

Deerfield Open Space and Recreation Plan



2023 – 2030*

Prepared by the Deerfield Open Space & Recreation
Committee

with assistance from the
Franklin Regional Council of Governments

This project was funded by the Town of Deerfield and a District Local Technical Assistance Grant provided by the Massachusetts Department of Housing and Community Development to the Franklin Regional Council of Governments

*2030-2033 as noted in Appendix A.

TOWN OF DEERFIELD
OPEN SPACE AND RECREATION PLAN
2023-2030

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June 14, 2023

Allison Gage
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301

Re: Open Space and Recreation Plan

Dear Ms. Gage:

Thank you for submitting the Open Space and Recreation Plan for Deerfield to this office for review and compliance with the current Open Space and Recreation Plan Requirements. I'm pleased to write that the plan has received final approval and the city is eligible to apply for DCS grants through January 2030. Please contact me at melissa.cryan@mass.gov if you have any questions or concerns.

Sincerely,

Melissa Cryan

Melissa Cryan
Grant Programs Supervisor

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SECTION 1

PLAN SUMMARY

The purpose of the Deerfield Open Space and Recreation Plan (OSRP) is to provide a framework for decisions dealing with land use, natural systems, and the lands that contain unique forest, agricultural, historical, recreational and scenic values. It documents current natural, historic, and recreational resources in town, and identifies priorities for protecting, maintaining, or improving these resources, as well as community preferences for the creation of new resources.

The 2023 Deerfield Open Space and Recreation Plan is based on community members' collective understanding of the interdependence of rivers, wetlands and aquifers, ridgelines and contiguous forests, recreational trails and access, agricultural fields, scenic views, and significant historical structures and landscapes with each other and with the town's rural character as a whole. The Open Space and Recreation Plan also illustrates the role that all undeveloped lands have in providing wildlife habitat, in ensuring the integrity of drinking water supplies, in providing for climate resiliency, and at least in part, in providing for residents' livelihoods.

The Plan highlights the town's natural, historical, and recreational resources, including:

- Prime farmland and working agricultural businesses;
- Critically important ground and surface waters;
- Large blocks of contiguous forest;
- The Connecticut and Deerfield Rivers;
- Trail systems on private and public lands;
- Rare wildlife habitats;
- Parks, playgrounds, and recreational programming; and,
- Significant historical sites and buildings throughout Deerfield.

The Seven-Year Action Plan provides direction to a myriad of local boards, commissions, and committees about how to implement the goals and objectives that were developed in part from the results of the 2021 Open Space and Recreation Planning Survey, input at the December 2022 Public Forum, and other recent planning efforts undertaken by the town.

A digital version of this updated OSRP can be found online:

<https://storymaps.arcgis.com/stories/0e3c98ff8aa6448aac294ea9182da53a>. The StoryMap summarizes each plan section and includes interactive maps.

SECTION 2

INTRODUCTION

A. STATEMENT OF PURPOSE

The purpose of this plan is to provide a foundation for decision-making based upon the short-term and long-term needs of Deerfield residents regarding the protection and/or enhancement of priority natural, cultural and recreational resources. Specifically, it is designed to help residents and Town officials decide which conservation opportunities they should act upon. In addition, this plan represents the collective will of many citizens who are committed to understanding and solving complex environmental challenges e.g., high water tables, flooding, water demands, and environmental pollution. This OSRP represents consensus on the most important recreational, scenic and natural resource-related needs in town and on the best solutions for addressing these needs. The Seven-Year Action plan, when carried out by town boards, commissions and committees, will implement the Town's open space and recreation goals and objectives (see Section 8) as well as provide citizens with meaningful experiences in the stewardship of their whole community.

B. PLANNING PROCESS AND PUBLIC PARTICIPATION

B.1 DESCRIPTION OF PROCESS

The Town of Deerfield's open space and recreation goals and objectives were developed through a public survey, a public forum, and a series of meetings of the Open Space & Recreation Committee between October 2021 and November 2022. In December of 2022, an open space and recreation public forum was held to gain input from residents on the Seven-Year Action Plan. The forum was advertised on the Town website, through a press release in the *Greenfield Recorder*, and through an invitation to town boards and committee members to attend. Flyers were also posted at Town Hall and other public locations in town.

In December 2021, a public survey was developed by the Open Space & Recreation Committee and distributed to the Deerfield community. The survey was available through Survey Monkey, and paper surveys were dropped off at the Library and the Town Offices. A total of 351 responses were received. The survey responses were used to help the Open Space & Recreation Committee focus on the development of Section 7: Analysis of Community Needs, Section 8: Goals and Objectives, and Section 9: Seven-Year Action Plan.

From October 2021 to November 2022, the Deerfield OSR Committee held a total of 13 public meetings. During these meetings, Committee members discussed open space and recreation goals and objectives and their opinions on the most critical environmental problems in Deerfield. In addition, they reviewed

and discussed draft sections of the Deerfield OSRP. Agendas and sign-in sheets from these meetings are included in the Appendices.

A public review period was held between December 6 through December 20, 2022, during which time the final draft of the 2023 Open Space and Recreation Plan was available for review on the town website. All comments received during the public review period are included in Section 10: Public Comment.

SECTION 3

COMMUNITY SETTING

The information provided in this section, Community Setting, inventories and assesses the human and land use components of the landscape, moving from the present, to the past, and then to the future based on current development trends. Regional Context provides a snapshot of Deerfield today, and identifies the ways in which the location of the Town within the region has affected its growth and quality of open space and recreational resources. History of the Community looks back at the manner in which human inhabitants settled and developed the landscape. Next, using statistical information and analysis, Population Characteristics describes who the people of Deerfield are today and how population and economic trends may affect the Town in the future. Finally, Growth and Development Patterns describes how the Town of Deerfield has developed over time and potential impacts that the current zoning could have on open space, drinking water supplies, and municipal services.

A. REGIONAL CONTEXT

A.1 TOWN OF DEERFIELD

The Town of Deerfield, a historic agricultural and residential community, is located in the center of Franklin County in western Massachusetts. It is approximately 99 miles west of Boston and 162 miles northeast of New York City. The town encompasses a geographic area of thirty-three square miles and lies within the heart of the Connecticut River Valley.

Deerfield is bordered by the Connecticut River and the Towns of Montague and Sunderland to the east, Whately to the south, Conway to the west, and Shelburne and Greenfield to the north (see the *Regional Context* map). The Deerfield River forms part of the northern and western boundaries of the town, and winds through the town's northern half. Mount Sugarloaf, located in the southern portion of Deerfield, is a prominent landscape offering views of the Connecticut River Valley. The Mount Sugarloaf Reservation draws in residents and visitors from the surrounding region for hiking and mountain biking.

The Town of Deerfield contains within its boundaries several different landscapes: the eastern facing slopes of the foothills of the Berkshires, the floodplains of the Connecticut and Deerfield Rivers, and the north-south running Pocumtuck Ridge. Prominent peaks



The watershed boundary for the Deerfield and Connecticut River Watersheds runs through the Town of Deerfield, as shown by the blue line on the map.

include North and South Sugarloaf, the Pocumtuck Ridge and Arthur's Seat with elevations that range between 400 and 900 feet above sea level. Deerfield lies in two watersheds: the Deerfield and the Connecticut. The Deerfield River basin includes the northern half of the town west of the Pocumtuck Ridge, while the Connecticut River basin includes the eastern slopes of the Pocumtuck as well as the southern half of the town. Historically these rivers played important roles in the transport of goods to markets in Boston, Connecticut and New York. A number of other rivers, streams, and brooks flow through Deerfield before eventually converging with the Connecticut River. The Mill River, located in the southwestern section of town, is a sub-watershed of the Connecticut River Basin.

Routes 5/10 and 116 constitute important transportation corridors that link Deerfield to the surrounding municipalities. Route 5/10 is the main north/south thoroughfare that connects Deerfield to Whately and Northampton in the south, and Greenfield and the Mohawk Trail (Route 2) in the north. Route 116 cuts diagonally east/west through Deerfield, linking the town to Sunderland and Amherst to the southeast, and to Conway, Ashfield and the Berkshires to the northwest. Interstate 91 bisects the town running North and South, bringing tourists and providing a convenient connection to important employment centers such as Springfield and Hartford, Connecticut. Interstate 91 also provides access to the Massachusetts Turnpike, which extends from Boston to Albany, New York. Local roads usher people to and from towns that are not linked to Deerfield via a federal or state highway. The East Deerfield rail yard links the east coast to the Midwest and points north and south for the movement of freight.

Deerfield's location on two major rivers and several key transportation routes has resulted in its settlement by Europeans first as an agricultural center in the 17th century around Old Deerfield, followed by its development as a manufacturing center in the 19th century, and ultimately its emergence as a tourist destination in the 20th century. The village of South Deerfield developed as a relatively dense residential area, with town services and small scale commercial and industrial uses concentrated near the village center. Throughout the changes Deerfield has endured, the Town has maintained its historic ties to farming, with more than 3,500 acres, or 16% of the Town's total area, continuing to be devoted to agricultural uses.¹

In order to plan for the protection of open space and natural resources and the provision of recreational opportunities in the Town of Deerfield, residents should consider the role natural resources play across the region. The character of the landscape in Deerfield is dominated by two watersheds; large blocks of dense, contiguous forestland, often on ridge lines; and farms located on prime soils in the floodplains. Each of these characteristic landscapes is discussed in detail in Chapter 4, Environmental Inventory and Analysis. The presence and relatedness of these significant resources present both opportunities and challenges to open space and recreation planning for Deerfield. In addition, these landscapes have shaped the historical development of Deerfield and the surrounding region.

¹ 2016 MassGIS Land Use Data.

A.2 REGIONAL SUSTAINABILITY PLAN CONTEXT

In 2013, Sustainable Franklin County: Franklin County's Regional Plan for Sustainable Development (RPSD) was completed by the Sustainable Communities Consortium including Community Action, Franklin County Regional Housing and Redevelopment Authority (HRA), North Quabbin Community Coalition (NQCC), Franklin County Community Development Corporation (FCCDC), and the Towns of Greenfield, Deerfield, Montague, and Orange. The RPSD is a long-term guide for Franklin County municipal governments, regional organizations, businesses, non-profits, and individuals. Through extensive public participation, individual residents and representatives of many organizations contributed to the creation of the plan. The plan identifies issues and constraints, goals, and recommendations and strategies. The overall sustainable development goals that came out of the public participation process are as follows:

- Increase and improve the housing stock, while focusing on affordability;
- Provide additional options for alternative transportation;
- Encourage economic development, by redeveloping vacant sites;
- Promote energy conservation and efficiency;
- Protect natural resources, including farmland and drinking supplies;
- Foster the growth of arts and culture;
- Concentrate new growth near town centers and focus on infill development; and
- Improve infrastructure, particularly high-speed internet.

The RPSD identified South Deerfield Center as a Priority Development Area.² The goals for revitalizing this area include maintaining the character of the community while fostering economic development and improving the livability for its residents. There are several noted challenges for developing South Deerfield Center, including the fact that the Village Center sits upon a large expanse of aquifer, and that there is no backup water supply. However, concentrating sustainable and climate resilient development in this area could protect the Town's open spaces, farmland, and forest from fragmentation.

B. HISTORY OF THE COMMUNITY: DEERFIELD'S CHANGING LANDSCAPE³

DEERFIELD'S LONG PAST

The township of Deerfield was created by an act of the legislature of the Massachusetts Bay Colony in 1673. However, prior to colonization and settlement in this region, Native Americans had occupied this part of the Connecticut Valley for a very long time. Several Native American camp sites where stone tools were left behind have been discovered and dated to 12,400 years ago. More recent sites have

² A Priority Development Area is defined as an existing or emerging regional employment center. More information about Redevelopment/Infill Development projects for the South Deerfield Center is available in the RPSD: <https://frcog.org/wp-content/uploads/2014/06/Sustainable-Franklin-County-2013-Plan.pdf>

³ We would like to thank Peter Thomas, PhD, local historian, for this comprehensive history of Deerfield's landscape. Additional material was provided from the work of Margaret Bruchac, PhD, and from members of the Open Space & Recreation Committee.

been reported throughout the Deerfield River floodplain, on Pine Hill, in South Meadows, north of Fuller Swamp, and on the floodplains and alluvial terraces along the Connecticut River. Upland settlement also occurred on the Pocumtuck Range and in the hills west of the Deerfield River.

The town of Deerfield is located literally at the center of the indigenous Pocumtuck homeland. Indian families living in the village at Pocumtuck, where Old Deerfield now exists, relied on hunting, fishing, wild plants, and corn-bean-squash horticulture for food. In this way, the community's use of space changed throughout the year. Planting fields were created on the broad floodplains along the Pocumtuck (now Deerfield) River, major fishing stations on the Connecticut River were used in the spring, and their fall and early winter hunting territory, to which families moved from the village, encompassed hundreds of square miles, extending into the Berkshires and southern Vermont. Depending on how the Pocumtuck homeland is defined and how broadly the term Pocumtuck is applied, at the peak of indigenous occupation somewhere between 5 and 15 thousand inhabitants once occupied this part of the Connecticut Valley.

By at least the 1630s the penetration of the northeast by the Dutch coming up the Hudson Valley, the English coming westerly and north up the Connecticut Valley, and the French from the Saint Lawrence was resulting in trading partnerships with many tribal groups. For the Pocumtuck and many others, what started out as amicable trade relations became more hostile encounters as the English began to establish settlements. A smallpox epidemic in 1633-34 took a heavy toll on the indigenous population of the region. Inter-tribal conflicts were exacerbated by colonial pressures, and in a short span of years, many hostile and violent encounters occurred among both European and Indigenous groups.

In the case of Pocumtuck's original inhabitants, displacement by the impacts of colonialism, coupled with elevated inter-tribal conflict, led to catastrophic loss. In February 1665, the Pocumtuck village was over-run by a large force of Mohawks and other Iroquois and never rebuilt. Survivors joined other Native villages downriver and were later involved in land "sales" with John Pynchon of Springfield. Despite the loss of their homelands, and attempts to erase their histories, over the years descendants of the original Pocumtuck inhabitants have maintained intermittent connections to Deerfield.

Hence, the story of Deerfield's colonial settlement is complex in so many ways. In 1650, 2,000 acres of land in the Town of Dedham, located just west of Boston, was awarded to Rev. John Eliot to form a Praying Indian community. By 1663, disputes with the Indians over land title had erupted in Dedham. To compensate, the colonial government told Dedham that they would be duly compensated if they could find sufficient land elsewhere.

After several ventures, a survey team explored the Deerfield valley in mid-1665 and subsequently laid out a 2,000-acre parcel of prime agricultural lands (Figure 1). When a few squatters from Hatfield started to break ground within these holdings in 1669/1670, Dedham's proprietors finally considered establishing a settlement here. The General Court fulfilled its promise and gave Dedham a compensatory 8,000 acres of land.

By 1673, unhappy with being under Dedham’s control, the first English residents, who originated mostly from Connecticut Valley towns located to the south, petitioned the General Court to be made a separate township. Their request was granted. The General Court expanded Deerfield’s land holdings to “seven miles square”; i.e., the equivalent of a 7 x 7-mile parcel, or 31,360 acres. The configuration of this land was left to the proprietors. The only stipulations were that the town must persuade an orthodox minister to settle in town and that a town farm be created within 3 years. A survey of these additional lands was not completed until about 1713 (Figure 2).

By 1673, home lots and meadow lands had been laid out within the parcel of 8,000 acres, south of the Deerfield River. These fields and meadows, formerly a Pocumtuck village, were now apportioned among the forty-three proprietors who came to reside at Pocumtuck (Figure 3).

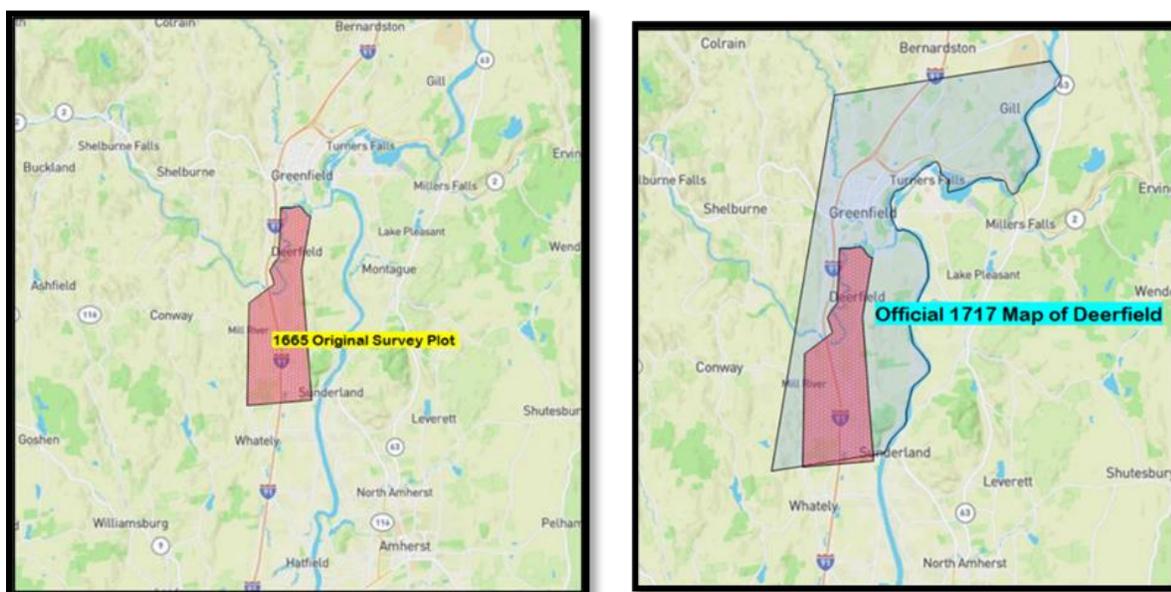


Figure 1 (Right): The 2,000-acre parcel as laid out by surveyors from Dedham in 1665. Figure 2 (Left): Deerfield’s boundary as laid out in 1665 (red) and as depicted on a 1717 map submitted to the General Court.

Deerfield’s strategic location and isolation from other settlements made it susceptible to repeated raids from French and Indian forces until well into the Colonial Period (1675-1775). King Philip’s or Metacom’s War in 1675-76 took its toll on both sides. The well-planned, Native ambush at Muddy Brook left nearly half the women living at Deerfield widowed and 21 children fatherless. Within days, the settlement was abandoned. This frontier village was resettled in 1686. To protect the inhabitants during times of attack, a stockade was built around the central portion of the village that included a town common, a meeting house, several houses and storehouses.

Actions taken by the proprietors in 1688 remind us that pre-modern notions of space and land ownership were grossly different from those of today. This is primarily due to the fact that all colonial towns in Massachusetts were granted to groups of proprietors who held various rights to **all** lands within their town's boundary. Individual homelots and land for crop production were initially laid out within and surrounding the village. These lots were deeded to individual proprietors. Agricultural plots were not fenced. All remaining land in town was considered "common land", which, until distributed to individual proprietors, was available for community use.

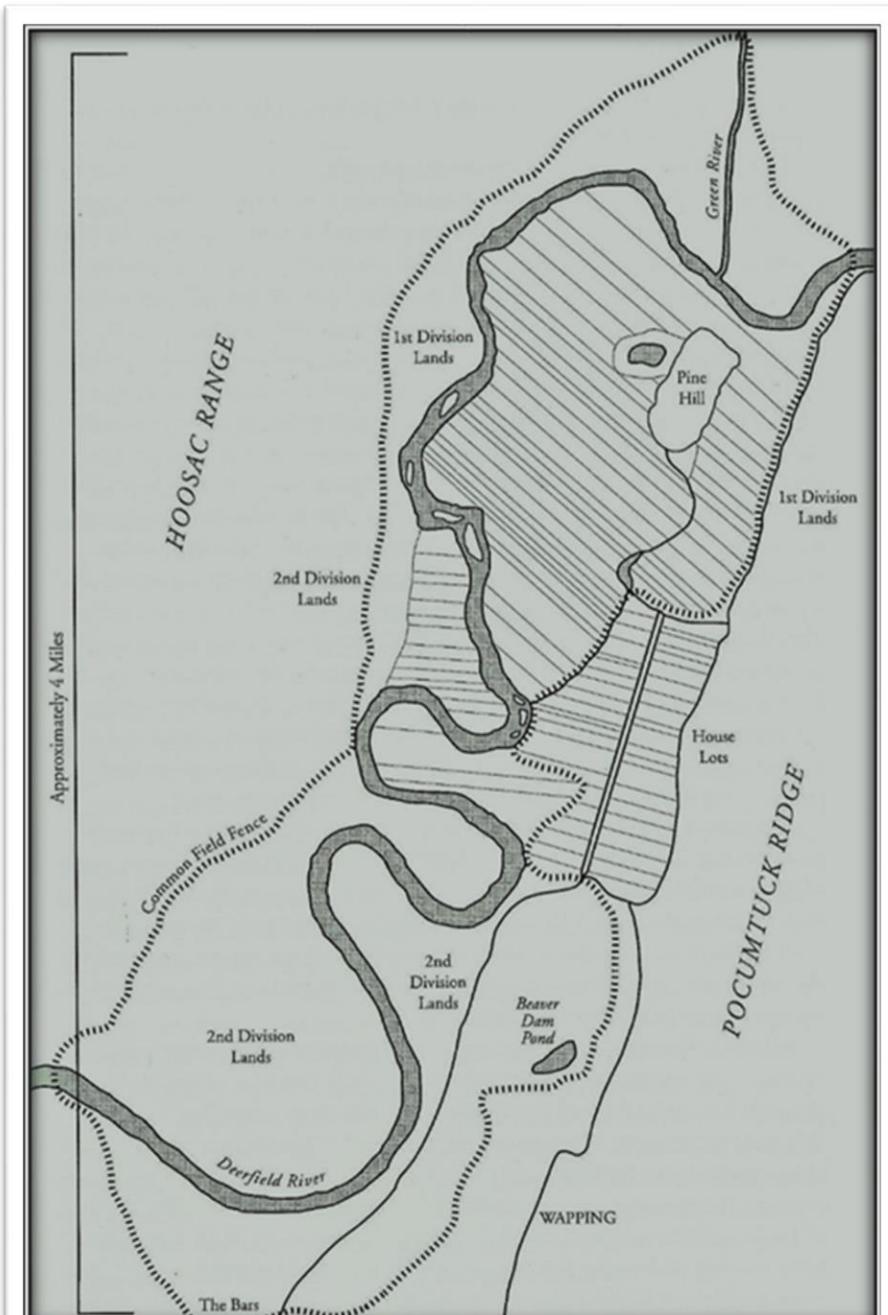


Figure 3. Layout of the Town Plat, 1st and 2nd Division Plow and Meadow Lands (from Haefeli and Sweeney 2003:17)

To successfully carry out their practices of animal husbandry and agriculture, settlers needed to keep their livestock out of their planting grounds. The solution was to construct and maintain a fence around all of the floodplains and bottomlands used for planting. Eventually, this fence was some ten miles long and extended to both sides of the Deerfield River (Figure 3). In the spring, just before planting time, the settlers drove their four-legged food supply outside the fence to graze. After the last crops were harvested, their livestock could be admitted. The dates of opening and closing the fence gates were agreed to in town meeting.

In 1688, forty-eight proprietors subdivided what is known as the Long Hill Division. The division encompassed virtually all of the land in the southern half of town. It was sub-divided

into 96 lots stretching from the Connecticut River west to the seven-mile line. The Division of East Mountain occurred at roughly the same time (Figure 4). Lots extended from the east side of the village, up and over the Pocumtuck Range, to the Connecticut River. Other land divisions followed (Figure 4). The proprietors' records were finally closed in 1799, after all common lands had been distributed.

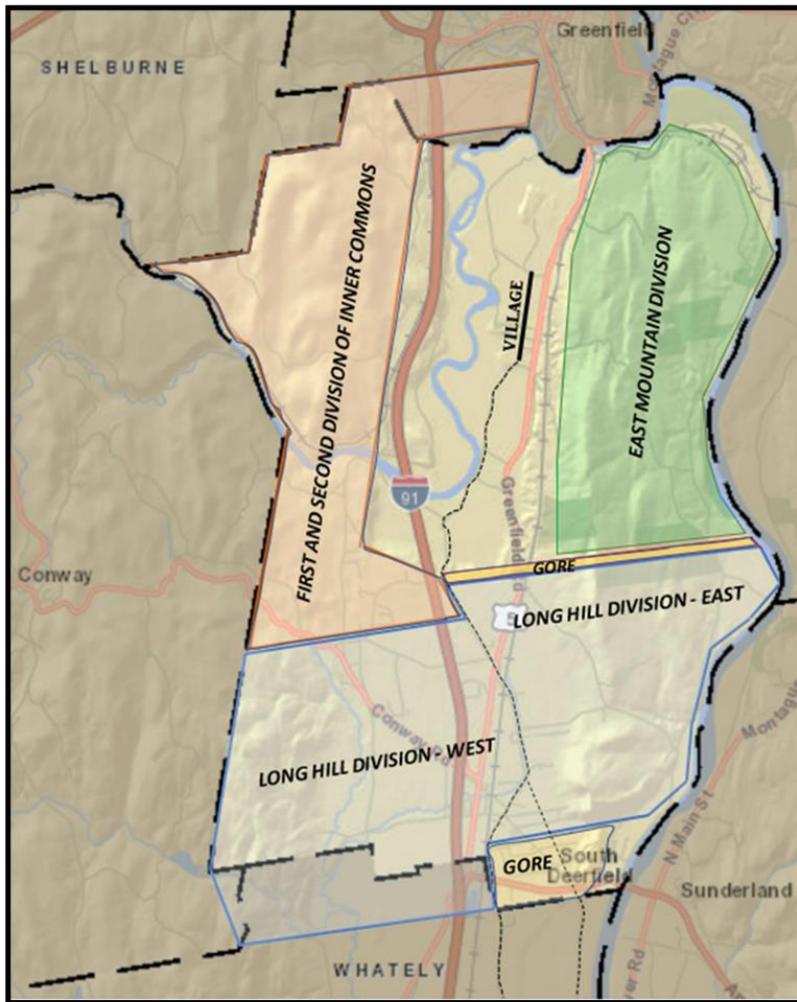


Figure 4. Major land divisions surrounding the initial village home lots.

It is noteworthy that virtually all of the agricultural fields in the northeast and southern parts of Deerfield today are fragments of these original division lots. Remnants of such lots can be observed on the “Context Map” as elongated rectangles coded in dark green. In South Deerfield, Mountain Road, Eastern Avenue, Graves Street, and Braeburn, Hillside and Jackson Roads were all laid out on the compass bearing as the original division lots. On these streets, the northern and southern boundary lines of house lots were laid out on the same alignment used in 1688. In other areas, house lots were oriented perpendicular to the adjacent road or street and not on the alignment of the earlier agricultural fields that were located to the rear of the homes.

In 1704, when the famous raid by a group of French and Indians occurred, Deerfield's total population numbered approximately 300 men, women, and children. A period of peace followed. By 1736, the colonial administrators of the Massachusetts Bay Colony wanted to encourage settlers to take up residence in the uplands west of Deerfield and began to grant new townships, despite appropriation from Indigenous tribes. Colonial expansion west offered opportunities for Deerfield's proprietors as well, particularly as it meant potential access to free land for their sons. The legislature also extended Deerfield's boundary westward from the 7-mile to the 9-mile line (Figure 5). The town now encompassed parts of what we know as Shelburne and all of Conway.

Although expansion facilitated colonial access to land, historic events led to later reduction of the town's boundaries. It was required by law that each town would have an active Congregational church that all town residents were expected to attend. With Deerfield's expansion, residential distance from the Congregational church located in the village increased to the point where attendance was no longer possible. New settlers would ultimately demand a solution to this predicament.

The remedy would come as a severe loss to the town. In order to accommodate newcomers, two new settlements outside the village had sprung up – Wapping, about a mile south of the village on Plumtree Plain in 1684, and north of the Deerfield River at scattered locations near the Green River about 1690. Both settlements were abandoned during subsequent colonial wars, but ownership of lots persisted and new lots were acquired during the 1740s. Although Wapping remained within the town, the lands north of the Deerfield River were set off in 1753 as a separate town – Greenfield. (In 1796, Greenfield was sub-divided into two towns, Greenfield and Gill.) In 1765, Deerfield contained 85 houses, 123 families and a total population of 720. By 1767, settlement had increased to the point where Conway, formerly Deerfield's Southwest District, was established as a new town. Deerfield's Northwest District was incorporated into the town of Shelburne in 1768. More than half of Deerfield's territory was thus lost (Figure 6).

Beginning in the 1740s, speculative land dealings within the town of Deerfield occurred with increasing regularity. It has never stopped. Today, through decades of repeated sales,

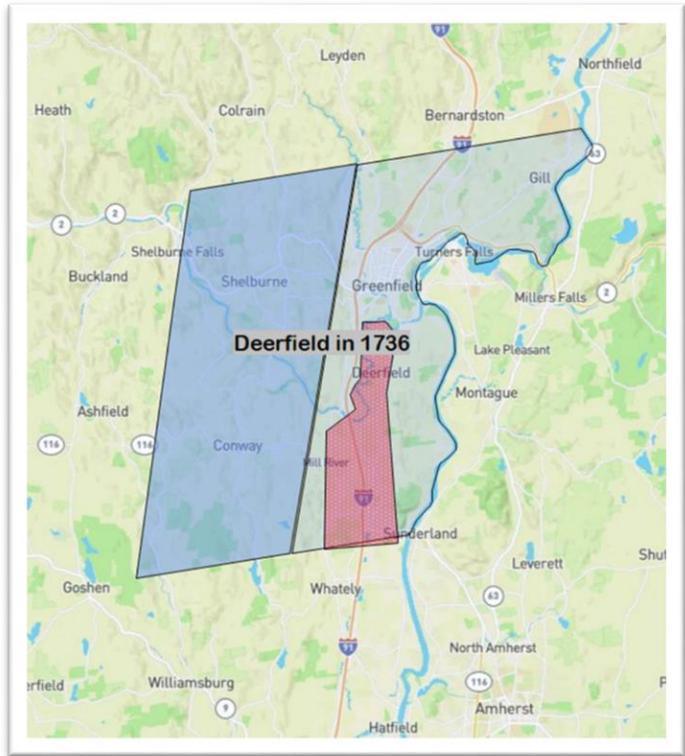


Figure 5. Deerfield in 1736.

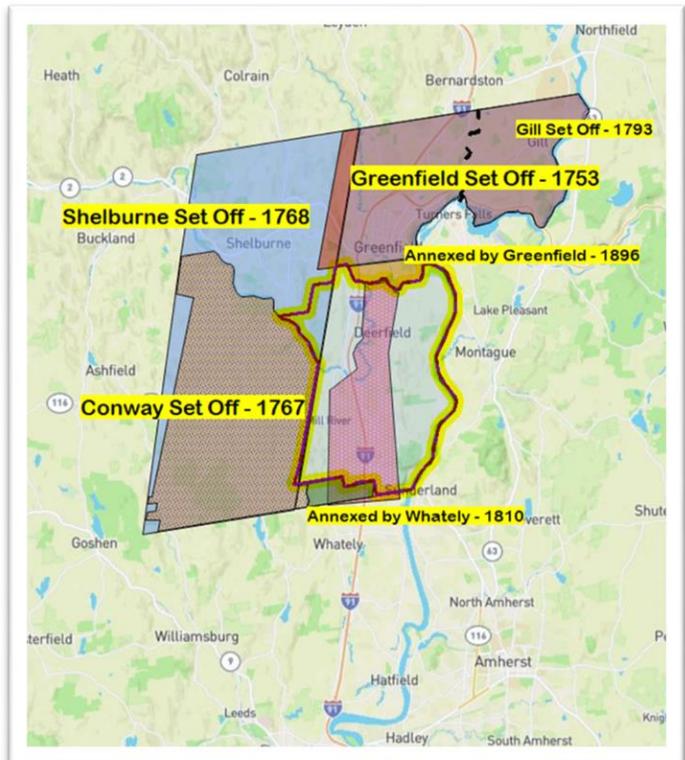


Figure 6. Deerfield's loss of territory, 1753-1896.

this early landscape has been sub-divided into more than a thousand individual parcels. Relatively few large plots of land remain after 350 years of carving up the original 96 lots. Balancing the retention of productive agricultural land and wetlands in the valley bottom with desires to construct even more single lot homes or larger residential complexes will take careful planning.

After roughly 1770, the extensive spatial expansion and contraction of the town was limited to the loss of lands to Whately in the southwest corner due to political gerrymandering in 1810 and the annexation of Cheapside to Greenfield in 1896 (Figure 6). Spatial changes have been more internal and have been largely affected by transportation improvements, changes in technology and agriculture and the needs brought about by population dynamics.

The most significant transformation was the establishment of South Deerfield as a second commercial and residential center. This shift came slowly. It was only in the 1750s, as the threat of colonial wars dissipated, that isolated farmsteads slowly spread into the southern part of town, primarily along the old Pocumtuck Path (now Mill Village Road and North and South Main Streets) and along South Mill River Road. By 1759, a schoolhouse was built in Bloody Brook for the dozen families that had ventured that far south from the village.

In 1818, settlers who lived in the southern reaches of the town convinced the state legislature to establish a second Congregational Church parish so that they could construct their own meeting house and hire a minister. Their petition was granted. The parish boundaries are essentially those of the Long Hill Division of 1688. Construction of the meeting house for the Second Parish Congregational Church was completed in 1821.

In 1847 train service began in South Deerfield with a whistle stop in the outskirts of Old Deerfield village. Both agriculture and manufacturing expanded, South Deerfield became the population and commercial center of the Town, and the roads and byways gradually filled in with a growing number of households.

THE DEERFIELD OF TODAY

Over the course of three and a half centuries, tremendous changes have occurred. Beginning in the 1840s substantial immigrant populations began to settle in Deerfield and surrounding towns, principal among these were Irish, German, and Eastern European--primarily Polish. The arrival of a more diverse population over the years has enriched the town both materially and culturally, and this continues with a growing population. In recent decades reconnections with descendants of Deerfield's Native inhabitants are also occurring. In 2004 a commemorative event was held titled "Raid on Deerfield: The Many Stories of 1704" (<http://www.1704.deerfield.history.museum/>) which included participation by the Deerfield community along with invitees representing numerous native communities and French-Canadian descendants. Efforts also continue to raise awareness of the indigenous past in Deerfield through our museums and other community projects.

Concepts of what constitutes areas of public open space have changed. Recreational opportunities were greatly enhanced in the 1960s, when the Commonwealth created a large park and reserve on Mt. Sugarloaf, small town commons exist in both Old and South Deerfield, and there are many opportunities, but often with limited access, for hiking, kayaking, fishing, and other sports. Improving on these opportunities is today's open space challenge.

Our infrastructure of local roadways has been built out as far as possible. While Routes 5 & 10, I 91 and Route 116 encourage commercial development, they also facilitate peoples' choices to live here, but work elsewhere. These state and federal roads continue to segment the town's landscape. Transportation by rail or trolley have long disappeared. Bus service is limited. Private vehicles are used almost exclusively.

Industrial components of the town have been radically altered by changing economics and modes of production. Agriculture appears robust, but significant shifts in crops have been required due to various challenges, including climate change. The mono-crops of onion, pickles, and tobacco that were once dominant are gone. Fields continue to be used for corn and hay, but many are now planted for commercial flower, berry, and sod production. Truck gardens with outlets at more centrally-located stands support local usage.

As our history records, change is inevitable. Our landscape has clearly been transformed. Our economic base has constantly shifted. Our population has fluctuated significantly. What our future may bring is unclear. Good planning and consensus building can ensure a positive way forward.

C. POPULATION CHARACTERISTICS

Understanding Deerfield's population characteristics is essential for the Town to plan for its future open space and recreational needs and to maximize the use of its open space resources. The following discussion will provide information about Deerfield's population characteristics and an analysis of how the Town's open space and recreation planning can respond to those demographics.

C.1 GENERAL POPULATION

The Town of Deerfield is the fourth largest municipality in Franklin County, with a total population of 5,090. As indicated below in Table 3-1, Deerfield's population increased between 1990 and 2010, but decreased by 0.6% from 2010 to 2020. Population density in Deerfield in 2020 was 152 persons per square mile, based on a total area of 33.4 square miles.

Table 3-1: Total Population, 1990-2019

Geography	U.S. Census Population			
	1990	2000	2010	2020
Deerfield	5,018	4,750	5,122	5,090

Geography	U.S. Census Population			
	1990	2000	2010	2020
Franklin County	70,092	71,535	71,372	71,029
Massachusetts	6,016,425	6,649,097	6,547,629	7,029,917

Source: U.S. Census Bureau – Decennial Census of Population and Housing 1990, 2000, 2010; U.S. Census Bureau 2020 Census PL 94-171 Redistricting data.⁴

Overall, this trend aligns with population growth across Franklin County, as the county’s population grew by 1% over the past 30 years, but contrasts with the trend for Massachusetts as a whole, where the population grew by 16% over the same period.

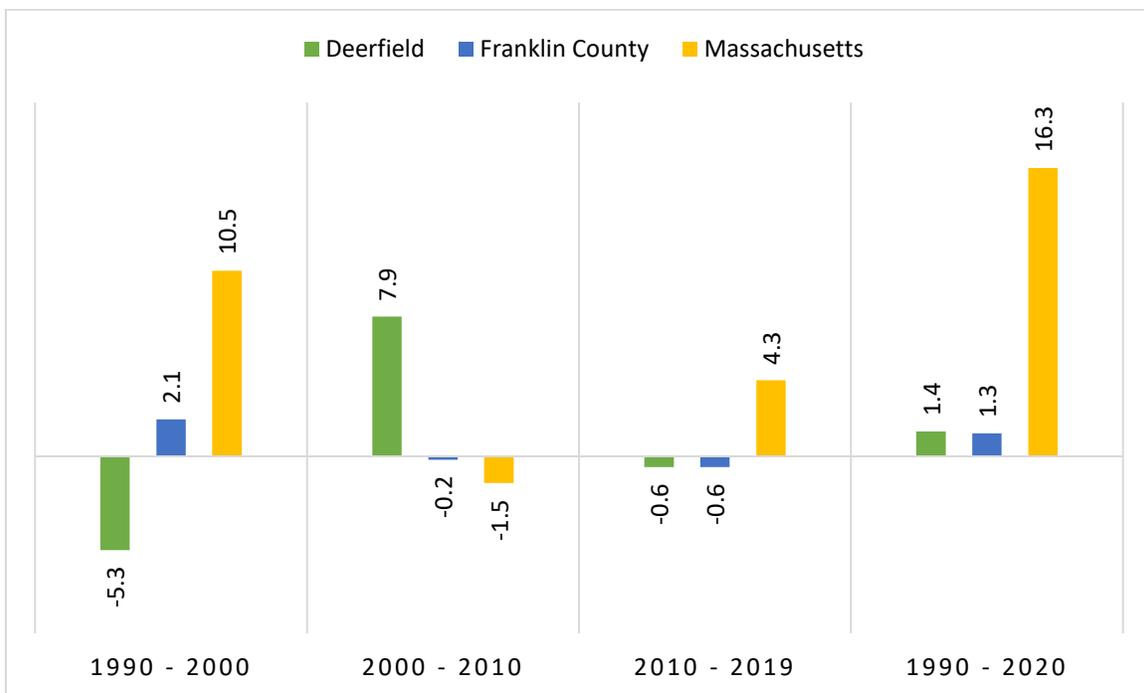


Figure 3-1: Percent Population Change, 1990-2019 in Deerfield, Franklin County, and Massachusetts

Source: Census Bureau – Decennial Census of Population and Housing 1990, 2000, 2010; U.S. Census Bureau 2020 Census PL 94-171 Redistricting data.

C.2 FUTURE PROJECTIONS

The Massachusetts Institute for Social and Economic Research (MISER) projects that the population of Deerfield will increase moderately during the years 2020 to 2040 by approximately 14% (Figure 3-2). Comparatively, the county’s population is expected to decrease by 2% and the state’s population is

⁴ The PL 94-171 dataset is the Redistricting Data File created by the United States Census Bureau based on the decennial census. It was created for use by the states in redistricting. When the final 2020 Census dataset is released, there could be some minor variations to Deerfield’s population from the redistricting data.

expected to increase by 6% over the same period.

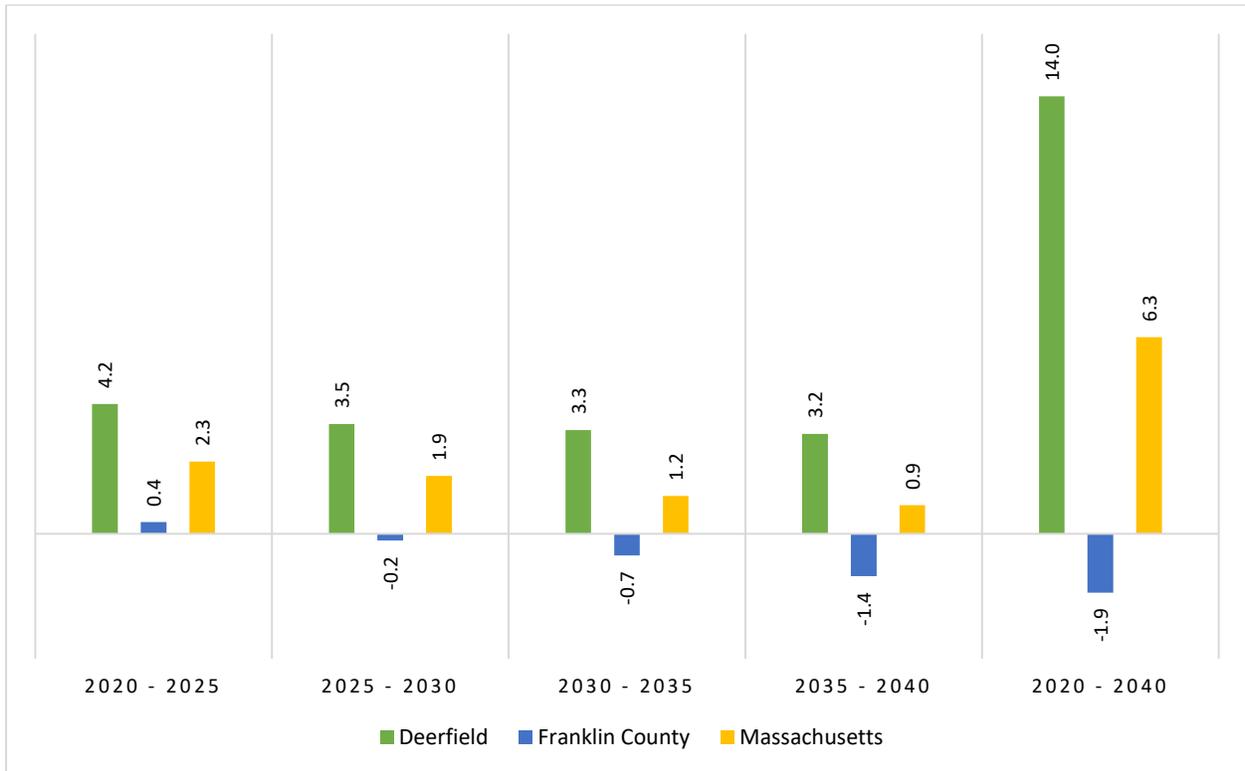


Figure 3-2: Projected Percentage Population Change, 2020 – 2040

Sources: U.S. Census Bureau and UMass Donahue Institute Vintage 2018 Population Projections.

Development pressures and population growth may stem from people relocating from more populous and expensive areas. Deerfield’s housing costs are amongst the highest in Franklin County, so potential buyers may look elsewhere for housing options first, depending on their budget.⁵ However, Deerfield’s housing costs are still significantly lower than urban areas in Eastern Massachusetts. During the COVID-19 pandemic, many families expressed interest in rural living opportunities in Franklin County, so if this trend continues, there may be pressure to build new housing in Deerfield.⁶ Currently there are not enough data to indicate any specific changes with regard to development or population changes. It is important for the Town to continue to monitor these trends as more data becomes available and consider where development is likely to occur to ensure farmlands, forests and ridge lines are protected from fragmentation.

⁵ The median monthly owner costs for housing units with a mortgage in Franklin County is \$1,570, compared to \$1,854 in Deerfield. The median monthly costs for a renter are \$633, compared to \$813 in Deerfield. Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates.

⁶ DeLuca, Zack. Moving to the country: Franklin County sees uptick in homebuyers from cities. Greenfield Recorder, August 2020. <https://www.recorder.com/City-folks-moving-to-the-country-35501300>

To determine how the recent and projected population change in Deerfield translates into demand for open space and recreational resources, it is necessary to look at the age distribution of the current and projected population. According to 2019 American Community Survey, shown in Figure 3-3 below, the Town of Deerfield has a higher percentage of citizens in the 65 and over age category (21%) than Massachusetts as a whole (16%). The Town of Deerfield has a similar percentage of citizens in the 19 and under category (22%) compared to the State (23%) but has less adults from 20-44 years of age (23% compared to 34%) and more adults from 45-64 years of age (34% compared to 28%). The Town’s age distribution of the current population aligns with the makeup of Franklin County.

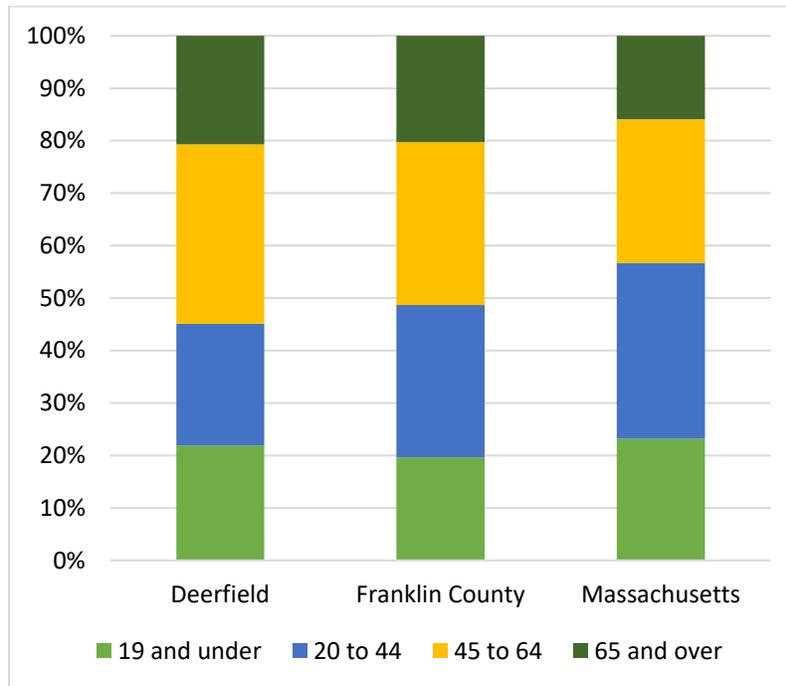


Figure 3-3: Age Distribution, Deerfield, Franklin County and Massachusetts

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates.

If the relatively large cohort of elderly residents (65 and over) were to continue to reside in Deerfield, it could result in a significant population of individuals in the oldest age cohorts in ten to twenty years. As shown in Figure 3-4, population projections estimate that by 2040, roughly 23% of Deerfield’s population will be over the age of 65, compared to 10% in 2010. Evaluating the Town of Deerfield’s current recreation opportunities and how they meet the needs of an aging population, particularly in terms of facilities that are accessible to those with disabilities, is key to developing recreational programming in the coming years that will be attractive to older residents. However, even with an aging population, providing facilities and programs appropriate for all ages will remain an important recreational goal for the Town in the future.

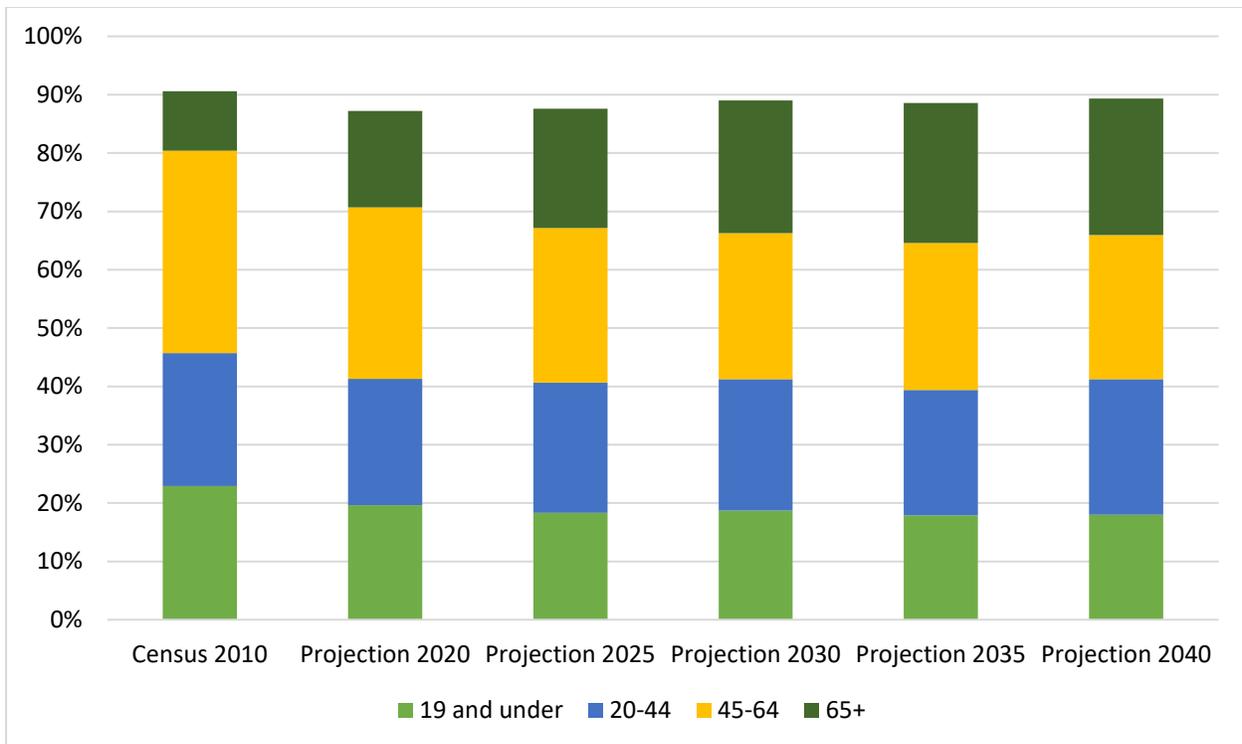


Figure 3-4: Deerfield Projected Age Distribution through 2040

Sources: U.S. Census Bureau and UMass Donahue Institute Vintage 2018 Population Projections.

C.2.1 ECONOMIC WEALTH OF RESIDENTS AND COMMUNITY

Measures of income levels of Deerfield’s residents as compared to the county and state are helpful in assessing the ability of citizens to pay for recreational resources and programs, and for access to open space. The 2019 ACS 5-year survey estimated Deerfield’s per capita income was \$43,325, which is higher than the county per capita income, but slightly lower than the state figure (Table 3-2). The median household income for Deerfield was estimated to be \$83,295 in 2019, which is higher than the county and state estimates. Deerfield’s poverty rate of 7.5% is lower than for both Franklin County and Massachusetts as a whole.

Table 3-2: Income and Poverty

Geography	Per Capita Income Estimate	Median Household Income Estimate	Percent of Individuals Below Poverty Level*
Deerfield	\$43,325	\$83,295	7.5%
Franklin County	\$35,908	\$60,950	9.7%
Massachusetts	\$43,761	\$81,215	10.3%

* For whom poverty status was determined.

Source: American Community Survey 2015-2019 Five-Year Estimates. Five-year estimate of income for the past 12 months and reported in 2018 dollars.

C.2.2 EMPLOYMENT CHARACTERISTICS

The labor force is defined as the pool of individuals who are 16 years of age and over, and are either employed or who are actively seeking employment. Persons not actively seeking employment, such as some enrolled students, retirees or stay-at-home parents, are excluded from the labor force. In 2019, the Town of Deerfield had a labor force of 3,181 with 3,113 residents employed and 68 residents unemployed (Table 3-3). Deerfield experienced a 2.1% rate of unemployment, slightly lower than the Commonwealth of Massachusetts' rate of 2.9%.

Table 3-3: Labor Force and Unemployment Data, 2019

Geography	Labor Force	Employed Persons	Unemployed Persons	Unemployment Rate
Deerfield	3,181	3,113	68	2.1%
Franklin County	41,318	40,207	1,111	2.7%
Massachusetts	3,817,437	3,706,556	110,881	2.9%

Source: Massachusetts Executive Office of Labor and Workforce Development, LAUS Data.

The Town experienced the same fluctuations in unemployment as the county and state over the course of the last ten years, but was not as severely impacted as other areas in terms of unemployment rates, in part because of the diversity of industrial sectors represented in the local economy (Table 3-4). However, it is also evident that Deerfield's labor force figures and the number of employed in town are influenced by the greater economy, as demonstrated by the highs and lows in Figure 3-5.

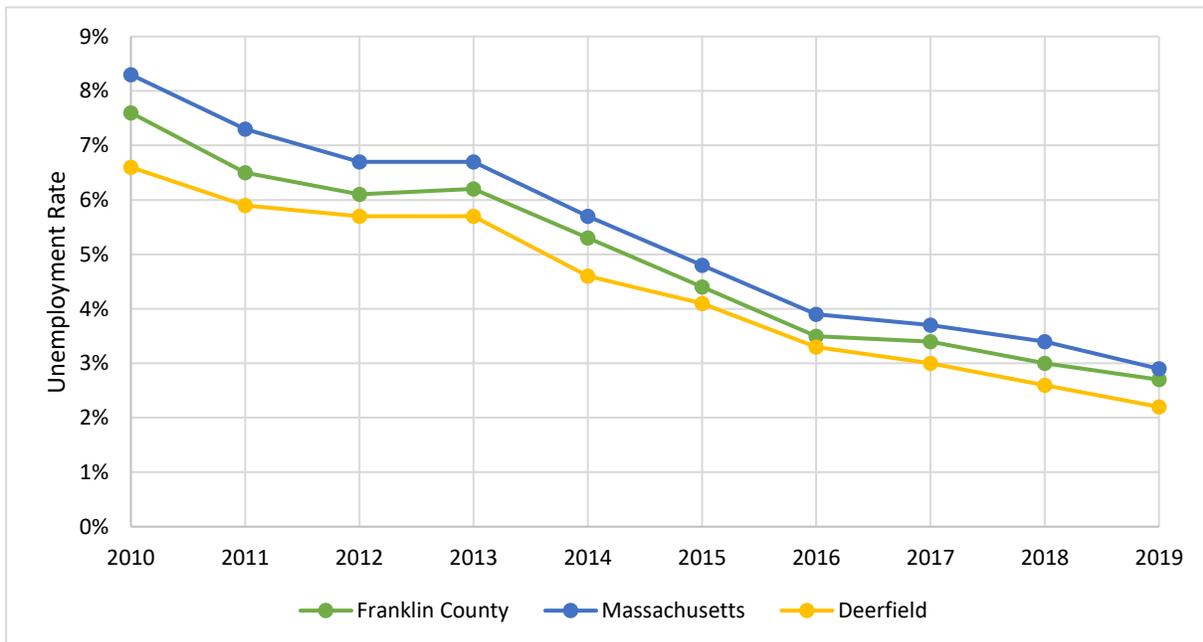


Figure 3-5: Unemployment Rates 2010 – 2019

Source: Massachusetts Department of Labor and Workforce Development

Unemployment data from the spring of 2020 (Figure 3-6) shows the impact of the ongoing COVID-19 pandemic on Deerfield’s workers. In March 2020, the unemployment rate in Deerfield was just 3%, but increased to 13% by April. Although Deerfield faced a high unemployment rate, it closely mirrored the trend experienced across the state. Massachusetts workers faced the highest rates of unemployment across the nation during the pandemic.⁷ Across Franklin County, Paycheck Protection Program (PPP) loans provided to 892 businesses were able to keep an estimated 10,000 jobs in the region. Beginning in July 2020, the unemployment rate fell to 9% and continued to decline back to pre-pandemic levels by June 2021.

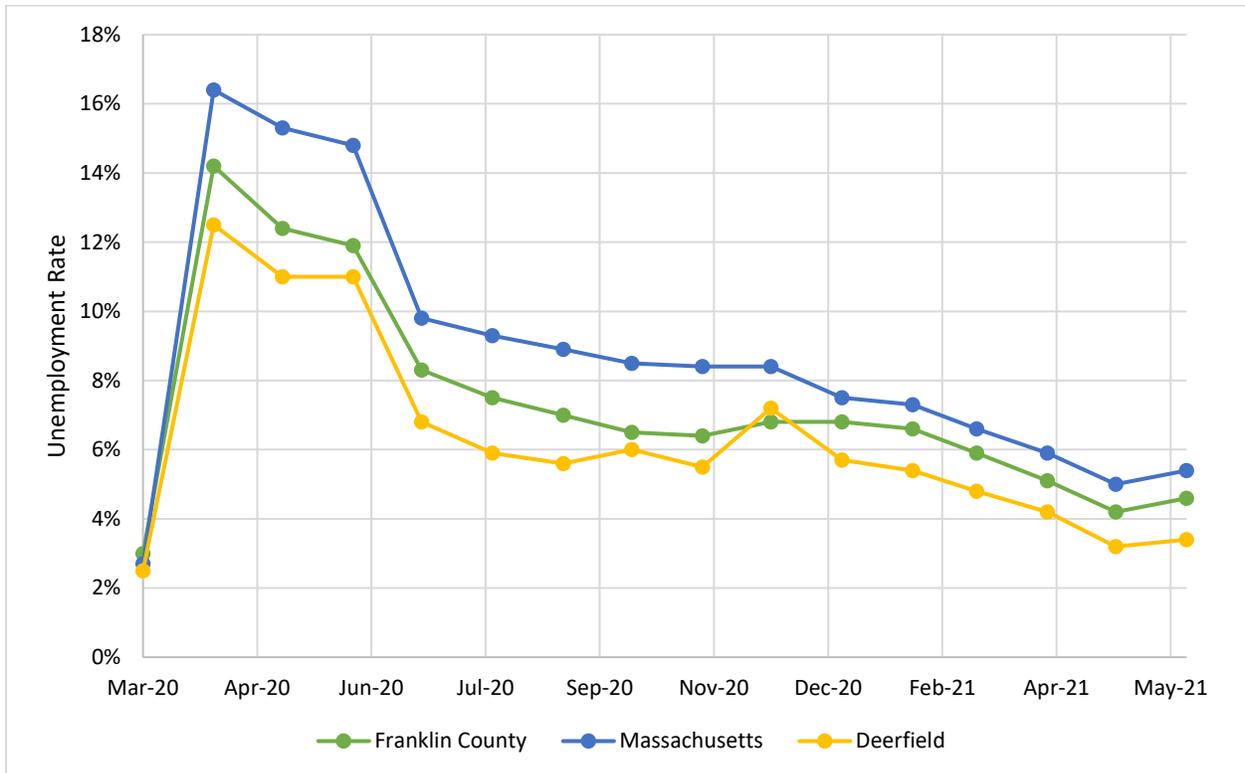


Figure 3-6: Unemployment Rates March 2020 – June 2021

Source: Massachusetts Department of Labor and Workforce Development

As Figure 3-7 demonstrates, the size of Deerfield’s labor force fluctuated slightly from 2010 to 2017, and has grown for the past two years. Often increases in the labor force are attributed to recent population growth or changes in labor force characteristics, such as people re-entering the workforce due to economic need. Decreases in the labor force are frequently attributed to population decline or individuals ceasing to be counted in the active workforce due to being discouraged from pursuing active employment, or due to pursuing educational opportunities instead.

⁷ Massachusetts Executive Office of Labor and Workforce Development, Local Area Unemployment Statistics

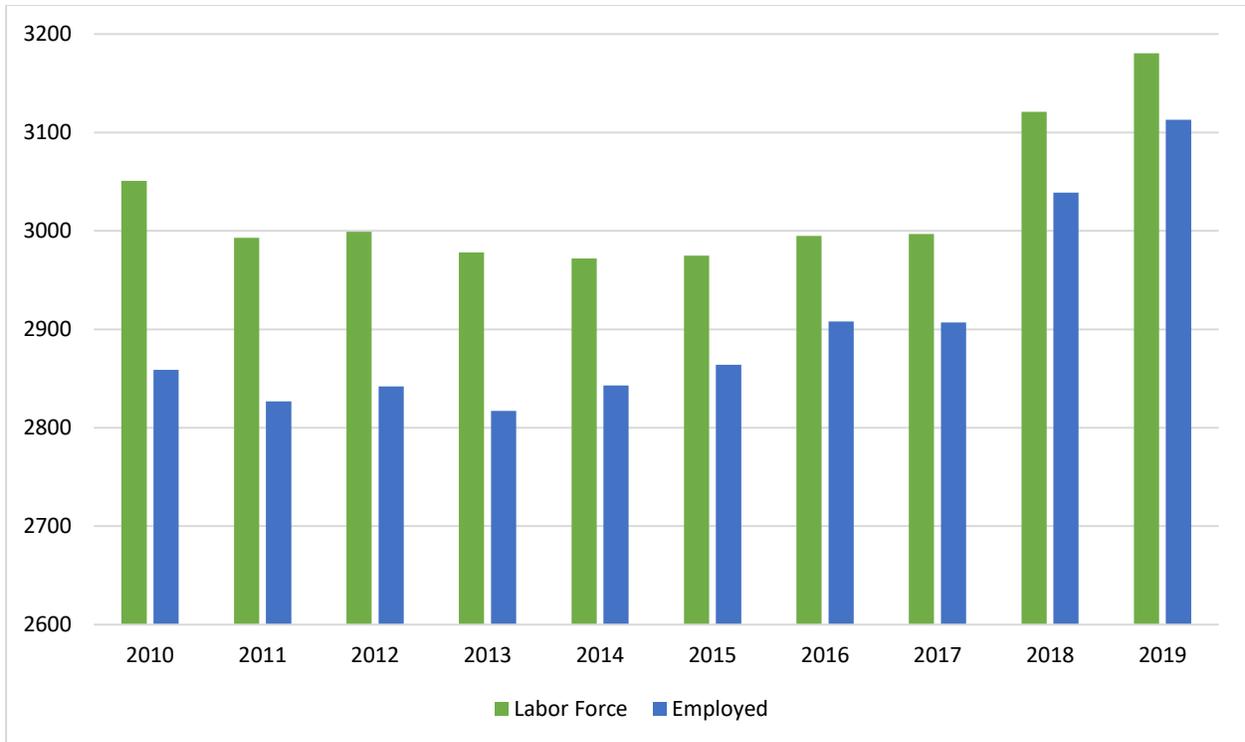


Figure 3-7: Labor Force and Employed Persons in Deerfield, 2010 through 2019⁸

Source: Massachusetts Executive Office of Labor and Workforce Development, LAUS Data.

The Massachusetts Executive Office of Workforce Development collects industry data for towns using the same categories as County Business Patterns, but also includes the public administration sector. Table 3-4 shows the number of workers and the percentage of total workers in each industry sector in Deerfield in 2019. In 2019, educational services, and health care and social assistance was the largest industry in Deerfield, which accounted for 41% of employment, followed by manufacturing (10%), retail trade (10%) and professional, scientific, and management, and administrative and waste management (8%).

⁸ Employment data from before 2010 are not shown because the methodology to estimate the labor force size changed in January 2010. Beginning in 2010, Census total population count data are used to develop labor force estimates.

Table 3-4: Top Industries for Deerfield Residents

<i>Industry</i>	<i>Total Workers</i>	<i>Percentage of Total</i>
<i>Educational services, and health care and social assistance</i>	<i>1,059</i>	<i>41%</i>
<i>Manufacturing</i>	<i>257</i>	<i>10%</i>
<i>Retail trade</i>	<i>251</i>	<i>10%</i>
<i>Professional, scientific, and management, and administrative and waste management services</i>	<i>203</i>	<i>8%</i>
<i>Information</i>	<i>153</i>	<i>6%</i>
<i>Construction</i>	<i>151</i>	<i>6%</i>
<i>Transportation and warehousing, and utilities</i>	<i>145</i>	<i>6%</i>
<i>Arts, entertainment, and recreation, and accommodation and food services</i>	<i>108</i>	<i>4%</i>
<i>Public administration</i>	<i>75</i>	<i>3%</i>
<i>Finance and insurance, and real estate and rental and leasing</i>	<i>70</i>	<i>3%</i>
<i>Wholesale trade</i>	<i>56</i>	<i>2%</i>
<i>Other services, except public administration</i>	<i>32</i>	<i>1%</i>
<i>Agriculture, forestry, fishing and hunting, and mining</i>	<i>28</i>	<i>1%</i>

Source: U.S. Census Bureau American Community Survey Five-Year Estimates, 2015-2019

According to 2019 data compiled by the Franklin Regional Council of Governments and the Massachusetts Department of Labor and Workforce Development, the largest employer located within the Town of Deerfield is Yankee Candle, with between 1,000 and 4,999 workers. This is also by far the largest employer within Franklin County. The largest employers in Deerfield are identified in Table 3-5. Oxford Foods LLC was a major employer in Town that closed in 2006, resulting in a loss of 130 jobs and the connection to the town’s history of pickle production that dates back to the mid-1800s.

Table 3-5: Deerfield Major Employers, 2019

Employer Name	Estimated Range of Employees*	Industry Sector
Yankee Candle Company, Inc.	1,000-4,999	Manufacturing; Retail Trade
Pelican Products Inc.	500-999	Manufacturing
Deerfield Academy	250-499	Education
Comprehensive Home Care	100-249	Health Care & Social Assistance

Employer Name	Estimated Range of Employees*	Industry Sector
Frontier Regional School District/Union 38	100-249	Educational Services
Goulet Trucking	100-249	Transportation
Historic Deerfield, Inc.	100-249	Arts, Entertainment & Recreation

*Includes full-time, part-time and per diem employees.

Source: MA Department of Workforce Development: 2019 Largest Employers by Area; FRCOG: 2020 Franklin County Regional Transportation Plan.

Analysis

Although Deerfield’s population has not significantly changed in the last 40 years, population projections indicate the Town may need to accommodate a larger community within the next couple of decades. The median age in Deerfield is 51, compared with a state average of 40, and aging is accelerating faster than the rest of the state. The region recognizes that a declining and aging population presents a major challenge because it affects all aspects of life and the economy. According to Deerfield’s Housing and Production Plan, there are no affordable senior housing units in Deerfield.⁹ Overall, there is a shortage of affordable housing units in the South County Region.

Deerfield is in the process of researching and identifying senior housing options, including determining the demand and how to finance construction. There are pockets of municipal land where senior housing could go. The Open Space & Recreation Committee is working with the Ad Hoc Senior Housing Committee via the Connecting Community Initiative, and can have an active role in helping determine suitable options. The Planning Board is also considering allowing Accessory Dwelling Units (ADUs), which could provide another avenue for providing affordable senior housing and conserving land. ADUs can be particularly helpful to elders as they “age in place,” by receiving supplemental income and possible maintenance assistance from tenants.

Deerfield’s Housing and Production Plan notes that targeted mixed-use development on Routes 5 and 10, through infill and adaptive reuse of existing structures, could provide new housing opportunities while avoiding commercial strip development along the route. As previously discussed, any development in Deerfield should be sited carefully in order to ensure the protection of the Town’s rural character and agricultural, forest, and water resources.

With funding from a Municipal Vulnerability Preparedness Action Grant, Deerfield recently revised its Zoning Bylaw to promote climate resiliency as well as low impact development. The Town’s Site Plan Review Zoning Bylaw now includes Green Development Performance Standards, which requires applicants to meet specifications for landscaping and water reduction, tree preservation, construction waste management and topsoil recovery and several other categories. Residents voted to pass the

⁹ Town of Deerfield Housing Production Plan, 2014-2019

Zoning amendments at Town Meeting in June 2021, and they are currently under review at the state level.

The overall character of Deerfield could be affected by a number of potential changes. Potential impacts of climate change could begin to push populations further west in the State, away from the coast, and more of Deerfield's land could be used for residential development. Diminishing supplies of fossil fuels – and their potential rising costs – continue to cause people to turn to alternate sources of locally produced energy sources, such as wood and solar, which could impact Deerfield's woodlands and open spaces. Related to the rising costs of fossil fuels, costs of shipping foods long distances could cause an even greater demand for locally grown and processed food, potentially placing a greater demand on farmland in Deerfield. Flooding from an increase in the intensity of storms and rainfall may also impact farm operations close to the Deerfield and Connecticut Rivers, and further limit the availability of land for new development. Tropical Storm Irene in 2011 provided an example of the extent of flooding that can occur in Deerfield's lowlands during large rain storms. While challenging, with thoughtful planning, these potential changes in development could be integrated into Deerfield's existing character, and could lead to greater energy independence, food security, and support for a continued healthy and productive farming community. Planning for growth before it happens will help to protect open space and recreation resources into the future while providing a livable community for people of all ages.

C.2.3 ENVIRONMENTAL JUSTICE POPULATIONS

The State of Massachusetts defines an environmental justice (EJ) community if any of the following conditions are met:

- Block group whose annual median household income is equal to or less than 65% of the statewide median (\$55,797 in 2019); or
- 40% or more of the residents identifying as minority; or
- 25% or more of households lack English language proficiency; or
- Minorities comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income (\$128,764 in 2019).

According to these criteria, the Town of Deerfield does not have any Environmental Justice populations. However, the Committee acknowledges there are climate vulnerable populations living in Deerfield, such as low-income communities and older adults. These populations will bear a disproportionate burden of the adverse health outcomes due to climate change.¹⁰ In terms of this Open Space and Recreation Plan, it is important to consider how to ensure these populations will have continue to have access to open spaces, clean air, clean water, and places to recreate safely.

¹⁰ People Who Are Vulnerable to Climate Change. The National Institute of Environmental Health Sciences. https://www.niehs.nih.gov/research/programs/climatechange/health_impacts/vulnerable_people/index.cfm

D. GROWTH AND DEVELOPMENT PATTERNS

D.1 PATTERNS AND TRENDS

During the pre-contact period, much of the open land in Deerfield was used by the Pocumtucks for farming. Written sources state that the Pocumtucks congregated in the fertile Deerfield River Valley and the adjacent hills in Deerfield. The Connecticut River floodplain is also the site of high quality agricultural land. Both the Deerfield and Connecticut rivers have long been utilized by natives and colonial settlers as an important fishing area. Native hunting most likely concentrated on the town's central lowlands and to a lesser degree the local uplands.¹¹

When Deerfield was colonized by English settlers in the late 1600s, the settlers built a compact, linear village in Old Deerfield surrounded by rich agricultural lands. The forests in Deerfield were gradually cleared to make way for cropland and grazing. In the 1790s, agriculture accounted for approximately 50% of the land in the Connecticut River Valley and during the period from 1800 to 1875, 60% to 80% of most towns in the area were devoted to open land (Foster; 1998). With 16% of its land area actively devoted to agricultural use today, Deerfield can still be considered an agricultural community despite significant losses of farmland to residential development in recent years.

The road system originated in Old Deerfield, the historic center, where business and residential activity were situated. With the coming of the railroad, development expanded south along Routes 5/10 to form the larger village of South Deerfield. From there it gradually radiated out in all directions as residential development began to encroach on former agricultural lands.

Bounded by Mount Sugarloaf to the east and by Routes 116 and 5/10 to the south and west, South Deerfield is considered the business and industrial heart of Deerfield, and is one of the major employment centers in Franklin County. The majority of commercial and industrial development is concentrated within the Small Business zoning district in the center of the village, the Expedited Permitting District encompassing the former Oxford Foods site, several Commercial districts along portions of Routes 5/10, two Industrial districts along Routes 5/10, and the Planned Industrial district along the south side of Route 116, at the location of the Deerfield Industrial Park (see the Zoning Map at the end of this section). Unfortunately, this area shows early signs of suburban sprawl and if future growth is not laid out and designed creatively, the area could lose its small village character. Development in this area in the last twenty years, both residential and commercial/industrial, has occurred on land that was once farmland with prime agricultural soils. Continued development of this area without careful planning will result in further degradation of its historically rural nature.

¹¹ Massachusetts Historical Commission Reconnaissance Survey Town Report: Deerfield, 1982.
<https://www.sec.state.ma.us/mhc/mhcpdf/townreports/CT-Valley/dee.pdf>

A Small Business district is also located along Routes 5/10 just south of Old Deerfield, and a Commercial district is designated in East Deerfield, at the confluence of the Connecticut and Deerfield Rivers. It is dominated by a railroad yard and rock quarry operations.

The historical changes in land use in Deerfield can be described as exhibiting three main patterns: subdivision, commercial/industrial expansion, and approval-not-required (ANR) development (development of homes along existing roads). There are three areas in South Deerfield that have seen the most subdivision and ANR development: the Mill Village area, which has suffered from septic system failures, and which is also now largely protected; North Hillside and Hillside Road; and the South Deerfield Village Center.

Although the landscapes are mostly permanent, being based on glacial and geomorphic processes, their uses are not. For example, the floodplains of Deerfield have historically been prized for their prime soils and, thus, farming has been a dominant activity there. However, development pressures threaten the continued viability of Deerfield farms. The more fragmented farmland becomes, the more expensive it becomes to farm, based on additional time and fuel costs. In the same way, fragmentation of the landscape affects the viability of forest management operations. When a large forest block is fragmented by a subdivision, the resulting parcels associated with single-family homes are often too small to manage individually for forestry purposes. Finally, the most inefficient method of providing municipal services such as police, fire, sewer, water, waste disposal, and plowing is associated with a fragmented landscape where residential development is spread sparsely across the town.

The following table is based on a new land cover/land use dataset provided by MassGIS and released in May 2019. This statewide dataset contains a combination of land cover mapping from 2016 aerial and satellite imagery, LiDAR and other data sources. Land use mapping is derived from standardized assessor parcel information for Massachusetts. This land cover/land use dataset does not conform to the classification schemes or polygon delineation of previous land use data from MassGIS (1951-1999; 2005) so comparisons of land use change over time can't be made using this current data.¹²

Table 3-7: Deerfield 2016 MassGIS Land Use Data

Land Use	Acres	%*
Open land	3,720.11	17%
Agriculture	3,561.52	16%
Residential - single family	3,110.98	14%
Tax exempt	2,449.08	11%
Mixed use, primarily residential	2,185.64	10%
Right-of-way	1,759.61	8%
Forest	1,753.80	8%
Mixed use, other	999.73	5%

¹² <https://docs.digital.mass.gov/dataset/massgis-data-2016-land-coverland-use>

Land Use	Acres	%*
Industrial	852.4	4%
Water	608.76	3%
Residential - multi-family	421.73	2%
Mixed use, primarily commercial	244.07	1%
Residential - other	186.77	1%
Commercial	169.73	1%
Recreation	42.11	0.2%
Unknown	32.76	0.1%

*Calculations based on a total of 22,098 acres of land in Deerfield. Source: MassGIS

According to the 2016 MassGIS data in Table 3-7, approximately 27% of the town is classified as residential land use and 17% of the town is classified as agricultural land use. Although the 2005 and 2016 land use data sets cannot be directly compared, the general trend Deerfield is experiencing is an increase in residential development and a decrease in agricultural land. However, according to the Deerfield Housing Production Plan, approximately 50% of the Town’s agricultural land is permanently protected from development.¹³ Approximately 5% of the total area in town is comprised of commercial or industrial land uses. According to information provided by the Deerfield Assessors’ and Building Inspector, between 2014 and June 2020, the Town issued sixty-two (62) building permits for new construction. Thirty-eight (38) of these permits were for condominiums under construction for a development in South Deerfield east of North Main Street near Mt. Sugarloaf State Reservation known as the Condominiums at Sugarloaf.

The conversion of forest and agricultural land to building sites for single-family homes is the dominant land use change in Deerfield. Future development patterns in Deerfield may depend on national and regional employment and population trends but also on local conditions that impact development and land use, such as infrastructure and land use controls. Zoning that promotes infill development in the South Deerfield Village Center could be a desirable option for the Town to consider in order to limit the amount of agricultural land that is developed for housing.

As previously noted in this section, there is an unmet need for affordable housing and affordable senior housing in Deerfield. The Sugarloaf Condos in South Deerfield proved to be a popular option for seniors; the 70 newly constructed units sold out in just three years, and 40 people are still on the waiting list. Most of the units were occupied by seniors from the area, but some of the new tenants came from further away, drawn to the area and the ability to age in place. However, this development did not provide an affordable housing option for seniors in Deerfield.

Massachusetts’s Affordable Housing Law was enacted with the goal of making at least 10% of every community’s housing affordable. In communities with little affordable housing (less than 10% of its year-

¹³ Town of Deerfield Housing Production Plan, 2014-2019

round housing), developers are able to appeal an adverse local decision. Only 1.5% of Deerfield’s year-round housing qualifies as affordable, meaning the Town must maintain a housing production plan and meet other short-term production goals in order to receive one or two year exemptions from state appeals. Developing more affordable housing in Deerfield would not only benefit the community, but it would also put Deerfield in a better position to determine where housing is developed.

D.2 INFRASTRUCTURE

D.2.1 TRANSPORTATION SYSTEM

ROADS

Routes 5/10 and 116 constitute important transportation corridors that link Deerfield to the surrounding municipalities. Route 5/10 is the main north-south thoroughfare while Route 116 cuts diagonally from the southeast to the northwest. Interstate 91, with two exits located in Deerfield, bisects the town and also provides access to Route 2 and the Massachusetts Turnpike, which extends from Boston to Albany, New York. A park and ride facility is located at the intersection of Routes 5/10 and Route 116, just north of the Interstate 91 exit 35 interchange in Whately, and facilitates carpooling and transit connections for commuters and travelers.

PUBLIC TRANSIT

Deerfield’s public transit is limited. The Town is served by the Franklin Regional Transit Authority (FRTA) and the Pioneer Valley Transit Authority (PVTA). The FRTA has six scheduled weekday trips between Greenfield and South Deerfield. Through UMass transit, the PVTA provides bus service from Amherst through Sunderland to South Deerfield, which travels to and from the university six times daily during the week, five times daily on Saturday, and three times on Sundays.

RAIL

The Pan Am Rail System’s Connecticut River Main Line carries between six to ten trains daily.¹⁴ Each train carries up to 100 freight cars, typically carrying goods such as plastic pellets, fertilizer, steel reinforcement rods and grain. The line runs along the Deerfield River from the Hoosac Tunnel to Greenfield. The East Deerfield Rail Yard is one of only two GRS classification rail yards in New England. A classification yard acts like a post office, splitting up lengths of containers, and rerouting containers into new train lengths based on their final destination. In the future, it may be desirable for the facility to operate as a trans-loading yard for the transfer of cargo from train to truck. This would result in increased traffic along Route 5/10 and in Deerfield.¹⁵

At the 2018 Municipal Vulnerability Preparedness Community Resiliency Building workshop, the East Deerfield Rail Yard was identified as a key vulnerability. The railyard is located along the Connecticut

¹⁴ Pan Am Rail Systems was sold to CSX Corporation on November 30, 2020. The sale is still pending as of February 2022.

¹⁵ Rail information was drawn from the Deerfield Master Plan, pg. 5-27.

River near the mouth of the Deerfield River and has hazardous materials subject to flooding impacts. In the event of a spill, the water quality of both rivers could be affected.¹⁶

In August 2019, Amtrak began a “Valley Flyer” service as a two-year pilot program. The service runs from Greenfield to New Haven, Connecticut, and with connections passengers can travel from Greenfield to New York City and back in a single day. When the pilot period ended, Amtrak announced the Valley Flyer would be a permanent service due to steady ridership. The John W. Olver Regional Transit Center in Greenfield serves as the hub of the Valley Flyer service and other public transportation options in Franklin County. The service is a good option for Deerfield residents who would like to use public transit to travel throughout the region, or for remote workers who are interested in living in more rural setting such as Deerfield, but would also like to have access to larger metropolitan areas.

SIDEWALKS

Several traffic calming and streetscape studies have been completed for the South Deerfield village center in order to improve the environment, safety and accessibility for pedestrians in the village. A 2001 traffic calming study focused on pedestrian safety and accessibility in South Deerfield, with a goal to improve the pedestrian connection from South Deerfield to the tourist related commercial activities along Routes 116, 5, and 10. The study developed recommendations for streetscape and roadway improvements that would increase safety and mobility for pedestrians, bicyclists, vehicles, and transit system users. In 2004 a pedestrian facilities survey administered by the FRCOG was completed by the Town Administrator and Highway Superintendent, and identified the following projects needed to improve pedestrian infrastructure in Town:

- Sidewalk repairs in South Deerfield
- Sidewalk repairs in Old Deerfield
- Sidewalk extensions east and west across Route 5 and 10
- Sidewalk repairs, public safety improvements, snow removal, ADA accessibility and parking are needed on Elm Street in South Deerfield.
- The sidewalk integrity is poor (i.e. broken or uneven concrete slabs) on Memorial Street and Main Street in Old Deerfield

A follow up to the survey was conducted in 2010, in which it was noted that some sidewalk repairs had occurred since the first survey, but that most of the issues identified in 2004 still exist.

Building upon the streetscape and traffic calming studies mentioned previously, the Town hired a consultant to develop a Complete Streets and Downtown Livability Plan for South Deerfield, and the Town’s Complete Streets Policy was adopted in May 2019.¹⁷ The goal of the plan is to better connect the residential neighborhoods of South Deerfield with the downtown commercial district, surrounding

¹⁶ Municipal Vulnerability Preparedness for Deerfield: Summary of Findings. Conservation Works, LLC, 2018.

¹⁷ <https://gis.massdot.state.ma.us/completestreets/PublicDownload.ashx?aWQ9ODM0JnRpZXJJZD0x>

schools, and the former Oxford Food site. The plan utilizes the Complete Streets model, which provides a balanced approach to street design that accommodates all modes of transportation, including walking and cycling. Ideally, the development and implementation of the Complete Streets and Downtown Livability Plan will provide for increased walking and cycling opportunities in the village center for both recreation and transportation purposes. According to Deerfield's Complete Streets Prioritization Plan, the Town's top three projects are:

- Updating crosswalks, installing curb ramps, pedestrian scale lighting, a bike rack, and a bus shelter at the Town Common;
- Reconfiguring the street and intersections to improve safety with the one-way street movement and installing curb ramps and sidewalks on Park Street; and
- Upgrading crosswalks and installing curb ramps, detectable walking panels, and flashing beacons, and reconfiguring on-street parking to improve ADA access on Elm Street.¹⁸

The 2021 Open Space and Recreation Community Survey demonstrated residents highly value functional sidewalks in Town. Of all the open space and recreational resources listed on the survey, sidewalks were selected as the most commonly used amenity. When asked about the major threats to the things residents love most about Deerfield, the fourth most common response was sidewalks in disrepair. Additionally, 42% of all survey respondents indicated improving sidewalks should be a high priority for the Town.

BIKEWAYS

The Franklin County Bikeway is a comprehensive network of off-road and shared roadway linkages to destinations throughout Franklin County. The goal is to provide alternative transportation that provides access to employment, educational, cultural and recreational sites. The Franklin County Bikeway currently consists of about 240 miles of trails, although not all of the expanded routes have been marked with wayfinding signs. Maps are available for routes in Eastern, Central, and Western Franklin County; many of the identified loops for Central County run through Deerfield.

The Deerfield Upper Road Lower Road route is a 12.8 mile loop that travels from Historic Deerfield to Greenfield and back via rural roads through farmland. The Whately Conway loop travels through a portion of Deerfield on Route 116 and South Mill River Road. The River Road loop is an 18.7 mile route that travels along River Road in Deerfield and links to Montague via the Canalside Trail path to the north, and to Sunderland via the Route 116 bridge in the south. Additionally, the River Road Connector begins at the intersection of Route 116 and River Road and travels south into Whately, connecting to Hampshire County in Hatfield. These routes are all marked with Franklin County Bikeway signs. Bikeway maps are available online at <https://frcog.org/program-services/transportation-planning/>

¹⁸ <https://gis.massdot.state.ma.us/completestreets/Map/>

D.2.2 WATER SUPPLY SYSTEM

The water that Deerfield residents drink comes from private wells and springs or public water district supplies. Water district supplies have both groundwater and surface water sources. In the Town of Deerfield, a brief analysis of water supply systems requires a separate discussion of its two main water districts, the South Deerfield Water Supply District and the Deerfield Fire District. Each utilizes a different system of public water sources and aquifers, and each has different issues and concerns.

SOUTH DEERFIELD WATER SUPPLY DISTRICT

The South Deerfield Water Supply District (SDWSD) utilizes a water distribution system that withdraws water from two reservoirs connected to each other by way of Roaring Brook. The primary source is a service reservoir located in Whately with a total water volume or capacity of 6.7 million gallons. The secondary reservoir located upstream in Conway has a total storage capacity of 164 million gallons. In comparison, the Roaring Brook Reservoir system has a firm yield of 1.42 million gallons per day. The firm yield is the amount of water that can be utilized on a continuous basis during an extended dry period without adverse hydrological or ecological impacts. The permitted water withdrawal volume is currently 650,000 gallons per day. A system is not considered to be in violation of this permit until it exceeds this amount, plus an additional 100,000 gallon allowable overrun.

To assist the SDWSD in limiting future demand on its water supply systems and to increase the system's climate resiliency, the Town of Deerfield may adopt zoning bylaws that restrict new commercial and industrial development to companies that use less water within the district. The SDWSD may also encourage the adoption of district-wide water conservation practices, such as a fee structure that charges more as usage increases, and other methods.

DEERFIELD FIRE DISTRICT

The Deerfield Fire District provides water to a stable customer base of primarily residential users with a small amount of agricultural, commercial and industrial services. The system also serves as a supplement to the Eaglebrook School's public water supply. All of the users are metered. The Deerfield Fire District (DFD) provides its customers with water primarily from two sources. The first is the Stillwater Well, with an average daily flow rate of 95,000 gallons per day. The Stillwater well taps into an aquifer straddling the Deerfield River between the bridge and Interstate 91. The Stillwater Springs/Harris Springs are inactive. These sources were closed in July 2003 for failure to pass the microscopic particulate analysis (MPA) and bringing them back on-line would require an expensive water treatment facility, which is not feasible. When these springs were in operation, they generated average daily flow rates of 70,000 gallons per day.

The second water source area is located off Pine Nook Road near Eaglebrook School. The Keats Spring and the new Cistern Spring, with their source the Pocumtuck Ridge, fill a 210,000 gallon tank reservoir that feeds into the distribution system. The Keats and Cistern Springs produced average daily yield of

approximately 41,000 gallons in 2017.¹⁹ The DFD's total water supply system's registered withdrawal is 100,000 gallons per day.

The Wapping well located along Route 5/10 just south of Childs Cross Road is currently inactive due to road salt contamination, though in the past it was considered as the emergency well. Currently, the Deerfield Fire District can purchase water from the Town of Greenfield in the case of an emergency.

Each well or spring is surrounded by land owned by the water district which is considered to have a high level of protection. The water withdrawal rate rarely exceeds its registered amount, has no contamination problems, and has no apparent concerns with respect to future water demands. Originally, the Deerfield Fire District used the Stillwater Well as their primary drinking water source. Over the years, the district has developed its spring water sources with new pipes and collection boxes. Overall, 35% of the DFD's water currently comes from springs, down from 66% when the Harris-Stillwater Springs were on line.

The Town needs a town-wide drinking water assessment in order to determine what percentage of the town's population is adequately served by the existing water districts and what percentage is not. Once underserved areas have been identified, potential sources of drinking water need to be identified and protected. Many residents on River Road are served by private deep wells that are not potable due to hardness and natural sources of arsenic found in the red rock aquifer that runs north and south in the valley.²⁰

D.2.3 SEWER SERVICE

The Town of Deerfield is served by two wastewater treatment plants, one in South Deerfield and one in Old Deerfield; both were constructed in 1971. Both facilities need repairs and upgrades to maintain their operational capacity as well as to increase their climate resiliency. The plant in Old Deerfield is threatened by fluvial erosion and flood hazards associated with the Deerfield River. An engineering feasibility study is needed to identify climate resilient improvements and associated cost estimates for both plants.

In 2019, Deerfield voters agreed to fund improvements to the South Deerfield Wastewater Treatment Facility, including those required by the MassDEP (replacement of the mechanical system inside an existing secondary clarifier at the plant). Public Works Superintendent Kevin Scarborough previously explained the clarifier is the tank that treated water goes through before making contact with chlorine. It failed in December 2017, when electricity was temporarily disabled by brutally cold temperatures and its metal arm bent after power came back on and tried to move accumulated treated water.²¹ Voters agreed to take on the \$19M costs of the planning, design, permitting, bidding and construction needed

¹⁹ https://www.deerfieldma.us/sites/deerfieldma/files/uploads/od_consumer_confidence_report.pdf

²⁰ 2020 Town of Deerfield Multi-Hazard Mitigation Plan

²¹ <https://www.recorder.com/Deerfield-special-ballot-question-election-26377163>

at the 150 Sunderland Road facility. Deerfield has secured a 40-year, approximately \$8 million loan (at 2.125% interest) and a \$2.6 million grant from the U.S. Department of Agriculture. The project's first phase will cost about \$11 million, with the total cost estimated at \$20 million.

The issue of wastewater treatment expansion is a difficult one since areas with a high frequency of septic system failures are spread throughout Deerfield, with particular problems in the Mill Village Road area of town. The Weston and Sampson Engineers (WSE) Wastewater Strategic Plan prepared for the Town of Deerfield in 1999 presented a series of alternatives that would attempt to solve the extensive septic failures experienced by residents around Town. The primary cause of the septic problems identified by WSE is an historic high water table in the affected areas. As a result, many people have to pump out their septic tank two or three times per year. The three levels of changes proposed were: sewer line extensions within ½ mile of the existing system, shared Title 5 septic systems for areas outside of the ½ mile buffer, and alternative or conventional on-site systems. Expansion of the sewer line would be expensive, in part because of the necessity for a pumping station. In the meantime, septic failures have been continuing. Further, recent construction of new homes is reported to be affecting the water table for local farmers and homeowners.²²

D.4 LONG TERM DEVELOPMENT PATTERNS

D.4.1 ZONING CONTROLS

Deerfield's Zoning Bylaw (Chapter 179 of the Deerfield Code) sets out the zoning districts, permitted uses and required lot sizes and dimensions that govern the Town's patterns of development. The town is divided into six districts:

- Residential-Agricultural (RA)
- Center Village Residential (CVRD)
- Small Business (C-I)
- Commercial (C-II)
- Industrial (I)
- Planned Industrial (PI)
- Expedited Permitting District (EPD)

The town also has six overlay districts:

- Watershed Protection District
- Flood Plain District
- Wireless Communications District
- Adult Use District
- Marijuana Overlay District
- Tourism Overlay District

²² 2020 Town of Deerfield Multi-Hazard Mitigation Plan

The majority of the town is in the Residential-Agricultural District. The commercial districts are located in South Deerfield village center, along Routes 5/10 between North Main Street and North Hillside Road, a small sliver along Routes 5/10 near Old Main Street, and in East Deerfield north of Keets Road, encompassing the East Deerfield rail yard at the confluence of the Connecticut and Deerfield Rivers. The Center Village Residential District is a mixed-use district also located in South Deerfield, east of the Connecticut River Main Line Railroad and north of Route 116, surrounding the Small Business District in the village center. The Expedited Permitting District encompasses the former Oxford Foods site in the village center. The Planned Industrial District is located south of Route 116 to the border with Whately, and the Industrial District is located along Routes 5/10 at the Whately border and further north between exit 35 on I-91 and Mill Village Road. The Watershed Protection Overlay District is located south of the Deerfield River and west of Route 91 on the town's western boundary and its restrictions to development and associated uses are stricter than the underlying Residential-Agricultural district (see Zoning Map at the end of this section).

Use regulations for these districts are included in Section 2200 of the Zoning Bylaw. Residential uses are permitted by right in the RA and CVRD districts, and a dwelling unit incidental to a commercial or industrial use is allowed by right in the C-I and C-II districts. Only single-family dwellings are allowed in the RA district, while both single-family and detached two-family dwellings are allowed in the CVRD. Two hundred feet of frontage is required to build in the RA district. Multi-family dwellings are allowed only by special permit in the CVRD, C-I, and EPD districts.

Two alternative development approaches, Flexible Developments and Conservations Subdivisions, are allowed under Deerfield's zoning. The purpose of these types of development is to encourage the preservation of open space, countering the effects of ANR lot development described above. Flexible Developments (Section 3500) can be constructed in any residence district when five or more lots are being created, whether in a subdivision or not. This provision allows for flexibility in lot sizes, however it is most applicable to the RA district, since the required minimum lot size is one acre for Flexible Developments, which is greater than the minimum lot size allowed in the CVRD, leaving little incentive for developers to choose this type of development for the CVRD district.

Conservation Subdivisions can be constructed in the RA district by right whenever five or more lots are created and require the permanent protection of at least 20% of the parcel as open space. The design process for Conservation Subdivision development requires developers to first designate the important natural, scenic, and cultural resources to be preserved as open space, and then determine house placement, then the street layout, and finally the lot lines. The lots are subject to less stringent dimensional requirements than are traditional lots in the underlying district. This process ensures that the provision of open space is not left to the end of the design process, but instead is the foundation which the remaining development is built upon. While this approach is preferable for conserving open space, there are no incentives in the Zoning Bylaw for developers to choose this method. The total number of housing units for both a conventional design and a Conservation Subdivision design must be the same. Additionally, while a stated purpose of the Conservation Subdivision is to promote affordable

housing for low- and moderate-income families, it is unclear how this would be accomplished. One way to accomplish this is to allow for an increase in the number of housing units (also known as a density bonus) allowed if a certain percentage of the total units in the subdivision are set aside as affordable. Density bonuses can also be given for an increase in the amount of open space set aside in the development. Language could also be added to the bylaw to emphasize specifically what types of resources the town wants to prioritize for protection, such as farmland. An effort should also be made to connect any protected open space within a proposed development with surrounding protected land to allow for contiguous protected open space.

A Planned Unit Development Bylaw was added to the Zoning Bylaws in 2010, and provides for a unified development containing a mix of uses and buildings under a comprehensive site plan. The intent is to allow for a campus-like clustering of buildings that maximizes the amount of open space on the site. Planned Unit Developments may be located in the Small Business (C-I), Commercial (C-II), and Industrial (I) districts.

The Deerfield Subdivision Regulations state that the Planning Board may require space for parks or playgrounds for recreational purposes and to allow for light and air in the proposed development. The size of the park or playground must be reasonable, and generally should be no less than 5% of the total area of land being subdivided. If the park or playground does not have frontage on a street, the Planning Board may require pedestrian access be provided from a street to the park. Sidewalks are required on all new streets, and public off-street walkways, bikeways, or bridle paths may be required as determined by the Board.

In 2011, Deerfield completed a Best Development Practices Guidebook for developers, designers, and community boards. The guidebook provides guidelines for stormwater management, erosion and sedimentation control, landscape design, and site planning. The guidebook promotes low cost, low impact solutions to protect groundwater and other natural resources, and ultimately the character of Deerfield.

These land use controls direct commercial and industrial development to appropriate areas of Deerfield, protect some critical water resources, and provide options to minimize the negative effects of development on the character of the town. Nonetheless, because such a large percentage of the town is located in the Residential-Agricultural district, this is where further residential development is likely to occur. This district includes most of the farmland and forestland that defines Deerfield's rural/agricultural character. Without a concerted effort to protect in perpetuity more of these critical resources, this land may ultimately be consumed by development and the open land in Deerfield will be restricted to only that which is currently protected.

In 2017, The Town of Deerfield Planning Board began updating the Floodplain Zoning Bylaw with funds provided by a Municipal Vulnerability Preparedness Action Grant. The revision helped to clarify the uses that are permitted, prohibited, and allowed by Special Permit in the Floodplain District. The updated

Bylaw will help to reduce the Town's vulnerability to increased flooding and severe precipitation events due to climate change, and bring the bylaw into compliance with federal flood insurance standards. Deerfield residents approved the bylaw change at a Special Town Meeting in October 2020.

E. PLANNING FOR THE FUTURE

Deerfield has made strides in recent years to protect the community's natural resources. As noted in the previous section, Deerfield pursued funding to strengthen their Floodplain Zoning Bylaw. One of the main changes to the Bylaw further clarifies the Special Permit process in the Floodplain District. The clarified process notes that the Planning Board must be able to find that a proposed use in the floodplain will not result in an increase in flood levels, meet the State Building Code Standards for flood proofing, and that septic systems are located as far as possible from the riverbank. Additionally, Deerfield's updated Site Plan Review Zoning Bylaw now includes Green Development Performance Standards, which requires applicants to meet specifications for landscaping and water reduction, tree preservation, construction waste management and topsoil recovery, and several other categories.

Deerfield has also updated its Zoning Bylaw in order to protect the community's character and to encourage development and tourism in a strategic manner. The Town amended its Zoning Bylaw in 2020 to amend the Marijuana Overlay District to remove marijuana cultivation from the Residential-Agricultural District and specify three Overlay Districts: one for cultivation, manufacturing and retail, one for just retail, and one for cultivation and manufacturing. All three of the Marijuana Overlay Districts are located in South Deerfield near the industrial and commercial areas of Town. In October 2021, Deerfield residents approved a new Tourism Overlay District. The District encompasses parcels next to Route 5 & 10 such as Tree House Brewing and other breweries in order to encourage tourism in a targeted area. It allows the breweries to do some activities by right, and then require some activities to obtain a Special Permit from the Planning Board.

Since the last update to Deerfield's Open Space and Recreation Plan, the Town has made efforts to increase recreation opportunities for residents. Deerfield acquired a parcel of land north of the Frontier Regional School, which will be utilized for the construction of a new park and will feature recreational fields and paths. Town voters authorized the use of CPA funds for this project at a Special Town Meeting in October 2020. More funding will be needed in order to build the facilities.

CPA funds could also be used as match funds for land conservation projects. The Franklin Land Trust is actively working in Deerfield to help the Town conserve farmland and forestland as parcels become available. The North and South Meadows in Deerfield are becoming better conserved; many parcels in that area are now protected by an Agricultural Preservation Restriction. The parcels that are currently temporarily protected through the Chapter 61 program could be among protection priorities for the town. Determining conservation priorities, as well as other options for protecting land and directing development away from important agricultural lands and forestlands will require coordination amongst town leaders.

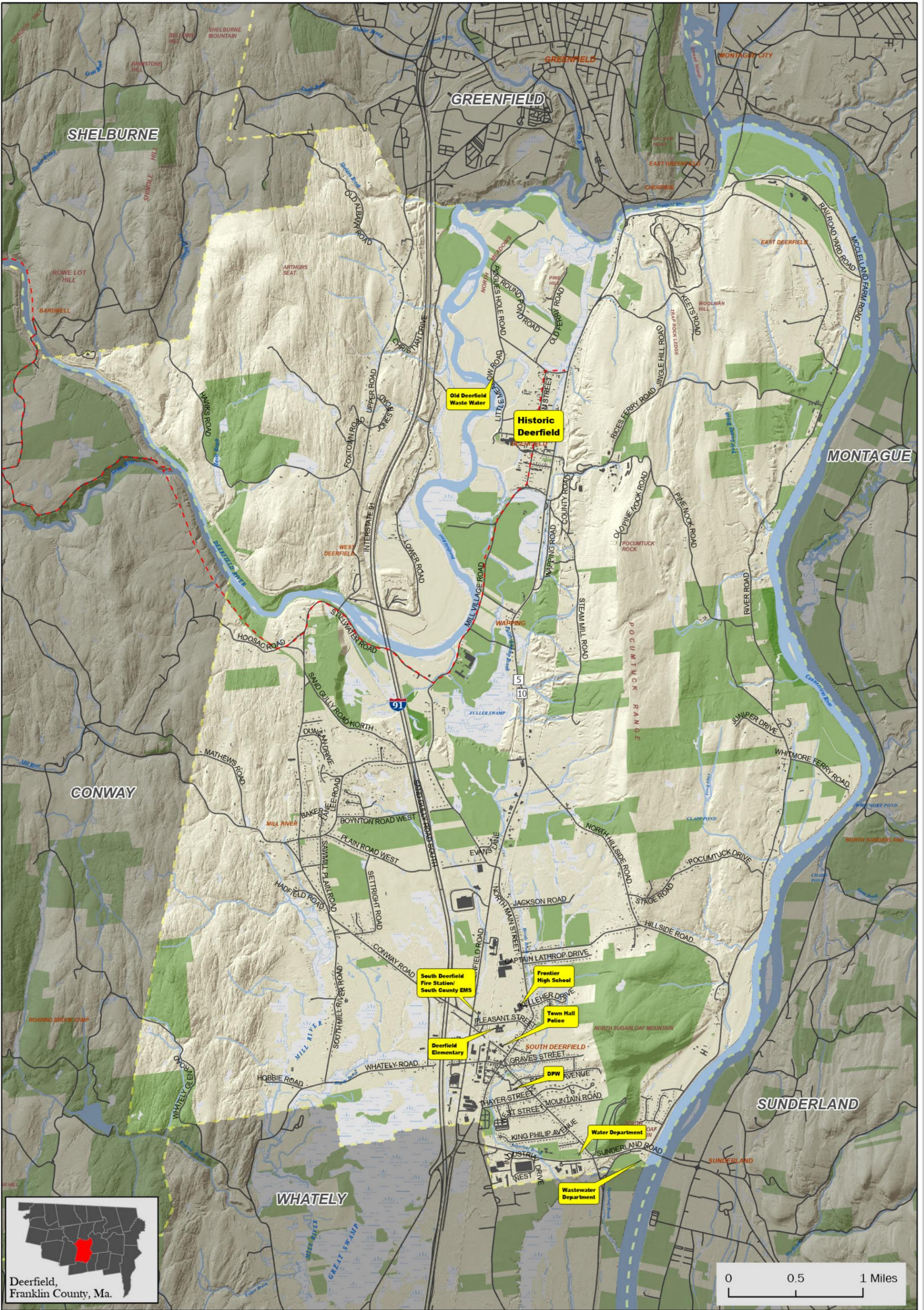
Deerfield Boards and Committees identified a need for better communication between groups as the Town plans for the future, and soon came up with an innovative solution to their problem. The Connecting Community Initiative began in the fall of 2021, with the purpose to create “better communication, collaboration, and innovation” across the twenty some Boards & Committees in Town.²³ Intentional cross collaboration in Deerfield is important to ensure new projects serve the diverse needs of residents in the community and meet the objectives of several boards. An Open Space & Recreation Committee member currently attends meetings to report on progress during the update of this Plan. An Open Space & Recreation Committee member should stay involved with this group to identify opportunities to promote open space and recreation needs in concert with other boards in Deerfield.

Future oriented planning in Deerfield should assess ways to protect land, encourage development in a targeted manner, and make the town’s current recreational resources and open spaces accessible to the public. As demonstrated in the Community Survey, Deerfield residents enjoy walking around town and hiking in the area. Continuing to develop these connections through thoughtful land conservation, trail enhancements, and wayfinding will promote a walkable, hikeable & bikeable Deerfield. The Town is working on making South Deerfield a walkable community, so that municipal, recreation, and other services are easily accessible for residents of all ages.



Congressman Jim McGovern, D-Worcester, meets with Deerfield officials in Deerfield Town Hall in July 2022 to learn about the Town’s efforts to revitalize South Deerfield. The revitalization, including a new Senior Center and upgrades to the wastewater treatment plant is estimated to cost \$40 million over 10 years. Congressman McGovern is advocating for federal resources that could be used to support Deerfield’s plans to increase walkability, accessibility, and connectivity for all residents. Photo courtesy of the Greenfield Recorder/Paul Franz.

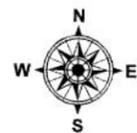
²³ Larabee, Chris. *Connected Community Initiative to foster collaboration among Deerfield boards*. Greenfield Recorder, November 2021. <https://www.recorder.com/Connected-Community-Initiative-to-foster-collaboration-among-Deerfield-boards-43116532>



Town of Deerfield Open Space & Recreation Plan 2022

Context Map

- - - Mohawk-Mahican Trail
- Permanently Protected Open Space
- Water
- Wetlands



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



SECTION 4

ENVIRONMENTAL INVENTORY AND ANALYSIS

This section of the Deerfield Open Space and Recreation Plan provides a comprehensive inventory of the significant natural and cultural resources in the Town. The inventory identifies and qualifies the Town's soils, special landscape features, surface waters, aquifers, vegetation, fisheries and wildlife, unique environments and scenic landscapes. The Environmental Inventory and Analysis provides the Town with information about existing natural and cultural resources and their relationship to people that is important to understand in order to make informed land use decisions that affect the Town's natural and open areas.

An analysis of each resource area is provided from two perspectives. The first perspective examines the basic ecological services and cultural amenities that the Town's natural resources provide to people who live, work, and visit Deerfield. Ecological services include drinking water filtration, flood storage capacity, maintenance of species diversity, and soil nutrient levels. Cultural amenities include the recreational use of open spaces, the quality of life benefits that are maximized by maintaining the area's rural character and scenic beauty, and the direct and indirect benefits that well-conserved natural resources, such as good drinking water and open spaces, have on the local economy. The second perspective examines whether additional conservation measures should be in place to ensure that the required quality and the quantity of each resource is sustained.

A. CLIMATE CHANGE IMPACTS

Natural resources, including water, woodlands, wildlife and habitats, as well as urban forests, are being impacted from a changing climate in Massachusetts, and will continue to be impacted as temperatures rise and precipitation amounts and intensity change over the coming decades. According to the Massachusetts Wildlife Climate Action Tool, warming is occurring in all seasons, with the greatest changes in winter, at higher latitudes, and potentially at higher elevations.²⁴ Seasonal warming is extending the growing season, particularly with more frost-free days occurring earlier in spring. Precipitation amounts are increasing, especially in winter. Warmer winters are also resulting in more precipitation falling as rain instead of snow, leading to reduced snowpacks - though stronger blizzards may lead to locally higher snowpacks in Massachusetts and New England. In the summer, heavier downpours combined with longer dry periods are expected, increasing the risk of both droughts and floods.

Natural resources play an important role in mitigating future climate change, but are also vulnerable to its impacts. Local decisions about how natural resources are managed and conserved will play an

²⁴ <http://climateactiontool.org/content/learning-about-climate-change>

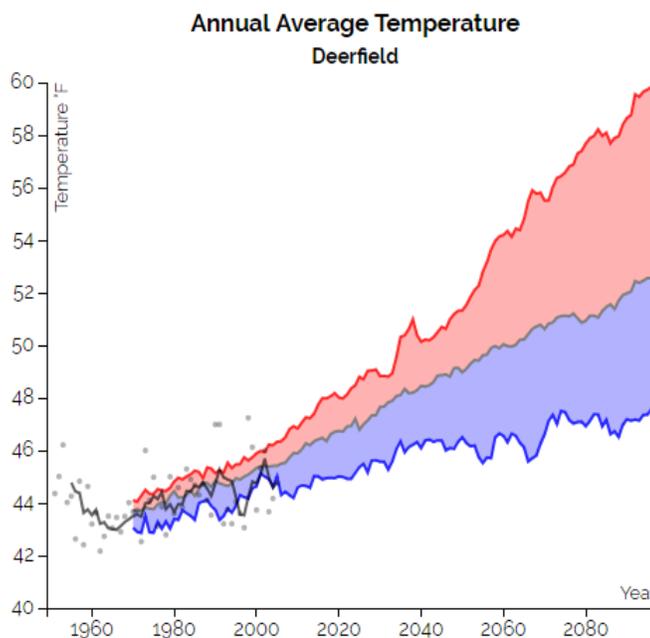
important role in the ability of people, habitats, and wildlife species to cope with future climate changes. Following is an overview of the two major impacts of climate change for Massachusetts and Deerfield: changes in temperature and precipitation. More information about specific climate change vulnerabilities due to these impacts as well as adaptation strategies are incorporated into each section of the Environmental Inventory and Analysis.

A.1 TEMPERATURE CHANGES

The northeast United States has experienced an increase in annual temperatures of 1.6°F over the last century, with the greatest warming happening in the winter.²⁵ Depending on future global greenhouse gas (GHG) emissions scenarios, average annual temperatures in Massachusetts are expected to be 2.8°F to 6.2°F warmer by 2050 than in the past several decades (when the average annual temperature was observed to be 47.5°F). By 2090, the average annual temperature in the state is expected to increase by 3.8°F to 10.8°F, depending on varying emissions scenarios.²⁶

In the Deerfield River Watershed, where much of Deerfield lies, annual temperatures in the watershed are expected to increase between 2.3°F and 6.9°F by 2050 depending on future GHG emissions levels (Figure 4-1). By 2090, average annual temperatures in the watershed could increase by 2.9°F to as much as 14.2°F depending on global emissions.²⁷ In addition to overall warming temperatures, it is expected that an increase in extreme high temperatures will occur. For example, in Massachusetts there will be between 7 to 26 more days over 90°F in 2050 compared to the past several decades. In the Deerfield River Watershed, it is expected that by 2050, there will be anywhere from 4 to 40 more days

Figure 4-1: Observed and Predicted Change in Annual Average Temperature, 1971-2090



Note: The blue line represents the modeled minimum annual average temperature, the grey line represents the modeled median, and the red line represents the modeled maximum. Source: Resilient MA: Climate Change Clearinghouse for the Commonwealth.

²⁵ Massachusetts Wildlife Climate Action Tool, <http://climateactiontool.org/content/temperature-changes>.

²⁶ Resilient MA: Climate Change Clearinghouse for the Commonwealth, <http://www.resilientma.org>. Accessed on August 29, 2018.

²⁷ Ibid.

trees in town and city centers. Warming temperatures and changes in precipitation will push plant and animal species northward or to higher elevations. Higher temperatures, along with changes in stream flow, will degrade water quality. Coldwater aquatic fish species will decline, while an increase in stronger storms will lead to more flooding and erosion. A shift to winter rains instead of snow will potentially lead to more runoff, flooding, and greater storm damage along with less spring groundwater recharge.

An increase in extreme weather events, including heavy rains, ice storms, microbursts and hurricanes, will affect natural resources and human communities. Loss of roads, bridges, culverts, buildings, farmland and crops are a few impacts that have already been experienced in the region from increased extreme weather. Sea level rise and more extreme storms on the coast may not directly affect Deerfield, but may begin to push some of the millions of people living along the north Atlantic seaboard to move inland, placing development pressure on rural areas.

While climate change will continue to be a major challenge globally, local efforts and decisions have real and lasting impacts on mitigating and adapting to future climate change. One of the most effective, and least costly, strategies is to preserve existing natural areas and manage them for increased resilience to climate change.

B. DOCUMENTING AND MAPPING ECOSYSTEMS

Just as the Town of Deerfield contains multiple and varied ecosystems, the state of Massachusetts, while relatively small, has many diverse ecosystems and habitats. Documentation and mapping of such ecosystems and habitats – and their contributions to biodiversity and climate change resilience – can be a first step toward protecting and preserving these resources.

Deerfield Town officials and residents can use this Open Space and Recreation Plan as a reference tool when making land use decisions. Ideally, land conservation projects will help protect the town's scenic value and natural resources in the face of potential development, changes in land use, and climate change impacts, while recognizing that people need places to live, learn, work and play. Development—when sited in unsettled areas rather than as infill—can require infrastructure such as roads, power, water, and wastewater systems. These collective needs, in turn, depend upon and affect critical natural systems.

One way to understand the impact development could have on natural resources and the community's wellbeing is to document the town and region's ecosystems. This includes documenting the complex relationship between organisms, including humans, their environment, and the processes that control their dynamics.³⁰ Another way to determine how development may impact the Town's ecosystems is to document the value of natural resources as critical natural systems that can help communities weather the impacts of climate change and other environmental issues.

³⁰ http://ecosystems.noaa.gov/what_eco.htm

Documentation and mapping of ecosystems and habitats, and of their contributions to biodiversity and climate change resilience, can be a first step toward protecting and preserving these resources. Pro-active conservation decisions based on a scientific assessment of conservation value can maximize the value of limited resources. On the statewide level, mapping Core Habitat and Critical Natural Landscapes helps to guide strategic conservation to protect those areas that are most critical to the long-term survival and persistence of rare and other native species and their related habitats and ecosystems. On the local level, Deerfield can use this information to better understand where the Town's ecosystems and habitats fit into the bigger picture. For example, a seemingly insignificant parcel of land could be a key link to two larger, intact ecosystems. Mapping ecosystems and prioritizing areas for land protection is a useful strategy for municipalities who may have the opportunity to acquire key parcels under the right of first refusal provision for lands coming out of Chapter 61 status.

The University of Massachusetts's Center for Agriculture, Food, and the Environment manages a clearinghouse of land conservation information sources and tools developed by a variety of organizations that are available to guide the decision making of Massachusetts land conservation practitioners. The "Land Conservation Tools" website links to commonly used tools such as BioMap2, Audubon's Mapping and Prioritizing Parcels for Resilience, and The Nature Conservancy's Resilient and Connected Landscapes, among others, that help decision-makers identify important criteria for prioritization and filter open space parcels through that criteria. The clearinghouse can be found at <https://ag.umass.edu/resources/land-conservation-tools>.

B.1 SUMMARY OF MAPPED ECOSYSTEMS IN DEERFIELD

For the purposes of identifying areas in Deerfield that may need to be considered for protection during the Open Space & Recreation planning process, a brief analysis was conducted using data from BioMap2, the Natural Heritage and Endangered Species Program (NHESP), and Mass Audubon. A summary of findings for each data set follows.

B.1.1 BIOMAP2³¹

BioMap2 data focuses primarily on state-listed rare species and exemplary natural communities and was developed to guide strategic biodiversity conservation in the state by focusing land protection and stewardship efforts. Core Habitat areas include the most viable habitat for rare plants and rare animals and exemplary natural communities. Critical Natural Landscapes include buffer areas around the Core Habitats, large undeveloped patches of vegetation, large "roadless" areas, and undeveloped watersheds. The Core Habitat areas were identified, through field surveys, as supporting viable populations of rare plant and animal species while the Critical Natural Landscape areas were determined through analyses using Geographic Information Systems (GIS) mapping programs. BioMap2 Core Habitat

³¹ In November 2022, MassWildlife released an update of BioMap. Data were not available when Deerfield's OSRP was drafted, but can be found online here: <https://biomap-mass-eoeea.hub.arcgis.com/>. New features released as a part of the update include Local and Regional Components, which enable users to customize data to their specific needs on local, statewide, and regional scales.

and NHESP Priority Habitats for Rare & Endangered Species are shown on the *Plant & Wildlife Habitat* Map.

NHESP BioMap2 Core Habitat and Critical Natural Landscapes (CNL) in Deerfield can be summarized as follows and are displayed on the *Plant & Wildlife Habitat* map in this section:

- 27% of the land classified as BioMap2 Core Habitat in Deerfield is protected
- 28% of the land classified as BioMap2 Critical Natural Landscape in Deerfield is protected.
- The largest patches of BioMap2 Core Habitat in Deerfield are located along the Deerfield River, the Connecticut River, and along the Pocumtuck Ridge, terminating at Mount Sugarloaf State Reservation. This patch of Core Habitat links Deerfield to far reaching landscapes in Wendell and Warwick, for example.
- A large area of BioMap2 Critical Natural Landscape is located in the southwest corner of Deerfield, which runs into the abutting Towns of Conway and Whately.
- The length of the Connecticut River along Deerfield's eastern border represents a stretch of Aquatic Core habitat. Smaller patches of Aquatic Core habitat are located on the Deerfield River east of Interstate 91.

B.1.2 NHESP NATURAL HERITAGE ATLAS

The 14th edition of the NHESP Natural Heritage Atlas (effective August 2017) displays the boundaries of Priority Habitat of Rare Species for the entire Town of Deerfield. A Priority Habitat is an area where plant and animal species that are protected by the Massachusetts Endangered Species Act regulations may occur.³² According to the 2017 Atlas, NHESP Priority Habitats in Deerfield occur:

- Along the full extent of the Deerfield River and Connecticut River within Town boundaries
- Along a section of the Mill River west of Route 91 in southern Deerfield
- In Mount Sugarloaf State Reservation
- Along the Pocumtuck Ridge north of Mount Sugarloaf

About BioMap2

In 2010, the Massachusetts Department of Fish and Game and The Nature Conservancy launched BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World. This project, produced by the Natural Heritage and Endangered Species Program (NHESP), is a comprehensive biodiversity conservation plan for Massachusetts, and endeavors to protect the state's biodiversity in the context of projected effects of climate change.

About the NHESP Program

Priority and Estimated Habitats is a program administered by NHESP. Identification and mapping of Priority and Estimated Habitats is based on the known geographical extent of habitat for all state-listed rare or endangered species, both plants and animals, and is codified under the Massachusetts Endangered Species Act (MESA). Habitat alteration within Priority Habitats is subject to regulatory review by the Natural Heritage & Endangered Species Program. Priority Habitat maps are used for determining whether or not a proposed project must be reviewed by the NHESP for MESA compliance.

³² <https://www.mass.gov/service-details/regulatory-maps-priority-estimated-habitats>

These areas are shown on the *Plant & Wildlife Habitat* map.

B.3 MASS AUDUBON'S MAPPING AND PRIORITIZING PARCELS FOR RESILIENCE (MAPPR)

Mass Audubon, in partnership with The Nature Conservancy and LandVest, developed MAPPR to allow Massachusetts conservationists to rapidly identify specific parcels that, if protected, could contribute the most to achieving land protection goals. MAPPR compiles the previous work of BioMap2 and TNC's Resilient Sites, along with other digital parcel information into one online mapping tool.³³ MAPPR allows land conservationists to identify the parcels within an area of interest that are the highest priorities for protection based on habitat quality, climate change resilience, and other metrics such as parcel size and adjacency to existing protected parcels.

In Deerfield, parcels of land identified as a priority for protection are primarily only temporarily protected (Figure 4-3). Areas along the Mill River in the southwestern corner of Deerfield and all along the Pocumtuck Ridge were identified as a conservation priority. Some are permanently protected, but some are in temporary protection programs. The majority of the parcels identified as a high or medium priority for conservation have a status of temporarily protected, through one of the Chapter 61 programs. Deerfield Town officials could use the MAPPR data to determine which parcels should be their highest priority for permanently protecting, should one of the parcels be put up for sale.

³³ <https://www.massaudubon.org/our-conservation-work/advocacy/shaping-the-future-of-your-community/current-projects/mappr-project>

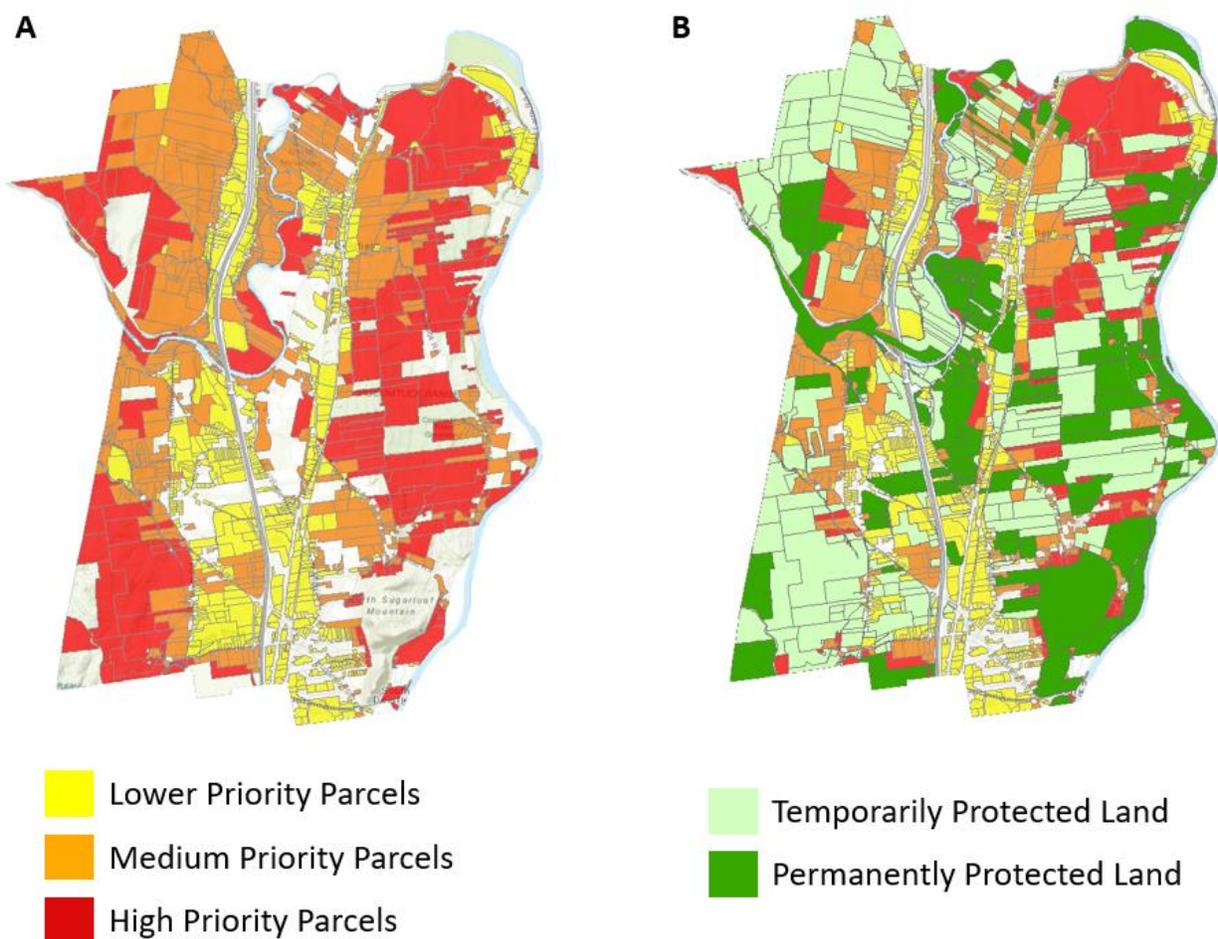
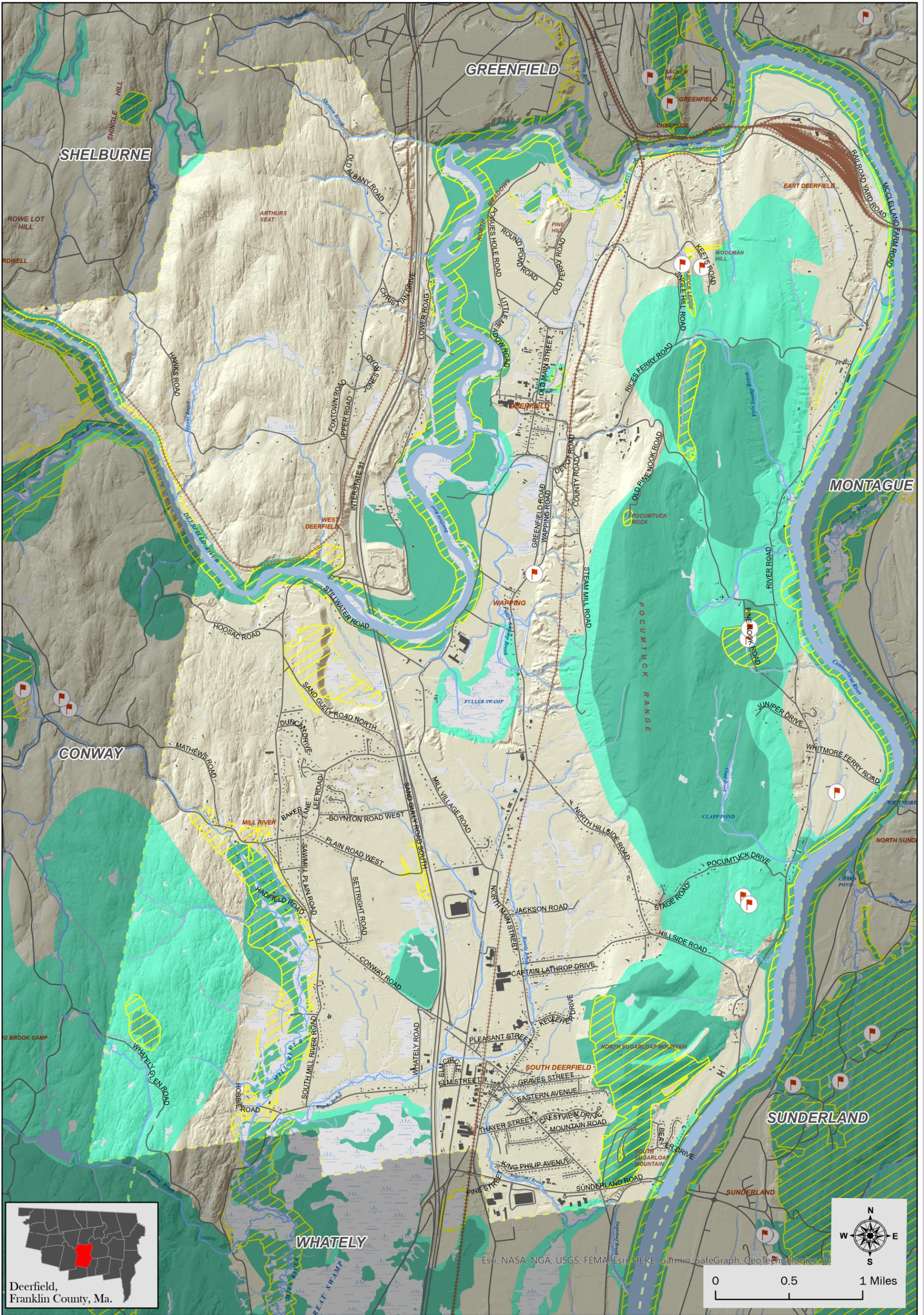


Figure 4-3: A) Parcels of land identified as a priority for protection in Deerfield by the MAPPR analysis.³⁴
B) Permanently and temporarily protected parcels in Deerfield overlaid on MAPPR data.
 Sources: Deerfield Assessor’s Office, MassGIS, Mass Audubon.

³⁴ The “Balanced Model” was used to develop the maps above. The Balanced Model combines the TNC Resilience, UMass Critical Linkages, BioMap2 Core Habitat, BioMap2 Critical Natural Landscape, Parcel size, Block size, Adjacent to existing protection, and Under-represented settings values together. They are all equally weighted. More information about each of these sources is available on the MAPPR Project website, linked above.



Town of Deerfield Open Space & Recreation Plan 2022

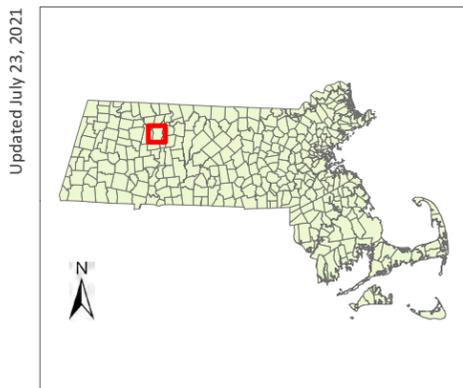
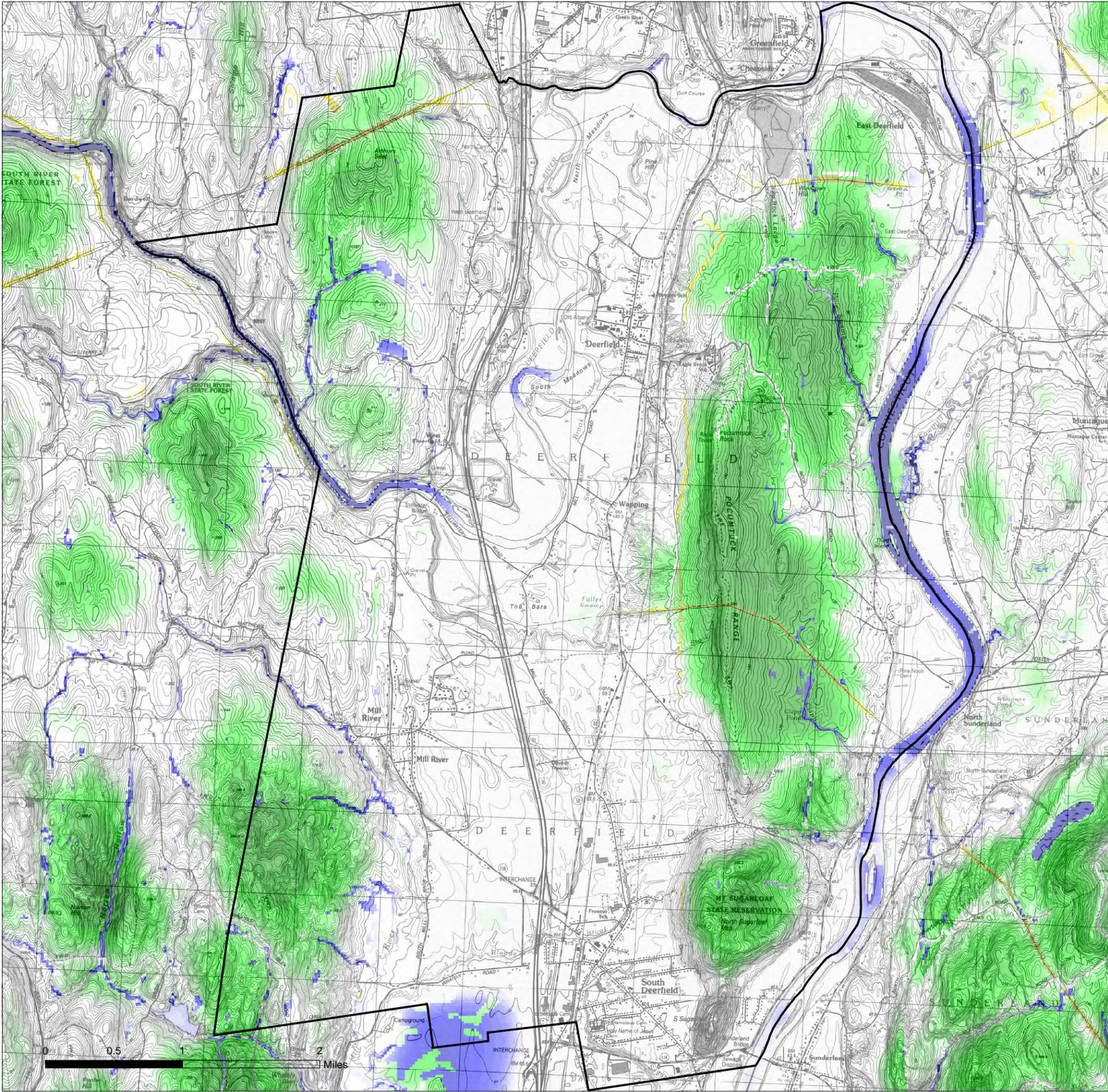
Plant & Wildlife Habitat

- ++++ Rail Line
- Road
- Building Structure
- Wetland
- Stream/River
- ▨ NHPSP Priority Habitat
Rare & Endangered Species*
- BioMap2 Core Habitat
- BioMap2 Supporting Landscape
- Certified Vernal Pool

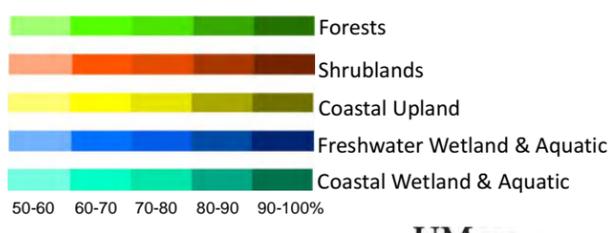
Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



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



IEI, Index of Ecological Integrity Top 50% of the Landscape



UMass Amherst
UMass Extension
CENTER FOR AGRICULTURE

CAPS is an approach to prioritizing land for conservation based on the assessment of ecological integrity for various ecological communities (e.g. forest, shrub swamp, headwater stream) within an area. The Index of Ecological Integrity (IEI) delineates the relative wildlife habitat and biodiversity value of any point on the landscape based on principles of landscape ecology and expert opinion. With a computer base map depicting various classes of developed and undeveloped land, we evaluate a variety of landscape-based variables ("metrics") for every point in the landscape. A metric may take into account the microclimatic alterations associated with "edge effects," intensity of road traffic in the vicinity, nutrient loading in aquatic ecosystems, or the effects of human development on landscape connectivity. Various metrics are applied to the landscape and then integrated in weighted linear combinations as models for assessing ecological integrity. This process results in a final Index of Ecological Integrity (IEI) for each point in the landscape based on models constructed separately for each ecological community. Depicted on this map are those areas representing 50% of the undeveloped landscape with the highest IEI values; the darker the color the higher the ecological integrity value. Coastal beaches and mudflats are included as Coastal Wetland and Aquatic. For more information see: <http://www.umasscaps.org> These maps were prepared by the University of Massachusetts Amherst, with funding from the Massachusetts Department of Environmental Protection and the Renewable Resources Extension Act

B. GEOLOGY, SOILS, AND TOPOGRAPHY

Decisions relating to open space and recreation planning should take into consideration the inherent suitability of a site for different uses. Topography, geology, and soils are essential in determining potential sites for future residential, commercial and industrial development as well as for new parks, hiking trails, and open space.

B.1 GEOLOGY

Deerfield is nestled in the Connecticut River Valley, a 410-mile long stretch of fertile bottomland and breathtaking scenery that extends from the Canadian border to Long Island Sound, Connecticut. The valley as it appears today developed over millennia of geologic activity, climatic change and human influence. The most significant era of its development began with the Triassic Period, when an aborted continental rift formed the Valley. Alternating periods of volcanic activity, shifting faults and erosion led to the formation of the Sugarloaf Arkose during the Jurassic and Cenozoic Periods. Sugarloaf Arkose is the distinctive red sedimentary rock common throughout Deerfield and the surrounding Connecticut River Valley. The geologic history of the valley was documented in the 1984 book by Richard Little entitled, *Dinosaurs, Dunes and Drifting Continents: The Geohistory of the Connecticut Valley*.

Severe temperature changes further transformed the area. Glacial sculpting during the Pleistocene Era, 11,000 to 1.8 million years ago, molded the Sugarloaf Arcos. Great sheets of ice, estimated to have a thickness of up to two miles, scraped and wore deep grooves into the land. As the glaciers retreated, Lake Hitchcock formed. Dried up long ago, this huge body of water straddled Connecticut and Massachusetts. The thickness of alternate layers of fine sands, silts, and clay deposits along the bed of the ancient lake point to an estimated life of nearly 4,000 years.

B.2 SOILS

Soils have five basic characteristics: their depth to bedrock; the speed at which they allow water to percolate into the ground; their slope; the amount of surface water that exists in the area; and the amount of boulders and stones present on the surface that make them appropriate or inappropriate for different land uses.

As Deerfield plans for the long-term use of its land, at least four soil related questions arise: Which soils constrain development given current technologies? Which soils are particularly suited for recreational opportunities and wildlife habitat? Which soils and substrates impact current and future drinking water supplies? And finally, which soils are best for agriculture? The answers to these questions will help lay the foundation for open space and recreation planning in Deerfield.

Deerfield's rich, alluvial soils are the result of the deposition of sediment in glacial Lake Hitchcock as well as annual flooding of local streams and rivers. Over thousands of years, sediments ran off the hills surrounding Lake Hitchcock and collected on the lake bottom. When the lake drained, the rich

sediments were left behind. The Connecticut and Deerfield Rivers carved valleys and terraces into these deep, varied glacial deposits of sand, gravel, silt, and clay. Regular flooding of these rivers and their tributary streams enhances the rich soils by leaving alluvial deposits within the level areas of their floodplains. As a result of this activity, 26% of the Town of Deerfield, or 5,664 acres, consists of prime agricultural soils.

B.2.1 SOILS CONSTRAINING DEVELOPMENT GIVEN CURRENT TECHNOLOGIES

According to the Franklin County Soil Survey (1967) most of the soils throughout the Pocumtuck Ridge are of the Holyoke-Sunderland-Cheshire Association, which is characterized in part by ridges of reddish bedrock locally referred to as “redrock.” The Holyoke soils are shallow, with bedrock generally no more than 18 inches from the surface. The Sunderland soils are also shallow and have a reddish fine sandy loam surface. Overall, the area does not readily lend itself to development.

B.2.2 SOILS SUITED FOR RECREATIONAL ACTIVITIES AND/OR WILDLIFE HABITAT AND WOODLANDS

Different recreational uses are constrained by separate soil and topographical characteristics. Sports fields require well-drained and level soils. Lands with slopes over 25% may be attractive to biking and hiking enthusiasts but only if the soils are not easily eroded. Erodible soils include those that are shallow, wet, sandy, or sloped or those with a combination of these characteristics. Depending on the combination of factors, highly erodible soils could have less than 15% slopes.

The foothills of the Berkshire Range in Deerfield provide soils that are well suited for recreational activities and woodlands. The range is split by the Deerfield River in an area referred to as the Gorge. This area of steep slopes and dense forest has not been subject to much development pressure. The foothills are grouped in the Westminster-Colrain-Buckland Association, which makes up roughly one-sixth of the Town’s soils. They are shallow soils, generally steep, with numerous ledge and rock outcroppings (Fuller, et al; 1967). This section of town is dominated by forested, rolling to steep hills and narrow valleys with swift flowing streams. Steeply sloped, wooded cliffs overlook the Deerfield River. The range contains several minor peaks, including Boyden Mountain, 840 feet; Pine Ledge, 694 feet; and Arthur’s Seat, the highest point in Deerfield at 960 feet. The steeply sloped hills lend themselves well to a variety of recreation opportunities including hiking, rock climbing and bird watching.

B.2.3 SOILS SUITABLE FOR AGRICULTURE

The Natural Resources Conservation Service (NRCS) is responsible for classification of soils according to their suitability for agriculture. NRCS maintains detailed information on soils and maps of where they are located. Designated farmland soils are comprised of three classes of soils that have been identified by the NRCS:

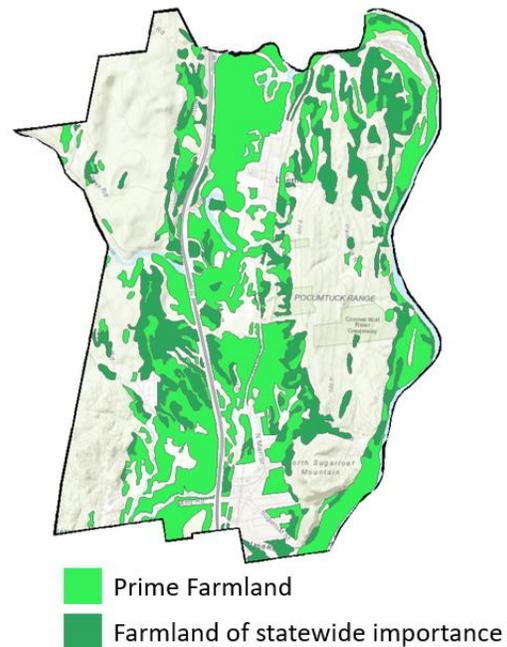
- Prime Farmland
- Unique Farmland, and
- Farmland of statewide or local importance.

These soil classes have been identified as contributing to the agricultural productivity of the country and should be protected from conversion to non-agricultural uses. NRCS defines prime farmland as the land with the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and that is available for these uses. Prime soils produce the highest yields with the fewest inputs, and farming in these areas results in the least damage to the environment. Unique farmland is land other than prime farmland used for the production of high-value food and fiber crops, with such crops defined by the Secretary of Agriculture. Farmland of statewide or local importance is defined as “farmland, other than prime or unique farmland, that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops.” These agricultural soils are a finite resource. If the soil is removed, or the land is developed, the capacity for food and fiber production is permanently lost.

Land adjacent to the Connecticut River consists of the Hadley-Winooski-Limerick Association, which are silty, predominantly stone-free, well-to-moderately well-drained soils that lend themselves easily to both development and agriculture, except for small depressions where surface drainage is impeded and water is ponded for long periods. According to the Soil Survey, these soils are the most productive in Franklin County. Presently, this area is intensively farmed.

The central section of Deerfield is a stepped valley and is dominated by soils of the Hartland-Ninegret Association and the Hadley-Winooski-Limerick Association, which together comprise more than one-third of the town’s soils. The southern end of this valley is 60 to 90 feet higher than the north end and contains the village of South Deerfield. The valley stretches north to approximately the geographic center of town, where Fuller Swamp and an area known as The Bars are located. The village of Wapping, or South Meadows, lies just to the north of Fuller Swamp, on the bank of the Deerfield River. North Meadows lies north of Old Deerfield and contains an outcrop of bedrock, known as Pine Hill, which rises to approximately 80 feet. According to the Massachusetts’ Department of Agricultural Resources (DAR), soils throughout this central portion of Deerfield are among the “most fertile agricultural soils in the country” and are comparable to those of the Danube River Valley. These prime soils contain the best combination of physical characteristics for producing food, feed, forage, fiber, and oilseed crops. With 9-12 inches of topsoil and 4-20 inches of subsoil, they are without rocks, highly permeable, and easily worked (Crolius, et al; 1989). These soils appear near population centers and their flat, well-drained character has made them attractive to residential and commercial development.

Soils suitable for agriculture in Deerfield.



This area has been extensively farmed and is highly productive, historically yielding cash crops that include shade tobacco, potatoes, onions, pickling cucumbers, carrots, and winter squash. Today, this area is made up of small farms that are growing crops for local consumption, such as fruits and vegetables. There are also some small operations growing hay and feed crops, such as corn. Additionally, marijuana and hemp farms are popping up in Deerfield.

The remainder of Deerfield's soils are comprised of the Hinckley-Windsor-Merrimac Association, which is characteristic of the Connecticut River Valley. These soils have formed in deep sandy and gravelly pockets and include the "Deerfield Series" of moderately well-drained loamy fine sands, located along the terraces which border the major streams. These soils are extensively used for farming, particularly corn, but drainage is often required for good yields since the water table is often quite high.

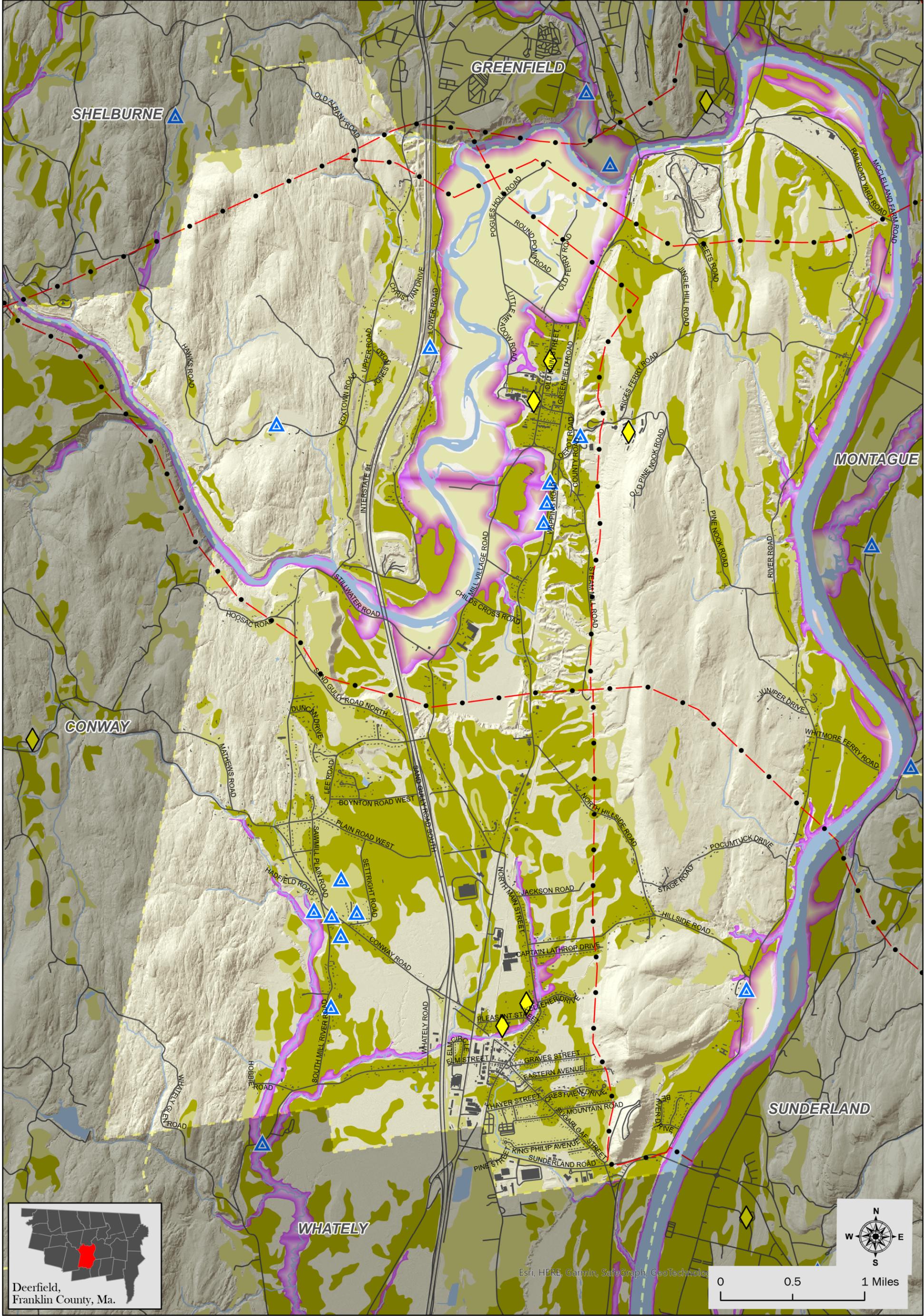
B.2.4 HEALTHY SOILS

As a part of a Municipal Vulnerability Preparedness Grant, Regenerative Design Group and Conservation Works prepared a Healthy Soils Report for the Town of Deerfield. The study found Deerfield's soil health is higher than state averages based on soil organic carbon (SOC) levels. However, laboratory tests show that centuries of farming and development have depleted soil carbon and other soil health indicators well below their inherent capacity. This presents Deerfield's land managers with an opportunity to achieve a significant carbon drawdown using soil-smart practices. Because of the exceptional vulnerability of Deerfield's soils to riverine flooding and slow-but-steady development, the necessity and benefits of implementing soil smart practices is great. The report recommends Deerfield promote:

- Increased protection of soils at high risk of degradation;
- Conservation, climate-forward management, and active restoration of wetlands and forests;
- Better soil management on farms and gardens;
- Management of turf and lawns for soil health; and
- Soil-smart development patterns & practices.

For detailed recommendations, please refer to a copy of the Healthy Soils Report.³⁵

³⁵ The text of this section was pulled from the Deerfield Healthy Soils Report prepared for the Town of Deerfield by Regenerative Design Group and Conservation works in June 2022. The report can be found on the Town's website: <https://www.deerfieldma.us/DocumentCenter/View/1044/Deerfield-Healthy-Soils-Report>



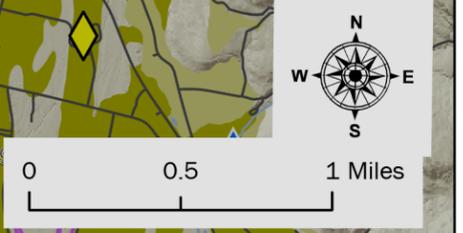
Deerfield, Franklin County, Ma.

Town of Deerfield Open Space & Recreation Plan 2022

Prime Farmland Soils

- Transmission Line
- ▲ Localized Flooding
- ◆ School
- Prime Farmland
- Farmland Unique or Statewide Importance
- 100 YR Flood Zone
- Water Body
- Road
- Building Structure
- Stream/River

Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



B.3 TOPOGRAPHY, GEOLOGY, AND SOILS ANALYSIS

Geologic activity and the last glacier also left a deep imprint on Deerfield’s topography, resulting in the formation of the majestic hills and graceful valleys that Deerfield residents hold dear. In the eastern portion of town, the Pocumtuck Ridge rises sharply from the floor of the Connecticut River Valley to a maximum height of over 800 feet above sea level, representing a vertical height of approximately 650 feet. Mount Sugarloaf State Reservation lies to the south of this ridge and contains two peaks, South and North Sugarloaf Mountains, with heights of 652 feet and 791 feet, respectively. A ridge stretches north from the Sugarloafs, steadily climbing until it reaches Pocumtuck Rock with an elevation of 852 feet. This area looks like a “saddle” which diagonally crosses the ridge and contains scenic Pine Nook Road. On the other side of the saddle, the ridge rises again to Trap Rock Ledge and Woolman Hill with respective heights of 450 feet and 400 feet. A significant amount of sand and gravel deposits are found here, which have been recently mined. The ridge then plunges to the confluence of the Deerfield and Connecticut Rivers. With the exception of a narrow strip of relatively flat land along the banks of the Connecticut River, extremely steep slopes of exposed bedrock dominate the area.

As detailed in the *Community Setting* section, the Town is interested in steering new development into existing downtown areas (such as the village of South Deerfield), balancing new development in rural areas with the permanent protection of farmland, and increasing opportunities for the preservation and continued agricultural use of productive farmland, to preserve land with prime agricultural soil conditions and to preserve the scenic qualities of the Town.

C. LANDSCAPE CHARACTER

Deerfield’s physical beauty is one of its most priceless assets and is indicative of the classic New England landscape. The features that set Deerfield apart from the surrounding communities include a wealth of archeological artifacts, a colonial village, the Pocumtuck Ridge, a diversity of wetlands, rivers and streams, and prime agricultural soils unparalleled in the country (see the *Scenic Resources and Unique Environments* map at the end of this section).

Deerfield’s landscape is composed of four different “bio-regions”— parallel bands that extend north to south and express unique ecological characteristics and land use patterns. These bio-regions are defined based on forest cover, topography and bedrock geology—the underlying substrate that largely determines soils, vegetation, land use, and species richness or distribution.

For example, while the Berkshire Foothills and Pocumtuck Ridge have similar elevations and forest cover distributions—as well as several shared plant communities—the bedrock geology is significantly different. The Berkshire Foothills are underlain with more alkaline, sedimentary limestone, whereas the

Pocumtuck Ridge is composed of more acidic, iron-rich basalt—a more uncommon substrate that hosts rather unique soils and plant communities.³⁶

Despite increasing development on former agricultural lands, the farming tradition remains strong in Deerfield. The land continues to be cultivated as it has been since Native Americans settled here thousands of years ago. Woodlands blanket the floodplain and skirt the surrounding hills of the Pocumtuck Ridge. These farmlands and large contiguous blocks of forest are among the most significant features that define the character of the Town of Deerfield.

D. WATER RESOURCES

Deerfield is rich in water resources, including brooks, streams, ponds, vernal pools, wetlands, and aquifers (See the *Water Resources* map). This section focuses on waters within the Town of Deerfield but it is important to keep in mind that improvement in water quality of the brooks and streams in the Town have impacts beyond Deerfield's borders.

D.1 WATERSHEDS

As described in Section 3, land in the Town is part of the Deerfield River watershed and the Connecticut River watershed. Both are described in further detail below.

CONNECTICUT RIVER WATERSHED

The Connecticut River watershed consists of approximately 11,000 square miles and includes portions of Massachusetts, New Hampshire, Vermont and Connecticut. The Connecticut River flows for approximately 410 miles, beginning at the Canadian border and emptying into the Long Island Sound. According to the Connecticut River Conservancy, 80% of the watershed is forested, 12% agricultural, 3% developed and 5% water. Thirty-eight tributaries flow into the Connecticut River, totaling over 20,000 miles of streams in the watershed.

The Connecticut River watershed is home to many species including nine federally listed endangered, threatened, or candidate species. These include the piping plover, shortnose sturgeon, dwarf wedge mussel, puritan tiger beetle, Jesup's milk-vetch, Robbin's cinquefoil, small whorled pogonia, and the northeastern bullrush. (The bald eagle (2007) and the peregrine falcon (1999), have been de-listed due to recovery of the species.)³⁷

³⁶ <https://frcog.org/wp-content/uploads/2018/06/Ecological-Resilience-in-Deerfield-Trees-as-Green-Infrastructure-1.pdf>

³⁷ U.S. Fish and Wildlife Service, Silvio O. Conte National Fish and Wildlife Refuge website, https://www.fws.gov/refuge/Silvio_O_Conte/wildlife_and_habitat/endangered.html, accessed March 2021.

MILL RIVER WATERSHED

The Mill River watershed is a sub-watershed of the Connecticut River, and includes portions of the towns of Conway, Deerfield, Hatfield, Northampton, and Williamsburg. It is approximately 48 square miles, predominantly forested, but with a sizeable component of agricultural land, mostly along the mainstem. The watershed was subject to numerous studies in the 1990s in part due to populations of state-listed, and one federally endangered, species of mussels. Findings from these studies are summarized in the next section, *Surface Water*.

DEERFIELD RIVER WATERSHED

The Deerfield River Watershed covers an area of 665 square miles, and is home to one of the coldest and cleanest rivers in Massachusetts. It originates in the Green Mountains of southern Vermont, flowing approximately 70 miles and dropping roughly 2,000 feet before draining into the Connecticut River in Greenfield. The river enters Massachusetts between the Towns of Monroe and Rowe in Franklin County and flows southeastward through the Berkshire Hills in a narrow valley characterized by beautiful scenery, steep slopes and rural village centers. As the Deerfield approaches its confluence with the Connecticut, the river valley becomes wider and more developed, including the rich agricultural fields of the Town of Deerfield and the urban center of Greenfield.

While there is very little development in the Deerfield River Watershed, decades of natural and human-caused disturbances, such as land clearing and channel modification, have made streams and rivers highly unstable and prone to frequent flooding and erosion. Climate change and continued development in the floodplain also contribute to significant stress on the river systems of the Watershed.³⁸

In 2017, FRCOG released *The Deerfield River Watershed-Based Plan*, which outlines evidence-based recommendations to protect watershed health, restore impaired water bodies, and increase the watershed's resiliency to climate change.³⁹ This plan focused on ways that towns can become more resilient by working across municipal boundaries to address shared issues and implement mutually beneficial solutions at watershed scale. The plan outlines a wide range of stewardship and management recommendations for public and privately owned forests and agricultural land. Many of these recommendations are relevant to, and support, goals and action items identified in Deerfield's 2023 Open Space & Recreation Plan. They include:

- ❖ Update and align land use regulations across the 14 watershed towns, with a focus on mapping and managing the river corridor,
- ❖ Identify sediment storage, water quality protection and conservation opportunities in the upland areas of the watersheds, and
- ❖ Conduct conservation and restoration projects that protect green infrastructure, improve flood resiliency and reduce sediment inputs to streams and rivers.

³⁸ *A Framework for Resilience: Responding to Climate Change in the Deerfield River Watershed*. Franklin Regional Council of Governments, January 2019.

³⁹ *A Watershed-Based Plan to Maintain the Health and Improve the Resiliency of the Deerfield River Watershed*, 15-04/319. Franklin Regional Council of Governments. 2017.

The plan also outlines more specific landscape scale, conservation and protection, and river corridor and floodplain recommendations that can be implemented throughout the Deerfield River Watershed and can involve many watershed communities and a variety of stakeholders. These recommendations are intended to protect and restore watershed health and engage and educate watershed residents.

BLOODY BROOK WATERSHED

The Bloody Brook watershed spans most of the southern half of Deerfield. Bloody Brook flows south and west through South Deerfield to join the Mill River, a tributary to the Connecticut River. The Bloody Brook watershed drains the west side of the Pocumtuck Ridge and much of the broad, flat land that characterizes southern Deerfield. The watershed contains the northern half of South Deerfield village, with dense residential and commercial development, a railroad, interstate highway, and roads. Farmland and low density residential development surround the village. West Deerfield Village, in the western portion of the Bloody Brook watershed, also experiences higher density residential and commercial enterprise with agricultural uses woven in.

D.2 SURFACE WATER

The following inventory describes Deerfield's rivers, streams, brooks, and ponds and focuses on water quality issues and the public access and recreational value of these waters. The Massachusetts 2018/2020 Integrated List of Waters prepared by the Department of Environmental Protection (DEP), and the BioMap2 Deerfield Town Report, are used as source documents for all listed surface waters within the Town of Deerfield.⁴⁰ Not all water bodies in Deerfield have been assessed by the DEP for water quality impairments.

The Massachusetts Surface Water Quality Standards (SWQS) assign all inland and coastal and marine waters to classes according to the intended beneficial uses of those waters.⁴¹ For example Class A waters are designated as the source of public water supplies and, where compatible with this use, should also be suitable for supporting aquatic life, recreational uses such as swimming and boating, and fish consumption. Class B waters are not water supplies, but are designated for all of the other uses cited above for Class A. Finally, Class C waters should be suitable for aquatic life and recreational uses where contact with the water is incidental, such as boating and fishing, but may not be suitable for swimming, diving, or water skiing.

A TMDL is the greatest amount of a pollutant that a water body can accept and still meet water quality standards for protecting public health and maintaining the designated beneficial uses of those waters

⁴⁰ The State is required by the United States Environmental Protection Agency to identify water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls. In each case, the most severe pollutant is identified. Although the affected water bodies may contain other pollutants, the Integrated List of Waters only includes the results of evaluations upon which DEP has performed some measure of quality control.

⁴¹ <https://www.epa.gov/sites/production/files/2014-12/documents/mawqs-2006.pdf>

for drinking, swimming, recreation, and fishing. Massachusetts DEP has a TMDL program that identifies the steps and technologies needed to reduce the pollutant or source of impairment for each impaired water body in Massachusetts to reduce pollution from both point and nonpoint sources in order to meet water quality standards.⁴²

Many of Deerfield's surface waters are classified as coldwater fish resources (CFRs) by the Massachusetts Division of Fisheries and Wildlife (MassWildlife). According to MassWildlife, CFRs are particularly sensitive habitats. Changes in land and water use can reduce the ability of these waters to support trout and other kinds of 11 fish. Identification of CFRs are based on fish samples collected annually by staff biologists and technicians. MassWildlife updates the list of CFRs in the state on an annual basis and maintains an interactive map online. Conservation commissions, planning boards, land trusts, regional planning agencies, and open space committees can refer to the list and map of CFRs to better inform conservation planning.⁴³

CFRs are particularly vulnerable to warming temperatures and changing precipitation patterns due to climate change, placing increased importance on protecting these resources now. As temperatures rise, species adapted to cool water temperatures will be increasingly under stress. Tree cover in stream riparian areas and around ponds is particularly important for regulating water temperatures. According to MassWildlife's Climate Action Tool, maintaining a forested buffer of at least 100 feet along a stream is ideal, however, even a narrow strip of trees can provide vital shade for coldwater streams. Landowners can help by maintaining forested buffers or planting trees along open stream banks or allowing these areas to return to forest.

RIVERS AND STREAMS

MassGIS's 2016 land cover data identified 511 acres of surface waters covering 2.3% of the surface area of the Town of Deerfield, consisting of a number of rivers and streams. A number of these waterbodies have habitat for rare and endangered species that are affected by nonpoint source pollution and can be protected through good open space management and acquisition of lands where these species exist.

According to Massachusetts Division of Fisheries and Wildlife, there are a total of five CFRs in Deerfield. Four of these are in the Deerfield River Watershed and one in the Connecticut River Watershed:

Deerfield River Watershed

1. Deerfield River
2. Sheldon Brook
3. Hawks Brook
4. Shingle Brook

⁴² <https://www.mass.gov/total-maximum-daily-loads-tmdls>

⁴³ <https://www.mass.gov/service-details/coldwater-fish-reNHources>, accessed on August 16, 2021.

Connecticut River Watershed

1. Mill River

CONNECTICUT RIVER

The Connecticut River forms Deerfield's eastern boundary. The Connecticut River has a "Class B" water quality designation from the New Hampshire- Vermont border to Holyoke and is classified as a warm water fishery. Class B waters are supposed to provide suitable habitat for fish and other wildlife and to support primary contact recreational activities such as fishing and swimming. The water should also be suitable for irrigation and other agricultural uses. The classification of rivers and streams in Massachusetts does not necessarily mean that the river meets that classification; rather, classifications represent the State's goal for each river.

According to the Massachusetts 2018/2020 Integrated List of Waters, the Connecticut River from the New Hampshire/Vermont state line down to the Turners Falls dam is impaired by flow regime alterations, and alteration in stream side or littoral vegetative covers.⁴⁴ Additionally, there is weekly sampling along the river in the state for *E. coli* by the Connecticut River Conservancy (CRC) because of heavy recreational use. *E. coli* is a bacteria found in all warm-blooded animals, including humans. The CRC tests for *E. coli* as an indicator for the presence of other pathogens that may cause waterborne illnesses to those swimming, wading, or boating. The testing program runs from April through October; current conditions can be found online here: <https://connecticutriver.us/it-clean>.

The 2018/2020 Integrated List of Waters also notes the Connecticut River is impaired by polychlorinated biphenyls (PCBs) along its total length. A report published in January 1998 by the New England Interstate Water Pollution Control Commission (NEIWPC) listed bioaccumulation and toxicity as water quality issues for the entire length of the Connecticut River in Massachusetts. Bioaccumulation refers to the concentration of toxins in organisms at higher levels in the food chain. The report specifically identified PCBs in fish. In 2022, as it has for previous years, the Massachusetts Department of Public Health, Bureau of Environmental Health issued a fish consumption advisory for the entire length from Northfield to Longmeadow.⁴⁵

Although wastewater treatment facilities constructed throughout the watershed have been treating major pollution discharges since the 1970s, the Connecticut River is still affected by pollution from combined sewer overflows, PCBs, chlorine heavy metals, erosion, landfill leachate, storm water runoff and acid rain. Long Island Sound has a "dead zone" from too much nitrogen being discharged into the Sound, and over the next several years, Massachusetts may be required to make additional efforts to reduce nitrogen inputs into the Connecticut River and its tributaries.

⁴⁴ <https://www.mass.gov/files/documents/2017/08/zu/16ilwplist.pdf>

⁴⁵ <https://www.mass.gov/doc/public-health-freshwater-fish-consumption-advisories-2022/download>

MILL RIVER

The Mill River is a tributary to the Connecticut River that flows through heavily populated areas of central western Massachusetts. Water quality testing at several points along the Mill River and its tributaries took place throughout 1997 as part of the Mill River Watershed Project. Supported by the Conte Refuge, this multidisciplinary, multi-year study included an assessment of water quality, geology, ecological integrity, fish, freshwater mussels and vegetative patterns as part of the process of developing a Mill River Watershed Protection Plan. Testing revealed that Bloody Brook, which flows through agricultural fields and pastures, residential lawns, and below Route 5 and Interstate 91, contained high concentrations of coliform bacteria and nitrates. This, in combination with low alkaline and dissolved oxygen levels, makes it difficult for aquatic life to thrive. Both the relatively high acidic nature of the water and the low dissolved oxygen levels are mostly due to natural causes. The bedrock below Bloody Brook lacks normal buffering capacities in comparison to other streams in the area. The meandering nature of the brook and low stream flows contribute to the low dissolved oxygen levels. A survey of invertebrates in the Mill River and its tributaries found invertebrates in all of the tributaries except Bloody Brook (Mill River Watershed Assessment Project Summary; 1997). Water quality problems in the Bloody Brook were also identified in a report done in 2000 by researchers from Smith College studying the Mill River Watershed (Rhodes & Sanders; 2000).

The high concentration of coliform bacteria and nitrates are most likely due to cultural uses. Most of the vegetation surrounding Bloody Brook consists of row fields, cropland, pastures and grassland, and there are no native vegetated strips to act as buffers. Polluted runoff from nearby roads and farms is therefore not filtered through plant roots but is instead directly deposited into the brook. Studies indicate that the presence of a 50- to 70-foot forested buffer improves water quality significantly and can even reduce harmful concentrations of phosphorous and nitrogen by 80% to 90% (Report on the Mill River Watershed Project; 1998).

DEERFIELD RIVER

The Deerfield River is a major tributary to the Connecticut River and extends 70.2 mainstem river miles from the river's source on Stratton Mountain (VT) to its mouth in Greenfield, MA. The Deerfield River Watershed Association (DRWA) has been monitoring the Deerfield River and several of its tributaries in Massachusetts for water quality since 1990. The results of its 2002 Volunteer Monitoring Program note that the alkalinity levels in the watershed are low, which can stress the native trout fishery. Dissolved oxygen levels have been historically high and were found to continue to be so. After five years of collecting bacteria data, the DRWA has concluded that dry spells in the watershed do not pose a bacterial threat to the Deerfield River and the tributaries it monitors and thus, these waters are safe for contact recreation during times of drought. Conversely, it was found that high rainwater events, with stormwater runoff, do pose a bacterial threat at several of the monitored sites, making them unsafe for swimming at those times.

Fortunately, the Deerfield River in Deerfield supports all recreational uses and has tremendous recreation potential. Angling for trout and other species is a popular pastime for many Deerfield residents who enjoy the natural beauty of the river and surrounding landscape. The public can access the river at the Stillwater Bridge where canoes and kayaks can be launched. Swimming, tubing and canoeing are also popular uses of the river from the Bardswell Ferry Bridge in Shelburne to the Stillwater Bridge area in Deerfield.

BLOODY BROOK

Bloody Brook joins the Mill River just south of the Deerfield-Whately boundary, about fifteen river miles north of the mouth of the Mill River. A 2003 Connecticut River Watershed Water Quality Assessment Report found:

- Bloody Brook is impaired for Aquatic Life Use based on the low dissolved oxygen concentrations and the elevated total phosphorus.
- The Primary Contact Recreation, Secondary Contact Recreation and Aesthetics uses are assessed as impaired based upon the chronic highly turbid conditions documented during water quality surveys. The Primary Contact Recreational Use is also impaired because of elevated E. coli bacteria counts.

The Franklin Regional Council of Governments is currently preparing a Watershed Based Plan for the Bloody Brook. The draft Plan summarizes that some of the impairments listed above may be due to the main stem of Bloody Brook flowing through a large proportion of the watershed's high-density impervious cover, residential use, and agricultural use areas. Only a fraction of the total stream miles of the Bloody Brook and its tributaries flow through areas of low impervious cover.

D.3 AQUIFER RECHARGE AREAS

The water that Deerfield residents drink comes from private wells and public water district supplies. Water district supplies have both groundwater and surface water sources. Groundwater sources are springs and wells while surface water sources include reservoirs and rivers. The underground water collects in layers of sand and gravel called aquifers. Rain permeating through layers of soil can reach groundwater, which in turn may replace water within an aquifer.

Wells are placed to take advantage of existing aquifers. Aquifer levels are maintained from areas called aquifer recharge areas. When rain falls in the hills in the northwestern portion of Deerfield, for example, some of it ends up in the small streams that course down to the Deerfield or the Mill River, but much of it enters the ground. Groundwater slowly moves through the aquifer, ultimately to arrive via private and public wells to residences and businesses. Protecting groundwater and aquifers from contamination by hazardous materials, sewage, salts, pesticides, etc. is critical to the quality of both community and non-community water sources.

A number of aquifers are known to underlie the Town of Deerfield (see the *Water Resources* map at the end of this section). These were initially identified in a 1985 report, entitled [A Hydrogeologic Investigation of South Deerfield, Massachusetts](#), produced by the University of Massachusetts. A large,

high volume aquifer lies beneath the Interstate 91 corridor, in the floodplain deposits of the Deerfield River. The Deerfield Fire District taps into this aquifer along Stillwater Bridge Road. A shallow unconfined aquifer, known as the Sugarloaf Street aquifer, lies in the central part of South Deerfield. Bounded on the east by the Pocumtuck Ridge and on the south and west by Sugarloaf Brook, this aquifer is recharged from the surrounding hills and by infiltrating rainwater along its entire length. The Sugarloaf well field pumped water from this source until it was shut down in 1984 due to excessive ethylene dibromide (EDB) levels. EDB is a chemical found in pesticides commonly used in the cultivation of shade tobacco. Because of this contamination, it is doubtful that the aquifer will provide a satisfactory supply of groundwater without costly treatment.

A deep confined aquifer system of three separate valleys exists between the bottom deposits of Lake Hitchcock and the underlying bedrock. While the extent of the aquifer has been documented by the United States Geological Survey, the recharge areas are not yet mapped. A significant amount of the recharge may originate from the eastern slope of the Berkshires, the Deerfield River, or the glacial Deerfield River delta.

Another productive aquifer may lie beneath the Connecticut River, and its recharge areas are also unknown at this time. Extensive testing of both the quantity and quality of the water is required before determining if a viable supply exists. Since the area above this aquifer is predominantly used for agriculture, which normally entails the use of chemical fertilizers and pesticides, testing would also focus on these potential pollutants. Even if chemicals common to pesticides and fertilizers were not found in the aquifer, its use as a public drinking water source would need to be balanced against the use of the land for farming purposes.

In 2003, the Franklin County Regional Water Supply Study identified areas with the potential for siting future community water supplies, based upon their location within high yield aquifers and the lack of constraints within a 400-foot radius (Zone 1 Recharge Area) of the proposed wellhead. Constraints may include groundwater contamination zones and restricted land uses such as industrial and commercial. These 2003 findings highlight that, as a result of Geographic Information System (GIS) analysis, only eight potential drinking water supplies were identified in Franklin County. Some of these are located in population centers, including Deerfield, which could further complicate siting. However, until tests are performed to determine capacity of the potential sources and the extent of the aquifer recharge areas, their viability is not known. Further, an inventory of existing land uses would need to be conducted to determine whether any uses conflict with the protection of Zone II recharge areas.

Protecting drinking water supplies and reducing water usage is the third highest priority natural resource goal in the *Franklin County 2035 Regional Plan for Sustainable Development (RPSD)*. Additionally, during the 2006 Deerfield Conservation Vision process, 7,168 acres in town were identified as high priorities for protecting water quality and quantity in town. Much of this land follows riparian corridors, including small streams and brooks, as well as areas surrounding the town's current drinking water supplies and potential future supplies (including land in the Town of Conway surrounding

Deerfield's reservoir). Of the 7,168 acres identified, 1,537 (21%) were already protected, 483 (7%) were developed, and 5,147 (72%) were neither developed nor protected.

D.4 FLOOD HAZARD AREAS

Water levels in Deerfield's rivers, streams, and wetlands rise and fall seasonally and during high rainfall events. High water levels are typical in spring, due to snowmelt and ground thaw. This is the period when flood hazards are normally expected. Low water levels occur in summer due to high evaporation and plant uptake (transpiration). At any time, heavy rainfall may create conditions that raise water levels in rivers and streams above bank full stage causing them to overflow adjacent lands.

Flood hazard areas include the watercourses (rivers and streams) and adjacent relatively low-lying areas subject to periodic flooding (the 100-year flood zone and 500-year flood zone). The 100-year floodplain has a one percent chance of being flooded in a single year, while areas in the 500-year floodplain have a 0.2% chance of being flooded in any given year. However, due to climate change changing precipitation patterns, the chances of Deerfield experiencing a 100-year or 500-year flood is higher than previously predicted.

Deerfield participates in the National Flood Insurance Program. The Town's Zoning Bylaw contains a Floodplain Overlay district that restricts development within floodplains. The major floods in Deerfield have resulted from rainfall alone, or in combination with snowmelt. The Town relies on FIRM (National Flood Insurance Rate Map) maps, and utilizes the electronic FEMA (Federal Emergency Management Agency) maps to determine flood hazard areas. The following areas have been designated as flood hazard areas in Deerfield on the Flood Rate Insurance Map (FIRM) dated July 2, 1980:

- Deerfield River;
- Mill River;
- Bloody Brook; and
- Connecticut River.⁴⁶

The Town of Deerfield also recently updated their Hazard Mitigation Plan. During the planning process, the Committee detailed other areas throughout the Town that are subject to frequent flooding. Areas of chronic localized flooding include:

- Pole Swamp Brook;
- Clapp Brook;
- Fuller's Swamp Brook;
- Hawks Brook; and
- Shingle Brook.

⁴⁶ In November 2018, FEMA began a 5-7 year project called "Risk MAP" to digitally modernize the floodplain maps in Franklin County, including for the Town of Deerfield, using LIDAR data and a watershed-oriented approach.

Major and ongoing flooding events, especially in the past decade, have caused severe erosion on waterways through the Town. Reduced riverbanks make roads more prone to flooding, which is a concern on Routes 5/10, Mill Village Road, and Stillwater Road. Culvert maintenance and replacements are needed in several locations throughout Deerfield. The Town's 2018 MVP plan identifies culverts at the following locations as high priority for replacement or repair:

- Mill Village Road (south of intersection with Log Plain Road);
- Route 5 (near Richardson's Candy Kitchen);
- Wapping Road (north of Greenough Crossing Road);
- Broughams Pond Road (west of intersection with Old Ferry Road);
- Captain Lathrop Drive; and
- Private culverts along North Main Street and Bloody Brook.

The Town's updated Hazard Mitigation Plan fully details past flood events and the extent of the damage incurred. The plan can be referenced here:

https://www.deerfieldma.us/sites/g/files/vyhlf3001/f/uploads/final_deerfield_2020_hmp_0.pdf

D.5 RIVER CORRIDOR MAPPING AND MANAGEMENT

Rivers and streams are dynamic systems in a constant state of change. Fluvial erosion is a natural process of wearing away of soil, vegetation, sediment, and rock through the movement of water in rivers and streams. While erosion is a natural process, the rate of erosion is affected by human alterations of river channels or land as well as a changing climate. Sometimes buildings and roads are located too close to river banks and areas of active river processes, placing them at risk to erosive forces while at the same time increasing the rate of erosion within the river corridor due to loss of flood storage in the floodplain.

In 2019, FRCOG released *The River Corridor Management Toolkit*, which developed and piloted innovative practices for delineating river corridors using a scientifically defensible mapping protocol. The toolkit outlines two management tools to accompany the mapping: a River Corridor Protection Overlay Zoning District Bylaw and a River Corridor Easement Restriction. The goal of the River Corridor Management Toolkit is to equip communities and landowners interested in river restoration and protection, climate resilient land use, and the reduction of harm to land, water, habitat, people and infrastructure caused by increasingly severe and frequent flood events. In Franklin County, the Green River, North River, and South River have mapped river corridors.

Deerfield could seek to apply the river corridor mapping protocol to the Deerfield River, Bloody Brook, or the Mill River. Newly mapped river corridor areas in the Town would guide planning efforts involving flood resilience and land conservation, which may foster opportunities to meet some of the Town's priority recreational objectives, such as increasing access to waterways.

D.6 WETLANDS

Although there are no significant ponds or lakes located within the town boundaries, wetlands typically adjacent to a brook or river are extensive. According to the 2016 MassGIS land use data, 1,161 acres, or 5% of total acreage in Deerfield, are classified as wetlands (*see the Water Resources map at the end of this section*). Wetlands in Deerfield are primarily located along the Deerfield River, and in the southern section of town along Bloody Brook. Fuller Swamp near Mill Village Road is one of the largest wetlands in town.

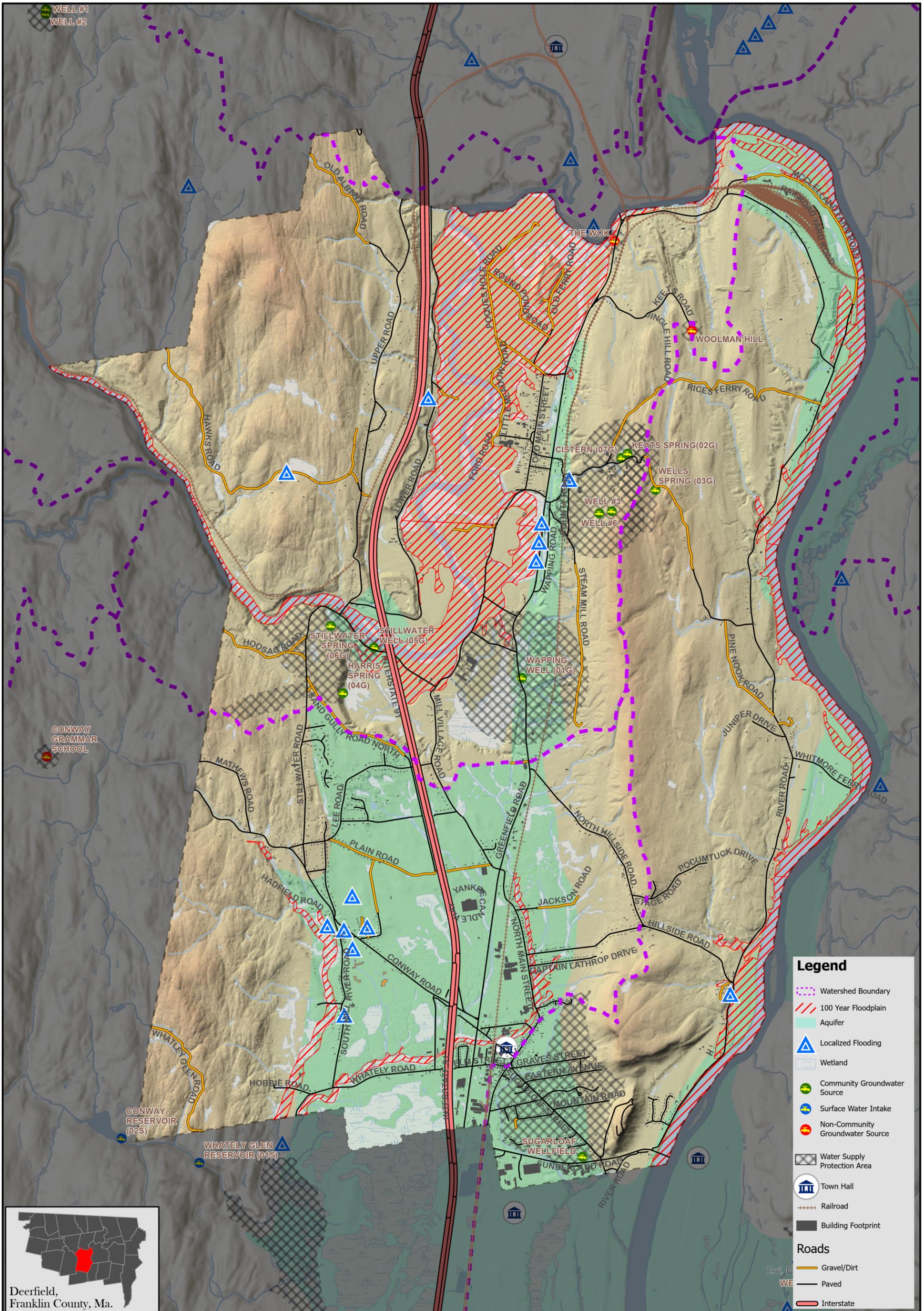
Wetlands are transitional areas where land-based and water-based ecosystems overlap. Inland wetlands are commonly referred to as swamps, marshes and bogs. Technically, wetlands are places where the water table is at or near the surface or the land is covered by shallow water. Sometimes, the term wetland is used to refer to surface water as well. Wetlands represent unique and special habitats that help to maintain biological diversity and support approximately 43% of the nation's threatened and endangered species (Kinne; 1999). Inland wetlands provide flood storage and control, pollution filtration, and habitat for fish and wildlife. Since they are commonly recharge zones for groundwater sources, it is important that Deerfield identify and protect its wetlands.

Historically, wetlands have been viewed as unproductive wastelands, to be drained, filled and "improved" for more productive uses. Over the past several decades, scientists have recognized that wetlands perform a variety of extremely important ecological functions. They absorb runoff and prevent flooding. Wetland vegetation stabilizes stream banks, preventing erosion, and trap sediments that are transported by runoff. Wetland plants absorb nutrients, such as nitrogen and phosphorus, which would be harmful if they entered lakes, ponds, rivers and streams. They also absorb heavy metals and other pollution. Finally, wetlands are extremely productive, providing food and habitat for fish and wildlife. Many plants, invertebrates, amphibians, reptiles and fish depend on wetlands to survive. Wetlands have economic significance related to their ecological functions: it is far more cost-effective to maintain wetlands than build treatment facilities to manage stormwater and purify drinking water, and wetlands are essential to supporting lucrative outdoor recreation industries including hunting, fishing and bird-watching.

In recognition of the ecological and economic importance of wetlands, the Massachusetts Wetlands Protection Act is designed to protect eight "interests" related to their function: public and private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, land containing shellfish, fisheries, and wildlife habitat. To this end, the law defines and protects "wetland resource areas," including banks of rivers, lakes, ponds and streams, wetlands bordering the banks, land under rivers, lakes and ponds, land subject to flooding, and "riverfront areas" within two hundred feet of any stream that runs all year. Local Conservation Commissions are responsible for administering the Wetlands Protection Act.

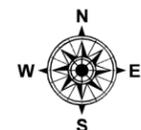
The Wetlands Protection Act requires a permit for any alteration of wetland areas or for any landscape disturbance within 100 feet of wetlands bordering a river or stream, or within 100 feet of isolated

wetlands larger than one quarter of an acre. Permits are also required for landscape alterations within 200 feet of rivers and perennial streams. The conversion of wetlands is a serious problem with high-priced consequences. Watersheds with degraded or destroyed wetlands experience substantially higher flood peaks. Moreover, wetlands replicated with engineered solutions do not function nearly as well ecologically as undisturbed natural wetland systems. The protection of all Deerfield's wetlands should be considered a high priority.



Town of Deerfield
Open Space &
Recreation Plan 2022

Water Resources



0 4,000 8,000 Feet

Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



Deerfield,
Franklin County, Ma.

E. VEGETATION

E.1 GENERAL INVENTORY

The soils and water resources in Deerfield create ecosystems that support a broad range of types of vegetation. The plants that are a critical component of these ecosystems convert solar energy into food, which supports all animal life. Plants cycle energy through the ecosystem by decaying, by removing carbon from the atmosphere and by shedding oxygen. Plants help moderate temperatures and act as shelter and feeding surfaces for herbivores, omnivores, and carnivores.

Plants and animals together make up *natural communities*, defined as interacting groups of plants and animals that share a common environment and occur together in different places on the landscape. Over the past decade, ecologists and conservationists in Massachusetts have devoted increasing effort to studying and protecting these natural communities, rather than focusing on individual species. This section and the following section will address both natural communities and their component species.

E.2 FOREST

Deerfield is fortunate to have forested open space and conservation lands located throughout the Town. Approximately 64% of Deerfield is forested.⁴⁷ Most of Deerfield's forested areas lie in the eastern and western portions of Town where the Pocumtuck Ridge, North and South Sugarloaf, Arthur's Seat, and Pine Ledge are located. These forests are largely dominated by hardwood species such as northern red oak, sugar maple, American beech, white birch and white ash, although eastern hemlock and white pine are also prevalent. Common shrub and herbaceous species that are important food sources for local wildlife are flowering dogwood, choke cherry, high bush and low bush blueberry, mountain laurel, witch hazel, aster, dandelions, goldenrod, sweet fern, cattail, and water lilies.

In 2012, students from the University of Massachusetts' Department of Environmental Conservation conducted natural resource inventories of forestry, vegetation, and wildlife of the 63-acre Town-owned parcel on Pocumtuck Ridge near the Pocumtuck Rock in order to inform management decisions of the parcel.⁴⁸ The report notes that the property surveyed lies within the Forest Core and Core Habitat as designated by the NHESP. The inventory found the following forest overstory species on the parcel:

- Northern red oak (*Quercus rubra*)
- Paper birch (*Betula papyrifera*)
- Sweet birch (*Betula lenta*)
- White oak (*Quercus alba*)
- Chestnut oak (*Quercus prinus*)
- Eastern white pine (*Pinus strobus*)
- Eastern hemlock (*Tsuga canadensis*)

⁴⁷ 2016 MassGIS Land Use Land Cover Data

⁴⁸

- Red maple (*Acer rubrum*)

The report states that the property and much of the eastern part of the Pocumtuck Ridge is identified as one homogenous stand type of mixed oak species. The forest inventory found that there is almost no oak regeneration and much of the midstory structure is black birch and red maple.

Understory species identified are as follows:

- Mountain Laurel (*Kalmia latifolia*)
- Sheep Laurel (*Kalmia angustifolia*)
- Witch Hazel (*Hamamelis virginiana*)
- Maple-Leaf Viburnum (*Viburnum acerifolium*)
- Low-Bush Blueberry (*Vaccinium angustifolium*)
- Tree Clubmoss (*Lycopodium obscurum*)
- Wintergreen (*Gaultheria procumbens*)
- Canada Mayflower (*Maianthemum canadense*)
- Partridge Berry (*Mitchella repens*)
- Common Yellow Wood-Sorrel (*Oxalis stricta*)

The most frequent species found were mountain laurel and tree clubmoss. The least frequent species were sheep laurel, partridge berry, and common yellow wood sorrel. In addition, a number of plants were found on the side of the access road that were not found anywhere else on the property, and were not part of the plots used for formal observation. Red raspberry (*Rubus idaeus*) was frequent along road edges. Bracken fern (*Pteridium aquilinum*) was noted as occurring in isolated bunches and Christmas fern (*Polystichum acrostichoides*) was seen as an individual, though not frequent. Invasive species were not counted in any plots, but individuals of multiflora rose (*Rosa multiflora*) and Morrow's honeysuckle (*Lonicera morrowii*) were observed on trail margins. The report recommends forest management strategies in the areas of snags/cavity trees, old growth habitat, early successional habitat, and mast trees.

The report also concludes that the property has great potential for educational and outreach opportunities due to its location, accessibility, and its unique scenic features. These opportunities could include community forest walks, wildlife viewing, recreation, and environmental education along the Pocumtuck Ridge trail.

E.2.1 FORESTS AND CLIMATE CHANGE

The second highest natural resource goal in the *Franklin County 2035 Regional Plan for Sustainable Development (RPSD)* is to protect forests. Unfragmented forests, old-growth forests, and forests that support rare and endangered plant and animal species are especially ecologically valuable, especially in the face of accelerating climate change impacts. Forests along rivers and streams are also a priority to

protect for their important habitat, water recharge functions, and bank stabilization. The plan lists several potential impacts on forests due to climate change, including decline of maple syrup production, the deterioration of the Eastern Hemlock, and the spread of invasive insect species.

Forests play a critical role in mitigating future climate change. The Massachusetts Attorney General's Office's Energy and Environment Bureau has been promoting that role, stressing that unfragmented forests play a critical role in protecting our climate and our citizen's public health. The AG's office points to recent research funded by Harvard Forest that illustrates that allowing forests to remain intact – or proforestation – increases carbon sequestration and long-term carbon storage in U.S. Forests.⁴⁹ The study, *Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good*, finds that “Intact forests—largely free from human intervention except primarily for trails and hazard removals—are the most carbon-dense and biodiverse terrestrial ecosystems, with additional benefits to society and the economy.”

Intact forests sequester and store carbon in tree roots, stems, branches and leaves, and in forest soils. Trees continue to sequester carbon for as long as they live. Young trees can grow quickly but older trees store more carbon. In Massachusetts, it is estimated that forests sequester 14% of the state's gross annual carbon emissions.⁵⁰ According to Mass Audubon, “Keeping forest as forest avoids carbon emissions from land use conversion.”

Climate change is impacting forests in many ways. A longer growing season and increasing temperatures are shifting habitat conditions for trees northward and to higher elevations. Over time, the birch-beech-maple forests typical of New England will decline while oak-hickory forests more typical in areas south of New England will thrive. An expected increase in periods of drought between intense precipitation events may weaken some trees, leaving them more susceptible to insects and diseases, while it may improve conditions for other trees.

Maintaining healthy forests well into the future will necessitate addressing stressors such as human disturbance, logging, and, invasive plant and insect species in an effort to increase forest resiliency. Forest resiliency is the capacity of a forest to respond to a disturbance by resisting damage or stress and recovering quickly. Depending on the forest type, location, history, and surrounding landscape, forests will have varying degrees of vulnerability and resiliency.

The 2016 publication “Increasing Forest Resiliency for an Uncertain Future” by researchers from UMass Amherst, the University of Vermont, and the U.S. Forest Service focuses on addressing the impacts of various stressors on New England's forests and offers recommendations for foresters, conservation

⁴⁹ <https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full#B58>

⁵⁰ <https://www.massaudubon.org/our-conservation-work/ecological-management/habitat-management/capturing-carbon>

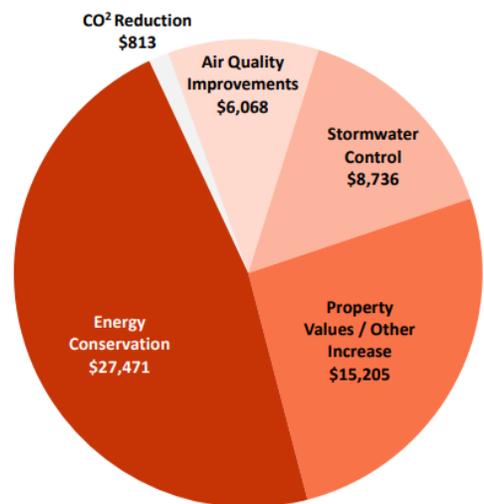
groups, landowners, and municipal officials on how to increase forest resiliency in an uncertain future.⁵¹ The main stressors highlighted in the report include forest conversion, invasive plants, invasive insects and disease, over-browsing from deer, and climate change. These stressors interact with one another to increase their negative impacts, making it all the more important to address them as part of a larger whole.

The Town of Deerfield could consider forest resiliency and carbon storage opportunities such as carbon trust when developing management or stewardship plans for Town owned properties, and when acquiring forested land parcels. Joining a carbon trust could be a source of revenue that would enable the Town to continue to support recreational spaces and open space acquisition. Additionally, one of the top recommendations from *Ecological Resilience in Deerfield: Trees as Green Infrastructure* is to install and manage riparian buffers and expand floodplain forests along the Deerfield River.⁵² According to the Northern Institute of Applied Climate Science (NIACS), maintaining and restoring forested riparian buffers is a core strategy for climate change mitigation and adaptation. The main reason for this has to do with retaining water on-site from precipitation, runoff, and flooding, all of which are more likely to continue to increase with climate change.

E.2.2 STREET TREES

Street trees are essential infrastructure, and some of the benefits they provide the Town and its residents with include the following:⁵³

- Air quality improvement
- Water quality improvement (including improved stormwater management)
- Cooler air temperatures
- Carbon Storage and Carbon Sequestration
- Building energy conservation
- Noise reduction
- Wildlife habitat
- Social/psychological benefits
- Human health benefits



Annual Benefits: Trees in the project area provide roughly **\$58,300** in benefits annually.

As a part of Deerfield's 2016 Tree Inventory, an analysis using i-Tree was conducted to determine the monetary value of the Town's public trees. More information about the methodology can be found in the report, which is linked below.

⁵¹ *Increasing Forest Resiliency for an Uncertain Future*. Catanzaro, Paul, Anthony D'Amato, and Emily Silver Huff. 2016. <https://masswoods.org/sites/masswoods.net/files/Forest-Resiliency.pdf>

⁵² <https://frcog.org/wp-content/uploads/2018/06/Ecological-Resilience-in-Deerfield-Trees-as-Green-Infrastructure-1.pdf>

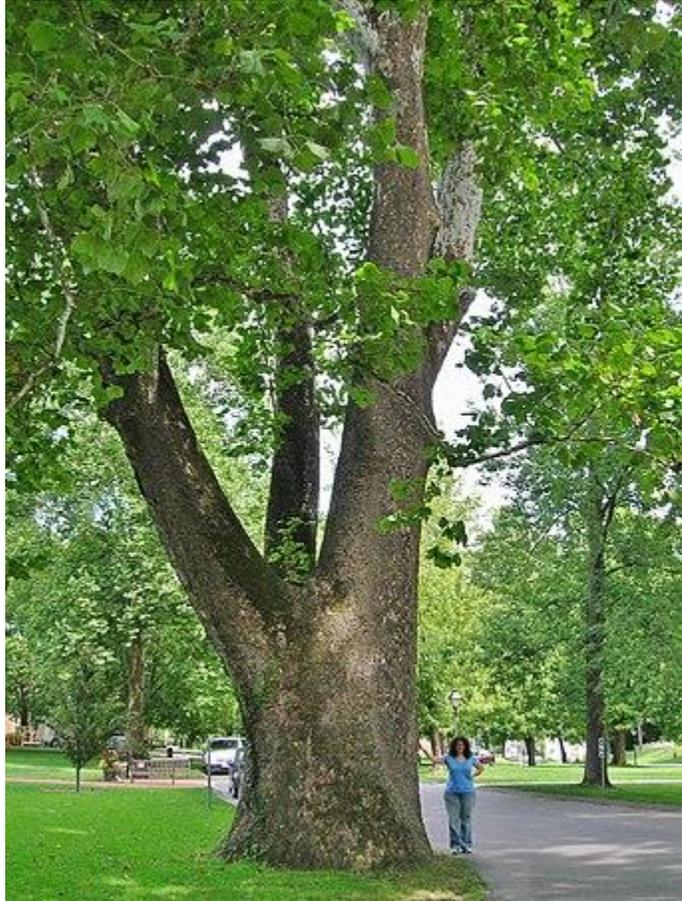
⁵³ Rick W. Harper, Ext. Assist. Professor-Urban and Community Forestry, UMass, "Realizing the Benefits of our Urban Trees," *3rd Annual Massachusetts Clean Energy Conference: Helping Communities with Renewables and Efficiency*; 2016.

- Beautification

The two villages in the Town of Deerfield are known for their tree-lined streets, which enhance the historic buildings and homes. An American Sycamore documented to be more than 300 years old is located on the Deerfield Academy campus. These trees create a sense of place in South Deerfield and Old Deerfield. To ensure the health of the living asset, the town highway department and tree warden worked with FRCOG staff to assess the tree population in 2016.⁵⁴

The project area included North and South Main Streets, Sugarloaf Street and Elm Street in South Deerfield, as well as Old Main Street in Old Deerfield. The trees inventoried in South Deerfield are comprised primarily of a mix of shade trees (large trees with spreading canopies). The most prevalent trees include sugar maples and Norway maples, each of which make up about one fifth of all tree species, followed by linden, red maple, red oak and honeylocust. The trees inventoried on Old Main Street were mostly mature trees, as with an average trunk diameter of 20" or larger. Prevalent species included red oak, Norway maple, honeylocust, sycamore, sugar maple, and white ash.

One finding of the report noted the Norway Maple is the most prevalent tree species inventoried, at 18% of all trees in the project area. Deerfield, like many communities, suffered great losses to street trees with the invasion of Dutch Elm disease in the 1930s through 1950s. Norway maples became a popular shade tree after the loss of elm trees, but many of those trees are now in decline and are being removed across the county. Norway maples are listed on the MA Department of Agricultural Resources Massachusetts Prohibited Plant List, which prohibits the importation, sale, and trade of these and other invasive trees and plants. Although the Norway maples inventoried in Deerfield provide significant ecological benefits, individual Norway maples can produce large quantities of seeds dispersed by wind. These seeds take root and invade forests, forest edges, and urban areas alike. The



An American Sycamore documented to be more than 300 years old is located on the Deerfield Academy campus. Image source: https://www.wikiwand.com/en/Deerfield_Academy

⁵⁴ <https://frcog.org/wp-content/uploads/2016/12/Deerfield-Tree-Inventory-Report-11x17-final.pdf>

dense canopy formed by Norway maple inhibits the regeneration of sugar maples and other diverse tree species, important to the region's mixed hardwood forests.

Primary recommendations from the report include:

- Conducting strategic tree plantings that intersperse young trees in between older trees (instead of waiting for trees to die to plant new ones) so that Deerfield develops a more resilient and diverse tree population;
- Replacing declining Norway maples with resilient native tree species; and
- Incorporating street trees into overall strategies and planning initiatives to improve or add new green infrastructure, improve walkability and reduce stormwater runoff.

When planting additional street streets, it is important to choose noninvasive species and are adapted to urban growing conditions. Invasive species have the ability to spread rapidly displacing native species and destroying local ecosystems. Planting native street trees along the Town's transportation corridors will promote a more pedestrian friendly environment as well as create wildlife habitat opportunities for songbirds, moths, butterflies and other species.

E.3 AGRICULTURAL LAND

Agricultural Preservation Restrictions (APRs) permanently protect 2,119 acres within Deerfield, with an additional 3,791 acres temporarily protected by the Chapter 61A program. The largest blocks of working farmland are located along the Deerfield River east of Interstate 91 and along the Connecticut River.

In 2015, the Franklin Regional Council of Governments (FRCOG) published the *Franklin County Farm and Food System Project* report. The project summarizes the needs of Franklin County farmers to increase food production, as well as how to make more local food accessible to Franklin County residents, particularly low and moderate-income people. Results of a survey of farmers showed a need for access to more farmland, and that farmland is currently too expensive. The report includes recommendations for increasing farmers' access to land, such as through land matching and leasing as well as by making public-owned land available for farming, where appropriate. Other land recommendations from the report include increasing the amount of farmland under permanent protection, and preventing land from being converted from farming to other uses, in part by offering farmers more technical assistance with farm transition and estate planning. Ensuring that good farmland – and the farm buildings and housing on it – remains available and affordable for farming will help continue to support the growth of this important part of the region's rural economy. These land recommendations are also supportive of open space and recreational planning in the City.

Climate change makes farmland protection even more vital. Locally grown and harvested products allow communities to be more self-sufficient and to contribute to the reduction of pollution and use of fossil fuels associated with industrial agriculture. Purchasing locally grown food and farm products also supports the continued viability of farming and food related jobs in the region, and therefore helps protect farmland from conversion to other uses. Many farmers in Franklin County sell their produce

locally, either directly on the farm, through farmers markets and community supported agriculture (CSAs), or through stores that are committed to purchasing from local farms.

E.4 WETLAND VEGETATION

Wetland resources present in Deerfield include open waters, rivers and streams, banks, marshes, wet meadows, forested wetlands, swamps, isolated wetlands, and vernal pools. The majority of the wetland vegetation consists of shrub swamp, marshes, meadows and forested wetlands. Wetlands in Deerfield can be seen on the Plant & Wildlife Habitat map.

E.5 FLOODPLAIN FORESTS

Forested buffers purify water by filtering out harmful nutrients from road run-off, lawns, and agricultural fields, therefore reducing the amount of suspended solids and phosphates that may enter the river. Vegetation also adds to the organic matter content of local soils, shelters and feeds wildlife, and cools water temperatures, which inhibits excessive growth of algae and aquatic vegetation. Vegetation acts as a natural sponge that absorbs, holds, and slowly disperses water toward rivers. This is particularly important during major storm events and the springtime thaw when flooding may be an issue. Floodplain forests are considered to be among the most threatened, globally significant wetland community types in New England. Unfortunately due to their high soil fertility and scenic qualities, many floodplain forests throughout the country have been converted to agricultural uses or cleared for residential and commercial development.

An inventory of Massachusetts floodplain forest communities undertaken by the Massachusetts Natural Heritage Programs and the Nature Conservancy revealed six examples of floodplain forests in Deerfield, as shown on the map to the right:

- North Meadows Island;
- Wapping Floodplain;
- South Meadows;
- Academy Island;
- Pine Hill Floodplain; and
- Deerfield Academy Playing Field Woods.



Source: *Ecological Resilience in Deerfield as Living Infrastructure, the Conway School 2018.*

E.6 RARE, THREATENED, AND ENDANGERED PLANT SPECIES

NHESP has identified 258 native plant species as rare in the Commonwealth, and a number of rare plants have been documented in the Town of Deerfield. These plants occur in some of the Priority Habitats identified in the *Documenting and Mapping Ecosystems* section of this chapter. Plants (and animals) listed as *endangered* are at risk of extinction (total disappearance) or extirpation (disappearance of a distinct interbreeding population in a particular area). *Threatened* species are likely to become endangered in the foreseeable future. *Species of special concern* have been documented to have suffered a decline that could result in their becoming threatened, or occur in very small numbers and/or have very specialized habitat, the loss of which could result in their becoming threatened (NHESP, 2017). Rare plant species in the Town of Deerfield are listed in Table 4-1.

Table 4-1: Plant Species in Deerfield Listed as Special Concern, Threatened, or Endangered

Scientific Name	Common Name	MESA Status*	Most Recent Observation
<i>Alnus viridis ssp. crispa</i>	Mountain Alder	SC	1988
<i>Amelanchier sanguinea</i>	Roundleaf Shadbush	SC	1991
<i>Arisaema dracontium</i>	Green Dragon	T	2016
<i>Aristida purpurascens</i>	Purple Needlegrass	T	1800s
<i>Asclepias verticillata</i>	Linear-leaved Milkweed	T	2017
<i>Boechera missouriensis</i>	Green Rock-cress	T	2013
<i>Carex lenticularis</i>	Shore Sedge	T	1984
<i>Carex tuckermanii</i>	Tuckerman's Sedge	E	Historic
<i>Celastrus scandens</i>	American Bittersweet	T	2013
<i>Cerastium nutans</i>	Nodding Chickweed	E	2018
<i>Chenopodium foggii</i>	Fogg's Goosefoot	E	2009
<i>Clematis occidentalis</i>	Purple Clematis	SC	2002
<i>Corallorhiza odontorhiza</i>	Autumn Coralroot	SC	2018
<i>Deschampsia cespitosa ssp. glauca</i>	Tufted Hairgrass	E	1991
<i>Desmodium cuspidatum</i>	Large-bracted Tick-trefoil	T	1967
<i>Eleocharis ovata</i>	Ovate Spike-sedge	E	2015
<i>Hypericum ascyron</i>	Giant St. John's-wort	E	2008
<i>Ludwigia polycarpa</i>	Many-fruited False-loosestrife	E	1984
<i>Lygodium palmatum</i>	Climbing Fern	SC	Historic
<i>Malaxis unifolia</i>	Green Adder's Mouth	T	1961
<i>Mimulus moschatus</i>	Muskflower	T	1967
<i>Minuartia michauxii</i>	Michaux's Sandwort	T	2009
<i>Morus rubra</i>	Red Mulberry	E	1974
<i>Panicum philadelphicum ssp. philadelphicum</i>	Philadelphia Panic-grass	SC	2010
<i>Potamogeton vaseyi</i>	Vasey's Pondweed	E	1820
<i>Prunus pumila var. depressa</i>	Sandbar Cherry	T	2000
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	SC	1958
<i>Rhododendron maximum</i>	Great Laurel	T	2015
<i>Salix exigua ssp. interior</i>	Sandbar Willow	T	1987

Scientific Name	Common Name	MESA Status*	Most Recent Observation
<i>Senna hebecarpa</i>	Wild Senna	E	2016
<i>Symphoricarpos albus var. albus</i>	Snowberry	E	2015
<i>Symphotrichum tradescantii</i>	Tradescant's Aster	T	2014
<i>Triphora trianthophora</i>	Nodding Pogonia	E	Historic
<i>Trisetum spicatum</i>	Spiked False Oats	E	1875

*SC – Special Concern; T - Threatened; E – Endangered.

Source: Massachusetts NHESP, Town Species Viewer: <https://www.mass.gov/info-details/rare-species-viewer>.

Any MESA listed species with a most recent observation date within the past 25 years is considered to be current. Older dates may be species that have not been recently inventoried, or they may be lost from Deerfield as land use has changed and water quality has changed. Fact Sheets describing many of the MESA listed species and their habitats are available from the state’s Natural Heritage and Endangered Species Program (NHESP) website.⁵⁵

F. FISHERIES AND WILDLIFE

Deerfield’s forests, rivers, wetlands and open farmland, as discussed in previous sections, provide habitat for a variety of common and rare wildlife species. This section discusses wildlife species and their habitats from the perspective of natural communities, individual species, and patterns of wildlife distribution and movement across the landscape.

F.1 GENERAL INVENTORY

The combination of the varied and diverse habitats found in Deerfield help promote the numerous wildlife and fisheries populations that live in the area. Deerfield is home to a vast array of wildlife, both permanent and migratory.

The Deerfield River forms portions of the northern and western boundaries of the Town and is a key habitat for several anadromous fish species (those that are born in fresh water, migrate to salt water where they mature and then return to freshwater to spawn) including striped bass, sea lamprey, blue-black herring, American shad, Atlantic salmon and shortnose sturgeon. Other resident fish species include walleye, channel catfish, northern pike, small and largemouth bass, and pickerel.

The Deerfield River is also one of Massachusetts’ premier Atlantic salmon restoration rivers. The river and its tributaries are nursery habitat for juvenile Atlantic salmon. Adult sea-run salmon are expected to use the river for natural reproduction (U.S. Fish & Wildlife Service; 1995). The Deerfield is also the most intensively fished and managed trout fishery in Massachusetts because the river has relatively clean water, is accessible, and there are a variety of fish habitats along its length.

⁵⁵ <https://www.mass.gov/service-details/list-of-plants>.

Limited access to the Connecticut River, which forms the eastern boundary of Deerfield, has meant that it is generally a less utilized fishing or boating destination. Resident fish species include walleye, channel catfish, northern pike, small and largemouth bass, and pickerel. American shad, blue-black herring, and shortnose sturgeon also spawn within this stretch of the Connecticut River.

Unfortunately, dams along both the Deerfield and the Connecticut Rivers threaten many species—especially Atlantic salmon, blueback herring, and American shad—by blocking fish passage and altering natural flows. During spawning season, fluctuating water releases sweep away fish eggs and larvae. Dams also have a detrimental effect on young fish and place stress on older fish that must constantly alter their feeding and resting areas due to habitat changes resulting from fluctuating flows. Fish may be killed by turbines or stranded in isolated pools when high flow releases recede.

The construction of fishways at key points on the Connecticut River has reduced some of the harmful effects of dams. Regular stocking has led to marginal populations of Atlantic salmon and increased populations of American shad. Lamprey eel numbers have also increased significantly, which indicates improving water quality throughout the Connecticut River Watershed and more efficient fish passage installations.

Periodic logging of forestland has created early successional habitats favored by deer and certain bird species. The Massachusetts Department of Fish and Game uses a percentage of the income derived from hunting and fishing licenses for the purchase of wildlife habitat and important research into wildlife management. Sporting associations such as the Franklin County Sportsmen’s Club and the South Deerfield Rod and Gun Club take advantage of the variety of prime game habitat in town. Hunters in Deerfield typically target white tail deer, turkey, snowshoe hare, raccoon, black bear, cottontail, ruffed grouse, and gray squirrel. Beaver, red fox, gray fox, bobcat, weasel, coyote, and fisher are also found in the area.

Table 4-2: Wildlife Species Identified on Town-owned Pocumtuck Ridge Parcel, 2012⁵⁶

Taxonomic Group	Common Name
Mammal	Fisher
Mammal	Gray Squirrel
Mammal	Eastern Chipmunk
Mammal	Coyote
Mammal	White Tailed Deer
Mammal	Raccoon
Bird	White Breasted Nuthatch
Bird	Turkey Vulture
Bird	Barred Owl
Bird	American Robin
Bird	Common Raven
Bird	Downy Woodpecker
Bird	Pileated Woodpecker
Bird	American Crow
Bird	Wild Turkey
Bird	Black-Capped Chickadee

⁵⁶ *Inventory of Old Pine Nook Road Parcel on the Pocumtuck Ridge, Deerfield MA.* University of Massachusetts Amherst, Department of Environmental Conservation, 2012.

The Department of Fish and Game has sponsored several programs aimed at subsidizing local wildlife populations. The ringed-neck pheasant, which is not native to North America, is stocked annually as game for Deerfield hunters. Another successful program involves the reintroduction of the wild turkey. Since the 1960s, wild turkeys have been captured in other states and released in Massachusetts. When the Pilgrims landed at Plymouth Rock, an estimated 75,000 wild turkeys lived in New England. Unfortunately unrestricted hunting and deforestation led to the eradication of the species from the State in the mid-1800s. Yet, since their reintroduction, Massachusetts' wild turkey population has soared. This is largely due to strict hunting regulations and reforestation.

F.2 RARE, THREATENED, AND ENDANGERED WILDLIFE AND FISHERIES SPECIES

NHESP has identified 169 species of animals in Massachusetts that are protected under the Massachusetts Endangered Species Act (MESA). Table 4-3 displays MESA-protected species that have been observed in Deerfield, and that may be found in the NHESP Priority Habitat areas identified in the 14th edition of the Natural Heritage Atlas (effective August 1, 2017). Animals listed as *endangered* are at risk of extinction (total disappearance) or extirpation (disappearance of a distinct interbreeding population in a particular area). *Threatened* species are likely to become endangered in the foreseeable future. *Species of special concern* have been documented to have suffered a decline that could result in their becoming threatened, or occur in very small numbers and/or have very specialized habitat, the loss of which could result in their becoming threatened (NHESP, 2017).

Table 4-3: Animal Species in Deerfield Listed as Special Concern, Threatened, or Endangered

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Amphibian	Ambystoma opacum	Marbled Salamander	T	2010
Bird	Cistothorus platensis	Sedge Wren	E	1951
Bird	Falco peregrinus	Peregrine Falcon	T	2018
Bird	Haliaeetus leucocephalus	Bald Eagle	T	2018
Bird	Ixobrychus exilis	Least Bittern	E	2006
Bird	Podilymbus podiceps	Pied-billed Grebe	E	1951
Bird	Poocetes gramineus	Vesper Sparrow	T	1994
Butterfly/Moth	Pyrrhia aurantiago	Orange Sallow Moth	SC	2002
Dragonfly/Damselfly	Boyeria grafiana	Ocellated Darner	SC	2004
Dragonfly/Damselfly	Gomphus abbreviatus	Spine-crowned Clubtail	SC	2016
Dragonfly/Damselfly	Gomphus vastus	Cobra Clubtail	SC	2016
Dragonfly/Damselfly	Gomphus ventricosus	Skillet Clubtail	T	2005
Dragonfly/Damselfly	Neurocordulia yamaskanensis	Stygian Shadowdragon	SC	2016
Dragonfly/Damselfly	Stylurus amnicola	Riverine Clubtail	E	2013
Fish	Acipenser brevirostrum	Shortnose Sturgeon	E	1999
Mussel	Lampsilis cariosa	Yellow Lampmussel	E	1987
Mussel	Ligumia nasuta	Eastern Pondmussel	SC	Historic

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Mussel	<i>Strophitus undulatus</i>	Creeper	SC	1948
Reptile	<i>Glyptemys insculpta</i>	Wood Turtle	SC	2016

T= Threatened, SC = Special Concern; E = Endangered.

Source: Massachusetts Natural Heritage and Endangered Species Program, Rare Species by Town Viewer: <https://www.mass.gov/service-details/rare-species-by-town-viewer>.

Where BioMap2 is a planning and conservation tool with no regulatory significance, State-listed rare species and Priority Habitat areas are regulated by the Massachusetts Endangered Species Act. Projects resulting in a "take" of state-listed rare species and disturbing two or more acres of Priority Habitat of Rare Species may be required to file an Environmental Notification Form (ENF) with the State.

As mentioned in the beginning of this section, climate change is expected to alter species distributions. As species move to adjust to changing conditions, federal, state and local agencies and entities involved in land conservation need a way to prioritize strategic land conservation that will conserve the maximum amount of biological diversity despite shifting species distribution patterns.

According to Mass Audubon's *State of the Birds* report, 30% of breeding bird species in Massachusetts are already declining and are in need of conservation action. Climate change will increase stress on many of those species, as well as additional species, and will do so in both predicted and unpredicted ways. For example, increasing temperatures can shift the timing of important events, such as leaf and insect emergence. Those changes in phenology can cause declines in long-distance migrant birds as their arrival on their breeding grounds misses the periods of peak food abundance. Their climate change projections estimate that 43% of the breeding species evaluated as a part of their study are highly vulnerable to climate change by the year 2050.⁵⁷ Mass Audubon's full report can be found at the link below for projected impacts on specific species.

F.3 WILDLIFE CORRIDORS

Permanently protected wildlife corridors are particularly critical in a landscape that is experiencing development pressures to ensure that animals have the ability to travel across vegetated areas between large blocks of habitat. Connections between bodies of water and sub-watersheds are also important for wildlife and fisheries species. Many species of wildlife in Deerfield have home ranges greater than fifty acres in size. Even those species with smaller home ranges move across the landscape between sources of shelter, water, food and mating areas. Some animals, including white-tailed deer and black bear, seek both interior forest habitat and wetland edges where food sources may be more abundant.

⁵⁷ *State of the Birds*. Mass Audubon, September 2019.

https://www.massaudubon.org/content/download/21633/304821/file/mass-audubon_state-of-the-birds-2017-report.pdf

Natural Heritage and Endangered Species Program considers the riparian areas along the Connecticut and Deerfield Rivers as critical habitats. These rivers play a dual role for the region's wildlife. Riparian corridors often contain a greater degree of species diversity than any other portion of the landscape. The rivers also serve as important regional migration corridors for anadromous fisheries as well as for mammals like the bobcat that may use the riparian forests to move between habitat areas. River corridors are also major migration routes for many species of migratory birds. The Connecticut River is located in the "Atlantic Flyway" where waterfowl migrate north and south each year. The north and south flow of this inland river provide direction, nesting and feeding areas for this great migration. Some of the more common animals that use river and stream corridors are beaver, muskrat, raccoon, green heron, kingfish, snapping turtle, and many species of ducks, amphibians, and fish. Floodplain forests also provide sheltered riverside corridors for deer and migratory songbirds.

The forested hills in south and northwest Deerfield provide large blocks of contiguous forestland, which provide interior forest habitats for a variety of birds and mammals. The Pocumtuck Ridge contains large contiguous forest patches running along ridges parallel to the Connecticut River floodplain, which biologists believe are used as travel corridors by wildlife. The forest/field interface and the extensive network of hedgerows provides extensive opportunities for both edge species, predatory activity by birds and mammals, as well as travel lanes from one contiguous forest to another. Large expanses of open farmland are important to species such as the Northern Harrier, turkey vultures, hawks, and flocks of migratory birds.

POLLINATOR CORRIDORS

The Commonwealth of Massachusetts has a rich diversity of native wild pollinators, including an estimated 380 species of bees and 120 species of butterflies. In recent decades, however, both managed, agricultural pollinators and wild, native pollinators nationwide have been experiencing significant challenges in their ability to survive and flourish. In the 2017 *Massachusetts Pollinator Protection Plan*, The Massachusetts Department of Agricultural Resources (MDAR) identified the need to evaluate, sustain and enhance pollinator populations in the state.⁵⁸ This urgent task is not only important to protect biodiversity and natural resources, it is also linked to the climate resiliency and sustainability of our local farms and food systems. Local agriculture is important to the character and economy of Deerfield and is a key industry sector of Franklin County.

Waterways, including wetlands, streams, and rivers, are critically important to pollinators. Not only are they home to high concentrations of flowering aquatic plants that feed native specialist and generalist pollinators, waterways are vital corridors that connect entire ecosystems and greater land areas, from uplands to wetlands. Wetland areas typically represent permanently protected open space where human activity is regulated under Massachusetts General Law, Chapter 131: Wetlands Protection Act (WPA).

⁵⁸ <https://www.mass.gov/files/documents/2017/06/zw/pollinator-plan.pdf>

In 2021, the Franklin Regional Council of Governments prepared a *Regional Pollinator Action Plan for Franklin County*, the first of its kind in Massachusetts. The plan documents specific actions towns can take to support pollinator habitats, and provides an implementation toolkit for interested town officials or residents hoping to expand pollinator habitat on their property. As a part of the planning process, FRCOG supported eight communities with identifying specific areas that already support pollinator habitat, and areas that could be managed to provide suitable habitat and/or provide linkages to habitats in neighboring towns. In 2022, the FRCOG received additional funding from the EEA to prepare a Pollinator Action Plan for the Town of Deerfield, which will be completed in 2024. Copies of the *Regional Pollinator Plan for Franklin County*, the *Regional Pollinator Habitat Corridor Implementation Toolkit*, and the Action Plans for the eight participating communities can be found here: <https://frcog.org/franklin-county-regional-pollinator-plan/>.

F.4 VERNAL POOLS

Vernal pools are temporary bodies of freshwater that provide critical habitat for many vertebrate and invertebrate wildlife species. Vernal pools are found across the landscape; anywhere that small woodland depressions, swales or kettle holes collect spring runoff or intercept seasonally high groundwater tables. Certified Vernal Pools (those that meet the criteria established by the Natural Heritage and Endangered Species Program) are protected to some extent by the Massachusetts Wetlands Protection Act and are protected by additional state and federal regulations. The Town of Deerfield has eight certified vernal pools; all are identified on the *Plant & Wildlife Habitat* map.

Deerfield has the potential to have many more pools certified.⁵⁹ Vernal pools that are certified have the added protection of Massachusetts law, providing a 100-foot buffer and preventing alterations provided that the vernal pools fall within wetland resource areas as defined by the Massachusetts Wetlands Protection Act.

F.5 ANALYSIS OF DEERFIELD'S WATER RESOURCES, VEGETATION, AND WILDLIFE

From this inventory of Deerfield's water resources, vegetation, and fisheries and wildlife, it is clear that Deerfield contains a diverse array of natural areas that have been utilized in the development of the community and for the enjoyment of its citizens since the Town's establishment. These resources are also all interconnected, and maintaining the health of all the Town's natural areas will help ensure vegetation and wildlife will continue to thrive.

Plants and animals are both critical, inter-related components of the ecosystem in Deerfield. Plants convert solar energy into food. This food supports all animal life. Plants cycle energy through the ecosystem by decaying, by removing carbon, and by shedding oxygen. Plants help moderate temperatures. Plants act as shelter and as food for herbivores, omnivores, and carnivores. It is easy to

⁵⁹ According to data from MassGIS, there are 98 potential vernal pools within Deerfield's borders. Mapping resources can be accessed at: http://maps.massgis.state.ma.us/map_ol/oliver.php

take plants for granted because they are the backdrop for our daily activities. Fields, a maintained stage of human-caused vegetation, are important wildlife habitat for many species.

The information provided throughout this section also emphasizes the importance of forests in Deerfield: they protect aquifers, first and second order streams, and edge and interior habitats; they clean the air and cleanse the water; and they can provide materials, food, and medicines to support our human community. They provide habitat for rare, threatened, and endangered plant species that have the potential to disappear with the loss of forestland. Forests also sequester and store carbon, which is essential to mitigate the effects of climate change. Forests of all types, densities, ages, and sizes, are what would predominate in our absence. Therefore, the multiple values of the forest should be considered in land use decisions with a goal of maintaining as much forestland as possible.

The common element between wetlands, streams and brooks, ponds, and groundwater wells is obvious; it is water. Keeping that water clean everywhere in Deerfield is very important to residents. The permanent protection of forests from development will do much towards ensuring that brooks and streams will continue to be home to a diverse array of plants and animals and that the associated wetlands will continue to exist to help slow floodwater energy. Deerfield's water bodies also contain special natural communities important to the region's biodiversity and climate resilience.

Warming temperatures and changes in precipitation due to climate change, including heavier precipitation events and more rain in the winter, pose threats to Deerfield's water resources. Conserving, and in some cases restoring, natural areas is key to maintaining the quantity and quality of Deerfield's water into the future. This may be accomplished through a combination of strategic land conservation and management, resident and landowner education, and revisions to Deerfield's land use regulations as necessary.

The most important areas to protect within Deerfield include those identified on the *Plant & Wildlife Map* as Priority Habitats for Rare & Endangered Species and BioMap2 Core Habitat. These regions include a broader area than site specific locations where rare, threatened, and wildlife species have been located, as they are a wider habitat area that supports such species. Any land use activities should include consideration of the identified locations of these species as well as their surrounding habitat that is crucial to support continued survival.

G. SCENIC RESOURCES AND UNIQUE ENVIRONMENTS

The characteristics that allow a visitor to distinguish Deerfield from other towns in the region may be different than the unique qualities and special places that only residents can really know. This section identifies the scenic resources and unique environments that most Deerfield residents would agree represent the essence of Deerfield's character. In many ways the history of Deerfield--how people came to settle the land, use its resources, and enjoy its forests, streams, and bodies of water--can be seen in the landscapes that have retained a sense of the past. The unique environments in Deerfield play a very

important role in providing residents with a sense of place. Brooks, mountains, wetlands, and Town centers provide markers on the landscape within which we navigate our lives.

Scenic landscapes often derive their importance from location relative to other landscape features. The purpose of inventorying scenic resources and unique natural environments in Deerfield is to provide a basis for setting resource protection priorities. To this end, this section includes information about the different values associated with each scenic resource and natural environment, and indicates areas where multiple values are represented in one landscape (See Table 4-4 and the Scenic Resources & Unique Environments Map). Those landscapes that contain, for example, scenic, wildlife, and cultural values may be given higher priority for protection than a landscape that contains only one value.

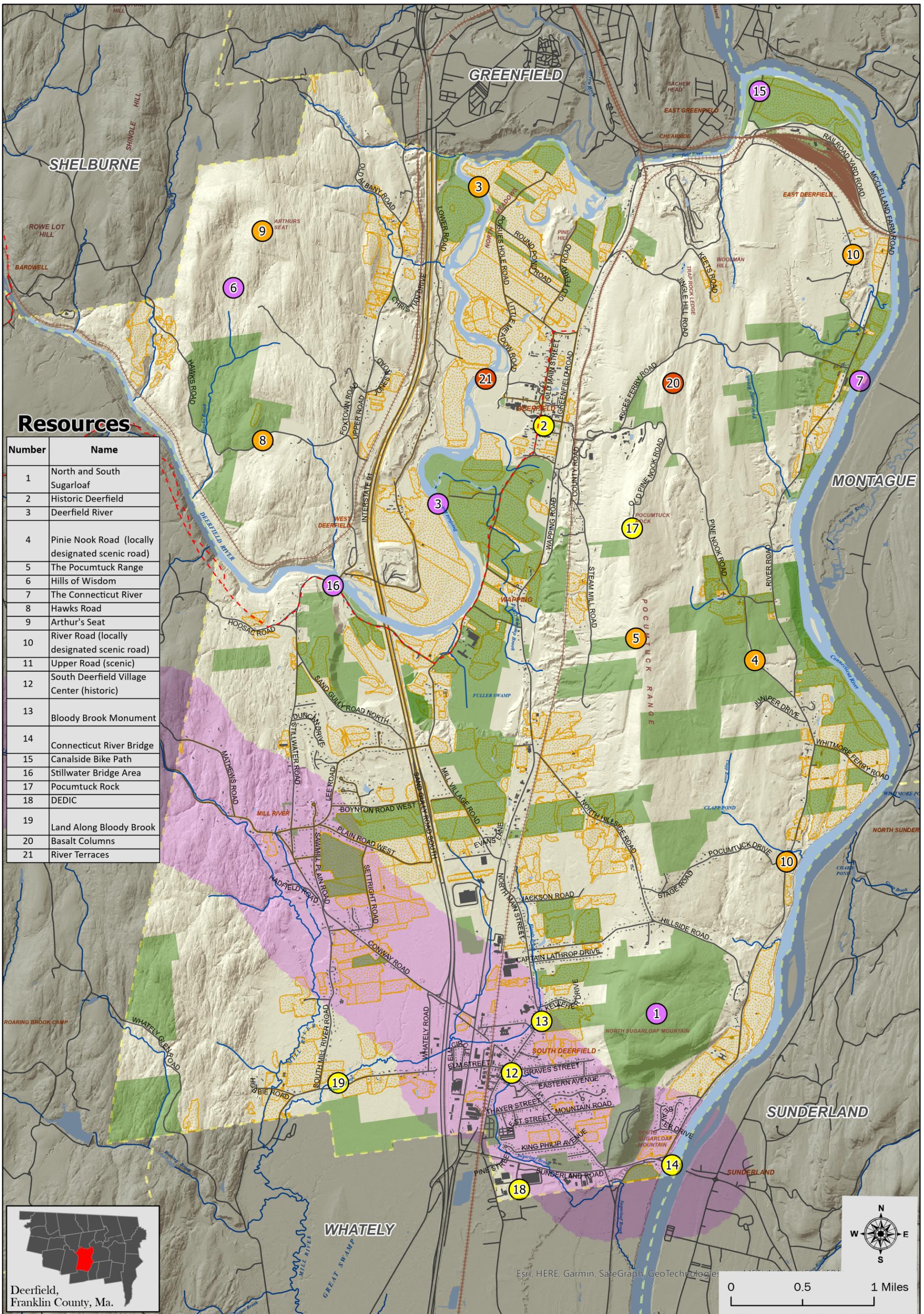
Table 4-4: Significant Scenic/Historic/Natural Landscapes/Environments in Deerfield

Category /Map #	Scenic Resources and Unique Environments	Description	Ecological Value	Recreational Value	Historical / Cultural Value
Scenic Landscapes					
<p><i>Note: This table identifies the scenic resources and unique environments that most Deerfield residents would agree represent the essence of Deerfield's character. While Deerfield's parks and open space are described in Section 5, this table summarizes some of these most notable scenic landscapes, and includes areas not otherwise mentioned in this plan.</i></p>					
	North and South Sugarloaf	<p>These mountain peaks afford spectacular views of large expanses of farmland, the Connecticut River and wooded hillsides. In addition to offering prime scenic vistas, the NHESP acknowledges this as a site of rare and endangered species.</p>	X	X	X
	The Pocumtuck Ridge	<p>Located on the eastern side of town, the Pocumtuck Hills rise 700 feet above the valley and stretch 7 miles from the Deerfield River to Mount Sugarloaf at its southern end. The Ridge is a popular walking spot and scenic asset. On a clear day, one can see agricultural fields, the Deerfield River and the Berkshire Hills. The ridge is predominantly ledgerrock, which is unsuitable for development, although scattered houses can be found there. The Ridge can be seen from just about everywhere in Deerfield.</p>	X	X	X

Category /Map #	Scenic Resources and Unique Environments	Description	Ecological Value	Recreational Value	Historical / Cultural Value
	River Road	Sections of River Road attest to what Deerfield must have looked like during its peak as a thriving agricultural community. Large, prosperous farmsteads dot the landscape and a number of 19 th century houses and tobacco barns remain intact. Magnificent views of the Connecticut River and the valley exist along this stretch of road. River Road was designated as a Scenic Road by the Town of Deerfield.	X	X	X
	Hawks Road	In the northwestern portion of Deerfield is a place fondly referred to as “The Old World.” In 1985, Hawks Road was added to the list of scenic roads in Deerfield, a reminder of how the town once looked. The road is often used by residents for cycling.	X	X	X
	Arthur’s Seat	Reached by Old Albany Road, the highest point in town, Arthur’s Seat is fondly remembered by Deerfield’s older residents as a spot that afforded a spectacular view of the town. Over the years, trees and shrubs have obstructed the view, but Arthur’s Seat remains much the same as it did many years ago—devoid of homes and roads—and visitors can still follow the ridge to the top of this privately owned land.	X	X	X
	Pine Nook Road	A trip along Pine Nook Road is a step back in time. A walk in any direction brings one in contact with remnants from the past such as ruins of an old farmhouse or maple sugar operation. The road winds uphill through young evergreen forests to the summit where a panoramic view of the Connecticut River and the	X	X	X

Category /Map #	Scenic Resources and Unique Environments	Description	Ecological Value	Recreational Value	Historical / Cultural Value
		surrounding landscape unfolds. Occasionally a falcon or bald eagle is sighted here.			
Archeological, Historic or Cultural Areas <i>Note: A complete list of properties listed on the National Register of Historic Places is available at www.nps.gov/subjects/nationalregister/index.htm</i>					
	Historic Deerfield	Surrounded by agricultural fields that are still actively farmed, twenty-four 18 th and 19 th century homes remain in this well-preserved colonial village and national historic site. Thirteen are enjoyed as popular tourist attractions. Franklin Land Trust has helped to protect farmland north and south of the village by encouraging farmers to obtain conservation restrictions on their properties.		X	X
	Stillwater Bridge Area	Scenic area; it was studied extensively due to previously proposed hydroelectric projects. Used by tubers, bikers, and fly fishers.		X	X
	Pocumtuck Rock	Old Pine Nook Road, a gated access road located off Pine Nook Road, leads to the top of the Pocumtuck Ridge, to a spot known locally as "The Rock." This area is part of the Town Forest parcel.		X	X
	DEDIC (Deerfield Economic Development and Industrial Corporation) site	It contains artifacts from the Paleo-Indians who inhabited the area 9,000 to 12,000 years ago. A 1977 excavation of the site yielded nearly 2,000 artifacts and sufficient information to place it on the National Register of Historic Places.			X
	Land along Bloody Brook	This area, just north of the Whately line contains important archaeological artifacts.	X		X
Unusual Geologic Features					

Category /Map #	Scenic Resources and Unique Environments	Description	Ecological Value	Recreational Value	Historical / Cultural Value
	Basalt Columns	Located along the Pocumtuck Ridge , and extend into the Rocky Mountain Range in Greenfield.			X
	River Terraces	Terraces can be seen in Deerfield on the eastern bank of the Deerfield River and north-south from Wapping to the Green River.	X		X
Unique Environments					
	Connecticut River	Kayaking and canoeing; swimming; powerboating; fishing; BioMap2 Core Habitat, Priority Habitat for Rare & Endangered Species.	X	X	X
	Deerfield River	Kayaking and canoeing; fishing; swimming; tubing; BioMap2 Core Habitat, Priority Habitat for Rare & Endangered Species. The Stillwater Bridge area boasts the highest density of known archeological artifacts per site within Deerfield.	X	X	X
	Prime Agricultural Soils	Prime agricultural soils are located throughout Deerfield. Large areas can be found along the Deerfield River, Connecticut River, Mill River, and Bloody Brook.	X	X	
	Pocumtuck Ridge	As noted above, this 7 mile stretch from the Deerfield River to Mount Sugarloaf consists of BioMap2 Core Habitat and contains Priority Habitat for Rare & Endangered Species.	X	X	X



Resources

Number	Name
1	North and South Sugarloaf
2	Historic Deerfield
3	Deerfield River
4	Pinie Nook Road (locally designated scenic road)
5	The Pocumtuck Range
6	Hills of Wisdom
7	The Connecticut River
8	Hawks Road
9	Arthur's Seat
10	River Road (locally designated scenic road)
11	Upper Road (scenic)
12	South Deerfield Village Center (historic)
13	Bloody Brook Monument
14	Connecticut River Bridge
15	Canalside Bike Path
16	Stillwater Bridge Area
17	Pocumtuck Rock
18	DEDIC
19	Land Along Bloody Brook
20	Basalt Columns
21	River Terraces



Town of Deerfield Open Space & Recreation Plan 2022

Scenic & Unique Resources

- - - Mohawk-Mahican Trail
- Permanently Protected Open Space
- Route 116 Scenic Byway
- Water
- Agricultural Land Cover
- Building Structure
- Road
- Unusual Geologic Features
- Historic Areas
- Recreation Areas
- Scenic Landscapes

Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



H. ENVIRONMENTAL CHALLENGES

The overarching environmental challenge for Deerfield’s community is climate change, as discussed throughout this section. Temperature changes and precipitation changes are anticipated to impact the Town’s water resources, forests, farms, and wildlife in a myriad of ways. In addition to this significant challenge, there are several other environmental challenges identified by the Massachusetts Division of Conservation Service as required in this plan. These challenges are described in this section along with efforts that the Town either has already implemented or may want to consider in order to address these issues.

H.1 ENVIRONMENTAL EQUITY & ENVIRONMENTAL JUSTICE

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. The Environmental Justice Executive Order No. 552 requires EEA agencies to take action in promoting environmental justice. The Executive Order requires new environmental justice strategies that promote positive impacts in environmental justice communities and focus on several environmental justice initiatives. EJ communities are defined as being low income, having a high minority population, and/or to have a high rate of English language isolation, based on data derived from the 2019 American Community Survey and based upon demographic data developed by the Massachusetts Executive Office of Energy and Environmental Affairs.⁶⁰

While the MassGIS Environmental Justice Viewer does not show any officially designated EJ populations, in Deerfield, the town still has climate vulnerable populations as discussed in Section 3. Equitable access and use of the Town’s open space and recreation facilities for residents of all ages, socioeconomic backgrounds, ethnicities, and physical abilities is an important part of meeting the open space and recreation needs of the community.

Additionally, as detailed early in this Plan, one of Deerfield’s main challenges is developing affordable housing. Clustering new housing near South Deerfield would provide residents with an opportunity to be within walking distance of shops, municipal resources such as the senior center and library, and public transportation via the FRTA.

H.2 FLOODING, EROSION, AND SEDIMENTATION

As previously outlined in the *Flood Hazard Areas* section of this chapter, the Town’s 2020 Hazard Mitigation Plan outlines numerous areas where flooding is an issue. The majority of the flooding occurs along the Deerfield River, Bloody Brook, and the Connecticut River. A number of flooding-related problems are affecting municipal infrastructure, including the culvert on Mill Village Road North and the culvert on Broughams Pond Road. The FRCOG completed a risk assessment of culverts and bridges in

⁶⁰ More information about how EJ Populations are designated is available here: <https://www.mass.gov/info-details/environmental-justice-populations-in-massachusetts>

Deerfield; a complete list of high-risk structures are included within the final report published in September 2018.⁶¹

Erosion and sedimentation is also an issue in Deerfield. Erosion on waterways has lowered riparian buffers and farm fields by approximately 6 feet in some locations, rendering adjacent farmlands, roads, houses and other infrastructure vulnerable to future floods, including Routes 5/10, Mill Village Road, and Stillwater Road. Additionally, the plant in Old Deerfield is threatened by fluvial erosion and flood hazards associated with the Deerfield River.

Deerfield's major flood events have resulted from rainfall alone or in combination with snowmelt. Snowmelt in the early spring causes annual flooding which often inundates the floodplains of the Deerfield and Connecticut Rivers and their tributary streams. The flat, low area surrounding Bloody Brook in South Deerfield is sometimes subject to severe flooding, which is exacerbated by undersized culverts and excessive growth on marginally developable land, as well as beaver activity downstream in Whately. At times, Main and Pleasant Streets are impassible due to standing water. Mill Village Road is also prone to flooding. Several houses built in this area during the past ten years have substantial septic system problems stemming from the high water table.

Changes in the intensity and frequency of storms due to climate change will also be a challenge for Deerfield, as a "100 year" storm, which once had a 1% chance of occurring in any given year, will likely occur more frequently in the future. Flooding from Tropical Storm Irene in 2011 provided a glimpse of what can happen when a large amount of rain falls on a region within a short period of time. The Town and the entire region will need to work on how to best mitigate damages to existing infrastructure and property from such flooding, and how to allow this flooding to occur naturally without exacerbating it with new development. The fact that this will need to be a regional, watershed-wide effort cannot be understated. As Deerfield lies at the confluence of several major rivers, changes upstream to tributaries and the larger rivers they feed into can greatly influence the impact of flooding in Deerfield. Looking at a watershed holistically, and ensuring there are outlets for floodwaters upstream, will help minimize the overall impact downstream.

H.3 GROUND AND SURFACE WATER POLLUTION

Non-point source pollution occurs when pollutants are generated not by a single source like an outflow pipe from a factory but from improper land use across landscapes both suburban and rural. For example, Deerfield residents can unknowingly contaminate groundwater by failing to update their private septic systems to limit leaching into rivers and streams and by improperly disposing of household hazardous materials like petroleum products, wood preservatives, and pesticides.

⁶¹ High Risk Stream Crossings in Deerfield, MA: A Resource for Assessing Risk and Improving Resiliency. Franklin Regional Council of Governments, 2018.

Non-point source pollution can result in the contamination of both surface and groundwater and involve other types of pollution. Sources of pollution thought to be of greatest concern to residents include the improper use and disposal of hazardous chemicals, other hazardous wastes, road salt, siltation from new construction, gravel roads, and the use of herbicides along utility right-of-ways. Pesticide use is also a large concern to residents, as there are many agricultural producers in Town known to use herbicides, insecticides, and fungicides. These chemicals can migrate to groundwater supplies used for drinking, or to the Connecticut River.

Non-point source pollution in Deerfield can affect the Town's drinking water supply and private wells. There is a direct link between above ground land use and below ground water quality. For example, lawns actually facilitate the movement of rainwater across the ground's surface instead of providing an easy entry point to the soil. Pavement produces even more runoff because it is impervious. Normally, as a community grows the amount of impervious surfaces increases. When precipitation runs off a surface like asphalt, the rainwater may pick up and carry contaminants into streams, ponds, lakes, and into the groundwater. Some of the groundwater moves through subsurface soil layers into streams, while other seeps down into aquifers. In Deerfield, there is concern regarding the pollution caused by illegal dumps and junk yards. Loss of wetlands and increased impervious surfaces also contribute to increases in polluted runoff from NPS sources. Erosion along riverbanks is a major source of sedimentation that can have a negative impact on water quality.

According to the Source Water Assessment and Protection (SWAP) Report prepared for the Deerfield Fire District by the MassDEP in 2003, the overall vulnerability ranking of susceptibility to contamination for the system is high. This ranking is based on the presence of high threat land uses within the water supply protection area, such as agricultural uses, sand and gravel mining, and transportation corridors. The aquifer that the Stillwater Well uses is considered highly vulnerable to contamination from activities on the ground surface due to the lack of a protective confining clay layer. Although the SWAP report is dated, the Town can refer to the recommendations to protect the quality of their public water supply.⁶²

Annual water quality test reports published by the Deerfield River Watershed Association note that the quality of the water in the Deerfield River is quite good, with the exception of bacteria levels that exceed state standards occasionally during wet weather events. The 2004-2008 Deerfield River Watershed Water Quality Assessment Report notes that nonpoint source pollution particularly from localized illegal dumping, acid mine drainage, stormwater runoff, failing septic systems, and agricultural activities, as well as elevated levels of arsenic within sediments behind several impoundments are also areas of concern. Although this report is dated, these issues still persist and affect private wells in Deerfield, including homes on River Road. The Town's existing water districts will not expand into this area, but the

⁶² Source Water Assessment and Protection (SWAP) Report for the Deerfield Fire District. Massachusetts Department of Environmental Protection, July 2003. <https://www.mass.gov/doc/deerfield-fire-district-swap-report/download>

Open Space & Recreation Committee could work on identifying specific parcels to conserve for a future water supply protection area.

Land uses may lead to the runoff of sediments, pesticides, fertilizers, chlorides, effluent and hazardous wastes into water bodies. To thwart further deterioration of Deerfield's water supplies, concerted action will need to be taken to address and minimize these non-point sources of pollution. The Town's Stormwater Bylaw, Stormwater Regulations, Best Development Practices Guidebook, and recently passed Green Development Performance Standards are good steps toward meeting these objectives.

Impaired Water Bodies

Bloody Brook is listed as an impaired water body due to low dissolved oxygen concentrations, elevated total phosphorous levels, high turbidity, and elevated *E. coli* bacteria counts.

The segments of the Deerfield River that run through town and along its northern and western border are listed as impaired due to elevated *E. coli* bacteria counts. However, these segments of the Deerfield River support fish and wildlife, and secondary contact recreational activities such as kayaking. It should also be noted that elevated levels of *E. coli* occur episodically, and typically only occur after a heavy rain event. From the confluence of the North River and the Deerfield River in Buckland, and upstream to the Sherman Reservoir in Rowe, the only impairment on the Deerfield River is a flow modification regime due to the hydroelectric facility in Rowe. According to the 2018/2020 Integrated List of Waters, fish and wildlife habitat, and all forms of recreation are fully supported along those segments.

The entire length of the Connecticut River in Deerfield is impaired due to elevated levels of PCBs that have bioaccumulated in fish tissue. The Massachusetts Department of Public Health's advisory states children under 12, people who are nursing or pregnant, and people of childbearing age should not consume any fish from the Connecticut River, whereas the general public should not consume American eel, channel catfish, white catfish, or yellow perch.⁶³ The Connecticut River is known by anglers to be a great place to catch bass and striped bass, both of which are safe to eat.

More information about impaired waterbodies in Deerfield can be found in the 2018/2020 Integrated List of Waters published by the Massachusetts Department of Environmental protection, and displayed graphically by pulling up the "DEP 2018 Integrated List Rivers" layer online in MassGIS's online mapping tool.^{64,65}

H.4 HAZARDOUS WASTE AND BROWNFIELD SITES

As defined by the U.S. Environmental Protection Agency (EPA), "Brownfields" are properties that the expansion, redevelopment, or reuse of may be complicated by the actual presence or perceived

⁶³ <https://www.mass.gov/doc/public-health-freshwater-fish-consumption-advisories-2022/download>

⁶⁴ <https://www.mass.gov/doc/final-massachusetts-integrated-list-of-waters-for-the-clean-water-act-20182020-reporting-cycle/download>

⁶⁵ <https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html>

potential presence of a hazardous substance, pollutant, or contaminant. Deerfield has been working with the Franklin Regional Council of Governments and property owners to assess the extent of contamination and promote redevelopment of identified brownfield sites in Town. Table 4-5 lists the sites and the extent of the work that has been done thus far. A Phase I Environmental Site Assessment report assesses a site’s potential contamination by conducting historical research and reconnaissance of the site. If needed, follow up reports, such as Phase II, will be conducted to assess the impact of potential contamination through sampling and laboratory analysis of soil, groundwater, or building materials. A Phase III report will be conducted if contamination is found in sufficient concentrations that action should be undertaken. The Phase III is a remediation plan that outlines how a clean-up should be conducted.

Table 4-5: Deerfield Sites in FRCOG Brownfields Program

Sites in FRCOG Brownfields Program		Assessment Work Completed			
Property Name	Address	Phase I	Phase II	Phase III /RAO	Other
Deerfield Parcel 24	Greenfield Road/Routes 5&10	Complete			
Lake Asphalt Plant	River Road	Complete			
Phan Oil Property	951 River Road	Complete			

In addition to the brownfields identified in Table 4-5, the Massachusetts Department of Environmental Protection (DEP) maintains a list of brownfield sites where known contamination has occurred. In Deerfield, 85 sites have been reported to the DEP as of September 2021, most of which have either been cleaned up or determined to pose no significant risk to public health.⁶⁶

EAST DEERFIELD RAIL YARD⁶⁷

The East Deerfield Rail Yard has been the source of numerous releases of hazardous materials over the years. The railyard is located at 246 Railroad Avenue in a commercial/residential section of East Deerfield. The property is approximately 129 acres, and is bound to the north and east by open land and the Connecticut River, to the south by East Deerfield Road, and to the west by the Deerfield River. The southwest border of the railroad yard has residences along River Road. Prior to its current use, the site was either undeveloped or used as farmland. The property has been a railyard since the late 1800s. The Commonwealth currently owns the property and it is managed by the Massachusetts Executive Office of Transportation. The property is leased to Pan Am Railways by the state. It has 35 rail lines as well as numerous work buildings, including an engine house. Pan Am services locomotives, fuels and sands locomotives, and operates a rail switching yard and layover facility for its freight train operation. Some

⁶⁶ The full list of sites can be found by searching the DEP database at <https://eeaonline.eea.state.ma.us/portal#!search/wastesite>

⁶⁷ This subsection is taken from the *2012 Deerfield Multi-Hazard Mitigation Plan*.

of the maintenance activities undertaken on the site that produce and process waste water, including changing oil in locomotives, cleaning the locomotives, and fueling the locomotives. As a result, the site is subject to a permit for storm water management under the National Pollutant Discharge Elimination System (NPDES) overseen by the U.S. Environmental Protection Agency (Permit #MA0000272).

The groundwater flows from the railyard northeasterly in the direction of the Connecticut River and it is located within two major watersheds. The depth to the very shallow water table is 3 to 12 feet below ground surface. The site is underlain by a Potentially Productive Medium Yield Aquifer. The section of this aquifer directly under the railyard is exempt from drinking water standards due to its industrial designation. There is a section of this aquifer that is located beyond the railyard boundaries and is subject to the drinking water regulations, and has been contaminated by chlorinated solvents from the railyard.

There is a perennial stream located 540 feet north of one of the hazardous release sites with an associated wetland buffer zone. There are also two perennial streams that run from the Pocumtuk Ridge, under River Road (on the southwest border of the site) and under the railyard site and discharge at the far side of the railyard. The pathway and conduit of these streams under the railyard are not completely known. Flows have been identified at the stormwater outfalls at the eastern end of the site during non-storm events, and we suspect that the source is either groundwater infiltration or possibly from one of these perennial streams. The concerns about these streams is their potential as a pollutant pathway for the contaminated soils at the site. Contaminated sites are located within the railyard area within 500 feet of protected and recreational open space.

The entire railyard is located on floodplain deposits of the Connecticut River on a meander point bar. It is located about 15 to 20 feet above the Connecticut River. It is located right below the confluence of the Deerfield and Connecticut Rivers. There has been a significant amount of fill from coal ash used at the site (which is exempted from background mercury concentrations due to an EPA designation under the Final CCR Disposal Rule as “beneficial use” and the Massachusetts Contingency Plan (MCP) identifies Historic Fill as a type of “Anthropogenic Background” that does not require remediation). Because much of the site’s soils are moderately to well drained, and in some locations, just a few feet to groundwater, the Town is concerned that any contamination in the soil can easily migrate into the groundwater.

Due to the numerous historic and ongoing releases of hazardous materials at the railyard, the site has been subject to the regulations set forth in M.G.L. Chapter 21E and the Massachusetts Contingency Plan (MCP; 310 CMR 40.1403), which are the state’s hazardous waste site clean-up regulations. The MCP governs the site assessment, remedial response actions, and public involvement process of hazardous waste sites.

Pan Am, as the operator at the site, was required to retain a Licensed Site Professional (LSP) to oversee and approve assessment and remedial activities conducted at the Site. An LSP is an environmental scientist or engineer experienced in the assessment and cleanup of releases of oil and/or hazardous

materials (OHM) to the environment. LSPs are licensed by the Massachusetts Department of Environmental Protection (MassDEP) to ensure responsible party compliance with the MCP. The LSP's role is to ensure that actions taken to address releases of OHM at a site comply with the requirements of the MCP and protect human health, safety, public welfare, and the environment.

MassDEP retains the authority to ensure that both technical and public involvement activities are conducted in accordance with state law and regulations. The town is working closely with the MassDEP to ensure Pan Am's compliance with the MCP. Due to cutbacks at MassDEP over the last two decades, many MCP sites such as this one are considered privatized cleanups that must be conducted under the responsible party's LSP. Since the town has working very closely with the MassDEP to ensure Pan Am's compliance with the MCP, MassDEP has been more involved with these sites in the past decade than other sites with similar MCP designations. Due to further cuts, MassDEP has only been able to conduct audits of Pan Am's efforts. The most recent audit was conducted within the last six months. These audits consistently find lapses in compliance with required MCP activities.

The Town of Deerfield has a Hazardous Waste Coordinator, who initiated the investigation into the issues at the railyard and has been overseeing Pan Am's compliance with the MCP for over two decades. She has written grants as well as working with the Town to fund an LSP on behalf of the town. She has overseen both the consultant's work and Pan Am's compliance with MCP requirements. She initiated the Public Information Process at the railyard for oversight of the MCP process at all of the hazardous waste sites. This process enables the Town to evaluate and comment on all of Pan Am's plans for investigation and clean-up of each site and has been instrumental with enabling the Town to have an active role in ensuring compliance. Pan Am has had to provide the Town with fact sheets, draft documents for comment, and to hold public hearings to explain site activities and solicit comments from residents and public officials.

In accordance with the MCP, the Chief Municipal Officer and the Board of Health are notified by Pan Am of the following activities are conducted:

- The purpose, nature and expected duration of any field work related to the investigation phases of the MCP and the implementation of Phase IV remedial activities;
- The use of respirators and other personal protective equipment (PPE) required under Level A, B or C as defined in the site specific Health and Safety Plan (HASP); and
- Sampling of any drinking water supply wells, indoor air or surface soils at any residential property at, adjacent to or down gradient from the Site.

Additionally, the Chief Municipal Officer and Board of Health are notified of the implementation of any Release Abatement Measure (RAM), including information about the purpose, nature and expected duration of the RAM. The Chief Municipal Officer and Board of Health will also be notified by Pan Am of the status of the availability of any closure determinations (Temporary Solution, Permanent Solution without Conditions, and Permanent Solution with Conditions). If issues of public safety are involved, the Deerfield Fire and Police Departments will be notified of any threat to public safety prior to the

implementation of remedial actions, unless prior notification is impracticable. The MCP requires community notification of major planning and implementation milestones at disposal sites.⁶⁸

A summary of contaminated sites and ongoing remediation work at the East Deerfield Rail Yard is included in the Town's recently updated Hazard Mitigation Plan.

H.5 IMPACTS OF DEVELOPMENT

Development patterns over the last forty years in Deerfield led to the construction of many single-family detached houses. Most of this development has taken place on farm and forestlands. Several of the largest undeveloped parcels in town are also the most suitable for development, and include farm and forestland with slopes under 25%, which are not protected from development. These open and forested lands contribute most to the town's rural character, yet are owned by a handful of families. Were these farm businesses to fail, the future of the farms and their families, as well as the rural character of the town itself, would be in jeopardy.

One type of non-point source pollution that is more common in an urbanizing landscape is the result of poor site management during new home construction. During a storm event, rainwater traveling over land can erode soil uncovered in the construction process. In addition, after construction, stormwater runoff from seeded and fertilized soils can load nearby streams and wetlands with excessive nitrogen and phosphorus. Fortunately, this is a well-recognized problem in Deerfield. As discussed in Section 3 of this Plan, Deerfield recently amended the Site Plan Review Zoning Bylaw to promote climate resiliency as well as low impact development. Having these measures in place will help to mitigate the impacts of new development on the Town's natural resources.

H.6 LANDFILLS

According to the Mass DEP Bureau of Waste Prevention, Deerfield has one landfill, located on Lee Road. The landfill, owned by the Town and used for municipal solid waste disposal, has been closed since 1997 and is capped but not lined. According to the Deerfield Fire District superintendent, the landfill poses a concern for the water district because it is located close to the Stillwater Well, the district's main water source serving the village of Old Deerfield and surrounding residents and businesses. Currently the well is not in danger of contamination from the landfill, however if the direction of the underground seepage were to change, it could pose a threat to this water source.

H.7 WASTEWATER TREATMENT

In the last two decades, the Town of Deerfield has taken extensive measures to address wastewater treatment issues throughout town. In the 2006 & 2014 Deerfield Open Space and Recreation Plans, the South Deerfield Wastewater Treatment District was identified as a particular challenge, as the plant was nearing its design capacity for the amount of wastewater it was taking in. However, this problem has been largely mitigated through a number of projects to reduce the amount of Infiltration and Inflow into

⁶⁸ 2020 Town of Deerfield Multi-Hazard Mitigation Plan.

the system. The Town is currently working on upgrading wastewater treatment in Deerfield with a phased construction project. The first phase is underway, which includes improvements to the water system, the grit removal system, the ultraviolet disinfecting system and the scum well mixing system, as well as adding a secondary clarifier. Later phases of the project will include upgrades to the Old Deerfield Waste Water Treatment Plant, which will either be a rehabbing project or determining a way to pump from the facility on Old Main Street to the newly upgraded South Deerfield Plant.

H.8 INVASIVE SPECIES

Invasive species, or exotics, are plants that are 'non-native' to our local ecosystem. These plants have the ability to spread rapidly and displace native species. In some cases they can cause extinction but generally they decrease biodiversity, alter habitats, and limit resources. Once they invade an ecosystem, it creates the need for time consuming and expensive weed management.

Climate models project rising temperatures and increased precipitation in the Northeastern United States in coming years, which is likely to impact local forests as well other vegetation and public health partially as a result of related impacts on pests, pathogens, and nuisance species. Periods of rapid climate change, such as we are presently experiencing, are especially favorable for rapidly reproducing species such as insects and diseases and promote conditions that can enhance the spread of problematic species. By contrast species with longer life cycles, such as trees, are inherently less well equipped to adapt to rapid climate change.

The following is a list of invasive species that have been documented in Deerfield by the Franklin County Flora Group as of March 2019:

- *Acer platanoides* L. (Norway maple)
- *Aegopodium podagraria* L. (Bishop's goutweed; bishop's weed; goutweed)
- *Ailanthus altissima* (P. Miller) Swingle (Tree of heaven)
- *Alliaria petiolata* (Bieb.) Cavara & Grande (Garlic mustard)
- *Berberis thunbergii* DC. (Japanese barberry)
- *Celastrus orbiculatus* Thunb. (Oriental bittersweet; Asian or Asiatic bittersweet)
- *Elaeagnus umbellata* Thunb. (Autumn olive)
- *Euonymus alatus* (Thunb.) Sieb. (Winged euonymus; Burning bush)
- *Frangula alnus* P. Mill. (European buckthorn; glossy buckthorn)
- *Hesperis matronalis* L. (Dame's rocket)
- *Iris pseudacorus* L. (Yellow iris)
- *Lonicera morrowii* A.Gray (Morrow's honeysuckle)
- *Lysimachia nummularia* L. (Creeping jenny; moneywort)
- *Lythrum salicaria* L. (Purple loosestrife)
- *Myriophyllum heterophyllum* Michx. (Variable water-milfoil; Two-leaved water-milfoil)
- *Myriophyllum spicatum* L. (Eurasian or European water-milfoil; spike water-milfoil)

- *Phalaris arundinacea* L. (Reed canary-grass)
- *Phragmites australis* (Cav.) Trin. ex Steud. subsp. *australis* (Common reed)
- *Polygonum cuspidatum* Sieb. & Zucc. (Japanese knotweed; Japanese or Mexican Bamboo)
- *Polygonum perfoliatum* L. (Mile-a-minute vine or weed; Asiatic tearthumb)
- *Potamogeton crispus* L. (Crisped pondweed; curly pondweed)
- *Ranunculus ficaria* L. (Lesser celandine; fig buttercup)
- *Rhamnus cathartica* L. (Common buckthorn)
- *Robinia pseudoacacia* L. (Black locust)
- *Rosa multiflora* Thunb. (Multiflora rose)

All of these species can be troublesome and difficult to control once planted. As noted in the section above on the Town's public shade trees, it is imperative that the Town continues to plant native species, which will better support pollinators, insects, birds, and mammals.

Invasive pests such as the hemlock wooly adelgid and the emerald ash borer also pose a threat to Deerfield's forests. Die-offs due to these species have already been reported in towns in Franklin County. The emerald ash borer is likely to eliminate ashes as major forest trees from Massachusetts in the next few decades.⁶⁹

The Town would be wise to take a proactive approach to environmental problems related to the spread of introduced pests, including invasive species, and stay abreast of the latest information about related problems that may impact local vegetation, agriculture, forestry wildlife, and public health, as well as related strategies for sustainable management. Such efforts will require cooperation with state and regional efforts and may involve several City boards and departments including the Open Space & Recreation Committee, the Board of Health, and the Conservation Commission, as well.

⁶⁹ 2020 Deerfield Hazard Mitigation Plan

SECTION 5

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

A. INTRODUCTION

The previous sections of this Plan have identified areas within the Town of Deerfield that are significant for their cultural, scenic, or ecological values. This information is helpful for understanding the character of Deerfield and for outlining issues, which may be of particular interest in open space and recreation planning decisions. This section provides an inventory of existing undeveloped land containing these significant values. It identifies public and private parcels, current land use, and the degree of protection, as well as existing land management practices.

In general terms, 'open space' is defined as undeveloped land. In an Open Space and Recreation Plan, the focus is on undeveloped land, which is valued by residents because of what it provides: actively managed farm and forestland; wildlife habitat; protection and recharge of groundwater; public access to recreational lands and trail systems; important plant communities; structures and landscapes that represent the community's heritage; flood control; carbon sequestration; and scenery. Recreational facilities can include open space, parks, and developed areas like tennis courts and swimming pools. Open space and Recreation Plans typically identify areas of undeveloped land that contain precious natural and recreational resources and prioritize them for protection.

Communities across the country are protecting land from development to ensure that the scenic, recreational and resource-based aspects of the landscape remain unchanged. Open space can be protected from development in several ways that differ in the level of legal protection they provide, the method by which they are protected, and by the type of landowner. Section 5 will deal with open space under four levels of protection: permanently protected, temporarily protected, limited protection, and unprotected. These are briefly defined below:

- Land is considered to be **permanently protected** if it is 1) owned by a state conservation agency, a nonprofit conservation land trust or other conservation organization, or by the Town of Deerfield under the care and control of the Conservation Commission; or 2) the land is subject to a conservation (CR) or Agricultural Preservation (APR) restriction in accordance with M.G.L. Ch. 184, section 31; or 3) the land is dedicated to recreation purposes in its deed;
- Privately owned land is considered to be **temporarily protected** if it is enrolled in one or more of the state's Chapter 61, Chapter 61A or Chapter 61B current use tax abatement programs;
- All land owned by the Town of Deerfield except for cemeteries and land under the care and control of the Conservation Commission is considered to have **limited protection**; and finally
- All privately owned land that is neither permanently nor temporarily protected is considered to be unprotected.

Deerfield has a total area of 22,098 acres. Of this, 12,026 acres are open space with some level of protection from development (See Table 5.1). This represents a 1,013 acre increase in protected open land since 2014. Of that total, 4,790 acres are permanently protected. A total of 10,072 acres of land in the town is in unprotected/developed land.

The inventory accompanied by the Open Space Map shows the location, types, and distribution of conservation lands in Deerfield. This inventory is divided into two main sections based on type of ownership: 1) private (including non-profit conservation organizations) and 2) public. Within each of these major categories, parcels are differentiated by use (farm or forestland), by ownership, and by level of protection: permanent, limited, and temporary (See Table 5-1 and Figure 5-1). The change in acres since the last Deerfield Open Space and Recreation Plan is also provided (see Table 5-1 and Figure 5-2).

Table 5-1: Summary of Protected and Not Protected Open Space in Deerfield

PROTECTED OPEN SPACE	Area in Acres	% of Deerfield's Total Open Space (12,206)	Change in Acres 2014 – 2022
PERMANENTLY PROTECTED OPEN SPACE			
Farmland			
Agricultural Preservation Restriction (APR)	2,119	17%	+104
University of Massachusetts Amherst	357	3%	0
Franklin Land Trust	46	.4%	0
Forestland			
Conservation Restriction (CR)	1,111	9%	+11
State owned (DCR, DFW)	914	7%	-22
Water and Fire District Land	453	4%	0
Cemeteries (public and private)	19	.15%	+3
Town Owned Parkland	8.5	<1%	+8.5
Total	4,790	41%	+104.5
TEMPORARILY PROTECTED OPEN SPACE			
Farmland (Chapter 61A)	3,791	31%	-20
Recreation Land (Chapter 61B)	329	3%	+298
Forestland (Chapter 61)	2,816	23%	+639
Total	6,936	57%	+917
Town owned open space	290	2.5%	-8.5
TOTAL OPEN SPACE WITH SOME LEVEL OF PROTECTION	12,026	100%	+1,013
TOTAL UNPROTECTED/DEVELOPED LAND	10,072	0%	-1,013

Source: Deerfield Assessor's Records and Maps 2022; MassGIS Open Space Data, Last accessed July 2022

Note: Any lands that are enrolled in both the Chapter 61 program and the Agricultural Preservation Restriction (APR) program, or is protected with a Conservation Restriction (CR), is counted as permanently protected to avoid double counting acreage.

It should be noted that the acreages presented in these tables are approximate, and based on the total acreage of a parcel enrolled in a Chapter program or with an APR or CR. In some cases, sections of a parcel are not included in the protected area, to allow for a house, barn, business, or other type of use.

The Franklin Land Trust has worked in partnership with the Massachusetts Department of Agricultural Resources (DAR), the Department of Conservation and Recreation (DCR) and the Department of Fish and Game (DFG) to protect hundreds of acres in Deerfield over the years, the majority of it working farmland. What these figures demonstrate is that, while farm and forestland is being converted to other more intensive land uses, some land is being protected. Since the 2014 Open Space and Recreation Plan, 104 additional acres of farmland have been protected permanently through the APR program.

The inventory that follows in Sections B and C lists parcels by private, public and non-profit ownership and then by protection status: protected, temporary, limited or unprotected. These types of open space are identified on the Protected Open Space Map found at the end of this chapter.

B. PRIVATELY OWNED PARCELS

B.1 PRIVATELY OWNED AGRICULTURAL LAND

Eighty-three percent of the undeveloped land with some degree of protection in Deerfield is privately owned. Privately owned parcels contribute to the amount of open space in Deerfield through deed restrictions, conservation easements and tax abatement programs. However as mentioned above, these programs offer varying degrees of protection. For instance, lands under the various Chapters of 61 can be taken out of the program at the landowner's will while lands enrolled in the Agricultural Preservation Restriction (APR) Program or with other conservation restrictions are protected in perpetuity.

As the intention of the APR program is to attain a fair distribution of lands throughout Massachusetts, priority is given to areas suffering from intense development pressure. In Deerfield alone, 2,119 acres are protected in perpetuity under this program, as detailed in Table 5-2 below. This represents approximately 10% of the Town's total acreage. Two areas concentrated along the Connecticut River and to the west of I-91 will help to ensure that Deerfield's agricultural heritage is preserved, but the town may want to continue to look for opportunities to protect farmland as development pressures mount. The town also has a large amount of prime farmland soils, a finite resource that is significant for the town and the greater region in terms of providing enough productive land for current and future generations to grow food. The Prime Farmland Soils and Geographic Features map in Section 4 shows the locations of prime farmland soils in Deerfield. Tables 5-2 and 5-3 below list all parcels enrolled in the APR Program and the Chapter 61A Program, as of 2022.

Table 5-2: Privately Owned Land Permanently Protected from Development in Deerfield with an Agricultural Preservation Restriction (APR)

Parcel ID	Owner(s)	Location	Land Area (Acres)	Program
106 17	Bar-Way Farm Inc.	Stillwater Rd	11.6	APR
106 7	Bar-Way Farm Inc.	Sand Gully Rd North	30.0	APR
112 1	Bar-Way Farm Inc.	Mill Village Rd	25.0	APR
123 1	Bar-Way Farm Inc.	Mill Village Rd	13.4	APR
123 19	Bar-Way Farm Inc.	Mill Village Rd	29.0	APR
123 28	Bar-Way Farm Inc.	Mill Village Rd	57.0	APR
123 4	Bar-Way Farm Inc.	Mill Village Rd	3.4	APR
123 5	Bar-Way Farm Inc.	Mill Village Rd	8.6	APR
94 1	Bar-Way Farm Inc.	Childs Cross Rd	16.0	APR
94 19	Bar-Way Farm Inc.	Mill Village Rd	129.0	APR
94 2	Bar-Way Farm Inc.	Childs Cross Rd	9.9	APR
94 7	Bar-Way Farm Inc.	Childs Cross Rd	12.4	APR
119 5	Best, Dayle Annette	River Rd	24.0	APR
45 4	Bolton, Donald	River Rd	87.0	APR
45 5	Bolton, Donald	River Rd	5.8	APR
94 16	Cloutier, Ann-Mary	Eastern Av	0.3	APR
100 20	Crowley Investment Trust	River Rd	27.7	APR
116 15	Crowley Investment Trust	River Rd	14.3	APR
118 4	Crowley Investment Trust	Whitmore Ferry Rd	12.5	APR
151 33	Dovi LLC	Hillside Rd	29.1	APR
97 1	Anne Rogers Trust	Pine Nook Rd	88.0	APR
98 4.1	Anne Rogers Trust	River Rd	55.0	APR
98 5	Anne Rogers Trust	River Rd	86.0	APR
140 13	Galenski, John + Justin E	Jackson Rd	15.3	APR
151 25	Galenski, John + Justin E	Hillside Rd	22.0	APR
184 7	Grybko, John A Jr + Grace J	Sunderland Rd	13.0	APR
57 2	Herron, John H Jr.	Hawks Rd	51.0	APR
28 19	John G Savage Realty Corp	Greenfield Rd	23.0	APR
78 2	John G Savage Realty Corp	Mill Village Rd	2.1	APR
78 3	John G Savage Realty Corp	Mill Village Rd	33.0	APR
121 3	Kownacki Investment Trust	North Hillside Rd	53.0	APR
123 21	Kownacki Investment Trust	Mill Village Rd	5.7	APR
111 64	Marsh Investment Trust	Mill Village Rd	4.9	APR
123 22	Melnik, Peter	Mill Village Rd	10.1	APR
95 7	Melnik, William W Sr + Sharon M	Childs Cross Rd	15.8	APR
78 7	Molenaar LLC	Mill Village Rd	4.1	APR
86 10	Molenaar LLC	Greenfield Rd	0.2	APR
86 6	Molenaar LLC	Greenfield Rd	24.0	APR
86 7	Molenaar LLC	Greenfield Rd	60.0	APR
87 11	Molenaar LLC	Mill Village Rd	7.1	APR
87 13	Molenaar LLC	Wells Cross Rd	1.9	APR

Parcel ID	Owner(s)	Location	Land Area (Acres)	Program
87 9	Molenaar LLC	Mill Village Rd	5.1	APR
44 1	Moody Richard E + Charlene E	River Rd	15.6	APR
44 10.1	Moody Richard E + Charlene E	River Rd	11.2	APR
123 20	Pasiecznik, James	Mill Village Rd	13.9	APR
131 1	Pasiecznik, James	Settright Rd	8.4	APR
131 2	Pasiecznik, James	Settright Rd	1.3	APR
131 3	Pasiecznik, James	Settright Rd	35.0	APR
131 4	Pasiecznik, James	Settright Rd	1.3	APR
142 18	Pasiecznik, James	Settright Rd	1.5	APR
142 19	Pasiecznik, James	Settright Rd	1.3	APR
143 19	Pasiecznik, James	Settright Rd	20.0	APR
78 4	Pioneer Gardens Inc.	Mill Village Rd	6.3	APR
78 6	Pioneer Gardens Inc.	Mill Village Rd	11.6	APR
87 2	Pioneer Gardens Inc.	Mill Village Rd	1.8	APR
87 6	Pioneer Gardens Inc.	Mill Village Rd	0.1	APR
122 17	Porth, Gideon	North Hillside Rd	44.0	APR
132 36	Porth, Gideon	Greenfield Rd	3.2	APR
66 4	Porth, Gideon	River Rd	10.9	APR
45 3	Porth, Gideon	River Rd	15.4	APR
45 6	Porth, Gideon	River Rd	4.6	APR
84 2	Rogers Farm Management LLC	Pine Nook Rd	79.0	APR
84 4	Rogers Farm Management LLC	Pine Nook Rd	30.0	APR
97 2	Rogers Farm Management LLC	Pine Nook Rd	7.8	APR
149 4	Savage, Jay G	Conway Rd	9.0	APR
158 60.1	Smead, Roxanne	North Main St	39.1	APR
64 5.1	Stephen A Anderson Trust	River Rd	17.9	APR
64 6	Stephen A Anderson Trust	River Rd	2.8	APR
100 31	Steve + Kathy Melnik Fam Trust	Sunrise Av	41.0	APR
117 1	Steve + Kathy Melnik Fam Trust	Whitmore Ferry Rd	40.0	APR
124 1	Steve + Kathy Melnik Fam Trust	Boynton Rd West	62.0	APR
125 75	Steve + Kathy Melnik Fam Trust	Boynton Rd West	17.0	APR
132 16	Steve + Kathy Melnik Fam Trust	Mill Village Rd	12.6	APR
18 4	Steve + Kathy Melnik Fam Trust	Lower Rd	86.9	APR
10 1	Williams Farm Realty Trust	Pogues Hole Rd	7.1	APR
10 2	Williams Farm Realty Trust	Pogues Hole Rd	24.0	APR
18 10	Williams Farm Realty Trust	Pogues Hole Rd	2.2	APR
18 14	Williams Farm Realty Trust	Pogues Hole Rd	1.6	APR
18 15	Williams Farm Realty Trust	Round Pond Rd	1.6	APR
18 7	Williams Farm Realty Trust	Pogues Hole Rd	1.0	APR
18 8	Williams Farm Realty Trust	Pogues Hole Rd	1.1	APR
19 1	Williams Farm Realty Trust	Pogues Hole Rd	3.7	APR
19 10	Williams Farm Realty Trust	Pogues Hole Rd	1.5	APR
19 11	Williams Farm Realty Trust	Pogues Hole Rd	1.6	APR

Parcel ID	Owner(s)	Location	Land Area (Acres)	Program
19 16	Williams Farm Realty Trust	Old Ferry Rd	4.9	APR
19 17	Williams Farm Realty Trust	Old Ferry Rd	3.8	APR
19 2	Williams Farm Realty Trust	Pogues Hole Rd	2.2	APR
19 3	Williams Farm Realty Trust	Pogues Hole Rd	2.2	APR
19 4	Williams Farm Realty Trust	Pogues Hole Rd	4.5	APR
20 1	Williams Farm Realty Trust	Greenfield Rd	21.0	APR
28 13	Williams Farm Realty Trust	Old Ferry Rd	4.3	APR
28 14	Williams Farm Realty Trust	Old Ferry Rd	4.6	APR
28 15	Williams Farm Realty Trust	Greenfield Rd	3.9	APR
28 2	Williams Farm Realty Trust	Old Ferry Rd	7.3	APR
29 12	Williams Farm Realty Trust	Pogues Hole Rd	1.7	APR
29 14	Williams Farm Realty Trust	Round Pond Rd	4.0	APR
70 3	Williams Farm Realty Trust	Mill Village Rd	16.0	APR
70 4	Williams Farm Realty Trust	Mill Village Rd	30.0	APR
70 5	Williams Farm Realty Trust	Log Plain Rd	29.0	APR
70 8	Williams Farm Realty Trust	Mill Village Rd	31.0	APR
70 9	Williams, Kenneth S Iv	Mill Village Rd	11.7	APR
78 1	Williams, Kenneth S Iv	Mill Village Rd	58.0	APR
70 1	Williams, Milton H Jr	Mill Village Rd	4.2	APR
Total APR Acres			2,119	

Source: Deerfield Assessor's Records and Maps 2022; MassGIS Open Space Data, Last accessed July 2022

Note: The acreages presented in these tables are approximate, and based on the total acreage of a parcel with an APR. In some cases, sections of a parcel are not included in the protected area, to allow for a house, barn, business, or other type of use.

Table 5-3: Privately Owned Agricultural Land with Temporary Protection from Development (61A)

Parcel ID	Owner(s)	Location	Land Area (Acres)
160 2	1946 Realty LLC	SOUTH MILL RIVER RD	6.2
160 3	1946 Realty LLC	SOUTH MILL RIVER RD	5.5
166 1	1946 Realty LLC	WHATELY RD	6.8
166 17	1946 Realty LLC	SOUTH MILL RIVER RD	57
166 20	1946 Realty LLC	SOUTH MILL RIVER RD	5.8
167 12	1946 Realty LLC	WHATELY RD	4.1
167 13	1946 Realty LLC	WHATELY RD	13.1
132 3	Adella T Wroblewski Rev Trust	GREENFIELD RD	13.5
66 1	Allen Chase Foundation	RIVER RD	84.4
82 2	Allen Chase Foundation	RIVER RD	89.5
64 5.2	Anderson, Stephen A	RIVER RD	91.3
93 1	Bar-Way Farm Inc	STILLWATER RD	14.8
94 23	Bar-Way Farm Inc	MILL VILLAGE RD	0.6
165 1	Bernard R Baronas Jr Inv Trust	HOBBIE RD	64
166 13	Bernard R Baronas Jr Inv Trust	SOUTH MILL RIVER RD	14.2
43 2	Bolton, Donald G	RIVER RD	8.7

Parcel ID	Owner(s)	Location	Land Area (Acres)
161 7	Chalfant Julie S	SOUTH MILL RIVER RD	7.6
161 8	Chalfant Julie S	SOUTH MILL RIVER RD	13.3
161 6	Chalfant Julie S	SOUTH MILL RIVER RD	10.5
161 10	Chalfant, Julie S	SOUTH MILL RIVER RD	72
87 3	Chapley, Paul	MILL VILLAGE RD	12
105 9	Churchill Megg + Lawrence Kirk	MILL VILLAGE RD	6.5
92 16	Churchill Megg + Lawrence Kirk	SAND GULLY RD NORTH	20
105 1	Churchill, Megg + Lawrence Kirk	SAND GULLY RD NORTH	8
17 23	Clark, Thomas Griswold	UPPER RD	9.3
12 1	Clarkdale Fruit Farms Land Corp	UPPER RD	13.4
17 1	Clarkdale Fruit Farms Land Corp	UPPER RD	69
30 4	Clarkdale Fruit Farms Land Corp	UPPER RD	106
30 7	Clarkdale Fruit Farms Land Corp	UPPER RD	5.9
58 10	Clarkdale Fruit Farms Land Corp	HAWKS RD	21
58 12	Clarkdale Fruit Farms Land Corp	OLD WORLD RD	1.7
58 13	Clarkdale Fruit Farms Land Corp	OLD WORLD RD	11.4
59 1	Clarkdale Fruit Farms Land Corp	UPPER RD	5.9
59 14	Clarkdale Fruit Farms Land Corp	UPPER RD	18
59 6	Clarkdale Fruit Farms Land Corp	OLD WORLD RD	1.5
177 4	Clemons, Brenda B	WHATELY RD	29
116 2	Crowley Investment Trust	RIVER RD	3.3
116 4	Crowley Investment Trust	RIVER RD	109
119 6	Crowley Investment Trust	RIVER RD	7.2
136 10	Crowley Investment Trust	RIVER RD	27
64 1	Crowley Investment Trust	RIVER RD	23
64 11	Crowley Investment Trust	RIVER RD	9.1
161 9.1	Curtis, Christopher L	SOUTH MILL RIVER RD	11.3
140 12	Dailey, Joyce A + Thomas F	JACKSON RD	64.2
122 14	Deerfield Land Trust Inc	NORTH HILLSIDE RD	10.9
30 1	Drumgool, Robert D	UPPER RD	25
30 2	Drumgool, Robert D	UPPER RD	25.9
81 1	Anne Rogers Trust	PINE NOOK RD	11.5
84 3	Anne Rogers Trust	PINE NOOK RD	110
158 66	Galenski John C + Justin E	NORTH MAIN ST	22
140 24	Galenski, John C + Justin E	NORTH MAIN ST	5.4
105 2	Gilmore, Mark E + Veronica L	SAND GULLY RD NORTH	59
14 1	Hawks Farm Realty Trust	OLD WORLD RD	4.9
35 1	Herron, John H + Joann W	HAWKS RD	114
35 2	Herron, John H + Joann W	HAWKS RD	25
35 3	Herron, John H + Joann W	HAWKS RD	29
56 5	Herron, John H + Joann W	HAWKS RD	2.4
56 6	Herron, John H + Joann W	HAWKS RD	3.4
161 12	John A Warchol Inv Trust	STOCKBRIDGE RD	63.1
131 11	John G Savage Realty Corp	PLAIN RD WEST	10.5

Parcel ID	Owner(s)	Location	Land Area (Acres)
50 2	John G Savage Realty Corp	ALBANY ROAD WEST	24
50 3	John G Savage Realty Corp	ALBANY ROAD WEST	4.1
50 4	John G Savage Realty Corp	ALBANY ROAD WEST	3.1
50 5	John G Savage Realty Corp	LOWER RD	4
50 6	John G Savage Realty Corp	LOWER RD	22
50 7	John G Savage Realty Corp	LOWER RD	4.4
60 3	John G Savage Realty Corp	LOWER RD	12.3
60 4	John G Savage Realty Corp	LOWER RD	25
71 1	John G Savage Realty Corp	LOWER RD	7.6
71 6	John G Savage Realty Corp	UPPER RD	1.6
77 11	John G Savage Realty Corp	LOWER RD	29
77 3	John G Savage Realty Corp	UPPER RD	13.4
77 4	John G Savage Realty Corp	LOWER RD	38
77 8	John G Savage Realty Corp	LOWER RD	66
77 9	John G Savage Realty Corp	LOWER RD	8
88 5	John G Savage Realty Corp	LOWER RD	10.7
88 6	John G Savage Realty Corp	LOWER RD	16
88 7	John G Savage Realty Corp	LOWER RD	5.2
134 1	Kolakoski, Bryan L + Gary W	NORTH HILLSIDE RD	54
113 17	Komosa, Henry	GREENFIELD RD	49.8
113 18	Komosa, Henry	NORTH HILLSIDE RD	32
113 9	Komosa, Henry	GREENFIELD RD	14.7
71 18	Kostiuk, Jeffrey J	LOWER RD	13
88 8	Kostiuk, Jeffrey J	LOWER RD	82
134 8	Kownacki Investment Trust	NORTH HILLSIDE RD	20
95 22	Linda Anne Chapley Rev Liv Tst	STEAM MILL RD	69
151 38	Louise H Bartos Nom Trust	HILLSIDE RD	6.1
113 2	Marion L Omeara Irr Re Trust	CLARK CROSS RD	7.4
123 27	Marion L Omeara Irr Re Trust	GREENFIELD RD	4.4
133 1	Marion L Omeara Irr Re Trust	NORTH MAIN ST	19
133 2	Marion L Omeara Irr Re Trust	NORTH MAIN ST	20
133 3	Marion L Omeara Irr Re Trust	NORTH HILLSIDE ST	26
134 20	Marion L Omeara Irr Re Trust	NORTH HILLSIDE RD	14.9
139 17	Marion L Omeara Irr Re Trust	NORTH HILLSIDE RD	28
139 18	Marion L Omeara Irr Re Trust	NORTH HILLSIDE RD	1.1
104 1	Marsh Investment Trust	MILL VILLAGE RD	44
87 4	Melnik, William W Sr + Sharon M	MILL VILLAGE RD	0.2
78 5	Molenaar LLC	MILL VILLAGE RD	6.9
86 5	Molenaar LLC	WELLS CROSS RD	3.3
87 12	Molenaar LLC	MILL VILLAGE RD	3.5
4 1	Nourse Realty LLC	MCCLELLAND FARM RD	118.5
34 2	Osell, Betsy T	BARDWELLS FERRY RD	10
131 18	Ostrowski, Chester P Jr	PLAIN RD WEST	1.3
142 20	Ostrowski, Chester P Jr	SETTRIGHT RD	48.2

Parcel ID	Owner(s)	Location	Land Area (Acres)
149 3	Ostrowski, Chester P Jr	CONWAY RD	21
149 6	Ostrowski, Chester P Jr	CONWAY RD	12.4
83 1	Pfeffer, Lawrence M + Donna M	RIVER RD	24
87 6	Pioneer Gardens Inc	MILL VILLAGE RD	0.1
87 1.1	Pioneer Gardens Inc	WELLS CROSS RD	6.1
143 1	Randle, Ashley	SOUTH MILL RIVER RD	4.1
143 2	Randle, Ashley	SOUTH MILL RIVER RD	330
44 6	Rose, Lynn + F Bernstein	MCCLELLAND FARM RD	18
44 9	Rose, Lynn + F Bernstein	MCCLELLAND FARM RD	24
117 3	Sadoski, Bernard C Jr + Nan E	WHITMORE FERRY RD	13.6
118 3	Sadoski, Bernard C Jr + Nan E	WHITMORE FERRY RD	16
119 4	Sadoski, Bernard C Jr + Nan E	RIVER RD	25
166 11	Sadoski, Charles F	SOUTH MILL RIVER RD	23
166 4	Sobieski, John F + Shiang S	WHATELY RD	2.6
177 3	Sobieski, John F + Shiang S	WHATELY RD	10
64 5	Stephen A Anderson Trust	RIVER RD	2.4
106 15	Steve + Kathy Melnik Fam Trust	SAND GULLY RD NORTH	1.1
106 8	Steve + Kathy Melnik Fam Trust	SAND GULLY RD NORTH	3
106 9	Steve + Kathy Melnik Fam Trust	SAND GULLY RD NORTH	1.2
124 16	Steve + Kathy Melnik Fam Trust	BOYNTON RD WEST	21
130 25	Steve + Kathy Melnik Fam Trust	PLAIN RD WEST	1.8
131 9	Steve + Kathy Melnik Fam Trust	PLAIN RD WEST	1.4
93 10	Steve + Kathy Melnik Fam Trust	STILLWATER RD	9.7
94 22	Steve + Kathy Melnik Fam Trust	STILLWATER RD	29
159 3	Targonski, Stanley	CONWAY ST	5.3
159 6	Targonski, Stanley	CONWAY ST	2.5
160 1	Tatro Joseph C	SOUTH MILL RIVER RD	15
149 1	Tatro, Joseph C	CONWAY RD	13.9
161 21	Tatro, Joseph C	SOUTH MILL RIVER RD	11.5
116 1	Tierney Trust	RIVER RD	17
116 14	Tierney Trust	RIVER RD	20
116 8	Tierney Trust	RIVER RD	1.2
117 2	Tierney Trust	WHITMORE FERRY RD	4
117 5	Tierney Trust	WHITMORE FERRY RD	2.7
114 1	Truesdell Delmer H	NORTH HILLSIDE RD	21
113 16	Truesdell, Delmer H	NORTH HILLSIDE RD	55
166 12	Tudryn Theodore J Jr + Megan L	SOUTH MILL RIVER RD	7.6
79 2	Williams, Kenneth S	GREENFIELD RD	12.9
18 12	Yazwinski, Edward J + Chester T Jr	GREAT POND RD	21
18 13	Yazwinski, Edward J + Chester T Jr	GREAT POND RD	9.6
18 9	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	2
19 6	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	15
19 8	Yazwinski, Edward J + Chester T Jr	OLD FERRY RD	35
28 10	Yazwinski, Edward J + Chester T Jr	OLD FERRY RD	8.9

Parcel ID	Owner(s)	Location	Land Area (Acres)
28 18	Yazwinski, Edward J + Chester T Jr	OLD FERRY RD	8.9
28 4	Yazwinski, Edward J + Chester T Jr	ROUND POND RD	13.3
29 19	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	4.7
29 21	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	5.8
29 22	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	8.7
29 6	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	7.4
39 17	Yazwinski, Edward J + Chester T Jr	LITTLE MEADOW RD	1.6
39 18	Yazwinski, Edward J + Chester T Jr	LITTLE MEADOW RD	17
39 19	Yazwinski, Edward J + Chester T Jr	LITTLE MEADOW RD	38
39 20	Yazwinski, Edward J + Chester T Jr	LITTLE MEADOW RD	11.3
39 21	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	27
39 22	Yazwinski, Edward J + Chester T Jr	LITTLE MEADOW RD	5.1
39 23	Yazwinski, Edward J + Chester T Jr	LITTLE MEADOW RD	7.8
39 24	Yazwinski, Edward J + Chester T Jr	LITTLE MEADOW RD	24
40 12	Yazwinski, Edward J + Chester T Jr	OLD FERRY RD	13.6
40 8	Yazwinski, Edward J + Chester T Jr	BROUGHTONS POND RD	4.7
40 9	Yazwinski, Edward J + Chester T Jr	POGUES HOLE RD	8
49 15	Yazwinski, Edward J + Chester T Jr	OLD MAIN ST	3.8
10 3	Yazwinski, Edward J, Chester T Jr	POGUES HOLE RD	9.9
Total Chapter 61A Acres			3,791.4

Source: Deerfield Assessor's Records and Maps 2022

Agricultural lands enrolled in the Chapter 61A program continue to be used as farmland and the majority lie along the Deerfield River, and some fall in the eastern portion of town in between the Connecticut River and the Pocumtuck Ridge. No state, town, or private funds are necessary to enroll the land in the program. Chapter 61A lands offer much value to Deerfield, even if the farmlands are only temporarily protected. The agricultural parcels often contain prime farmland soils, contribute to the town's tax base and generate revenue, employment, and food products. In addition, some landowners may allow access to their property for recreational purposes, such as hiking and birdwatching. However, access should not be assumed, as the land is privately owned. Most Chapter 61A landowners take pride in their land, while practicing good stewardship. They help to define a sense of place for Deerfield and contribute to community stability over time.

Remaining farms that are not in either the APR Program or the Chapter 61A Program are not listed here, as they are not considered to have any form of protection from development. It is important to note that farms may remain in a family for generations with no formal protection other than a family's desire and ability to keep working the land. However, with development pressure and unreliable economic and weather conditions that impact farms, it is important for farm families to consider successional planning for the future continuance of their farm. This future planning may involve family discussions to consider land protection options, legal and estate issues, ownership and management of the farm operation, and sharing of assets among successors.

B.2 PRIVATELY OWNED FORESTED LAND

Most natural processes do not respect political boundaries, but different types of ownership can affect the forest through varying development and management practices. Permanently protected forestland (itemized in Table 5-4) is that for which landowners have donated or sold development rights to a state conservation agency or land trust in return for placement of a conservation restriction on the deed. Those landowners retain all other property rights not conveyed by deed, and they pay property taxes, which will, however, be lower due to reduced value of the land. Temporarily protected forestland includes parcels enrolled in Chapter 61 and 61B (see Tables 5-5 and 5-6).

There are 982 acres in Deerfield (See Table 5-4) that are permanently protected from development and privately owned.

Table 5-4: Privately Owned Forestland Permanently Protected from Development with a Conservation Restriction

Parcel ID	Land Owner	Holder of the Conservation Restriction	Location	Land Area
64 5.2	Anderson, Stephen & Gips, Ava	MA DCR	River Road	91.2
98 5	Anne D Rogers Trust	MA DCR	River Road	39.2
57 1	Cosby, Camille O.	Franklin Land Trust	Hawks Road	97.3
73 3	Cosby, Camille O.	Franklin Land Trust	Hawks Road	39.1
53 1	Cosby, Camille O.	Franklin Land Trust	Hawks Road	100.0
91 3	Dejnak, Brian W. & Rebecca M.	Franklin Land Trust	Off Stillwater Road	38.1
27 9	Ghiselin, Alexander & Welter, Diane	Franklin Land Trust	Off Keets Road	8.8
27 10	Ghiselin, Alexander & Welter, Diane	Franklin Land Trust	Off Keets Road	10.2
106 16	Great River Hydro	MA DCR	Lower Road/Deerfield River	2.3
56 3	Great River Hydro	MA DCR	Lower Road/Deerfield River	6.4
75 3	Great River Hydro	MA DCR	Lower Road/Deerfield River	12.9
75 4	Great River Hydro	MA DCR	Lower Road/Deerfield River	6.1
89 11	Great River Hydro	MA DCR	Lower Road/Deerfield River	5.1
89 12	Great River Hydro	MA DCR	Lower Road/Deerfield River	34
89 13	Great River Hydro	MA DCR	Lower Road/Deerfield River	12.3
89 16	Great River Hydro	MA DCR	Lower Road/Deerfield River	10.8
90 2	Great River Hydro	MA DCR	Lower Road/Deerfield River	28
91 14	Great River Hydro	MA DCR	Lower Road/Deerfield River	7.2
92 1	Great River Hydro	MA DCR	Lower Road/Deerfield River	2.3
92 4	Great River Hydro	MA DCR	Lower Road/Deerfield River	1.9
79 16	Krough, Carl and Mary	Franklin Land Trust	Greenough Crossing Road	3.8
79 17	Krough, Carl and Mary	Franklin Land Trust	Greenough Crossing Road	1.5
105 6	Localio, Arthur and Ruth	Franklin Land Trust	Off Mill Village Road	19.0

Parcel ID	Land Owner	Holder of the Conservation Restriction	Location	Land Area
61 45	McInerney, Linda	Franklin Land Trust	Greenfield Road	0.9
116 5	New England Forestry Foundation	MA DCR	Off River Road	65.5
100 11	New England Forestry Foundation	MA DCR	Pine Nook Road	74.8
44 9	Rose, Lynn	MA DCR	McClelland Farm Road	23.9
66 5	Shimmel, Joshua & Jennifer	MA DCR	River Road	5.7
4 1	Stewart's Nursery	MA DCR	McClelland Farm Road	119.3
121 5	Pocumtuck Stewards of the Land	Franklin Land Trust	Off Stage Road	6.5
135 3	Pocumtuck Stewards of the Land	Franklin Land Trust	Off Stage Road	9.9
135 4	Pocumtuck Stewards of the Land	Franklin Land Trust	Off Stage Road	78.0
Total CR Acres				1,111

Source: Deerfield Assessor's Records and Maps 2022; MassGIS Open Space Data, Last accessed July 2022

An important recreational site that is protected from development with a Conservation Restriction is the **Pocumtuck Ridge Nature Preserve**.

This 94-acre site is composed of three parcels that were donated or purchased by the Deerfield Land Trust in 1993. In 1998, the preserve was conveyed to a new local non-profit group, the Pocumtuck Stewards of the Land. Located on the Pocumtuck Ridge north of Stage Road and Pocumtuck Drive, this woodland contains a few well-maintained trails and is open to the public for hiking, bird watching, horseback riding, and cross-country skiing. The trails include:

- The Pocumtuck Ridge Trail continuing north from the juncture of Stage Road and Pocumtuck Drive.



Trail blaze on the Pocumtuck Ridge. Photo by Julie Caswell.

- A trail along the ridge that starts at the end of Ridge Road and then connects with the Pocumtuck Ridge Trail.
- A trail to Clapp Pond, which starts at the juncture of Stage Road and Pocumtuck Drive.
- A trail connecting Clapp Pond to the Pocumtuck Ridge Trail.

As host of the Pocumtuck Ridge Trail, the Pocumtuck Ridge Nature Preserve assures the continuance of the trail across this section of the ridge.

All of the parcels in Table 5-5 and Table 5-6 are temporarily protected in the Chapter 61 Forestland and Chapter 61B Recreational Open Space Classification and Taxation Program, and the degree of protection of these parcels is short term. Between the two programs, there are 3,145 acres (14% of the town) of privately owned forestland with temporary protection in Deerfield. There are no public grants awarded as a result of enrolling in the Program; however, the owner does receive a property tax break over a ten-year period.⁷⁰

Assessment of forestland under Chapter 61 is based on the land’s ability to grow timber. Program requirements include: 10 or more contiguous acres, a state-approved forest management plan developed by a licensed forester or landowner, and periodic forest management as recommended by the forest management plan. Landowners must renew their Chapter 61 enrollment every ten years with the local assessor’s office.

Table 5-5: Privately Owned Forestlands with Temporary Protection from Development Enrolled in the Ch. 61 Forestland Classification and Taxation Program

Parcel ID	Owner(s)	Location	Land Area (Acres)
42 2	Allen Chase Foundation	JINGLE HILL RD	8.8
42 7	Allen Chase Foundation	JINGLE HILL RD	69.2
47 1	Allen Chase Foundation	JINGLE HILL RD	4.8
47 2	Allen Chase Foundation	JINGLE HILL RD	13.3
47 7	Allen Chase Foundation	RICES FERRY RD	4.2
47 8	Allen Chase Foundation	PINE NOOK RD	17
48 2	Allen Chase Foundation	RICES FERRY RD	19
48 3	Allen Chase Foundation	RICES FERRY RD	31
48 4	Allen Chase Foundation	JINGLE HILL RD	24
48 7	Allen Chase Foundation	RICES FERRY RD	20
48 8	Allen Chase Foundation	RICES FERRY RD	34
48 9	Allen Chase Foundation	RICES FERRY RD	16
49 46	Allen Chase Foundation	RICES FERRY RD	5.5
49 48	Allen Chase Foundation	RICES FERRY RD	7.1
62 8	Allen Chase Foundation	PINE NOOK RD	6.4
62 9	Allen Chase Foundation	PINE NOOK RD	28
63 4	Allen Chase Foundation	PINE NOOK RD	6.6

⁷⁰ For more information about tax breaks landowners may receive for enrolling their land in these programs, please see: <https://masswoods.org/sites/masswoods.net/files/Ch61-v2.pdf>

Parcel ID	Owner(s)	Location	Land Area (Acres)
63 7	Allen Chase Foundation	PINE NOOK RD	5.1
63 9	Allen Chase Foundation	PINE NOOK RD	2.9
67 3	Allen Chase Foundation	PINE NOOK RD	2.8
68 2	Allen Chase Foundation	PINE NOOK RD	4.4
68 3	Allen Chase Foundation	PINE NOOK RD	2.5
119 1	Best, Dayle Annette	RIVER RD	80
160 7	Boron Living Trust	CONWAY RD	14.8
109 4	Brennan, Willis H + Mishaela L	MATHEWS RD	10.4
109 4.1	Brennan, Willis H + Mishaela L	MATHEWS RD	75
73 1	Cantieni, David	HAWKS RD	41.4
126 16	Clarke, Jay M + James H	MATHEWS RD	24.5
143 3	Conlon, Bonita L	SOUTH MILL RIVER RD	18.1
144 1	Conlon, Bonita L	CONWAY RD	68
72 11	Cummings, William J + Judith K	HAWKS RD	27
72 15	Cummings, William J + Judith K	HAWKS RD	2.4
52 9	Davey Family Trust	UPPER RD	11.4
91 3	Dejnak, Brian W + Rebecca M	STILLWATER RD	38
96 1	Estate Of Urkiel, Edwin J	PINE NOOK RD	27
126 5	Eve/Cowles Tree Farm Inc	CONWAY RD	58.4
128 1	Eve/Cowles Tree Farm Inc	WHATELY GLEN RD	42
145 1	Eve/Cowles Tree Farm Inc	CONWAY RD	67
127 1	Eve-Cowles Tree Farm Inc	CONWAY RD	6.7
126 4	Eve-Cowles, Laura L	CONWAY RD	13.2
109 3.2	Fitch, Thomas R	MATHEWS RD	36.6
109 3.1	Fitch, Thomas R	MATHEWS RD	2.6
25 1	Franklin Co Sportsmens Club In	RIVER RD	69
24 4	Franklin County League Of	RIVER RD	7
43 3	Franklin County League Of	RIVER RD	4.3
129 2	Grinnan, Suzanne E + Kelly J	CONWAY RD	60
2 5	Gwen Sherburne Rev Trust	SO SHELBURNE RD	10.2
15 1	Herron, John H + Joann W	OLD WORLD RD	46
15 2	Herron, John H + Joann W	OLD WORLD RD	18
15 3	Herron, John H + Joann W	OLD WORLD RD	89.9
15 4	Herron, John H + Joann W	OLD WORLD RD	60
16 1	Herron, John H + Joann W	OLD WORLD RD	32
32 1	Herron, John H + Joann W	OLD WORLD RD	32
32 2	Herron, John H + Joann W	OLD WORLD RD	62
32 3	Herron, John H + Joann W	OLD WORLD RD	55
36 1	Herron, John H + Joann W	HAWKS RD	26
36 2	Herron, John H + Joann W	OLD WORLD RD	74
139 57	Mary Lou Reid Rev Trust	HILLSIDE RD	46
46 4	Melnik, Gregory S + Claire K	RICES FERRY RD	13.7
109 10	Mizula, Russell P	GRAND VIEW DR	19.9
12 7	O'Bryan, Patrick	UPPER RD	80

Parcel ID	Owner(s)	Location	Land Area (Acres)
119 3	Sadoski, Bernard C Jr + Nan E	RIVER RD	163
95 12	Satkowski, David J + Ann D	GREENFIELD RD	30
164 2	Scott, Donald M	WHATELY GLEN RD	142
164 3	Scott, Donald M	WHATELY GLEN RD	36
101 1	Thompson, Robert B + Kathleen M	JUNIPER DR	34.3
101 1	Thompson, Robert B + Kathleen M	JUNIPER DR	34.3
103 8	Timothy J Hilchey Inv Trust	GREENFIELD RD	12.3
165 4	Trzcienski, Walter E Jr	HOBBIE RD	78
159 11	WD Cows Inc.	WHATELY RD	5
160 5	WD Cows Inc.	WHATELY RD	4.2
160 6	WD Cows Inc.	WHATELY RD	41
164 1	WD Cows Inc.	WHATELY GLEN RD	70
167 28	WD Cows Inc.	WHATELY RD	11.1
159 7	WD Cows Inc.	WHATELY RD	3.3
54 1	Weiskel, Portia W	HAWKS RD	5.2
56 1	Weiskel, Portia W	HAWKS RD	86
130 2	Wesoloski, Mark	CONWAY RD	20.4
17 16	Western Mass Electric Co	UPPER RD	5.6
17 17	Western Mass Electric Co	UPPER RD	13.6
17 18	Western Mass Electric Co	UPPER RD	2
36 4	Williams Farm Realty Trust	OLD WORLD RD	39
37 4	Williams Farm Realty Trust	UPPER RD	40
102 2	Yazwinski, Chester T + Helen E	NORTH HILLSIDE RD	30
96 2	Yazwinski, Edward J + Chester T Jr	PINE NOOK RD	21
102 7	Yazwinski, Frank Et Al	NORTH HILLSIDE RD	121
Total Chapter 61 Acres			2,815.9

Source: Deerfield Assessor's Records and Maps 2022; MassGIS Open Space Data, Last accessed July 2022

The Chapter 61B Program is intended for landowners interested in maintaining the land in a substantially natural, wild or open condition. Assessment of forestland under Chapter 61B is 25% of the current assessed value of the land. Landowners must have at least 5 contiguous acres of land. Land does not have to be open to the public. Forest management under Chapter 61B is not mandated. However, landowners do have the option of managing their forests if they develop a state approved forest management plan. Landowners must renew their Chapter 61B enrollment annually with the local assessor's office.

Table 5-6: Forestlands with Temporary Protection from Development Enrolled in the Ch. 61B Recreational Open Space Lands Classification and Taxation Program

Parcel ID	Owner(s)	Location	Land Area (Acres)
141 6	1946 Realty LLC	ROUTE 91	5.1
150 3	1946 Realty LLC	ROUTE 91	6.1
150 5	1946 Realty LLC	GREENFIELD RD	1.6
100 12	Allen Chase Foundation	PINE NOOK RD	10

153 1	Bunker, Patricia A + Gary R	HILLSIDE RD	8.3
150 8	Franklin Land Trust Inc	GREENFIELD RD	21.6
1 1	Green River Bowmens Club Inc	OLD ALBANY RD	21
17 4	Kelly, Patricia M	OLD ALBANY RD	157
17 5	Kelly, Patricia M	OLD ALBANY RD	32
122 10	Oxboel, Kirsten	NORTH HILLSIDE RD	18
141 3	Skibiski, Michael R	ROUTE 91	1.5
141 5	Skibiski, Michael R	ROUTE 91	4
126 14	So Deerfield Rod + Gun Club	MATHEWS RD	43
Total Chapter 61B Acres			329.2

Source: Deerfield Assessor's Records and Maps 2022

B.3 NON-PROFIT OWNED OPEN SPACE

The Franklin Land Trust (FLT) is a 501(c)(3) conservation land trust. Their mission is to conserve farms, forests, wildlands, and other natural resources significant to the quality of the environment, economy and rural character of Franklin County.⁷¹ FLT's properties in Deerfield are considered to be held in perpetuity for conservation purposes.

Land trusts also can assist towns by pre-acquiring land and holding it long enough for the town to find funding to purchase the land. Towns are limited in their ability to respond quickly when important open space parcels come on the open market (and also in Chapter 61 Right-of-First-Refusal situations) because the town usually lacks an immediate source of funds and because it may be necessary to wait several months before the next Town Meeting at which residents can vote to approve the project. It requires many months and much hard work on the part of the Open Space & Recreation Committee or Conservation Commission to apply for and receive the necessary grants to cover the cost of Town conservation land.

Table 5-7: Permanently Protected Parcels Owned by Private Non-Profit Conservation Organizations

Map & Parcel	Owner	Location	Acres
61 73	Franklin Land Trust	Greenfield Road	0.21
69 1	Franklin Land Trust	Mill Village Rd.	12.8
69 4	Franklin Land Trust	Old Main St.	0.32
122 14	Franklin Land Trust	North Hillside Rd.	10.9
150 8	Franklin Land Trust	Greenfield Rd.	21.6
Total Non-Profit Acres			45.83

C. PUBLICLY OWNED OPEN SPACE

Publicly owned protected open space equals approximately 9 percent of all of the open space that has some level of protection in town. Most of this land is protected from development and is owned by the State of Massachusetts. A few other public and non-profit entities own parcels of land throughout Deerfield that contribute to the town's supply of recreational open space. While these properties do

⁷¹ <https://www.franklinlandtrust.org/mission/>

not comprise a significant portion of Deerfield’s total acreage, they do play an important role in satisfying wildlife and community needs. The following inventory includes the significant public and semi-public lands in town and highlights their potential as conservation or recreation areas.

C.1 PROTECTED PUBLIC PARCELS

Deerfield residents value the fact that the Massachusetts Department of Conservation and Recreation (DCR) owns and manages 791 acres of lands open to the public for passive and active recreational activities. For example, the Mount Sugarloaf hiking trails are the second most used amenity in Deerfield according to the 2021 Community Survey.

Many of the parcels included in Table 5-8 are a part of the Connecticut River Greenway. The Connecticut River Greenway is one of Massachusetts' newest State Parks. It connects open spaces, parks, scenic vistas, and archaeological and historic sites along the length of the Connecticut River as it passes through the state. Currently the park includes over 12 miles of permanently protected shoreline and eight river access points.

Table 5-8: State Owned Land Protected from Development in Deerfield

Map & Parcel	Owner	Location	Acres	Current Use
102 4	Department of Conservation & Recreation (DCR)	Steam Mill Rd.	8.2	Conservation and Recreation
102 5	DCR	Steam Mill Rd.	7.8	Conservation and Recreation
102 6	DCR	Off Steam Mill Rd.	19.1	Conservation and Recreation
103 10	DCR	Off North Hillside Rd.	8.4	Conservation and Recreation
103 11	DCR	Steam Mill Rd.	15.6	Conservation and Recreation
20 12	DCR	Greenfield Rd.	2.1	Conservation and Recreation
3 1	DCR	Off McClelland Farm Rd.	8.3	Conservation and Recreation
64 3.2	DCR	Off River Rd.	39.3	Conservation and Recreation
79 40	DCR	Steam Mill Rd.	15.5	Conservation and Recreation
8 11	DCR	McClelland Farm Rd.	11.7	Conservation and Recreation
8 9	DCR	Off McClelland Farm Rd.	9.3	Conservation and Recreation
95 19	DCR	Off Steam Mill Rd.	5.5	Conservation and Recreation
95 23	DCR	Steam Mill Rd.	11.9	Conservation and Recreation
95 24	DCR	Steam Mill Rd.	9.3	Conservation and Recreation
153 7	DCR	Mt. Sugarloaf	447.0	Conservation and Recreation
184 1	DCR	Mt. Sugarloaf	90.0	Conservation and Recreation
115 1	DCR	Off North Hillside Rd.	82.0	Conservation and Recreation
102 4	DCR	Steam Mill Rd.	8.2	Conservation and Recreation
Total DCR Acres				791.1

Map & Parcel	Owner	Location	Acres	Current Use
177 1	Division of Fisheries and Wildlife (DFW)	Off Whately Rd.	28.5	Wildlife Habitat
70 2	DFW	Off Mill Village Rd.	18.0	Wildlife Habitat
89 15	DFW	Stillwater Rd.	4.3	Wildlife Habitat
93 9	DFW	Stillwater Rd.	0.5	Wildlife Habitat
176 3	DFW	Route 91	5.6	unknown
176 5	DFW	Off Whately Rd.	66.3	Wildlife Habitat
Total DFW Acres				123.2
153 4	University of Massachusetts (UMass)	River Rd.	148.7	Farmland
137 1	UMass	River Rd.	45.5	Farmland
156 15	UMass	River Rd.	26.1	Farmland
156 16	UMass	River Rd.	15.0	Farmland
171 1	UMass	River Rd.	85.4	Farmland
171 2	UMass	River Rd.	16.1	Farmland
184 3	UMass	River Rd.	19.9	Farmland
Total UMass Acres				356.7
Total State Owned Land				1271.0

Source: Deerfield Assessor's Records and Maps 2010 and 2022; MassGIS Open Space Data, Last accessed July 2022

The following section provides more detailed descriptions of some of the critical publicly owned and quasi-publicly owned properties of particular interest in the Town of Deerfield that are protected from development in perpetuity:

- *Mount Sugarloaf State Reservation:* Mount Sugarloaf is a dominant geologic formation and an unmistakable gateway to South Deerfield. Consisting of 537 acres, the Reservation is a favorite destination for hikers, picnickers, and other outdoor enthusiasts. An auto road winds to the summit where commanding views of the Connecticut River, the Pioneer Valley, and the Pocumtuck Ridge can be observed from an observation tower and visitors can relax in the shade of an outdoor pavilion. Restrooms are also available and the area is handicap accessible.
- *Mount Sugarloaf Field:* This small parcel is presently owned by the Department of Conservation and Recreation and maintained by the Town of Deerfield Recreation Department as a playing field. Frequently enjoyed by local sport leagues, permission to use this field rests with DCR.
- *University of Massachusetts:* The University owns a 357-acre tract of land along River Road in South Deerfield, which is used for agricultural and turf research. Some of this property along the west side of River Road is pasture and forest land.

In June 2020, voters at Town Meeting approved the purchase of an 8.5-acre parcel that will be used for a public park with walking paths, multi-purpose fields, and picnic areas. The park is currently in the planning and design phase.

Table 5-9: Town Owned Land Protected from Development in Deerfield

Site Name/Location	Acres	Assessor's Map	Assessor's Lot	Current Use	Condition	Type of Grant	*Zoning
North Main Street Park	8.5	151	1	Under Construction	New	LWCF	CI

Source: Deerfield Assessor's Records and Maps 2010 and 2022.

C.2 PROTECTED QUASI-PUBLIC FIRE AND WATER SUPPLY DISTRICTS

The Deerfield Fire District and the South Deerfield Water Supply District are quasi-public entities established through acts of the state legislature to serve their districts with water for drinking, sanitation, and for fire protection. Their lands are typically held for water supply purposes. For the scope of this plan, it is assumed that most, if not all of the acreage held by these two districts, is protected under Article 97 of the Amendments to the Massachusetts State Constitution.

The Deerfield Fire District owns 187 acres and the South Deerfield Water District owns 266 acres, for a total of 453 acres of densely wooded land. The area is safeguarded for the districts' water supplies and therefore can only support certain limited recreation uses such as hiking, hunting, and bird watching.

C.3 PUBLIC PARCELS WITH LIMITED PROTECTION

The Town owns and manages a total of 290 acres of public land that are considered to have limited protection because they are not under the control of the Conservation Commission. These lands contribute to the open space. Table 5-10 shows these parcels in three categories:

- Lands in Use or Planned for Use (64.4 acres): These lands include properties such as the Elementary School, Town Hall, Memorial Field, and the Senior Center. They also include the parcel residents voted on acquiring for a new park on North Main Street in the Village of South Deerfield. As of the writing of this OSRP, plans are still underway for construction of this park, but will likely include new sports fields and walking paths.
- Lands of Recreational Interest—Currently in Limited Use (170.5 acres): These lands include 11 parcels. Several of these are discussed further below.
- Other Miscellaneous Lands (65.1 acres): These parcels are open lots, most with low or unknown recreational value. These lands could be evaluated for future uses that would include small neighborhood parks or other recreational facilities. As of this report, the OSRC does not view these properties as a priority for recreational use.
- The Town of Deerfield also owns nine cemeteries that contain 19 acres that are considered to be protected from development.

Table 5-10: Town-Owned and Managed Open Space with Limited Protection from Development in Deerfield

Site Name/Location	Ownership	Management Agency	Acres	Assessor's Map	Assessor's Lot	Current Use	Condition	Recreation Value	Public Access	Type of Grant	*Zoning
Lands in Use or Planned for Use											
Old Albany Rd	Town	Town	0.2	17	2	Open Space (Cemetery)	Good	Medium	Yes	N/A	RA
Off Memorial St.	Town	Town (Deerfield Rec. Dept.)	1.5	61	47	Ball Field	Good	High	Yes	N/A	RA
Pine Nook Rd.	Town	Town (DPW)	8	61	56	Laurel Hill Cemetery	Good	Medium	Yes	N/A	RA
Recreation Field/Greenfield Rd.	Town	Town	6.1	159	15	Open Land	Poor (wet)	Low	Yes	N/A	C I
28 Pleasant St.	Town	DES	0.9	159	23	Elem. School Play Area	Good	High	Yes	N/A	CVR
Pleasant St	Town	Town	2.3	159	24	Open Space (Elem. School Parking)	Good	Low	Yes	N/A	CVR
Elementary School/21 Pleasant	Town	DES	11.7	159	27	Playground and Fields	Good	High	Yes	N/A	CVR
Park St.	Town	Town	0.2	168	5	Town Common	Good	High	Yes	N/A	CVR
15 Jewett Ave	Town	Town	15.9	168	21	Former Oxford Food Site	Fair	High	Limited	N/A	EPD
Off Conway St.	Town	Town	0.2	168	138	Access to Elem. School Fields	Good	Low	Yes	N/A	CVR
Conway Street	Town	Town	3.4	168	139	Town Hall	Good	Low	Yes	N/A	CVR

Site Name/Location	Ownership	Management Agency	Acres	Assessor's Map	Assessor's Lot	Current Use	Condition	Recreation Value	Public Access	Type of Grant	*Zoning
Off Conway St.	Town	Town (Deerfield Rec. Dept.)	1.8	168	140	Memorial Field behind Town Hall	Good	High	Yes	N/A	CVR
North Main Street	Town	Town	0.55	169	11	Senior Center	Fair	Medium	Yes	N/A	CVR
Jewett Avenue	Town	Town	0.18	169	186	Highway Department	Fair	Low	Limited	N/A	EPD
Merrigan Way	Town	Town	3	174	161	Highway Department	Fair	Low	Limited	N/A	EPD
Lands of Recreational Interest (Currently in Limited Use)⁷²											
Off Pine Nook Rd.	Town	Town	8.4	63	8	Hiking, Hunting, etc.	Good	Medium	Limited	N/A	RA
River Rd	Town	Town	0.9	64	4	Open Space	Good	Low	Limited	N/A	RA
Steam Mill Rd. (3 - Steam Mill Forest)	Town	Town	31	79	39	Town Forest	Good	Medium	Yes	N/A	RA
Old Pine Nook Rd. (1 - Pocumtuck Rock)	Town	Town	63	80	1	Town Forest	Good	High	Yes	N/A	RA
Pine Nook Rd. (2 - Pine Nook Memorial Forest)	Town	Town	18	81	3	Town Forest	Good	High	Yes	N/A	RA
Off Mill Village Rd. (5 - Deerfield River off Mill Village Rd.)	Town	Town	5.5	87	8	Fishing	Fair	High	Limited	N/A	RA

⁷² Numbered Lands of Recreational Interest are shown on the Open Space map.

Site Name/Location	Ownership	Management Agency	Acres	Assessor's Map	Assessor's Lot	Current Use	Condition	Recreation Value	Public Access	Type of Grant	*Zoning
Mill Village Rd	Town	Town	0.5	87	10	Open Space	Good	High	Limited	N/A	RA
Pocumtuck Dr	Town	Town	1	135	10	Open Space	Good	Low	Limited	N/A	RA
Birchwood Dr. (4 - Birchwood Nature Refuge)	Town	Town	36	138	5	Hiking, etc.	Good	High	Yes	N/A	RA
Off North Main St./ Braeburn	Town	Town	3.4	169	23	Open Space	Good	Medium	Limited	N/A	CVR
Braeburn Avenue (6)	Town	Town	2.8	169	24	Open Space	Good	UNK	Limited	N/A	CVR
Other Miscellaneous Lands (Low Recreation Potential)											
Lower Rd	Town	Town	0.5	18	2	Open Space	Good	Low	Limited	N/A	RA
Depot Rd.	Town	Town	0.7	69	31	Open Space	Good	Low	Limited	N/A	RA
Upper Rd.	Town	Town	2.8	88	1	Open Space	Poor	Low	Limited	N/A	RA
Off Childs Cross Rd.	Town	Town	0.96	94	3	Fuller Swamp	Poor	Low	No	N/A	RA
Stillwater Rd	Town	Town	1	106	2	Open Space	Good	UNK	Limited	N/A	RA
Sand Gully Rd North	Town	Town	16.3	106	14	Open Space	Good	UNK	Limited	N/A	RA
Sand Gully Rd North	Town	Town	2.6	106	14.1	Open Space	Good	UNK	Limited	N/A	RA
Sand Gully Rd North	Town	Town	2.6	106	14.2	Open Space	Good	UNK	Limited	N/A	RA
Lee Rd	Town	Town	11.1	110	20	Open Space	Good	Low	Limited	N/A	RA
Mill Village Rd	Town	Town	1.6	111	62	Open Space	Good	Low	Limited	N/A	RA
Greenfield Rd	Town	Town	0.9	123	24	Open Space	Good	Low	Limited	N/A	CII

Site Name/Location	Ownership	Management Agency	Acres	Assessor's Map	Assessor's Lot	Current Use	Condition	Recreation Value	Public Access	Type of Grant	*Zoning
Baker Ln	Town	Town	0.4	125	39	Open Space	Good	Low	Limited	N/A	RA
North Main St	Town	Town	1.1	132	41	Open Space	Good	Low	Limited	N/A	I
Route 91	Town	Town	5.2	141	7	Open Space	Good	Low	Limited	N/A	RA
Conway Rd	Town	Town	7.4	149	18.1	Open Space	Good	Low	Limited	N/A	RA
Conway Rd	Town	Town	5.4	149	23	Open Space	Good	Low	Limited	N/A	RA
Oak Knoll Dr	Town	Town	1.2	156	12	Open Space (Roadway)	Good	Low	Limited	N/A	RA
Conway Rd	Town	Town	1.5	159	12	Open Space	Good	Low	Limited	N/A	RA
Railroad St	Town	Town	0.2	168	118	Open Space	Good	Low	Limited	N/A	CI
South Main St	Town	Town	0.1	175	49	Open Space	Good	Low	Limited	N/A	CVR
Sunderland Rd	Town	Town	0.04	182	18	Open Space	Good	Low	Limited	N/A	CVR
Total Town Open Space with Limited Protection									290		

Source: Deerfield Assessor's Records and Maps 2022; MassGIS Open Space Data, Last accessed July 2022

Note: RA= Residential Agricultural; CVR=Central Village Residential; CIII=Small Business; EPD=Expedited Permitting District.

Many of the parcels included in the category of **Lands of Recreational Interest** that are currently in limited use have a strong potential for increased recreational use. These include:

On the Pocumtuck Ridge

1. *Pocumtuck Rock* (Off Pine Nook Road, 63 acres): This parcel is accessible via Old Pine Nook Road, a gated access road off Pine Nook Road on the Pocumtuck Ridge, and via the Pocumtuck Ridge Trail, as well as by informal trails in the area. The Pocumtuck Ridge Trail travels the length of the property, with expansive views of the Deerfield River Valley from the lookout at Pocumtuck Rock. Other trails cross the property including a trail along the eastern boundary of the property and a trail beginning at the radio towers that heads north to the Eaglebrook Ski Hill chairlift and terminates at Pine Nook Road. These trails are used by mountain bikers, hikers, and walkers. Currently, no signage marks the property as owned by the Town of Deerfield or for public access.
2. *Pine Nook Memorial Forest* (Pine Nook Road, 18 acres): This World War I memorial parcel is located on Pine Nook Road. The public can access the parcel by a trail that leaves Pine Nook Road at the north end of the property, although no signage marks the property as owned by the Town of Deerfield or for public access. Informal trails that exit the property lead to the Pocumtuck Rock parcel and the Pocumtuck Ridge Trail across non-town property.
3. *Steam Mill Forest* (Steam Mill Road, 31 acres): This parcel is on the east side of Steam Mill Road. The OSRC does not know of any trails on this property. It shares its eastern boundary with the Town's Pocumtuck Rock parcel. The steep cliff of the Pocumtuck Ridge prevents hiking access between the two properties.
4. *Birchwood Nature Refuge* (Birchwood Drive, 36 acres): This parcel is south of Stage Road and Pocumtuck Drive. It was sold to the Town in 1976 with the restriction that it be used as a wildlife refuge with trails for hiking, snow-shoeing, horseback riding, and cross country skiing, with no picnic areas, camp sites, snowmobiles, mini-bikes or related uses. Public access is off Stage Road on town land.

The Pocumtuck Ridge Trail crosses this parcel, making a continuous trail, from south to north, from DCR property on South and North Sugarloaf, across Hillside Road and onto University of Massachusetts property, onto the Birchwood Nature Refuge, and via a short segment on Stage Road, continuing on the land of the Pocumtuck Stewards of the Land to the north of Stage Road.

The Birchwood Nature Refuge and the Pocumtuck Ridge Trail through it are little known and lightly used. Currently, no signage marks the property as owned by the Town of Deerfield or for public access.

On the Deerfield River

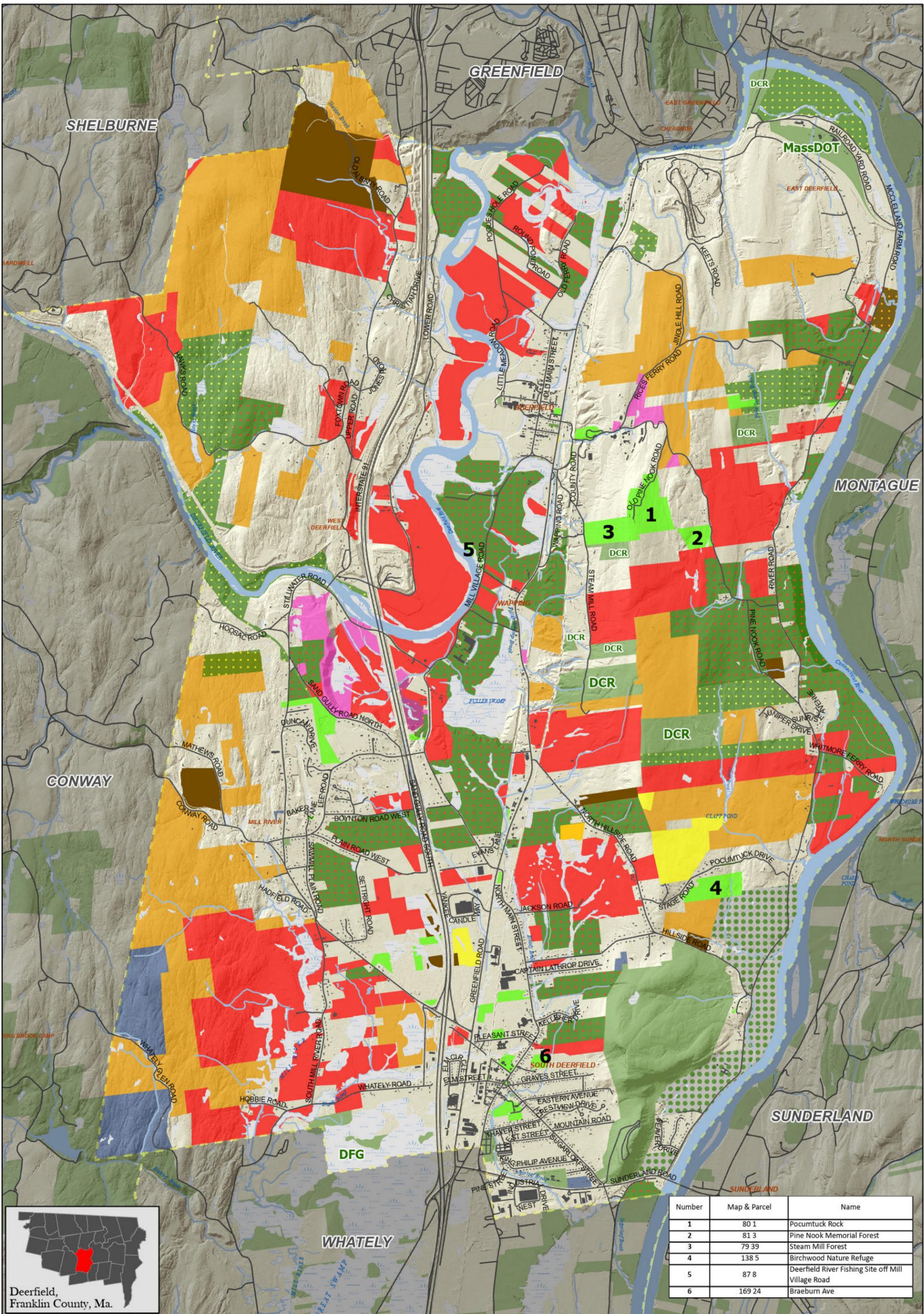
5. *Deerfield River* (Off Mill Village Road, 5.5 acres): This parcel runs along the Deerfield River at the intersection of Mill Village Road with Wells Cross Road. A path leads down to the river. Currently, no signage marks the property as owned by the Town of Deerfield or for public access.

In South Deerfield Center

6. *Braeburn* (Off North Main St/Braeburn, 3.4 acres and Braeburn Avenue, 2.8 acres): This is a piece of land with no public parking, low recreational potential. The Town would like to determine what to do with this property.



View from Town Property off of Mill Village Road to North Sugarloaf. Photo by Julie Caswell.

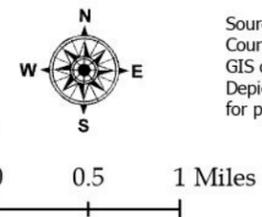


Number	Map & Parcel	Name
1	80 1	Pocumtuck Rock
2	81 3	Pine Nook Memorial Forest
3	79 39	Steam Mill Forest
4	138 5	Birchwood Nature Refuge
5	87 8	Deerfield River Fishing Site off Mill Village Road
6	169 24	Braeburn Ave

Town of Deerfield Open Space & Recreation Plan 2022

Open Space

- State Owned
- Land Trust
- Agricultural Preservation Restriction
- Town Owned Recreation Land
- Conservation Restriction
- Chapter 61 Forestry
- Fire District
- Chapter 61 Recreation
- Water District
- Chapter 61 Agricultural
- University of Massachusetts



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



D. OPEN SPACE EQUITY

One dimension of environmental equity is the distribution of open space. This is somewhat difficult to evaluate in a town like Deerfield, where most residences are spread out along the rural roads in town. Deerfield's public recreation areas are primarily located on the eastern side of town, including the Mount Sugarloaf and Pocumtuck Ridge hiking trails, and playgrounds at the elementary school. However, according to the 2021 Community Survey, residents did not seem to have an issue with the distribution or location of recreational facilities. The primary reason why residents did not use the town's facilities was noted to be that they did not know about available programs and facilities. Considering the most popular activities Deerfield households participate in according to the survey (walking, hiking, and biking) can be done throughout town, one way to improve open space equity would be to publish easily accessible information about publicly accessible lands and trails. The Open Space & Recreation Committee hopes to make more maps and trail information available to the public to increase residential awareness of recreational options in town.

Another issue related to open space equity discussed throughout this plan is the improvement and addition of sidewalks throughout town. Although many of Deerfield's residents have access to a car, many residents rely on sidewalks to get to open spaces or prefer to walk. This sentiment was echoed in the Community Survey results. However, most of the sidewalks that are in disrepair are owned by the state, and the Town doesn't have the jurisdiction to upgrade them. The Town can advocate for high priority/heavily used sidewalks to be repaired first.

E. OPPURTUNITIES FOR FUNDING OPEN SPACE AND CONSERVATION PROJECTS IN DEERFIELD

The opportunities for the Town of Deerfield to procure funding for open space projects can be a challenge. Deerfield is a small rural community with limited financial resources available for funding open space projects. The following summaries provide a brief description of some of available resources for funding open space and conservation projects.

E.1 LAND GRANT PROGRAM (FORMERLY THE SELF-HELP GRANT PROGRAM)

The Commonwealth of Massachusetts offers a grant program through the Executive Office of Energy and Environmental Affairs, Division of Conservation Services, to assist municipalities with open space projects. This program was formerly known as the Self Help grant program and is now entitled the LAND grant program (Local Acquisitions for Natural Diversity). Conservation or Agricultural Commissions from communities with an up-to-date Open Space and Recreation Plan are eligible to apply for reimbursement grants to acquire land for conservation and passive recreation in fee or for a conservation restriction. The grant supports the purchase of forests, fields, wetlands, wildlife habitat, unique natural, cultural, or historic resources, and some farmland. The public must have reasonable access to the land. Reimbursement rates are between 52-70%, with a maximum grant award of \$400,000.

E.2 PARC GRANT PROGRAM

The Parkland Acquisitions and Renovations for Communities (PARC) Grant Program, offered by the Executive Office of Energy and Environmental Affairs, Division of Conservation Services, was established to assist cities and towns in acquiring and developing land for park and outdoor recreation purposes. These grants can be used by municipalities to acquire parkland, build a new park, or to renovate an existing park. Applications are open to all municipalities that have submitted an up-to-date Open Space and Recreation Plan, however, the number of residents in a town may affect the grant amount. Reimbursement rates are between 52-70%, with a maximum grant award of \$400,000.

E.3 MASSACHUSETTS LAND AND WATER CONSERVATION FUND GRANT PROGRAM

The Massachusetts Land and Water Conservation Fund Grant Program is offered through the Executive Office of Energy and Environmental Affairs, Division of Conservation Services, and is funded from the Federal Land and Water Conservation Fund. The program provides up to 50% reimbursement for the acquisition of parkland or conservation land, creation of new parks, renovations to existing parks, and development of trails. Municipalities with up-to-date Open Space and Recreation Plans are eligible to apply.

E.4 DEPARTMENT OF CONSERVATION AND RECREATION FUNDING

DCR has a limited budget for funding land protection state-wide through fee purchases or buying Conservation Restrictions. To make their expenditures as effective as possible, DCR is focusing on expanding existing large blocks of state-owned land. DCR has designated areas throughout the state that have priority for funding.

E.5 LOCAL LAND TRUSTS

Mount Grace Land Conservation Trust and Franklin Land Trust are local non-profit organizations that assist farmers and other landowners who seek to protect their land from unwanted development. A land trust does not seek to own land, but instead encourages private stewardship. Although land trusts could assist the Town of Deerfield in land conservation, they generally do not have funds to donate to the Town for protecting open space. Land trusts may be most helpful by serving towns on a consultant basis, by recommending funding sources, and by partnering with towns to provide public education and outreach.

E.6 REGIONAL AND STATEWIDE CONSERVATION ORGANIZATIONS

In addition to local land trusts, several other regional and statewide conservation organizations are available for partnership conservation projects. The New England Forestry Foundation (NEFF) has a focus in conserving managed forest lands. Massachusetts Audubon Society (MAS) works to protect the diversity of Massachusetts natural resources. Additional organizations include The Trustees of Reservations and The Nature Conservancy. Each of these conservation organizations has access to no-interest or low-interest loan funds to assist in the conservation of significant natural resources through the Norcross Wildlife Foundation's loan program and the Open Space Institute's Western Mass Loan Fund.

E.7 CONSERVATION PARTNERSHIP GRANT PROGRAM

This is a State grant program that is designed to help land trusts and other non-profit conservation organizations acquire interests in land for conservation or recreation purposes. Potential projects fall into one of two categories: acquisition of the fee interest in land or a conservation restriction; or due diligence for land or a conservation restriction that was donated to the organization. The maximum reimbursement amount available for a single project is 50% of the total eligible project cost up to the grant award maximum of \$85,000. This is a resource that could be helpful to Deerfield because there are several parcels in Town with very high conservation value that an organizations such as the FLT would be interested in working with the Town to conserve. The challenge is finding funds for the remaining 50% of the project.

E.8 AGRICULTURAL LANDS CONSERVATION PROGRAM / WETLANDS RESERVE EASEMENTS

This is a federal funding program through the United States Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS). The program provides financial and technical assistance to help conserve agricultural lands and wetlands. Under the Agricultural Land Easements component of the program, NRCS helps state and local governments and conservation organizations protect working agricultural lands and limit non-agricultural uses of the land. NRCS provides up to 50% of the fair market value of the agricultural land restriction. Under the Wetlands Reserve Easements component of the program, NRCS helps to restore, protect and enhance wetlands. Depending on the length of the restriction, NRCS may pay up to 100% of the cost of the restriction as well as wetland restoration costs.

E.9 COMMUNITY PRESERVATION ACT

The Community Preservation Act is legislation that allows cities and towns to exercise control over local planning decisions. The Community Preservation Act (CPA) provides new funding sources that can be used to address three core community concerns:

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

A fourth category, recreation, is also an allowable use for funds, though it is not required that CPA funds be expended for recreation.

The CPA allows communities to create a local Community Preservation Fund to raise money through a surcharge of up to 3% of the real estate tax levy on real property for open space protection, historic preservation and the provision of affordable housing. The act also creates a significant state matching fund, which serves as an incentive to communities to pass the CPA. To enact the CPA, voters must approve it at a Town-wide election. Deerfield Town Meeting adopted the CPA in May 2007 at the 3% surcharge rate, exempting the first \$100,000 on residential properties and low-income residents.

A minimum of 10% of the annual revenues of the fund must be used for each of the three core community concerns, and up to 5% may be used for administrative expenses of the Community Preservation Committee. The remaining funds can be allocated for any combination of the allowed uses, or for land for recreational use. This gives each community the opportunity to determine its priorities, plan for its future, and have the funds to make those plans happen. Projects using CPA funds must have those funds approved by a Town Meeting vote. If residents do not feel the CPA is working as they expected, they can repeal it or change the surcharge amount. Additionally, CPA funds can be used as local matching funds to leverage many of the grant programs discussed above.⁷³

⁷³ For more information on projects completed using CPA funds, go to <http://www.communitypreservation.org>

SECTION 6

Community Vision

A. DESCRIPTION OF PROCESS

The Town of Deerfield's open space and recreation goals from the 2014 Open Space and Recreation Plan were reviewed by the members of the Open Space & Recreation Committee and were reaffirmed through a thoughtful and comprehensive public outreach and planning process that included the following:

- In November 2021 an Open Space and Recreation Survey developed by the Deerfield Open Space & Recreation Committee was widely circulated online via social media, the Town's website, an article in the *Greenfield Recorder*, and through the Town's reverse 911 emergency communication system. Additional copies of the survey were made available at the Library and at Town Hall. The Committee received **391 responses** to the survey.
- From October 2021 to November 2022, the Deerfield Open Space & Recreation Committee developed and updated the Open Space and Recreation Plan using several methods for involving public participation:
 - The Open Space and Recreation Survey results were used to support the development of Section 8 Goals and Objectives as well as the overall open space and recreation goals and vision.
 - Thirteen public meetings were held by the Open Space Planning Committee and were open to the public.
 - Drafts of plan sections were sent to the Open Space & Recreation Committee members representing Town boards and community groups through the Connecting Community Initiative.
 - Updates of the Committee's work were provided at Connecting Community Initiative (CCI) meetings to seek input from all Boards and Committees in Town.
 - A public forum was held on December 13 2022, where residents reviewed and discussed the inventory, analysis, community goals, objectives, and seven-year action plan. All public comments were recorded and incorporated into the plan.
 - *Update with timeline of the two week public comment period*

B. STATEMENT OF OPEN SPACE AND RECREATION GOALS

Deerfield residents who responded to the Open Space and Recreation Survey and participated in the process of developing this plan have a vision for the future of Deerfield's natural, scenic, recreational, and historical resources.

Their vision for Deerfield rests in these main themes: protecting networks of protected farmland and forests; maintaining a sense of place; creating a walkable, hikeable, and bikeable Deerfield; and improving communications about the Town's open space and recreational resources.

Protecting networks of protected farmland and forests: Deerfield sustains a network of ecologically important forests, wetlands, and riverside forests to maintain a clean drinking water supply, to mitigate the impacts of climate change, and to support rare and common native plant and animal species. Land is protected and areas are taken care of because Deerfield residents have a strong relationship with the land, the rivers, and the natural environment as a whole.

Maintaining a sense of place: Deerfield retains the distinctive landscape characteristics and rural character. The historical, cultural, and scenic resources of each sub-region and of the town as a whole are cherished, revered, and preserved for the enjoyment of current and future generations. Any development is appropriate for the Town's rural character. Recreational assets such as community gardens and pocket parks bring residents together.

Creating a walkable hikeable, and bikeable Deerfield: Trails and sidewalks are well linked so that residents have a feeling of being on a walking tour when traveling in their community; sidewalks are well maintained and expanded for safety and public access; and there are ample places for people to sit along the way. Biking is supported all the way along Routes 5&10, and new bike paths allow residents to easily travel without a car.

Improving communications about the Town's open space and recreational resources: Community members are well aware of Deerfield's recreational amenities; there is an online guide to walking loops, hiking trails, biking loops, parks, and river access points; and recreational resources are clearly marked, for example, trails are clearly marked with trailhead kiosks and maps as funding allows.

SECTION 7

Analysis of Needs

The Deerfield Open Space and Recreation Plan incorporates an inventory of land-based natural, historic, scenic, and recreational resources in town (Section 4), identifies the areas that contain these resources (Section 5), and based on the community's general goals (Section 6), makes comparisons between the supply of resources and the demand (Section 7). In the following subsection, A. Summary of Natural Resource Protection Needs, the most important environmental issues are highlighted. In B. Summary of Community's Needs, the most important needs of the residents are discussed. Finally, in C. Management Needs, the obstacles to the effective resolution of these needs are addressed.

A. SUMMARY OF NATURAL RESOURCE PROTECTION NEEDS

The previous sections of this Open Space and Recreation Plan examined the variety of natural and cultural resources, which provide Deerfield its distinctive rural character. Public input, in the form of survey results and comments from Deerfield Open Space and Recreation Committee members, provided a basis for discussion as to what resources are of priority concern to residents. The following section outlines key natural resource protection needs.

Areas of Conservation Interest

According to the 2021 Open Space and Recreation Plan Community Survey, 75% of survey respondents think protecting forestland for wildlife, biodiversity, climate mitigation/adaptation and water quality should be the highest priority projects for the Open Space & Recreation Committee over the next seven years. Specific areas of interest highlighted by survey respondents included riverfront areas, the Pocumtuck Ridge, and farmland.

Environmental Protection

Section 4: Environmental Inventory and Analysis includes a discussion of environmental problems in Deerfield. Land uses may lead to the runoff of sediments, pesticides, fertilizers, chlorides, effluent and hazardous wastes into water bodies. To thwart further deterioration of Deerfield's water supplies, concerted action will need to be taken to address and minimize these non-point sources of pollution. The Town's Stormwater Bylaw, Stormwater Regulations, Best Development Practices Guidebook, and Green Development Performance Standards are large steps toward meeting these objectives. In addition, as dumping and other forms of environmental contamination occur, the Town needs to have an established means for dealing with these issues that is satisfactory to residents.

Farmland and Forests

Farmland and forests give Deerfield its rural, small town feel. Active farming and forestry support the town's and the region's economy. Wildlife abound in Deerfield because large areas of contiguous forest and undeveloped agricultural areas exist.

Farmland and forests provide multiple public benefits to Deerfield residents. The support of local farms affords residents access to fresh vegetables, fruits, and dairy products, as well as the opportunity to buy forest products grown by neighbors. Farms also provide passive recreational value as roadside views and scenic vistas. Forests cover sub-watershed slopes and help replenish streams and wetlands over time. Forests provide habitat for wildlife and can provide public and private landowners periodic income.

Deerfield has been very active in protecting farmland over time. However, there still remain parcels with prime farmland soils that are threatened by development. Respondents to the 2021 survey think residential development that leads to the loss of open space, farmland, and forests is the greatest threat to Deerfield's character.

Water Resources

Deerfield residents value the role that ground and surface waters play in the quality of their lives. Overall, 96% of survey respondents considered that it was important to conserve drinking water supplies in Deerfield. Both of the community water supply districts in Deerfield are aware of limits to their current supplies based on existing demand. In recent decades, two productive sources have been taken offline due to contamination. In addition, there is evidence of a medium yield aquifer (a potential drinking water resource) in East Deerfield where drinking water for existing residential uses is needed, due to high levels of arsenic and minerals. The two water districts serve only a portion of the drinking water needs for Deerfield residents. The remainder of properties are served by private wells. There is no comprehensive data on the needs and availability of water supplies for drinking water and fire control for the entire town. Therefore, the Town should identify areas of Deerfield that do not have sufficient water supplies for drinking water and fire control through a town-wide needs and supply assessment.

B. SUMMARY OF COMMUNITY NEEDS

Over the next seven years, town boards, committees, and commissions may need to focus on how they can collaboratively and positively impact several key community needs: 1) improving connectivity; 2) improving recreational access to rivers, trails, and natural areas; and 3) encouraging new development and redevelopment in appropriate areas while protecting the visual rural character of Deerfield.

Improving Connectivity

The theme of this update to Deerfield's Open Space and Recreation Plan is creating a "walkable, hikeable, & bikeable" Deerfield. Connections such as sidewalks and bikeways provide recreational opportunities for all abilities, builds community, and links people to other resources (recreation, open space, commerce, and more). Connections can also be enhanced to the Connecticut River and Deerfield River, and in the South Deerfield Village. The survey identified the need for a system of well maintained, interconnected accessible sidewalks to encourage passive recreation and provide for non-vehicular connections to points of interest throughout town. 67% of respondents noted improving sidewalks is a high priority.

Recreation Needs

The Commonwealth completed The Statewide Comprehensive Outdoor Recreation Plan (SCORP), Massachusetts Outdoors 2017, an update of the SCORP 2012 five-year plan. SCORP plans are developed by individual states to be eligible for federal Land and Water Conservation Fund (LWCF) grants and serve as a tool for states to use in planning for future needs and uses of outdoor resources for public recreation and relaxation. As part of the update process to the 2017 SCORP, a survey of Massachusetts residents was conducted to assess their desires and needs for outdoor recreation. The surveys show that the top priority for survey respondents is the desire for more trails of all kinds. Respondents said that they want more community-wide trail systems, hiking trails, and multi-use trails for both walking and bicycling. These priorities reflect the responses from the 2021 Open Space and Recreation Community Survey distributed to Deerfield's residents.

The top four recreational activities that survey respondent households do in or near Deerfield are walking (89%), hiking (75%), biking (61%), and gardening (60%). It is not surprising, then, that some of the most used recreational resources in town of survey respondents are sidewalks, hiking trails, and the Franklin County bikeway. In terms of needs, survey respondents demonstrated a strong desire for the expansion of bike paths in town, as well as hiking and walking trails. Public access to the Deerfield and Connecticut Rivers was also identified as a high priority need.

As discussed in Section 3, Deerfield's population is aging. By 2040 it is projected that almost a quarter of the Town's population will be over the age of 65, compared to 10 percent currently. Through this planning process and through planning for a revitalized South Deerfield Village Center, recreational facilities needs for seniors were recognized. Walking paths and exercise facilities for seniors were identified as a need, as well as a new community center for social gatherings. The Town is currently working on developing a new Senior Center.

Deerfield teens have access to facilities and programming through the Frontier Regional School District. Additionally, the town is planning to create a park with playing fields on North Main Street. The new park will allow for new playing opportunities for local teens, and cut down on travel time for youth sports. There are no other playing fields located in Deerfield.

Deerfield is a part of the Tri-Town Beach District, which is a seasonal recreational facility open from July to the end of August. The facility consists of a lake for swimming, a pavilion for picnicking, and a main building that houses bathroom facilities. It is jointly operated by the towns of Whately and Deerfield and the facility is within the borders of the Town of Whately. The beach was closed from 2019 through 2021 due to pandemic restrictions and deteriorating conditions. However, after many months of planning and clean-up efforts, the Tri-Town Beach Commission reopened the facility for the 2022 summer season. Several respondents to the Community Survey noted the beach is an important recreational facility in town, and 16% noted they anticipated going to the beach more frequently in the future.

A top goal from Whately's 2021 Open Space & Recreation Plan update states: *Coordinate with the Town of Deerfield and the Tri-Town Beach District Commission to determine how Tri-Town Beach can meet the needs of a greater number of residents and present as more welcoming.* Deerfield's Open Space & Recreation Committee and Tri-Town Beach District Commissioners should coordinate with Whately as needed to maintain the facility.

Kiosks

Information materials on the community's recreational programs are typically available on the Town's website. However, the Open Space & Recreation Committee and residents have voiced that there is not enough information available about the Town's open spaces and hiking areas. When asked how Deerfield can improve parks and recreational programming to make them welcoming for all community members, the top survey response was to "improve communications and outreach about available facilities." Providing the information at one or more informational kiosks around the community would likely reach many residents and make the information the most accessible, in addition to posting maps online. The Open Space & Recreation Committee identified Pocumtuck Rock, Pine Nook Memorial Forest, and Birchwood Nature Refuge as areas that already have trails, but are in need of signage and kiosks to increase accessibility.

Maps and kiosk signage could be created in partnership with local organizations such as the Nolumbeka Project to highlight Native American history in Deerfield.

Deerfield's Rural, Small Town Character

Deerfield is known for its scenic and historically significant agricultural landscapes, and the broad forested slopes of the Berkshire Hills and the Pocumtuck Ridge. The Town's two villages, Old Deerfield and South Deerfield, each have historic landscapes and structures. The Town has pursued both economic development and community preservation. As a result, Deerfield continues to be a strong regional employment center, a significant New England tourist destination, and a leader in farmland conservation. Residents support maintaining efforts to protect priority lands from development, while also desiring development that is in character with the community and promotes a vibrant, livable village center. Residents also are concerned about the future of Routes 5 and 10, and generally support well-designed development in select areas, rather than strip development with chain stores spread out along the corridor. The current Deerfield Zoning Bylaws support this type of development along Routes 5 and 10.

These desires are reflected in the survey responses and feedback received during the public forum. Overall, the majority of survey respondents felt it is important for the town to conserve historic buildings, monuments and cemeteries, and landscapes; forests; farms and farmland; scenic views; wildlife habitat; rivers, streams, and ponds; and drinking water supplies from development. At the same time, respondents showed strong support for development to be focused in South Deerfield village center, and to a lesser degree, areas of Routes 5 and 10.

C. SUMMARY OF MANAGEMENT NEEDS

This section addresses opportunities for improvement in the ways open space and recreation areas are managed and maintained in the Town of Deerfield.

Town-wide Cooperation

The Town of Deerfield has had a fair amount of participation by landowners, town officials, land trusts, and residents in the development of their Open Space and Recreation Plan. The key to successful implementation of the plan will reside both in the leadership of the town's champions and the willingness of others to participate in the ways that bring them the most value. Like any new endeavor, ongoing land conservation, natural resource protection and recreation projects may need the input and effort of many individuals. Deerfield has already taken an important step forward by forming the Connecting Community Initiative, with the purpose to create "better communication, collaboration, and innovation" across the twenty some Boards & Committees in Town.

An Open Space and Recreation Committee member currently attends meetings to report on progress during the update of this Plan. A Committee member should stay involved with this group to identify opportunities to promote open space and recreation needs in concert with other boards in Deerfield.

SECTION 8

GOALS AND OBJECTIVES

The following goals and objectives were formulated from the results of the 2021 Deerfield Open Space and Recreation Planning Survey and meetings of the Open Space & Recreation Committee. Many of these goals and objectives will be pursued and implemented within the context of increasing and strengthening Deerfield's resiliency to climate change.

Goal A: Preserve and enhance the unique small town, rural character of Deerfield as reflected by connected farms, forests, ridgelines, and Deerfield's history.

Objectives:

- A1. Explore the adoption of zoning measures, like a ridge protection bylaw, that would seek to protect the slopes of the Pocumtuck Ridge and other ridgelines from poorly planned development.
- A2. Continue to encourage the implementation of the recommendations from the Downtown Deerfield Complete Streets and Livability Plan, which include streetscape enhancements and improvements for walkers, bicyclists, and recreation in South Deerfield.
- A3. Identify areas in Chapter 61, 61A and 61B that would be a priority for preservation or town purchase due to their contributions to resiliency (such as forest based carbon storage & sequestration, stormwater management, etc.), significant scenic viewsheds, plant and wildlife habitat, water resource protection, recreation potential, and other public benefits.
- A4. Continue to support the identification, documentation, and monitoring of significant historical sites and work towards their conservation and preservation.
- A5. Encourage Zoning Bylaws that reflect desired characteristics in rural areas and village centers, such as clustered development in order to preserve open space.

Goal B: Ensure that Deerfield maintains or improves the quality of its natural resources (e.g. air, water, native flora and fauna) by maintaining the presence of working farmland, prime farmland soils, forestlands, and wildlife habitat through land conservation, including pollution prevention and mitigation.

Objectives:

- B1. Develop, adopt, and promote a local wetlands bylaw to protect against pollution to streams, wetlands, and other water bodies.
- B2. Study the connections between high water tables, the area's topography, and development in Deerfield. Develop strategies that seek to mitigate water quality issues associated with high water tables.

- B3. Explore and identify potential future water supply sources in Deerfield.
- B.4 Continue to educate the public about the Town’s Stormwater Bylaw and Stormwater Regulations, and Green Development Performance Standards. Encourage the utilization of the Best Development Practices Guidebook when permitting new development to reduce stormwater runoff and non-point source pollution.
- B5. Implement recommended activities from the 2000 Mill River Watershed Project and the forthcoming Bloody Brook Watershed Based Plan to educate the public and improve water quality in the watershed.
- B6. Seek to understand the relationship between residential, commercial, industrial and agricultural land uses to ground and surface water quality.
- B7. Encourage the enforcement of existing zoning codes and Board of Health regulations regarding non-permitted junkyards.
- B8. Continue close oversight of the cleanup at the East Deerfield Railyard.
- B9. Document and address current dumping and trash-polluted sites in Deerfield.
- B10. Through landowner education and advocacy activities within the town and state, promote organic techniques for farming, lawn care, and roadside vegetation control practices.
- B11. Work with local non-profits and state agencies to support conservation efforts to protect areas that abut protected lands to create larger areas of contiguous farm and forestland. Recognize the key roles that Deerfield’s landscapes play within the region as a whole.
- B12. Employ the following methods to protect land from development in Deerfield:
 - Assist in the donation of open space and/or development rights to land trusts or other conservation agencies.
 - Educate landowners about land protection opportunities and estate planning.
 - Adopt zoning bylaws that result in protected lands for farming, forest management, wildlife habitat, or groundwater management.
 - Encourage the conservation of land in Deerfield by private non-profits and state conservation agencies.
 - Invest Community Preservation Act funds in support of local Agricultural Preservation Restrictions (APR) and Conservation Restrictions.
 - Prioritize lands in the Chapter 61 program for protection should they become available for purchase (see Objective A3).
- B13. Encourage municipal projects that share infrastructure (parking, heating/cooling and large meeting spaces) and green space/landscaping to reduce the duplication and expansion of systems and paved surfaces.

Goal C: Ensure that Deerfield maintains and improves the quality and accessibility of all of its recreational facilities and programming, especially those that connect people with the town’s diverse natural environments and landscapes. Encourage the development of new facilities and programming where feasible.

Objectives:

- C1. Create new recreational facilities identified as a need in the survey and other town planning efforts.
- C2. Educate the general public as to the proper use of private lands for recreational purposes, where permission is granted.
- C3. Identify, protect, and enhance new and existing river access points for the Deerfield and Connecticut Rivers.
- C4. Identify the best prospects for future roadside biking, walking and jogging paths in town and work to develop those facilities.
- C5. Install facilities that encourage people to walk or ride their bikes to shopping and other destinations.
- C6. Provide access points to major recreational trails and scenic areas such as the Pocumtuck Ridge Trail, including the development of parking.
- C7. Work with community groups to establish a team of trail volunteers that could be available for trail and parking area maintenance.
- C8. Work with the State's Environmental Police and the Deerfield Police Department to explore ways of increasing the level of policing for the most popular and most often abused recreational facilities in town, as well as to minimize the unauthorized and unwanted use of private lands.
- C9. Provide information on the available public recreation resources in town.

Goal D: Improve communication and decision-making processes among Town boards, committees, and departments. Continue to engage residents in discussions about community projects and the town's natural, recreational, and cultural resources, and as volunteers and stewards of these resources.

- D1. Foster a greater level of collaboration among town officials and citizens by Participating in the Connecting Community Initiative (CCI) to ensure communication.
- D2. Continue to engage the community in open space and recreation planning efforts.

SECTION 9

SEVEN YEAR ACTION PLAN

The Seven-Year Action Plan fulfills the Open Space and Recreation Plan objectives. The objectives address open space, natural resources, recreation, and community development needs because the quantity and quality of accessible open space relates directly to the state of Deerfield’s environment; the Town’s recreational opportunities; and the quality of future development in Deerfield. The overarching goal of this Plan is to establish a walkable, hikeable, and bikeable Deerfield. These activities were frequently brought up in the Community Survey, and the Committee developed several actions that will help to engage the community in those activities. The Committee has a vision that Deerfield’s walking paths, hiking trails, and bikeways will be easily navigable and residents will be well informed about the opportunities available to them.

The objectives are listed in the far left column of Table 9-1 and are followed in the same row by recommended actions, responsible board or group, start date, and potential funding sources. By implementing the recommended actions, each objective will begin to be realized. Implementing the Open Space and Recreation Plan will not only require the participation of the Open Space & Recreation Committee, but it will also necessarily involve many other Town groups, as indicated in the “responsible board or group” column in the action plan.

Many of these actions may be constrained by a lack of volunteer time, in addition to funding limitations. Where money is required, such as to permanently protect open space, it does not have to be provided by the Town alone. State and federal governmental agencies, private non-profit conservation agencies, and foundations are potential sources of funding. These sources are more likely to invest in land protection projects that have a broad base of community support.

A successful Open Space and Recreation Program, under the primary stewardship of an Open Space & Recreation Committee, can achieve all of the action steps listed below over time. However, it will be important to establish priorities for the first seven years. The Committee has prioritized action steps by the goals and objectives listed in the previous chapter. These action steps are represented graphically (where possible) on the Seven-Year Action Plan Map and highlighted in light yellow in Table 9-1. Any project the Town decides to take on will ensure avenues for public input and comment.

Table 9-1: Deerfield 2022 Open Space and Recreation Plan Action Plan

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
Goal A: Preserve and enhance the unique small town, rural character of Deerfield as reflected by connected farms, forests, ridgelines, and Deerfield’s history.				
A1. Explore the adoption of zoning measures, like a ridge protection bylaw, that would seek to protect the slopes of the Pocumtuck Ridge and other ridgelines from poorly planned development.	Revisit adoption of a Deerfield Ridge Protection Bylaw to prevent impacts of erosion and runoff from development on steep slopes, and to reduce the forest fragmentation and visual impacts of such development.	Open Space & Recreation Committee, Planning Board, FRCOG	2025	District Local Technical Assistance (DLTA) Grants
A2. Continue to encourage the implementation of the recommendations from the Downtown Deerfield Complete Streets and Livability Plan, which include streetscape enhancements and improvements for walkers, bicyclists, and recreation in South Deerfield.	Create a committee or working group to implement the plan. Priorities for project funding should include accessibility enhancements.	Selectboard, Recreation Committee	2023-2030	Community Preservation Act; MassWorks Infrastructure Program; MassDOT
A3. Identify areas in Chapter 61, 61A and 61B that would be a priority for preservation or town purchase due to their contributions to climate resiliency (such as forest based carbon storage & sequestration, stormwater management,	Use the results of the 2021 Community Survey and other previous studies to prioritize parcels for protection of multiple values, including scenic viewsheds, river access and agricultural lands.	Open Space & Recreation Committee, Recreation Committee, Agricultural Commission, Historical	2023	Volunteer Time

⁷⁴ Any action highlighted in light yellow is considered a high priority. The high priority designation was determined through the OSRP Community Survey and during Open Space & Recreation Committee meetings.

⁷⁵ For action items that are considered to be ongoing efforts, the start date is given as 2023-2030. Many of the action items can be worked on simultaneously. Also, the start date for a given action item is not set in stone. The Responsible Board/Group could change the start date for a specific action item, as it deems appropriate, after consultation with the Open Space & Recreation Committee. The start date is also dependent on available funding.

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
<p>etc.), significant scenic viewsheds, plant and wildlife habitat, water resource protection, recreation potential, and other public benefits.</p>		Commission, Water Districts		
	Pursue protection of identified parcels.	Open Space & Recreation Committee, Recreation Committee, Agricultural Commission, Historical Commission, Water Districts	2025	Community Preservation Act; LAND Grant; EEA Drinking Water Supply Protection Program
<p>A4. Continue to support the identification, documentation, and monitoring of significant historical sites and work towards their conservation and preservation.</p>	Identify and document all of Deerfield’s significant historical sites.	Deerfield Historical Commission, Historic Deerfield Inc., Pocumtuck Valley Memorial Association (PVMA), Nolumbeka Project	2023-2030	Community Preservation Act; Massachusetts Historical Commission
	Place a plaque at the American Sycamore on Old Deerfield common that is documented to be more than 300 years old.	Deerfield Academy, Deerfield Historical Commission, Pocumtuck Valley Memorial Association (PVMA), Historic Deerfield	2025	Community Preservation Act

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
A5. Encourage Zoning Bylaws that reflect desired characteristics in rural areas and village centers, such as clustered development in order to preserve open space.	Work with the Planning Board to evaluate existing zoning to identify needs and opportunities for enhancing zoning for preserving open space.	Planning Board, Selectboard, FRCOG	2024	Massachusetts Cultural Council; Massachusetts Historical Commission; volunteer time; District Local Technical Assistance (DLTA)
Goal B: Ensure that Deerfield maintains or improves the quality of its natural resources (e.g. air, water, native flora and fauna) by maintaining the presence of working farmland, prime farmland soils, forestlands, and wildlife habitat through land conservation, including pollution prevention and mitigation.				
B1. Develop, adopt, and promote a local wetlands bylaw to protect against pollution to streams, wetlands, and other water bodies.	Work with the Conservation Commission to develop a draft wetlands protection bylaw. Review stormwater regulations and revise as necessary to protect wetlands.	Conservation Commission, Planning Board, Open Space & Recreation Committee, FRCOG	2024	District Local Technical Assistance (DLTA)
B2. Study the connections between high water tables, the area's topography, and development in Deerfield. Develop strategies that seek to mitigate water quality issues associated with high water tables.	Fund and develop a Hydrogeologic Assessment and Action Plan for the Town of Deerfield.	Selectboard	2024	Town Funds; USDA Rural Development; MVP Action Grant
B3. Explore and identify potential future water supply sources in Deerfield.	Develop a Comprehensive Drinking Water Needs and Supply Assessment for Deerfield. The study should address supply	Selectboard	2024	Town Funds; USDA Rural

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
	needs for sections of Deerfield not currently covered by a water district, such as East Deerfield.			Development; MVP Action Grant
	Explore expanding the existing Water Protection District in the Zoning Bylaw, based upon findings from the Needs and Supply Assessment if a source of potential drinking water is identified.	Planning Board, FRCOG	2026	District Local Technical Assistance (DLTA)
	Conduct an inventory of existing land uses to determine whether any conflict with the protection of the existing Zone II recharge areas exist.	Water Supply Districts, Selectboard, Open Space & Recreation Committee	2026	Mass DEP 604b Water Quality Management Planning Grant
	Seek to protect land surrounding potential new water supply sources if identified through the Needs and Supply Assessment.	Water Supply Districts, Selectboard, Open Space & Recreation Committee	2026	Community Preservation Act; Drinking Water Supply Protection Program
B.4 Continue to educate the public about the Town's Stormwater Bylaw and Stormwater Regulations, and Green Development Performance Standards. Encourage the utilization of the Best Development Practices Guidebook when permitting new development to reduce stormwater runoff and non-point source pollution.	Develop (if not readily available) resources to be posted on the Town of Deerfield website related to stormwater management.	Open Space & Recreation Committee, Ad Hoc Town Common Committee	2024	Volunteer time
B5. Implement recommended activities from the 2000 Mill River Watershed Project and the forthcoming Bloody Brook Watershed Based Plan to educate the	Work with riparian landowners to improve the water quality of Bloody Brook by developing natural buffer strips to reduce	Selectboard, Open Space & Recreation Committee	2023-2030	NRCS; s.319 Nonpoint Pollution Grant Program

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
public and improve water quality in the watershed.	impacts from sediments, fertilizers and pesticides.			
	Inform water users of Roaring Brook Reservoir about water conservation to reduce water uses.	Selectboard, Water supply district	2024	Mass DEP; Massachusetts Environmental Trust (MET)
	Work with teachers and students on environmental projects/enrichment at the local elementary school and middle and high school, both of which are located on Bloody Brook.	Selectboard, Open Space & Recreation Committee	2023-2030	MET
B6. Seek to understand the relationship between residential, commercial, industrial and agricultural land uses to ground and surface water quality.	While working on the “Comprehensive Water Needs and Supply Assessment” and the “Hydrogeologic Assessment and Action Plan,” facilitate a public meeting to educate residents about the impacts of land uses and pesticides on water quality and quantity, and the benefits of eco-friendly lawns.	Selectboard, Open Space & Recreation Committee	2024	Town Funds
B7. Encourage the enforcement of existing zoning codes and Board of Health regulations regarding non-permitted junkyards.	Explore the need for developing a Board of Health policy or protocol to deal with junkyards based on a thorough assessment of current regulations and their effectiveness. If there is a need for additional protocols, develop one.	Board of Health	2023	Town Funds
B8. Continue close oversight of the cleanup at the East Deerfield Railyard.	Support the Hazardous Waste Coordinator and public information process as dictated by the Massachusetts Contingency Plan (MCP) for the site.	Selectboard, Hazardous Waste Coordinator	2023	Town Funds

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
B9. Document and address current dumping and trash-polluted sites in Deerfield.	Participate in annual CT River Source to Sea Clean-Up sponsored by the Connecticut River Conservancy.	Deerfield Highway Superintendent, Selectboard, Chief of Police, Connecticut River Conservancy, and State Environmental Police	2023-2030	Volunteer Time
B10. Through landowner education and advocacy activities within the town and state, promote organic techniques for farming, lawn care, and roadside vegetation control practices.	Identify current pest management practices in town and explore educational and technical resources for integrated pest management (IPM) and organic methods. Ensure that safety continues to be a top consideration. Coordinate activities with MassDOT and the Hilltown Anti-Herbicide Coalition to address the roadside spraying initiatives.	Selectboard, Board of Health, Highway Department, Agricultural Commission	2024	Toxic Use Reduction Grant Program (TURA)
B11. Work with local non-profits and state agencies to support conservation efforts to protect areas that abut protected lands to create larger areas of contiguous farm and forestland. Recognize the key roles that Deerfield's landscapes play within the region as a whole.	Work with willing landowners to protect priority parcels identified on the Farmland and Habitat conservation priorities maps developed through the Greenprinting process.	Open Space Committee, Agricultural Commission, Franklin Land Trust, Kestrel Land Trust	2023-2030	Landscape Partnership Program; LAND grant program; Community Preservation Act
B12. Employ the following methods to protect land from development in Deerfield:	Place an announcement on the town's website and on cable TV describing how the Town can receive lands for conservation purposes that can be transferred to a land trust or other land conservation agencies.	Open Space & Recreation Committee, Selectboard	2023-2030	Volunteer Time

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
<ul style="list-style-type: none"> • Assist in the donation of open space and/or development rights to land trusts or other conservation agencies. • Educate landowners about land protection opportunities and estate planning. • Adopt zoning bylaws that result in protected lands for farming, forest management, wildlife habitat, or groundwater management. • Encourage the conservation of land in Deerfield by private non-profits and state conservation agencies. • Invest Community Preservation Act funds in support of local Agricultural Preservation Restrictions (APR) and Conservation Restrictions. • Prioritize lands in the Chapter 61 program for protection should they become available for purchase (see Objective A3). • Sell Town owned land to abutters to get more land on the tax rolls 	Hold periodic workshops on estate planning and land management options in coordination with the MassWoods Program, UMass Extension.	Franklin Land Trust Open Space & Recreation Committee	2023-2030	Town funds; Volunteer time
	Revise the Town’s Conservation Subdivision Design zoning bylaw to increase the required amount of preserved open space. Require a Special Permit for conventional subdivisions in the Residential-Agricultural zoning district.	Open Space & Recreation Committee, Planning Board	2025	District Local Technical Assistance (DLTA) Grant
	Work with local and regional land conservation trusts (e.g., FLT and Kestrel Land Trust and state conservation agencies like Mass. Department of Conservation and Recreation (DCR)) to encourage private conservation efforts and to provide resources for landowners interested in protecting their land.	Open Space & Recreation Committee	2023-2030	Town funds
	Apply for a PARC grant to help acquire recreation lands for facilities identified as a need in the Open Space and Recreation Plan survey.	Selectboard, Recreation Department	2026	PARC Grant
	Continue to invest Community Preservation Act funds in support of local Agricultural Preservation Restriction (APR) applications and other forms of preserving priority open space.	Agricultural Commission, Selectboard, Town Meeting	2023-2030	Community Preservation Act
	Continue to organize and facilitate annual public information meetings on the Community Preservation Act to elicit input from the public on funding priorities.	Community Preservation Committee	2023-2030	Volunteer time

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
B13. Encourage municipal projects that share infrastructure (parking, heating/cooling and large meeting spaces) and green space/landscaping to reduce the duplication and expansion of systems and paved surfaces.	Support the creation of a municipal campus that repurposes, restores and updates existing town-owned buildings with a unified landscape design, shared parking and a joint geothermal heating/cooling system.	Selectboard	2023-2030	Town funds, EERE Community Geothermal Heating Grant
	Support the creation of senior housing within walking distance of the municipal campus.	Selectboard, Ad Hoc Senior Housing Committee	2023-2030	Town funds
Goal C: Ensure that Deerfield maintains and improves the quality and accessibility of all of its recreational facilities and programming, especially those that connect people with the town's diverse natural environments and landscapes. Encourage the development of new facilities and programming where feasible.				
C1. Create new recreational facilities identified as a need in the survey and other town planning efforts.	Assess whether there are small lots near neighborhoods that could be acquired for the purposes of developing local tot lots, playgrounds, and pet lots.	Open Space & Recreation Committee, Recreation Department	2025	Community Preservation Act; PARC grant program
	Create walking and mountain biking trails to link the Town owned properties of Pocumtuck Rock and the Pine Nook Memorial Forest on Pine Nook Road. The Memorial Forest property currently has no loops on town land, but trails could be created to make a loop from Pine Nook Road to the Pocumtuck Rock.	Open Space & Recreation Committee; Recreation Department; FRCOG	2023-2026	MassTrails
	Develop signage to indicate town ownership, public access, and allowed parking areas to facilitate increased use of the Pocumtuck Rock, Pine Nook Memorial Forest, and Birchwood Nature Refuge (off	Open Space & Recreation Committee, Recreation Department, FRCOG	2023-2026	MassTrails; Town Funds

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
	Stage Road), which are all town properties on the Pocumtuck Ridge.			
	Complete the North Main Street Park, which would allow for the addition of walking paths and recreational activities for residents.	Selectboard	2023-2026	Community Preservation Act, Town Funds
	Increase access to Rices Ferry Road for hiking, mountain biking, and cross-country skiing by creating a small parking area and putting up signage.	Open Space & Recreation Committee	2023-2023	Town Funds, MassTrails
C2. Educate the general public as to the proper use of private lands for recreational purposes, where permission is granted.	Develop a pamphlet providing guidelines about engaging in recreational activities on private lands. Consider doing this in cooperation with surrounding towns.	Recreation Department	2025	Town Funds
	Develop a trail map/pamphlet showing the full extent of the Pocumtuck Ridge Trail from South Sugarloaf to Canada Hill in Greenfield, clearly delineating where public access is allowed. The pamphlet should also include information about parking and access to shorter loops along the Ridge, such as the Clapp Pond Trail and the Big Rocks Trail on the Pocumtuck Ridge Nature Preserve. Engage with local organizations such as the Nolumbeka Project and the Ohketeau Cultural Center to include Indigenous narratives and history in the pamphlet.	Open Space & Recreation Committee, FRCOG	2023-2026	MassTrails
	Create a walking map for the Meadow Lane loop in Old Deerfield. The map	Open Space & Recreation	2023-2026	MassTrails

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
	should show parking locations and the roads that are suitable for biking.	Committee, Historic Deerfield		
C3. Identify, protect, and enhance new and existing river access points for the Deerfield and Connecticut Rivers.	Work with landowners, including the State and utility company, and river users to identify river access sites. Acquire land for this purpose if available.	Open Space & Recreation Committee, Recreation Department, Selectboard	2026	Community Preservation Act; PARC grant program
	Discourage inappropriate or unsafe use of non-authorized river access points, and develop an education/outreach program with the goal of decreasing litter.	Selectboard, Police Department	2023-2030	Town Funds
	If the Deerfield River Wild and Scenic River Study Act of 2022 becomes law, designate an Open Space & Recreation Committee member to serve on the local advisory committee. ⁷⁶	Open Space & Recreation Committee	2026	Volunteer time
C4. Identify the best prospects for future biking, walking and jogging paths in town and work to develop those facilities.	Work with the Franklin Regional Council of Governments to explore the creation of new off-road bike paths in town.	Recreation Department, Franklin Regional Council of Governments	2023-2030	Community Preservation Act; FRCOG Unified Planning Work Program
	Improve connections between Deerfield and Greenfield from the northern section of Routes 5 &10 to the Cheapside Bridge.	Community Preservation Committee, Open Space & Recreation Committee, Energy	2023-2025	Community Preservation Act, MassTrails, MassDOT

⁷⁶ Find up to date information on the progress of the bill here: <https://www.congress.gov/bill/117th-congress/senate-bill/4631/text?r=2&s=1>

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
		Committee, Selectboard		
C5. Install facilities that encourage people to walk or ride their bikes to shopping and other destinations.	Purchase additional bike racks for installation throughout town.	Selectboard	2024	Town Funds
	Explore the creation of additional sidewalks in town. Add sidewalks where recommended in the <i>Downtown Deerfield Complete Streets and Livability Plan</i> .	Selectboard, Highway Department, MassDOT	2023-2030	Town Funds; MassWorks Infrastructure Program; Community Development Block Grant
C6. Provide access points to major recreational trails and scenic areas such as the Pocumtuck Ridge Trail, including the development of parking.	Develop a plan to work toward securing public access along the length of the Pocumtuck Ridge Trail in Deerfield.	Selectboard, Open Space & Recreation Committee	2023-2030	Community Preservation Act; Recreational Trails Grant
	Update the Town Forest management plan, considering the recommendations from the 2011 UMass inventory of the property, and seek to increase recreational use of the property.	Selectboard	2025	Community Preservation Act; PARC grant program; Community Forest Stewardship Grant; Urban and Community Forestry Challenge Grant
	Identify trails in Town that are in need of signage and/or trailhead kiosks and install these features where appropriate. Kiosks should include information about use standards and etiquette.	Open Space & Recreation Committee, Recreation Department	2023	MassTrails; Town Funds

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
C7. Work with community groups to establish a team of trail volunteers that could be available for trail and parking area maintenance.	Work with community groups to establish a team of trail volunteers for trail and parking area maintenance.	Recreation Department, Open Space & Recreation Committee	2025	Volunteer Time
C8. Work with the State’s Environmental Police and the Deerfield Police Department to explore ways of increasing the level of policing for the most popular and most often abused recreational facilities in town, as well as to minimize the unauthorized and unwanted use of private lands.	Work with the Environmental Police, Deerfield Police Department, and landowners to identify the best protocols for dealing with specific and general unauthorized and unwanted use of private lands.	Open Space & Recreation Committee and Selectboard	2023-2030	Volunteer Time
C9. Provide information on the available public recreation resources in town.	Produce a map of Deerfield showing the location of recreation resources in town that are open to public use. Make printed copies available at the town hall, library, and schools, and an electronic version available on the town website.	Open Space & Recreation Committee, Recreation Department	2023-2026	Town Funds
	Provide an inventory of public recreation resources on the town website, including a description of the resource, appropriate uses, location, and photos.	Open Space & Recreation Committee, Recreation Department	2023-2026	Town Funds
	Create a brochure or online resource to show road/gravel biking routes in Deerfield.	Open Space & Recreation Committee	2023-2026	Volunteer Time

OBJECTIVE	ACTION ⁷⁴	RESPONSIBLE BOARD/ GROUP	START DATE ⁷⁵	POTENTIAL FUNDING SOURCES
Goal D: Improve communication and decision-making processes among Town boards, committees, and departments. Continue to engage residents in discussions about community projects and the town’s natural, recreational, and cultural resources, and as volunteers and stewards of these resources.				
D1. Foster a greater level of collaboration among town officials and citizens by Participating in the Connecting Community Initiative (CCI) to ensure communication.	Designate a member from the Open Space & Recreation Committee to regularly attend CCI meetings.	Open Space & Recreation Committee	2023-2030	Volunteer Time
D2. Continue to engage the community in open space and recreation planning efforts.	Assess community outreach efforts regarding the updating of the Open Space and Recreation Plan and work towards greater public involvement.	Open Space & Recreation Committee, Recreation Department	2023-2030	Volunteer Time

Identify trails in Town that are in need of signage and/or trailhead kiosks and install these features where appropriate. Kiosks should include information about use standards and etiquette.

Produce a map of Deerfield showing the location of recreation resources in town that are open to public use. Make printed copies available at the town hall, library, and schools, and an electronic version available on the town website.

Identify areas in Chapter 61, 61A and 61B that would be a priority for preservation or town purchase due to their contributions to climate resiliency (such as forest based carbon storage & sequestration, stormwater management, etc.), significant scenic viewsheds, plant and wildlife habitat, water resource protection, recreation potential, and other public benefits.

Develop signage to indicate town ownership, public access, and allowed parking areas to facilitate increased use of the Pocumtuck Rock, Pine Nook Memorial Forest, and Birchwood Nature Refuge (off Stage Road) town properties on Pocumtuck Ridge.

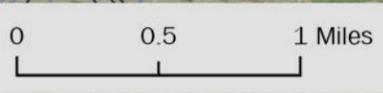
Develop a Comprehensive Drinking Water Needs and Supply Assessment for Deerfield. The study should address supply needs for sections of Deerfield not currently covered by a water district.

Create walking and mountain biking trails to link the Town owned properties of Pocumtuck Rock and the Pine Nook Memorial Forest on Pine Nook Road. The Memorial forest property currently has no loops on town land, but trails could be created to make a loop from Pine Nook Road to Pine Nook Rock.

Complete the North Main Street Park, which would allow for the addition of walking paths and recreational activities for residents.

Develop a trail map/pamphlet showing the full extent of the Pocumtuck Ridge Trail from South Sugarloaf to Canada Hill in Greenfield, clearly delineating where public access is allowed.

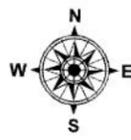
Explore the creation of additional sidewalks in town. Add sidewalks where recommended in the Downtown Deerfield Complete Streets and Livability Plan.



Town of Deerfield Open Space & Recreation Plan 2022

Action Plan

- - - Mohawk-Mahican Trail
- Permanently Protected Open Space
- Wetlands
- Water



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.



SECTION 10

PUBLIC COMMENT

Public feedback was sought throughout the entire open space and recreation planning process. The Open Space & Recreation Committee shared an early draft of the Seven-Year Action Plan with the Boards & Committees involved with the Connecting Community Initiative. Many thanks to Lili Dwight, Kate Larson, and Alex Herchenreder for their thoughtful comments.

A more direct request for feedback from residents was presented in the public forum, which was held on December 13, 2022 via Zoom. Participants were encouraged to provide input on the Seven-Year Action Plan and participate in a group discussion to generate ideas about how to maintain and improve Deerfield's open spaces. Comments received during the public forum are summarized below, and were incorporated into the Seven-Year Action Plan, as appropriate.

A two week public comment period was held from December 6, 2022 to December 20, 2022. No written comments were received.

Letters of support from the Selectboard, the Franklin Regional Council of Governments, the Planning Board, and the Community Preservation Committee are included at the end of this section.

PUBLIC FORUM DISCUSSION POINTS

- Participants in the workshop discussed the possibility of having young adults work on some of the projects proposed in the Seven-Year Action Plan. Programs such as Groundwork Lawrence were used as examples. Several comments related to this opportunity were posted in the Zoom Chat, which are copied here for reference:
 - *In the Cincinnati area, the local chapter of Groundwork USA (based in Yonkers, NY) has developed a vast operation of youth (15-18) and young adult (18-26) workforce development for a wide range of land management and environmental careers. Groundwork has local chapters in Lawrence, Southeastern Massachusetts and Somerville. There is, as I see it, big potential for a local Groundwork chapter for that part of the valley from Great Falls and Greenfield through Deerfield to Holyoke.*
 - *The advantage of such an operation is to mobilize and pay 16-26 youth, mostly through paid contract work with both public and private money, to do a lot of the heavy lifting of land management, water quality monitoring, community outreach on recycling and composting, Groundwork's HR and workforce development work is heavily but not completely focused on lower income youth.*

It's similar to the work already stated by the 501c3 launched by Owen Wormser largely through students at Franklin Tech. Long story short, because there are already three Groundwork USA chapters in the State, with the national office in the Hudson Valley, we have a good opportunity here to elevate all of this work in the Connecticut River valley area of Franklin and Hampden counties by involving youth. This involves paying them in such a way that can help them launch good-paying careers — in effect, a local Civilian Conservation Corps (CCC) for modern youth. With GCC and UMASS close by, this in my opinion is a no brainer. All it takes is two sponsors.

- The Stillwater Bridge area is in need of attention. It could use more parking, an informational kiosk, and a dedicated trail that goes down to the Deerfield River. The riverbank near the parking lot is eroding due to visitors frequently walking on it.
- The Town is in need of more delineated bike lanes. Participants are supportive of the current proposal by a volunteer group in Greenfield to create a bike path from Greenfield to Old Deerfield.
- Participants discussed concerns about pesticide use on UMass' farm, and an interest in working with the Selectboard and UMass to learn about their practices.
- The majority of the protected open space in Deerfield is under temporary protection. This is especially a concern along the Pocumtuck Ridge. The OSC & Town should focus on permanently protecting land in this area.
- DCR, perhaps with help from local volunteers and UMASS students, need to start the process of eradicating invasive Norway Maples, Burning Bush and multi flora rose from DCR land along Pocumtuck Ridge.
- The Town should investigate opportunities for earning revenue through a carbon capture and carbon sequestration program.

SECTION 11

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APPENDIX A: AGENDAS & PUBLICITY

DRAFT

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Thursday, August 26th

3:00pm – 4:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/87578899001?pwd=TIQ5blMzT0h4NE9qWlpmYnZTS2xldz09>

Join via phone: 1-929-436-2866, Meeting ID: 875 7889 9001, Passcode: 435097

1. Welcome & Introductions
2. Review Project Scope of Work & Schedule
 - a. Updates to the OSRP
 - b. Committee to work on OSRP update – special areas of interest or assistance
3. Review and Discuss the 2014 Survey
 - a. Add questions/modify questions
 - b. Survey distribution
4. Close meeting
 - a. Set regular or next Committee meeting
 - b. Next steps

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, September 28th

5:00pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/89783209368?pwd=OXAx5b3BBenFrckl5QzJmckdCKlQyUT09>

Join via phone: 1-929-436-2866, Meeting ID: 897 8320 9368, Passcode: 290478

1. Welcome & Introductions
2. Discuss follow up materials from last meeting (resource folder, sample StoryMaps, meeting invitation)
3. Review draft OSRP community survey
 - a. Discuss survey distribution
4. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, October 26th

5:00pm – 6:30pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/89187538075?pwd=UUpTemJxeFVkcGh0Kyt4NDVjSnFmQT09>

Join via phone: 1-929-436-2866, Meeting ID: 891 8753 8075, Passcode: 657312

1. Welcome & Introductions
2. Finalize OSRP Community Survey
 - a. Review and modify questions
 - b. Determine timeline for opening/closing survey
3. Discuss survey distribution
4. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, November 30th

5:00pm – 6:30pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/89214538587?pwd=WGFoSWgvSTg3KzZuWWRHMWsvandpQT09>

Join via phone: 1-929-436-2866, Meeting ID: 892 1453 8587, Passcode: 672892

1. Welcome & Introductions
2. Discuss survey distribution/progress on survey responses
3. Review Deerfield's 2014 Section 8: Goals and Objectives
4. Discuss items not anticipated within 48 hours
5. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday January 11, 2022

5:00pm – 6:30pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/84773221295?pwd=WjZxZFZ1VHhvQnlXYjBTWWV5aHV3dz09>

Join via phone: 1-929-436-2866, Meeting ID: 847 7322 1295, Passcode: 220132

1. Welcome & Introductions
2. Survey Update
3. Review Deerfield's 2014 Section 8: Goals and Objectives
4. Discuss items not anticipated within 48 hours
5. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Thursday February 3, 2022

Rescheduled meeting

5:00pm – 6:30pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/82621986021?pwd=UWYyVlZHMWpUbG5ldFd3ZlZZSDZ5dz09>

Join via phone: 1-929-436-2866, Meeting ID: 826 2198 6021, Passcode: 682944

1. Welcome & Introductions
2. Survey Update
3. Stakeholder Outreach
4. Review Deerfield's 2014 Section 8: Goals and Objectives
5. Discuss items not anticipated within 48 hours
6. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, March 1, 2022

5:00pm – 6:30pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/85096278864?pwd=SElyNXN3TFItQkhJVWNuaVNBMGZZUT09>

Join via phone: 1-929-436-2866, Meeting ID: 850 9627 8864, Passcode: 788956

1. Welcome & Introductions
2. Discuss meeting time
3. Discuss survey results
4. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Monday, March 21, 2022

4:30pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/81488249340?pwd=eVVZZTA4V2crbHhKNUtCQzVCUUZGZz09>

Join via phone: 1-929-436-2866, Meeting ID: 814 8824 9340, Passcode: 497465

1. Welcome & Introductions
2. Approve Minutes from 3-2-22 meeting
3. Continue discussing survey results
4. Discuss Section 3: Community Setting
5. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Wednesday, May 4, 2022

4:30pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/87903280750?pwd=UzlRUm91YTh5ZFd4V0dUMC9yNEFEQT09>

Join via phone: 1-929-436-2866, Meeting ID: 879 0328 0750, Passcode: 558120

1. Welcome & Introductions
2. Approve Minutes from 3-21-22 meeting
3. Discuss Section 3: Community Setting
4. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, August 16 2022

4:30pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/86257254833?pwd=YUVXOUZTUTZwYjEraklEbUhnZ1V4dz09>

Join via phone: 1-929-436-2866, Meeting ID: 862 5725 4833, Passcode: 115376

1. Welcome & Introductions
2. Approve Minutes from 7-12-22 meeting
3. Discuss Section 5: Lands of Conservation and Recreation Interest
4. Discuss Open Space Map
5. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, September 13 2022

4:30pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/81211906276?pwd=bFJJN0VBWnYrMk1lTTRRQUViY3Z0UT09>

Join via phone: 1-929-436-2866, Meeting ID: 812 1190 6276, Passcode: 503142

1. Welcome & Introductions
2. Approve Minutes from 8-16-22 meeting
3. Discuss Section 9: Seven-Year Action Plan
4. Discuss project timeline (final edits, public forum, etc.)
5. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, October 25 2022

4:30pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/84904337201?pwd=U2lyNGlUOUxHTzVzalBhWnl2TDdvQT09>

Join via phone: 1-929-436-2866, Meeting ID: 849 0433 7201, Passcode: 937092

1. Welcome & Introductions
2. Approve Minutes from 9-13-22 meeting
3. Discuss second draft of Section 5: Inventory of Lands
4. Discuss comments from CCI
5. Discuss project timeline (final edits, public forum, etc.)
6. Close meeting
 - a. Discuss next meeting date

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, November 22 2022

4:30pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/81534382877?pwd=V0RkdXJORGdJSRDUk9TKzFYemJDUT09>

Join via phone: 1-929-436-2866, Meeting ID: 815 3438 2877, Passcode: 126747

1. Welcome & Introductions
2. Approve Minutes from 10-25-22 meeting
3. Discuss full draft of 2023 Deerfield OSRP
4. Discuss public forum to be held on 12-13-22
5. Discuss bike trail inquiry
6. Close meeting
 - a. Discuss next meeting date

Agenda
Deerfield Open Space & Recreation Plan
PUBLIC FORUM
Tuesday, December 13 2022
6:30 pm

1. Introductions
2. Purpose of the **Deerfield Open Space & Recreation Plan**
3. Presentation of draft plan, goals, objectives, and key findings
4. Public Input on Seven-Year Action Plan
 - a. Priorities
 - b. Future project ideas
 - c. Next steps

The meeting will be held virtually via zoom, register in advance:

<https://us02web.zoom.us/meeting/register/tZEkc-6orDkrH9c9MvU3OabKE8sK8pgT0d30>

AGENDA

Deerfield Open Space and Recreation Plan Update Project

Tuesday, December 20 2022

4:30pm – 6:00pm

Meeting held virtually via Zoom

Join via weblink: <https://us02web.zoom.us/j/81065049642?pwd=L0J0QmItWmVUTU85TFArMFFwRlhHUT09>

Join via phone: 1-929-436-2866, Meeting ID: 810 6504 9642, Passcode: 685100

1. Welcome & Introductions
2. Approve Minutes from 11-22-22 meeting
3. OSRP Wrap Up
4. MassTrails Grant Application
5. Other items not anticipated within 48 hours
6. Close meeting
 - a. Discuss next meeting date

GREENFIELD RECORDER



(<https://www.recorder.com>)

News > Local (</News/Local/>)

South County Notebook: Nov. 16, 2021



Conway Town Hall will be closed for in-person business from Nov. 17 through Nov. 19 while Town Clerk Laurie Lucier attends a conference. Staff File Photo/Zack DeLuca » [Buy this Image](#)

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Published: 11/15/2021 4:18:40 PM

Conway Town Hall to be closed Nov. 17 through Nov.19

CONWAY — Town Hall will be closed for in-person business from Nov. 17 through Nov. 19 while Town Clerk Laurie Lucier attends a conference.

Emails and voicemails will still be monitored regularly.

Whately public property values available

WHATELY — The Board of Assessors has received preliminary certification of assessments for all classes of property in Whately for fiscal year 2022.

According to a notice from Cynthia Herbert with the Assessors Office, the public disclosure period of these values will last through Nov. 18. Proposed values are available online on the town website or in the Town Offices at 4 Sandy Lane from Monday through Thursday from 8 a.m. to 4 p.m.

Taxpayers are encouraged to check their values and direct any questions or issues to the Board of Assessors at 413-665-4400, ext. 4 or assessors@whately.org.

Open Space and Recreation Survey available

DEERFIELD — The town is updating its Open Space and Recreation Plan and is seeking public input.

The plan will inform Deerfield town officials about what residents would like to see done in terms of the town's parks, conservation lands and recreation facilities for its seven-year action plan.

The survey is available until Dec. 17 and can be answered at bit.ly/3qo1ckr (<https://bit.ly/3qo1ckr>).

Printed copies can also be found at Town Hall, Tilton Library or the South County Senior Center.

Sunderland resident earns doctorate from UConn School of Law

SUNDERLAND — Niko Keith Ames of Sunderland recently earned his doctorate from the University of Connecticut School of Law. Niko is the son of Keith and Jane Ames, also of Sunderland.

Since passing the bar exam, Ames has worked with a law firm in Stamford, Conn.

Ames is a 2018 summa cum laude graduate of Albertus Magnus College in New Haven, Conn., where he earned a degree in health care management. While at Albertus Magnus College, he played both soccer and lacrosse, and was a member of Kappa Gamma Pi National Catholic College Honor Society.

Ames is also a 2014 graduate of Frontier Regional School in South Deerfield where he played soccer, basketball and baseball, and was a member of the National Honor Society.

[deerfield ma \(/keyword/?keyword=deerfield ma\)](#) [sunderland ma \(/keyword/?keyword=sunderland ma\)](#)

[whately ma \(/keyword/?keyword=whately ma\)](#) [conway ma \(/keyword/?keyword=conway ma\)](#)

 Share on Facebook

(<https://www.facebook.com/sharer/sharer.php?s=100&u=https%3a%2f%2fwww.recorder.com%2fSouth-County-Notebook-Nov-16-2021-43462880>)

 Share on Twitter

(<https://twitter.com/share?url=https://www.recorder.com/South-County-Notebook-Nov-16-2021-43462880&text=South County Notebook: Nov. 16, 2021>)

Respond to Deerfield's Open Space and Recreation Plan Survey!

The Town of Deerfield is updating our Open Space and Recreation Plan. Please let us know what facilities are important to you, what you value about our Town's parks, conservation lands, and recreation facilities, and how we can make your experience better. Please also consider the Town's open land in light of pressing conservation and climate mitigation needs. Your responses will be used to help guide the Town's 7-year Action Plan.

We need your input!

Navigate to the survey by scanning the QR code or using the web link below. Please respond by 12/17/21.



<https://www.surveymonkey.com/r/DeerfieldOSRP>

Deerfield 2022 Open Space and Recreation Plan Update PUBLIC FORUM



The view from Mount Sugarloaf in South Deerfield. Photo courtesy of the Greenfield Recorder/Andy Castillo.

The Town of Deerfield's Open Space Committee and the Franklin Regional Council of Governments invite residents to hear about and comment on the updated Open Space & Recreation Plan (OSRP)

- ✓ Attend the public forum: December 6th @ 6:30pm
 - Join us to discuss the plan's goals and objectives, our key findings, and provide input on the 7-year Action Plan
- ✓ Provide public comment between November 29 – December 13:
 - Updated OSRP will be posted online:
<https://www.deerfieldma.us/280/Open-Space-Recreation-Committee>
 - Submit a comment via email to Allison Gage at the Franklin Regional Council of Governments, agage@frcog.org

Tuesday, December 6, 2022 6:30 p.m. via Zoom
Please register in advance of the meeting:
bit.ly/deerfieldforum



APPENDIX B: 2021 SURVEY

DRAFT

Town of Deerfield

2021 Open Space and Recreation Survey

What do you love about Deerfield?

What aspects of Deerfield would you like to preserve?

What recreation opportunities would you like to see in Town?

Complete this survey and help the Town of Deerfield update its Open Space and Recreation Plan!

The Town of Deerfield, through its Open Space and Recreation Committee, is preparing a 7-year update to the Town's Open Space and Recreation Plan (OSRP). An updated plan is required to apply for grant funds to maintain, upgrade, and enhance facilities. The plan will help guide strategic decisions about the use of open land in Deerfield and how we can provide for our recreational preferences. This is increasingly important considering conservation, agricultural, and climate related issues, which should be part of an over-all plan for the land within our boundaries.

An important piece of the planning process is this survey, as it allows residents to voice their opinions and help shape the Seven-Year Action Plan component of the OSRP. Please take a few moments to complete this survey. **We encourage each member of your household to fill out their own survey.** Your responses are confidential.

Please complete this survey by December 17th. If you'd prefer to take the survey online, you can access it here: <https://www.surveymonkey.com/r/DeerfieldOSRP>.

When finished with this survey, you can place it in the drop box at Town Hall.



2021 Deerfield Open Space and Recreation Plan Community Survey

OPEN SPACE

Answers to the following questions will help us understand which open spaces are valued by the community.

1. How important is it to permanently protect the following natural and scenic resources in Deerfield?

	Important	Neutral	Not Important
Historic buildings and monuments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Historic landscapes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking and hiking trails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farms and farmland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scenic views	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife habitat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rivers, streams, and ponds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drinking water supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

2. Are there specific areas in Deerfield that the Town should try to own, protect access to, develop for access if the Town owns it, or otherwise protect? Let us know about up to three locations.

Area

Purpose

Area

Purpose

Area

Purpose

3. Deerfield passed the Community Preservation Act in 2007, establishing a fund through a tax levy and state matching funds to help preserve open space and historic resources, create community housing, and develop outdoor recreation facilities. What should Deerfield's overall priorities be for spending these funds? **Please rank the four categories from 1-4, with 1 being the highest priority and 4 being the lowest.**



Open Space (protecting agricultural land, forest land, wetlands, river/stream frontage, scenic vistas, wildlife habitat, aquifer recharge areas, etc.)



Historic Preservation (preserving structures or documents significant in the history, archeology, or architecture of Deerfield)



Community Housing (providing funding for low and moderate income housing for individuals and families, including low or moderate income senior housing)



Outdoor Recreation (developing community gardens, trails, adult and youth sports, parks, playgrounds, fields, etc.)

4. The Open Space Committee is interested in hearing from residents about how to prioritize projects over the next seven years. Which of the following open space and recreation projects do you think the Town should prioritize in the future? **Please check as many boxes as apply.**

- Develop a town-wide trail network
- Develop an inter-town trail network
- Create signage and maps for public trails (existing or future)
- Improve public access to the Deerfield/Connecticut Rivers
- Address hazardous flooding and erosion throughout town
- Protect farmland
- Develop pollinator habitat/corridors
- Protect forestland for wildlife, biodiversity, and climate mitigation/adaptation, and water quality
- Protect environmentally sensitive habitats
- Create or make available existing information on Deerfield's natural resources

5. If you own land in Deerfield, have you dealt with impacts related to people recreating on your land (for activities such as hunting, snowmobiling, four wheeling, mountain biking, hiking, etc.) without permission?

Yes

No

6. If you answered "yes" to question #5, how would you like to see the Town address issues related to people recreating on your land?

7. What do you consider to be threats to things you love most about Deerfield and what should the Town do in response?

2021 Deerfield Open Space and Recreation Plan Community Survey

RECREATION

Answers to the following questions will help us understand which recreation activities Deerfield residents value.

8. Which of the following recreational activities do members of your household do in, or near, Deerfield? Please select all that apply.

- | | |
|--|---|
| <input type="checkbox"/> Basketball | <input type="checkbox"/> Softball |
| <input type="checkbox"/> Baseball | <input type="checkbox"/> Swimming |
| <input type="checkbox"/> Bicycling | <input type="checkbox"/> Tennis |
| <input type="checkbox"/> Boating | <input type="checkbox"/> Skateboarding |
| <input type="checkbox"/> Jet skiing/Water skiing /Tubing | <input type="checkbox"/> Horseback riding |
| <input type="checkbox"/> Camping | <input type="checkbox"/> Lacrosse |
| <input type="checkbox"/> Canoeing/Kayaking | <input type="checkbox"/> Ice hockey/Ice skating |
| <input type="checkbox"/> Cross-country skiing | <input type="checkbox"/> Football |
| <input type="checkbox"/> Fishing | <input type="checkbox"/> Ultimate frisbee |
| <input type="checkbox"/> Picnicking | <input type="checkbox"/> Golf |
| <input type="checkbox"/> Rock climbing | <input type="checkbox"/> Hunting |
| <input type="checkbox"/> Rollerblading | <input type="checkbox"/> Hiking |
| <input type="checkbox"/> Sledding | <input type="checkbox"/> Walking |
| <input type="checkbox"/> Snowshoeing | <input type="checkbox"/> Gardening |
| <input type="checkbox"/> Snowmobiling | |
| <input type="checkbox"/> Other (please specify) | |

9. Which of the following recreational resources would you like to see expanded, improved, or created in Deerfield? Please select the appropriate columns for the resources you are interested in, and identify your highest priorities. If you are not interested in a resource you do not need to fill in a bubble.

	Expand	Improve	Create	High Priority
Bike paths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bike lanes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trail/mountain biking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bike racks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Expand	Improve	Create	High Priority
Family picnic areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basketball courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor ice skating rink	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neighborhood parks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation building	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pavilion for group events (with tables, grills, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Athletic fields (softball, baseball, soccer, frisbee)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fitness/walking track	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tennis courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playgrounds/tot lots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hiking trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ADA Accessible trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross-country skiing trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public access to the Deerfield and Connecticut Rivers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kayak/car-top boat launch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Riverside board walks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming pool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Splash pad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunting areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Snowmobiling trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horseback riding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dog walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Snowshoeing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sledding hills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community gardens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skateboarding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pickle ball courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Expand	Improve	Create	High Priority
Public restrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public art	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bird/wildlife viewing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disc Golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bocce courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sidewalks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amphitheater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drinking fountains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. How often do you utilize the following open space and recreational resources? Please select your current frequency of use, and if you anticipate using a resource more frequently in the future.

	Monthly	A Few Times a Year	Never	Anticipate Using More Frequently in the Future
High School fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elementary School fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elementary School playground	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Memorial Field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation Department programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sidewalks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tri-Town Beach (when open)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pocumtuck Valley Memorial Association Field (Old Deerfield Grammar School)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pocumtuck Ridge Hiking Trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mount Sugarloaf Hiking Trails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mount Sugarloaf Field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deerfield River fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deerfield River boating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connecticut River fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connecticut River boating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Franklin County Bikeway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eaglebrook Ice Skating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deerfield Academy Fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deerfield Academy Tennis Courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mahican-Mohawk Trail (Hoosac Road)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

11. If you did not use the Town's recreational facilities **prior to COVID-19**, please indicate why not. (Check all that apply)

- Transportation issues
- Lack of time
- Safety concerns
- Don't know about them
- Facilities are not accessible
- Lack of organized team/activity
- Language/cultural barrier
- Didn't feel welcome
- Other (please specify)

12. If you do not use the Town's recreational facilities **during COVID-19**, please indicate why not. (Check all that apply)

- Transportation issues
- Lack of time
- Safety concerns
- Don't know about them
- Facilities are not accessible
- Concerns about virus transmission
- Lack of organized team/activity
- Language/cultural barrier
- Didn't feel welcome
- Other (please specify)

13. How can Deerfield improve our parks and recreational programming to make them welcoming for all of our community members?

14. What type of facilities/activities would you like to see included in the project design for the new park on North Main Street?

2021 Deerfield Open Space and Recreation Plan Community Survey

Open Space Information

Let us know how to communicate about open space and recreation with the community.

15. The Deerfield Open Space Committee would like to provide more information to the community on topics pertinent to open space and recreation. Which of the following topics, if any, would you like to learn more about?

- | | |
|---|---|
| <input type="checkbox"/> Snowmobiling and all-terrain vehicle use | <input type="checkbox"/> Managing land for wildlife habitat |
| <input type="checkbox"/> Public trails | <input type="checkbox"/> Good forest stewardship and forest cutting practices |
| <input type="checkbox"/> Recreational programming for children | <input type="checkbox"/> Land protection via conservation and agricultural preservation restrictions |
| <input type="checkbox"/> Recreational programming for adults | <input type="checkbox"/> Estate planning for conservation donation |
| <input type="checkbox"/> Recreational programming for seniors | <input type="checkbox"/> Chapter 61 (Forestry, Agriculture or Open Space and Recreation) Current Use Tax Program for landowners |
| <input type="checkbox"/> Hunting seasons & landowner rights | <input type="checkbox"/> Climate change vulnerability and resilience |
| <input type="checkbox"/> Threats to and best practices for groundwater quality protection | <input type="checkbox"/> Wetlands protection |
| <input type="checkbox"/> Septic betterment loan program | <input type="checkbox"/> Nature-based solutions to stormwater management (such as blue roofs or rain gardens) |
| <input type="checkbox"/> Invasive plant species management | <input type="checkbox"/> Low Impact Development (LID) techniques |
| <input type="checkbox"/> Supporting pollinators through native plantings, eliminating pesticide use, etc. | |

16. How do you generally get information about Town matters?

- Town website
 - Town facebook pages
 - Other social media (Instagram, Twitter, Facebook)
 - Newspaper
 - Word of mouth
 - Public Committee meetings
 - Public events (speakers, forums)
 - Handouts available at Town Hall, Town Meeting, schools, etc.
 - Other (please specify)
-
- None of the above

2021 Deerfield Open Space and Recreation Plan Community Survey

Demographic Information

Your answers to these questions will help us understand what preferences different populations (new or long-time residents, youth or seniors, etc.) have.

17. Please use the blanks to write the number of people in each of the following age groups in your household.

Under 18 years old

18 to 24 years old

25 to 44 years old

45 to 64 years old

65+ years old

18. How many years have you lived in Deerfield?

- Less than 5 years
- 5 to 15 years
- 15+ years

19. Select the option that best describes your living situation in Town.

- Renter
- Seasonal resident
- Private school housing resident
- Homeowner
- Other (please specify)

APPENDIX C: ADA SELF-EVALUATION REPORT

The ADA Self-Evaluation and Transition Plan for the Town of Deerfield can be found online here:
[https://www.dropbox.com/s/ec9nircblabd872/Deerfield%20ADA%20Self Evaluation%20Transition%20Plan.pdf?dl=0](https://www.dropbox.com/s/ec9nircblabd872/Deerfield%20ADA%20Self%20Evaluation%20Transition%20Plan.pdf?dl=0)

DRAFT

APPENDIX D: 2023-2033 10-Year Action Plan



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Maura T. Healey
GOVERNOR

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LIEUTENANT GOVERNOR

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September 11, 2025

Jessica Atwood
FRCOG
12 Olive Street, Suite 2
Greenfield, MA 01301

Re: Open Space and Recreation Plan

Dear Ms. Atwood:

Thank you for submitting the updated Action Plan for the Town of Deerfield's Open Space and Recreation Plan extending the goals and objectives over 10 years. I'm pleased to write that the plan has received an additional three years of approval, and the town is eligible to apply for DCS grants through January 2033. Please contact me at melissa.cryan@mass.gov if you have any questions or concerns.

Sincerely,

Melissa Cryan

Melissa Cryan
Grant Programs Supervisor

SECTION 9

TEN YEAR ACTION PLAN

The Ten-Year Action Plan fulfills the Open Space and Recreation Plan objectives. The objectives address open space, natural resources, recreation, and community development needs because the quantity and quality of accessible open space relates directly to the state of Deerfield’s environment; the Town’s recreational opportunities; and the quality of future development in Deerfield. The overarching goal of this Plan is to establish a walkable, hikeable, and bikeable Deerfield. These activities were frequently brought up in the Community Survey, and the Committee developed several actions that will help to engage the community in those activities. The Committee has a vision that Deerfield’s walking paths, hiking trails, and bikeways will be easily navigable and residents will be well informed about the opportunities available to them.

The objectives are listed in the far left column of Table 9-1 and are followed in the same row by recommended actions, responsible board or group, start date, and potential funding sources. By implementing the recommended actions, each objective will begin to be realized. Implementing the Open Space and Recreation Plan will not only require the participation of the Open Space & Recreation Committee, but it will also necessarily involve many other Town groups, as indicated in the “responsible board or group” column in the action plan.

Many of these actions may be constrained by a lack of volunteer time, in addition to funding limitations. Where money is required, such as to permanently protect open space, it does not have to be provided by the Town alone. State and federal governmental agencies, private non-profit conservation agencies, and foundations are potential sources of funding. These sources are more likely to invest in land protection projects that have a broad base of community support.

A successful Open Space and Recreation Program, under the primary stewardship of an Open Space & Recreation Committee, can achieve all of the action steps listed below over time. However, it will be important to establish priorities for the first ten years. The Committee has prioritized action steps by the goals and objectives listed in the previous chapter. These action steps are represented graphically (where possible) on the Ten-Year Action Plan Map and highlighted in light yellow in Table 9-1. Any project the Town decides to take on will ensure avenues for public input and comment.

Table 9-1: Deerfield 2022 Open Space and Recreation Plan Action Plan

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
Goal A: Preserve and enhance the unique small town, rural character of Deerfield as reflected by connected farms, forests, ridgelines, and Deerfield’s history.				
A1. Explore the adoption of zoning measures, like a ridge protection bylaw, that would seek to protect the slopes of the Pocumtuck Ridge and other ridgelines from poorly planned development.	Revisit adoption of a Deerfield Ridge Protection Bylaw to prevent impacts of erosion and runoff from development on steep slopes, and to reduce the forest fragmentation and visual impacts of such development.	Open Space & Recreation Committee, Planning Board, FRCOG	2025	District Local Technical Assistance (DLTA) Grants
A2. Continue to encourage the implementation of the recommendations from the Downtown Deerfield Complete Streets and Livability Plan, which include streetscape enhancements and improvements for walkers, bicyclists, and recreation in South Deerfield.	Create a committee or working group to implement the plan. Priorities for project funding should include accessibility enhancements.	Selectboard, Recreation Committee	2023-2033	Community Preservation Act; MassWorks Infrastructure Program; MassDOT
A3. Identify areas in Chapter 61, 61A and 61B that would be a priority for preservation or town purchase due to their contributions to climate resiliency (such as forest based carbon storage & sequestration, stormwater management,	Use the results of the 2021 Community Survey and other previous studies to prioritize parcels for protection of multiple values, including scenic viewsheds, river access and agricultural lands.	Open Space & Recreation Committee, Recreation Committee, Agricultural Commission, Historical	2023	Volunteer Time

¹ Any action highlighted in light yellow is considered a high priority. The high priority designation was determined through the OSRP Community Survey and during Open Space & Recreation Committee meetings.

² For action items that are considered to be ongoing efforts, the start date is given as 2023-2033. Many of the action items can be worked on simultaneously. Also, the start date for a given action item is not set in stone. The Responsible Board/Group could change the start date for a specific action item, as it deems appropriate, after consultation with the Open Space & Recreation Committee. The start date is also dependent on available funding.

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
etc.), significant scenic viewsheds, plant and wildlife habitat, water resource protection, recreation potential, and other public benefits.		Commission, Water Districts		
	Pursue protection of identified parcels.	Open Space & Recreation Committee, Recreation Committee, Agricultural Commission, Historical Commission, Water Districts	2025	Community Preservation Act; LAND Grant; EEA Drinking Water Supply Protection Program
A4. Continue to support the identification, documentation, and monitoring of significant historical sites and work towards their conservation and preservation.	Identify and document all of Deerfield’s significant historical sites.	Deerfield Historical Commission, Historic Deerfield Inc., Pocumtuck Valley Memorial Association (PVMA), Nolumbeka Project	2023-2033	Community Preservation Act; Massachusetts Historical Commission
	Place a plaque at the American Sycamore on Old Deerfield common that is documented to be more than 300 years old.	Deerfield Academy, Deerfield Historical Commission, Pocumtuck Valley Memorial Association (PVMA), Historic Deerfield	2025	Community Preservation Act

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
A5. Encourage Zoning Bylaws that reflect desired characteristics in rural areas and village centers, such as clustered development in order to preserve open space.	Work with the Planning Board to evaluate existing zoning to identify needs and opportunities for enhancing zoning for preserving open space.	Planning Board, Selectboard, FRCOG	2024	Massachusetts Cultural Council; Massachusetts Historical Commission; volunteer time; District Local Technical Assistance (DLTA)
Goal B: Ensure that Deerfield maintains or improves the quality of its natural resources (e.g. air, water, native flora and fauna) by maintaining the presence of working farmland, prime farmland soils, forestlands, and wildlife habitat through land conservation, including pollution prevention and mitigation.				
B1. Develop, adopt, and promote a local wetlands bylaw to protect against pollution to streams, wetlands, and other water bodies.	Work with the Conservation Commission to develop a draft wetlands protection bylaw. Review stormwater regulations and revise as necessary to protect wetlands.	Conservation Commission, Planning Board, Open Space & Recreation Committee, FRCOG	2024	District Local Technical Assistance (DLTA)
B2. Study the connections between high water tables, the area's topography, and development in Deerfield. Develop strategies that seek to mitigate water quality issues associated with high water tables.	Fund and develop a Hydrogeologic Assessment and Action Plan for the Town of Deerfield.	Selectboard	2024	Town Funds; USDA Rural Development; MVP Action Grant
B3. Explore and identify potential future water supply sources in Deerfield.	Develop a Comprehensive Drinking Water Needs and Supply Assessment for Deerfield. The study should address supply	Selectboard	2024	Town Funds; USDA Rural

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
	needs for sections of Deerfield not currently covered by a water district, such as East Deerfield.			Development; MVP Action Grant
	Explore expanding the existing Water Protection District in the Zoning Bylaw, based upon findings from the Needs and Supply Assessment if a source of potential drinking water is identified.	Planning Board, FRCOG	2026	District Local Technical Assistance (DLTA)
	Conduct an inventory of existing land uses to determine whether any conflict with the protection of the existing Zone II recharge areas exist.	Water Supply Districts, Selectboard, Open Space & Recreation Committee	2026	Mass DEP 604b Water Quality Management Planning Grant
	Seek to protect land surrounding potential new water supply sources if identified through the Needs and Supply Assessment.	Water Supply Districts, Selectboard, Open Space & Recreation Committee	2026	Community Preservation Act; Drinking Water Supply Protection Program
B.4 Continue to educate the public about the Town’s Stormwater Bylaw and Stormwater Regulations, and Green Development Performance Standards. Encourage the utilization of the Best Development Practices Guidebook when permitting new development to reduce stormwater runoff and non-point source pollution.	Develop (if not readily available) resources to be posted on the Town of Deerfield website related to stormwater management.	Open Space & Recreation Committee, Ad Hoc Town Common Committee	2024	Volunteer time
B5. Implement recommended activities from the 2000 Mill River Watershed Project and the forthcoming Bloody Brook Watershed Based Plan to educate the	Work with riparian landowners to improve the water quality of Bloody Brook by developing natural buffer strips to reduce	Selectboard, Open Space & Recreation Committee	2023-2033	NRCS; s.319 Nonpoint Pollution Grant Program

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
public and improve water quality in the watershed.	impacts from sediments, fertilizers and pesticides.			
	Inform water users of Roaring Brook Reservoir about water conservation to reduce water uses.	Selectboard, Water supply district	2024	Mass DEP; Massachusetts Environmental Trust (MET)
	Work with teachers and students on environmental projects/enrichment at the local elementary school and middle and high school, both of which are located on Bloody Brook.	Selectboard, Open Space & Recreation Committee	2023-2033	MET
B6. Seek to understand the relationship between residential, commercial, industrial and agricultural land uses to ground and surface water quality.	While working on the “Comprehensive Water Needs and Supply Assessment” and the “Hydrogeologic Assessment and Action Plan,” facilitate a public meeting to educate residents about the impacts of land uses and pesticides on water quality and quantity, and the benefits of eco-friendly lawns.	Selectboard, Open Space & Recreation Committee	2024	Town Funds
B7. Encourage the enforcement of existing zoning codes and Board of Health regulations regarding non-permitted junkyards.	Explore the need for developing a Board of Health policy or protocol to deal with junkyards based on a thorough assessment of current regulations and their effectiveness. If there is a need for additional protocols, develop one.	Board of Health	2023	Town Funds
B8. Continue close oversight of the cleanup at the East Deerfield Railyard.	Support the Hazardous Waste Coordinator and public information process as dictated by the Massachusetts Contingency Plan (MCP) for the site.	Selectboard, Hazardous Waste Coordinator	2023	Town Funds

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
B9. Document and address current dumping and trash-polluted sites in Deerfield.	Participate in annual CT River Source to Sea Clean-Up sponsored by the Connecticut River Conservancy.	Deerfield Highway Superintendent, Selectboard, Chief of Police, Connecticut River Conservancy, and State Environmental Police	2023-2033	Volunteer Time
B10. Through landowner education and advocacy activities within the town and state, promote organic techniques for farming, lawn care, and roadside vegetation control practices.	Identify current pest management practices in town and explore educational and technical resources for integrated pest management (IPM) and organic methods. Ensure that safety continues to be a top consideration. Coordinate activities with MassDOT and the Hilltown Anti-Herbicide Coalition to address the roadside spraying initiatives.	Selectboard, Board of Health, Highway Department, Agricultural Commission	2024	Toxic Use Reduction Grant Program (TURA)
B11. Work with local non-profits and state agencies to support conservation efforts to protect areas that abut protected lands to create larger areas of contiguous farm and forestland. Recognize the key roles that Deerfield's landscapes play within the region as a whole.	Work with willing landowners to protect priority parcels identified on the Farmland and Habitat conservation priorities maps developed through the Greenprinting process.	Open Space Committee, Agricultural Commission, Franklin Land Trust, Kestrel Land Trust	2023-2033	Landscape Partnership Program; LAND grant program; Community Preservation Act
B12. Employ the following methods to protect land from development in Deerfield:	Place an announcement on the town's website and on cable TV describing how the Town can receive lands for conservation purposes that can be transferred to a land trust or other land conservation agencies.	Open Space & Recreation Committee, Selectboard	2023-2033	Volunteer Time

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
<ul style="list-style-type: none"> • Assist in the donation of open space and/or development rights to land trusts or other conservation agencies. • Educate landowners about land protection opportunities and estate planning. • Adopt zoning bylaws that result in protected lands for farming, forest management, wildlife habitat, or groundwater management. • Encourage the conservation of land in Deerfield by private non-profits and state conservation agencies. • Invest Community Preservation Act funds in support of local Agricultural Preservation Restrictions (APR) and Conservation Restrictions. • Prioritize lands in the Chapter 61 program for protection should they become available for purchase (see Objective A3). • Sell Town owned land to abutters to get more land on the tax rolls 	<p>Hold periodic workshops on estate planning and land management options in coordination with the MassWoods Program, UMass Extension.</p>	<p>Franklin Land Trust Open Space & Recreation Committee</p>	<p>2023-2033</p>	<p>Town funds; Volunteer time</p>
	<p>Revise the Town’s Conservation Subdivision Design zoning bylaw to increase the required amount of preserved open space. Require a Special Permit for conventional subdivisions in the Residential-Agricultural zoning district.</p>	<p>Open Space & Recreation Committee, Planning Board</p>	<p>2025</p>	<p>District Local Technical Assistance (DLTA) Grant</p>
	<p>Work with local and regional land conservation trusts (e.g., FLT and Kestrel Land Trust and state conservation agencies like Mass. Department of Conservation and Recreation (DCR)) to encourage private conservation efforts and to provide resources for landowners interested in protecting their land.</p>	<p>Open Space & Recreation Committee</p>	<p>2023-2033</p>	<p>Town funds</p>
	<p>Apply for a PARC grant to help acquire recreation lands for facilities identified as a need in the Open Space and Recreation Plan survey.</p>	<p>Selectboard, Recreation Department</p>	<p>2026</p>	<p>PARC Grant</p>
	<p>Continue to invest Community Preservation Act funds in support of local Agricultural Preservation Restriction (APR) applications and other forms of preserving priority open space.</p>	<p>Agricultural Commission, Selectboard, Town Meeting</p>	<p>2023-2033</p>	<p>Community Preservation Act</p>
	<p>Continue to organize and facilitate annual public information meetings on the Community Preservation Act to elicit input from the public on funding priorities.</p>	<p>Community Preservation Committee</p>	<p>2023-2033</p>	<p>Volunteer time</p>

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
B13. Encourage municipal projects that share infrastructure (parking, heating/cooling and large meeting spaces) and green space/landscaping to reduce the duplication and expansion of systems and paved surfaces.	Support the creation of a municipal campus that repurposes, restores and updates existing town-owned buildings with a unified landscape design, shared parking and a joint geothermal heating/cooling system.	Selectboard	2023-2033	Town funds, EERE Community Geothermal Heating Grant
	Support the creation of senior housing within walking distance of the municipal campus.	Selectboard, Ad Hoc Senior Housing Committee	2023-2033	Town funds
Goal C: Ensure that Deerfield maintains and improves the quality and accessibility of all of its recreational facilities and programming, especially those that connect people with the town's diverse natural environments and landscapes. Encourage the development of new facilities and programming where feasible.				
C1. Create new recreational facilities identified as a need in the survey and other town planning efforts.	Assess whether there are small lots near neighborhoods that could be acquired for the purposes of developing local tot lots, playgrounds, and pet lots.	Open Space & Recreation Committee, Recreation Department	2025-2033	Community Preservation Act; PARC grant program
	Create walking and mountain biking trails to link the Town owned properties of Pocumtuck Rock and the Pine Nook Memorial Forest on Pine Nook Road. The Memorial Forest property currently has no loops on town land, but trails could be created to make a loop from Pine Nook Road to the Pocumtuck Rock.	Open Space & Recreation Committee; Recreation Department; FRCOG	2023-2026	MassTrails
	Develop signage to indicate town ownership, public access, and allowed parking areas to facilitate increased use of the Pocumtuck Rock, Pine Nook Memorial Forest, and Birchwood Nature Refuge (off	Open Space & Recreation Committee, Recreation Department, FRCOG	2023-2026	MassTrails; Town Funds

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
	Stage Road), which are all town properties on the Pocumtuck Ridge.			
	Complete the North Main Street Park, which would allow for the addition of walking paths and recreational activities for residents.	Selectboard	2023-2026	Community Preservation Act, Town Funds
	Increase access to Rices Ferry Road for hiking, mountain biking, and cross-country skiing by creating a small parking area and putting up signage.	Open Space & Recreation Committee	2023-2033	Town Funds, MassTrails
C2. Educate the general public as to the proper use of private lands for recreational purposes, where permission is granted.	Develop a pamphlet providing guidelines about engaging in recreational activities on private lands. Consider doing this in cooperation with surrounding towns.	Recreation Department	2025	Town Funds
	Develop a trail map/pamphlet showing the full extent of the Pocumtuck Ridge Trail from South Sugarloaf to Canada Hill in Greenfield, clearly delineating where public access is allowed. The pamphlet should also include information about parking and access to shorter loops along the Ridge, such as the Clapp Pond Trail and the Big Rocks Trail on the Pocumtuck Ridge Nature Preserve. Engage with local organizations such as the Nolumbeka Project and the Ohketeau Cultural Center to include Indigenous narratives and history in the pamphlet.	Open Space & Recreation Committee, FRCOG	2023-2026	MassTrails
	Create a walking map for the Meadow Lane loop in Old Deerfield. The map	Open Space & Recreation	2023-2026	MassTrails

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
	should show parking locations and the roads that are suitable for biking.	Committee, Historic Deerfield		
C3. Identify, protect, and enhance new and existing river access points for the Deerfield and Connecticut Rivers.	Work with landowners, including the State and utility company, and river users to identify river access sites. Acquire land for this purpose if available.	Open Space & Recreation Committee, Recreation Department, Selectboard	2026	Community Preservation Act; PARC grant program
	Discourage inappropriate or unsafe use of non-authorized river access points, and develop an education/outreach program with the goal of decreasing litter.	Selectboard, Police Department	2023-2033	Town Funds
	If the Deerfield River Wild and Scenic River Study Act of 2022 becomes law, designate an Open Space & Recreation Committee member to serve on the local advisory committee. ³	Open Space & Recreation Committee	2026	Volunteer time
C4. Identify the best prospects for future biking, walking and jogging paths in town and work to develop those facilities.	Work with the Franklin Regional Council of Governments to explore the creation of new off-road bike paths in town.	Recreation Department, Franklin Regional Council of Governments	2023-2033	Community Preservation Act; FRCOG Unified Planning Work Program
	Improve connections between Deerfield and Greenfield from the northern section of Routes 5 & 10 to the Cheapside Bridge.	Community Preservation Committee, Open Space & Recreation Committee, Energy	2023-2025	Community Preservation Act, MassTrails, MassDOT

³ Find up to date information on the progress of the bill here: <https://www.congress.gov/bill/117th-congress/senate-bill/4631/text?r=2&s=1>

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
		Committee, Selectboard		
C5. Install facilities that encourage people to walk or ride their bikes to shopping and other destinations.	Purchase additional bike racks for installation throughout town.	Selectboard	2024	Town Funds
	Explore the creation of additional sidewalks in town. Add sidewalks where recommended in the <i>Downtown Deerfield Complete Streets and Livability Plan</i> .	Selectboard, Highway Department, MassDOT	2023-2033	Town Funds; MassWorks Infrastructure Program; Community Development Block Grant
C6. Provide access points to major recreational trails and scenic areas such as the Pocumtuck Ridge Trail, including the development of parking.	Develop a plan to work toward securing public access along the length of the Pocumtuck Ridge Trail in Deerfield.	Selectboard, Open Space & Recreation Committee	2023-2033	Community Preservation Act; Recreational Trails Grant
	Update the Town Forest management plan, considering the recommendations from the 2011 UMass inventory of the property, and seek to increase recreational use of the property.	Selectboard	2025	Community Preservation Act; PARC grant program; Community Forest Stewardship Grant; Urban and Community Forestry Challenge Grant
	Identify trails in Town that are in need of signage and/or trailhead kiosks and install these features where appropriate. Kiosks should include information about use standards and etiquette.	Open Space & Recreation Committee, Recreation Department	2023	MassTrails; Town Funds

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
C7. Work with community groups to establish a team of trail volunteers that could be available for trail and parking area maintenance.	Work with community groups to establish a team of trail volunteers for trail and parking area maintenance.	Recreation Department, Open Space & Recreation Committee	2025-2033	Volunteer Time
C8. Work with the State’s Environmental Police and the Deerfield Police Department to explore ways of increasing the level of policing for the most popular and most often abused recreational facilities in town, as well as to minimize the unauthorized and unwanted use of private lands.	Work with the Environmental Police, Deerfield Police Department, and landowners to identify the best protocols for dealing with specific and general unauthorized and unwanted use of private lands.	Open Space & Recreation Committee and Selectboard	2023-2033	Volunteer Time
C9. Provide information on the available public recreation resources in town.	Produce a map of Deerfield showing the location of recreation resources in town that are open to public use. Make printed copies available at the town hall, library, and schools, and an electronic version available on the town website.	Open Space & Recreation Committee, Recreation Department	2023-2026	Town Funds
	Provide an inventory of public recreation resources on the town website, including a description of the resource, appropriate uses, location, and photos.	Open Space & Recreation Committee, Recreation Department	2023-2026	Town Funds
	Create a brochure or online resource to show road/gravel biking routes in Deerfield.	Open Space & Recreation Committee	2023-2026	Volunteer Time

OBJECTIVE	ACTION ¹	RESPONSIBLE BOARD/ GROUP	START DATE ²	POTENTIAL FUNDING SOURCES
Goal D: Improve communication and decision-making processes among Town boards, committees, and departments. Continue to engage residents in discussions about community projects and the town’s natural, recreational, and cultural resources, and as volunteers and stewards of these resources.				
D1. Foster a greater level of collaboration among town officials and citizens by Participating in the Connecting Community Initiative (CCI) to ensure communication.	Designate a member from the Open Space & Recreation Committee to regularly attend CCI meetings.	Open Space & Recreation Committee	2023-2033	Volunteer Time
D2. Continue to engage the community in open space and recreation planning efforts.	Assess community outreach efforts regarding the updating of the Open Space and Recreation Plan and work towards greater public involvement.	Open Space & Recreation Committee, Recreation Department	2023-2033	Volunteer Time

Identify trails in Town that are in need of signage and/or trailhead kiosks and install these features where appropriate. Kiosks should include information about use standards and etiquette.

Produce a map of Deerfield showing the location of recreation resources in town that are open to public use. Make printed copies available at the town hall, library, and schools, and an electronic version available on the town website.

Identify areas in Chapter 61, 61A and 61B that would be a priority for preservation or town purchase due to their contributions to climate resiliency (such as forest based carbon storage & sequestration, stormwater management, etc.), significant scenic viewsheds, plant and wildlife habitat, water resource protection, recreation potential, and other public benefits.

Develop signage to indicate town ownership, public access, and allowed parking areas to facilitate increased use of the Pocumtuck Rock, Pine Nook Memorial Forest, and Birchwood Nature Refuge (off Stage Road) town properties on Pocumtuck Ridge.

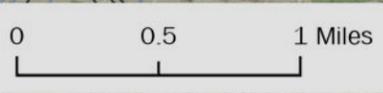
Develop a Comprehensive Drinking Water Needs and Supply Assessment for Deerfield. The study should address supply needs for sections of Deerfield not currently covered by a water district.

Create walking and mountain biking trails to link the Town owned properties of Pocumtuck Rock and the Pine Nook Memorial Forest on Pine Nook Road. The Memorial forest property currently has no loops on town land, but trails could be created to make a loop from Pine Nook Road to Pine Nook Rock.

Complete the North Main Street Park, which would allow for the addition of walking paths and recreational activities for residents.

Develop a trail map/pamphlet showing the full extent of the Pocumtuck Ridge Trail from South Sugarloaf to Canada Hill in Greenfield, clearly delineating where public access is allowed.

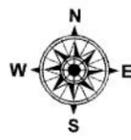
Explore the creation of additional sidewalks in town. Add sidewalks where recommended in the Downtown Deerfield Complete Streets and Livability Plan.



Town of Deerfield Open Space & Recreation Plan 2022

Action Plan

- - - Mohawk-Mahican Trail
- Permanently Protected Open Space
- Wetlands
- Water



Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.

