the older backstops and dugouts at the softball fields.
- Install drainage at softball fields and southwestern corner of the soccer fields to eliminate muddy playing conditions.
- Increase maintenance practices to eliminate bare patches and improve playing surface.

## Section 8: Goals and Objectives

The following goals and objectives were drafted and refined through this planning process with input and feedback from the Core Team, the Community Survey, and two Community Forums.

- **Goal #1: Preserve and protect the Town's drinking water sources.** (70% of community survey respondents feel this is very important, 23% of the community survey respondents feel this is important, for a total of 93% feeling it is at least important)
  - Objectives:
    - 1.1 Explore stormwater management pilot projects to improve water quality in sensitive areas of Millis.
    - 1.2 Continue to review activity that occurs within Groundwater Protection Districts, or wetland, and surface water buffer zones.
    - 1.3 Routinely test aquifers for capacity and contaminants.
- **Goal #2: Improve existing playing fields and playgrounds.** (58% of community survey respondents feel this is very important, 26% of the community survey respondents feel this is important, for a total of 84% feeling it is at least important)
  - Objectives:
    - 2.1 Enhance the maintenance of existing fields and offer alternative field areas for practices (aeration, top seeding, fertilization, weed prevention, etc.).
    - 2.2 Increase management capacity through staff, volunteer, or non-profit organizations (e.g. "Friends of" organizations).
    - 2.3 Improve management and scheduling of all town fields as a shared resource.
- **Goal #3: Protect the Town's remaining farms.** (56% of community survey respondents feel this is very important, 28% of the community survey respondents feel this is important, for a total of 84% feeling it is at least important)
  - Objectives:
    - 3.1 Encourage owners of farmland to enter into Chapter 61 and Chapter 61A registration.
    - 3.2 Work with land owners to preserve and promote agricultural uses of existing operating farms.
- **Goal #4: Protect surface water quality and natural habitats.** (47% of community survey respondents feel this is very important, 34% of the community survey respondents feel this is important, for a total of 81% feeling it is at least important)
  - Objectives:
    - 4.1 Preserve all healthy, un-fragmented wetlands and restore degraded wetlands.
    - 4.2 Protect small ponds and lake habitats from climate change and disruption from pollutants.
    - 4.3 Identify and protect vernal pools across Millis.
    - 4.4 Promote and advance non-lethal management of beavers for regulation of flooding, while maintaining healthy wetland ecosystems, and informing responses to increasing water levels which may or may not be caused by beavers.

- **Goal #5: Preserve and protect the Town's heritage and natural character.** (45% of community survey respondents feel this is very important, 36% of the community survey respondents feel this is important, for a total of 81% feeling it is at least important)
  - Objectives:
    - 5.1 New development in Millis should integrate new open space and conservation areas, connect to nearby amenities, and protect existing views and natural assets.
    - 5.2 Establish new historic districts to provide additional protection for existing historic assets in Millis.
  
- **Goal #6: Promote awareness and appreciation of open space through education and outreach.** (41% of community survey respondents feel this is very important, 38% of the community survey respondents feel this is important, for a total of 79% feeling it is at least important)
  - Objectives:
    - 6.1 Develop a guide to Millis open space resources that is available to residents as both a paper and digital brochure.
    - 6.2 Develop a consistent system of signage, wayfinding, information, and trail blazing at Town-owned open space and conservation areas.
  
- **Goal #7: Improve access to existing Town-owned recreation and conservation land.** (35% of community survey respondents feel this is very important, 43% of the community survey respondents feel this is important, for a total of 78% feeling it is at least important)
  - Objectives:
    - 7.1 Develop an annual maintenance routine for the care of trails and paths on Town-owned open space and conservation areas.
    - 7.2 Study and implement prioritized locations for sidewalk improvements or extensions to connect more people safely to nearby open spaces.
  
- **Goal #8: Add or improve open space connections through regional greenways and trail networks.** (37% of community survey respondents feel this is very important, 38% of the community survey respondents feel this is important, for a total of 75% feeling it is at least important)
  - Objectives:
    - 8.1 Collaborate with the Metropolitan Area Planning Council for routes and locations of multi-modal regional connections of the LandLine in Millis.
    - 8.2 Develop a plan for a network of multimodal paths that could connect open space and recreation assets across Millis.
    - 8.3 Study the possibility of rail-trail connections in unused rail corridors.
    - 8.4: Connect to existing regional trails, such as the Bay Circuit Trail that passes through Medfield's Noon Hill area.

- **Goal #9: Improve accessibility of facilities for all residents, including residents with special needs.** (35% of community survey respondents feel this is very important, 39% of the community survey respondents feel this is important, for a total of 74% feeling it is at least important)
  - Objectives:
    - 9.1 Improve universal accessibility of Town-owned open space and recreation areas.
- **Goal #10: Construct new playing fields and playgrounds.** (48% of community survey respondents feel this is very important, 19% of the community survey respondents feel this is important, for a total of 67% feeling it is at least important)
  - Objectives:
    - 10.1 Replace existing high-use natural turf athletic fields with synthetic turf athletic fields.
    - 10.2 Construct additional athletic fields on existing town property to supplement existing fields currently available.
    - 10.3 Increase funding options and sources dedicated to field improvements.
- **Goal #11: Strengthen climate resilience through Town open spaces.** (32% of community survey respondents feel this is very important, 34% of the community survey respondents feel this is important, for a total of 66% feeling it is at least important)
  - Objectives:
    - 11.1 Where adjacent to flood prone areas, use open spaces to provide flood storage and/or flood barriers to adjacent residential areas.
    - 11.2 Integrate natural infiltration and green infrastructure design features into town open spaces and conservation areas, particularly where parking is provided in these areas.
    - 11.3 Develop a tree stewardship and protection program for open space and conservation areas to manage the Town tree canopy.

### **Statewide Comprehensive Outdoor Recreation Plan (SCORP)**

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is the Commonwealth's equivalent of a municipal open space plan. SCORP plans are developed by individual states in order to be eligible for federal Land and Water Conservation Fund (LWCF) grants. In 2017, the Executive Office of Energy and Environmental Affairs completed the Massachusetts SCORP to help guide the distribution of federal funding to state agencies and municipalities for the acquisition of open space, renovation of parks, and development of new parks. The SCORP is a planning document that discusses the available recreational resources in a state, as well as its needs, and identifies the gaps between the two. The goals of the 2017 SCORP are to:

- Goal 1: Improve Access for Underserved Populations
- Goal 2: Support the Statewide Trails Initiative
- Goal 3: Increase the Availability of Water-based Recreation
- Goal 4: Support the Creation and Renovation of Neighborhood Parks

This plan is consistent with these goals and has particular alignment with Goal 2: Support the Statewide Trails Initiative and Goal 3: Increase the Availability of Water-based Recreation.

## Section 9: Seven Year Action Plan

The Seven Year Action Plan details the actions and activities that should occur over the next seven years to successfully advance the goals and strategies of the Millis Open Space and Recreation Plan. These action items provide specific recommendations to further define the goals and objectives that were formulated in Section 9. The designation of a responsible committee (such as the Recreation Committee) or the creation of a new OSRP Implementation Committee will be key to ensuring successful implementation of this plan. It is this responsible committee that will delegate recommended responsibilities, check-in on progress, and keep the community informed of progress and challenges in implementing the plan.

### Accomplishments since the 1999 OSRP

The Town has undertaken a number of projects since the adoption of the 1999 OSRP including:

1. Analyzed town land suitable for recreation as part of the Athletic Fields Master Plan.
2. Formed a Recreation Committee.

This plan looks to build upon those accomplishments and seeks to expand the number of completed projects and progress against the Town's 2019 OSRP goals and objectives.

### Open Space and Recreation Priorities

The Seven Year Action Plan Table below lists a wide range of actions. Some of these actions may be underway, planned, or in need of additional support. While all of the actions listed are recognized as an important part of this plan, overarching issues have been identified through this planning process that elevate several supporting actions as high priorities for the future of the Town's open space and recreation assets. The overarching issues are:

- **Low Impact Development** – Strengthening requirements for low impact development techniques in new development and redevelopment to increase the resilience of private property and reduce impacts on the Town's natural systems with natural infiltration and green infrastructure.
- **Resource Awareness** – Improving awareness and visibility of open space resources by developing a consistent signage and wayfinding system. Develop a user-friendly guide and single town-wide map of existing town trails and open space resources.
- **Connections and Access** – Improving non-vehicular access and connections to open space resources to expand recreational opportunities and safety for residents. Explore design plans and cost estimates for rail-trail conversions. Strengthen universal accessibility of Town-owned open space and recreation areas.
- **Maintenance and Stewardship** – Strengthening resources dedicated to field maintenance and improvements by increasing user fees for in-Town programs that use recreation fields. Identify annual maintenance routines and best practices for each Town-owned recreation and conservation land and resources to fill gaps in care.

An action that is identified as a key element of one of these overarching issues is highlighted in **bold** type in the table below.

## Seven Year Action Plan Introduction

The following table identifies the specific actions to be undertaken to implement this plan. Each action item is organized by goals and objectives (the objectives are generally listed in order of priority), a responsible party and timeframe are identified, and where applicable, a funding source is identified. The party or parties responsible are listed with the primary one being in **bold** type.

Acronyms for the responsible parties listed in the Seven Year Action Plan are in alphabetical order:

- BOH – Millis Board of Health
- BOS – Millis Board of Selectmen
- CC – Millis Conservation Commission
- COA – Millis Council on Aging
- CPC – Millis Community Preservation Committee
- CRWA – Charles River Watershed Association
- DPW – Millis Department of Public Works
- EC – Millis Energy Committee/Manager
- MPS – Millis Public Schools
- OGC – Oak Grove Farm Commission
- PB – Millis Planning Board
- RC – Millis Recreation Committee
- USAC – United State Army Corps of Engineers

The Open Space and Recreation Seven Year Action Plan is intended to guide many actions across Boards, Committees, and others in the Town. The plan doesn't belong to or place responsibility on any one party. The goals and actions are associated with a responsible party, so for each of those actions an "owner" is assigned. Given the nature of the goals, that ownership is spread across the Board of Selectmen, Planning Board, Conservation Commission, DPW, Board of Health, Recreation Committee and others listed above. It is hoped that each of these "owners" would use the plan to guide future activities and decisions.

If another level of stewardship or accountability related to the plan is desired, a committee could be formed and assigned oversight and follow-up, but the power for action would still remain with those other boards and committees. Several towns in the region (Rockport, Dedham, Ashland, and Manchester, among others) have created an Open Space and Recreation Committee whose purpose is to be a steward of the actions identified in the Open Space and Recreation Plan, by creating work plans for high priority actions over about 2 year periods. The committees are typically appointed by the Board of Selectmen and range from about 5-7 members. They may include a member from each of the primary boards or committees related to the OSRP and an at-large member or two. If such a committee is desired in Millis, it could follow the model of the "Core Team" that was assembled to guide this OSRP process and the simultaneous Municipal Vulnerability Preparedness (MVP) process.

The Action Plan is arranged sequentially beginning with the first goal and the associated objectives and actions to facilitate the achievement of this goal. For each action, a timeframe for when the proposed action should be taken is listed. Short-term recommendations fall within the 2019-2021 timeframe, mid-term recommendations fall within the 2022-2024 timeframe, and

long-term recommendations fall within the 2025-2026 timeframe. Recommendations that are ongoing are marked as such.

Acronyms for potential funding sources (see program descriptions below) listed in the Seven Year Action Plan are:

- Town: funding from Town budget
- CPA: Community Preservation Act funding through the Millis Community Preservation Committee
- LAND: Local Acquisitions for Natural Diversity Program through DCS
- LWCF: Land and Water Conservation Fund grant through DCS
- RTGP: Recreational Trails Program Grant through the MA Department of Conservation and Recreation (DCR)
- CPG: Conservation Partnership Grant through the MA Division of Conservation Services (DCS) available only to not-for-profit groups, not municipalities
- MET: Massachusetts Environmental Trust General Grant

## Seven Year Action Plan Table

<b>Goal #1: Preserve and protect the Town's drinking water sources.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>
<b>Objective 1.1: Explore stormwater management pilot projects to improve water quality in sensitive areas of Millis.</b>			
<b>Action 1.1.1: Set back or treat existing discharges in wetlands, especially near water supplies such as MA Department of Environmental Protection Zone A and Zone 1 recharge areas.</b>	DPW	Mid-term	LWCF
<b>Action 1.1.2: Provide reduced permitting fees or other incentives for innovative practices of low impact development techniques in sensitive areas of Millis.</b>	BOS, CC	Short-term	Not Applicable (NA)
<b>Objective 1.2: Continue to review activity that occurs within Groundwater Protection Districts, or wetland, and surface water buffer zones.</b>			

<b>Action 1.2.1:</b> Require low impact development techniques in new development and redevelopment to reduce and infiltrate precipitation runoff and stormwater, and increase evapotranspiration volumes to minimize pollutants and replenish stream base-flow ensuring maximum ecological integrity and flood storage capacity.	PB, CC	Short-term	NA
<b>Action 1.2.2:</b> Maintain existing hydrology to ensure proper recharge into groundwater systems. For new development and redevelopment ensure drainage systems distribute water and infiltrate on site. Groundwater helps regulate temperature and flow in rivers and streams.	PB, CC	Short-term	NA
<b>Objective 1.3:</b> Routinely test aquifers for capacity and contaminants.			
<b>Action 1.3.1:</b> Continue Annual Drinking Water Quality Reports and respond to any issues identified.	DPW	Ongoing, Short-term	NA
<b>Action 1.3.2:</b> As per the Mass DEP Source Water Assessment Program (SWAP) Report continue to inspect Zone I regularly.	DPW	Ongoing, Short-term	NA
<b>Action 1.3.3:</b> Provide residents with Hazardous Materials disposal information through a joint program with the Town of Norfolk.	DPW, BOH	Ongoing, Short-term	NA
<b>Goal #2: Improve existing playing fields and playgrounds.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>
<b>Objective 2.1:</b> Enhance the maintenance of existing fields and offer alternative field areas for practices (aeration, top seeding, fertilization, weed prevention, etc.).			

<b>Action 2.1.1:</b> Identify additional field areas that could be used to expand practice facilities and minor improvements that may be required.	OGC, RC	Short-term	CPA, LWCF
<b>Action 2.1.2:</b> Define priorities for minor improvements to enable expanded practice fields and implement improvements. For example, addressing drainage of the lower soccer field at Oak Grove Farm.	BOS, OGC, RC	Short-term	NA
<b>Action 2.1.3:</b> Establish consistent maintenance best practices for fields managed and maintained by separate entities.	MPS, OGC, RC, BOH	Short-term	NA
<b>Objective 2.2:</b> Increase management capacity through staff, volunteer, or non-profit organizations (e.g. "Friends of" organizations).			
<b>Action 2.2.1:</b> At locations where maintenance issues have been identified, encourage and enable new "no cost" organizations or volunteer efforts to assist with specific maintenance tasks on a predetermined schedule and frequency.	CC, BOS, TA, PB, RC	Short-term	NA
<b>Objective 2.3:</b> Improve management and scheduling of all town fields as a shared resource.			
<b>Action 2.3.1:</b> Identify the needs of a computerized reservation system to schedule the use of sports fields, including practice fields.	MPS, RC, TA	Short-term	NA
<b>Action 2.3.2:</b> Develop procedures for scheduling with cooperative coordination as a principle for field users and owners.	MPS, RC, TA	Short-term	NA
<b>Goal #3: Protect the Town's remaining farms.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>

<b>Objective 3.1:</b> Encourage owners of farmland to enter into Chapter 61 and Chapter 61A registration.			
<b>Action 3.1.1:</b> Establish or reinstate a Town of Millis Agricultural Commission to support agriculture and farming activities in the Town of Millis.	BOS	Short-term	NA
<b>Action 3.1.2:</b> Create and update a full inventory of all farmland in Millis that does not currently have any agricultural restrictions.	CC, CPC	Short-term	NA
<b>Action 3.1.3:</b> Engage owners of unprotected land, discuss the benefits of Chapter 61, and encourage registration of the property.	CC, CPC	Mid-term	NA
<b>Objective 3.2:</b> Work with land owners to preserve and promote agricultural uses of existing operating farms.			
<b>Action 3.2.1:</b> Create a venue for posting of issues or requests for assistance that can be supported by the Town.	TA, BOS	Short-term	NA
<b>Action 3.2.2:</b> Share and promote the existing Right to Farm Bylaw (2008) educating neighbors and residents.	TA	Short-term	NA
<b>Goal #4: Protect surface water quality and natural habitats.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>
<b>Objective 4.1:</b> Preserve all healthy, un-fragmented wetlands and restore degraded wetlands.			
<b>Action 4.1.1:</b> Protect vulnerable wetlands first, such as headwater streams and near water supplies.	CC, CRWA, USAC	Ongoing, Short-term	NA
<b>Action 4.1.2:</b> Protect or restore vegetated buffers around wetlands with at least 100 feet.	CC, CRWA, USAC	Ongoing, Mid-term	NA

<b>Action 4.1.3:</b> Prevent new discharges and effluent in wetlands and avoid 100-foot buffer zones for new discharges for best pollutant removal.	CC, DPW, PB	Ongoing- Short-term	NA
<b>Objective 4.2:</b> Protect small ponds and lake habitats from climate change and disruption from pollutants.			
<b>Action 4.2.1:</b> Avoid direct discharges near vernal pools that can pollute habitat and lengthen hydro-periods impacting vernal pool populations and wetland ecological integrity.	CC, DPW, PB	Ongoing- Short-term	NA
<b>Action 4.2.2:</b> Manage stormwater and non-point source pollution across the Town of Millis with green infrastructure and natural infiltration strategies to eliminate runoff into small ponds.	CC, DPW, PB, CRWA	Ongoing- Short-term	NA
<b>Action 4.2.3:</b> Create protective barriers, such as earthen berms, around small ponds and lakes to prevent stormwater runoff and non-point source pollution from entering small ponds and lakes. This will also serve to protect adjacent infrastructure from flooding during extreme weather events.	CC, DPW, PB, CRWA	Mid-term	LWCF
<b>Action 4.2.4:</b> Ensure culverts at small ponds and lakes, if present, are sufficient size to manage flow, particularly during extreme weather events.	CC, DPW, PB, CRWA	Mid-term	LWCF
<b>Objective 4.3:</b> Identify and protect vernal pools across Millis.			
<b>Action 4.3.1:</b> Work with the Natural Heritage and Endangered Species program with the Division of Fisheries and Wildlife to identify all vernal pools in Town.	CC, BOH	Short-term	NA

<b>Action 4.3.2:</b> Mitigate stormwater runoff with natural infiltration and green infrastructure adjacent to vernal pools to prevent non-point source pollution into the delicate ecosystem and prevent amphibian reproductive activity.	CC, DPW, PB	Mid-term	NA
<b>Action 4.3.3:</b> Ensure wetlands adjacent to vernal pools are healthy and functioning.	CC, DPW, PB, BOH	Mid-term	NA
<b>Objective 4.4:</b> Promote and advance non-lethal management of beavers for regulation of flooding, while maintaining healthy wetland ecosystems, and informing responses to increasing water levels which may or may not be caused by beavers.			
<b>Action 4.4.1:</b> Require non-lethal management of beaver activity for maintaining appropriate water levels in bodies of water and to ensure the beavers' presence in healthy wetlands ecosystems.	BOH	Mid-term	NA
<b>Action 4.4.2:</b> Create an active community outreach program for education of non-lethal devices and the value of maintaining beaver's presence for healthy wetlands ecosystems.	BOH	Short-term	NA
<b>Action 4.4.3:</b> Establish a documentation system for beaver impact with water levels as well as non-beaver impact with water levels, especially for sites historically issued permits for beaver management.	BOH	Short-term	NA
<b>Action 4.4.4:</b> Shift responsibility to private property owners for the costs of non-lethal beaver management and maintenance of flow devices.	BOH	Mid-term	NA

<b>Action 4.4.5:</b> Form a committee to assess individual beaver related issues consisting of the: Board of Health, the Conservation Commission, and the Department of Public Works.	BOS, BOH, CC, DPW	Short-term	NA
<b>Action 4.4.6:</b> Encourage beavers to move upstream or downstream into areas where their flooding will not significantly harm infrastructure and homes.	BOH	Mid-term	NA
<b>Goal #5: Preserve and protect the Town's heritage and natural character.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>
<b>Objective 5.1:</b> New development in Millis should integrate new open space and conservation areas, connect to nearby amenities, and protect existing views and natural assets.			
<b>Action 5.1.1: Promote use of the Open Space Preservation (2002) Section of the Zoning By-Law.</b>	PB, CC	Short-term	NA
<b>Objective 5.2:</b> Establish new historic districts to provide additional protection for existing historic assets in Millis.			
<b>Action 5.2.1:</b> Advance establishment of the Rockville Historic District as outlined in the Millis Historical Commission Master Plan (2014).	CPC, PB	Mid-term	NA
<b>Action 5.2.2:</b> Refine the boundary of and advance the establishment of the Bogastow Historic District as outlined in the Millis Historical Commission Master Plan (2014).	CPC, PB	Mid-term	NA
<b>Goal #6: Promote awareness and appreciation of open space through education and outreach.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>

<b>Objective 6.1:</b> Develop a guide to Millis open space resources that is available to residents as both a paper and digital brochure.			
<b>Action 6.1.1:</b> Create a user-friendly inventory of publicly accessible open space based on the OSRP inventory with a photo, description of amenities, and location of each resource.	TA, CC, COA	Short-term	NA
<b>Action 6.1.2:</b> Distribute and promote use of brochure by residents and visitors at Town Hall, in new resident information, on the Town's webpage.	TA	Mid-term	NA
<b>Action 6.1.3:</b> Integrate a feedback, suggestion, or issue reporting mechanism to provide for improved maintenance and care of resources.	TA	Mid-term	NA
<b>Objective 6.2:</b> Develop a consistent system of signage, wayfinding, information, and trailblazing at Town-owned open space and conservation areas.			
<b>Action 6.2.1:</b> Develop a signage and wayfinding design for all sign types that will be needed throughout the open space and recreation network including main feature sign, information sign(s), wayfinding sign(s), trailblazing signs(s), regulatory sign, or other required signs.	TA, BOS, CC, RC	Short-term	RTGP
<b>Action 6.2.2:</b> Install a consistent feature sign with the inventory of public accessible open space. Place the sign in a consistent location at each resource with a consistent information, size, lettering, colors, and other information.	DPW	Mid-term	RTGP

<b>Action 6.2.3: Install a consistent family of support signage at each facility for information, wayfinding, trail blazing, and other features.</b>	<b>DPW</b>	<b>Long-term</b>	<b>RTGP</b>
<b>Goal #7: Improve access to existing Town-owned recreation and conservation land.</b>			
<i><b>Objectives/Actions</b></i>	<i><b>Responsible Parties</b></i>	<i><b>Time Frame</b></i>	<i><b>Potential External Funding Sources</b></i>
<b>Objective 7.1: Develop an annual maintenance routine for the care of trails and paths on Town-owned open space and conservation areas.</b>			
<b>Action 7.1.1: Define best practices list of annual maintenance for each Town-owned recreation and conservation land and compare to resources available.</b>	<b>CC, TA</b>	<b>Short-term</b>	<b>NA</b>
<b>Action 7.1.2: Identify resources (additional funds, staff, volunteers, and other organizations) to fill the gap between best practices and resources available for each Town-owned recreation and conservation land.</b>	<b>CC, TA</b>	<b>Mid-term</b>	<b>NA</b>
<b>Action 7.1.3: Integrate these activities with existing community clean-up days and other ongoing volunteer efforts.</b>	<b>TA</b>	<b>Mid-term</b>	<b>NA</b>
<b>Objective 7.2: Study and implement prioritized locations for sidewalk improvements or extensions to connect more people safely to nearby open spaces.</b>			
<b>Action 7.2.1: Identify comprehensive list of sidewalk installations, extensions or improvements to provide safe connections between open spaces, open spaces and surrounding amenities, and open spaces and clusters of housing.</b>	<b>DPW, COA</b>	<b>Short-term</b>	<b>NA</b>

<b>Action 7.2.2:</b> Prioritize list of sidewalks and budget for improvements annually.	BOS, DPW	Mid-term	NA
<b>Goal #8: Add or improve open space connections through regional greenways and trail networks.</b>			
<i>Objectives/Actions</i>	<i>Responsible Parties</i>	<i>Time Frame</i>	<i>Potential External Funding Sources</i>
<b>Objective 8.1:</b> Collaborate with the Metropolitan Area Planning Council for routes and locations of multi-modal regional connections of the LandLine in Millis.			
<b>Action 8.1.1:</b> Review the Land Line regional greenway plan and hold a planning workshop with MAPC and MassDOT to develop preferred alignment of Land Line trail segments in Millis.	PB, CC, DPW	Mid-term	NA
<b>Action 8.1.2:</b> Develop an action plan with priorities to construct each trail segment in Millis.	PB, CC, DPW	Long-term	NA
<b>Objective 8.2:</b> Develop a plan for a network of multimodal paths that could connect open space and recreation assets across Millis.			
<b>Action 8.2.1:</b> Create a single town map of existing town trails, proposed/potential town trails, and key nodes such as schools, community centers, open space, and conservation resources.	PB, CC, DPW	Short-term	NA
<b>Action 8.2.2:</b> Create greater connections of conservation land to ensure maximum ecological function and wildlife habitat connectivity.	BOS, CC, USAC	Long-term	LAND
<b>Objective 8.3:</b> Study the possibility of rail-trail connections in unused rail corridors.			
<b>Action 8.3.1:</b> Identify existing conditions, ownership, legal constraints of rail corridors in Millis.	PB, DPW	Short-term	NA

<b>Action 8.3.2:</b> Pursue a study to develop design plans and cost estimates for rail-trail conversions.	PB, DPW	Mid-term	NA
<b>Action 8.3.3:</b> Evaluate costs and priorities for rail-trail conversions and pursue implementation as appropriate.	PB, DPW	Long-term	NA
<b>Objective 8.4:</b> Connect to existing regional trails, such as the Bay Circuit Trail that passes through Medfield's Noon Hill area.			
<b>Action 8.4.1:</b> Coordinate potential contributions to the Bay Circuit Trail with Bay Circuit Alliance, Appalachian Mountain Club, and neighboring communities.	PB, DPW	Mid-term	NA
<b>Action 8.4.2:</b> Develop action plan to add side paths and connecting segments that link to the Bay Circuit Trail.	PB, DPW	Long-term	NA
<b>Goal #9: Improve accessibility of facilities for all residents, including residents with special needs.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>
<b>Objective 9.1:</b> Improve universal accessibility of Town-owned open space and recreation areas.			
<b>Action 9.1.1:</b> Install improvements identified in the Americans with Disabilities Act (ADA) Transition Plan.	TA, CPC, COA	Short-term	NA
<b>Action 9.1.2:</b> Define and prioritize other improvements identified by the residents or Town accessibility officer to strengthen universal accessibility.	TA, CPC, COA	Mid-term	NA
<b>Goal #10: Construct new playing fields and playgrounds.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>
<b>Objective 10.1:</b> Replace existing high-use natural turf athletic fields with synthetic turf athletic fields.			

<b>Action 10.1.1:</b> Determine the fields with enough use to warrant replacement with synthetic turf.	BOS, MPS, RC	Short-term	NA
<b>Action 10.1.2:</b> Replace the existing high school football field with synthetic field and track consistent with the Athletic Fields Master Plan (2014) as a pilot project.	BOS, MPS, RC	Mid-term	NA
<b>Objective 10.2:</b> Construct additional athletic fields on existing town property to supplement existing fields currently available.			
<b>Action 10.2.1:</b> Construct a new additional baseball field at Town Park consistent with the Athletic Fields Master Plan (2014).	BOS, RC	Mid-term	NA
<b>Action 10.2.2:</b> Add additional natural turf soccer fields at Oak Grove Farm similar to the Athletic Fields Master Plan (2014).	BOS, RC	Mid-term	NA
<b>Objective 10.3:</b> Increase funding options and sources dedicated to field improvements.			
<b>Action 10.3.1:</b> Increase user fees for in-Town programs that use the fields.	TA, MPS, RC	Short-term	NA
<b>Goal #11: Strengthen climate resilience through Town open spaces.</b>			
<b>Objectives/Actions</b>	<b>Responsible Parties</b>	<b>Time Frame</b>	<b>Potential External Funding Sources</b>
<b>Objective 11.1:</b> Where adjacent to flood prone areas, use open spaces to provide flood storage and/or flood barriers to adjacent residential areas.			
<b>Action 11.1.1:</b> Protect Millis's small lakes, ponds and vernal pools, areas most vulnerable to climate change. Prioritize BioMap2 Aquatic and Wetland Core Habitats and Critical Natural Landscapes to protect existing wetlands and waterways, protect the Town from flooding, and enhance flood storage capacity.	CC, DPW, CRWA, BOH	Short-term	NA

<b>Action 11.1.2:</b> Identify locations that frequently flood and opportunities for improvements on open space or conservation parcels that could reduce flood risks for adjacent assets (depress area to create additional flood storage, elevate an area to create a flood barrier, etc.).	CC, DPW, CRWA, BOH	Short-term	NA
<b>Objective 11.2:</b> Integrate natural infiltration and green infrastructure design features into town open spaces and conservation areas, particularly where parking is provided in these areas.			
<b>Action 11.2.1:</b> Identify town open space and conservation areas that offer opportunities for green infrastructure improvements.	CC, DPW, BOH, EC	Short-term	NA
<b>Action 11.2.2:</b> Prioritize list of green infrastructure improvements and budget for improvements annually.	CC, DPW, BOH, EC	Mid-term	NA
<b>Objective 11.3:</b> Develop a tree stewardship and protection program for open space and conservation areas to manage the Town tree canopy.			
<b>Action 11.3.1:</b> Create a forest management plan for all conservation land to minimize invasive species establishment, tree pests and diseases, and restoration after significant disturbance following extreme weather events.	CC	Short-term	NA
<b>Action 11.3.2:</b> Create a plan for managing street trees in Millis that allows succession of tree species that are more adaptive to the changing climate.	DPW	Short-term	NA

## **Local Funding Sources**

### **Community Preservation Act**

The establishment of a real estate transfer tax was signed into law on September 14, 2000 as the Community Preservation Act (CPA). CPA is a tool for communities to preserve open space, park and recreational facilities, historic sites, and affordable housing. The Community Preservation Act is statewide enabling legislation that allows cities and towns to exercise control over local planning decisions by providing a funding source which can be used to address three core community concerns:

- Acquisition and preservation of open space
- Improve park and recreation facilities

- Creation and support of affordable housing
- Acquisition and preservation of historic buildings and landscapes

A minimum of 10% of the annual revenues of the fund must be used for each four core community concerns. The remaining 70% can be allocated for any combination of the allowed uses. This gives each community the opportunity to determine its priorities, plan for its future, and have the funds to make those plans happen.

### **Potential State and Federal Funding Sources**

#### **Local Acquisitions for Natural Diversity (LAND) Program**

The LAND Program (formerly the Self-Help Program) was established in 1961 to assist municipal conservation commissions acquiring land for natural resource and passive outdoor recreation purposes. Lands acquired may include wildlife, habitat, trails, unique natural, historic or cultural resources, water resources, forest, and farm land. Compatible passive outdoor recreational uses such as hiking, fishing, hunting, cross-country skiing, bird observation and the like are encouraged. Access by the general public is required. This state program pays for the acquisition of land, or a partial interest (such as a conservation restriction), and associated acquisition costs such as appraisal reports and closing costs.

#### **Land and Water Conservation Fund (LWCF)**

This is a federal program administered by the State Division of Conservation Services for the acquisition and development or renovation of park, recreation and conservation land. The Federal Land & Water Conservation Fund (P.L. 88-578) provides up to 50% of the total project cost for the acquisition, development and renovation of park, recreation or conservation areas. Municipalities, special districts and state agencies are eligible to apply. Nearly 4000 acres have been acquired and hundreds of parks renovated using the \$95.6 million that Massachusetts has received from the state side portion of the federal program since 1965. DCS administers the state side Land & Water Conservation Fund program in Massachusetts. Access by the general public is required.

#### **Recreational Trails Grant Program (RTGP)**

The Recreational Trails Program provides grants ranging from \$2,000 to \$50,000 on a reimbursement basis for a variety of trail protection, construction, and stewardship projects throughout Massachusetts. It is part of the National Recreational Trails Program, which is funded through the Federal Highway Administration (FHWA). Funds are disbursed to each state to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. In Massachusetts, funds are administered by the Department of Conservation and Recreation (DCR), in partnership with the Massachusetts Recreational Trails Advisory Board.

## Map 8: Action Plan

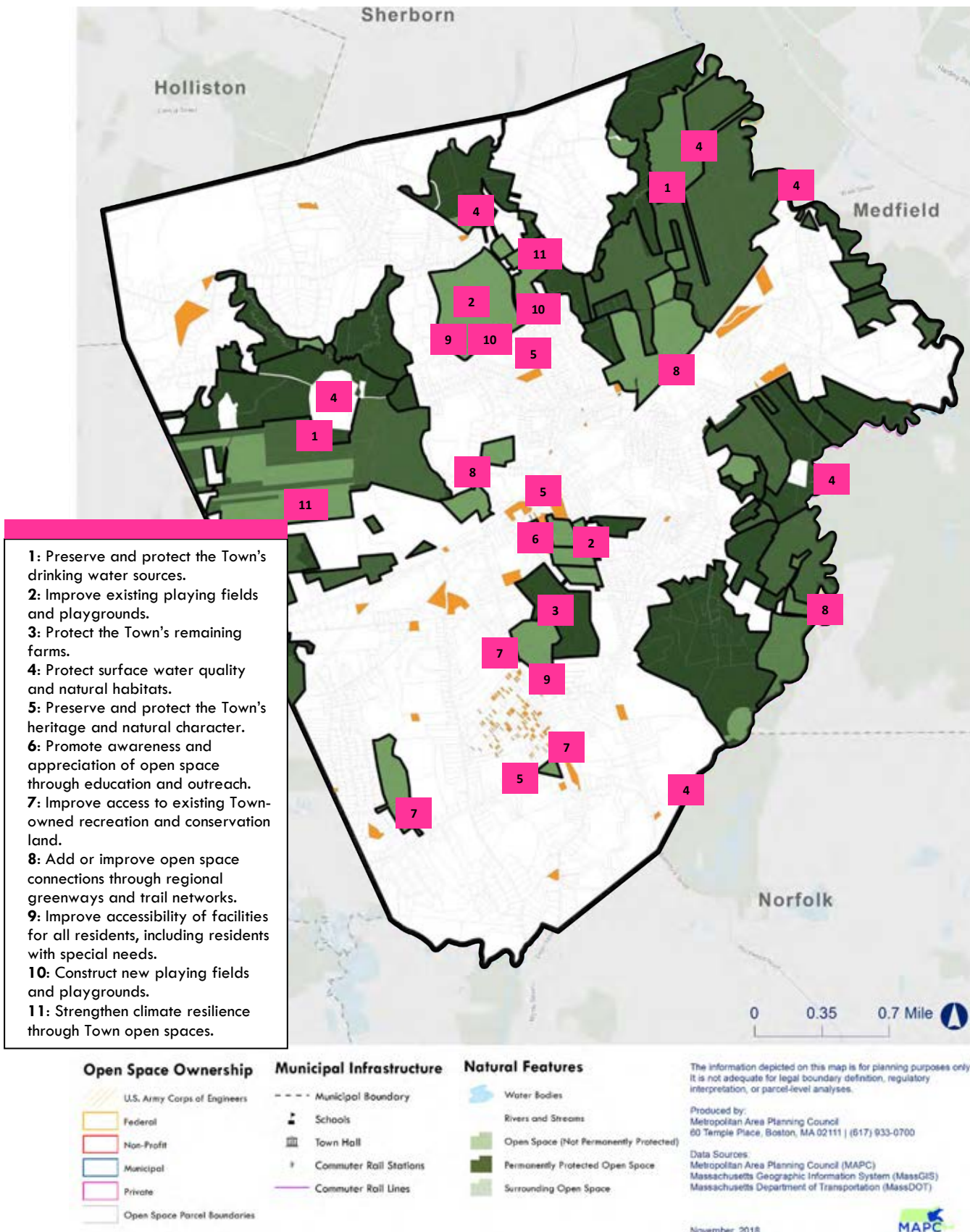




Image – South End Pond, photo by MAPC

Town of Millis  
**Open Space and Recreation Plan (OSRP)**

June 26, 2019

**Appendices**

**Appendix 1:** Public Comments

**Appendix 2:** 2019 Open Space and Recreation Survey

**Appendix 3:** ADA Accessibility Self-Evaluation

**Appendix 4:** Parks and Open Space Climate Assessment

## **Appendix 1: Public Comments**

The Open Space and Recreation Plan Core Team received public comments regarding the Open Space and Recreation Plan throughout the planning process. Two advertised public meetings were held for during the drafting of the OSRP and to review the draft plan. One public meeting was held on February 7<sup>th</sup>, 2019 and a second was held on May 9<sup>th</sup>, 2019. Comments received at these meetings have been incorporated into the Open Space and Recreation Plan.

Review letters from the Millis Board of Selectmen, Millis Town Administrator, Millis Planning Board, and Millis Conservation Commission are provided below. The Metropolitan Area Planning Council has also offered a letter of review.

Following the letters are summaries of the public comments and exercises that occurred at the two public community meetings.



# TOWN OF MILLIS

Loring Barnes Edmonds, Chair  
James J. McCaffrey, Vice Chair  
Peter C. Jurmain, Clerk

## OFFICE OF THE BOARD OF SELECTMEN and TOWN ADMINISTRATOR

Veterans Memorial Building  
900 Main Street • Millis, MA 02054  
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Fax: 508-376-7053

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Town Administrator  
[mguzinski@millisma.gov](mailto:mguzinski@millisma.gov)

Karen M. Bouret  
Operations Support Manager  
[kbouret@millisma.gov](mailto:kbouret@millisma.gov)

June 3, 2019

Melissa Cryan  
Division of Conservation Services  
Mass Executive Office of Energy and Environmental Affairs  
100 Cambridge Street Suite 900  
Boston, MA 02114

RE: Town of Millis Open Space and Recreation Plan

Dear Ms. Cryan,

The Town of Millis is pleased to submit, and approve, the 2019 Open Space and Recreation Plan.

The process chosen by the Town to update the plan, its first update since 1999, reached out to Millis residents and open space users. It enabled the Town's staff, committees and our consultant to compile many opinions and observations that are necessary to create a vision for the future.

The updated Plan provides the Town of Millis with clear guidance on how to prioritize our open space efforts with concise action items that we can accomplish over the next seven years. In general, we hope to achieve a balance of active playing fields, the creation of walking and biking trails, and more passive types of open space for all ages to enjoy.

We look forward to achieving the goals outlined in the Plan and build on the work that has already been done in creating and preserving open space in Town.

Sincerely,

Loring Barnes Edmonds  
Chair, Board of Selectmen



# TOWN OF MILLIS

Loring Barnes Edmonds, Acting Chair  
James J. McCaffrey  
Peter C. Jurmain

## OFFICE OF THE BOARD OF SELECTMEN and TOWN ADMINISTRATOR

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Town Administrator  
[mguzinski@millisma.gov](mailto:mguzinski@millisma.gov)

Karen M. Bouret  
Operations Support Manager  
[kbouret@millisma.gov](mailto:kbouret@millisma.gov)

June 3, 2019

Ms. Melissa Cryan  
Division of Conservation Services  
Mass Executive Office of Energy and Environmental Affairs  
100 Cambridge Street Suite 900  
Boston, MA 02114

RE: Town of Millis Open Space and Recreation Plan

Dear Ms. Cryan,

The Town of Millis is pleased to submit, and recommend the approval of, the 2019 Open Space and Recreation Plan.

The updated Plan provides the Town of Millis with clear guidance on how to prioritize our open space efforts with concise action items spread out over the next seven years. In general, we hope to achieve a balance of active playing fields, the creation of walking and biking trails, and more passive types of open space for all ages to enjoy.

We look forward to achieving the goals outlined in the Plan and build on the work that has already been done in creating and preserving open space in the Town of Millis.

Sincerely,

Michael J. Guzinski  
Town Administrator

Cc: Board of Selectmen  
Robert Weiss, Energy Manager



# TOWN OF MILLIS

## OFFICE OF THE PLANNING BOARD

900 Main Street • Millis, MA 02054

Phone: 508-376-7045

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Richard Nichols, *Chair*  
Nicole Riley, *Clerk*  
James McKay  
George Yered  
Bodha B. Raut Chhetry  
Joshua Guerrero, *Associate*

Camille Standley  
Administrative Assistant  
[cstandley@millisma.gov](mailto:cstandley@millisma.gov)

June 4, 2019

Melissa Cryan  
Division of Conservation Services  
Mass Executive Office of Energy and Environmental Affairs  
100 Cambridge Street Suite 900  
Boston, MA 02114

RE: Town of Millis Open Space and Recreation Plan

Dear Ms. Cryan,

The Millis Planning Board appreciates the opportunity to comment on the Town's 2019 Open Space and Recreation Plan. The Board believes that the updates included in the 2015 Plan provide a clear set of tasks that will bring the Town closer to the community vision outlined in the Plan.

The Board has been working hard to encourage growth in Town that will balance development with maintaining the Town's rustic atmosphere. We are also encouraged to by the thorough process of open forums and surveys to create opportunities for all residents and open space users to voice their opinions.

The 2019 Plan provides a concise vision, community goals and steps to achieve those goals. The Board is pleased to be part of Millis' efforts to maintain the Town's character by preserving, creating and enhancing open space for all to enjoy.

Sincerely,  
Millis Planning Board

Richard Nichols  
Chairman



# TOWN OF MILLIS

Dr. James A. Lederer, *Chairman*  
Anne Rich, *Vice Chair*  
Edward Chisholm  
Christine Gavin  
Daniel Lee  
Ramcharan Khalsa

## OFFICE OF THE CONSERVATION COMMISSION

900 Main Street • Millis, MA 02054  
Phone: 508-376-7045  
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Camille Standley  
Administrative Assistant  
[cstandley@millisma.gov](mailto:cstandley@millisma.gov)

June 3, 2019

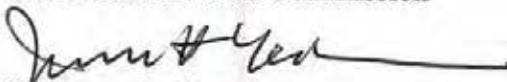
Melissa Cryan  
Division of Conservation Services  
Mass Executive Office of Energy and Environmental Affairs  
100 Cambridge Street Suite 900  
Boston, MA 02114

RE: Town of Millis Open Space and Recreation Plan

Dear Ms. Cryan,

The Conservation Commission voted at its meeting June 3, 2019 to endorse the Open Space and Recreation Plan of 2019. The Commission is pleased at how much has been accomplished since the 1999 Plan to improve recreational facilities and to increase the amount of land protected as open space in Town. The Commission will be one of the entities coordinating the implementation of the action plan, actions that will continue to involve the efforts of various Town departments, as well as volunteer groups and individuals.

Sincerely,  
Millis Conservation Commission

  
Dr. James Lederer  
Chairman



SMART GROWTH AND REGIONAL COLLABORATION

June 26, 2019

Melissa Cryan  
Executive Office of Energy and Environmental Affairs  
Division of Conservation Services  
100 Cambridge Street  
Boston, MA 02114

Re: Millis Open Space and Recreation Plan

Dear Ms. Cryan:

This letter will serve as MAPC's review of the Town of Millis 2019-2026 Open Space and Recreation Plan. MAPC enjoyed working with the Town of Millis to develop this plan. It was written to comply with the Division of Conservation Services (DCS) guidelines and to integrate a regional perspective on the issues addressed during the planning process. We have also worked to make the plan consistent with the goals and objectives of *MetroFuture*, the regional policy plan for the Boston metropolitan area. We believe that the participation of Town staff, the enhanced outreach conducted during the preparation of the plan, and MAPC's regional perspective have generated a plan that will help to guide the Town in its continued efforts to improve open space and recreation opportunities and facilities in Millis.

Additionally, the plan includes a Parks and Open Space Climate Assessment report. This appendix, funded in part by the Commonwealth of Massachusetts Municipal Vulnerability Preparedness Program, evaluates the vulnerability of Millis's natural systems and the opportunity for these systems to contribute to the town's resilience. This section of the report, which is an appendix to the plan, includes park and open space design recommendations for climate resilience.

MAPC wishes the best of luck to the Town as it moves forward with implementation of the plan.

Sincerely,

Mark Racicot  
Land Use Planning Director


## Community Meeting Summary

May 9<sup>th</sup>, 2019

Town Hall – Board of Selectmen Room

Attendees – approximately 20

The meeting was broadcast live through Millis Community Media and a recording of that broadcast has been made available through [www.millismedia.org](http://www.millismedia.org) under the video title “Open Space Forum 5/9/19”. The feedback below was collected at the meeting.

A poster for a community meeting. The background is a photograph of a park with a large tree, a body of water, and a picnic table. The text is overlaid on the image. At the top, it says "PLEASE JOIN US FOR A" in small letters, followed by "COMMUNITY MEETING" in large, bold, white letters on a dark blue banner. Below that, it says "TO DISCUSS" in small letters, followed by "MILLIS OPEN SPACE AND RECREATION AND MUNICIPAL VULNERABILITY PREPAREDNESS PLANS" in bold, black letters. On the right side, there is a dark blue box with white text: "DATE: THURSDAY, MAY 9th", "TIME: 7:30 to 9:00PM", and "LOCATION: TOWN HALL BOARD OF SELECTMEN ROOM (229) 900 MAIN STREET". At the bottom left, it says "IF YOU HAVEN'T YET PARTICIPATED IN THE ONLINE COMMUNITY SURVEY, TAKE IT HERE:" followed by the URL "http://bit.ly/MillisOpenSpaceSurvey". At the bottom right, there is a green box with white text: "Please join us to participate in updating the Town's Open Space and Recreation Plan! The Open Space and Recreation Plan will assess the community's park and recreation assets and needs to determine the Town's key challenges and priorities for the next seven years. The Town of Millis last prepared an Open Space and Recreation Plan in 1999. The town is working with the Metropolitan Area Planning Council (MAPC) to update the plan. At this meeting, MAPC will present the draft Open Space and Recreation Plan and draft Municipal Vulnerability Preparedness Plan and invite your input and feedback to improve the draft documents." At the bottom left, there is a small logo for the Town of Millis and a note: "If you need special assistance or translation services, please contact MAPC at (617) 933-0760 or (info@mapc.org)". At the bottom right, there is a logo for the Metropolitan Area Planning Council (MAPC).

As part of the community meeting, attendees were given a handout that asked about for comments and to prioritize the top 5 actions, open comments received included:

- Wouldn't recycling be an initiative that would fall into this work? It's very expensive to conduct for a town or resident. Open space can be in conflict with peaceful enjoyment of outdoor spaces when developments are concentrated and push new traffic past these areas, or shift housing density in such a way as to create concentrated traffic.
- Since we have so much water, review if it makes sense to sell water to other towns in need.

The results of the prioritization are shown on the following pages.

# MILLIS OPEN SPACE AND RECREATION PLAN (OSRP) COMMUNITY MEETING

THURSDAY, MAY 9TH 7:30-9:00PM



## PLACE A CHECK IN THE BOX OF YOUR 5 FIVE TOP PRIORITIES FOR ACTIONS

### Goal #1 Preserve and protect the Town's drinking water sources.

- ☐ Continue routine testing of aquifers for capacity and contaminants and raise awareness.
- ☐ Provide residents with Hazardous Materials disposal information through a joint program with the Town of Norfolk.
- ☐ Continue to review activity that occurs within Groundwater Protection Districts, or wetland, and surface water buffers.
- ☐ Require low impact development techniques in new development and redevelopment.
- ☐ Explore stormwater management pilot projects to improve water quality in sensitive areas of Millis.
- ☐ Provide reduced permitting fees or other incentives for innovative practices of low impact development techniques in sensitive areas.

### Goal #3 Protect the Town's remaining farms.

- ☐ Encourage owners of farmland to enter into Chapter 61 and Chapter 61A registration.
- ☐ Establish or reinstate a Town of Millis Agricultural Commission to support agriculture and farming activities in the Town of Millis.
- ☐ Work with land owners to preserve and promote agricultural uses of existing operating farms.
- ☐ Create a venue for posting of issues or requests for assistance that can be supported by the Town.

### Goal #2 Improve existing playing fields and playgrounds.

- ☐ Enhance the maintenance of existing fields and offer alternative field areas for practices.
- ☐ Define priorities for minor improvements and implement to enable expanded practice fields.
- ☐ Increase management capacity through staff, volunteer, or non-profit organizations (e.g. "Friends of" organizations).
- ☐ Encourage and enable new organizations or volunteer efforts to assist with specific maintenance tasks on a preset schedule.
- ☐ Improve management and scheduling of all town fields as a shared resource.
- ☐ Identify the requirements of a computerized reservation system to coordinate scheduling of sports fields and practice fields.

### Goal #4 Protect surface water quality and natural habitats.

- ☐ Preserve all healthy, un-fragmented wetlands and restore degraded wetlands.
- ☐ Prevent new discharges and effluent in wetlands and avoid 100-foot buffer zones for new discharges for best pollutant removal.
- ☐ Protect small ponds and lake habitats from climate change and disruption from pollutants.
- ☐ Create protective barriers, such as earthen berms, around small ponds and lakes to prevent stormwater runoff and non-point source pollution from entering small ponds and lakes. This will also serve to protect adjacent infrastructure from flooding during extreme weather events.
- ☐ Identify and protect vernal pools across Millis.
- ☐ Mitigate stormwater runoff with natural infiltration and green infrastructure adjacent to vernal pools.

### ANY OTHER COMMENTS:



**Goal #5 Preserve and protect the Town's heritage and natural character.**

New development in Millis should integrate new open space and conservation areas, connect to nearby amenities, and protect existing views and natural assets.

- 1** Promote use of the Open Space Preservation (2002) Section of the Zoning By-Law.

Establish new historic districts to provide additional protection for existing historic assets in Millis.

- 1** Advance establishment of the Rockville Historic District as outlined in the Millis Historical Commission Master Plan (2014).

**Goal #7 Improve access to existing Town-owned recreation and conservation land.**

Develop an annual maintenance routine for the care of trails and paths on Town-owned open space and conservation areas.

- 3** Identify resources (additional funds, staff, volunteers, other organizations) to fill the gap between best practices and resources available for each Town-owned recreation and conservation land.

Study and implement prioritized locations for sidewalk improvements or extensions to connect more people safely to nearby open spaces.

- 1** Identify comprehensive list of sidewalk installations, extensions or improvements to provide safe connections between open spaces, open spaces and surrounding amenities, and open spaces and clusters of housing.

**Goal #9 Improve accessibility of facilities for all residents, including special needs..**

Improve universal accessibility of Town-owned open space and recreation areas.

- 0** Install improvements identified in the Americans with Disabilities Act (ADA) Transition Plan.
- 1** Define and prioritize other improvements identified by the residents or Town accessibility officer to strengthen universal accessibility

**Goal #6 Promote awareness and appreciation of open space through education and outreach.**

Develop a guide to Millis open space resources that is available to residents as both a paper and digital brochure.

- 4** Create a user-friendly inventory of publicly accessible open space based on the OSRP inventory with a photo, description of amenities, and location of each resource.

Develop a consistent system of signage, wayfinding, information, and trailblazing at Town-owned open space and conservation areas.

- 4** Develop a signage and wayfinding design for all sign types that will be needed throughout the open space and recreation network including main feature sign, information sign(s), wayfinding sign(s), trailblazing signs(s), regulatory sign, or other required signs.

**Goal #8 Add or improve open space connections through regional greenways.**

Collaborate with the Metropolitan Area Planning Council for routes and locations of multi-modal regional connections of the LandLine in Millis.

- 1** Review the Land Line regional greenway plan and hold a planning workshop with MAPC and MassDOT to develop segments.

Develop a plan for a network of multimodal paths that could connect open space and recreation assets across Millis.

- 3** Create a single town map of existing town trails, proposed/potential town trails, and key nodes such as schools.

Study the possibility of rail-trail connections in unused rail corridors.

- 3** Pursue a study to develop design plans and cost estimates for rail-trail conversions.

**Goal #10 Construct new playing fields and playgrounds..**

Replace existing high-use natural turf athletic fields with synthetic turf athletic fields.

- 2** Replace the existing high school football field with synthetic field and track consistent with the Athletic Fields Master Plan (2014).

Construct additional athletic fields on existing town property to supplement existing fields currently available.

- 0** Construct a new additional baseball field at Town Park consistent with the Athletic Fields Master Plan (2014).
- 0** Add additional natural turf soccer fields at Oak Grove Farm similar to the Athletic Fields Master Plan (2014)

Increase funding options and sources dedicated to field improvements.

- 2** Increase user fees for in-Town programs that use the fields.

**ANY OTHER COMMENTS:**

## **Community Meeting Summary**

February 7<sup>th</sup>, 2019

Town Hall – Board of Selectmen Room

Attendees – approximately 25

The meeting was broadcast live through Millis Community Media and a recording of that broadcast has been made available through [www.millismedia.org](http://www.millismedia.org) under the video title “Open Space Forum 2/7/19”. The feedback below was collected at the meeting.

### **Results of the S.W.O.T. (Strengths, Weaknesses, Opportunities, and Threats) Exercise:**

#### **Strengths**

- Community Preservation Committee (CPC) funding is available for use to advance open space priorities
- Wetland and river assets in the Town are great for activity, birds, and natural habitats
- Hidden resources, need signage and more people would know about them.
- Tree canopy and tree cover in the Town.
- Rebuild and expand existing fields.

#### **Weaknesses**

- Lack of recreation fields – track, sports, active recreation on Millis’ open space
- Lack of walking trails
- Conservation land contains many wetlands limiting potential recreation opportunities
- Lack of outdoor recreation facilities for seniors
- Limited funding capacity to acquire and develop parks and open space properties, particularly Chapter 61 properties
- No tax revenue to the Town from the Army Corps flood protection lands
- Current track facility does not conform to high school regulations for use in competitive meets, is closed and unsafe. New track would benefit all residents
- Sports/school fields in need of renovation
- No money to maintain
- Development for intersection with residents (signs, etc.)
- Dying trees (Oaks) at Oak Grove Farm, ticks in Oak Grove, and beavers that bring down trees.
- No pool in town

#### **Opportunities**

- Create map of all Town park and open space assets and plan for usage and signage
- Reserve funds annually to quickly respond to land that becomes available for parks or conservation
- Add more connected walking trails throughout the town and the existing open space and conservation network
- Form an open space and recreation implementation committee to advance the recommendations of the open space and recreation plan
- Design recommendations that could enhance open space flood storage and enhance resilience of town for storm events
- Use State funding for acquisition of land for conservation or open space and improvement of existing open spaces
- Convert the rail spur at the center of Town into a bike path
- Add more canoe launch locations on the Charles River

- Develop for use by neighboring towns through permits?
- Rebuild track and football/soccer field in grass

#### Threats

- Climate change could cause more frequent or lasting flooding in flood storage areas, diminishing storage capacity and wetland functionality with increased precipitation
- Flooding impedes roadways causing excessive traffic, vehicle emissions, and damage to infrastructure, vehicles, and property
- Wetlands not maintained causing roadway flooding
- No finances to develop access or knowledge of resources
- Funding to purchase Chapter 61A properties
- No tax revenue from Army Corps Land

#### **Results of Initial Goals Prioritization**

(10) Initial Goals were drafted for this meeting based on the 1999 OSRP and analysis and discussions that have occurred prior to the Community Meeting for this current OSRP process. Each goal included objectives that were voted on for priority by meeting attendees. The goals are prioritized below based on the number of dots each of its objectives received. The number (#) of dots noted in parentheses. Each participant was given (6) dots to vote for priorities.

#### High Priority

- G1. Strengthen open space connections to expand a growing regional greenway and trail network. (15)
- G2. Provide access to Town-owned land and conservation land. (11)
- G3. Identify and implement long range recreational needs and strategies. (9)
- G4. Develop diverse park and outdoor recreation facilities with increased accessibility for all Millis residents, including residents with special needs and seniors. (9)

#### Mid Priority

- G5. Preserve, protect, and enhance surface water quality as it relates to habitat, groundwater resources, and recreation. (5)
- G6. Protect the Town's remaining farms. (4)
- G7. Develop opportunities and methods for environmental education. (4)
- G8. Strengthen climate resilience through open space strategies. (4)

#### Low Priority

- G9. Preserve, protect, and enhance the quantity and quality of the Town's present and future wells used for drinking water. (3)
- G10. Identify, preserve, and protect Millis' heritage and character, through its unique physical features and ecologically sensitive areas. (2)

#### **Results of Initial Objective Prioritization**

No edits or additions were made to the preliminary draft list of goals and objectives provided at the Community Meeting. Priorities were added by dot voting from meeting participant. The following list provides the draft goals and objectives that received dot votes with the number (#) of dots noted in parentheses. Each participant was given (6) dots to vote for priorities. The goal under which the objective is currently nested is shown after the dot count and references the list of goals above (G1 through G10).

#### High Priority

- Evaluate cross-town and inter-town routes for pedestrian paths, bikeways, horseback riding, and cross-country skiing, with respect to potential for acquisition and development. (7) (G1)

- Combine open space park systems and active recreational areas in order to promote greater use of all open space. (6) (G2)
- Develop recreational opportunities for special needs groups, such as seniors, disabled, and young children. (5) (G4)
- Develop a public awareness of recreational opportunities in Millis, promote local and regional trail systems and develop support for trails on publicly owned land. (4) (G1)
- Link school campuses by creating trails to other Town-owned land, thus making use of school parking areas on weekends for those using recreation facilities. (4) (G2)
- Contribute to the LandLine, a vision to connect greenways and trails into a seamless regional network, including a trail system at Bogastow Brook and the Charles River. (3) (G1)
- Strengthen neighborhood, school, local government, and business participation in the planning, development, and maintenance of recreation facilities. (3) (G3)
- Encourage multiple use recreation facilities through the coordinated efforts of schools, town boards, and private organizations. (3) (G3)
- Provide sidewalks from Island Road to Orchard Street for safe access to Oak Grove Farm. (3) (G4)
- Preserve and promote agricultural land and agricultural uses of existing operating farms through restrictions and buy-back/lease-back programs. (3) (G6)
- Facilitate opportunities for the environmental education of town residents. (3) (G7)

#### Mid Priority

- Develop a program for optimum passive uses of Oak Grove Farm. (2) (G3)
- Develop a system of greenbelts along rivers and streams, such as the Charles River and Bogastow Brook, and retention of 50- to 100-foot buffer zones. (2) (G5)
- Clean ditches and streams to maintain free flow of water, providing proper drainage and thereby minimizing flood problems. (2) (G5)
- Identify synergies for maintenance and acquisition programs to benefit open space and climate resilience. (2) (G8)
- Establish priorities for the protection of key conservation and recreation properties and connectors. (1) (G1)
- Gain access to landlocked Town-owned land and conservation land by acquiring access to those lands in fee or easement. (1) (G2)
- Pursue a variety of land acquisition and maintenance programs, including private donations, easements, land trust organizations, and state and federal assistance. (1) (G3)
- Identify Town-owned parcels and additional parcels for purchase to develop small neighborhood play areas or quiet spaces. (1) (G4)
- Prevent problems with aquatic weeds and septic system leachate and encourage retention of vegetation for 100 feet by preventing building encroachment near ponds. (1) (G5)
- Encourage owners of forest land and farmland to enter into Chapter 61 and Chapter 61A registration. (1) (G6)
- Prepare a curriculum for all levels of school programs to enhance awareness of ecological concerns. (1) (G7)
- Recommend how and where significant protected open space areas can contribute to resilience strategies. (1) (G8)
- Prioritize open space investments that would benefit vulnerable populations identified through the Municipal Vulnerability Preparedness (MVP) program. (1) (G8)

- Review Board of Health Regulations to ensure that the greatest possible protection of surface water and groundwater is being implemented by the Town. (1) (G9)
- Support the objectives of the Millis groundwater protection zoning bylaw. (1) (G9)
- Continue to collect specific information on the extent of the town's groundwater recharge areas. (1) (G9)
- Protect by means of inventory, survey, and designation as federal or local historic districts those properties with important historical or scenic significance. (1) (G10)
- Consider creation of historic districts in the Rockville section and in the vicinity of Towle Corner, including Oak Grove Farm and Orchard Street. (1) (G10)

#### Low Priority (received no dot votes)

- Develop park facilities near existing concentrations of housing. (0) (G4)
- Acquire by fee, easement, or restriction additional parcels for watershed protection. (0) (G5)
- Identify parcels of land within the two U.S. Army Corps of Engineers Natural Valley Storage Areas that are currently under easement and pursue acquisition. (0) (G5)
- Identify possible farmlands for preservation under the Agricultural Preservation Restriction Act. (0) (G6)
- Grow resident awareness of the environmental education information available at resources such as the Norfolk County Agricultural School. (0) (G7)
- Encourage multiple uses of school and other Town-owned lands for environmental education purposes for all age groups. (0) (G7)
- Acquire property for future well development. (0) (G9)
- Protect by means of easements, zoning, or purchase those properties with unique ecological, scenic vistas or archaeological qualities. (0) (G10)

#### **Individual Comments from Handouts**

As part of the community meeting, attendees were given handouts that asked about their experience with existing open space and recreation resources in Millis. The questions and answers given are below.

#### Let us know the parks, open spaces, or conservation areas you visit regularly:

- Oak Grove (3)
- Charles River/Banks (2)
- Town Park 1A – Prospect Hill Park
- High School Fields
- Tangerini's Farm

#### What would make these better for you?:

- A Townwide map of all open spaces
- Knowing where these open space areas are and what they offer.
- More "active", sports fields facilities!
- Maintenance, funding and support

#### Any other comments or information?:

- Check and use Annual Town of Millis Census data for households/population
- Convert rails to bike paths to link areas of town; open spaces, other Towns! For commuters, walking trails, and bike paths
- Active fields for "level" school population that is underserved last 15 years
- Look at State data on "tree loss" in Millis due to Gypsy moth blight – DCR website

#### **MVP Workshop**

Town of Millis Open Space and Recreation Plan

#### **Appendix 1: Public Comments**

## Municipal Vulnerability Preparedness (MVP) Workshop

January 8<sup>th</sup>, 2019

Town Library – Meeting Room

Attendees – approximately 35

In addition to the two Community Forums, the OSRP plan and process were highlighted at the MVP workshop hosted by the Town.

Millis Open Space and Recreation comments received on engagement board with comments from participants:

**Climate Change in Millis: Natural Assets**  
**Millis Open Space and Recreation Plan**

Write your thoughts below and they will be used to inform the Open Space and Recreation Plan

What are the main challenges for open space and recreation amenities?

Low Maintenance ...  
Mapping of open space  
Communication  
Identify Legal Restrictions  
Applying for Grants  
Who maintains the properties + who pays for it?

What should be the primary goals of the open space and recreation plan?

Community Engagement  
Use  
environmental buffers

## **Appendix 2: 2019 Open Space and Recreation Survey**

A Community Survey was prepared to expand outreach and engagement of Millis residents in the Open Space and Recreation Plan. The Community Survey was made available online through the Town's website and paper copies were made available at Town Hall and the Senior Center. The availability of the survey was publicly advertised and promoted.

The Community Survey was available for responses from March 13<sup>th</sup>, 2019 through May 21<sup>st</sup>, 2019. The Community Survey received **478 responses**.

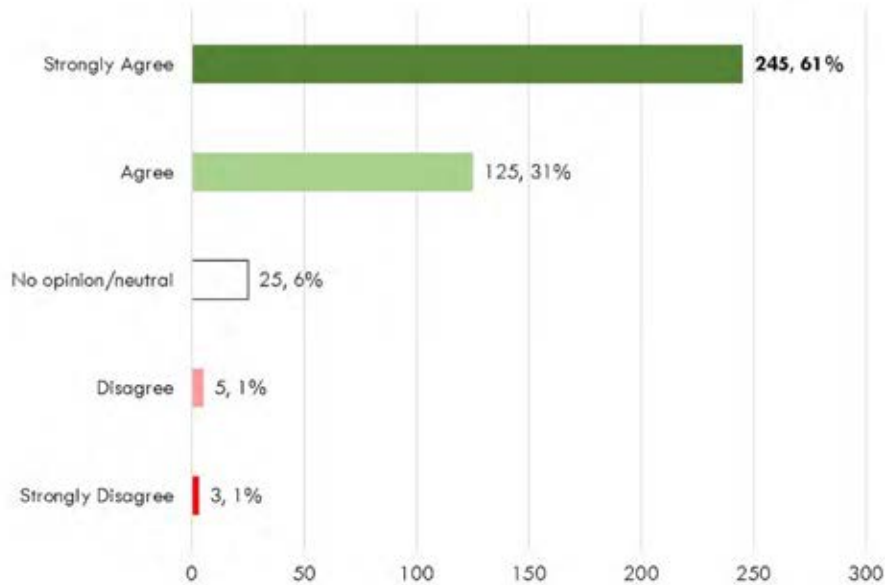
The compiled Community Survey responses are included below followed by the Community Survey form.

# Community Values



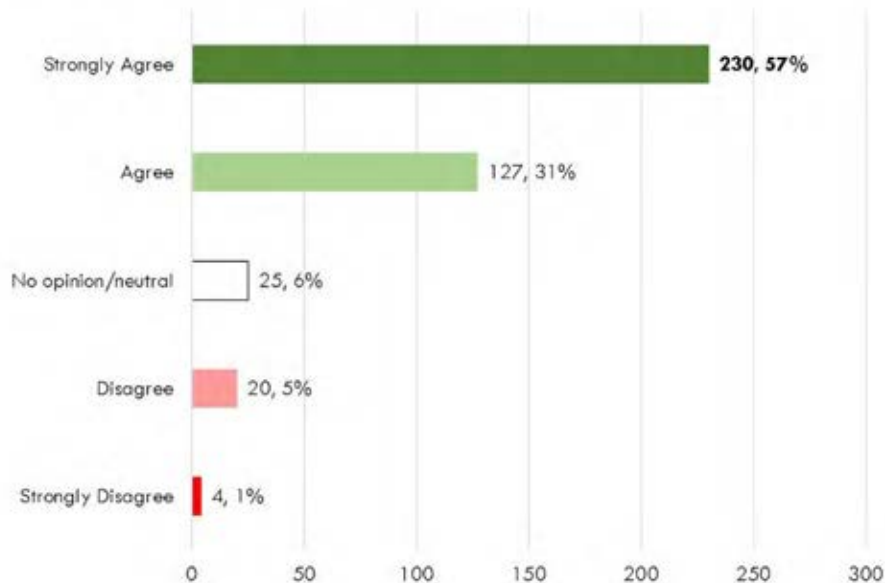
■ Do you agree or disagree with the following statement:

■ *Preserving Millis open space and natural areas is important to me.*



■ Do you agree or disagree with the following statement:

■ *Millis existing open space and recreational amenities contribute positively to overall quality of life.*

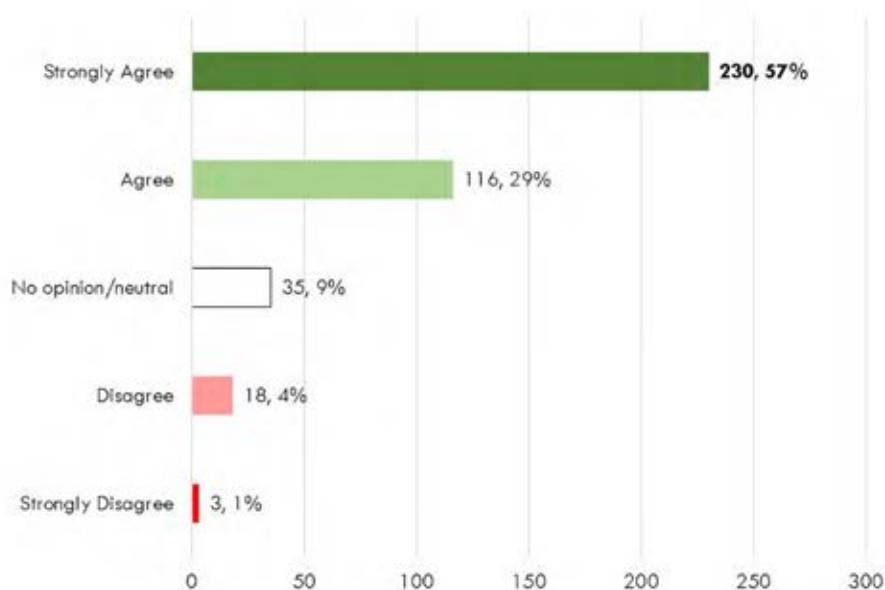


# Community Values



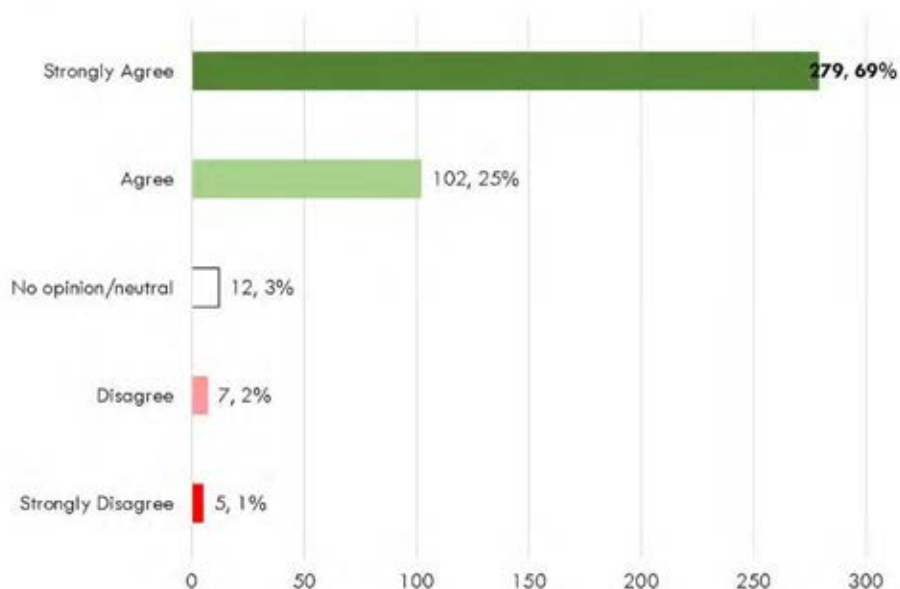
■ Do you agree or disagree with the following statement:

■ *Millis needs to proactively preserve open space.*



■ Do you agree or disagree with the following statement:

■ *Millis needs to proactively plan for the recreational needs of its residents.*

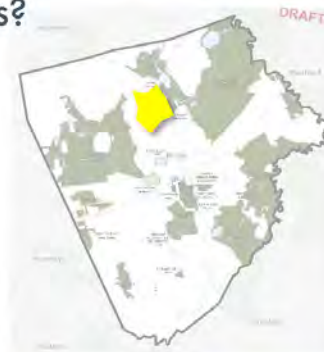
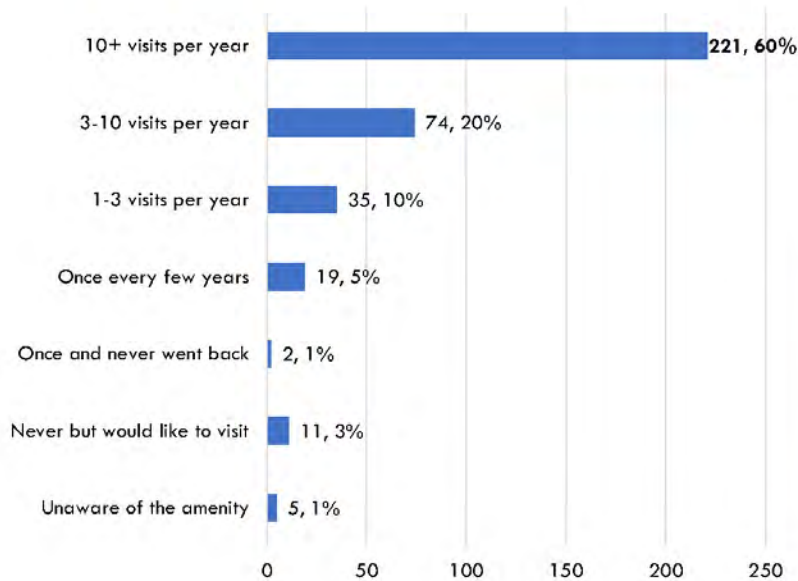


# Awareness and Usage



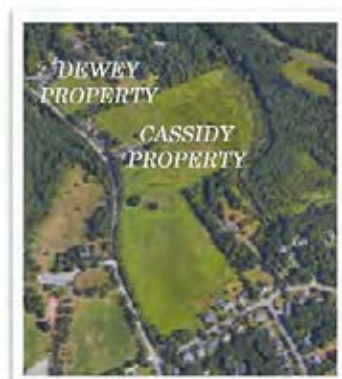
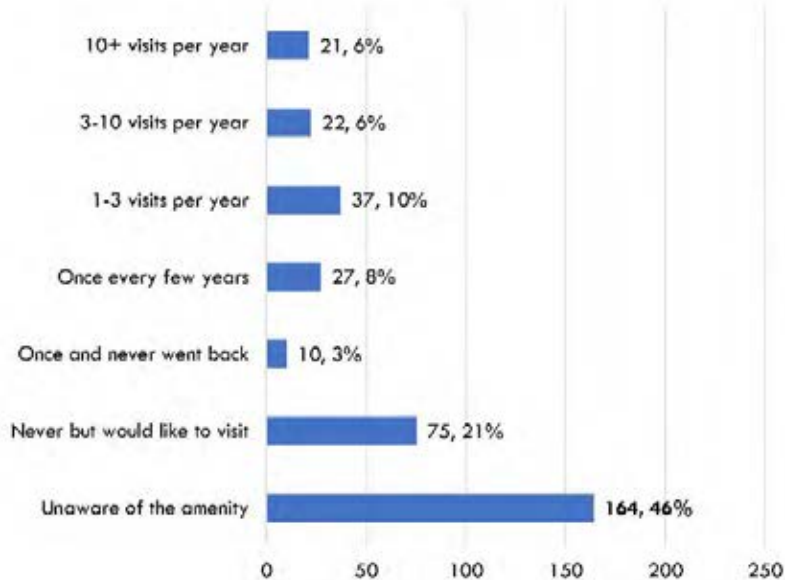
## How often do you visit or use the following parks?

### Oak Grove



## How often do you visit or use the following parks?

### Dewey and Cassidy Properties

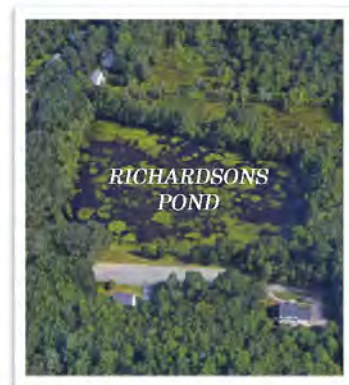
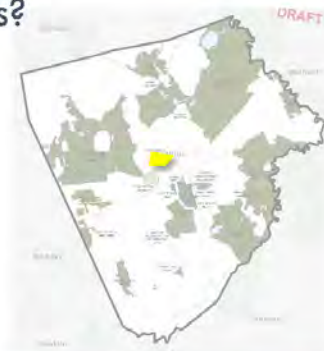
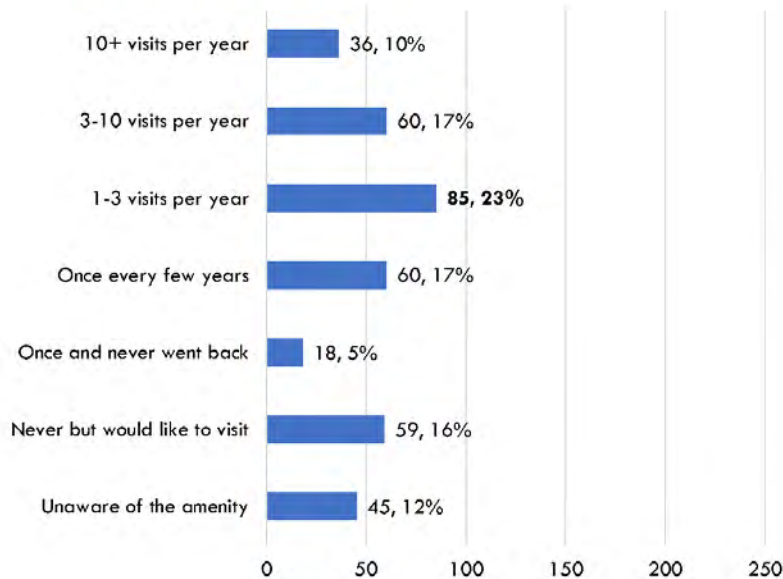


# Awareness and Usage



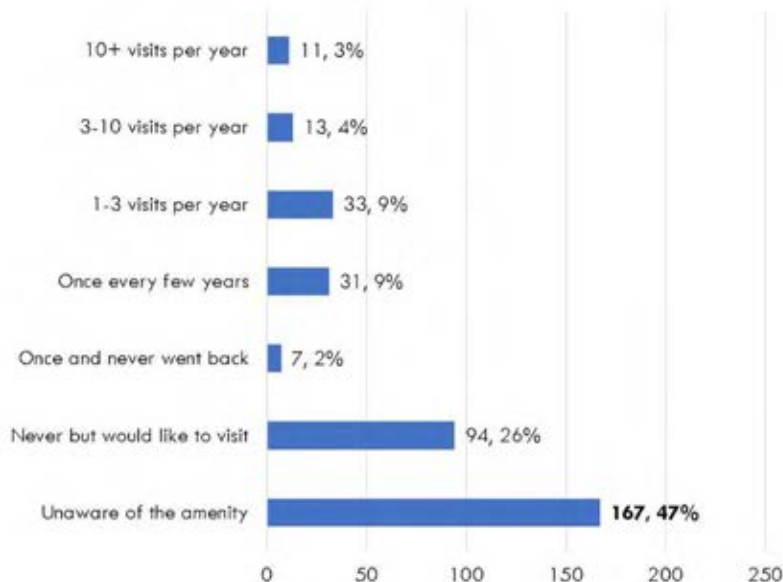
## How often do you visit or use the following parks?

### Richardsons Pond



## How often do you visit or use the following parks?

### Pleasant Meadows Farm

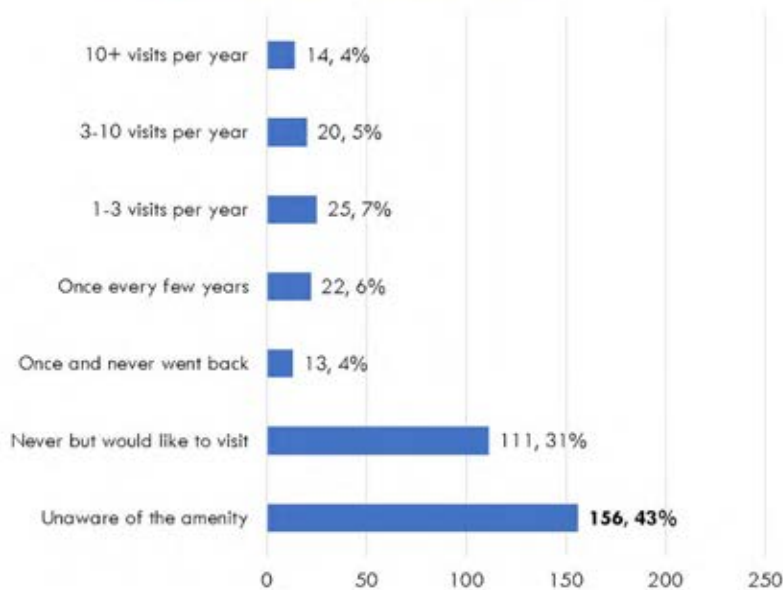


# Awareness and Usage



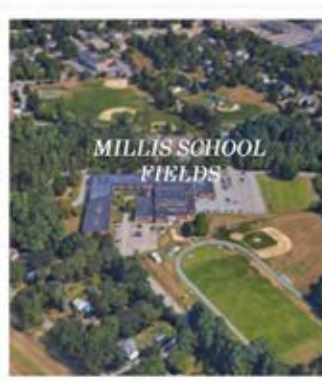
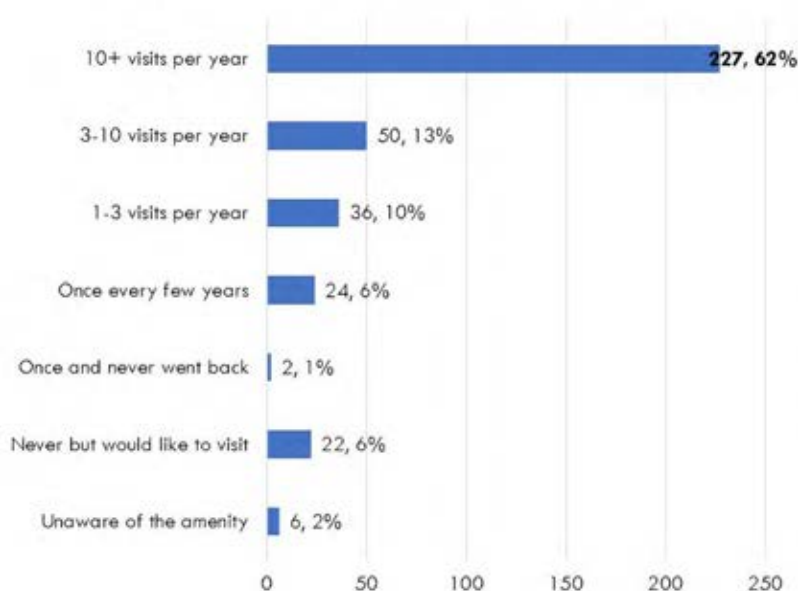
## How often do you visit or use the following parks?

### Village Street Conservation Area



## How often do you visit or use the following parks?

### Millis School Fields

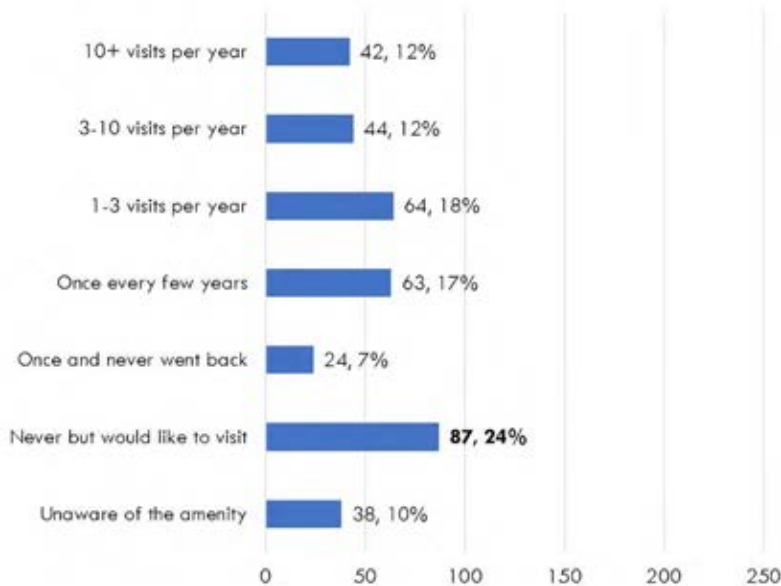


# Awareness and Usage



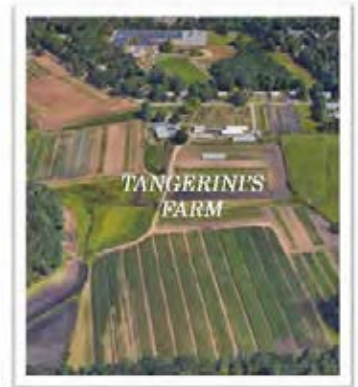
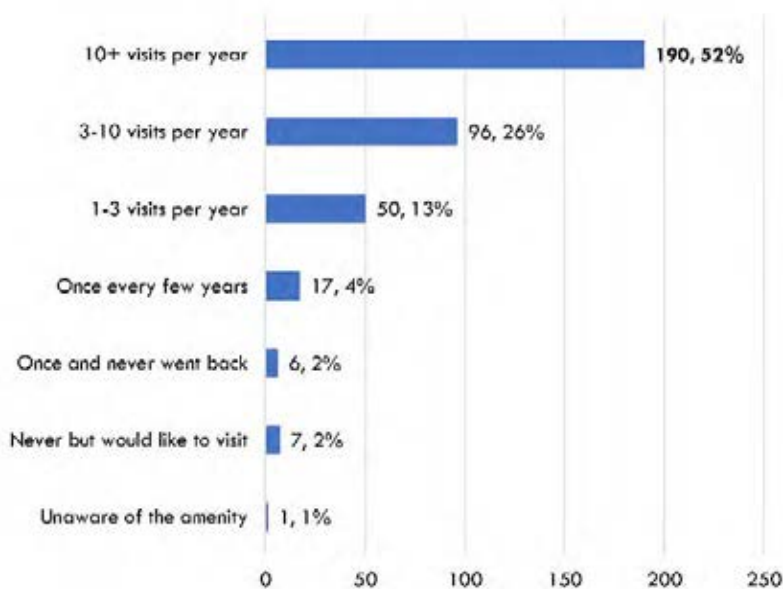
## How often do you visit or use the following parks?

### Prospect Hill Cemetery



## How often do you visit or use the following parks?

### Tangerini's Farm

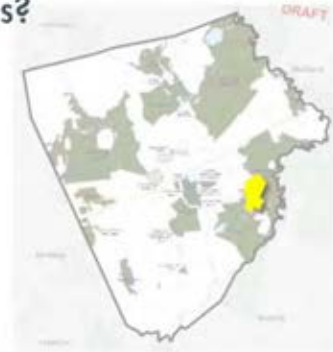
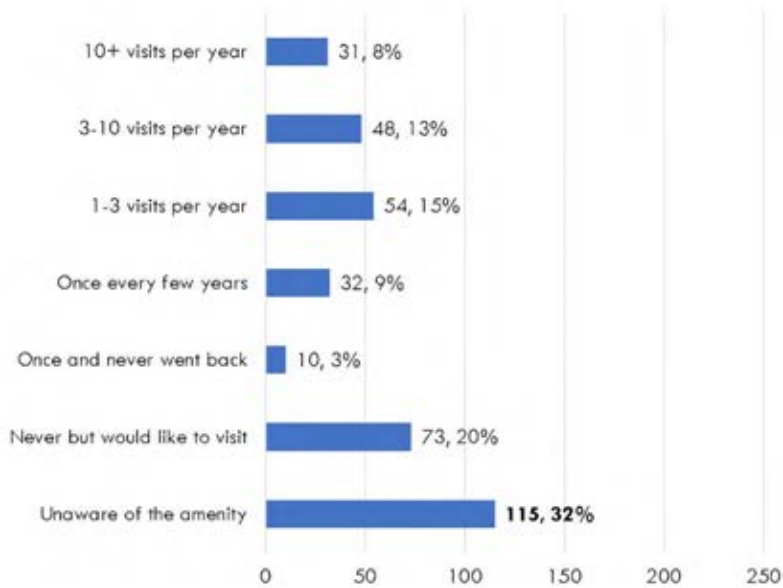


# Awareness and Usage



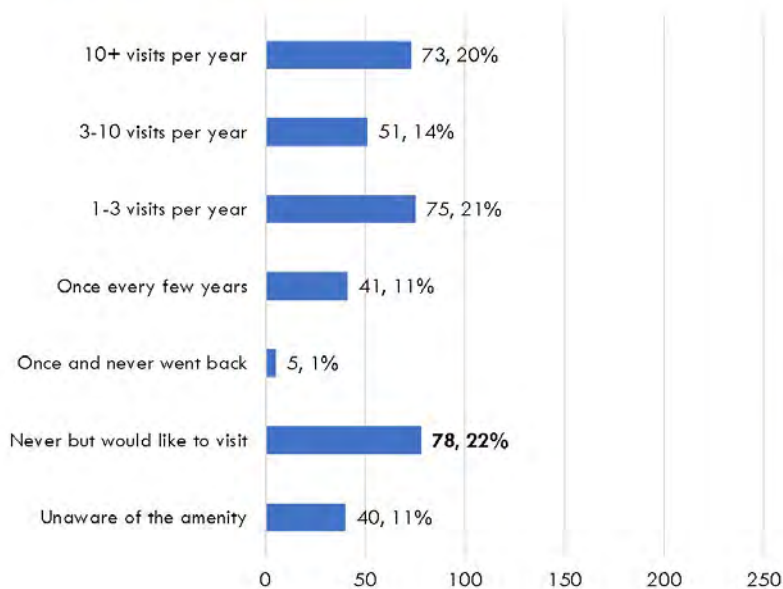
## How often do you visit or use the following parks?

### Cedariver Reservation



## How often do you visit or use the following parks?

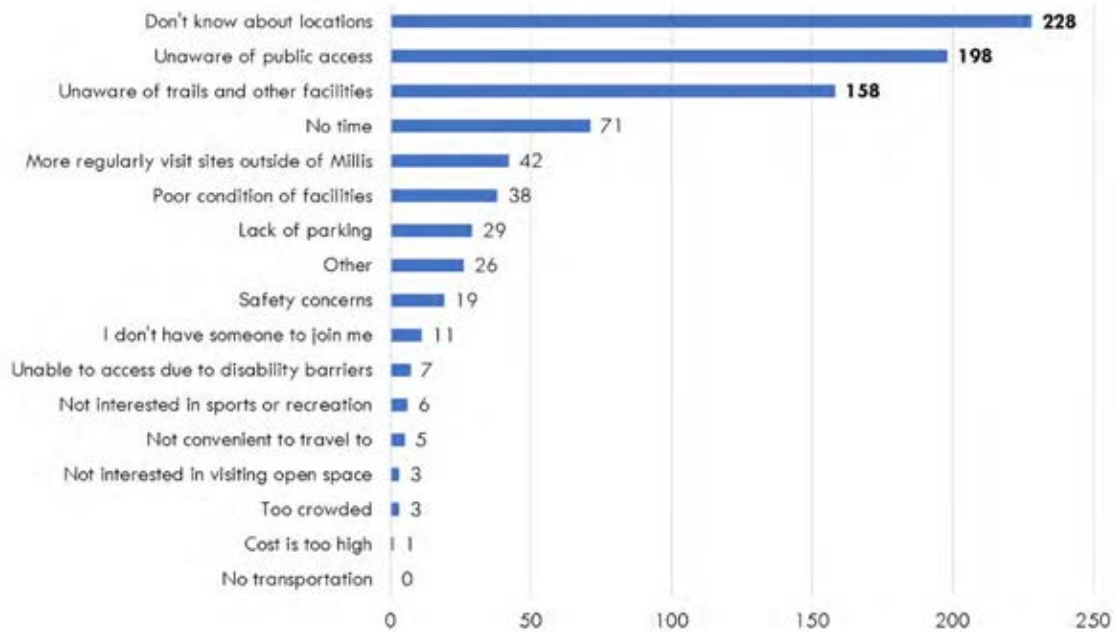
### Charles River



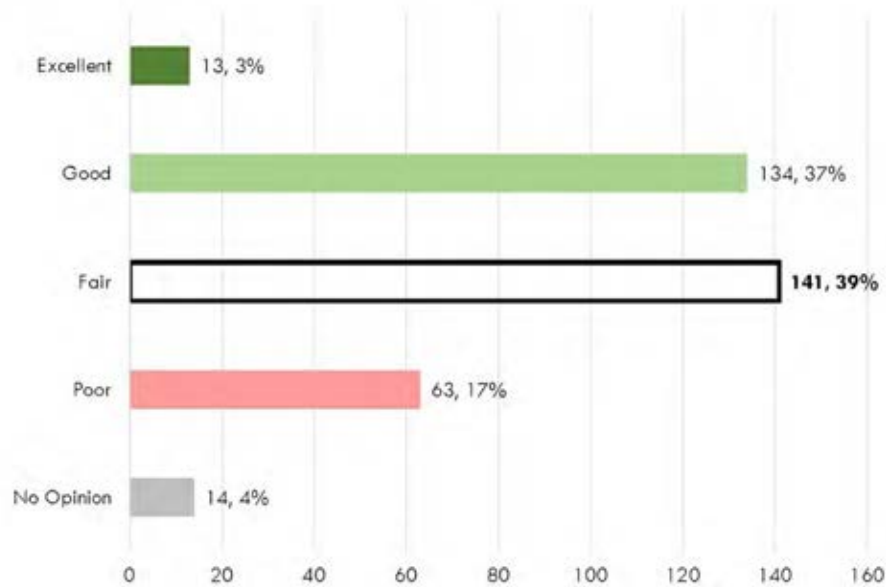
# Awareness and Usage



## ■ What prevents you from utilizing Millis open space amenities?



## ■ How would you evaluate the overall quality of recreational facilities in Millis?



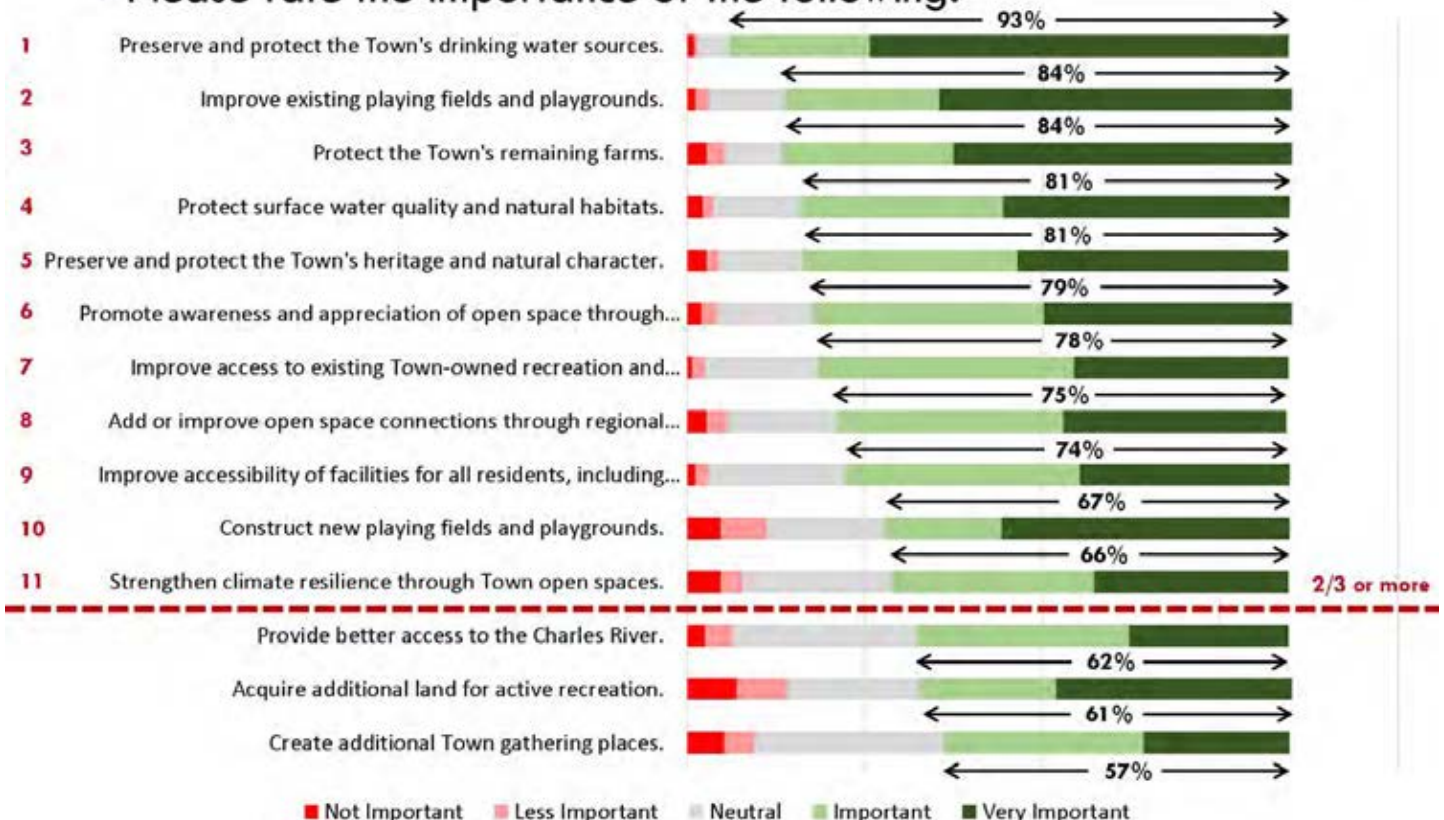
- Comments on how facilities could be improved:



## Priorities



- Please rate the importance of the following:





- 
- A word cloud of terms related to the project, including: field, space, town, land, area, purchase, park, oak, grove, farm, open, cassidy, property, trail, school, old, light, mill, and gaf. The words are in various shades of blue and purple, with 'town' and 'land' being the most prominent.



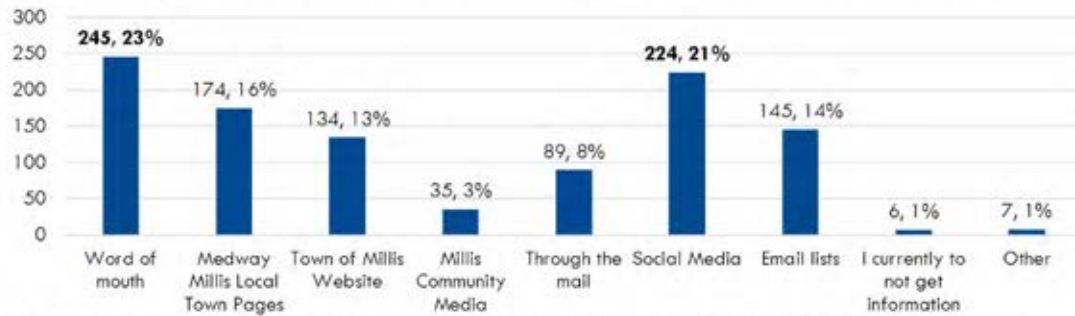
- 
- A bar chart showing the number of respondents by age group for the question 'How many people do you know who are in the military?'. The y-axis represents the number of respondents, ranging from 0 to 160 in increments of 20. The x-axis lists seven age categories: '19 or younger', '20-29', '30-39', '40-49', '50-59', '60 or older', and 'Prefer not to answer'. Each bar is blue and labeled with its value and percentage of the total.
- | Age Group            | Number of Respondents | Percentage |
|----------------------|-----------------------|------------|
| 19 or younger        | 0                     | 0%         |
| 20-29                | 6                     | 2%         |
| 30-39                | 63                    | 19%        |
| 40-49                | 135                   | 40%        |
| 50-59                | 68                    | 20%        |
| 60 or older          | 58                    | 17%        |
| Prefer not to answer | 6                     | 2%         |

- 
- | Category                | Count | Percentage |
|-------------------------|-------|------------|
| 1-10 years              | 115   | 34%        |
| 11-20 years             | 103   | 31%        |
| 21+ years               | 109   | 33%        |
| I do not live in Millis | 4     | 1%         |
| Prefer not to answer    | 3     | 1%         |

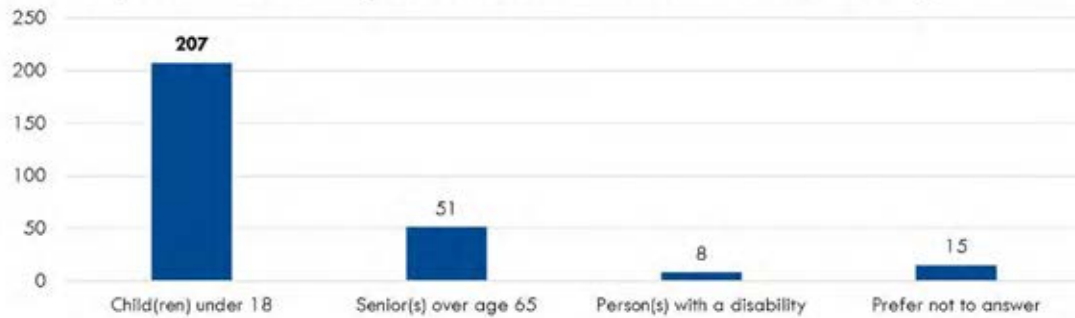
# Respondent Information



## How do you currently obtain information about Town news?



## Do any members of your household match the following?



# Open Responses



## Other comments?





Town of Millis  
Open Space and Recreation Plan (OSRP)

## Community Survey

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### Welcome

We need your input!

The Town of Millis is updating its Open Space and Recreation Plan (OSRP) and we want to hear from you. The Millis OSRP will guide the Town's actions in maintaining, protecting, and improving its open spaces, parks, and recreational resources by setting goals, actions and priorities for the next seven years. By completing the OSRP update, the Town of Millis will become eligible for state funds to improve conservation and recreation resources. It is important that our open space and recreation amenities contribute to the character of our Town and improve residents' quality of life, so we want to know what matters most to you.

More information about the Millis Open Space and Recreation Plan update process can be found at the following on the Town's website ([www.millis.org](http://www.millis.org)).

Your survey answers will help the Town identify opportunities for significant, long-term improvements that provide the greatest benefit to people who live, work, and play in Millis.

All questions are optional and your responses are kept anonymous. This survey should take no longer than ten minutes to complete and your answers are saved as you go. Thank you for taking the time to complete this survey!

Questions? Contact Robert Weiss, Town of Millis Energy Manager, at [rweiss@millisma.gov](mailto:rweiss@millisma.gov) or (508) 376-7040 ext. 106. Or, Josh Fiala, Project Manager, MAPC, at [jfiala@mapc.org](mailto:jfiala@mapc.org) or (617) 451-2770 ext. 760

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### Welcome

## Community Values

Do you agree or disagree with the following statements:

	Strongly Agree	Agree	No opinion/ neutral	Disagree	Strongly Disagree
Preserving Millis open space and natural areas is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Millis existing open space and recreational amenities contribute positively to overall quality of life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Millis needs to proactively preserve open space.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Millis needs to proactively plan for the recreational needs of its residents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Community Values

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### Awareness and Usage of Open Space and Recreational Amenities

How often do you visit or use the following parks, playgrounds, open space or conservation areas for active or passive recreation, e.g. sports, jogging, walking, canoeing/kayaking, bird watching? A description of Millis parks and playgrounds, as well as a map indicating the location of open space and recreation properties throughout the Town, can be found at the Town of Millis homepage and through the 2-7-19 Community Meeting presentation.

	10+ visits per year	3-10 visits per year	1-3 visits per year	Once every few years	Once and never went back	Never but would like to visit	Unaware of the amenity
Oak Grove	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dewey and Cassidy Properties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Richardson's Pond	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasant Meadows Farm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Village Street Conservation Area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
School Fields	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prospect Hill Cemetery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tangerini's Farm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cedariver Reservation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Charles River	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What prevents you from utilizing Millis open space and recreation amenities listed in the previous questions? Check all that apply.

- ☐ Don't know about locations
- ☐ Unaware of public access
- ☐ No time
- ☐ Unable to access due to disability barriers
- ☐ Unaware of trails and other facilities
- ☐ Unable to access due to lack of transportation
- ☐ Not convenient to travel to
- ☐ More regularly visit sites outside of Millis
- ☐ Lack of parking
- ☐ Not interested in visiting open space
- ☐ Not interested in recreation or sports
- ☐ Safety concerns
- ☐ I don't have someone to join me
- ☐ Poor condition of facilities
- ☐ Too crowded
- ☐ Other (Please specify) \_\_\_\_\_

How would you evaluate the overall quality of the recreational facilities in Millis?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ No opinion

Please provide any general comments you have on specific Town facilities and public spaces. (e.g. better lighting, restrooms, new benches, more trees, better maintenance, etc.)

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#### Awareness and Usage of Open Space and Recreational Amenities

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##### Priorities

Please rate the importance of the following to you:	Very Important	Important	Neutral	Less Important	Not Important
Add or improve open space connections through regional greenways and trail networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve access to existing Town-owned recreation and conservation land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide better access to the Charles River	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve existing playing fields and playgrounds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Construct new playing fields and playgrounds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acquire additional land for active recreation, e.g. playgrounds, ballfields	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create additional Town gathering places	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve accessibility of facilities for all residents including residents with special needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Protect surface water quality and natural habitats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Protect the Town's remaining farms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Promote awareness and appreciation of open space through education and outreach

☐☐☐☐☐

Strengthen climate resilience through Town open spaces

☐☐☐☐☐

Preserve and protect the Town's drinking water sources

☐☐☐☐☐

Preserve and protect the Town's heritage and natural character

☐☐☐☐☐

Other (Please specify)

☐☐☐☐☐

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Are there any parcels of land you think the Town should investigate purchasing or permanently protecting for new conservation or recreation land?

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Priorities

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## Respondent Information

To help us better understand community needs, please tell us a little about yourself. All questions are optional and responses are kept anonymous.

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How do you currently obtain information about Town news, events, and activities? Check all that apply.

- ☐ Word of mouth
  - ☐ Medway Millis Local Town Pages
  - ☐ Town of Millis website
  - ☐ Television, e.g. Millis Community Media
  - ☐ Through the mail
  - ☐ Social media/online groups, e.g. Facebook, Twitter
  - ☐ Email lists
  - ☐ I currently do not obtain any information of this type
  - ☐ Other (Please specify) \_\_\_\_\_
-

What is your age?

- ☐ 19 or younger
  - ☐ 20-29
  - ☐ 30-39
  - ☐ 40-49
  - ☐ 50-59
  - ☐ 60 or older
  - ☐ Prefer not to answer
- 

How long have you lived in Millis?

- ☐ 1-10 years
  - ☐ 11-20 years
  - ☐ 21+ years
  - ☐ I do not live in Millis
  - ☐ Prefer not to answer
-

Do any members of your household - including yourself - match the following descriptions? Check all that apply.

- ☐ Child(ren) under 18
- ☐ Senior(s) age 65 or above
- ☐ Person(s) with a disability
- ☐ Prefer not to answer

### Respondent Information

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#### Thank You

Please use the space below to add any other comments you may have.

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Thank you for taking the time to provide your input on this survey!

For more information about the Open Space and Recreation Plan, please visit the Town of Millis homepage at [www.millis.org](http://www.millis.org)

#### Thank You

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### **Appendix 3: ADA Accessibility Self-Evaluation**

The ADA Accessibility Self-Evaluation consists of Administrative Requirements for Town of Millis programs and policies that are reflected in the following documents:

- **Designation of ADA Coordinator** – The official designation of the employee responsible for ADA coordination with name and position title, signed by the chief municipal officer.
- **Grievance Procedures** – The procedure for the general public to follow in the event that a complaint must be made.
- **Public Notification Requirements** – Employees and the public must be notified that the community does not discriminate on the basis of disability. A copy of the Equal Opportunity Employment clause that must be included in any recruitment materials or publications and evidence that notices are also made available for the visual and learning impaired.
- **Statement from the ADA Coordinator** – Signed statement attesting to the fact that the town's employment practices are in compliance with the American with Disabilities Act. The following categories must be included in this statement: Recruitment, Personnel Actions, Leave Administration, Training, Tests, Medical Exams/Questionnaires, Social and Recreational Programs, Fringe Benefits, Collective Bargaining Agreements, and Wage and Salary Administration.

The ADA Accessibility Self-Evaluation also consists of an ADA facility inventory and transition plan for each of the Town-owned Conservation and Recreation facilities. The Town-owned facilities were evaluated for this ADA inventory in May of 2019 and include:

- Oak Grove Farm (managed by Oak Grove Farm Commission)
- Town Park Fields (managed by Millis Department of Public Works)
- Gerry Sisto Field (managed by Millis Department of Public Works)
- Pleasant Meadows Farm (managed by Millis Conservation Commission)
- Village Street Conservation Area (managed by Millis Conservation Commission)
- Cassidy Property (managed by Millis Conservation Commission)
- Richardson's Pond (managed by Millis Conservation Commission)
- South End Pond (managed by Millis Conservation Commission)
- Pleasant Street Conservation (managed by Millis Conservation Commission)

The on-site ADA inventory was performed using the ADA evaluation templates provided in the Open Space and Recreation Planner's Workbook, 2008. Many of the properties evaluated in Millis have minimal facilities that would require ADA compliance, but all facilities listed were evaluated. A summary table shows the facilities available at each property, this is followed by more detailed evaluations and recommendations for each of the properties. It is the one of the goals of the Town to improve accessibility of facilities for all residents, including residents with special needs. The transition plan provides recommendations for how to achieve that goal.

**Summary Table ADA Accessibility Self-Evaluation**

<b>Location</b>	<b>Parking</b>	<b>Pathway</b>	<b>Toilet Facility</b>	<b>Feature(s)</b>	<b>Picnic Area</b>
Oak Grove Farm (managed by Oak Grove Farm Commission)	✓	✓	✓	Playground, soccer fields, softball/base ball fields, trails	✓
Town Park Fields (managed by Millis Department of Public Works)	✓	✓		Playground, softball/base ball fields, tennis courts, basketball courts	
Gerry Sisto Field (managed by Millis Department of Public Works)	✓	✓		Baseball field	✓
Pleasant Meadows Farm (managed by Millis Conservation Commission)	✓	✓		Trails	✓
Village Street Conservation Area (managed by Millis Conservation Commission)	✓	✓		Trails	
Cassidy Property (managed by Millis Conservation Commission)				None	
Richardson's Pond (managed by Millis Conservation Commission)	✓	✓		Trails	✓
South End Pond (managed by Millis Conservation Commission)				None	
Pleasant Street Conservation (managed by Millis Conservation Commission)				None	

## Individual Property ADA Accessibility Self-Evaluation

**Oak Grove Farm** (managed by Oak Grove Farm Commission)

Facility	Evaluation
Parking	<ul style="list-style-type: none"> <li>Oak Grove Farm includes two parking areas, both include accessible parking signage. The lower parking lot does not include signage mounted at the proper height. Both parking areas are gravel and not striped. The lower parking lot does not connect to an accessible path.</li> </ul>
Pathway	<ul style="list-style-type: none"> <li>The upper parking area and accessible parking spaces connect to a brick accessible path that provides the proper width and slope for an accessible pathway.</li> <li>This pathway leads to a seating area, picnic tables, and the playground.</li> <li>A large granite stone is laid into the ground at the beginning of the brick path and presents an accessibility issue with the height of the unevenness of its transition to the brick.</li> <li>No accessible pathway is provided to playing fields or trails.</li> </ul>
Toilet Facility	<ul style="list-style-type: none"> <li>One seasonal port-a-pottie is provided, but it is not accessible nor can accommodate a wheelchair</li> </ul>
Playground	<ul style="list-style-type: none"> <li>The playground is adjacent to the accessible pathway, but is depressed from the surrounding area by approximately 2 feet. This depression creates an accessibility barrier at the perimeter of the entire playground.</li> <li>No accessible play equipment is provided at the playground.</li> </ul>
Picnic Area	<ul style="list-style-type: none"> <li>There are two picnic tables, one picnic table is an accessible design with deep overhang at one end.</li> <li>The accessible picnic table is adjacent to the accessible pathway. Surface under tables grass and is stable and relatively evenly graded.</li> </ul>
<p><b>Recommendations:</b></p> <p>Oak Grove Farm is one of the most visited park facilities in Millis and should be prioritized for accessibility improvements. The Town of Millis should consider paving and striping the accessible parking spaces and adding signage at the proper height for the lower parking area. The Town should consider adding an accessible pathway to ball fields from the improved lower accessible parking area. When investments are made to the playground an accessible access point should be added along with universally accessible play equipment. The port-a-pottie should be replaced with one that is wheelchair accessible.</p>	

**Town Park Fields** (managed by Millis Department of Public Works)

Facility	Evaluation
Parking	<ul style="list-style-type: none"> <li>• Accessible parking areas for these fields are shared with either Town Hall or the Schools. Both locations offer fully compliant accessible parking.</li> </ul>
Pathway	<ul style="list-style-type: none"> <li>• No clearly marked pathway from accessible parking locations to the playing fields is provided.</li> <li>• No accessible pathway to playing fields or spectator areas is provided once entering the fenced grass park area.</li> </ul>
Playground	<ul style="list-style-type: none"> <li>• As part of the ongoing school construction, a new playground will replace a playground that its construction has displaced. This playground will provide universally accessible play equipment and an accessible path to the playground.</li> </ul>
<p><b>Recommendations:</b>  The Town Park fields should be improved with a clearly marked, even, non-grass surface that provides an accessible pathway to playing fields and spectator areas. The spectator areas should be improved to provide clearly marked accessible viewing areas.</p>	

**Gerry Sisto Field** (managed by Millis Department of Public Works)

Facility	Evaluation
Parking	<ul style="list-style-type: none"> <li>• No accessible parking spaces are offered in the on-street parking adjacent to Sisto Field.</li> <li>• Accessible parking area for the field could be provided at the adjacent Town Hall, but an accessible pathway may be too far.</li> </ul>
Pathway	<ul style="list-style-type: none"> <li>• No accessible pathway to playing fields or spectator areas is provided.</li> </ul>
Picnic Area	<ul style="list-style-type: none"> <li>• A picnic table is provided, but it is not an accessible table</li> <li>• Surface under table is paved and evenly graded</li> </ul>
<p><b>Recommendations:</b>  Sisto Field should be improved with a clearly marked, even, non-grass surface that provides an accessible pathway to the playing field and spectator areas. The spectator areas should be improved to provide clearly marked accessible viewing areas. An accessible picnic table should also be provided.</p>	

**Pleasant Meadows Farm** (managed by Millis Conservation Commission)

Facility	Evaluation
Parking	<ul style="list-style-type: none"><li>• A small gravel parking area and turn around is provided, but no accessible parking spaces are provided</li></ul>
Pathway	<ul style="list-style-type: none"><li>• No accessible pathways exist at the property</li></ul>
Picnic Area	<ul style="list-style-type: none"><li>• Several benches and picnic tables and an old shelter area are available on the property, but none are accessible.</li></ul>
<b>Recommendations:</b> If improvements are made at the property, an accessible parking space should be provided with an accessible path that connects to a picnic area or scenic area near the main trailhead on the property. An accessible picnic table should be provided at this area to complement these improvements.	

**Village Street Conservation Area** (managed by Millis Conservation Commission)

Facility	Evaluation
Parking	<ul style="list-style-type: none"><li>• An uneven gravel parking lot is provided with no accessible parking spaces.</li></ul>
Pathway	<ul style="list-style-type: none"><li>• An uneven grass pathway is provided into the conservation property but it is not accessible.</li></ul>
<b>Recommendations:</b> An accessible parking space could be provided in the parking lot that connects to a more even accessible path, but it would not likely be able to extend too far into the property. Other identified accessibility improvements would appear to be a higher priority.	

**Cassidy Property** (managed by Millis Conservation Commission)

Facility	Evaluation
Parking	<ul style="list-style-type: none"><li>• No parking, accessible or otherwise, is provided.</li></ul>

Pathway	<ul style="list-style-type: none"> <li>No pathways are provided.</li> </ul>
<b>Recommendations:</b> If the property is improved for additional access or potential recreation playing fields, then those improvements should include accessibility features such as accessible parking, an accessible pathway to recreation features, and accessible spectator areas.	

**Richardson's Pond** (managed by Millis Conservation Commission)

Facility	Evaluation
Parking	<ul style="list-style-type: none"> <li>Parking is provided, but no accessible parking spaces are provided.</li> </ul>
Pathway	<ul style="list-style-type: none"> <li>Trails are provided, but no accessible pathways are provided.</li> </ul>
Picnic Area	<ul style="list-style-type: none"> <li>Tables and benches are provided, but no accessible picnic areas are provided.</li> </ul>
<b>Recommendations:</b> A small portion of the existing parking lot could be paved, marked, and signed for an accessible parking space. The space could connect directly to a short accessible pathway that would provide access to a new accessible seating or picnic area on an evenly graded surface overlooking Richardson's Pond.	

**South End Pond** (managed by Millis Conservation Commission)

Facility	Evaluation
Parking	<ul style="list-style-type: none"> <li>No parking, accessible or otherwise, is provided.</li> </ul>
Pathway	<ul style="list-style-type: none"> <li>No pathways are provided.</li> </ul>
<b>Recommendations:</b> Given the limited nature of access to this property currently, accessibility improvements do not appear to be necessary.	

**Pleasant Street Conservation** (managed by Millis Conservation Commission)

Facility	Evaluation
Parking	<ul style="list-style-type: none"><li>• No parking, accessible or otherwise, is provided.</li></ul>
Pathway	<ul style="list-style-type: none"><li>• No pathways are provided.</li></ul>
<p><b>Recommendations:</b> Given the limited nature of access to this property currently, accessibility improvements do not appear to be necessary.</p>	



# TOWN OF MILLIS

## OFFICE OF THE BOARD OF SELECTMEN and TOWN ADMINISTRATOR

Veterans Memorial Building  
900 Main Street • Millis, MA 02054  
Phone: 508-376-7040  
Fax: 508-376-7053

Michael Guzinski  
Town Administrator  
[mguzinski@millisma.gov](mailto:mguzinski@millisma.gov)

Karen M. Bouret  
Operations Support Manager  
[kbouret@millisma.gov](mailto:kbouret@millisma.gov)

June 20, 2019

RE: Town of Millis ADA Coordinator

To Whom It May Concern:

The ADA Coordinator for the Town of Millis is:

**Ms. Karen Bouret**  
**Operations Support Manager**  
**Veterans Memorial Building**  
**900 Main Street**  
**Millis, MA 02054**  
**508-376-7040 ext. 102**  
[kbouret@millisma.gov](mailto:kbouret@millisma.gov)

Please feel free to contact me should you have any questions in regards to this matter.

Sincerely,

Michael J. Guzinski  
Town Administrator

Cc: Board of Selectmen  
Robert Weiss, Energy Manager

GRIEVANCE PROCEDURES FOR COMPLAINTS  
OF DISCRIMINATION ON THE BASIS OF DISABILITY

Adopted: July 22, 2019

The following grievance procedure is established to meet the requirements of the Americans with Disabilities Act. It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in employment practices and policies or the provision of services, activities, programs and benefits by the Town of Millis.

The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date and description of the problem. Reasonable accommodations, such as personal interviews or a tape recording of the complaint, will be made available for persons with disabilities who are unable to submit a written complaint.

The complaint should be submitted by the grievant and/or his/her designee as soon as possible, but no later than 60 calendar days after the alleged violation to:

Town Administrator  
Town of Millis  
900 Main Street  
Millis, Massachusetts 02054  
(508) 376-7040

Within 15 calendar days after receipt of the complaint, the Town Administrator will meet with the complainant to discuss the complaint and possible resolutions. Within 15 days after the meeting, the Town Administrator will respond in writing and, where appropriate, in a format accessible to the complainant such as audiotape. The response will explain the position of the Town of Millis and offer options for substantive resolution of the complaint.

If the response by the Town Administrator does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision of the Town Administrator within 15 calendar days after receipt of the response to the Board of Selectmen, or their designee.

Within 15 calendar days after receipt of the appeal, the Board of Selectmen, or their designee, will meet with the complainant to discuss the complaint and possible resolutions. Within 15 calendar days after the meeting, the Board of Selectmen, or their designee, will respond in writing and, where appropriate, in a format accessible to the complainant such as audiotape, with a final resolution of the complaint.

All complaints received by the Town Administrator, appeals to the Board of Selectmen, or their designee, and responses from the Town Administrator and the Board of Selectmen, or their designee, will be kept by the Town of Millis for at least three years.



# TOWN OF MILLIS

Loring Barnes Edmonds, Chair  
James J. McCaffrey, Vice Chair  
Pete Jumain, Clerk

## OFFICE OF THE BOARD OF SELECTMEN and TOWN ADMINISTRATOR

Veterans Memorial Building  
900 Main Street • Millis, MA 02054  
Phone: 508-376-7040  
Fax: 508-376-7053

Michael Guzinski  
Town Administrator  
[mguzinski@millis.ma.net](mailto:mguzinski@millis.ma.net)

Karen M. Bouret  
Operations Support Manager  
[kbouret@millis.ma.net](mailto:kbouret@millis.ma.net)

The Town of Millis does not discriminate on the basis of disability in admission to, access to, or in the operation of its programs, services or activities. The Town of Millis does not discriminate on the basis of disability in its hiring or employment practices.

This notice is provided as required by Title II of the Americans with Disabilities Act (ADA) of 1990.

Questions, concerns, complaints or requests for additional information regarding the ADA may be forwarded to the Town of Millis' ADA Coordinator:

Karen Bouret  
Operations Support Manager  
Veterans Memorial Building  
900 Main Street  
Millis, Massachusetts 02054

Telephone: (508) 376-7040  
Fax: (508) 376-7053

Individuals who need auxiliary aids for effective communications in programs and services of the Town of Millis are invited to make their needs and preferences known to the ADA coordinator.

This Notice is available in large print and audiotape from the ADA coordinator.



# TOWN OF MILLIS

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Veterans Memorial Building  
900 Main Street • Millis, MA 02054  
Phone: 508-376-7040  
Fax: 508-376-7053

Karen Bouret  
Operations Support Manager  
ADA Coordinator  
[kbouret@millisma.gov](mailto:kbouret@millisma.gov)

June 21, 2019

RE: Statement from ADA Coordinator

To Whom IT May Concern:

The Town of Millis is an Equal Opportunity Employer. As the ADA Coordinator, I can assure you that the Town does not discriminate based on race, sex, color, religion, age, national origin, veterans' status, disability (where it does not fundamentally alter the job, program, or activity), sexual orientation or based on other non-merit factors in the hiring and promotion process. Promotion and recruitment are based on qualifications and all "Help Wanted" advertisements identify the Town of Millis as an Equal Opportunity/Affirmative Action Employer. Moreover, the Town makes all employment decisions, including leave administration, training, tests, medical exams/questionnaires, social and recreational programs, fringe benefits, collective bargaining agreements, and wage and salary administration based on merit; and, toward that end is committed to make reasonable accommodations for disabled persons.

Sincerely,

Karen M. Bouret  
Operations Support Manager  
ADA Coordinator

## Appendix 4: Parks and Open Space Climate Assessment

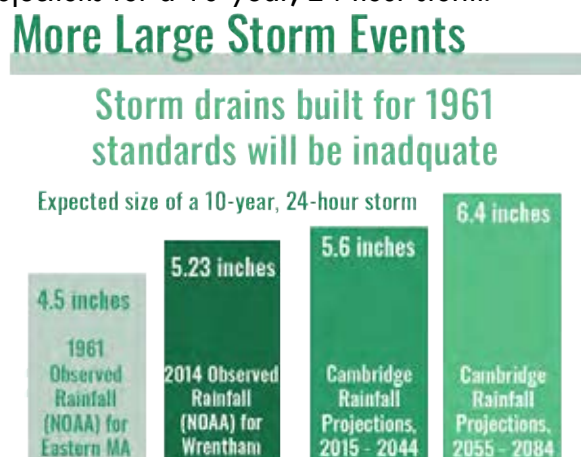
In the last five years, Massachusetts has experienced increasingly more frequent and severe weather events. Record-breaking snowfall in 2015, a widespread and severe drought in 2016, the warmest year on record in 2017, and four Nor'easters in one month and flooding comparable to the Blizzard of 1978 in 2018 are just some examples. Further, the fall of 2018 had the greatest amount of precipitation since 1890 when precipitation was first recorded.<sup>1</sup> Climate change is not imminent but affecting the people and cities and towns of the Commonwealth today.

Many studies document the ancillary benefits of parks and open space as an important and cost-effective natural solution to the changing and extreme weather patterns associated with climate change. Parks and open space are important community assets designed to serve the recreation, beauty, and natural experience needs of its residents. However, parks and open space also serve to capture and infiltrate stormwater, recharge aquifers, maintain riverine stream flow, cool neighborhoods with shade and evapotranspiration, and reduce energy demands during extreme heat. This section will provide a brief overview of climate change risks and vulnerabilities to the Town of Millis and its parks and how parks and open space can serve to protect the community from the impacts of climate change.

### Climate Change in Millis

Because of its location in the watershed of the largest river in Massachusetts, the Charles River, precipitation events, drought, and changing precipitation patterns will have an important impact on the community and down-river communities as well. For the Boston area there has been a 10% increase in precipitation over the past 50 years<sup>2</sup> and a 71% increase in the amount of rain that falls in the top 1% events from 1958 – 2012.<sup>3</sup> In the future, Millis will likely experience more frequent and intense precipitation events. By mid to late century, Millis can anticipate 9-10 days with precipitation events with greater than one inch of rain or an increase

Figure 1. Design storm projections for a 10-year, 24-hour storm.



<sup>1</sup> Blue Hills Observatory

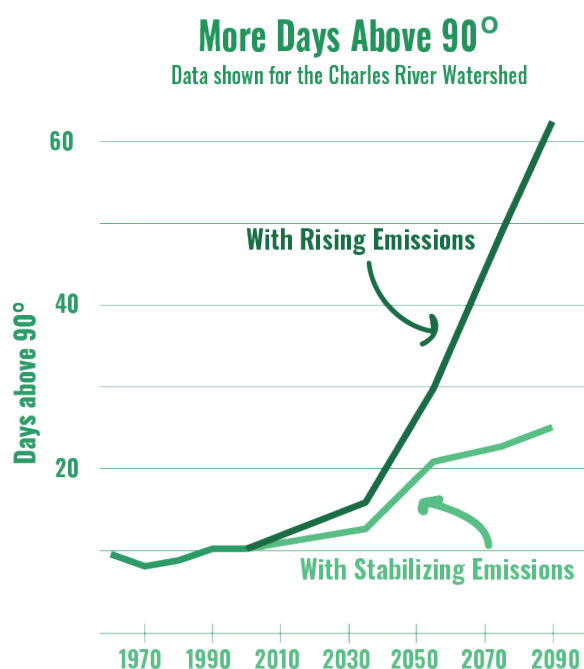
<sup>2</sup> Blue Hills Observatory

<sup>3</sup> USGCRP, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

in total precipitation from 45 inches to 48 in the Charles River Basin.<sup>4</sup> With aged stormwater infrastructure and increases in severity and intensity of precipitation, flooding could have a major impact on the town.

Global temperatures increased by nearly 2 degrees in the last century<sup>5</sup> and even small changes in temperature have widespread and significant changes to our climatic system. For example, the northeast has experienced a 10-day increase in the growing season in since 1980.<sup>6</sup> Due to its 60% tree canopy cover and only 8% impervious surface, urban heat island is not a significant issue for the Town of Millis. With climate change, the Town can expect 40-50 days over 90 degrees by mid to late century, a significant increase from the baseline of 7 days today.

Figure 2. Temperature change and projections for days over 90° with two emission scenarios.



Finally, though not a coastal community, sea level rise could have important implications on the future community of Millis if significant loss of coastal land promotes migration to more inland suburban Boston communities such as Millis. With a high emission scenario, Massachusetts could experience between 11-14 inches of sea level rise by 2030, the same amount of sea level rise experienced in the last 100 years.<sup>7</sup> The amount of sea level rise increases to 50-90 inches by mid to late century (Figure 3).<sup>8</sup> Hence, the amount of emission reduction measures we pursue will

<sup>4</sup> [www.Resilientma.org](http://www.Resilientma.org)

<sup>5</sup> USGCRP, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

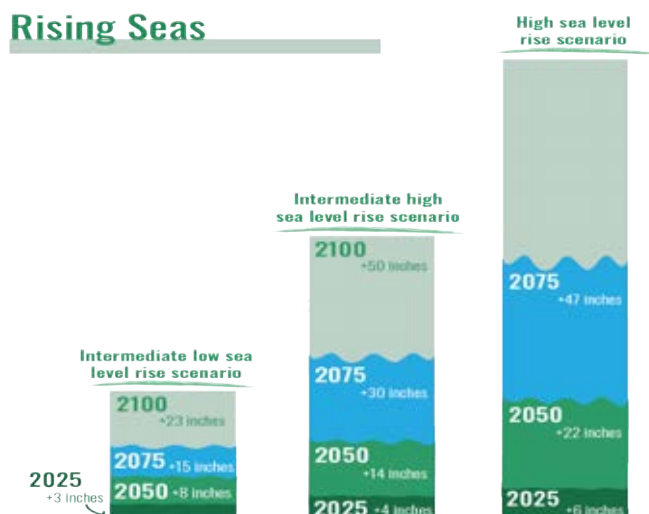
<sup>6</sup> Knuckel, K.E., D.R. Easterling, K. Hubbard, and K. Redmond. 2004. Temporal variations in frost-free season in the United State: 1895-2000. *Geophys. Res. Lett.* 31:L03201.

<sup>7</sup> National Atmospheric and Oceanic Administration. Boston Tide Gage. <https://water.weather.gov/ahps2/hydrograph.php?wfo=box&gage=bhbm3>

<sup>8</sup> Data from Northeast Climate Science Center. UMass Amherst. [www.resilientma.org](http://www.resilientma.org)

determine the extent to which Millis experiences climate migration, decisions on land use, and prioritization for parks and open space protection and design.

Figure 3. Sea Level Rise projections from the Northeast Climate Science Center based on emission scenarios.



## Climate Change Vulnerability in Millis

Through the Commonwealth of Massachusetts's Municipal Vulnerability Preparedness (MVP) program, Millis is working to mitigate the impacts of natural hazards and climate change. The Core Team which guided the MVP program in Millis identified the following top natural hazards for the community:<sup>9</sup>

- Extreme Heat/ Heat Waves
- Inland and Riverine Flooding
- Extreme Cold and Severe Winter Storms (ice storms, tornados, Nor'easters, blizzards)
- Drought/Fire

These top hazards identified through MVP and through climate change risks today have already affected stormwater management, road flooding, disruption in services, and vulnerability to people and infrastructure with downed trees and loss of electricity. The MVP Community Resilience Building Summary of Findings summarizes areas of significant concern for the aforementioned climate and natural hazards as identified by participants in the MVP Community Resiliency Building Workshop.<sup>10</sup>

<sup>9</sup> Metropolitan Area Planning Council. 2019. *Town of Millis Municipal Vulnerability Preparedness Community Resilience Building Summary of Findings*. Millis, MA

<sup>10</sup> Metropolitan Area Planning Council. 2019. *Town of Millis Municipal Vulnerability Preparedness Community Resilience Building Summary of Findings*. Millis, MA

Table 1. Millis areas of concern, vulnerable to identified hazards.

Millis Areas of Concern			
Neighborhoods	Society	Infrastructure	Environment
<ul style="list-style-type: none"> <li>• Charles River at Route 109</li> <li>• Charles River at Dover Road</li> <li>• Causeway Street Area</li> <li>• Center of Millis</li> <li>• Cliquot Site</li> </ul>	<ul style="list-style-type: none"> <li>• Senior Citizens</li> <li>• Teenagers</li> <li>• Veterans</li> <li>• Young Students with Disabilities</li> <li>• People Living Alone</li> </ul>	<ul style="list-style-type: none"> <li>• Wells</li> <li>• Town Buildings and Schools</li> <li>• Septic and Sewer</li> <li>• Route 109 Dover Road Bridge</li> <li>• Senior Housing, Senior Facilities, Assisted Living Facilities</li> <li>• Municipal Information Technology and Servers</li> </ul>	<ul style="list-style-type: none"> <li>• Wetland Stress to Flooding, Drought, and Toxic Exposure</li> <li>• Tree Canopy</li> <li>• Loss of Open Space with Development</li> <li>• Vector-Borne Disease</li> <li>• Environmental Regulations and Industry Growth</li> </ul>

### Infrastructure Vulnerability

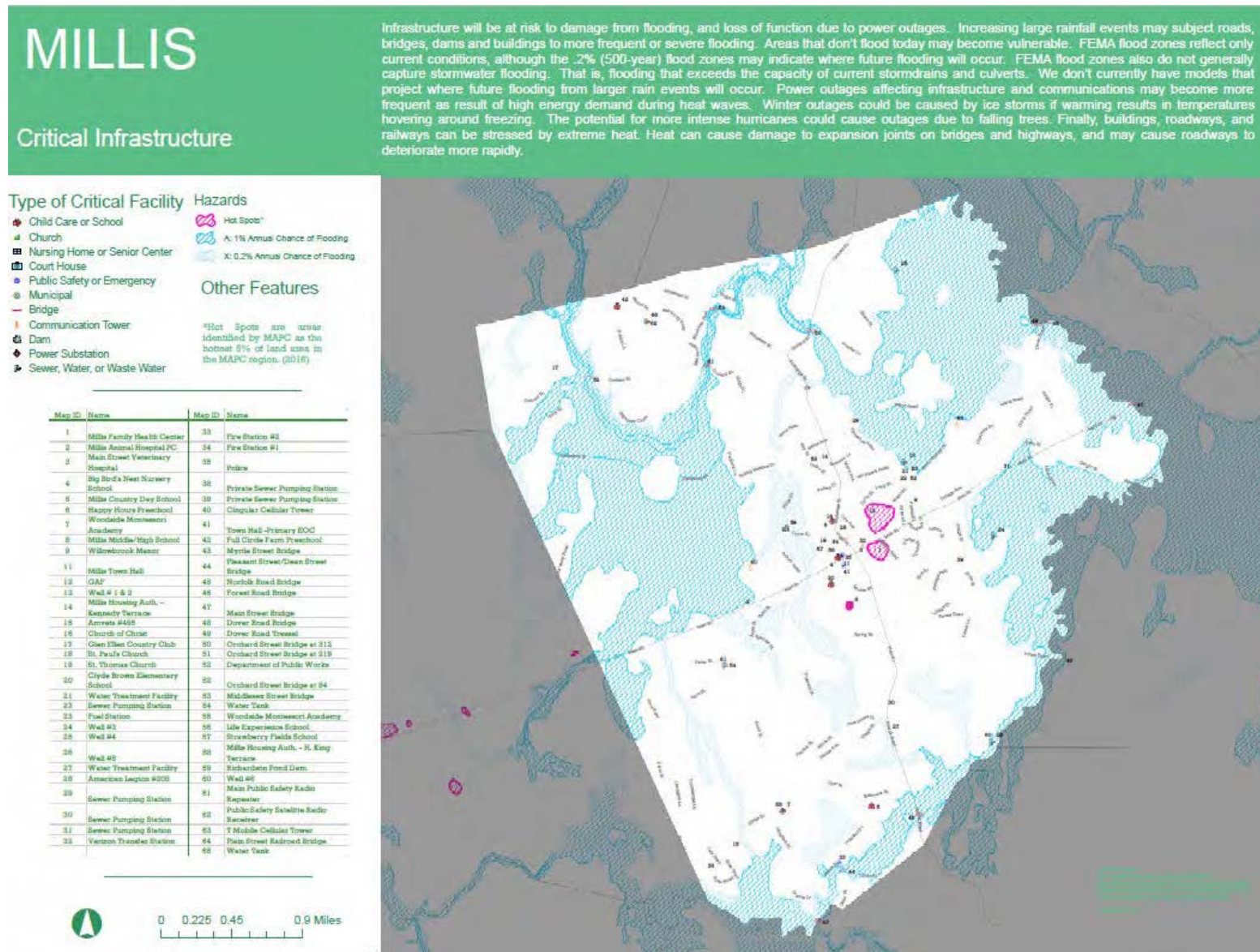
Millis has 66 facilities identified by the Town as being critical in providing services to the community and municipal function and operation. These critical facilities include infrastructure such as municipally-owned buildings, wells, bridges, social service businesses and institutions, low-income and senior housing, and farms.<sup>11</sup> Of these 66 critical facilities, 17 are located in a Federal Emergency Management Agency (FEMA) designated flood zone or flood way. These include 11 bridges in a 1% and/or 0.2% Annual Chance Flood or Regulatory Floodway, six wells in a 1% Annual Chance Flood and the Richardson's Pond Dam in a 0.2% Annual Chance Flood. In addition, with a 1% annual chance flood, 13 buildings could sustain moderate damage and 65 households could be displaced creating total property damage of over \$6 million. This flooding could also cause approximately \$10,000 in business interruption loss.<sup>12</sup>

The Metropolitan Area Planning Council (MAPC) has created a regional downscaled land surface data analysis for determining locations that are more vulnerable to extreme heat in comparison to other geographic locations. These areas are called urban heat islands. The urban heat island analysis uses LANDSAT land surface temperature at 30m spatial resolution on two very hot days with low cloud cover, July 13, 2016 and August 30, 2016. On these days, Logan Airport

<sup>11</sup> MAPC. 2018. Town of Millis Natural Hazard Mitigation Plan Update. Pp 60-61

<sup>12</sup> HAZUS model 100-year Flood in Millis, MA. 2018. As described in MAPC. 2018. Town of Millis Natural Hazard Mitigation Plan Update.

Figure 4. Millis critical facility vulnerability to the 1% Annual Chance Flood and Urban Heat Island.



reported temperatures at 92°F. These area are then further refined to identify the top 5% hottest areas across the 101 municipalities in Metro Boston region. The urban heat islands in Millis include the Millis Middle School/High School, the commercial area with Roche Brothers on Route 109/Main Street, the commercial area with Ann & Hope on Route 109/Main Street, and the Cliquot/ GAF Site (Figure 4).

### **Drinking and Waste Water**

With anticipated sea level rise, increased frequency and intensity of precipitation events and/or drought, extreme heat and shifting freeze/thaw cycles, climate change is expected to strain drinking water resources, both in quality and quantity. It is important to understand the extent of water supply and demand today, plan for the water demand for new residential, commercial, industrial, and agricultural growth into the future, and evaluate the system's vulnerabilities to meeting the Town's demands today and into future.

The drought of 2016 stressed many municipal drinking water supplies, including Millis's, though supply is not generally a concern, future climate projections could cause stressors to this functioning system. Through the MVP program, Millis's concerns on drinking water were centered on flooding and well pump station resiliency. Specifically, participants were concerned of aquifer contamination and/or bacterial exposure during flooding and the viability of pump stations before and after emergencies/extreme weather events with electricity loss. Land protection is a key component to protecting both the quantity and quality of the Town's drinking water.<sup>13</sup>

Participants in Millis's MVP workshop raised concerns about the capacity of the Charles River Pollution District, the regional wastewater system, as more residents are seeking to connect to sewer. Participants also questioned individual septic systems viability in a changing climate. Excessive precipitation raises the water table rendering a more shallow depth to ground water limiting septic leachate area. With less area, there is reduced microbial activity needed to properly filter wastewater potentially releasing fecal coliform and phosphorus into water bodies. With more frequent freeze/thaw cycles with climate change, participants raised concern of the efficacy of mounded septic systems during these conditions. The implications of this is the potential for further contamination to Millis's already impaired water bodies.

### **Parks**

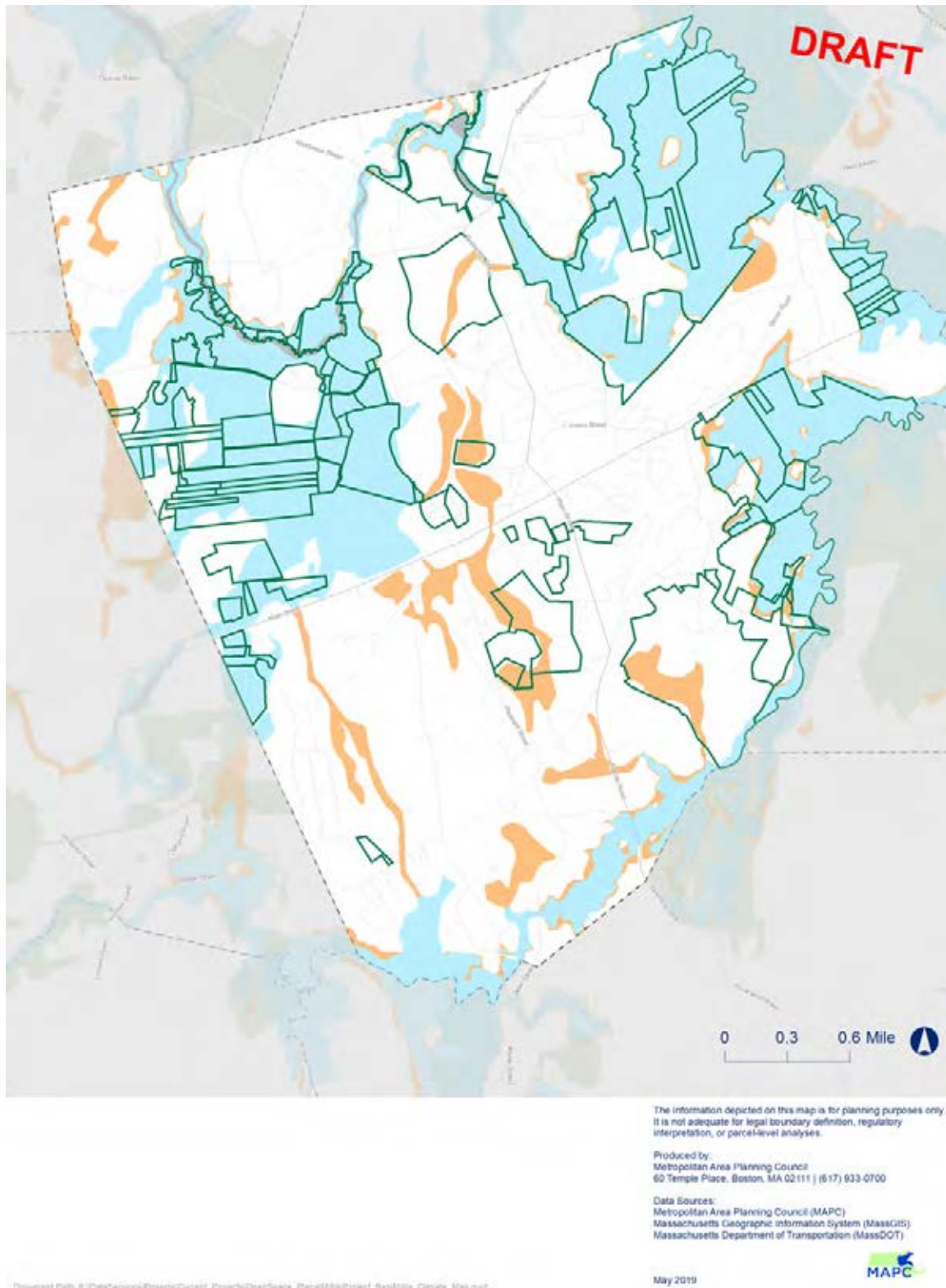
Only one park in Millis, the Village Street Conservation Area, is not located within a flood zone. Indeed, much of Millis's parks systems are aligned with the FEMA Flood Zones for the 1% annual chance flood (Figure 5). Parks and open space located within the 0.2% annual chance flood include Tangerini Farm, Apple Knoll Farm, Pleasant Street Conservation Area, and Oak Grove Park. There are some portions of the Charles River Natural Valley Flood Storage Area also within a 0.2% annual chance flood as expansions to the 1% annual chance flood area. Further, acres of Millis's parks and open space are wetlands. The intersection of Millis parks, wetlands, and flood zones illustrate an accomplished effort to create flood storage area and protect sensitive lands for the current and future impacts of climate change. They also serve to provide additional

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<sup>13</sup> MAPC. *Town of Millis Municipal Vulnerability Preparedness Community Resilience Building Summary of Findings*. January 2019.

stormwater management benefits to the town when parks are renovated with storage and infiltration design strategies.

Figure 5. Millis Parks and Open Space and FEMA Flood Zones



## Natural Systems Vulnerability

Participants in the MVP Community Resilience Workshop identified many of Millis's natural features and open space as an important asset toward its climate resilience. These include vast amounts of contiguous open space, protected flood storage areas, and a widespread tree canopy covering the Town. Millis contains over 2,300 acres of protected parks, open space, and conservation land. The Town also has 1,984 acres of BioMap Core Habitat, most of which is protected, and 2,316 acres of BioMap Critical Natural Landscape.<sup>14</sup> These are contiguous tracts of exemplary ecosystems more resilient to climate change stressors and provide important ecosystem services for resilience such as flood control, clean water, clean air, and cooling. These ecological systems provide many benefits to the town and enhance its resilience, however they are also vulnerable to the impacts of climate change.

### Forest Vulnerability

Nearly 60% of Millis is covered by tree canopy, making it an important asset and liability to the Town with climate change. In addition to the cooling, beauty, and natural landscape benefits, the trees in Millis sequester 3,700 tons of carbon/year worth over \$634,000. They mitigate 360,000 pounds per year of air pollutants (CO, NO<sub>2</sub>, O<sub>3</sub>, PM 2.5, SO<sub>2</sub>, PM 10) worth \$571,000, and avoid 30 million gallons of runoff a year saving the Town \$270,000 a year in avoided stormwater runoff expenses.<sup>15</sup>

Millis's MVP program revealed that residents and stakeholders had concerns about the future tree canopy and forest on both public and private land. With climate change, MVP participants noted that trees will become more stressed from flooding, drought, and overall warming temperatures/longer growing seasons. New tree pests and diseases are a vulnerability for the Town's forests and oaks, maples, ash, and white pine were the identified as trees of concern. One of the most important concern for the Town of Millis for open space was the Charles River Flood Valley Storage protected land. Approximately 1,300 acres of land is under the Army Corp's control or management and participants wanted better communication and collaboration with the Army Corps particularly since the viability of these lands to protect the Town and downstream river cities and towns from climate change is of the utmost importance.<sup>16</sup>

Intact forest ecosystems are critical for maintaining long-term climate resilience. Though longer growing seasons and increased carbon in the atmosphere overall may benefit forest productivity, forests will undergo stressors related to our changing climate such as periods of intense precipitation and/or drought, and warmer winters. The growing season in the last 60 years has increased a week to 10 days.<sup>17</sup> Warmer winters may increase the incidence of ice storms, and extreme precipitation regimes could cause severe rainfall in a single event causing flooding or drought conditions with inconsistent precipitation patterns. These factors work in conjunction to cause several vulnerabilities to the forest: (i) favoring invasive and exotic species

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<sup>14</sup> [http://maps.massgis.state.ma.us/dfg/biomap/pdf/town\\_core/Millis.pdf](http://maps.massgis.state.ma.us/dfg/biomap/pdf/town_core/Millis.pdf)

<sup>15</sup> iTree Landscape. Processed on Dec. 2018

<sup>16</sup> MAPC. 2019. Town of Millis Municipal Vulnerability Workshop Summary of Findings. Millis, MA.

<sup>17</sup> United States Environmental Protection Agency. US Climate Indicators Report 2016.

Table 2. Tree species adaptive capacity to climate change.

Southern New England Forest		
Tree Species	Low Emissions Scenario	High Emissions Scenario
Balsam Fir	--	--
Black Spruce	--	--
Eastern White Pine	--	--
Northern White Cedar	--	--
Paper Birch	--	--
Quaking Aspen	--	--
Red Spruce	--	--
White Spruce	--	--
Tamarack	--	•
American Beech	•	--
Red Maple	•	--
Northern Red Oak	•	--
Bear/Scrub Oak	•	•
Black Cherry	•	•
Sugar Maple	•	•
Bigtooth Aspen	+	•
Pitch Pine	+	•
American Basswood	•	+
Bitternut Hickory	+	+
Black Oak	+	+
Chestnut Oak	+	+
Shagbark Hickory	+	+
White Oak	+	+
Threatened by Current Forest Health Issues		
Black Ash	--	--
Eastern Hemlock	•	•
White Ash	•	•

The values indicate whether a species will decrease in habitat (--), stay the same (•), or increase in habitat (+). Source: Catanzaro, P., A. D'Amato, E. Silver Huff 2016. Increasing Forest Resiliency for an Uncertain Future. UMass Extension Landowner Outreach Pamphlet. 28 pages.

establishment with gaps in the canopy due to wind and ice storms, (ii) migration of species to more northern climates and immigration of new species and/or pests; and (iii) weakened trees with drought causing greater susceptibility to insects and diseases.<sup>18</sup> The overall impact is an anticipated shift in forest type in Southern New England from a Maple/Birch/Beech forest to

<sup>18</sup> Catanzaro, P., A. D'Amato, E. Silver Huff 2016. Increasing Forest Resiliency for an Uncertain Future. UMass Extension Landowner Outreach Pamphlet. 28 pages

forests characteristic of southern New York, New Jersey and Pennsylvania, and Oak/Hickory forests.<sup>19</sup>

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<sup>19</sup> U.S. Forest Service, *Changing Climate, Changing Forests*. The Impacts of Climate Change on the Northeast United States and Eastern Canada. 2011

Table 2 lists species that will be more or less competitive with a changing climate. Managing forests and trees for climate adaptation will be an important strategy to retaining Millis's forest health, clean air and water, flood storage capacity and overall climate resilience.

## Wildlife Vulnerability

Wildlife are integral component of ecological systems like wetlands, forests, rivers, and streams. As wildlife habitat is impaired by the impacts of climate changes, so is wildlife viability, reproductive capacity, and adaptability. As ecological systems are interdependent upon wildlife species, water cycling, plant growth, and decomposition, disruption of one of these components affects the entire ecological system. Hence, protecting wildlife habitat and wildlife species is important to the ecological integrity and ecosystem services parks, open space, and natural areas provide for climate resilience.

Table 3. Habitat types present in the Town of Millis and their vulnerability to climate change by year and emission scenario.

Habitat Type	Climate Vulnerability	Year of Vulnerability	Emission Scenario
Oak-Hickory Forest	Low	2015-2100	Low and High
Oak Pine Forest	Medium	2015-2100	Low and
Freshwater Wetlands	Slight	2020-2080	Low, Mid, and High
Non-Forested Wetlands	No Climate Vulnerability Data Available		
Bogs and Fens	Slight	2020-2080	Low, Mid, and High
Large and Great Rivers	Slight	2100	Low and High
Rivers and Streams	Slight	2100	Low to High
Small Lakes and Ponds	Extreme	2100	Low to High
Vernal Pools	Moderate	2100	Low to High

Wildlife are affected by climate change by changing temperatures or temperature increases and changing precipitation patterns in Millis. These climatic conditions can alter food supply and reproductive timing.<sup>20</sup> Furthermore, loss of habitat to development, degraded ecological systems by invasive species or pollution, and loss of connectivity further impair wildlife's ability to adapt to our changing climate. Protecting BioMap2 Core Habitat and Critical Landscape as well as managing for highly vulnerable wildlife species will be an important component for Millis's climate resilience with its natural landscape. Table 3 lists the terrestrial and aquatic wildlife habitat types and their vulnerability to climate change. Habitat type vulnerability is modeled using various greenhouse gas emission scenarios which dictates the extremity of changing climate conditions.<sup>21, 22, 23</sup>

<sup>20</sup> United States Forest Service.

<sup>21</sup> Terrestrial Habitat Map for the Northeast US and Atlantic Canada. [Maps.tnc.org/nehabitatmap/](https://maps.tnc.org/nehabitatmap/)

<sup>22</sup> MA. Department of Environmental Protection Wetlands

<sup>23</sup> Massachusetts Climate Action Tool. <https://climateactiontool.org>

Table 4. Wildlife species in Millis and their vulnerability to climate change by year and emissions scenario.<sup>24</sup>

Species	Climate Vulnerability	Year of Vulnerability	Emission Scenario
Beaver	Stable	2050	High
American Bullfrog	More Stable than Most Amphibians	Dependent upon precipitation changes and extremes.	
American Eel	Moderate	2050	Mid-Range
American Mink	Stable	2050	Mid-Range
American Woodcock	Increase Vulnerability Likely to High	2050-2100	Mid-Range
Blandings Turtle	Moderate	2050	Mid-Range
Blueback Herring	High	2005-2055	Business As Usual
Canada Warbler	Moderate to Stable	2050	Mid-Range
Coyote	Increase Likely	2050	Mid-Range
Eastern Meadowlark	Presumed Stable	2050	Mid-Range
Fowler's Toad	Moderate	2050	Mid-Range
Marbled Salamander	High	2050	Mid-Range
Marsh Wren	Stable	2050	Mid-Range
Northern Long-eared Bat	Stable	2050	Mid-Range
Olive-sided Flycatcher	Moderate	2050	Mid-Range
Smooth Green Snake	Stable	2050	Mid-Range
Snowshoe Hare	High to Very High	2050	Not specified and Mid-Range
Snowy Egret	Moderate	Not Specified	Not Specified
Virginia Rail	Moderate	2050	Mid-Range
White Sucker	Not Specified	Sensitive to warming stream temperatures, habitat loss.	
White-Tailed Deer	Stable	2050	Mid-Range
Wild Turkey	Increase Likely	2050	Mid-Range
Willet	Moderate to High	2050	GHG Doubled over Pre-industrial to Mid-Range
Wood Duck	Stable	2050	Mid-Range
Wood Thrush	Stable	2050	Mid-Range
Wood Turtle	Stable to Moderate	2050-2100	Mid-Range

In addition to the habitat types, Wildlife are affected by climate change by changing temperatures or temperature increases and changing precipitation patterns in Millis. These climatic conditions can alter food supply and reproductive timing. Furthermore, loss of habitat to development, degraded ecological systems by invasive species or pollution, and loss of connectivity further impair wildlife's ability to adapt to our changing climate. Protecting BioMap2 Core Habitat and Critical Landscape as well as managing for highly vulnerable wildlife species will be an important component for Millis's climate resilience with its natural landscape. Table 3

<sup>24</sup> Massachusetts Climate Action Tool. <https://climateactiontool.org>

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Table 4 describes common wildlife species present in Millis and their vulnerability to climate change by year and emission scenario. These wildlife important species toward maintain ecosystem function and health.

In summary, small lakes and ponds and vernal pools are the habitat types most vulnerable to climate change. Blueback Herring, Marbled Salamander, Snowshoe Hare, and Willet are the wildlife species in Millis most vulnerable to climate change. Land conservation, parks, and open space prioritization should consider these habitat types and species.

### **Wetlands Vulnerability**

Flooding is one of Millis's top categories of concern. Wetlands are complex ecosystems that protect drinking water supplies, minimize flooding, store flood waters, buffer storm damage, and improve water quality in river, streams, and lakes. Intact wetland ecosystems are a critical natural resilience strategy to protect communities from climate change. Though wetlands are generally protected through the Wetlands Protection Act and the Town of Millis Wetlands Protection Bylaw, development across the Commonwealth has contributed a loss of 1,250 acres of wetlands from 1991-2008.<sup>25</sup> Millis lost approximately 5 acres of wetlands from commercial and residential development from 2001-2012.<sup>26</sup>

Millis has 1,731 acres of Charles River Natural Valley Storage Area and extensive conservation and natural landscape, however, the wetlands in the Charles River watershed have already undergone stress related to changing precipitation regimes. These include the drought of 2016 and the excessive precipitation of 2018-2019. The latter has left wetlands submerged for over six consecutive months. The former, when dry conditions persist, wetlands could shrink in area or lose some of their absorptive and flood storage capacity. They also become more prone to runoff and erosion when precipitation events occur thereafter. With increased hydrologic stress during extreme changes in precipitation, wetlands could transform to more open water systems, creating a loss of land and further inland flooding.

Existing and capped landfills could impair existing wetlands, groundwater resources, or adjacent water bodies. With anticipated increase in extreme and more frequent rain events with climate change, excessive rain could result structural damage to the mitigating structures on capped sites and increase infiltration of toxic leachate into adjacent wetlands or waterbodies.<sup>27</sup> For example, the closed landfill in Millis is not lined or capped and is adjacent to wetlands and the 1% annual chance flood area (Figure 6). However, there are no toxic sites regulated at the state and/or federal level that could cause toxic exposure during a flood event.

Overall, the integrity of Millis's wetland resources are at risk to climate change do to several factors: (i) drought, (ii) increasing temperatures, (iv) persistent high water tables from excessive

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<sup>25</sup> Wetland Loss Project. <https://www.mass.gov/guides/wetlands-loss-maps-qa>

<sup>26</sup> Wetland Loss Project. MassGIS.

<sup>27</sup> AECOM. 2018. *Massachusetts State Hazard Mitigation and Climate Adaptation Plan*. Pp 4-108 to 4-133

Figure 6. Potential toxic exposure to wetlands during a 1% Annual Chance flood event in Millis.



precipitation, (v) toxic exposure from flooding of regulated sites, and (iv) nutrient and pollutant loading from stormwater runoff exacerbated by extreme precipitation events. However, according to analysis performed by the Manomet Center for Conservation Sciences in MA,

forested wetlands, like many in Millis, are only moderately vulnerable to climate change.<sup>28</sup> Hence, protection and restoration of wetlands will enable greater resilience in the community.

### **Rivers and Streams Vulnerability**

Heat waves, hotter summers, and drought, combined with earlier spring run-off due to warmer temperatures and a shift from snow to rain, can lead to warmer waters and seasonal low-flow or no-flow events in rivers and streams or early flooding with winter rains rather than snow. Shallower waters and warmer temperatures also lead to low levels of dissolved oxygen, resulting in negative effects on fish species. Heavy precipitation accompanied by flooding can scour stream and river vegetation eroding banks and degrading ecosystem function. It also has a negative effect on water quality, because it flushes ground pollutants – everything from dog waste, to oils on the road, to sand – into rivers, streams, and ponds.

The combined effects of washing nutrients into lakes and ponds and warmer summer temperatures may lead to an increase in the growth of aquatic vegetation. For example, warmer winter temperatures and lack of ice cover extend the growing season enabling greater aquatic growth in ponds. Excessive aquatic vegetation can deplete dissolved oxygen and lead to die-offs of aquatic animals. Additionally, algae blooms can also lead to growth in toxic bacteria that makes water bodies unsafe for use by humans and pets. The health of these water bodies are critical to Millis's climate resilience where the wetlands and forests are part of an integrated web of natural system interaction where disruption of one creates stressors in another.

Table 5 lists impaired waters from the 2014 “Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act” where the Town of Millis is responsible for reporting and regulating Total Maximum Daily Loads (TMDL) of pollutants. The only non-attaining TMDL in Millis is the Charles River.

Table 5. Integrated List of Waters for Millis 2016.

<b>Waterbody</b>	<b>TMDL Category</b>	<b>Impairment</b>
Bogastow Brook	4A	Fecal Coliform
South End Pond	3	None Assessed
Charles River	5	Excess Algal Growth, Chlordane, DDT, Mercury in Fish Tissue, Nutrient/Eutrophication, Non-Native Aquatic Plants, Dissolved Oxygen Saturation, Phosphorus, Aquatic Macroinvertebrate Bio-assessments

Millis has demonstrated strong leadership in addressing one of their most significant challenges, stormwater management. The Town regularly manages stormwater infrastructure such as catch basin cleaning, street sweeping, and leaf litter clean, and constructing and maintaining the Town's sewer and drainage systems. In addition, the Town hosts community clean-up days and voted to institute a stormwater utility in November 2017. The Town performed a strong public outreach

<sup>28</sup> Manomet Center for Conservation Science (Manomet) and Massachusetts Division of Fisheries and Wildlife (MA DFW). 2010. Climate change and Massachusetts fish and wildlife: Volume 2 habitat and species vulnerability. Massachusetts Division of Fisheries and Wildlife, Westborough, MA.

campaign on stormwater management, best practices, and implementing a utility. Residents receive rebates for pervious surfaces on their property calculated in their stormwater utility.<sup>29</sup> Contiguous and connected tracks of open space and conservation land combined with stormwater management practices that brings water back into the ground can help mitigate these climate risks. Monitoring and management of ecosystem health will be an important long-term adaptation strategy.

### **Park and Open Space Design Recommendations for Climate Resilience**

Active and passive parks present additional opportunities to capture stormwater, reduce impervious surface, and manage flooding related to extreme precipitation events and over-capacity in aged stormwater systems. There are several design strategies in park renovations that can minimize municipal costs for MS4 permit requirements, alleviate stormwater infrastructure stress, and replenish groundwater.

Figure 7. Basketball court with porous pavement, City Park, Lancaster, PA.



### **Park Design for Impervious Surfaces**

Stormwater runoff, particularly from parking lots and parks with pet waste, is a major contributor to pollution where water ultimately flows into streams and rivers. Limiting impervious surfaces in park development reduces stormwater runoff, allows infiltration, and minimizes non-point source pollution. There are a number of pervious and permeable surface options for active and passive

<sup>29</sup> Metropolitan Area Planning Council. 2019. *Town of Millis Municipal Vulnerability Preparedness Program. Community Resilience Building Workshop Summary of Findings*. Millis, Massachusetts.

park amenities. For example, pervious pavement can be used to pave basketball courts (Figure 7). Consider using ADA compliant permeable pavers for walking paths (Figure 8)

Figure 8. Example of ADA Compliant permeable pavers.



Photo credit QZLand.com

Finally, green parking lots are attractive amenities that prevent urban islands and contribute to stormwater, precipitation infiltration and cooling with evapotranspiration. Consider designing green parking lots rather than impervious asphalt (Figure 9).

Figure 9. Green Parking Lots that capture stormwater and provide cooling



### Climate Park Design for Recreation Fields and Courts

Soccer, baseball, and multi-purpose playing fields are in high-demand in the Town of Millis. These amenities are often frequently used causing soil compaction and minimizing precipitation and runoff infiltration capacity. Consider adding bio-retention areas recreation fields in active parks such (Figure 10). Ensure that all runoff is captured entirely within the park site.

Figure 10. Bio-retention area along ball fields, Irvine, CA and capturing run-off from courts, New Blair Park, Altoona, PA.



Photo credit Stiffler sitephocus.com (top) and McGraw and Associates (bottom).

An alternative option for playing fields that encourages infiltration is a pervious artificial turf with an environmentally friendly/healthy subsurface and perforated pipes that direct excess, non-infiltrated runoff into a catch basin, bioswales, or stormwater system (Figure 10). Perforated pipes allow a slow infiltration of stormwater into the ground reducing the amount entering the stormwater system. Rather than using a rubber-crumb subsurface, which tends to be controversial, utilize more ecologically friendly infills such as sand, coated silica sand, TPE, or Nike Grind.<sup>30, 31</sup>

Figure 11. Artificial Turf with Perforated Pipe for Water Infiltration.



#### **Park Design for Flood Storage/Protection**

Another potential option is increasing the storage capacity of the park to flood waters by building wetlands and other infrastructure that can hold water and minimize flooding to adjacent infrastructure. For example, a pump track would draw more active transportation and bring new variety to youth recreation amenities. This track could also be designed to flood and hold water during flood events if designed properly (Figure 11).

<sup>30</sup> Mayer, R. 2016. "If Not Crumb-Rubber, Then What? 7 Alternative Infills." Sportsfield Management. <https://www.sportsfieldmanagementmagazine.com/maintenance/artificial-turf/crumb-rubber-alternatives/>

<sup>31</sup> <http://www.woodardcurran.com/blog/alternatives-to-crumb-rubber-for-synthetic-turf-fields>

Figure 11. A pump track if designed correctly can serve as a recreation amenity and as flood storage infrastructure.



Photo Credit Velosolutions.com

Consider multi-functional topographic greenscapes that encourage creative play and create a barrier to flood waters from the river or other water bodies to adjacent critical infrastructure or residences. For example, earthen berms create an elevated walking path along the river or water body and minimize not only flooding in the flood zones but also stormwater runoff into the water body (Figure 12).

Figure 12. Topographic greenscapes and landforms for play at Pierce Park, Baltimore, MD and Renaissance Park in Chattanooga.



Photo credit inhabitat.com (top) and Landscape Performance Series (bottom).