The Town of Sunderland
Open Space and Recreation Plan
2021 Update

Updated in 2020-2021 by:
The Sunderland Open Space Committee
With assistance from the Franklin Regional Council of Governments
Approved through January 2029.

Based on the 1994 plan, as updated in 2001 by the Sunderland Conservation Commission and Christine T. Fahl, as updated in 2014 by the Sunderland Open Space and Recreation Committee
Funding for the 2020-2021 update was provided from the MA Executive Office of Energy and Environmental Affairs (EEA), and from the MA Department of Housing and Community Development (DHCD)

The Commonwealth of Massachusetts

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June 13, 2022

Megan Rhodes
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301

Re: Open Space and Recreation Plan

Dear Ms. Rhodes:

Thank you for submitting the Open Space and Recreation Plan for Sunderland 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 town is eligible to apply for DCS grants through January 2029. Please contact me melissa.cryan@mass.gov if you have any questions or concerns.

Sincerely,

Melissa Cryan

Melissa Cryan
Grant Programs Supervisor

Cover page photo credit: Jill Kaufman / New England Public Media (NEPM), 2019

2001 Acknowledgements

Many people contributed to the development of this plan. Special thanks to Liz Sillin who provided much of the original input on historical and cultural resources, the staff of the Resource Mapping Unit in the Department of Forestry and Wildlife Management at the University of Massachusetts for GIS technical support, and the many town residents who shared their hopes and visions of Sunderland's future.

2014 Acknowledgements

Given Sunderland's severe financial constraints, we set out to update this plan without spending a dime of town money. And so this was a volunteer effort, with help from town staff and the University of Massachusetts. We extend our warm thanks to: Lee Whitcomb, Sunderland's Assistant Assessor, who pulled together the inventory of protected lands in record time; Margaret Nartowicz, Sunderland's Town Administrator; Cindy Bennett, Administrative Secretary to the Selectboard; Wendy Houle, Town Clerk; and also Richard Harris, Town Planner for South Hadley, who took time from his busy schedule to show us the ropes. Jim Ewen, the town's Recreation Coordinator, made many helpful suggestions. For our all-important Map 7, which shows every parcel of conserved and un-conserved land, we owe a huge thank-you to Prof. Bethany Bradley in the Department of Environmental Conservation at the University of Massachusetts, who teaches a course in Geographic Information System (GIS) mapping, and to her student Caitlin Gardipe. *Without whom not!*

2021 Acknowledgments

It was gratifying to be able to build this update on the solid bedrock of our 2014 plan. Although the upheavals of COVID-19 delayed our work by a year, ultimately we were able to meet via Zoom and make steady progress. Warm thanks go above all to Alyssa Larose, senior planner at the Franklin Regional Council of Governments, who was instrumental in coordinating this update and adding important new sections on climate-change resilience. She lightened our work in every way! Town Administrator Geoff Kravitz was also wonderfully efficient and helpful at every turn. As climate change already begins reshaping our lives here in Sunderland, we see how

our open space and forest lands become increasingly critical to our wellbeing. All of us are grateful for the natural beauty of our little town, and for the many ways we can get outdoors and enjoy it. May we plan well for the future, expand opportunities for all, be a little bit lucky, and continue to thrive!

Sunderland Open Space Committee:

Nancy Pick, Chair
Meghan Arquin
Douglas Fulton
Teresa Jones
Jennifer Unkles

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1. Plan Summary

We are happy to report that Sunderland has made real progress since its last Open Space and Recreation Plan was approved in 2014. Several generous state grants have helped the town meet the goals laid out in that plan, by creating Riverside Park and improving access to the Connecticut River. In addition, Sunderland has partnered with local land trusts to protect key parcels of farmland and forest. Just as importantly, a core of Sunderland volunteers has devoted their skills, brainpower and countless hours toward accomplishing several major projects. In all, since 2014, Sunderland has made significant strides toward expanding outdoor recreation opportunities for its diverse population, protecting its water supply and rare habitats, preserving its rural character, improving river access and generally enhancing its green profile.

During the darkness of the pandemic in 2020, the beauty and peace of nature soothed many a Sunderland soul. More residents than ever headed out to explore—perhaps taking the new Riverside Park pathway in a snowstorm, or finding a daily walking routine on farm roads, or climbing Mt. Toby as the leaves fell. The recently completed pathway and preservation projects gave people access to Sunderland's great outdoors when they needed it most, from river to field to mountain.

Following are highlights from Sunderland's open space and recreation accomplishments since 2014:

- **Sunderland Riverside Park** opened in 2019, creating a beautiful pathway along the Connecticut River and around the town playing fields. The ¾-mile loop is fully ADA accessible. A pavilion was built with views overlooking the river. Nearby parking was expanded and improved, to allow space for boat trailers. In order to make the pathway possible, the town first negotiated a land swap in 2016 with civic-minded abutters. The Riverside Park project was then funded by a state PARC grant matched by the town, drawing on Community Preservation Act (CPA) funds.

  The all-day celebration for the park's opening in July, 2019 involved an ambitious list of programs, including a guided paddle on the Connecticut River, live music, a fishing clinic, and talks on such topics as river conservation and Native American life in Sunderland. Several hundred people attended the celebration, bringing together a wide range of townspeople of all ages and abilities.

In 2019, Sunderland Riverside Park won an accessibility award from the Western Massachusetts Stavros organization.

- A **second phase of Sunderland Riverside Park** development was begun in 2021, adding a storage building for the kayak lending program to be run by the Sunderland Public Library. In additional, bathrooms next to the town playing fields are scheduled to be renovated, and a sidewalk is being added along the boat ramp access road. Again, the project was jointly funded by the town, drawing on CPA money, as well as a PARC grant from the state.

- In 2020, **Sunderland Water District** obtained 40 acres of land at the base of Mt. Toby that are critical for protecting the town's water supply. The funds for buying the land were obtained with a state Drinking Water Protection grant, matched by the town (using CPA money as well as the Conservation Trust overseen by the Sunderland Conservation Commission). Kestrel Land Trust of Amherst was instrumental in negotiating the sale, providing a bridge loan and covering administrative costs.

- In 2020, the town completed plans for **improvements on North Main** Street, working with the state Department of Transportation. The plan honors the town's historic linear common design, creates bike lanes, improves sidewalks and aims to protect the historic Buttonball sycamore tree and other trees along the street.

- In 2018, the **Sunderland Boat Ramp** near the Sunderland Bridge was graded and paved, after many years with the access road being nearly impassable. Happily, the work was completed in time for the town's Tricentennial celebration. The project involved complex efforts to trace ownership of an adjacent triangular plot and reimburse the owners. Fortunately, the Connecticut River Watershed Council was able to help fund the reimbursement, using fines obtained from its 2016 federal lawsuit against river polluters.

  Another major step was transferring responsibility for maintaining the boat ramp to the state Department of Fish and Game. The Sunderland Boat Ramp is operated as a "fisherman's access" for small boats only. The mostly shallow stretch of river to the north makes it a perfect (and now popular) place to paddle.

- In June of 2018, the town held a fabulous **Tricentennial Celebration**, an entire weekend of ambitious programming that brought the entire community together. The main fair

took place behind Town Hall on the land that is now part of Riverside Park. Outdoor programs included a parade, live music, performances by Sunderland Elementary School students, dance and karate demonstrations, food tents, children's activities, historical theater in Sunderland Cemetery, fireworks and polka dancing.

- Nearly 200 acres of prime farmland have been added to the **Agricultural Protection Program** (APR) in Sunderland since 2014, bringing the total protected acreage to 1,300 acres. This represents 14 percent of the town's total land area.

- In 2018, work was done to preserve the **historic Elm Tree** behind the Sunderland Town Library.

- In 2015, a new softball field, **Merritt Field**, was opened at Sunderland Elementary School. The project involved much hands-on labor by town volunteers.

- In 2014, a **new solar field** was built on town land near the Sunderland Elementary School.

- Mainly through the state Complete Streets program, several **new sidewalks** have been added in Sunderland since 2014. Phase 1 of the grant funded sidewalks on: South Main Street and Garage Road, as well as pedestrian improvements on Hadley Road and Old Amherst Road. In 2021, Phase 2 of the grant funded sidewalks on South Main Street (west side) and Silver Lane, as well as improved bicycle accommodations on Falls Road. In addition, the state Department of Transportation is planning to construct new sidewalks on both sides of Route 116 near the town center, from the Route 47 intersection to Garage Road.

- Since 2014, **the town website** has been continually redesigned and improved, greatly enhancing communication between the public and town administration, boards and organizations. Many resources are now available on the website, including the town's wetlands bylaws, a quick-and-easy guide to wetlands regulations, and the town's Open Space and Recreation Plan. Also, a **town wide phone/email notification system** is now in place and used regularly, to convey important messages about elections and other town business.

With these many accomplishments related to open space and recreation over the past seven years, Sunderlanders have much to celebrate. But there remains more work to do, as the community re-emerges from the isolation of the pandemic. In the wake of COVID-19, Sunderland is experiencing development pressure that it has not seen in many years. As Americans flee cities and buy homes in rural areas, prices in Sunderland have been pushed up for both open land and existing houses. Owners of the last remaining large tracts of undeveloped land in Sunderland, particularly in the area of Plumtree Road close to Amherst, are increasingly opting to sell to developers.

Meanwhile, much of Mt. Toby's critical habitat remains in private hands and unprotected from development. In the southern part of town, important wildlife corridors to Mt. Toby remain unprotected and vulnerable to development. Also, residents of the southern part of town are requesting pathways and sidewalks, where there are currently none at all. Many more people are out walking and cycling in that neighborhood since the 2020 opening of a major new housing development, North 116 Flats, with 150 rental units (25 percent designated as affordable housing). Most the new renters are affiliated with the University of Massachusetts, which continues its rapid growth.

Many additional ideas have been suggested by the public for enhancing Sunderland's quality of life, such as creating: a pickle ball court, pollinator gardens, climate resilience programs, better parking at trailheads, a water park, a longer riverside path, more bike lanes, more playgrounds, trash cleanup programs, and outdoor activities for the elderly. In addition to public input, ideas have come from town boards that have also spent much time and energy forming plans to improve open space and recreation resources in town, including the Community Preservation Committee, the Selectboard, the Community Pathways Committee, and the Conservation Commission.

In setting priorities and ultimately forging ahead with such projects, this plan includes a Seven-Year Action Plan designed to guide important decisions about the use, conservation, and thoughtful development of the Town's land and open space and recreational resources. The Open Space and Recreation Committee looks forward to coordinating with other town volunteers, town boards and departments, as well as government and private agencies. Through these efforts, Sunderland will become an even more beautiful, green and great place to live.

2. Introduction

2. a. Statement of Purpose

Sunderland is blessed with many beautiful and unique features including: scenic views of forested mountains, productive farms, and the Connecticut River; mountain streams tumbling down hemlock-lined ravines and waterfalls; rock ledges rich with ferns and wildflowers; rare and special wildlife and fisheries habitats; clean, pure aquifer-supplied water; and many recreational opportunities. This Open Space and Recreation Plan update was initiated to identify opportunities and challenges for recreation and the conservation of open space and natural resources in Sunderland. Through this planning process, we strove not only to inventory the natural resources and recreational opportunities in town, but also to identify the natural resource conservation and recreation priorities of townspeople. It is hoped that this plan will also help to coordinate the actions of the various town committees and boards for zoning, planning, land acquisition, and funding. To that end, the Open Space and Recreation Committee will seek endorsement of the state approved OSRP by all town boards and committees to help encourage broad support for its implementation and sustainability.

2. b. Planning Process/Public Participation

Through this planning process the following key steps have been accomplished:

- Compilation of an inventory listing all properties with conservation restrictions, as well as all properties owned by government and not for profit land conservation entities;
- Formulation of open space, conservation, and recreational goals and objectives for the town;
- Determination of needs of the town for recreation, open space and natural resources conservation and analysis of the progress made towards these needs;
- And formulation of a seven-year action plan based on goals, objectives and needs analysis for the town.

The Town of Sunderland first developed a draft open space plan in 1987, though it never received final approval. In 1994, the Conservation Commission contracted with Christine Fahl, a planning consultant, to research and write a plan, which was approved. That plan was then updated in 2001 by Kelly Druzisky and Kerri Davis, under the direction of the Sunderland Conservation Commission. Although they submitted a comprehensive document to the State, the 2001 update never received final approval. (Unfortunately, the approval process broke down at

the very end. So it goes, when a small town relies on volunteer labor!) A 2014 update was prepared by the town's Open Space and Recreation Committee, formed in 2012, and received formal State approval. The Open Space Committee reconvened in 2020 to update the plan once again. The Committee includes representation from the Conservation Commission, Community Preservation Committee, Recreation Committee, agriculture / farming community, and the Community Pathways Committee.

There were three basic steps in writing this plan. The first step was to gather information on the current status of Sunderland's open space and recreational resources. The second step focused on determining the future open space and recreational needs of Sunderland. These first two steps were facilitated by using Mass GIS (Geographic Information System) and other mapping tools that provide maps of a variety of elements (such as prime agricultural lands, water resources, and recreation sites) that are important in the planning process. These maps, in combination with discussions with a variety of town committees and a town survey provided the information to evaluate open space and recreation needs in town. The final step was to analyze the progress made towards the goals and objectives cited in prior plans and use this information to help identify overall plan goals and objectives, and to develop Sunderland's current 7-year action plan.

For this update, an important new element was the integration of climate change data into the plan. Sunderland became a certified Municipal Vulnerability Preparedness (MVP) community in 2020, after completing a Community Resilience Building workshop, outreach to farmers, and a public listening session. Results from the MVP planning process were incorporated into this update, particularly when relating to Sunderland's open spaces, environment, and recreation amenities. Threats from climate change, as well as opportunities to build resilience to climate change, are included in the inventory sections of the plan and the Action Plan.

Public participation was initiated early in the update process. A public survey was conducted in 2020 to gather feedback on open space and recreation needs and priorities. Nearly 500 townspeople responded. The results of the survey are included in the appendix, and are summarized in Section 7, Summary of Needs. A public forum was held on August 2, 2021. The Town conducted significant outreach to attract forum attendees, including posting an announcement on local access TV (Frontier Cable Access Television), sending out an email invitation to the town wide email list, and posting physical fliers throughout town. The forum was held as a hybrid meeting, with Committee members and several residents attending in

person, while a number of people participated remotely. More than a dozen residents discussed their ideas and completed a survey to identify their open space and recreation priorities.

3. Community Setting

3. a. Regional Context

The Town of Sunderland is located in the northern part of the Massachusetts portion of the Connecticut River Valley (see Map 1), bordered to the west by the river. Out of 26 towns in Franklin County, Sunderland is third smallest in terms of land area, at 9,440 acres. Sunderland is bordered by the towns of Hadley and Amherst to the south, Leverett to the east, and Montague to the northeast. Deerfield and Whately are located across the Connecticut River to the west. In 2019, the town had a total population of 3,647 people. This equates to a population density of approximately 248 people per square mile.

Located within the Connecticut River Watershed, the town's nearly 15-square-mile area encompasses river floodplains, rich agricultural lands, rolling hills, and steep, mountainous terrain. This rich and varied terrain is part of what makes Sunderland so appealing. The town's landscape and terrain also helped shape the patterns of development in Sunderland. Like many Franklin County towns, Sunderland's population settled first along the river, while much of the flat flood plain land was—and still is—used for farming. The primary north/south road, Route 47, runs alongside the Connecticut River.

Many areas in the town—such as Mt. Toby, the Connecticut River, and prime agricultural land—are regionally important for conservation, recreation, culture, and economy. Sunderland contains almost 2,000 acres of prime farmland soils, representing 21 percent of the town's area, located mainly along the Connecticut River and to the south and west of Route 116. These soils generally require less energy and water to produce crops, and are a regionally and nationally significant resource. The impacts of climate change on farmland, and the need to grow more of the world's food using less energy, make the protection of prime farmland soils in our region even more important.

Sunderland is also rich in biological diversity. There are more than 20 endangered or threatened plant species in town, as well as numerous rare or endangered animal species. These conservation, recreational and scenic values of Sunderland are vitally important to the regional landscape. Roughly 75 percent of Sunderland is considered Core Habitat by the Massachusetts Natural Heritage and Endangered Species BioMap2 program. Core Habitat identifies key areas that are critical for the long-term persistence of rare or endangered species, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Sunderland's Core Habitat is part of a larger block of contiguous open space moving north and south along the

Connecticut River corridor and east towards the Quabbin Reservoir. These large, intact habitat corridors are critical for supporting biodiversity and species migration as climate change accelerates.

Sunderland is located within easy commuting distance of several of the region's major cities and employment centers. Northampton and Greenfield are approximately 15 miles away, while Holyoke and Springfield are within 30 miles. The University of Massachusetts, Amherst College, Hampshire College, Smith College, Mt. Holyoke College and Greenfield Community College are also easily accessible from Sunderland, via good roads and a free regional bus system. Many of Sunderland's residents travel outside of town for work and shopping.

Sustainable Franklin County, the regional plan developed in 2013 for Franklin County, identified strong support for locating housing near jobs and transit, while also protecting the region's farmland and forests. Because of the town's access to transit, state routes, employment, and recreational opportunities, and existing water and sewer infrastructure, the Sunderland Village Center is identified in the plan as an emerging development area to target infill housing and businesses.

Two scenic byways are located in Sunderland. The Route 116 Scenic Byway originates in Sunderland Center and extends west into the Berkshire hilltowns. The Connecticut River Scenic Byway is a nationally designated scenic byway extending north/south along the Connecticut River. In Sunderland, the byway travels along Route 47.

Sunderland is part of several regional recreational resources. The Connecticut River Greenway State Park spans the Connecticut River valley in Massachusetts. Sunderland's boat ramp at Riverside Park is one of a series of river access points highlighted on the CT Greenway State Park website. Sunderland is also part of the Franklin County Bikeway, a series of marked on and off-road bicycle routes throughout the county, and part of the Connecticut River Scenic Byway Bikeway which spans the Connecticut River valley in Massachusetts, Vermont, and New Hampshire. The Robert Frost Trail, a 47-mile long hiking trail from South Hadley to Wendell, passes through Mt. Toby State Forest in Sunderland.

3. b. History of Sunderland

Sunderland was an important area of pre-historic and historic settlement. Prior to European settlement, native peoples used a major north-south trail following the river terrace near North Silver Lane. Numerous areas throughout town are believed to have been sites used by Native Americans, including: the Long Plain delta, quarry sites around Mt. Toby, and North Sunderland around Whitmore Pond. These historic and archeological resources give the community special character. Native planting fields were probably established on the flood plains in the north of town. Northern Sunderland most likely demarcated the boundary between the territory of the Norrwottucks, to the south, and the Pocumtucks, traditionally centered in Deerfield.

The present site of Sunderland was purchased from the Norwottucks in 1674. The town was first known as Swampfield, so named for the abundance of wetlands found by the first English settlers. Swampfield was separated from neighboring Hadley in 1673, and the Connecticut River served as the border with Deerfield, just as it does today. The first settlers in Swampfield abandoned their settlements during the upheaval that occurred during King Philip's War (1675), when settler massacres occurred in neighboring Deerfield and Northfield. In 1714, the town was re-settled and originally included parts of Montague and Leverett, as well as present-day Sunderland. Houses dating back to the early 1700s still stand in Town and serve as a valuable record of Sunderland's history. The Sunderland Historical Society's **History through Houses**, included in the Appendix of this plan, provides details of some of the Town's historic houses. The primary focus of Sunderland's colonial residents was agriculture, particularly crop production. In the early 19th century, the commercial tobacco and onion industries developed. Tobacco grows best in the rich flood plain soils found throughout the southern part of town, and by 1865, tobacco was Sunderland's leading crop. By 1885, Sunderland was also the leading onion producer in the valley. The pattern of agricultural lands that we see today, with the majority of farms located in the river flood plain, is the result of this period. Also, very much evident from this period are the numerous tobacco barns that grace the landscape.

Although farming was the primary economic activity found in Sunderland, there were also numerous supporting industries, such as sawmills, gristmills, farm machinery suppliers, tobacco shops, blacksmiths and gravel operations. In the early 1800s, Sunderland also had a major broom making industry, one of the largest in the area. To this day, there are many similar industries, including large gravel removal operations and numerous vegetable farms.

Sunderland has always been important to regional transportation. The town was a historical crossing point of the Connecticut River, first with ferries, and then by bridge as early as 1812. Sunderland is still a crossing point, with the Route 116 Bridge a major artery for the region. The other two bridges crossing the river in the northern valley are 10 miles away.

By the turn of the 20th century, development patterns throughout the valley were strongly influenced by the extensive system of inter-urban trolleys. Sunderland was home to the "Amherst to Sunderland Street Railway." Residential and commercial development sprang up along these transit lines, creating linear settlement patterns. This settlement pattern is still seen today, as evidenced by the "strip development" along Route 116. Today, many residents who feel frustrated by their dependence on cars wish the street railway could be rebuilt!

The growth of the University of Massachusetts's population led to increased housing production in the second half of the 20th century. Sunderland's population doubled between 1955 and 1970. Several large apartment complexes were built, including the Cliffside Apartments in 1971. With more houses and apartments, the town has gone from a farming community to a bedroom community, giving easy access to out-of-town jobs, especially at nearby institutions of higher education. This trend has continued into the early 21st century. A new 150-unit apartment complex was completed in 2020.

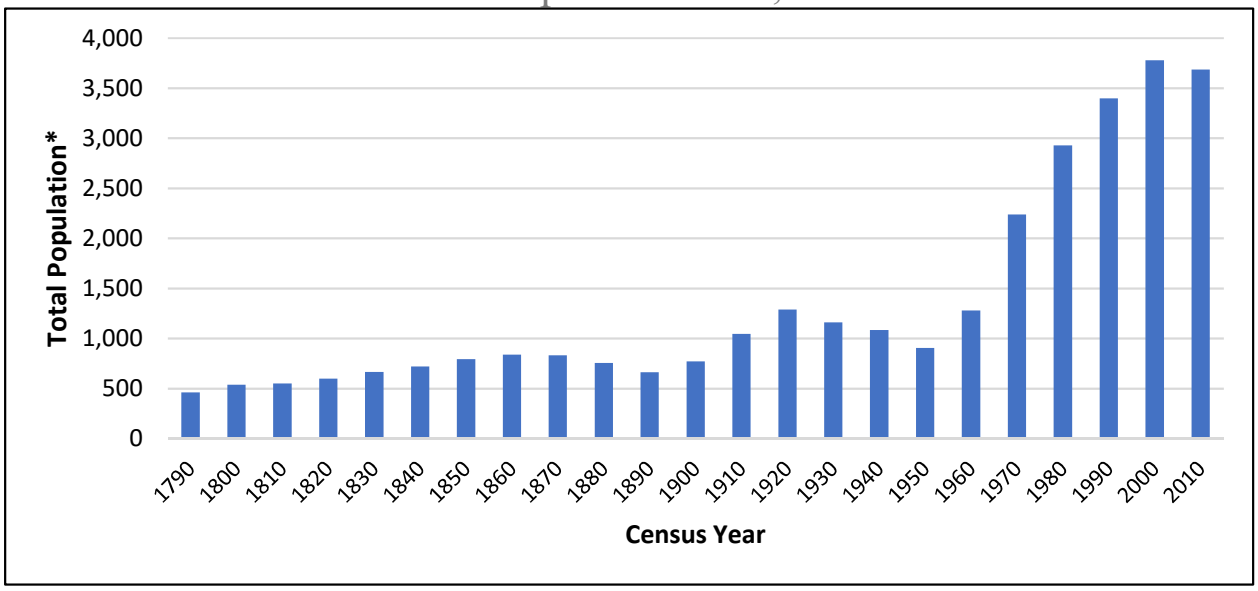
Recognizing the housing pressures, the town also began to focus on open space protections to offset the 400 acres of farmland lost between 1970 and 1999. There have been significant efforts to protect farmland, forested land, and open space. For example, by 1990, the town had permanently preserved more than 300 acres of farmland through the Agricultural Protection Restriction (APR) program. Recently, the town has been especially focused on Mt. Toby and the Riverside Park area. Efforts include formalizing and mapping the trail system on Mt. Toby, creating a river walk along the Connecticut River, and improving the facilities at Riverside Park.

3. c. Population Characteristics

Historically, Sunderland has experienced several periods of significant population fluctuation. Between 1790 and 1860, the town recorded significant growth, reaching a peak of 839 residents in 1860 (Table 1). During the post-Civil War era, Sunderland's population declined to 663. However, after 1890, there was a tremendous increase in Central European immigrants, mostly from Poland. Between 1890 and 1920, the town's population more than doubled to 1,289 residents. By 1950, Sunderland's population had declined to 905 residents. Since the 1950s, Sunderland has once again been growing. Like many communities in the Connecticut River

Valley, Sunderland experienced significant growth between 1970 and 2000. Between 1970 and 1990, the population of Sunderland increased by more than 65%, to 3,399 people. Then between 1990 and 2000, the population grew by another 11% to 3,777 people. Between 2000 and 2010, the town's population decreased slightly, by 2.5 percent, to 3,684. The recession of 2008 has likely contributed to this change, as development slowed to a mere trickle. The trend is estimated to have continued through the 2010's as the most recent population estimates show a slight decline of population to 3,647 in 2019. Franklin County as a whole has experienced a declining population for the past two decades.

Table 1: Sunderland Census Population Data, 1790 - 2010



Source: US Census and Massachusetts Census, various years. *Early census counts (18th century, 1st part of 19th century) include only free, non-slave persons.

The COVID19 pandemic has impacted the real estate market in Franklin County. Both the number of home sales, and the median single family home price, were higher during the second half of 2020 than at the same time the previous year (Figure 1). These trends are continuing into 2021. As of March 2021, the single family median sale price in Franklin County was $265,000, compared to $245,000 in 2020, and the number of days on the market was 34, compared to 67 in 2020. Anecdotally, realtors have reported an increase in homebuyers from out of the area, especially from urban areas like Boston and New York. The lack of housing supply, coupled with an influx of buyers from places where average incomes are higher than in Franklin County, is driving prices up. In Sunderland, the number of sales has increased during the pandemic, similar to county trends, but median sale prices during COVID19 are comparable to pre-COVID

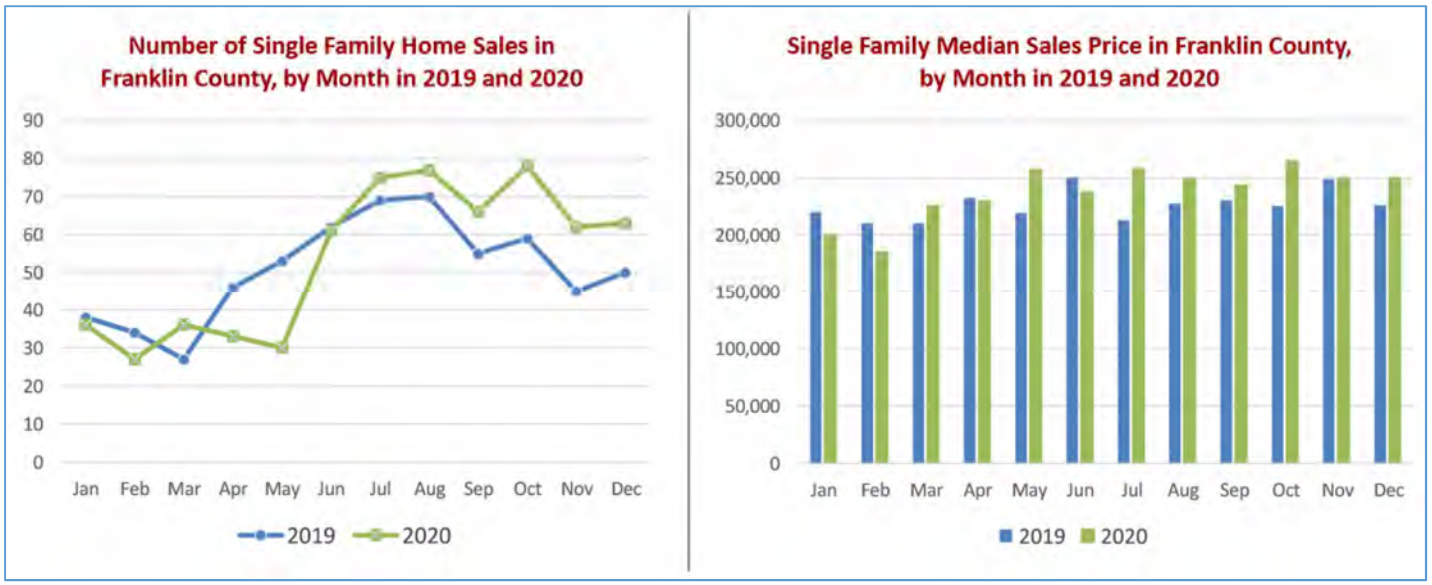
levels in 2019. Sunderland's median single family home price in 2019 was $350,000, much higher than the county median of $226,500.[1] At the writing of this update, it is unclear whether these trends will continue beyond the pandemic.

Population trends over the next seven years are somewhat difficult to predict. The most recent projections from the UMass Donahue Institute indicate Sunderland's population will decline in the next two decades. However, recent trends contradict these projections and show that the population in town is growing and development pressure on the last remaining unprotected farmland remains. While the vast majority of Sunderland residents want to preserve the town's rural character, development pressure has returned. Most recently in 2021, a 150 unit apartment complex, known as North 116 Flats, was built off of Route 116 and Plumtree Road near the border with Amherst. The complex is expected to mostly cater to students attending UMass Amherst or other colleges in the region. The apartments were built utilizing a Comprehensive Permit under MGL Chapter 40B, which allows developers to build at higher densities than otherwise allowed in a town if at least 25% of the apartments are restricted as affordable. Thirty-eight units at North 116 Flats are affordable, and cannot be rented to student-only households.

The Town of Sunderland has also been proactive at meeting housing needs through supporting development that is consistent with community character. The 120 North Main Street senior affordable housing project, initiated by the Town, broke ground in March 2021. The development will include 33 affordable senior apartments on the property located in the center of town, including rehabilitation of an existing historic home on the site. These new developments increase the population of town, and may also increase demand for recreational facilities and programs for children and seniors.

[1] Realtor Association of Pioneer Valley: https://www.rapv.com/media-news/sales-reports/; Massachusetts Department of Revenue, Division of Local Services LA3 Parcel Search.

Figure 1: Franklin County Home Sales Data, 2019 to 2020 Comparisons



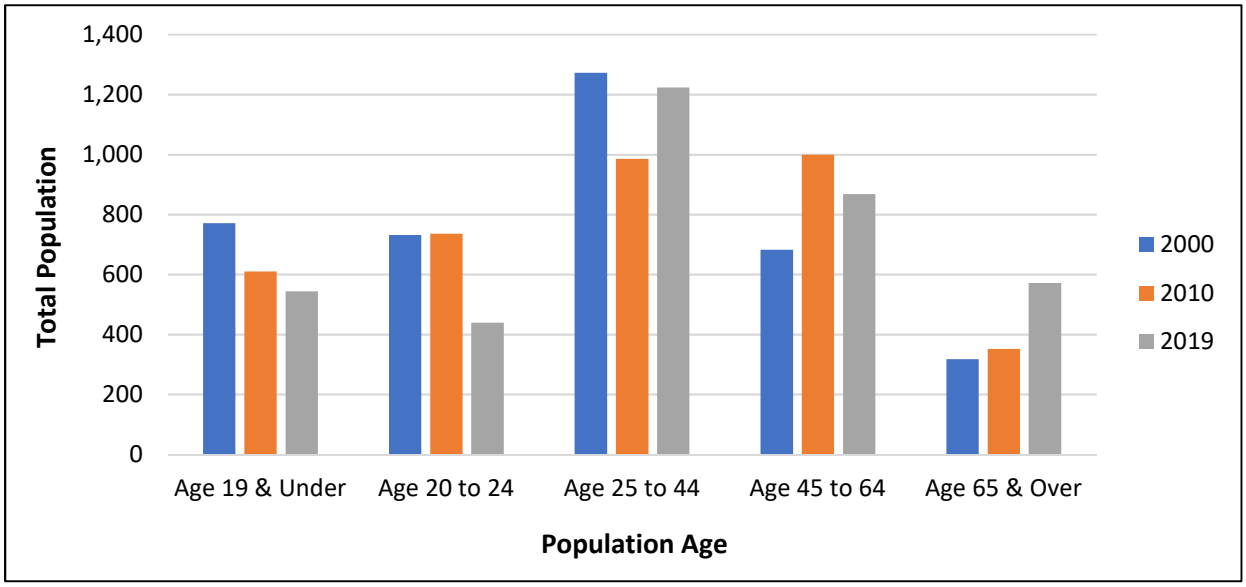
Source: Massachusetts Association of Realtors.

In the past, the town has seen dramatic shifts in its demographics. According to Census data, before 1970, people aged under 17 and over 40 were a majority in town. By 1993, the number of 18- to 35-year-olds had risen sharply, most likely due to the increase in college-aged residents living in the apartment complexes in Town. Sunderland is unique among Franklin County towns in having a high percentage of multi-family housing, and approximately half of the town's housing is rental housing. Together, the four major apartment complexes in town contain 683 housing units, equal to 41 percent of the town's housing stock. The new North 116 Flats development adds another 150 apartments to the town's multi-family housing. Many of these are rented by students affiliated with the University of Massachusetts at Amherst, located less than 10 miles to the south.

As a result of the college student population residing in town, Sunderland has a larger number of residents between the ages of 20 to 24 compared to other Franklin County towns, and a much younger median age (34 years in 2019, compared to a median county age of 47). Taking the college age group out of the equation, Sunderland's population is seeing similar trends as the region. The population age 19 and under is decreasing, while the population over 65 is increasing. This reflects the aging of the Baby Boomer generation (born between 1946 and 1964), and other social trends such as smaller average family sizes and economic factors. The 2019 estimates for the 20 to 24 and 25 to 44 age groups are not accurate because the college

population is not taken into consideration. It is likely that the 20 to 24 age group has remained consistent or even grown since 2010.

Table 2: Sunderland Population Change, 2000 – 2019, by Age Group



Source: U.S. Census Bureau, 2000, 2010 Decennial Census, and 2015-2019 American Community Survey Five-Year Estimates.

Only a small number of Sunderland's population works in town. The vast majority of residents are affiliated with the University of Massachusetts in some way, either as students or as employees. The most common occupations are professional and management, particularly educational services. The various employers in town tend to be small (20 employees) service-oriented industries, such as Sinauer Associates, a publishing house, and All States Asphalt and Delta Sand and Gravel, involved in road construction and gravel operations.

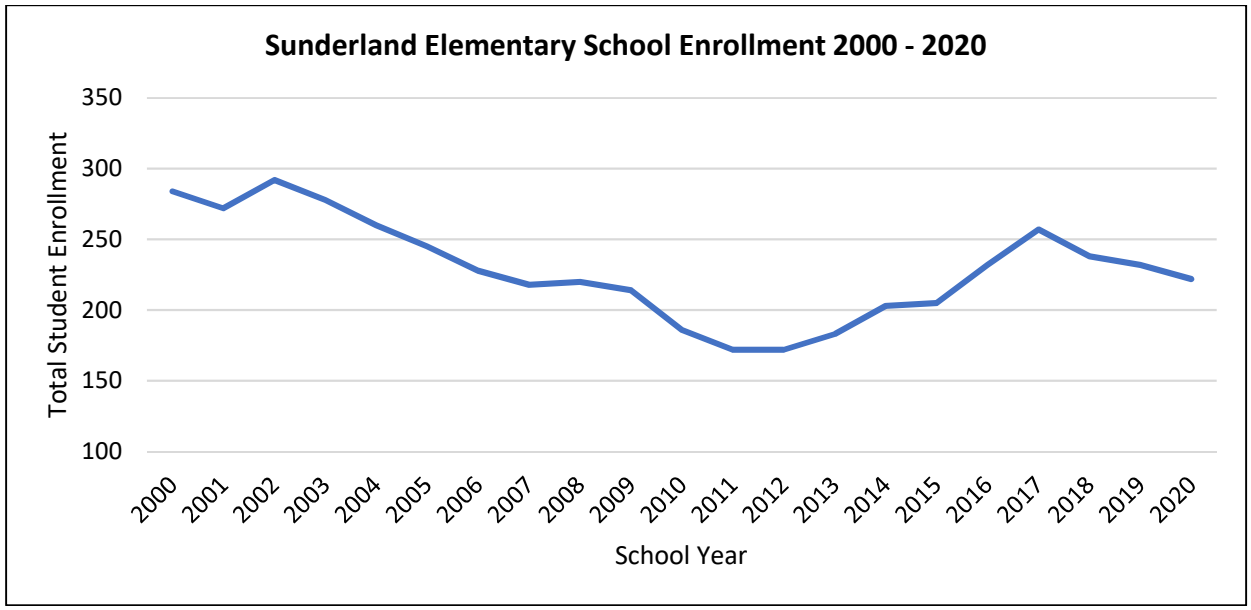
Agriculture plays an important role in the culture and economy of the town, providing local food, jobs, and cultural activities and tourism. Farm businesses in town include fruit, honey, dairy, livestock, poultry processing, vegetables, and more. Local farm products are sold through wholesale to stores and restaurants, and to consumers through CSAs, farmers markets, and farm stands. The Sunderland Farm Collaborative is a “group of local farmers who teamed up to offer our products in a convenient online marketplace.” Customers order online from a variety of producers, and can choose home delivery or pick-up from a variety of locations. Local farm events, such as Mike’s Maze at Warner Farm and Kitchen Garden Farm’s Chile Fest, draw hundreds of people to town each year.

Pre-COVID, an estimated 19% of Sunderland's workforce used public transportation to get to work, a much higher percentage than other Franklin County towns. Sunderland is served by both the Franklin Regional Transit Authority (FRTA) and the Pioneer Valley Transit Authority (PVTA). The PVTA provides robust bus service between Sunderland and Amherst to accommodate the students and staff at UMass Amherst.

Between 1970 and 1990, there was an 81% increase in proportion of children (ages 0-17) within the town's population. Since 2000, the number of children in town has declined. The recreational needs of this age group tend to be greater than for other age groups. The number of children enrolled at Sunderland Elementary School has declined in recent years. When the new school was built in 1989, more than 300 children attended. That number has gradually fallen, dropping to a 20 year low of 172 in 2011 and 2012. Since then, enrollment has generally been within the range of 200 to 250 students each year. Total enrollment includes School Choice students who attend the school but who live in other communities. Table 4 shows how resident enrollment has fluctuated over the past six years, with an overall decline in enrollment since 2016.

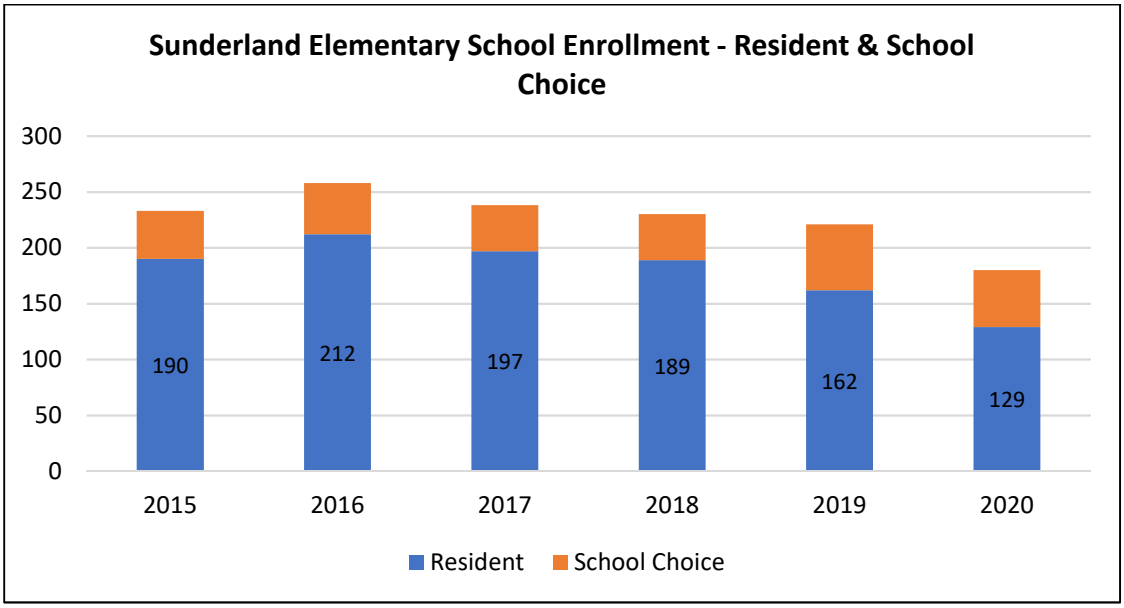
Participation in the town's youth sports teams has also remained consistent in recent years, and thus there has not been pressure to increase the number of athletics fields. There is a need to improve the existing fields, however.

Table 3: Total Enrollment at Sunderland Elementary School, 2000 - 2020



Source: Massachusetts Department of Secondary and Elementary Education, School District Profiles.

Table 4: Sunderland Elementary School Enrollment by Residency, 2015 - 2020



Source: Frontier Regional School District.

3.c.1. Aging Population

According to the UMass Donahue Institute, the average age of the Sunderland population is projected to rise over the next few decades, matching a nationwide trend. The percent of residents age 65 and over is expected to increase from 10 percent in 2010, to 27 percent in 2030.[2] However, Sunderland's high proportion of college-age students may keep the town's average age somewhat lower than in the rest of the county. As residents reach retirement age, they may spend more hours outdoors and seek more recreation opportunities, such as fishing on the Connecticut River, hiking, bird watching, and possibly cycling (if safe routes can be created). Moreover, an aging population may increase demand for handicapped-accessible recreational facilities and for elder-focused recreational programs.

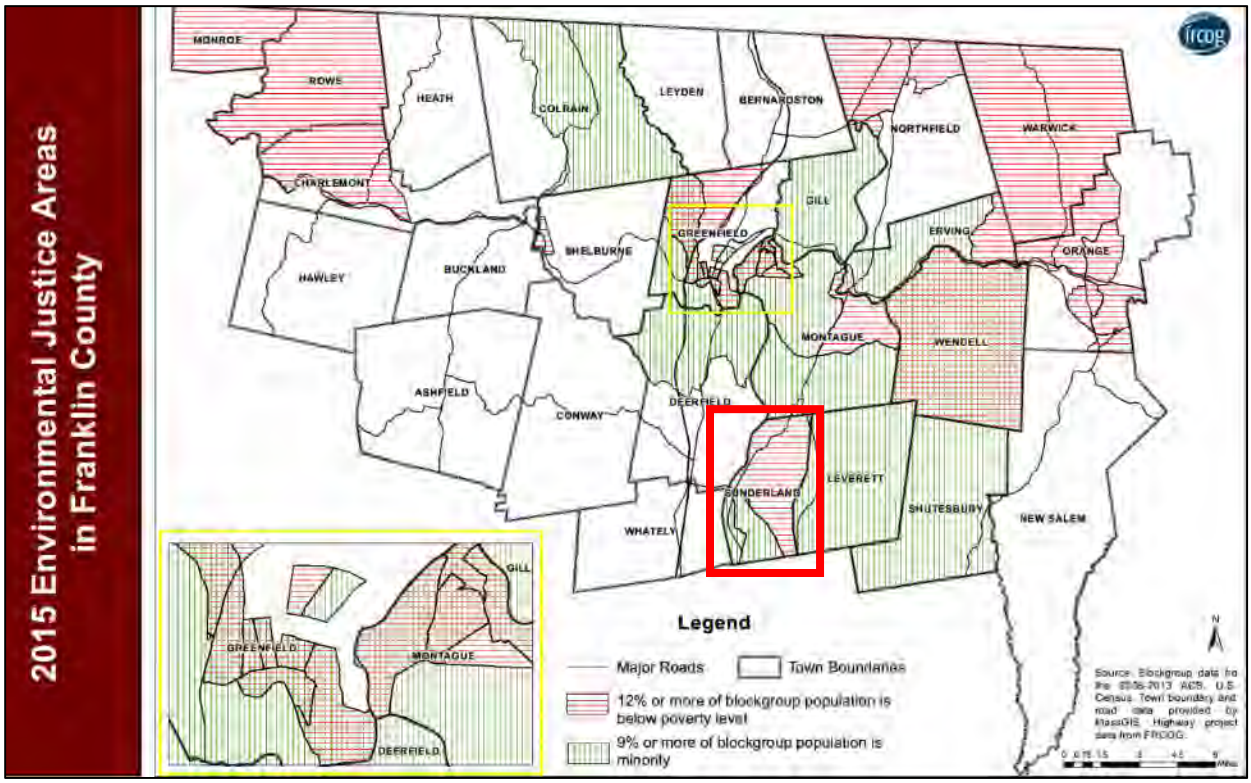
3.c.2. Environmental Justice Populations

Environmental Justice (EJ) Areas are defined as U.S. Census block groups in which racial minorities comprise nine percent or more of the population and/or at least 12 percent of the block group's population lives below the poverty level. Based on this analysis, as of 2015, there are several Environmental Justice Areas within the County, including Sunderland. See Figure 2: Environmental Justice Areas. As of 2019, it is estimated that 13.1 percent of the population in Sunderland lives below poverty, compared to 9.7 percent in Franklin County, according to the U.S. Census Bureau's American Community Survey estimates.

The presence of so many students living in Sunderland causes the median household income of the Town to drop (Table 5). It is worthwhile to note that while the incomes may be low in the Town, it does not necessarily accurately reflect the economic condition of students who may be receiving additional support from their families or other sources.

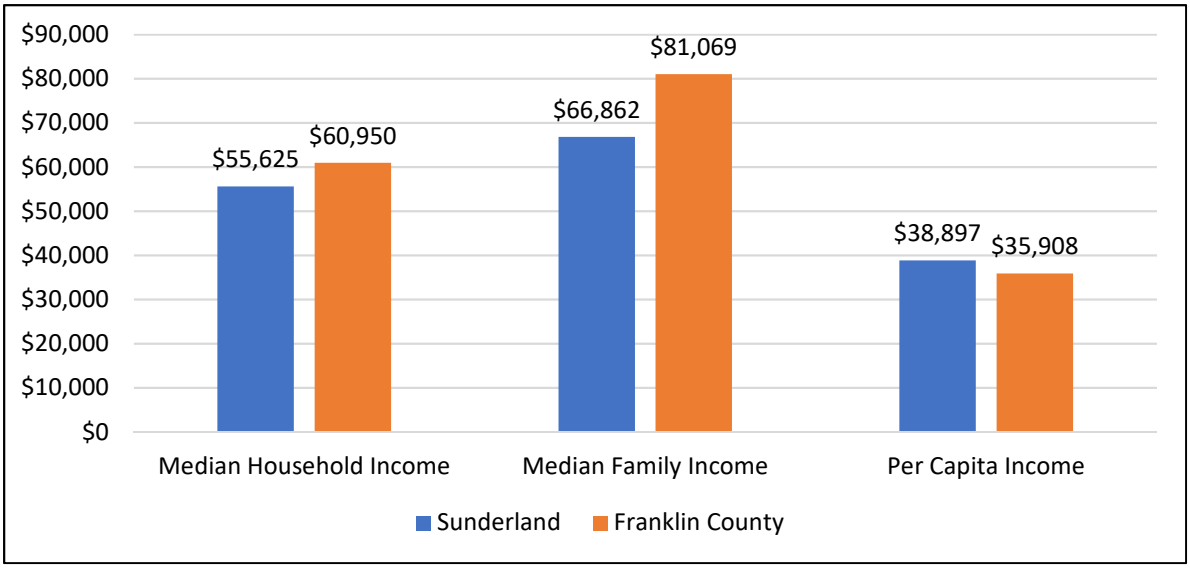
[2] UMASS Donahue Institute, Population Projections, November 2018.

Figure 2: Environmental Justice Areas in Franklin County



Source: 2015 Regional Transportation Equity Analysis for Franklin County, FRCOG. Sunderland is outlined in red.

Table 5: Sunderland Income Estimates Compared to Franklin County, 2019



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

Sunderland has a much more diverse population than other Franklin County towns: 82% of the population is white, 7% is Asian, 6% identify as two or more races, 3% is Native Hawaiian or Other Pacific Islander, and 2% is Black or African American. Five percent (5%) of Sunderland's population is Hispanic or Latino (of any race).[3]

The town's four large apartment complexes – located on Routes 116 and 47 - are rented primarily by college and graduate students at the University of Massachusetts. Residents of these apartment complexes can take buses run by Pioneer Valley Transit Authority, which stop close to all four apartment complexes, run frequently during the school year, and are free to students. This bus service provides easy access to town sports fields and to the Connecticut River, as well as to sports and recreation facilities at the university and in the town of Amherst.

3. d. Growth and Development Patterns

3.d.1.Patterns and Trends

European settlement of Sunderland began as a traditional New England farming town, with a village center, surrounded by farms. As agriculture increased, new villages, such as North Sunderland, developed. With increased development of farmlands into housing, this pattern of traditional development is increasingly difficult to discern.

Sunderland experienced significant population and housing growth between 1960 and 2000. In 1960, for example, the town had 1,279 residents (U.S. Census). By 2000, its population had grown to 3,777 people, almost tripling the population in 40 years. Similarly the number of housing units in town has close to quadrupled during the 1960-2000 period, increasing from approximately 450 housing units (1960) to 1,668 housing units (2000). From 2000 to 2010, the town's population declined slightly, but total housing units continued to increase to 1,729.

During the 1960s and early 1970s, Sunderland's growth was driven by the expansion of the University of Massachusetts at Amherst, and the construction of a number of large apartment complexes in town. Four apartment complexes built in Sunderland during this time contain an estimated 666 housing units. The apartment complexes primarily served students from the University of Massachusetts at Amherst and other local colleges, as well as families and young working adults.

[3] 2015-2019 U.S. Census Bureau American Community Survey Five-Year Estimates.

The growth of housing in Sunderland has slowed since 1990. From 1990 to 2000, the number of housing units in town increased by 164, or 11% (U.S. Census). This pace of construction was slower than previous periods, but still faster than that of Franklin County and Massachusetts as a whole and many neighboring towns. Between 2000 and 2010, new housing units increased in town by 61 units, or 4%, a smaller rate of growth than the county and some surrounding towns. The recession beginning in 2008 slowed housing production in Sunderland and the region.

Over the period from 2005 – 2018, an average of 3 building permits for new homes were issued each year, for a total of 39 permits. All of these were for single family homes.[4] Although town zoning encourages clustered developments, the new single-family homes were scattered, built mainly on former farmland in the south part of town. In 2019, 150 units were permitted at the North 116 Flats (formerly known as the Sugarbush Meadows project) development off of Plumtree Road and Route 116. As noted previously, these apartments were permitted through the Comprehensive Permit process under MGL Chapter 40B, which allows developers to build at higher densities than otherwise allowed in a town if at least 25% of the apartments are restricted as affordable. Thirty-eight units at North 116 Flats are restricted as affordable for low-moderate income households, and cannot be rented to student-only households.

In 2020, 33 units were permitted for the Sanderson Place affordable senior housing development at 120 North Main Street in Sunderland Center, also through a 40B Comprehensive Permit process. Most of the units will be located in a new three-story structure on the site, while several units will be incorporated into an existing single family home. The Town initiated this project by purchasing the land in 2014 with CPA funds. Through a Request for Proposals process, the Town selected Rural Development Inc. (RDI) to develop the site for affordable senior housing. The Town transferred ownership of the site to RDI in 2021, and the units are expected to be ready for leasing in 2022.

Because of these two developments, the Town currently has over 10% affordable housing according the State's Subsidized Housing Inventory, and therefore has control over any new proposed 40B developments. However, when the 2020 Census counts are released, the Town may find itself under the 10% threshold again. It is important for the Town to continue to proactively plan for affordable housing that meets the community's housing needs. Given the town's high percentage of multi-family housing and its existing apartment complexes,

[4] 2016 Sunderland Housing Plan.

Sunderland is most interested in having new housing development which is smaller scale in nature and which is most compatible with the town's goal of preserving its rural character and important natural, scenic, and historic resources.[5]

In terms of non-residential buildings, only the Sunderland Public Library, the Sunderland Safety Complex and the 3,000-square-foot American Leasing Insurance building were constructed in the last 20 years. In recent years, two solar farms have been built. In 2017, a 242 kW ground-mounted solar PV system was installed on town-owned land at the Sunderland Elementary School. The system covers roughly 1.8 acres. Then in 2018, the electric utility Eversource installed a ground-mounted solar PV system on a parcel adjacent to Route 116 near the Amherst Town border, with a development footprint of roughly 4.5 acres.[6] Future commercial development in Sunderland will likely be associated with renewable energy and other small-scale commercial and research operations.

According to 2016 Mass GIS land cover data, the most recent available, 18% (1,727 acres) of Sunderland was classified as agricultural land cover, including intensive cropland, hay fields and pasture. Forest comprised 63% (6,030 acres) of total town acres, including active timber lands, State-owned forest, and non-commercial land with forest cover. Impervious land cover, which includes all buildings, roads, and parking areas, comprises 5% of land cover in town (432 acres) Developed open space, which may include active recreation areas, resident lawns, as well as gravel mines and utility corridors, comprises 4% of land cover in town (415 acres).

Table 6: Land Cover Data

Land Cover	Acres	Percent of Town
Bare Land	140	1%
Cultivated	1439	15%
Deciduous Forest	2626	28%
Developed Open Space	415	4%
Evergreen Forest	3404	36%
Grassland	222	2%
Impervious	432	5%
Wetland	276	3%
Pasture/Hay	287	3%
Scrub/Shrub	26	0%
Water	268	3%
Total Acres	9536.32	100%

Source: Mass GIS 2016 Land Cover Data

[5] Ibid.
[6] *2021 Sunderland Hazard Mitigation Plan.*

3.d.2. Infrastructure

Water Infrastructure

Sunderland residents get their drinking water from seven public water supplies located throughout the community (see Water Resources Map). Three are owned by the Sunderland Water District: Ralicki groundwater well on Reservoir Road; the Saw Mill Brook surface water source on Reservoir Road; and the Hubbard groundwater wells on Amherst Road. Other water sources are the Mt. Toby Apartments groundwater well on Route 47 (which also serves the Pond Ridge Condo development) and three Cliffside Apartment complex groundwater wells. Currently, the North 116 Flats apartment complex is served by the Sunderland Water District. Looking ahead, however, the owners of complex have proposed developing a new drinking water well just north of the Amherst town line, tapping into a large aquifer that could also supply water to Amherst.

The Sunderland Water District serves approximately 76% of Sunderland residents, while the Cliffside Apartment and Mt. Toby Apartment water systems supply another 17% of residents. Only 7% of residents have private wells. In terms of fire suppression needs, there are two water storage tanks located in Sunderland. One is behind the Cliffside Apartment complex (500,000 gallons) and the other is located on Reservoir Road (250,000 gallons). These tanks also provide emergency back-up water supply to the apartment complexes in the event the wells cannot be used.[7]

The Sunderland Source Water Protection Plan identifies water system vulnerabilities to contamination and lays out goals for how to keep drinking water safe. Also, while much of the community is served by public water systems, not all parts of town have water lines, including: Bull Hill, Falls Road, parts of Montague Road, and roads that extend off of Montague Road.

Projected Future Water Demand

The current water supply is more than adequate to meet additional demands that projected population growth might generate**.**

[7] *2013 Franklin County Water and Sewer Survey.* Franklin Regional Council of Governments, and *2021 Sunderland Hazard Mitigation Plan.*

Sewer Infrastructure

The Sunderland Wastewater Treatment Facility located off of River Road/Route 47 receives the wastewater from the sewer lines in Sunderland. According to a Water and Sewer Survey conducted by the FRCOG in 2013, the facility and sewer lines were installed in 1975 and serve approximately 2,300 households. Public sewer serves a limited area of the Town, including the village center district, the Sunderland Elementary School, and some of the major apartment complexes. Also located in Sunderland is a waste water pumping station used by the Massachusetts Division of Fisheries and Wildlife Fish Hatchery on Route 116.

Projected Future Sewer Demand

The current system is designed to handle 500,000 gallons per day. Currently, the average daily flow is 165,000 gallons. Expansion of the collection system in the Russell Street, Hadley Road, and River Road area of town was explored in 2013-2014, but is not being pursued.

Transportation Infrastructure

Sunderland has an excellent transportation system, with easy access to a major interstate highway (I-91) in the neighboring town of Whately (southbound) and Deerfield (northbound). Sunderland residents are fortunate that they can access the Interstate without encountering the notorious traffic snarls that often occur near the Coolidge Bridge in Northampton. In addition, Sunderland is served by two state highways. Route 116 provides a direct path to the University of Massachusetts, as well as to the shops and malls on Route 9 in Hadley. A second state highway, Route 47, intersects with Route 116 in Sunderland center. Route 47, which generally follows the path of the Connecticut River, crosses through more rural and agricultural areas of town. As a designated part of the Connecticut River Scenic Farm Byway, the route attracts tourists and is heavily traveled by cyclists during the warmer months. All told, the Town maintains about 40 miles of local roads.

The Town of Sunderland is a member of the Pioneer Valley Transit Authority (PVTA). The PVTA region includes 24 towns in Franklin, Hampshire, and Hampden Counties. The PVTA provides the primary fixed-route bus service for the Town of Sunderland. The primary transit route serving the Town of Sunderland is the PVTA's Pink 31 Route, which runs primarily along Route 116 between Sunderland and South Amherst. The route operates seven days a week

throughout the year, except on holidays. It makes over 300 runs to Sunderland Center each week (55-57 run each weekday) during the regular UMass school year and about half that many runs during the summer and when UMass is not in session. The route's ridership is comprised primarily of UMass students, with other riders such as UMass employees, other college students, and low-income non-students accounting for approximately 10-15% of the route's total passengers. The PVTA also operates other routes through Sunderland.

The Franklin Regional Transit Authority offers fixed route service from Greenfield to Sunderland center, with stops in Montague. Riders may connect with other fixed-route services in these neighboring communities to travel to other destinations in the region.

Sunderland has roughly 4.5 miles of sidewalks, with almost a half-mile added in recent years through the Complete Streets program (see below). Sunderland's 2014 Master Plan indicated that most of the sidewalks are located in and around the Village Center on Route 116, Route 47, School Street, Old Amherst Road, Swampfield Drive, and Garage Road. Additional sidewalks serve the apartment complexes on Route 116 and Route 47. Since 2014, Sunderland has added almost a half-mile of new sidewalks on River Road, Hadley Road, and Garage Road/North Silver Lane, through the Complete Streets program (see below). In 2019, the Sunderland Riverside Park on School Street was completed, creating a 3/4-mile loop of off-road paved walking paths and a stone-dust riverside trail.

Sunderland adopted a Complete Streets policy in 2016 committing the town to plan roadway improvements with the safety of all users in mind, including cyclists, pedestrians, transit users, and automobiles. With assistance from the Franklin Regional Council of Governments, Sunderland prepared a Complete Streets Prioritization Plan in 2017, identifying priority projects in town. In 2018, Sunderland was awarded funding through MassDOT's Complete Streets program for projects on Garage Road and South Main Street for sidewalk improvements and extensions, and for sidewalk and crosswalk improvements on Hadley Road, from Old Amherst Road past Sugarloaf Estates. A new sidewalk on South Silver Lane was completed in 2021 using Complete Streets funding, adding about 2,000 linear feet.

Designs for sidewalk, crosswalk, roadway, and bicycle improvements along North Main Street (Route 47) from Route 116 to Clay Brook Drive were completed in 2020 with funding from the Transportation Improvement Program (TIP). Sunderland also received a Housing Choice Initiative Small Town Capital Grant in FY2019 for design of streetscape and ADA improvements on School Street, connecting pedestrian and bicycle improvements on North Main Street to the new riverside trail and boat ramp on the Connecticut River. These projects will also improve pedestrian connections between the affordable senior housing development at 120 North Main Street and Town Hall, Sunderland Public Library, and recreational resources on School Street.

In 2021, Mass DOT will complete new and reconstructed sidewalks on both the north and south side of Route 116 from the current sidewalk terminus (just east of Route 47) to the North Star learning center and Frostie Ice Cream stand. A new crosswalk will be added in front of North Star, and will include solar-powered pedestrian-activated flashing lights. The crosswalk will connect to PVTA bus stops on both sides of Route 116.

Residents on Plumtree Road have expressed the need for safer walking and bicycling conditions. This road connects Route 47 and Route 116 near the southern border of town. Sidewalks may be too expensive for this long stretch of roadway, but other traffic calming measures could be explored to improve safety.

3.d.3. Long-term Development Patterns

In general, Sunderland has been innovative and progressive in attempting to deal with growth issues. This effort was in response to rapid changes in the landscape and in hope of reducing sprawl.

In the 1990s, low-density development occurred both in the Critical Resource and Watershed Protection districts, changing the land use from sustainable natural resources dependent uses, such as timber production, to residential use. There continued to be conversion of agricultural lands to housing, especially in the Prime Agricultural District. Lands originally placed in the Chapter 61A program have been taken out and converted to non-agricultural uses, emphasizing the limited resource protection this program offers. In 2004, the Massachusetts Supreme Judicial

Court case ruled that rate-of-development bylaws were unconstitutional. Accordingly, in 2019 Sunderland voted to remove its Development Rate Limitation bylaw from the town's zoning bylaws at its Annual Town Meeting. Currently, Sunderland has been focusing on measures that promote sustainable housing development.

Zoning

Zoning bylaws provide the legal framework for planning and guiding growth in Sunderland. Sunderland has five basic zoning districts: Village Center, Village Residential, Commercial 1, Commercial 2, and Rural Residential. Further, there are several overlay districts that also moderate development. These overlay districts help protect significant resources, such as watersheds or agricultural areas (see Figure 3).

In 2012, Sunderland approved a Large-Scale Ground-Mounted Solar Electric Installation Bylaw, designed to provide standards for the placement, design, construction, operation, monitoring, modification, and removal of such facilities. The standards are intended to address public safety, minimize impacts on environmental, scenic, natural, and historic resources. The bylaw requires a special permit and a site plan review for arrays over 1,000 square feet, except in the Commercial 2 district, where arrays up to 4 acres require only Site Plan Review, and places a height limit of 15 feet. Roof-mounted solar arrays and ground-mounted arrays under 1,000 square feet are allowed by right. As mentioned above, since the passage of the bylaw, a ground-mounted solar PV system was installed on town-owned land at the Sunderland Elementary School, covering roughly 1.8 acres. In addition, Eversource installed a ground-mounted solar PV system on a parcel adjacent to Route 116 near the Amherst Town border, with a development footprint of roughly 4.5 acres.

Zoning Districts

Village Center: In 2012, the town approved a new Village Center district, located at the intersection of Routes 116 and 47, designed to encourage small business. Minimum lot size is 20,000 square feet. This zoning, along with Village Residential, allows for the densest development in town.

Village Residential: Minimum lot size requirement: 20,000 square feet. This zone lies in the traditional village area of town, but also includes much of the developed areas where the apartment complexes are located. A majority of this area is served by town water and/or town sewer.

Commercial 1 and 2: Minimum lot size: 32,000 square feet. This zone is located primarily along the major roads, Rtes. 116 and 47. Limited industrial development has occurred by variance outside of the commercial area. A second, very small commercial area is located near the Montague line.

Rural Residential: The remaining area which is not zoned commercial or village residential is zoned rural residential, with a minimum lot size of 32,000 square feet.

There are several overlay districts that apply to specific areas that place further restrictions on development (see below).

Overlay Districts

The three overlay districts in town (Watershed Protection, Critical Resources, and Prime Agricultural) are all special resource districts. The purpose of these special resource districts is "to insure that lands critical to the environmental structure of Sunderland not be physically developed prior to public consideration of alternatives to such development." For proposed development to take place, they must meet the requirements of the underlying district in addition to other protective measures. These measures include the submission of a "flexible development" plan in addition to the basic plan to the Planning Board. Further, the town reserves the right to purchase the property or development rights to the property, if the resource values of the property are not adequately protected by the plan.

In 1975, in response to concern about the increased growth pressures that were occurring, Sunderland enacted one of the state's most innovative zoning bylaws, a TDR or Transferable Development Rights by-law. The goal of this bylaw is to protect the visual, economic and ecological values of town with the additional benefit of preserving watershed and agricultural lands. Two of the special resource districts are the source areas for the transfer of development rights to other areas of town. Lands proposed for a major residential development if located within the Prime Agricultural or Watershed Protection Districts may be designated "agricultural protection land" or "watershed protection land." Development unit credits can then be transferred out of the resource district into other districts, in exchange for a perpetual conservation restriction on the lands in the resource district that were proposed for development. By agreeing to transfer these development unit credits to other areas of town that are less sensitive, the developer can build at a higher density than normally would be allowed under regular zoning requirements. This innovative tool has only been used once since it was passed. This is because

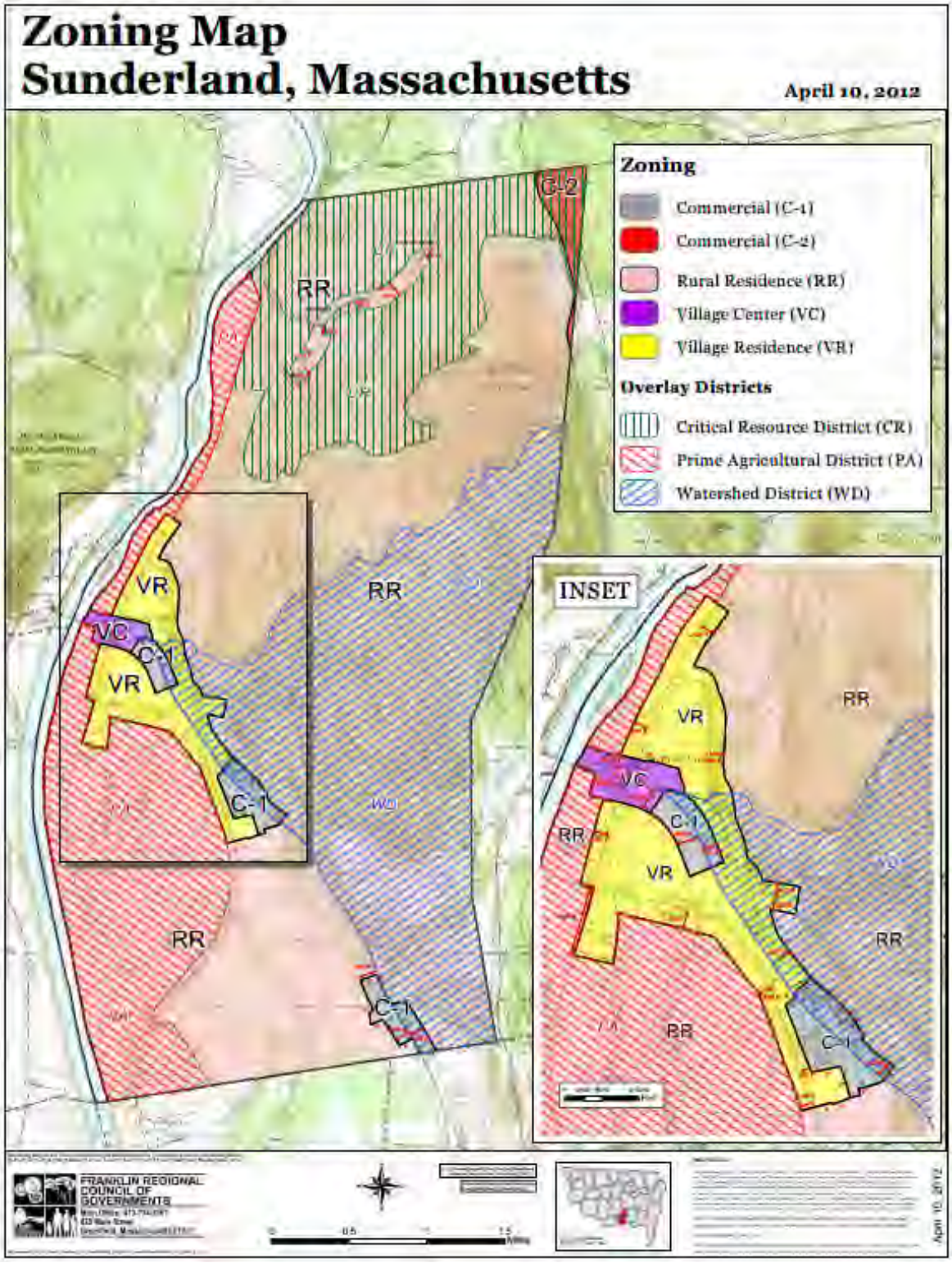
most development that has occurred in town have not reached the threshold to qualify as a major residential development (having five or more units); thus, they do not qualify for review under this program. Modifications could be made to this bylaw to make it more effective for preserving critical resource values in Sunderland.

Watershed Protection District: This area, expanded in 1989, is designed for protection of the recharge and watershed area of the main public water supply in Sunderland. Within this district, the minimum lot size is 3 acres, except for lots that have 200 feet of road frontage on Rte. 116, Bull Hill Road or East Plumtree Road, where the minimum lot size is 32,000 square feet. Most commercial activities, especially those that involve the manufacture or storage of hazardous wastes, are not permitted in this district. Removal of sand or gravel is permitted down to ten feet above the mean maximum groundwater table. To further protect the resource, road salt is to be minimized in the district, and it is recommended that tilled lands in agricultural use have cover crops established on them.

Critical Resources District: The Critical Resource District was established to help protect many important and critical resources from adverse impact from development. It encompasses the Whitmore Pond area in the northern section of town, and overlays "rural residence" zoning in that area. Within this district; any change in land use other than additions or alterations, is subject to review by the town.

Prime Agricultural District: Most of the significant and important farmlands are located within the Prime Agricultural District. The purpose of this district is to protect those areas of town that have the most significant agricultural resources, namely soils classified as "state significant" and "important agricultural." The majority of active farms in town are located in this district, adding significantly to the town economy and the scenic rural character of town.

Figure 3: Zoning



Source: Franklin Regional Council of Governments.

Sunderland also has a floodplain overlay district that regulates development within the 100-year floodplain. Current development in the floodplain includes approximately 17 acres of residential land and no commercial, public/institutional and industrial uses. The vast majority of the 592 acres of land in the floodplain consists of a thin strip along the Connecticut River, with two large areas of floodplain between Falls Road and the river in the northern part of town and along River Road north of the intersection with Potyrala Road in the southern part of town. Of the 592 acres of floodplain, approximately 90%, or 532 acres, are zoned Rural Residence (RR) and most of that land is included in the Prime Agricultural District (PA). The remaining approximately 5%, or 30 acres, of the floodplain are zoned Village Residence (VR) and 5%, or 30 acres, is zoned Rural Residence.

The 500-year floodplain in Sunderland covers a substantially larger area of town, including the village center and significant portions of Route 47 and Route 116. Development in this area is not regulated through zoning. It is notable that flooding has occurred within the 500-year floodplain more than once within the last 100 years in Sunderland. Currently the Federal Emergency Management Agency (FEMA) is updating Sunderland's 100-year floodplain map, which is dated from 1980. It is expected that the floodplain in Sunderland may contain more areas with the updated map that will fall under the Town's floodplain district regulations.[8]

Sunderland has several other bylaws that influence development in town. To encourage open space and cluster development, there is a Flexible Development bylaw. This by-law allows for alternative frontage and lot requirements in exchange for protecting at least 40 percent of the developable area as open space. Flexible developments with single family or two-family homes are allowed by-right with Site Plan Review by the Planning Board. Flexible development includes the potential for a density bonus if more than 40% of the parcel is protected as open space.

As noted previously, any development of five or more housing units, unless proposed as a flexible development, falls under Major Residential Development review. The review requires submittal of a development plan, affordable housing plan, and has additional criteria for multi-family proposals. In 2005, the Town created a Planned Unit Development (PUD) Overlay District to encourage developments which use land efficiently, and to promote coordinated building and site design which both buffers adjacent residential uses and protects scenic and

[8] Floodplain data is from the 2021 Sunderland Hazard Mitigation Plan.

natural features. The boundaries of the PUD Overlay District are coincident with those of the VC and C-1 districts.

Also, to further safeguard Sunderland's wetlands resources, the Sunderland Conservation Commission passed a Wetland Protection Bylaw in 1990, and subsequently wrote regulations to implement it. The 2014 update to this Bylaw established a no-build zone within 50 feet of wetlands in town.

New zoning tools are available to help communities plan for appropriate growth and for our changing climate. Low Impact Development (LID) is a concept that has been around for some time, but is now being codified into zoning and subdivision regulations. The basic concept of LID is to manage storm water close to where it falls through small, decentralized storm water Best Management Practices, as an alternative to, or in addition to, pipe and pond systems. Nature Based Solutions is a broader concept that includes LID, where natural systems are maintained (through land conservation), mimicked, or restored, to provide services like flood storage and water filtration through natural processes.[9]

Natural Resource Protection Zoning (NRPZ) accomplishes a similar goal as Sunderland's overlay districts, and with recent Housing Choice changes to Ch. 40A, can be adopted at Town Meeting by a simple majority vote.[10] NRPZ is a by-right approach to housing development that preserves a significant portion (65% - 90%) of a parcel as undeveloped through an open space design process. NRPZ emphasizes natural resource-based uses over developed uses, and is appropriate for undeveloped areas of communities with critical natural resources. Traditional, cookie cutter development may be prohibited from areas designated as NRPZ, or only allowed by Special Permit and only if the natural resource protection goals can be met.

The Conservation Commission can work with the Planning Board to review these zoning options for Sunderland. Technical assistance can be obtained through the Franklin Regional Council of Governments (FRCOG), the regional planning agency for Franklin County, to draft zoning bylaws. Several recent State grants also provide funding to towns to hire consultants to work on these types of land use regulation changes.[11]

[9] Mass Audubon developed a bylaw review tool for communities to help with integrating LID: https://www.massaudubon.org/our-conservation-work/advocacy/shaping-climate-resilient-communities/publications-community-resources/bylaw-review

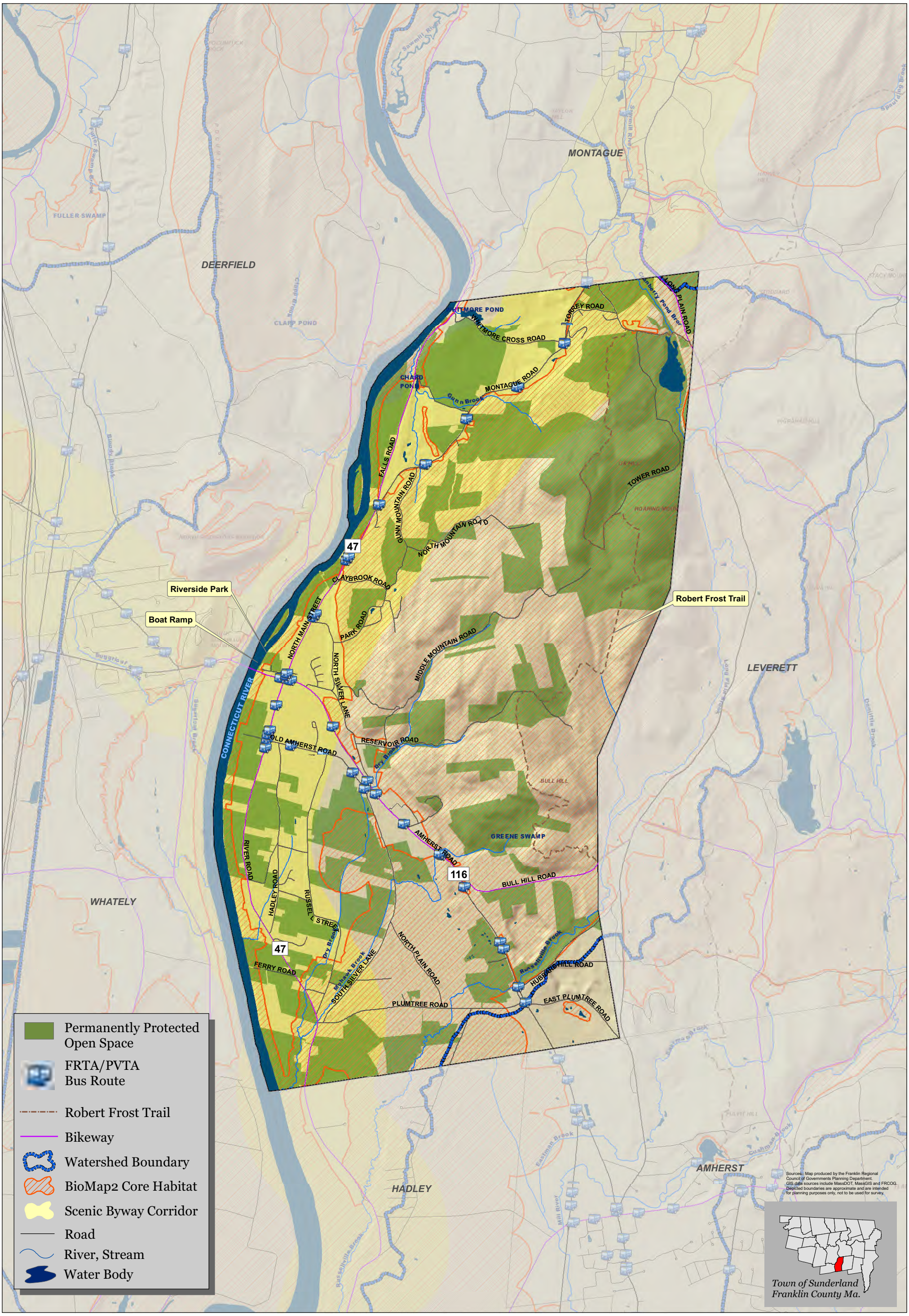
[10] https://masswoods.org/sites/masswoods.net/files/pdf-doc-ppt/natural_resources_protection_zoning.pdf

[11] Funding opportunities include MVP Action Grants, Community Planning Grants (through the Community One Stop for Growth), and Direct Local Technical Assistance (DLTA).

In addition to town bylaws, there are many state programs that help regulate growth. Chapters 61, 61A and 61B of the Farmland Assessment Act are differential tax assessment provisions of the State Tax Code that enable qualifying forest, farm and recreational lands to be taxed at their use value rather than at full market value. Lands enrolled in Chapters 61, 61A and 61B provide significant tax savings to landowners and provide an incentive for a land owner to maintain their property for farming, forestry or recreational uses. It is a mechanism to help land owners, particularly farmers, to keep their land in farming as the market value of their lands escalate. Once the parcel is enrolled, the Act gives the town the "right-of-first-refusal" to buy Chapter 61, 61A or 61B lands should the owner decide to sell or convert their property to a different use. Land under the various Chapter 61 provisions are only protected as long as the owner keeps it in the program. If a landowner sells or converts classified land to another use within ten years of its inclusion, a penalty of a conveyance tax or a roll back tax is assessed.

Another State program that serves to lessen development pressure and to preserve the town's rich farmland is the Agricultural Preservation Restriction Act (APR). The APR program provides funding to buy the development rights for farmland, paying the landowner upwards of 80% of the appraised development value. The farmer stills owns the land and can still sell it, but only for agricultural uses. This prevents non-agricultural development of the property in perpetuity. This program is a valuable tool for protecting farmland in Sunderland.

An important local funding source for open space protection is the Community Preservation Act (CPA). Sunderland adopted the CPA in 2010. CPA creates a local fund from a surcharge on property taxes, up to 3%, which is then matched by State funds that originate from property transfer fees at the Registry of Deeds. At least 10% of CPA funds must be spent on open space, historic preservation, and affordable housing each year, or set aside in a reserve fund. The remaining 70% of funds can be spent on any of the three categories, as well as outdoor recreation. In past years Sunderland has transferred CPA funds to a conservation trust fund to support APRs on farmland in town. In 2020, CPA funds were used to help acquire and protect 40 acres within the public drinking water supply aquifer recharge area on Cross Mountain Road.



Town of Sunderland Open Space & Recreation Plan 2022

Context Map

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Franklin Regional Council of Governments

4. Environmental Inventory and Analysis

4. a. Climate Change

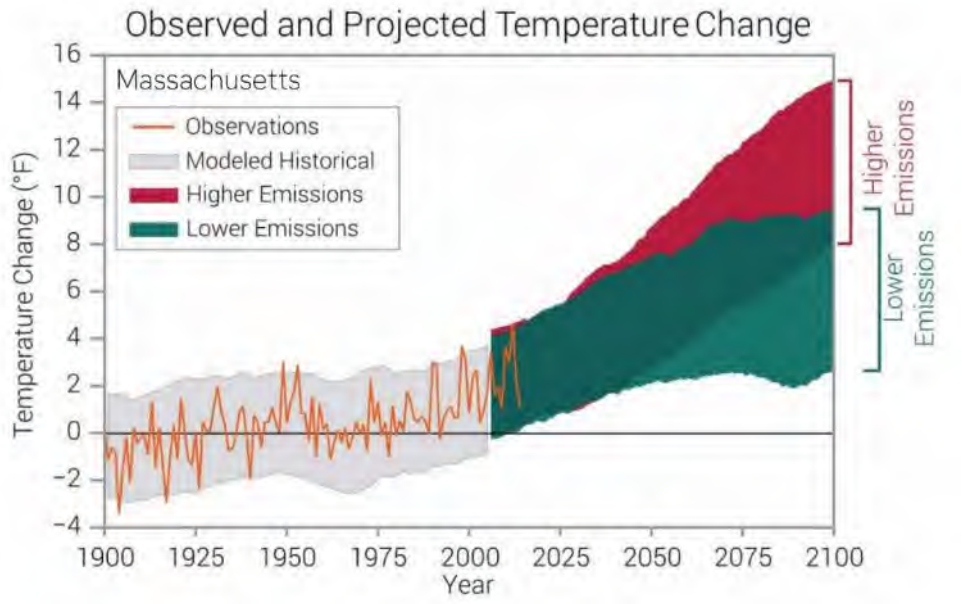
Natural resources, including wildlife and habitats, are impacted from a changing climate in Massachusetts, and will continue to be as temperatures rise, precipitation patterns change, and storms become more severe, over the coming decades. According to the Massachusetts Wildlife Climate Action Tool, warming is occurring in all seasons, with the greatest changes in winter. 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 snowpack - though stronger blizzards may lead to locally higher snowpack 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. Sea level is also rising at a rapid rate along the Massachusetts coastline, leading to coastal flooding, which is compounded by increasingly intense coastal storms, such as hurricanes.

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 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 Sunderland: 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.

4.a.1 Changes in Temperature

Between 1971 and 2000, the average annual temperature was 47 degrees Fahrenheit. Average temperatures ranged from 25 degrees Fahrenheit in winter to about 68 degrees in summer. The Connecticut River basin is expected to experience increased average temperatures throughout the

Figure 4: Massachusetts Average Temperature, 1900 - 2100



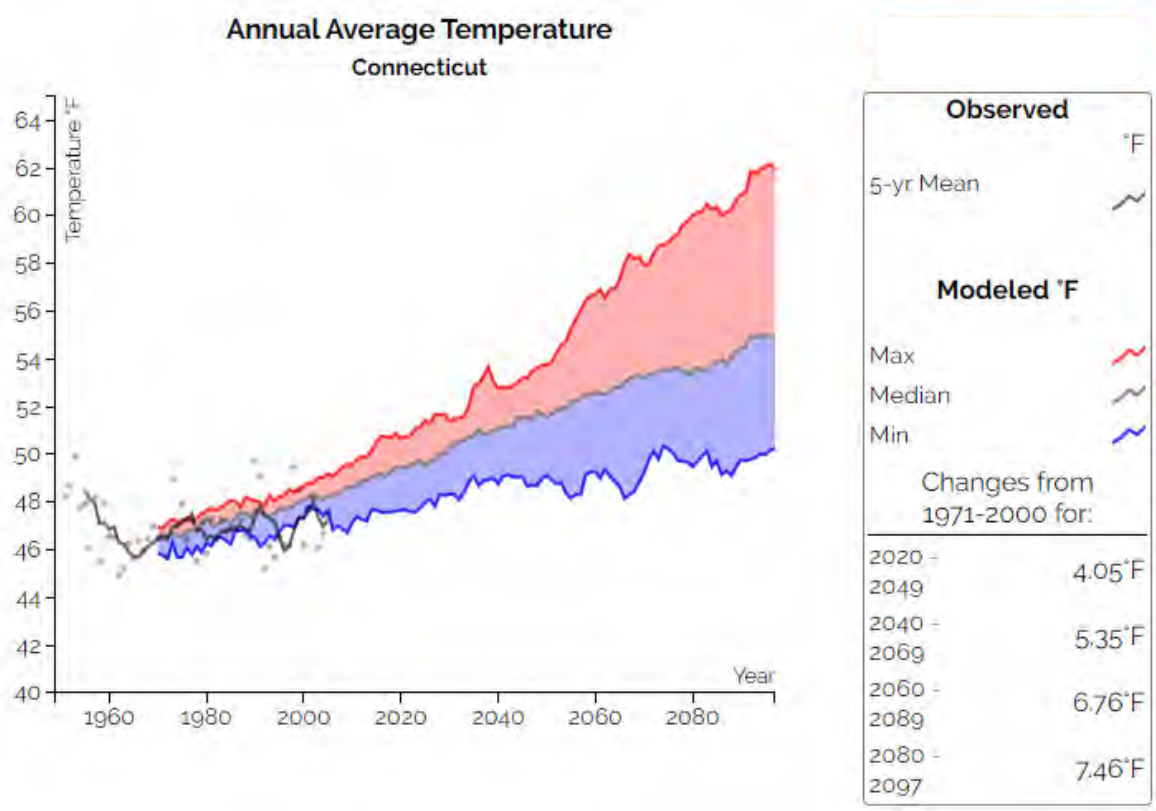
Source: http://resilientma.org/

21st century. Maximum and minimum temperatures are also expected to increase throughout the end of the century. These increased temperature trends are expected for annual and seasonal projections. Seasonally, maximum summer and fall temperatures are expected to see the highest projected increase throughout the 21st century, but minimum winter and fall temperatures are also expected to increase throughout the 21st century.

Figure 4 demonstrates temperature changes in the State of Massachusetts between the years 1900 and 2100. Temperature projections for the rest of the 21st century are based on models used by the International Panel on Climate Change (IPCC) and two scenarios of future greenhouse gas emissions: 'medium' and 'high.' A 'medium' scenario (shown in the graph as "Lower Emissions") assumes a peak in global greenhouse gas emissions around 2050, which then declines rapidly over the second half of the century due to carbon reduction efforts. A 'high' scenario assumes a "business as usual" continuation of the current emissions course. These scenarios represent different pathways that society may or may not follow, to reduce emissions through climate change mitigation measures.

The temperature projections shown in Figure 5 have been localized to accuracy at the watershed scale, by researchers from the Northeast Climate Science Center at the University of Massachusetts, Amherst. These highly valuable projections demonstrate how the climate is likely to transform in the Connecticut River Watershed over the course of the 21st century, based on climate models used by the IPCC and 'Medium' and 'High' emissions scenarios, as defined above.

Figure 5: Connecticut River Watershed Average Temperature, 1971 - 2100



Source: http://resilientma.org/

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. The Connecticut River Watershed is expected to see days with temperatures over 90 °F increase by 10 to 35 more days by mid-century, and 15 to 76 more days by the end of the century. Conversely, the watershed is expected to experience fewer days when temperatures drop below freezing (32°F).

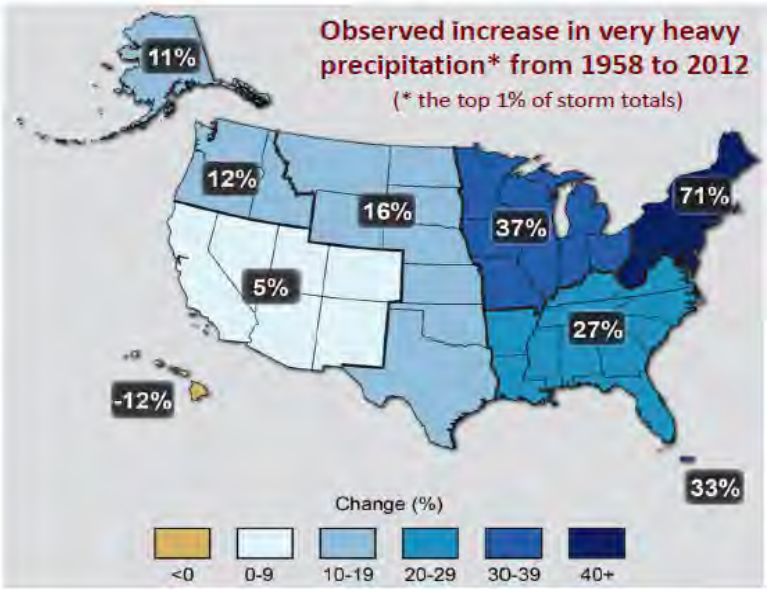
4.a.2 Changes in Precipitation

In Massachusetts, annual precipitation amounts have increased at a rate of over 1 inch per decade since the late 1800s, and are projected to continue to increase largely due to more intense precipitation events. The Northeast has experienced a greater increase in extreme precipitation events than the rest of the U.S. in the past several decades (Figure 6). Although overall precipitation is expected to increase, it will occur more in heavy, short intervals, with a greater potential for dry, drought conditions in between.

Observed annual precipitation in Massachusetts for the last three decades was 47 inches. Total annual precipitation in Massachusetts is expected to increase between 2% to 13% by 2050, or by roughly 1 to 6 inches. In the Connecticut River Watershed, annual precipitation has averaged around 45 inches in recent decades. By 2050, the annual average could remain relatively the same (but occur in more heavy, short intervals) or increase by up to 15 inches a year. In general precipitation projections are more uncertain than temperature projections.[12]

In the summer of 2016, Massachusetts was gripped with the worst drought conditions in recent memory. Another significant drought impacted the region in 2020. The prolonged period of

Figure 6: Observed Increases in Heavy Precipitation Events



Source: https://nca2014.globalchange.gov/report/our-changing-climate/heavy-downpours-increasing

warm, dry weather served as a stark reminder of how residents, communities, and industries depend upon the Commonwealth's fresh water resources. On September 21 of that year, the U.S. Department of Agriculture designated Franklin County, along with most other parts of the state, as primary natural disaster areas due to the ongoing drought and its effect on agriculture. A small projected decrease in average summer precipitation combined with higher temperatures will likely increase the frequency of episodic droughts in the future.

4.a.3 Effects of Climate Change

Climate change is already altering natural habitats and impacting communities in various ways. Ecosystems that are expected to be particularly vulnerable to climate change include coldwater streams and fisheries, spruce-fir forests, hemlock forests, northern hardwood forests, vernal pools and public shade trees in town 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 species will decline, while an increase in stronger storms leads 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 impact 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 impact Sunderland, 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.

In 2019–2020, Sunderland participated in a Community Resilience Building planning process to become a certified Municipal Vulnerability Preparedness (MVP) community. Top concerns related to climate change and natural resources were identified during a public workshop and stakeholder outreach. Workshop participants expressed concern about heavy rain events and potential future flooding, particularly within the Connecticut River floodplain where a high water table already causes flooded basements and farm fields. Drainage channels, most on private land, have become disconnected and may not be maintained. The combination of an increase in impervious surfaces in this area from residential development, plugged drainage ditches, a high water table, and heavier rain events leads to localized flooding because the ground becomes saturated and unable to absorb rainfall. Standing water, along with delayed fall frosts, also leads to greater risk to mosquito-borne diseases such as West Nile Virus and Eastern Equine Encephalitis (EEE).

Workshop participants also identified this broad flat area as prone to high wind events that can damage buildings and crops and result in power outages. High wind could also easily and quickly spread a wildfire across this area, a concern due to the number of people living in the lowland area of town.

Changing precipitation patterns due to climate change are also a concern. More rain and ice in the winter will result in greater amounts of runoff from Mt. Toby and other high elevation areas in town; long, dry periods result in drought and higher wildfire potential. Drought is also a problem for farms in Sunderland. Many farms in the Town are located to the east of Route 47, which limits their access to water from the Connecticut River. Irrigation is time consuming and adds hours to an already full workday. Smaller farms may lack irrigation equipment to make the task more efficient.

Outreach to farms during the MVP process also identified energy resilience as a key concern and need. Some farms have added, or would like to add, on-site renewable energy power sources, like solar PV and solar hot water. Solar-powered back-up battery storage was identified as a need to increase resilience to extended power outages that could be devastating to a farm business.

Batteries powered by renewable energy could also allow for more flexible siting of greenhouses, which help protect crops from severe weather, but require a power source.

The 2020 Sunderland Municipal Vulnerability Preparedness (MVP) Resiliency Plan documents these concerns, as well as the strengths within the community to address impacts of climate change. Information and actions from the MVP plan that relate to open space and recreation are integrated into this OSRP update.

4. b. Geology, Soils and Topography

Sunderland is dominated by two major landform features, the Connecticut River and Mt. Toby Range. The juxtaposition of these features gives Sunderland striking visual vistas and beauty. These features also helped to determine some of the Town's development patterns, such as where homes are concentrated and where the best locations for farming exist. The Connecticut River Valley has its origins in glaciers that blanketed the area more than 15,000 years ago. As the glaciers retreated, a massive lake, known as Lake Hitchcock, was formed behind a rubble dam near Middletown, Connecticut, and extended north to Hanover, New Hampshire. Many of the town's valuable natural resources and distinctive features originated from this glacial period. For example, the thick silt deposits that settled on the ancient lake bottom, helped build the rich farmland found on the river flood plains. The gravel deposits formed by the ancient alluvial outwash of tributaries flowing into Lake Hitchcock formed the aquifer that provides our town its abundant, pure water. The Mt. Toby area, which is dominated by thin soils, ledge and steep slopes, provides unique habitats for rare and sensitive plants and animals.

Several categories of soil are present in town and are categorized as follows:

Prime and significant agricultural soils. These soils include: Hadley, Agawam, Winooski, Hartland, Deerfield and Sudbury soil types. These soils are mostly located on flood plains or in outwash plains in south and southeastern Sunderland. Many of these soils have moderate to severe limitations for development due to slow percolation rates, high water table, or excessive drainage, which can impact septic system function and possibly lead to ground water contamination. However, many of the prime and significant agricultural soils can accommodate

development with drainage or special septic designs. These soils usually are the easiest, most cost efficient areas to develop. If town sewer or water are provided, then the soil limitations of these areas are generally not a limiting factor for development.

Water impacted soils. These are soils that are poorly drained, seasonally flooded, or have a seasonal high water table. Much of these soils are found throughout town in areas classified as wetland resource areas, and include Limerick, Saco, Walpole, Wareham and various muck soils. These soils have severe development limitations.

Shallow, Stony and Hardpan Soils. These soils are mostly found in the upland areas of town, especially in the Mt. Toby Range. The Mt. Toby highlands, including Mt. Toby, Ox Hill, Roaring Mountain, Bull Hill and the surrounding terrain, have steep slopes covered with a thin-fragile soil. These soils, along with the abundant ledge also found in this area, impose limitations on development, mainly due to increased costs associated with specialized septic and road designs. Until recent years, these added costs have limited development pressure on the mountain. However, with increased demand for housing, the potential for development in these areas is increasing. Increased development in this area could threaten the town water supply and cause erosion and habitat degradation.

4. c. Landscape Character

Sunderland, for both residents and visitors, represents a traditional, quaint New England Town of by-gone days. Many residents cite the rural atmosphere, the pleasing combination of woods, river, mountain, and farms as the qualities that make Sunderland so special. Sunderland has a diversity of beautiful views, well preserved architectural heritage, and a rural way of life that make it stand out from its neighbor towns. However, many of these features can be adversely affected by inappropriate or poorly planned development. Views can be marred by ridge-top development. The pleasing mix of land use, such as farm and housing, can be changed to a monotonous view of tract houses. Knowing what makes Sunderland will help to guide development to complement rather than harm the unique character of town.

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. BioMap2 combines NHESP's 30 years of rare species and natural community documentation with the Division of Fish and Wildlife's 2005 State Wildlife Action Plan (SWAP). It also integrates The Nature Conservancy's assessment of ecosystem and habitat connections across the State and incorporates ecosystem resilience in the face of anticipated impacts from climate change. BioMap2 data replace the former BioMap and Living Waters data.

According to the BioMap2 Town Report for Sunderland, the town lies on the border of the Connecticut River Valley and the Worcester Plateau Ecoregions. The Connecticut River Valley Ecoregion, the borders of which are primarily defined by the bedrock geology, has rich soils, a relatively mild climate and low rolling topography. The valley floor is primarily cropland and built land. Central hardwoods and transition hardwood forests cover the ridges. The Worcester Plateau Ecoregion is an area that includes the hilliest areas of the central upland of Massachusetts with a few high monadnocks and mountains. The dominant forest types present are transition hardwoods and some northern hardwoods. Forested wetlands are common. Surface waters are acidic. Many major rivers drain this area.[13]

An estimated 75 percent of Sunderland, a total of 7,069 acres, is classified as containing NHESP BioMap Core Habitat. Core Habitat identifies key areas that are critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Protection of Core Habitats will contribute to the conservation of specific elements of biodiversity. . Core Habitat includes:

- Habitats for rare, vulnerable, or uncommon mammal, bird, reptile, amphibian, fish, invertebrate, and plant species;
- Priority Natural Communities;

[13] https://www.mass.gov/service-details/biomap2-town-reports

- High-quality wetland, vernal pool, aquatic, and coastal habitats; and
- Intact forest ecosystems.

Core Habitat areas are identified on the Plant and Wildlife Habitat map, and generally comprise of the area to the north and east of Route 116 and Route 47, as well as to the southwest of Route 116, south of Old Amherst Road. These areas connect to Core Habitat in the surrounding towns of Hadley, Leverett, and Montague.

4. d. Water Resources

Sunderland has a great variety of water resources. These resources not only provide public drinking water, but also provide recreational opportunities and wildlife and fisheries habitats (see the Water Resources Map).

4.d.1. Watersheds

The Town of Sunderland lies within the Connecticut River Watershed. Local watershed associations include the Connecticut River Conservancy (CRC) which advocates for the entire, four-state Connecticut River watershed. The CRC works to protect water—the river, its tributaries, lakes, fish; and the land, plants, and creatures connected to that water.

4.d.2. Surface Waters

One of the most defining features of Sunderland is the Connecticut River, which forms the western border of town. The river is used for boating, swimming and fishing. It also provides habitat for numerous species of plants, fish and wildlife, some rare or endangered. The water quality of the river has increased significantly in recent years and is now rated as class B: fishable and swimmable. With this improvement, there have been increases in anadromous fish species that migrate in the river, such as American Shad and Shortnose Sturgeon. The stretch of river that flows through Sunderland is characterized by shallow, swift currents and shifting sandbars. These make this part of the river ideal for canoeing and fishing. To help preserve these characteristics of the river, the State restricts the speed limit of water craft (15 mph) permitted on this section of river that runs through Sunderland. The Connecticut River Task

Force, a consortium of state and local law enforcement agencies, patrols the waters and shoreline along the Connecticut River, including speed limits. The Task Force is composed of law enforcement and vessels from Easthampton, Hadley, Northampton, South Hadley and Chicopee along with the Massachusetts Environmental Police, United States Coast Guard, Massachusetts Department of Conservation and Recreation and the Northwestern District Attorney's Office.[14]

The Connecticut River and its watershed are nationally significant. In 1991, Congress established the Silvio O. Conte National Fish and Wildlife Refuge, the only refuge in the country to encompass an entire watershed – the Connecticut River watershed in four states. Seven years later, in 1998, the Connecticut River became one of only fourteen rivers in the country to earn Presidential designation as an American Heritage River. In May 2012, the U.S. Interior Secretary designated the Connecticut River as America's first National Blueway, saying the restoration and preservation efforts on the river were a model for other American rivers.

Water pollution occurs in many different forms and can impact the natural environment in many ways. Historically, point source pollution – pollution from a discrete discharge point into a water body, such as factories or sewer pipes – was a major source of contamination in rivers across New England. With passage of the Clean Water Act of 1972, these sources of pollution were regulated, requiring permits and treatment of wastewater for any discharge into a waterbody. As a result, water quality has improved significantly in the Connecticut River and other waterbodies over the past 50 years.

Despite the improvement in water quality in the Connecticut River, challenges remain. The 2020 Public Health Freshwater Fish Consumption Advisories cites PCBs in fish tissue as the reason that children younger than 12, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat any fish from the Connecticut River. The advisory also warns the general public not to consume channel catfish, white catfish, American eel, or yellow perch from the Connecticut. According to the Connecticut River Conservancy, "PCBs, now banned, were used for many years in a variety of products ranging from inks to light fixtures

[14] WWLP News, "Connecticut River task force will enforce marine safety and regulations this summer," May 27, 2021. https://www.wwlp.com/news/local-news/connecticut-river-task-force-will-enforce-marine-safety-and-regulations-this-summer/

because of their non-conductive and fire-resistant qualities. PCBs in the Connecticut River derive from old industrial discharges." There is little that can be done to clean up the concentrations of PCBs in the river.[15]

Another source of pollution in the Connecticut River is storm water runoff that carries contaminants like motor oil, pesticides, and animal waste from nearby roads, parking lots, lawns, and farms, into the water. This type of pollution is called non-point source (NPS) pollution, and is harder to identify and remedy. Loss of wetlands and riparian buffers that slow runoff and capture and filter out pollutants, increases in impervious surfaces (pavement and buildings) that increase the amount of runoff, and heavier precipitation events caused by climate change, all contribute to polluted runoff. Erosion along riverbanks is also a major source of sedimentation that can have a negative impact on water quality.

Non-point source pollutants found in the Connecticut River in Franklin County include pesticides from farms and lawns, and E.coli bacteria from sewage or animal waste contamination. Unfortunately funding cuts to the Massachusetts Department of Environmental Protection (Mass DEP) water-quality monitoring program since the early 2000s has led to limited water quality data in recent years. In the absence of regular water quality monitoring by the state, the Connecticut River Conservancy conducts bacteria testing during the summer months and produces a yearly report card of E.coli levels at various sample locations throughout the watershed, including at the Sunderland boat ramp at the end of School Street.[16] Based on recent testing, this site is usually clean for boating and swimming. Bacteria levels can spike in the river due to rainfall runoff; however the Sunderland boat ramp site tends to be safe even after recent rainfall events, according to testing data.

Managing storm water runoff is one way for towns to address non-point source pollution. Sustainable storm water management utilizes practices that capture, clean, and store water on site, close to where it falls, reducing runoff, recharging groundwater, and improving water quality. Sustainable storm water management techniques associated with roads and other major

[15] "Is it safe to eat Connecticut River fish?" by Andrea Donlon, Connecticut River Watershed Council (now CRC) newsletter, Vol. 56 no. 1, Spring 2007. https://www.ctriver.org/documents/newsletter/CRWC_Newsletter_07Spr.pdf
[16] https://connecticutriver.us/index.php/it-clean

development projects are also known as Low Impact Development (LID). Incorporating LID into planned and funded municipal development projects and road infrastructure projects are untapped opportunities in many communities.

In 2021, the Franklin Regional Council of Governments (FRCOG) completed a Sustainable Stormwater Management Plan for Franklin County. The plan identifies major storm water impacts affecting most or all Franklin County towns and provides pilot assessments in three (3) typical project settings – Rural Roads, Downtown Revitalization, and Complete Streets. The pilot projects can be used as models for projects in Sunderland.

Sustainable storm water management has many co-benefits. For instance, projects incorporating swales and street trees with sidewalk improvements helps slow traffic and reduces the heat island effect. The planned streetscape designs for School Street could incorporate storm water management practices that promote use of the public spaces and help protect the nearby boat ramp and Connecticut River. Improvements to parks and playgrounds can include rain gardens that also provide pollinator habitat and beautification. Implementing storm water best practices on the steep dirt roads on Mount Toby can protect the roads from erosion and reduce sedimentation of roadside streams and waterbodies. More funding and training are needed to fully implement these measures in Sunderland and other small towns. The Franklin Regional

Figure 7: Sustainable Stormwater Management Techniques

Examples of sustainable stormwater management techniques. Left: MassDOT's separated bike lane design guidance includes use of stormwater swales to collect runoff from the roadway and multi-use path. Right: A rain garden collects water from the spray feature at Unity Park in Montague.

Council of Governments is one resource that can assist Sunderland with identifying projects and potential funding.

Adding to the variety of water resources in Sunderland are the numerous ponds, streams and brooks found throughout town. These areas provide recreational opportunities, wildlife habitat, and scenic beauty. Cranberry Pond is the largest pond in Sunderland. It is much used for fishing, including ice fishing, and boating. Many of the streams and brooks in town, such as Mohawk and Russellville brooks, have native trout populations and are popular areas for fishing. These streams and brooks also provide great scenic beauty, especially the waterfalls found along the brooks.

Sunderland contains BioMap2 Aquatic Core Habitat areas. These are identified as intact river corridors within which important physical and ecological processes of the river or stream occur. These areas include a 10-acre wetland just south of East Plumtree Road; Dry Brook on Mt. Toby; and the main stem of the Connecticut River.

Cold Water Fish Resources

Several streams and brooks in Sunderland are classified as coldwater fish resources (CFRs) by the Massachusetts Division of Fisheries and Wildlife (MassWildlife). According to MassWildlife, cold water fish resources are particularly sensitive habitats. Changes in land and water use can reduce the ability of these waters to support trout and other kinds of cold water 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.[17] Conservation commissions, planning boards, land trusts, regional planning agencies, and town open space committees can refer to the list and map of CFRs to better inform conservation planning.

Coldwater fish resources 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

[17] https://mass-eoeea.maps.arcgis.com/apps/webappviewer/index.html?id=56ddeb43ffc642feb3117ce7ebd1aa43

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.

The following are identified as coldwater fish resources in Sunderland:

- Cranberry Pond Brook
- Long Plain Brook
- Russellville Brook
- Dry Brook
- Unnamed tributary to Dry Brook (along Reservoir Road)
- Mohawk Brook

4.d.3. Aquifer Recharge Areas

The largest public water supply in town is the Long Plain aquifer, located at the south end of the Mount Toby highlands. This geologic formation is a two square mile highly permeable glacial sand and gravel delta deposit. The major source of recharge to this aquifer is from precipitation and stream flow in the Long Plain Brook. The entire drainage for Long Plain Brook functions as a recharge area for the aquifer, since there is no confining impervious soil layer between the brook and the aquifer. This aquifer not only supplies water to a town well, numerous private wells on East Plum Tree Road, but also to three fish hatcheries, a state trout hatchery operated by the MA Division of Fisheries and Wildlife, a federal trout hatchery operated by the U.S. Fish and Wildlife Service, and a private commercial hatchery.

4.d.4. Wetlands

Like many towns in the area, Sunderland has a wealth of wetlands. Wetlands provide many functions that contribute to maintaining the quality of the environment, including aquifer recharge, control of local flooding, pollution filtration, and recreational and scenic opportunities. Wetlands are also vital in helping maintain the biological diversity found in Sunderland. Many

of the rare, threatened or endangered species found in Sunderland are dependent on wetlands for some part of their life cycle. The U.S. Fish and Wildlife Service National Wetlands Inventory Program has delineated many of the major wetlands found in Sunderland. They include a wide variety of wetland types including river flood plain forests, cattail marshes, red maple swamps, and vernal pools. Many of these wetlands occur in mosaics with more than one type of wetland occurring in the complex.

BioMap2 used an assessment to identify the least disturbed wetlands in the state within undeveloped landscapes - those with intact buffers and little fragmentation or other stressors associated with development. These wetlands are most likely to support critical wetland functions (i.e., natural hydrologic conditions, diverse plant and animal habitats, etc.) and are most likely to maintain these functions into the future. In Sunderland, wetland core habitat areas are located at the headwaters of Mohawk Brook on Bull Hill, and a large wetland on the northwest side of Mount Toby.

Sunderland has a politically autonomous water district that provides water to the central and southern parts of town. This water is provided from two town wells, the Ralicki Well off Reservoir Road, and the Hubbard Well on Rt. 116 off Hubbard Hill Road. Both of these wells and surrounding areas are protected to some degree by overlay zones.

Areas of town that are not served by the water district obtain their water from private wells. There have been some instances of well contamination, in one instance from agricultural contamination in the prime agricultural district. The subsequent extension of the water main into this area helped facilitate development in the area.

Participants in the 2020 Municipal Vulnerability Preparedness (MVP) planning process expressed concern about heavy rain events and potential future flooding, particularly within the Connecticut River floodplain where a high water table already causes flooded basements and farm fields. As Sunderland's original name of Swampfield suggests, many areas of town are low and subject to saturated ground conditions for some part of the year. A series of drainage ditches, located mostly in the Prime Agricultural District, helps to reduce the duration and

severity of flood conditions and subsequent impacts on agricultural land and houses in this area. As larger farm parcels have been subdivided into house lots, however, the drainage ditches once maintained by farmers have begun to grow in. The combination of an increase in impervious surfaces in this area from residential development, plugged drainage ditches, a high water table, and heavier rain events leads to localized flooding because the ground becomes saturated and unable to absorb rainfall. Standing water, along with delayed fall frosts, also leads to greater risk to mosquito-borne diseases such as West Nile Virus and Eastern Equine Encephalitis (EEE).

4.d.5. Flood Hazard Areas

The 2021 Sunderland Hazard Mitigation Plan states that there are 592 acres, or approximately 6 percent of the town, in Sunderland located in the 100-year flood plain. There is only one residence located in a flood hazard area and no commercial, industrial or public/institutional land uses in the flood hazard area. The 500-year floodplain in Sunderland covers a substantially larger area of town, including the village center and significant portions of Route 47 and Route 116. It is notable that flooding has occurred within the 500-year floodplain more than once within the last 100 years in Sunderland.

In addition to the floodplain, the Hazard Mitigation Plan identifies the following areas where localized or chronic flooding is a concern:

- Areas along Dry Brook experience periodic, localized flooding.
- In the southern section of town, a high water table causes flooded basements in homes and buildings, which can lead to mold and mildew issues and could cause damage to home heating systems.
- As noted above, early farmers built drainage ditches to the Connecticut River to drain the fields for crops. Volunteers now continue to clean out these ditches but some have become overgrown and blocked. A high water table and higher than average precipitation in the last two years has decreased the amount of farmland available for planting because fields are too wet. The Town has been looking into solutions to clear these drainage systems. However, these systems are largely not municipally owned and run through private property, though there is a small Town-owned parcel near the Elementary School

that has become filled in by erosion and grass vegetation. The challenge with drainage in this area of town is how to coordinate and address the problem across many properties. In order for improvements on one property to effective, coordinated improvements and maintenance must happen on all properties.

- The Town is in the process of creating a database of culverts in town with a goal of prioritizing maintenance, replacement and repairs. In the past several years, the Highway Department has replaced 3-4 culverts due to structural failure, several of which were privately owned. Existing culverts may be undersized and unable to withstand heavier precipitation events.
- The closure of the Vermont Yankee nuclear power plant in Vernon, Vermont, in 2014 has resulted in colder water temperatures in the Connecticut River since the plant no longer uses the river for cooling. This has led to an increased risk in ice jams along the river, especially in a bend of the river approximately one mile north of the Route 116 Bridge, which historically had been more common prior to the operation of the power plant. Ice jams have the potential of flooding farmland along the banks of the river.

Erosion has been an issue along dirt roads in the steeper northeastern section of town around Mount Toby. Stormwater forms streams in the roadbed, washing sediment from the roads onto private yards. This causes damage to the road, private property, and impacts water quality in nearby streams and waterbodies.

4. e. Vegetation

4.e.1. General Inventory

Sunderland has a mosaic of different types of habitats: forest, wetlands, old field, and agricultural lands. The town also has many unique and special plant communities, as well as those that are more typical of southern New England. The plant communities found in Sunderland today are very different than what occurred prior to European colonization. Originally, the low areas of town along the river were probably dominated by extensive floodplain forests and large wetlands. However, as these rich lands were developed for agriculture, wetlands were drained and forests cut. When agriculture reached its peak in the latter half of the 19th century, much of the land suitable for agriculture had been cleared.

4.e.2. Vegetation Mapping Projects

According to the BioMap2 Town Report for Sunderland, produced by Natural Heritage and Endangered Species Program and the Nature Conservancy, Of Sunderland's total area (9,431 acres), over 7,000 acres are classified a Core Habitat (see definition to the right). Figure 8 summarizes the core habitats and landscapes found in Sunderland.[18]

BioMap2
CONSERVING THE BIODIVERSITY OF MASSACHUSETTS IN A CHANGING WORLD

DEFINITIONS:

Core Habitat: Core Habitat identifies specific areas necessary to promote the long-term persistence of rare species, other Species of Conservation Concern, exemplary natural communities, and intact ecosystems.

Critical Natural Landscape: Critical Natural Landscape identifies intact landscapes in Massachusetts that are better able to support ecological processes and disturbance regimes, and a wide array of species and habitats over long time frames.

According to the report, the main stem of the Connecticut River is the spine of a much more extensive, 93,990-acre Core Habitat that connects many of the most biologically important sites in the river valley. Just in the main stem and adjacent uplands, 91 rare and uncommon species have been found. This large, meandering river hosts seven species of rare dragonflies, including the globally rare Skillet Clubtail and the Midland Clubtail, which is found nowhere else in the state. Below the Turners Dam in Montague, the river supports the federally Endangered Shortnose Sturgeon, the state's only population of Burbot, and Eastern Silvery Minnows. High above the river Bald Eagles soar; this river is a key breeding and wintering site for this bird in Massachusetts.

Mt. Toby is part of the extensive Connecticut River Core Habitat. The mineral-rich conglomerate bedrock of this mountain supports an amazing concentration of rare ferns and orchids, and is home to 15 state-listed plants.

[18] The complete report is available at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/land-protection-and-management/biomap2/biomap2-town-reports.html.

4.e.3. Rare Plant Species

Sunderland is considered one of the most important areas in central New England for plants requiring calcareous conditions. Many rare plants are found in these rich calcareous woods, including narrow-leaved spleenwort, climbing fumitory, ginseng, and wall rue. Sunderland is also a rich area for orchids and ferns. Almost all the fern species present in the Commonwealth have been found in the Mt. Toby area (42 species), and numerous orchid species are also present.

Figure 8: BioMap2 Summary

Sunderland at a Glance

- Total Area: 9,431 acres (14.7 square miles)
- Human Population in 2010: 3,684
- Open space protected in perpetuity: 3,096 acres, or 32.8% percent of total area*
- *BioMap2* Core Habitat: 7,069 acres
- *BioMap2* Core Habitat Protected: 2,413 acres or 34.1%
- *BioMap2* Critical Natural Landscape: 1,022 acres
- *BioMap2* Critical Natural Landscape Protected: 348 acres or 34.1%.

BioMap2 Components

Core Habitat

- 1 Exemplary or Priority Natural Community
- 1 Wetland Core
- 6 Aquatic Cores
- 3 Species of Conservation Concern Cores**
  - 3 birds, 3 amphibians, 1 fish, 9 insects, 1 mussel, 1 flatworm, 24 plants

Critical Natural Landscape

- 2 Wetland Core Buffers
- 6 Aquatic Core Buffers

* Calculated using MassGIS data layer "Protected and Recreational Open Space – March, 2012".

** See next pages for complete list of species, natural communities and other biodiversity elements.

According to BioMap2, there are 24 plant species of special concern supported by Core Habitat in Sunderland (see Table 7 in the Appendix).

BioMap2 is an important conservation planning tool, but does not have any regulatory significance. However, the Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife has designated "Priority Habitat" areas in the Town of Sunderland, which are regulated by the Massachusetts Endangered Species Act (MESA). A Priority Habitat is an area where plant and animal populations protected by MESA may occur. Rare species habitat is located in the following areas in Sunderland, and is also shown on the Plant and Wildlife Habitat Map:

- Mount Toby and surrounding forested area
- Connecticut River
- Farmland and wooded areas in the southwest corner of town

The Massachusetts Environmental Policy Act (MEPA) provides the public an opportunity to review proposed projects for environmental impacts, including potential impacts to state-listed rare species. Proponents with projects and activities within Priority & Estimated Habitats must file with the NHESP for review and approval. "Project" or "Activity" means any action, including, but not limited to:

- grading, excavating, filling, demolition, draining, dumping, dredging, or discharging;
- the erection, reconstruction, or expansion of any buildings or structures;
- the construction, reconstruction, improvement or expansion of roads and other ways;
- the installation of drainage, sewage and water systems;
- beach nourishment or dune building; and
- The construction or reconstruction of seawalls, groins, dikes, jetties or retaining walls; or the destruction of plant life.

During the Regulatory Review process, state biologists will determine whether the project, as proposed, will impact state-listed species and their habitats. Projects may require certain conditions such as timing restrictions to avoid impacts to state-listed species and their habitats, or may need to be revised to avoid impacting species and habitats. There are a number of projects and activities exempt from review, including many agricultural uses.[19]

NHESP has identified 258 native plant species as rare in the Commonwealth; 39 of these rare plants have been documented in the Town of Sunderland (see Table 8 in the appendix). These plants occur in some of the Priority Habitats identified above. 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).

[19] For the full list of exemptions see: https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat

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 Sunderland 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.[20]

Sunderland's remaining lands that are not forested include developed land and playing fields, intensively farmed agricultural land, pasture and abandoned fields. Abandoned fields are extremely important to many early successional plant and animal species. As these abandoned pastures and fields continue to revert back to forest, this habitat is becoming rarer throughout the state.

4.e.4. Forest Land

The types of forests found in town today are largely the result of soil types, elevation, and past land-use history. West and south facing slopes of the Mt. Toby area support the oak-hickory forest type, while the north facing slopes are dominated by hemlock and northern hardwood forests. Plantations of white pine occur on the sandy outwash soils. Red oak forests are found on thin, stony soils. Cottonwoods and silver maples are found in the flood plain area. The dominant species of trees found in Sunderland are hemlock, red oak and sugar maples. White pine, white ash, red maple, black birch and paper birch are also present. Common understory plants include huckleberry, blueberry, shadbush, mountain laurel, azalea and hornbeam.

Forest 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[21] focuses on addressing the impacts of various stressors on New England's forests and offers recommendations for foresters, conservation groups, landowners, and municipal officials on how to increase forest resiliency. Forest resiliency is the capacity of a forest to respond to a disturbance by resisting

[20] https://www.mass.gov/info-details/list-of-endangered-threatened-and-special-concern-species
[21] *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

damage or stress and recovering quickly. The authors break down forest resiliency into four goals: keep forest forested and connected, reduce stressors, reduce vulnerability, and provide refuge. Depending on the forest type, location, history, and surrounding landscape, forests will have varying degrees of vulnerability and resiliency.

Keep Forest Forested and Connected

Converting forests to other uses impacts the benefits the forest provides. Much of the forest in Sunderland and New England was cleared in the 1800s for farming and timber. Over the past 150 years, forests in the region have regrown. More recently, however, the amount of forestland in New England has begun to decline again due to development. As most of the land in New England is family forest, owned by families and individuals, the decisions these family forest owners make about their land moving forward will likely be the most important drivers of forest change. The average age of family forest owners is over sixty, meaning the coming years will see a very large intergenerational transfer of land ownership. It is important for these landowners to make formal plans for the future of their land. Landowners can work with a local land trust or conservation organization to investigate options for conserving their land.

Conserving resilient forests and the linkages between them will help plant and animal species move to more suitable habitats as the climate changes. Large, intact forested areas will also be more likely to recover from extreme events such as droughts, wind storms, ice storms, and flooding. Although individual parcel sizes may be small, conserving critical connections between larger core habitat areas can make a big difference in species migration. In addition to land protection, communities can implement land use regulations that encourage natural resource conservation and minimize forest fragmentation and land clearing for development.

Reduce Stressors

Forest stressors include invasive plants, invasive insects and disease, over-browsing from deer, and climate change. Invasive plants can out-compete native plants and decrease overall plant diversity by dominating forests and reducing regeneration of native trees and plants. Invasive insects, like the hemlock woolly adelgid or the Asian long-horned beetle, have no natural predators and are significantly affecting species composition as trees susceptible to these insects

are selectively killed. Landowners can work with foresters to prevent the introduction of invasive species, remove small populations of existing ones, and learn to manage extensive areas of infestation. Deer browsing can be so intense in some areas that regeneration of certain species can be inhibited. Allowing deer hunting to control deer populations and protecting seedlings using temporary fencing or deer repellants can limit the impacts of deer browsing.

Forest landowners can also take steps to maintain or restore soil and water health by ensuring forestry best management practices are used when conducting a timber harvest to reduce soil compaction and erosion and to promote soil fertility. Recreation on forest land can be directed away from easily erodible soils or other environmentally sensitive sites. Maintaining or restoring forested riparian buffers around water resources will help filter out sediment and contaminants and keep water temperatures cooler.

Reduce Vulnerability

A forest's vulnerability is it's susceptibility to undesired change from stressors. Forests with high complexity are more likely to withstand stressors and recover from disturbances. Complex forests have a diversity of tree species, including trees that are likely to do well in future climate conditions (see Figure 9), a variety of tree sizes, ages, and tree arrangements, and enough standing deadwood and logs on the ground. Forests with existing high complexity can be monitored over time for signs of vulnerability. Forests that are lacking in high forest complexity in one or more areas can become more resilient through forest stewardship activities such as creating openings of different sizes to promote regeneration of well-adapted species, thinning of forests to promote growth, and selectively felling trees to increase the amount of deadwood on the ground.

Provide Refuge

Conserving areas of diverse topography, geology, and local connectivity to provide can provide refuge for threatened and endangered species as the climate changes. Forested areas that contain endangered and threatened species and the conditions that sustain them, such as BioMap2 Core Habitat and NHESP Priority Habitat areas, should be prioritized for conservation, and may be most appropriate to designate as forest reserves where a passive management approach is taken.

Figure 9: Predicted Change in Tree Species Habitat under Climate Change

The following table provides tree species and predictions of how competitive they will be in the future. The values following each species name indicate whether species-suitable habitats will increase (+), decrease (−), or stay the same (•) under projected climate change.

Northern New England (Ecological subsections M211A, B, C, and D, and M211E and J)		
Tree Species	Low Emissions (PCM B1)	High Emissions (GFDL A1FI)
Balsam Fir	−	−
Black Spruce	−	−
Northern White Cedar	−	−
Paper Birch	−	−
Red Spruce	−	−
Tamarack	−	−
White Spruce	−	−
American Beech	•	−
Quaking Aspen	•	−
Sugar Maple	•	−
Yellow Birch	•	−
Bear/Scrub Oak	•	•
Bigtooth Aspen	•	•
Eastern White Pine	•	•
Red Maple	•	•
American Basswood	•	+
Bitternut Hickory	•	+
Black Cherry	•	+
Pitch Pine	+	•
Black Birch	+	+
Black Oak	+	+
Chestnut Oak	+	+
Northern Red Oak	+	+
Shagbark Hickory	+	+
White Oak	+	+
Threatened by Current Forest Health Issues (Do not target)		
Black Ash	−	−
Eastern Hemlock	•	•
White Ash	•	•

Southern New England (Ecological subsection M221A)		
Tree Species	Low Emissions (PCM B1)	High Emissions (GFDL A1FI)
Balsam Fir	−	−
Black Spruce	−	−
Eastern White Pine	−	−
Northern White Cedar	−	−
Paper Birch	−	−
Quaking Aspen	−	−
Red Spruce	−	−
White Spruce	−	−
Tamarack	−	•
American Beech	•	−
Northern Red Oak	•	−
Red Maple	•	−
Yellow Birch	•	−
Bear/Scrub Oak	•	•
Black Cherry	•	•
Sugar Maple	•	•
Bigtooth Aspen	+	•
Pitch Pine	+	•
American Basswood	•	+
Bitternut Hickory	+	+
Black Oak	+	+
Chestnut Oak	+	+
Shagbark Hickory	+	+
White Oak	+	+
Threatened by Current Forest Health Issues (Do not target)		
Black Ash	−	−
Eastern Hemlock	•	•
White Ash	•	•

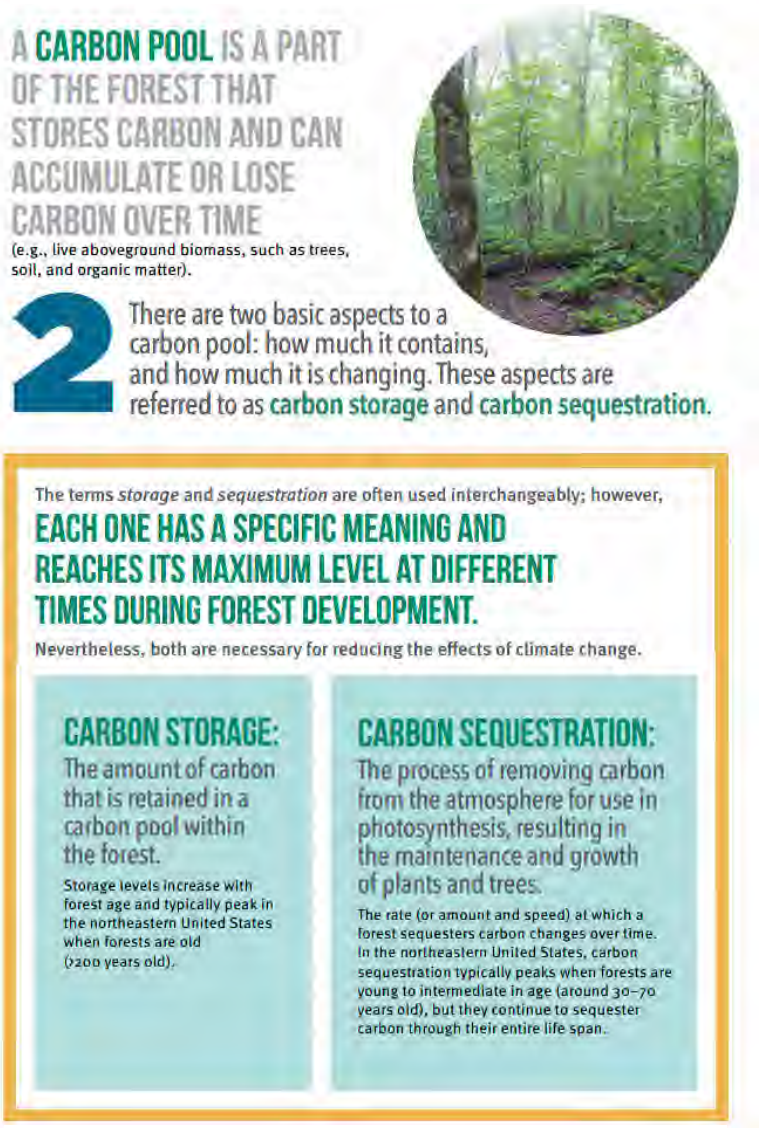
Sunderland falls within the Southern New England eco-region. Source: *Increasing Forest Resiliency for an Uncertain Future*. Catanzaro, Paul, Anthony D'Amato, and Emily Silver Huff. 2016. https://masswoods.org/sites/masswoods.net/files/Forest-Resiliency.pdf

Forest's Role in Sequestering and Storing Carbon

As forests grow, they remove (aka sequester) carbon dioxide from the atmosphere and store it within forest biomass and soils. Thus, forest growth plays an important role in combatting climate change. Currently, carbon sequestration in our forests offsets about 14% of annual emissions in Massachusetts.[22]

As Figure 10 shows, forest carbon includes both the carbon stored in the forest – in trees, plants, leaves, roots, soils, and dead trees – as well as carbon sequestration - the rate at which a forest removes carbon from the atmosphere. The amount of carbon stored or sequestered in any given forests depends on the forest age, tree species, soils, past land use, and any natural or human disturbances. Generally speaking, younger forests (30 – 70 years old) maximize carbon sequestration, as trees are growing fast during this stage and have access to light and space. As forests age, growth, and sequestration rates, slow, but the total amount of carbon stored in the forest increases more with age. Carbon stored in old growth forests, for instance, ranges form 100 – 120 metric tons per acre,

Figure 10: Forest Carbon Pool



Source: *Forest Carbon: An Essential Natural Solution for Climate Change*. UMass Amherst and University of Vermont. https://masswoods.org/caring-your-land/forest-carbon

[22] MassAudubon, https://www.massaudubon.org/our-conservation-work/ecological-management/habitat-management/forest-management accessed June 16, 2021.

while most forests in our region at around 100 years old store between 60 – 80 metric tons of carbon per acre.

Multi-aged forests, where small disturbances over time have opened the canopy in some areas while other areas have continued to age, contain a mix of both characteristics, balancing carbon storage and sequestration. This type of multi-age structure can be accomplished within a forest under one ownership, or on a larger scale throughout a region, by landowners choosing passive and active approaches to managing forestland. Local wood products like lumber, furniture, and flooring provide a carbon benefit as well, if harvested from forests that are sustainably managed. Local wood products store carbon for the life of the product, and are an environmentally friendly alternative to other building materials that have higher embodied carbon.[23]

4.e.5. Wetland Vegetation

There is a moderate-size Black Ash-Red Maple-Tamarack Calcareous Seepage Swamps located in the vicinity of Mount Toby, according to BioMap2. This swamp is vegetated with a mixed deciduous-coniferous forest occurring in areas where there is calcium-rich groundwater seepage. This nutrient enrichment supports many rare calcium-loving plant species. This swamp is in good condition and is part of a larger complex of naturally vegetated wetlands. It is particularly unusual this far east in the state.

4.e.6. Natural Communities

According to BioMap2, there are five Priority Natural Communities in Sunderland – "assemblages of plant and animal species that share a common environment and occur together repeatedly on the landscape. BioMap2 gives conservation priority to natural communities with limited distribution and to the best examples of more common types. The five Priority Natural Communities in Sunderland are:

- Black Ash-Red Maple-Tamarack Calcareous Seepage Swamp
- Major-river Floodplain Forest
- High-energy Riverbank
- Calcareous Rock Cliff Community
- Calcareous Talus Forest/Woodland

[23] https://aiacalifornia.org/embodied-carbon-definitions-and-facts/

4.e.7. Public Shade Trees

Sunderland is home to the famous Buttonball Tree, the largest sycamore tree in Massachusetts. According to the Sunderland Historical Commission's informational flyer, "the Sunderland Buttonball tree (American Sycamore) is a center-of-town tree that has been standing observing Sunderland residents for centuries. It has a strong welcoming presence overhanging road, sidewalk and yard." As of October 2003, the tree stood 114.4 feet tall and had a girth of 24.9 feet

Along with the Buttonball Tree, the Town has many other old and grand trees lining its historic streets. Trees along North and South Main Streets have been inventoried as part of the Mass DOT road improvement projects in recent years. Expanding this inventory to other parts of the village center would help the town identify maintenance and replanting needs. The 2020 MVP Plan recommends planting new trees in areas lacking shade trees, and to replace aging trees that will need to be removed.

Public shade trees in the built landscape offer many environmental and economic benefits, including cleaner air, traffic calming, noise reduction, and increased property values. Trees shade pavement and buildings, reducing the urban heat island effect and the costs and energy associated with cooling buildings. This is becoming more important as extreme heat days are increasing in our region due to climate change. Neighborhoods with mature street trees are attractive places to walk, bike, and be outside, improving public health and helping to build a sense of community.

Public shade trees also serve an important storm water management role. Trees intercept rain on leaves, branches, and trunks, delaying and reducing peak flows. Trees absorb groundwater through roots, increasing runoff storage capacity. Tree roots also promote storm water infiltration into the soil, reducing the amount of runoff and helping to recharge groundwater resources. Finally, trees also remove pollutants from the soil, including metals, organic compounds, fuels, and solvents.

4.e.8. Agricultural Land

Agricultural fields and their edges provide important wildlife habitat to a number of wildlife species. As indicated earlier in this report, 2016 Mass GIS land cover data shows that 18% (1,727 acres) of Sunderland was classified as being in agricultural land use. This included intensive cropland, hay fields and pasture.

Agriculture plays an important role in the culture and economy of the town, providing local food, jobs, and cultural activities and tourism. The best description of the agriculture industry in Franklin County is from the Census of Agriculture, taken every five years (figure 11). The most recent census is from 2017. The next Census of Agriculture will be taken in 2022. This data shows that although the acres in farms has decreased slightly since 2012, the number of farms has increased by 6% percent. More community-supported agricultural ventures and more farmers' markets, even throughout the winter months, are being supported by Franklin County residents. People in the region feel strongly about protecting their farmland. Despite this positive trend, Sunderland's location nearby area colleges and population centers makes it particularly vulnerable to development pressures on its farmland and farmers.

Figure 11: Snapshot of the Agriculture Industry in Franklin County

During the Sunderland MVP planning process, farmers in Sunderland reported difficulty dealing with the extremes in weather from climate change. The naturally high water table and increased precipitation in recent years have caused farmers to lose arable land because their fields are become too wet. Paradoxically, drought is also a problem for farms in Sunderland. Many farms in the Town are located to the east of Route 47, which limits their access to water from the Connecticut River. Irrigation is time consuming and adds hours to an already full workday. Smaller farms may lack irrigation equipment to make the task more efficient. Much of the farmland in Sunderland is located in the flat, open southwestern section of town. This area is vulnerable to high winds. Wind events have damaged crops, greenhouses, and barns, and knock out power.

While farms in town are feeling the effects of climate change on their operations, farmland in Sunderland also plays an important role in mitigating climate change impacts. On-farm conservation practices and improved agricultural practices can increase resiliency to climate change and help mitigate impacts to wildlife, water quality, and other natural resources. Agriculture directly impacts wildlife habitat by converting it to cultivate crops and/or graze livestock and then repeatedly disturbing the resulting habitat throughout the year as part of production. It also affects wildlife habitat indirectly through water management practices for irrigation and drainage, soil erosion and sedimentation, the use of pesticides, and the runoff of nutrients and other pollutants into the environment.

"The **Massachusetts Coordinated Soil Health Program** (MA CSHP) serves farmers, both organic and conventional, in each county of the Commonwealth. Through the implementation of cover crops, no-till, nutrient management, and other soil health management practices, soil health can be improved-- as can farm viability and resiliency to climate change." – American Farmland Trust https://farmland.org/ma-soil-health-program/

The Natural Resource Conservation Service (NRCS), part of the United States Department of Agriculture, has several programs that incentivize conservation practices on farmland to improve soil health, habitat, and water quality. Another new initiative focuses on improving soil health on Massachusetts farms. According to the American Farmland Trust (AFT), "maintaining healthy soils can reduce a farmer's production costs and improve profits while also helping the land sequester more carbon, increase water infiltration and improve wildlife and pollinator habitat." AFT recently launched the Massachusetts Coordinated Soil Health Program in collaboration with UMass Amherst, Massachusetts Department of Agricultural Resources (MDAR), and the Northeast Organic Farming Association. The program seeks to provide technical assistance to farmers to implement healthy soil practices.

Outreach to farms in Sunderland also indicated energy resilience as a key concern and need. Some farms have added, or would like to add, on-site renewable energy power sources, like solar PV and solar hot water. Solar-powered back-up battery storage was identified as a need to increase resilience to extended power outages that could be devastating to a farm business. Batteries powered by renewable energy could also allow for more flexible siting of greenhouses,

which help protect crops from severe weather, but require a power source. Converting farm vehicles and equipment to electric models is another area of interest.

The following strategy is included in the MVP plan - “Assist farms with assessing and prioritizing climate resiliency options to protect crops, farm fields, and farm workers from extreme weather, such as greenhouses, irrigation systems, and innovative drainage solutions, and identify funding for implementation.” The plan also identifies the need to assist farms with energy resilience strategies. Ultimately, farms in Sunderland can work together on becoming more resilient, sharing information on new technologies, equipment, and techniques. Funding could be sought through the MVP program or other sources, to conduct a farm resiliency assessment and roadmap for farms in town. A shared approach would likely be more competitive for certain State funding sources and could serve as a model for other farm communities.

4. f. Fish and Wildlife

4.f.1. General Inventory

Sunderland has a great diversity of fish and wildlife habitats; thus, there is a great diversity of animal species. The great variety of wildlife in Sunderland is very important to many of the town’s residents and visitors. Bird watching is a popular activity for many, as is fishing and hunting. As one person said, "knowing that there are wild turkeys, bluebirds and deer living next door makes this place all the more special."

The Connecticut River is important breeding habitat for many invertebrate species, such as mussels, as well as numerous fish, bird and mammal species. For many endangered species, such as the Short Nose Sturgeon, the Connecticut River provides breeding, foraging and wintering habitats. Many important commercial and recreational species, such as American shad and large-mouth bass also are found in the river. Many species of birds, such as belted kingfisher, osprey, bank and rough-wing swallows use the river for nesting and feeding. Bald eagles are also often seen perched in the trees along the river.

Mammal species common in Sunderland include black bear, white-tail deer, cottontail rabbit, raccoon, coyotes, woodchuck, foxes, mink, otter, and numerous small mammal species.

There are numerous bird species that can be found in Sunderland as well. Many, such as the Neotropical migrant songbirds, breed in various habitats found in town. Several species that are dependent on large, unfragmented forest tracts are common breeders in the Mount Toby area. These include wood thrush, veery, ovenbird, black-and-white warbler and scarlet tanager. Many species of migrant birds also pass through Sunderland during the spring and summer migration, stopping to feed and rest before moving on. The bird species list for Sunderland numbers over 200!

Not all of the wildlife found in Sunderland are of the furry and feathered kind. The diverse natural habitats that occur throughout town are habitat for many species of amphibians and reptiles.

4.f.2. Corridors for Wildlife Migration

In general, the wildlife habitat found in Sunderland is typical of southern New England. There is a large amount of maturing mixed hardwood forests or mixed hardwood/conifer forests with areas that are dominated by agricultural and developed lands. Scattered throughout the forested area are wetlands, and increasingly, housing development. However, unlike many areas throughout the region where the large blocks of forested habitat have been fragmented by suburban development, there are still relatively large, unfragmented tracts of forest land. While it is true that edges (where two different habitat types meet) attract diverse species, many species require forest interior habitat that has no edge present. When large blocks of forest are bisected by roads, power lines and housing developments, edge is created. The overall result is the reduction of forest interior habitat for those species that depend on it. The maintenance of the biological diversity found in Sunderland depends, in part, on the maintenance of some large unfragmented forest lands, such as Mt Toby.

Many wildlife species also inhabit the fields and agricultural lands of Sunderland. Indeed, many of the more unusual birds, such as bobolinks, upland sandpipers and grasshopper sparrows, require open field habitat. This is important to consider in future open space planning, because

as more pasture and old fields revert to forest, there is less of this essential habitat for those species that depend on them.

Mobility is essential for wildlife. Many species of wildlife need to move between different habitats. For example, many species of salamanders winter in upland areas, then migrate to vernal ponds to breed in spring. Wildlife also need to be able to find mates, and young need to disperse. Thus, habitat corridors are a vital element in the landscape, especially as more and more habitat becomes fragmented. Recognizing this need for movement is vital to maintaining viable wildlife populations.

According to the MassWildlife Climate Action Tool, climate change is likely to result in changes to habitat conditions (temperature, rainfall, vegetation) that will require adjustments in the areas occupied by many species. Restoring and maintaining landscape connectivity sufficient to allow wildlife populations to adjust their distribution over time is a critically important strategy for adapting to climate change. Strategies can include permanent protection of key parcels that connect larger tracts of protected open space, dam removal along streams and rivers, and retrofit or replacement of undersized culverts at road-stream crossings to allow for aquatic and terrestrial animal passage.

Roughly 75 percent of Sunderland is considered Core Habitat by the Massachusetts Natural Heritage and Endangered Species BioMap2 program. Core Habitat identifies key areas that are critical for the long-term persistence of rare or endangered species, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Sunderland's Core Habitat is part of a larger block of contiguous open space moving north and south along the Connecticut River corridor and east towards the Quabbin Reservoir. These large, intact habitat corridors are critical for supporting biodiversity and species migration as climate change accelerates.

Sunderland contains BioMap2 Aquatic Core Habitat areas. These are identified as intact river corridors within which important physical and ecological processes of the river or stream occur. These areas include a 10-acre wetland just south of East Plumtree Road; Dry Brook on Mt. Toby; and the main stem of the Connecticut River.

4.f.3. Vernal Pools

According to NHESP, vernal pools are "unique wildlife habitats best known for the amphibians and invertebrate animals that use them to breed. Vernal pools, also known as ephemeral pools, autumnal pools, and temporary woodland ponds, typically fill with water in the autumn or winter due to rainfall and rising groundwater and remain ponded through the spring and into summer. Vernal pools dry completely by the middle or end of summer each year, or at least every few years. Occasional drying prevents fish from establishing permanent populations, which is critical to the reproductive success of many amphibian and invertebrate species that rely on breeding habitats free of fish predators." The Water Resources Map and Plant and Wildlife Habitat maps show the 14 certified vernal pools in Sunderland.

4.f.4. Rare Species

As with plant species, BioMap2 also lists plants classified as endangered, threatened, and of special concern as well as those plants identified on the State Wildlife Action Plan (SWAP). Rare animal species identified in Sunderland are shown in Table 9 in the appendix.

A number of rare species have been documented in the Town of Sunderland that are protected through the Massachusetts Endangered Species Act (Table 10 in the appendix). These animals may occur in the Priority Habitat areas shown on the Plant and Wildlife Habitat map. 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).

4. g. Scenic Resources and Unique Environments

4.g.1. Scenic Landscapes

An important element contributing to Sunderland's rural character and scenic beauty is its diverse environmental and cultural features. There are outstanding vistas of natural features throughout town, such as views of mountains (Mt. Toby and Sugarloaf) and pleasing views of both river and

upland. However, development on ridge lines or mountainsides can have an adverse impact on these treasured scenic views.

The landscape of Sunderland is not only defined by the vistas and views, but also by the many unique features that can be found throughout town. Sunderland has the longest cave in Massachusetts and some of the tallest waterfalls in the area. The Sunderland Caves are located in the Mount Toby State Demonstration Forest and can be accessed via the popular Robert Frost hiking trail. The Gunn Brook Falls are also located on Mount Toby. The Upper Gunn Brook Falls are about 15 feet tall and the Lower Gunn Brook Falls are approximately 11 feet tall. Mount Toby is a distinct plateau-like upland that rises from the flat Connecticut River valley. Because of Mt. Toby's steep and rough topography in places, there are portions of forest that have never been logged and as a result there are large areas of relatively unfragmented forest habitat. Mount Toby is particularly rich in biodiversity including rare orchid species. The Long Plain Aquifer provides very high quality water. Indeed, Sunderland is a very special place.

Numerous scenic, archeological, geologic, and historic areas are identified on the Scenic Resources map. The following section provides more detail on several of these resources.

4.g.2. Cultural, Archeological, and Historic Areas/Unique Environments

Sunderland Center Historic District

Sunderland also has a village center of exceptional beauty and architectural interest. In 2001, those qualities earned it national recognition, when Sunderland Center became officially listed on the National Register of Historic Places. The district comprises 180 historic properties along North and South Main Streets (from Claybrook Road to Old Amherst Road), and also along a stretch of Route 116.

The Sunderland Center Historic District also features the immense and much-visited Buttonball Tree, a sycamore of national significance, likely 400 or 500 years old. The nearby plaque says the tree was alive in 1787, at the time of the signing of the American Constitution.

National Register status does not impose restrictions on homeowners. Rather, it serves as an honorary designation, acknowledging the significance of the buildings in town, as well as Sunderland's unusual linear layout, different from the usual square town-common layout. The houses in this district represent most of the architectural styles of the 18th, 19th and 20th centuries. This pleasing mix of architecture styles, coupled with sugar maple trees that line the roads, help to give Sunderland a quiet, rural atmosphere. Additionally there are numerous areas that are potential Native American sites, many which still have yet to be surveyed.

Silvio O. Conte Refuge

The Silvio O. Conte National Fish & Wildlife Refuge was established in 1997 to protect and enhance the ecosystems of the 7.2-million acre Connecticut River watershed, which spans from the river's headwaters in northern New Hampshire down to where it meets the sea in Old Lyme, Connecticut. The refuge comprises nine tracts of land, including one in Sunderland: a 30-acre parcel at the base of Mt. Toby where many rare plant species can be found. This parcel is part of larger wildlife corridor, particularly for migrating birds. The Conte refuge works together with a wide range of individuals and organizations to provide environmental education and encourage habitat conservation. In addition, the refuge provides technical support to improve management of the lands throughout the watershed.

Notable projects have included: the Connecticut River songbird stopover habitat survey; a cooperative project with the Natural Resources Conservation Service to target important wildlife habitats; and construction of fish passages at small dams. The refuge also formed the New England Invasive Plant Group, a consortium dedicated to stopping new invaders from entering the region.

Connecticut River Scenic Farm Byway

The National Scenic Byway Program is a federal transportation program that provides funding for official state-designated scenic roads. In 2003, the Massachusetts Legislature gave that official designation to Route 47 – including the stretch that passes through Sunderland - creating the Connecticut River Scenic Farm Byway. The Scenic Farm Byway passes through the Pioneer Valley towns of South Hadley, Hadley and Sunderland before continuing north. The program

recognizes the distinct natural beauty of the landscape and its classic New England farm village patterns.

The Corridor Management Plan for the Byway was last updated in 2016, establishing priorities for promoting economic opportunities while protecting the Byway's natural, cultural, and historic resources. A number of projects and programs have been awarded funding through the National Scenic Byway Program, including: two grants for land protection along the corridor totaling $1.5 million, and a tourism signage project to direct tourists to farm stands and other features.

Route 116 Scenic Byway

The Route 116 Scenic Byway was designated as a Scenic Byway by the Massachusetts Legislature on August 4, 2008. In Franklin County, the Byway begins in Sunderland Center and travels through the towns of Deerfield, Conway, and Ashfield. It is a scenic drive through rolling farm fields and forested areas into the Berkshire Hills. A Corridor Management Plan for the Byway was completed in 2013.

Connecticut River Greenway State Park

The Connecticut River Greenway is one of the Massachusetts' newest State Parks, connecting open spaces, parks, scenic vistas, and archeological and historic sites along the length of the Connecticut River as it passes through the state. The park comprises more than 12 miles of permanently protected shoreline, and offers numerous access points to the river, including the Sunderland boat ramp at the end of School Street, on the north side of the Sunderland Bridge.

The stretch of the Connecticut River that flows past Sunderland is mild and fairly narrow. Because the water is shallow, this part of the river is not suited to large powerboats. Instead, it is meant for quiet recreation, observation and wildlife protection.

Franklin County Bikeway

The central section of the Franklin County Bikeway totals about 44 miles in length, consisting of a main loop through Greenfield, Deerfield, Montague and Gill, with a southern spur through

Sunderland. Construction of the central core of the Bikeway was completed in phases starting in 2004, with the off-road paths built first.

Most of the network consists of "on-road" or "shared roadway" sections that make use of predominantly low traffic roads, such as Falls Road in Sunderland. Some portions – such as the section of the Bikeway that follows Route 47 - are best used by experienced cyclists, due to higher traffic volumes and vehicle speeds. Franklin County Bikeway logo signs were installed on the shared roadway sections, connecting the off-road paths to each other and providing continuous routes to Northfield, Amherst and Sunderland.

4. h. Environmental Challenges

Although Sunderland has very little industry, being mainly a residential and farming town, it does face its share of environmental challenges. While some threats are localized, others are driven by regional and even global forces. The town's environmental challenges include hazardous spills and leaks, chronic flooding in low-lying areas, sewer plant overflows, invasive plants, high mercury levels in the Connecticut River, smog, and climate change impacts that bring heavier rainstorms that worsen flooding and threaten roadways and culverts.

● **Hazardous Waste Sites.** Sunderland is fortunate not to have any Superfund or Brownfields sites within its borders (these being sites identified by the U.S. Environmental Protection Agency as contaminated by hazardous waste, and eligible for cleanup). However, there are a number of locations in town where hazardous materials are stored, and spills do happen. Releases of hazardous materials over specified amounts are required to be reported to the Massachusetts Department of Environmental Protection (MA DEP) and may require steps for containment and remediation. MA DEP maintains a searchable database and map of waste sites and reported releases.[24]

The 2021 Sunderland Hazard Mitigation Plan lists locations in town where hazardous materials are stored. In addition, the plan identifies hazardous materials carried on transportation routes as a vulnerability. In particular, materials carried by train or along Route 63 pass over the town's

[24] https://eeaonline.eea.state.ma.us/portal#!/search/wastesite.

drinking water aquifer. The plan also notes that during the summer months, there is a higher volume of trucks carrying pesticides and fertilizers in town.

● **Landfills.** Sunderland's former landfill, off of Reservation Road near the Montague line, has been closed and capped. As of 2014, there have not been any reported problems related to leaching. Residents pay for private pickup of trash, which is hauled to a variety of landfills and recycling centers in the region.

● **Chronic Flooding.** In 1675, the original town settlement was named Swampfield, in reference to its low-lying, swampy geography. Although the name was changed to something more poetic, and the swamps were drained, Sunderland's basic geography has not changed. The water table remains high in the flat areas of town, due in part to the underground aquifer connected to the Connecticut River. The Meadowbrook Stream watershed area seems particularly vulnerable to flooding, and many residents there have complained about flooded basements during rainy periods. (The watershed runs parallel to Route 47, to its east, in the flatlands from the Hadley line to the Sunderland Bridge.) Also, the town's drainage ditches, traditionally maintained by farmers, have become clogged in recent years. This clogging may be contributing to the local flooding problem. However, a 2013 master's thesis by Colleen Samson studying the local hydrology concluded that the underground aquifer is likely the major cause of flooding in the Meadowbrook Stream watershed. Anyone considering construction in this watershed should be advised against building a basement. Areas along Dry Brook experience periodic, localized flooding.

Moreover, climate change has been bringing heavier rainfalls that exacerbates the problem. While most of the land within the 100-year floodplain in Sunderland is in agricultural use, the 500-year floodplain covers a substantially larger area of Sunderland. Many of Sunderland's critical facilities are located within the 500-year floodplain, or would be inaccessible because of flooding on Routes 116 and 47. These include the Town Hall, Library, Public Safety Complex and Highway Garage, Wastewater Treatment Plant, and the Sunderland Elementary School. Many residents, businesses, and farms would be impacted by flooding in this area. The Federal Emergency Management Agency (FEMA) is currently updating the 100-year floodplain maps

for Sunderland and other communities. The maps are expected to be complete by fall 2023, according to current estimate from FEMA. Once the new maps are available, outreach will be needed to residents and businesses that may be within the newly designated area. The Town participates in the National Flood Insurance Program (NFIP) which provides flood insurance at reduced rates for properties in town.

● **Sedimentation.** Sedimentation changes the physical features of a body of water, affecting water depth, surface area, circulation patterns, and flow rates. These alterations can negatively impact water quality, by upsetting the natural process of self-purification. Soil erosion on Sunderland's many agricultural fields contributes to sedimentation. To prevent sedimentation at construction sites, the town Conservation Commission monitors the sites and often requires siltation fences and hay bales. Erosion and storm water runoff along steep roads in town also contributes to sedimentation in roadside streams, ponds, and wetlands. The pond at the Town Park, for instance, has become filled in over time by sedimentation.

● **Development Impact.** Since the recession of 2008, very little development has occurred in Sunderland. The weak economy has provided a window for land to be added to the APR program, and has meant that environmentally sensitive areas of town—such as Mt. Toby—have remained unaltered. At the time of this update, it appears likely that construction of the 150-unit Sugarbush Meadows apartment complex will move forward on Plumtree Road. This development would be exempt from local environmental bylaws, due to its Chapter 40B affordable housing status. However, Sugarbush Meadows will still need to comply with state and federal environmental regulations, which are designed to minimize environmental impacts.

● **Ground and Surface Water Pollution.** Since 2010, there have been four documented cases of hazardous spills and leaking underground storage tanks in Sunderland, some of which have led to groundwater contamination. Sunderland's proximity to the Connecticut River makes it all the more important that spills and leaks be prevented and quickly cleaned up. In 2010, a spill occurred on Bridge Street at Ben's Service, a gas station that has since closed. That same year, the Sunoco Station on Amherst Street was found to have a leaking underground storage tank. Also in 2010, a spill occurred at Delta Sand & Gravel on North Main Street. And lastly, in 2012,

a leak was detected in an underground gasoline storage tank at Christy's Market (7-Eleven) on Amherst Road.

Historically, failing septic systems have also contributed to surface and groundwater pollution. Often, these failing systems have not been discovered until a house is sold and found to be non-compliant with Title V septic system regulations.

Another water pollution problem concerns the fish in the Connecticut River. Sadly, most fish species in the river—including American Shad, Yellow Perch and Striped Bass—have been declared unfit for human consumption by the Massachusetts Department of Fish and Game, due to high levels of mercury and/or PCBs. The main source of mercury is coal-fired power plants, located in Massachusetts as well as in the Midwest, which spew particulates into the air that eventually end up in the river. Possibly, improvements may be coming. In April of 2014, the U.S. Supreme Court backed the EPA's authority to regulate emissions from coal-fired plants through the Clean Air Act.

As for PCBs, they were banned in the U.S. in 1977, after production of more than 1.5 billion pounds. Unfortunately, PCBs break down very slowly in the environment and accumulate in food chains. There are no known current sources of PCBs in the Connecticut River, so the toxins in the fish must result from historic contamination.

● **Forestry Issues.** The forests in Sunderland face a number of diseases and pests, with perhaps the most troubling being the Hemlock Woolly Adelgid, an invasive insect that feeds on and kills hemlock trees. The pest, a native of Asia, has no natural predators in the U.S. The hemlocks on Mt. Toby are at risk.

Invasive plants pose an ongoing problem in Sunderland, especially in ponds and wetlands. In Cranberry Pond, the invasive Eurasian Water Milfoil (*Myriophyllum spicatum*) crowds out native aquatic plants and reduces fish habitat. Another invasive, the Common Reed (*Phragmites australis* subsp. *australis*), has been identified in Sunderland wetlands along Russell Road. The reed produces a toxin that kills neighboring plants, and its deep roots make the reed difficult to

eradicate. A third aggressive and invasive plant, Japanese Knotweed (*Fallopia japonica*), is spreading in many of the town's wetlands, overtaking native ferns and other natives.

Participants in the 2019-2020 MVP planning process also voiced concerns with regard to the possibility of a wildfire outbreak and the Town's ability to manage a fire. Overall lack of maintained fire access roads to forested land in town is a concern. Large tracks of forestland around Sunderland Fire Tower on Ox Hill, Roaring Mountain, Middle Mountain Road, Cross Mountain Road, North Mountain Road, and Tower Road are not maintained. Some of these access roads are currently inaccessible to all but the most rugged off-road vehicles or completely impassible due to washouts. Wildland firefighting, as well as search and rescue operations, are severely impeded in these areas. Lack of water for firefighting purposes is also a concern. In the past, the Town Park pond was used for firefighting, but is now silted in due to nearby development.

A June 2020 wildfire in neighboring Leverett that consumed 66 acres demonstrated how even mild drought conditions can lead to serious wildfire conditions. The flat grassland areas of town are also a concern for wildfire. Wind could spread a fire quickly in this area, which is more populated than the forested areas in town.

● **Smog.** Sunderland lies within the Pioneer Valley, whose geography acts as a trap for smog. This makes air quality poor during ozone season, which runs from May through September. In 2014, the American Lung Association again gave neighboring Hampshire County an F (its lowest grade) for air quality, due to the number of days with high ozone levels. Although Franklin County does not own air-quality monitors that track ozone pollution, it is safe to assume that Sunderland's river valley—lying contiguous to the Hampshire County valley—shares the same poor-quality air in the summertime. The smog results from a combination of locally produced air pollution and particulates blowing east from coal-fired power plants in the Midwest.

Section 4 Appendix

Table 7: BioMap2 Summary Plants List

Genus and Species	Common Name	Status*
Adlumia fungosa	Climbing Fumitory	SC
Aplectrum hyemale	Putty-root	E
Asclepias verticillata	Linear-leaved Milkweed	T
Asplenium ruta-muraria	Wall-rue Spleenwort	T
Boechera laevigata	Smooth Rock-cress	SC
Boechera missouriensis	Green Rock-cress	T
Carex lenticularis	Shore Sedge	T
Clematis occidentalis	Purple Clematis	SC
Corallorhiza odontorhiza	Autumn Coralroot	SC
Elatine americana	American Waterwort	
Eleocharis intermedia	Intermediate Spike-sedge	T
Eragrostis frankii	Frank's Lovegrass	SC
Lygodium palmatum	Climbing Fern	SC
Minuartia michauxii	Michaux's Sandwort	T
Ophioglossum pusillum	Adder's-tongue Fern	T
Platanthera dilatata	Leafy White Orchis	T
Platanthera flava var. herbiola	Pale Green Orchis	T
Poa saltuensis ssp. languida	Drooping Speargrass	E
Prunus pumila var. depressa	Sandbar Cherry	T
Salix exigua ssp. interior	Sandbar Willow	T
Sphenopholis nitida	Shining Wedgegrass	T
Trichomanes intricatum	Appalachian Bristle-fern	E
Liparis liliifolia	Lily-leaf Twayblade	T
Deschampsia cespitosa ssp. glauca	Tufted Hairgrass	E

*Status Key

Status	Status Description
E	Endangered
T	Threatened
SC	Special Concern

Table 8: MESA-Protected Rare Plant Species in Sunderland

Common Name	Scientific Name	Taxonomic Group	MESA Status	Most Recent Observation
Adder's Tongue Fern	Ophioglossum pusillum	Vascular Plant	Threatened	1992
American Waterwort	Elatine americana	Vascular Plant	Endangered	2002
Appalachian Bristle-fern	Crepidomanes intricatum	Vascular Plant	Endangered	2011

Common Name	Scientific Name	Taxonomic Group	MESA Status	Most Recent Observation
Appalachian Fir-moss	Huperzia appressa	Vascular Plant	Endangered	1964
Autumn Coral-root	Corallorhiza odontorhiza	Vascular Plant	Special Concern	2018
Bristly Buttercup	Ranunculus pensylvanicus	Vascular Plant	Special Concern	1922
Cat-tail Sedge	Carex typhina	Vascular Plant	Threatened	2016
Climbing Fern	Lygodium palmatum	Vascular Plant	Special Concern	2015
Climbing Fumitory	Adlumia fungosa	Vascular Plant	Special Concern	2018
Clustered Sanicle	Sanicula odorata	Vascular Plant	Threatened	1932
Drooping Speargrass	Poa saltuensis ssp. languida	Vascular Plant	Endangered	2010
Frank's Lovegrass	Eragrostis frankii	Vascular Plant	Special Concern	1987
Giant St. John's-wort	Hypericum ascyron	Vascular Plant	Endangered	1872
Green Dragon	Arisaema dracontium	Vascular Plant	Threatened	2016
Green Rock-cress	Boechera missouriensis	Vascular Plant	Threatened	2018
Large-bracted Tick-trefoil	Desmodium cuspidatum	Vascular Plant	Threatened	1922
Leafy White Orchid	Platanthera dilatata	Vascular Plant	Threatened	2017
Matted Spike-sedge	Eleocharis intermedia	Vascular Plant	Threatened	2016
Michaux's Sandwort	Minuartia michauxii	Vascular Plant	Threatened	1999
New England Blazing Star	Liatris novae-angliae	Vascular Plant	Special Concern	1928
Nodding Chickweed	Cerastium nutans	Vascular Plant	Endangered	2013
Northern Wild Comfrey	Cynoglossum virginianum var. boreale	Vascular Plant	Endangered	1906
Ovate Spike-sedge	Eleocharis ovata	Vascular Plant	Endangered	2010
Pale Green Orchid	Platanthera flava var. herbiola	Vascular Plant	Threatened	2001
Purple Clematis	Clematis occidentalis	Vascular Plant	Special Concern	2015
Putty-root	Aplectrum hyemale	Vascular Plant	Endangered	2010
Round-leaved Shadbush	Amelanchier sanguinea	Vascular Plant	Special Concern	1931
Sandbar Cherry	Prunus pumila var. depressa	Vascular Plant	Threatened	1987
Sandbar Willow	Salix exigua ssp. interior	Vascular Plant	Threatened	2016
Shining Wedgegrass	Sphenopholis nitida	Vascular Plant	Threatened	2017
Shore Sedge	Carex lenticularis	Vascular Plant	Threatened	1987
Smooth Rock-cress	Boechera laevigata	Vascular Plant	Special Concern	1999

Common Name	Scientific Name	Taxonomic Group	MESA Status	Most Recent Observation
Swamp Oats	Sphenopholis pensylvanica	Vascular Plant	Threatened	1910
Sweet Coltsfoot	Petasites frigidus var. palmatus	Vascular Plant	Endangered	1970s
Tall Nut-sedge	Scleria triglomerata	Vascular Plant	Endangered	1871
Tussock Hairgrass	Deschampsia cespitosa ssp. glauca	Vascular Plant	Endangered	1991
Violet Wood-sorrel	Oxalis violacea	Vascular Plant	Endangered	1874
Wapato	Sagittaria cuneata	Vascular Plant	Threatened	2016
Whorled Milkweed	Asclepias verticillata	Vascular Plant	Threatened	1999

Note: MESA = Massachusetts Endangered Species Act

Source: Massachusetts Natural Heritage and Endangered Species Program.

Table 9: BioMap2 Summary Animals List

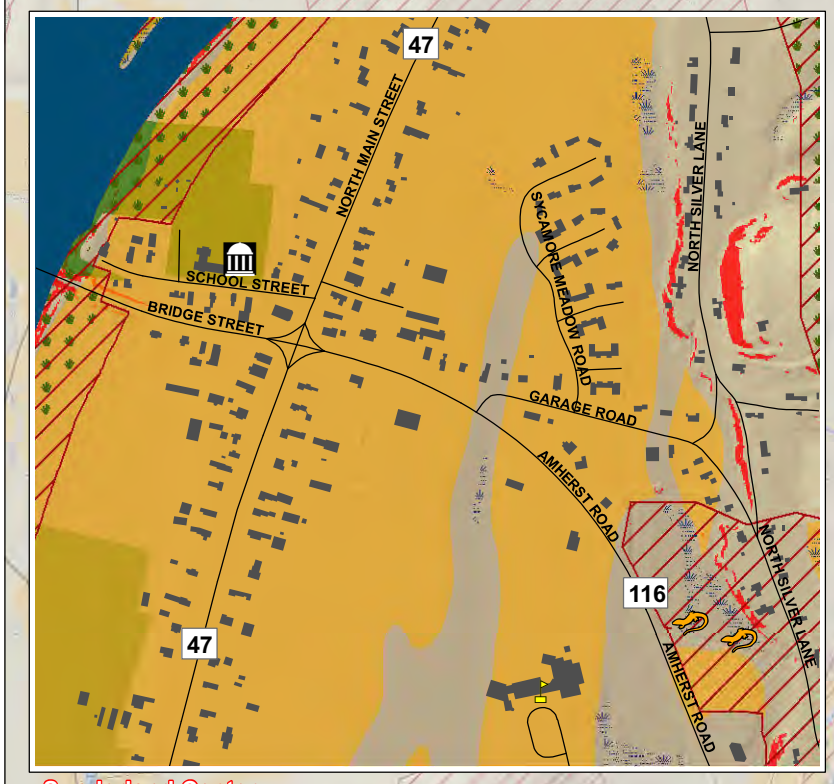
Common Name	Genus and Species	Status*
Flatworms		
Sunderland Spring Planarian	Polycelis remota	E
Mussels		
Yellow Lampmussel	Lampsilis cariosa	E
Dragonflies		
Spine-crowned Clubtail	Gomphus abbreviatus	SC
Midland Clubtail	Gomphus fraternus	E
Rapids Clubtail	Gomphus quadricolor	E
Cobra Clubtail	Gomphus vastus	SC
Skillet Clubtail	Gomphus ventricosus	T
Stygian Shadowdragon	Neurocordulia yamaskanensis	SC
Riverine Clubtail	Stulurus amnicola	E
Arrow Clubtail	Stylurus spiniceps	Non-listed SWAP species
Zebra Clubtail	Stylurus scudderi	Non-listed SWAP species
Amphibians		
Blue-spotted Salamander	Ambystoma laterale	SC
Eastern Spadefoot	Scaphiopus holbrookii	T
Northern Leopard Frog	Rana pipiens	Non-listed SWAP species
Fishes		
Shortnose Sturgeon	Acipenser brevirostrum	E
Birds		
Grasshopper Sparrow	Ammodramus savannarum	T
Bald Eagle	Haliaeetus leucocephalus	T
Vesper Sparrow	Pooecetes gramineus	T

*Status Key

Status	Status Description
E	Endangered
T	Threatened
SC	Special Concern

Table 10: MESA-Protected Rare Animal Species in Sunderland

Common Name	Scientific Name	Taxonomic Group	MESA Status	Most Recent Obs.
Eastern Spadefoot	Scaphiopus holbrookii	Amphibian	Threatened	2019
Jefferson Salamander (complex)	Ambystoma jeffersonianum	Amphibian	Special Concern	2016
Purple Tiger Beetle	Cicindela purpurea	Beetle	Special Concern	1927
Bald Eagle	Haliaeetus leucocephalus	Bird	Threatened	2019
Grasshopper Sparrow	Ammodramus savannarum	Bird	Threatened	2014
Mourning Warbler	Geothlypis philadelphia	Bird	Special Concern	1996
Peregrine Falcon	Falco peregrinus	Bird	Threatened	1901
Vesper Sparrow	Pooecetes gramineus	Bird	Threatened	2007
Midland Clubtail	Gomphurus fraternus	Dragonfly/ Damselfly	Endangered	1991
Rapids Clubtail	Phanogomphus quadricolor	Dragonfly/ Damselfly	Endangered	2002
Riverine Clubtail	Stylurus amnicola	Dragonfly/ Damselfly	Endangered	2004
Skillet Clubtail	Gomphurus ventricosus	Dragonfly/ Damselfly	Threatened	2003
Spine-crowned Clubtail	Hylogomphus abbreviatus	Dragonfly/ Damselfly	Special Concern	1999
Bridle Shiner	Notropis bifrenatus	Fish	Special Concern	1951
Shortnose Sturgeon	Acipenser brevirostrum	Fish	Endangered	2018
Sunderland Spring Planarian	Seidlia remota	Flatworm	Special Concern	1987
Eastern Small-footed Bat	Myotis leibii	Mammal	Endangered	2018
Little Brown Bat	Myotis lucifugus	Mammal	Endangered	2018
Creeper	Strophitus undulatus	Mussel	Special Concern	1954
Dwarf Wedgemussel	Alasmidonta heterodon	Mussel	Endangered	1979
Yellow Lampmussel	Lampsilis cariosa	Mussel	Endangered	2007
Eastern Box Turtle	Terrapene carolina	Reptile	Special Concern	1993
Wood Turtle	Glyptemys insculpta	Reptile	Special Concern	2009



Sunderland Center

MONTAGUE

WHITMORE POND

CHARD POND

Gunn Brook

Cranberry Pond Brook

TORREY ROAD

RESERVATION ROAD

LONG PLAIN ROAD

WHITMORE CROSS ROAD

MONTAGUE ROAD

GUNN CROSS ROAD

FALLS ROAD

47

GUNN MOUNTAIN ROAD

NORTH MOUNTAIN ROAD

TOWER ROAD

NORTH MAIN STREET

CLAYBROOK ROAD

See Inset

MIDDLE MOUNTAIN ROAD

CONNECTICUT RIVER

SOUTH MAIN STREET

BRIDGE STREET

GARAGE ROAD

OLD AMHERST ROAD

RESERVOIR ROAD

Dry Brook

LEVERETT

SOUTH SILVER LANE

CLARK MOUNTAIN ROAD

GREENE SWAMP

AMHERST ROAD

116

BULL HILL ROAD

RIVER ROAD

POTTAPALA CROSS ROAD

RUSSELL STREET

HADLEY ROAD

WHATELY

47

Dry Brook

Mallawk Brk

FERRY ROAD

COUNTRY LANE

NORTH PLAIN ROAD

PLUMTREE ROAD

SOUTH PLAIN ROAD

Russellville Brook

HUBBARD HILL ROAD

EAST PLUMTREE ROAD

HADLEY

HATFIELD

Permanently Protected Open Space
BioMap2 Core Habitat
Prime Farmland Soils
Priority Habitat for Rare & Endangered Species*
Certified Vernal Pool*
Slope > 25%
Town Hall
School
Building Footprint
Road
River, Stream
Wetland
Water Body

*Natural Heritage & Endangered Species Program

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.

Town of Sunderland
Franklin County Ma.

Town of Sunderland Open Space & Recreation Plan 2022

Soils & Environmental Constraints

0 0.25 0.5 1 Miles

N

Franklin Regional Council of Governments

Town of Sunderland Open Space & Recreation Plan 2022

Water Resources

Water Resources

- Public Water Supply
- Water Supply Protection Area
- 100 Year Flood Zone
- Wetland
- Low Yield Aquifer
- Certified Vernal Pool (NHESP)
- Town Hall
- Public Safety Complex
- Building Footprint
- Water Line
- Sewer Line
- Watershed Boundary
- Road
- Rail Line
- MA DFW Coldwater Fisheries
- River, Stream
- Water Body

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.

Town of Sunderland
Franklin County Ma.

0 0.25 0.5 1 Miles

N

Franklin Regional Council of Governments

Sunderland Center

MONTAGUE

WHITMORE POND

WHITMORE CROSS ROAD

TORREY ROAD

RESERVATION ROAD

LONG PLAIN ROAD

CHARD POND

FALLS ROAD

GUNN CROSS ROAD

Gunn Brook

MONTAGUE ROAD

47

OX HILL

TOWER ROAD

ROARING MOUN

GUNN MOUNTAIN ROAD

NORTH MOUNTAIN ROAD

NORTH MAIN STREET

CLAYBROOK ROAD

See Inset

NORTH MAIN STREET

NORTH SILVER LANE

BRIDGE STREET

GARAGE ROAD

SOUTH MAIN STREET

CONNECTICUT RIVER

OLD AMHERST ROAD

116

RESERVOIR ROAD

MIDDLE MOUNTAIN ROAD

LEVERETT

BULL HILL

CLARK MOUNTAIN ROAD

SOUTH SILVER LANE

GREENE SWAMP

AMHERST ROAD

BULL HILL ROAD

RIVER ROAD

RUSSELL STREET

POTTERALA CROSS ROAD

HADLEY ROAD

WHATELY

Dry Brook

HUBBARD HILL ROAD

Kissacktte Brook

HUBBARD HILL ROAD

47

FERRY ROAD

Mattawk Br.

COUNTRY LANE

NORTH PLAIN ROAD

PLUMTREE ROAD

EAST PLUMTREE ROAD

SOUTH PLAIN ROAD

HADLEY

BioMap2

- BioMap2 Core Habitat
- BioMap2 Critical Natural Landscape
- Certified Vernal Pool (NHESP)*
- Priority Habitats for Rare & Endangered Species*
- Town Hall
- Building Footprint
- Road
- River, Stream
- Water Body
- Wetland

*Natural Heritage & Endangered Species Program

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.

Town of Sunderland
Franklin County Ma.

Town of Sunderland Open Space & Recreation Plan 2022

Plant & Wildlife Habitat

0 0.25 0.5 1 Miles

N

Franklin Regional Council of Governments

Sunderland Center

MONTAGUE

WHITMORE POND

BIKE ROUTE

WHITMORE CROSS ROAD

Gunn Brook Waterfall

CHAPD POND

FALLS ROAD

GUNN CROSS ROAD

Gunn Brook

MONTAGUE ROAD

47

ORREY ROAD

RESERVATION ROAD

Cranberry Pond Brook

LONG PLAIN ROAD

Sunderland Caves

Cranberry Pond

Mt. Toby State Park

OX HILL

ROARING MOUNTAIN

TOWER ROAD

Scenic Overlook

NORTH SUGARLOAF MOUNTAIN

GUNN MOUNTAIN ROAD

NORTH MOUNTAIN ROAD

NORTH MAIN STREET

CLAYBROOK ROAD

BIKE ROUTE

BIKE ROUTE

See Inset

NORTH SILVER LANE

CLARK ROAD

MIDDLE MOUNTAIN ROAD

Sugarloaf Brook

BIKE ROUTE

116

BRIDGE STREET

GARAGE ROAD

CONNECTICUT RIVER

SOUTH MAIN STREET

OLD AMHERST ROAD

RESERVOIR ROAD

Dry Brook

Riverside Cemetery

LEVERETT

BULL HILL

CLARK MOUNTAIN ROAD

RIVER ROAD

RUSSELL STREET

SOUTH SILVER LANE

GREENE SWAMP

AMHERST ROAD

116

BULL HILL ROAD

WHATELY

HADLEY ROAD

47

Dry Brook

Mohawk Br.

FERRY ROAD

COUNTRY LANE

NORTH PLAIN ROAD

Silvio O. Conte Refuge

Russellville Brook

HUBBARD HILL ROAD

HUBBARD HILL ROAD

EAST PLUMTREE ROAD

PLUMTREE ROAD

SOUTH PLAIN ROAD

HADLEY

HATFIELD

- Permanently Protected Open Space
- Connecticut River Scenic Farm Byway & Route 116 Scenic Byway
- Sunderland Center Historic District
- Franklin County Bikeway
- Robert Frost Trail
- DCR Trails
- Unusual Geologic Feature
- Town Hall
- Building Footprint
- Road
- River, Stream
- Water Body

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.

Town of Sunderland
Franklin County Ma.

Town of Sunderland Open Space & Recreation Plan 2022

Scenic Resources & Unique Environments

0 0.25 0.5 1 Miles

N

frcog Franklin Regional Council of Governments

5. Inventory of Lands of Conservation and Recreational Interest

Open space is extremely important to Sunderland's quality of life, especially given that Sunderland is a small town with few businesses or commercial diversions. Residents and visitors alike appreciate the beauty of the town's landscape, which offers a pleasing mix of river, farm fields, and mountains. The public associates open space with such positive values as good health, clean air, pure drinking water, locally grown food, wildlife habitat preservation, and a wide range of recreational opportunities. Many residents make active use of the town's open space, through such outdoor pursuits as walking, cycling, boating, fishing, hunting, hiking, camping, and bird-watching, cross-country skiing, snowmobiling, and ball sports.

The term "open space" generally refers to land owned by the town and protected from development by town organizations, such as the Water Department or the Conservation Commission; also properties maintained as open space by the State or Federal government; also conservation land owned by nonprofit organizations; and also certain privately owned farm, forest and open-space land.

Open space lands can be grouped into two main classifications: protected and unprotected. Within the protected classification, there are several levels of protection: permanent protection, temporary protection, and limited protection:

Permanent Protection **—** when land is considered protected there is a legal restriction that does not permit the parcel to be developed for residential, commercial, or industrial uses. To protect land under the Massachusetts constitution, a property owner must file a formal dedication by deed or restriction. Land is considered permanently protected if the Town of Sunderland or a State conservation agency or public or private landowner has filed a deed or conservation restriction at the Franklin County Registry of Deeds specifying that the land has been reserved in perpetuity and is devoted to conservation, recreation and/or water supply protection purposes.

In Sunderland, approximately 4,071 acres, or 43% of land in town, is permanently protected from development. The parcels that are considered permanently protected in Sunderland include:

- Land owned by the Commonwealth of Massachusetts and under the management of two state conservation agencies, the Department of Conservation and Recreation (DCR) and the Division of Fisheries and Wildlife (MassWildlife).
- Land owned by the United States of America and under the management of the U.S. Fish and Wildlife Service.
- Land owned by the Town of Sunderland that is under the authority of the Sunderland Conservation Commission, or for which a deed or conservation restriction is filed specifying that the land has been reserved in perpetuity for conservation, recreation and/or water supply protection purposes.
- Land owned by private conservation organizations like the Kestrel Land Trust and The Nature Conservancy.
- Land owned by private citizens who have sold or donated their development rights to the state, a land trust, the town, or other conservation organization through either a conservation restriction or agricultural preservation restriction attached to the property deed.
- Land acquired for the specific purpose of protecting public water supplies.

Land that is permanently protected from development in one of these ways is protected under Article 97, which requires a two-thirds majority vote of the State Legislature to convert the open space to another use. Land acquired for the specific purpose of protecting public water supplies actually have an extra level of protection, in addition to Article 97. In addition to requiring approval by two thirds of the State Legislature, the state Department of Environmental Protection must approve any conveyance, conversion or change of use of land acquired for protecting water supplies. Finally, any such change must be approved by a two-thirds vote at a special district meeting.

Temporary Protection — Private lands are considered temporarily protected if enrolled in Massachusetts Chapter 61 (forestry), Chapter 61A (agriculture) and 61B (open space/ recreation) current use tax program. This program offers landowners reduced local property taxes in return for maintaining land in productive forestry, agricultural or recreational use, or in a wild condition, for a period of time. These “chapter lands” provide many public benefits from

maintaining wildlife habitat and recreational open space to sustaining rural character and local forest and farm-based economic activity. Approximately 1,473 acres, or 16% of land in town, is currently enrolled in one of the Chapter 61 programs.

A landowner with land enrolled in one of these programs is somewhat constrained from selling and/or developing his or her land by the Town's capacity to act on its right of first refusal. When a parcel that has been enrolled in one of the Chapter programs is proposed for sale or conversion to a use that would make it ineligible for the program, the town is guaranteed a 120-day waiting period during which it can exercise its right of first refusal to purchase the property. After a Purchase and Sale Agreement has been signed, the municipality has ninety days to complete the purchase if it elects to buy the property (or assign the right). The right of first refusal can be sold to, or given to, a land trust that can often respond much more quickly than the Town can.

Exercising the right of first refusal is difficult, however, unless there is an active program in place to acquire land. Towns looking to act on their right of first refusal benefit from having criteria by which they identify ahead of time priority protection lands. Important characteristics that could motivate the Town to consider acting on its right include the presence of prime farmland soils, pasture, wetlands, aquifer, rare or endangered species habitat, or the parcel's potential as link between two other segments of protected land or a trail network.

A Town is also likely to be more successful in taking advantage of the right of first refusal opportunity when partnering with a land trust or DCR and MassWildlife. These organizations can often fundraise much more quickly than a Town and don't have to bring the decision to purchase the land to a Special Town Meeting. The Town can work on these relationships ahead of time so that it is able to assign its right of first refusal to the land trust as soon as the landowner expressed interest in selling the land to a developer.

Limited Protection - Land considered to have limited protection includes any Town-owned open space, not under the authority of the Conservation Commission or which does not have a deed or conservation restriction is filed specifying that the land has been reserved in perpetuity for conservation, recreation and/or water supply protection purposes, and could be developed

through a decision by the Selectboard or by Town Meeting vote. Land owned by the United States of America that is not under the management of U.S. Fish and Wildlife is also considered to have limited protection. Approximately 87 acres of Town-owned open space, and 56.2 U.S.-owned acres comprising the Sunderland Fish Hatchery, is considered to have limited protection.

Unprotected - Land is considered unprotected if owned by a private entity that has not filed a deed/conservation restriction at the Franklin County Registry of Deeds, specifying that the land has been reserved in perpetuity as open space and is devoted to conservation purposes.

The Town of Sunderland encompasses 9,431 acres. Roughly 60 percent of its land (approximately 5,687 acres) falls under some level of protection – meaning the property is owned by a government entity, nonprofit organization, or land trust; is privately-owned with a Conservation Restriction, or belongs to the state's Agricultural Preservation Restriction Program (APR); or is in a state Chapter 61 program; or else has its development rights limited in some other way. Table 11 provides a summary of land with some level of protection in Sunderland (including temporarily protected land in Chapter 61 programs), while Tables 12 through 14 provide a detailed inventory of these properties.

Table 11: Summary of Open Space in Sunderland with Some Level of Protection

Level of Protection	Acres	Percent of Total Land in Sunderland (9,431 acres)
Permanently Protected Land		
Publicly-Owned		
U.S. Fish and Wildlife Service	30.1	0%
State Department of Conservation and Recreation (DCR)	1379.8	15%
State Department of Fish and Game (DFG)	880.8	9%
Town of Sunderland	34.7	0%
Sunderland Water District	162.4	2%
Non-Profit / Conservation Organizations	165.2	2%
Total Publicly-Owned	*2,653*	*28%*
Privately-Owned		
Conservation Restrictions (CR)	99.6	1%
Agricultural Preservation Restrictions (APR)	1,318.3	14%
Total Privately-Owned	*1,418*	*15%*
TOTAL PERMANENTLY PROTECTED LAND	**4,071**	**43%**
Land Under Limited Protection (publicly-owned)		
Town of Sunderland	87.0	1%
U.S. Department of Interior Fish Hatchery	56.2	1%
TOTAL LAND WITH LIMITED PROTECTION	**143.2**	**2%**
Temporarily Protected Land (privately-owned)		
Chapter 61	690.0	7%
Chapter 61A	733.1	8%
Chapter 61B	49.5	1%
TOTAL TEMPORARILY PROTECTED LAND	**1,473**	**16%**
TOTAL OPEN SPACE WITH SOME LEVEL OF PROTECTION	**5,687**	**60%**

Source: 2020 Sunderland Assessor Records and Open Space Committee input.

5. a. Private Parcels

Approximately 1,318 acres of Sunderland's wonderfully rich farmland have been permanently protected through the state's Agricultural Preservation Restriction Program (APR). Actively farmed land with prime soils or soils of statewide importance may be eligible for enrollment in the APR program, which purchases development rights and attaches a restriction to the deed,

legally barring development and keeping land permanently available for agriculture. Since the 2014 OSRP update, almost 200 additional acres have been protected in Sunderland through this program. While most of the town's largest farms have already been conserved, Sunderland continues to actively encourage farmers to participate. Also, as of 2020 there are approximately 733 acres enrolled in the Farmland Assessment Program (Chapter 61A), which provides an annual tax break but does not permanently protect farmland from development. As Map 9 illustrates, much of the preserved farmland is located along the Connecticut River and in the southwest portion of Sunderland.

Approximately 100 acres of privately-owned forestland is permanently protected from development through a Conservation Restriction. These CRs are held by either a State conservation agency or local land trust and are located south of Bull Hill Road, adjacent to the Delta Sand and Gravel operation. An additional 690 acres of forestland is temporarily protected through the Chapter 61 forestry program. The majority of that land is owned by a local timber products company and is located in the eastern section of town, adjacent to permanently protected State forest land on Mount Toby.

Additionally, there are 50 acres in Sunderland enrolled in the recreational / open space component of Chapter 61 (61B). These parcels are mainly located in the southeast corner of town. Private recreational facilities are provided by many of the apartment complexes, though these are for use by residents of the apartment complexes and their guests. In 2012, the private Maple Ridge Community Center opened its doors for community use of its indoor tennis courts, performance stage and meeting places. The local Cub Scouts meet there for free.

Protecting land on Mount Toby is a Town priority. Current gaps in protection on Mount Toby could be prioritized for future land protection efforts with willing landowners. The Town could partner with local land trusts and UMass extension services (MassWoods) to conduct education and outreach to landowners about conservation options, and to explore funding opportunities with landowners interested in permanently protecting their land. Having a plan in place and starting these discussions now will make it easier to act when land protection opportunities arise.

5. b. Public and Nonprofit Parcels

A total of approximately 2,796 acres in Sunderland are protected conservation, open space or recreational lands owned by government or nonprofit entities. The town owns 122 acres of open space. This includes parcels considered permanently protected that are managed by the Conservation Commission (19 acres), public land restricted for recreation (10 acres), and cemetery lands (6 acres), as well as 87 acres considered under limited protection including recreational land and other parcels. The Sunderland Water District owns 162 acres of land considered permanently protected for public water supply protection. In 2020, CPA funds were used to help acquire and protect 40 acres within the public drinking water supply aquifer recharge area on Cross Mountain Road.

The Commonwealth owns 2,261 acres, or roughly 81 percent of the protected public lands found in Sunderland. Most of this land is forested and protected for conservation, recreation or research purposes. These tracts are found mainly in the Mt. Toby area and also include two islands in the Connecticut River. In addition, the U.S. government owns 86 acres, including 30 acres of permanently protected land on Gunn Mountain Road at the base of Mt. Toby (part of the Silvio O. Conte Refuge) and 56 acres for the Department of Interior Fish Hatchery on East Plumtree Road, considered under limited protection.

Several nonprofit entities also own land in town. The Nature Conservancy, a private, non-profit conservation organization, owns 149 acres, located in the Bull Hill area. Amherst College owns 16 acres off of Reservoir Road. In addition, the Nature Conservancy, the Trustees of Reservation, the Kestrel Land Trust, and the Franklin Land Trust, hold the development rights for various Conservation Restrictions and Agricultural Preservation Restrictions in town.

Table 12. Summary of Privately-Owned, Permanently Protected Land in Sunderland

Type of Restriction	Map/ Parcel	Location	Owner(s)	Holder of Rights (as of 8-2012)	Total Parcel Acres	Site Name
APR	1 0 155	Falls Rd.	Smiarowski, Daniel	C/M (DAR) & Town	1.6	
APR, CR	1 0 158	River Rd.	Gunn, Stephen	C/M(Agr Res), USDA(NCRS) & Town	108.8	
APR	1 0 49	Montague Rd.	Milewski, Scott D.	Franklin Land Trust	4.8	
APR	1 0 63	Montague Rd.	Gunn, Stephen		26.2	
APR	1 0 69	Falls Rd.	Williams, Robert O.	Trustees of Reservations	13.1	
APR	1 0 70	Falls Rd.	Shilling, Barbara Ann & Ruth E.		18.0	
APR	1 0 71	Falls Rd.	Williams, Robert O.		18.5	
APR	1 0 72	Falls Rd.	Smiarowski, Daniel	C/M (DAR) & Town	18.5	
APR	1 0 73	Falls Rd.	Smiarowski, Daniel	C/M (DEM,DFA)	17.6	
APR	1 0 77	Montague Rd.	Patterson, Donald F., Jr. & Susan R.	C/M (F&A) & Town (SM)	20.4	
APR In process	1 0 81	Montague Rd.	Gunn, Stephen		11.1	
APR In process	1 0 94	Whitmore Cross Rd.	Gunn, Stephen		27.0	
APR	10 0 10	River Rd.	Grybko, John A. Jr. & Grace J., Irene H. Clancy	C/M (F&A)	17.9	
APR	10 0 11	River Rd.	Wissemann, Michael A.	Trustees of Reservations	3.8	
APR	10 0 12	River Rd.	Meattey, Herman & Sarah		5.4	
APR	10 0 135	River Rd.	Yokubaitis, Estelle M.	C/M (F&A) & Town	6.9	
APR	10 0 136	Hadley Rd.	Pickunka, Nancy et al	C/M (F&A)	8.0	
APR	10 0 139	off Silver Lane	Chin-Yee, Ferdene & Scott Reed	C/M (Agr) & Town	9.4	
APR	10 0 141	Hadley Rd.	Thomas, James E.	C/M (DAR) & Town	8.0	
APR	10 0 17	Hadley Rd.	Thomas, James E.	C/M (DFA)	11.5	
APR	10 0 2	River Rd.	Grybko, John A. Jr. & Ann L.	C/M (F&A)	15.0	

Type of Restriction	Map/ Parcel	Location	Owner(s)	Holder of Rights (as of 8-2012)	Total Parcel Acres	Site Name
APR	10 0 22	Hadley Rd.	Bak, Gerald S. & Wanda M.	C/M (F&A)	8.3	
APR	10 0 38	River Rd.	Wissemann, Michael A.	C/M (DFA)	6.7	
APR	10 0 39	River Rd.	Meattey, Herman & Sarah		2.0	
APR	10 0 4	River Rd.	Meattey, Herman & Sarah		9.0	
APR	10 0 40	River Rd.	Thomson, H. DeWitt	C/M (DFA)	4.9	
APR	10 0 41	River Rd.	Pickunka, Nancy et al	C/M (F&A)	7.6	
APR	10 0 43	River Rd.	Lynch, Robert & Meghan Arquin	C/M (DFA)	1.3	
APR	10 0 46	River Rd.	Lynch, Robert & Meghan Arquin	C/M (DFA)	12.6	
APR	10 0 52	Potyrala Cross Rd.	Yokubaitis, Mary E. & John Jr.		6.0	
APR	10 0 67	Russell St.	Manheim, Hugh D.	Trustees of Reservations	10.0	
APR	10 0 7	Hadley Rd.	Bak, Gerald S. & Wanda M.	C/M (F&A)	7.0	
APR	10 0 8	River Rd.	Kinchla, John W.	C/M (Agr Res)	5.7	
APR	10 0 82	Russell St.	Laznicka, Peter	C/M (DAR) & Town	13.8	
APR	10 0 88	Hadley Rd.	Thomson, H. DeWitt	C/M (DFA)	6.1	
APR	10 0 9	River Rd.	Bak, Gerald S. & Wanda M.	C/M (F&A)	4.0	
APR	11 0 100	Ferry Rd.	Hadley & Ferry LLC	C/M (DFA) & Town	9.7	
APR	11 0 106	Hadley Rd.	Storozuk, Thomas	C/M (DFA) & Town	11.6	
APR	11 0 107	Russell St.	Burleson, Mary Ann & Katherine G. Mokrzecky	C/M (F&A) & Town (SM or ConComm)	13.5	
APR	11 0 17	Hadley Rd.	Scott, Russell E. & Kathryn		15.8	
APR	11 0 18	Hadley Rd.	Smiarowski, Charles W. Living Trust	C/M (F&A) & Town (ConComm)	19.0	
APR	11 0 19	Russell St.	Smiarowski, Charles W. Living Trust	C/M (F&A) & Town (ConComm)	3.3	
APR	11 0 20	Russell St.	Burleson, Mary Ann & Katherine G. Mokrzecky	C/M (F&A) & Town (SM or ConComm)	14.8	

Type of Restriction	Map/ Parcel	Location	Owner(s)	Holder of Rights (as of 8-2012)	Total Parcel Acres	Site Name
APR	11 0 30	Russell St.	Burleson, Mary Ann & Katherine G. Mokrzecky	C/M (F&A) & Town (SM or ConComm)	1.2	
APR	11 0 31	Hadley Rd.	Hadley & Ferry LLC	C/M (DFA), Mass. Highway Comms.	1.0	
APR	11 0 32	Russell St.	Burleson, Mary Ann & Katherine G. Mokrzecky	C/M (F&A) & Town (SM or ConComm)	4.0	
APR	11 0 33	Hadley Rd.	Boisvert, Michelle	C/M (Secy of Agr) & Town (ConComm)	5.0	
APR	11 0 34	Ferry Rd.	Manheim, Hugh D.	C/M (Agr Res)	20.4	
APR	11 0 35	Ferry Rd.	Hadley & Ferry LLC		5.0	
APR	11 0 36	off Ferry Rd.	Hadley & Ferry LLC		2.0	
APR	11 0 37	Hadley Rd.	Hadley & Ferry LLC		2.0	
APR	11 0 54	Hadley Rd.	Boisvert, Michelle	C/M (Secy of Agr) & Town (ConComm)	3.6	
APR	11 0 71	Ferry Rd.	Hadley & Ferry LLC	C/M (DFA), Mass. Highway Comms.	1.0	
APR	11 0 72	Ferry Rd.	Hadley & Ferry LLC	C/M (DFA), Mass. Highway Comms.	1.5	
APR	11 0 91	Ferry Rd.	Hadley & Ferry LLC	C/M (DFA), Mass. Highway Comms.	1.0	
APR	11 0 92	Ferry Rd.	Hadley & Ferry LLC	C/M (DFA), Mass. Highway Comms.	0.7	
APR	12 0 4	Silver Lane	Storozuk,(Sophie) Family Trust	C/M (F&A)	52.6	
APR	12 0 56	Russell St.	Burleson, Mary Ann & Katherine G. Mokrzecky	C/M (F&A) & Town (SM or ConComm)	10.0	
APR	13 0 37	Amherst Rd.	Hubbard, Stephen A.	C/M (DAR) & Town	37.7	
APR	14 0 20	off Plumtree Rd.	Violette, Stephen	Kestrel Land Trust	19.0	

Type of Restriction	Map/ Parcel	Location	Owner(s)	Holder of Rights (as of 8-2012)	Total Parcel Acres	Site Name
APR	14 0 21	off Plumtree Rd.	Burleson, Mary Ann & Katherine G. Mokrzecky		22.0	
APR	14 0 94	466 Hadley Rd.	Szawlowski Realty, Inc.	C/M (DAR)	113.0	
APR	15 0 1	Hadley Rd.	Szawlowski Realty, Inc.	C/M (DFA) & Town (SM)	33.1	
APR	15 0 12	Hadley Rd.	Zuzgo, Jacqueline M. et al	C/M (F&A, DEM)	5.0	
APR	15 0 3	Hadley Rd.	Manheim, Hugh D.	C/M (F&A, EM) & Town (ConComm)	54.5	
APR	2 0 14	North Main St.	Williams, Robert O. & Barbara E.		8.0	
APR	4 0 19	Park Rd.	Williams, Robert O. & Barbara E.		9.6	
APR	4 0 2	Park Rd.	Williams, Robert O. & Barbara E.		11.2	
APR	4 0 20	Park Rd.	Williams, Robert O. & Barbara E.		6.2	
APR	4 0 3	Park Rd.	Williams, Robert O. & Barbara E.		6.0	
APR	5 0 1	North Main St.	Williams, Robert O. & Barbara E.		10.2	
APR	5 0 2	North Main St.	Williams, Robert O. & Barbara E.		6.9	
APR	5 0 5	North Main St.	Williams, Robert O. & Barbara E.		16.1	
APR	6 0 119	off South Main St.	Clark, Helen F.	Trustees of Reservations	6.3	
APR	6 0 127	off South Main St.	Wissemann, Michael A.	Trustees of Reservations	13.4	
APR	6 0 130	off South Main St.	Wissemann, Michael A.	Trustees of Reservations	6.9	
APR	6 0 131	River Rd.	Family Farmland, LLC	C/M (DFA)	14.8	
APR	6 0 132	River Rd.	Grybko, John A. Jr. & Grace J., Irene H. Clancy	C/M (F&A)	17.4	
APR	6 0 25	off South Main St.	Wissemann, Michael A.	Trustees of Reservations	7.9	
APR	7 0 109	Old Amherst Road	Family Farmland, LLC		0.0	
APR	7 0 121	Old Amherst Road	Family Farmland, LLC		0.8	
APR	7 0 61	Old Amherst Rd.	Family Farmland, LLC		8.6	
APR	7 0 75	Reservoir Rd.	Uchneat, Mary Ann Living Trust	C/M (Agr Res) & Town	15.9	

Type of Restriction	Map/ Parcel	Location	Owner(s)	Holder of Rights (as of 8-2012)	Total Parcel Acres	Site Name
APR	9 0 3	Silver Lane	Family Farmland, LLC		27.0	
APR	9 0 4	Silver Lane	Manheim, Hugh D.	C/M (F&A) & Town	58.5	Bealls Farm
APR	9 0 62	Silver Lane	Manheim, Hugh D.	C/M (F&A)	1.2	
APR	9 0 63	Silver Lane	Bagdon, Theresa, Robert & Julie	C/M (F&A)	13.0	
APR	9 0 64	Silver Lane	Manheim, Hugh D.	C/M (F&A)	13.1	
APR	9 0 65	Silver Lane	Manheim, Hugh D.	C/M (F&A)	7.4	
APR	9 0 67	Russell St.	Storozuk Family Trust	C/M (F&A)	21.0	
APR	9 0 70	Silver Lane	Wilcox, Timothy & Caroline Pam	C/M (DAR)	5.8	
APR	9 0 72	Silver Lane	Manheim, Hugh D.	C/M (F&A)	14.7	
APR	9 0 90	Silver Lane	Manheim, Hugh D.	C/M (F&A)	24.6	
APR	9 0 92	Silver Lane	Wilcox, Timothy & Caroline Pam	C/M (DAR) & Town	6.3	
APR SUBTOTAL					**1,318.3**	
CR (wildlife habitat)	8 0 29	Bull Hill Rd.	Delta Materials Corp.	Franklin Land Trust, C/M (DFW)	37.0	-
CR	8 0 38	Bull Hill Rd.	Delta Materials Corp.	Franklin Land Trust, C/M (DFW)	29.2	
CR (wildlife habitat)	12 0 168	Plumtree Rd.	Loos, Ralph & Danielle		3.4	
CR (wildlife habitat)	13 0 110	Bull Hill Rd.	Delta Materials Corp.	Franklin Land Trust, C/M (DFW)	1.5	
CR (wildlife habitat)	14 0 24	off Plumtree Rd.	Klemyk Family Trust		28.5	
CR SUBTOTAL					**99.6**	
TOTAL					**1,417.9**	

Source: 2020 Sunderland Assessor Records.

Table 13. Summary of Privately-Owned, Temporarily Protected Land in Sunderland Enrolled in the Chapter 61, 61A, and 61B Programs

Owner	Chapter Program	Map Lot	Acres
Tozloski Barre E.	61	2 0 13	82.0
Mileski Francis	61	3 0 21	18.5
Mileski Francis	61	3 0 22	15.4
Cowls W. D., Inc.	61	3 0 23	68.8
Cowls W. D., Inc.	61	3 0 24	12.3
Cowls W. D., Inc.	61	3 0 25	9.5
Cowls W. D., Inc.	61	3 0 26	12.3
Cowls W. D., Inc.	61	3 0 27	43.6
Cowls W.D., Inc.	61	3 0 28	53.4
Cowls W. D., Inc.	61	3 0 30	18.1
Cowls W.D., Inc.	61	3 0 7	12.7
Williams Farm Realty Trust	61	7 0 25	13.9
Williams Farm Realty Trust	61	7 0 27	15.0
Moore Investment Trust Joseph G.	61	7 0 31	4.9
Hubbard Cindy Benjamin	61	7 0 78	51.5
Williams Farm Realty Trust	61	7 0 80	33.2
Bak Gerald S.	61	7 0 82	22.0
Grybko John A., Jr.	61	7 0 85	22.7
Grybko John A., Jr.	61	7 0 86	26.0
Cowls W. D., Inc.	61	8 0 11	8.5
Cowls W. D., Inc.	61	8 0 14	72.5
Cowls W. D., Inc.	61	8 0 17	9.8
Cowls W. D., Inc.	61	8 0 6	12.8
Cowls W. D., Inc.	61	8 0 8	6.2

Owner	Chapter Program	Map Lot	Acres
Cowls W. D., Inc.	61	8 0 9	44.4
CH61 SUBTOTAL			**690.0**
Whitmore, William R Heirs and Devicees	61A	1 0 1	0.5
Whitmore,William R Heirs and Devicees	61A	1 0 13	1.4
Whitmore,William R Heirs and Devicees	61A	1 0 17	52.7
Craven Barbara L	61A	1 0 18	11.4
Gunn Stephen	61A	1 0 51	4.0
Gunn Stephen F	61A	1 0 76	31.0
Kowaleck James	61A	4 0 21	21.9
Goodyear Family Rev Trust Virginia Goodyear (Tr)	61A	5 0 129	6.2
Millstone Farm, Llc	61A	6 0 114	2.3
Benjamin Cindy L.	61A	6 0 164	19.0
Millstone Farm, Llc	61A	6 0 173	4.1
Wissemann Michael A	61A	6 0 19	2.3
Wissemann Michael A	61A	6 0 20	1.7
Wissemann Michael A	61A	6 0 22	2.9
Zak Joseph F.	61A	8 0 13	9.0
Bagdon Joseph K.	61A	8 0 36	73.1
Bagdon Joseph K.	61A	8 0 37	4.0
Bagdon Joseph K.	61A	8 0 50	4.0
Doubleday Thomas J.	61A	9 0 71	18.0
Zak Michael J., Jr.	61A	9 0 73	16.0
Bagdon Revocable Trust Joseph L., Jr.	61A	9 0 75	9.8
Bagdon Revocable Trust Joseph L., Jr.	61A	9 0 76	31.2
Zak Michael J., Jr.	61A	9 0 82	4.5
Bagdon John R., Jr.	61A	9 0 96	2.3

Owner	Chapter Program	Map Lot	Acres
Bagdon John R., Jr.	61A	9 0 97	3.2
Bagdon John R., Jr.	61A	9 0 98	39.8
Mitchkoski William P	61A	10 0 112	0.7
Mitchkoski William P	61A	10 0 113	0.7
Mitchkoski William P	61A	10 0 114	0.7
Mcdonald Lianne C.	61A	10 0 29	14.5
Mitchkoski William P	61A	10 0 49	2.2
Mitchkoski William P	61A	10 0 50	0.8
Mitchkoski William P	61A	10 0 51	1.4
Skribiski Robert W	61A	11 0 112	0.5
Ramasubramaniam Ashwin	61A	11 0 113	14.3
Mcdonald Lianne C.	61A	11 0 3	6.0
River Property Realty Trust	61A	11 0 5	9.1
Laurenitis Robert F et al	61A	12 0 24	50.8
Zak Michael J., Jr.	61A	12 0 25	66.3
Matysiewicz Edwin J. Jr.	61A	12 0 3	18.5
Bagdon Revocable Trust Joseph L., Jr.	61A	12 0 30	20.4
Laurenitis Robert F et al	61A	12 0 32	14.9
Laurenitis Robert F et al	61A	12 0 36	10.8
Whittle Kristen P.	61A	12 0 50	9.0
Skribiski Robert W.	61A	12 0 54	19.5
Fabry Mark P Jr	61A	12 0 7	12.3
Laurenitis Robert F et al	61A	12 0 79	0.4
Laurenitis Robert F et al	61A	13 0 7	12.5
Rankin Dean M.	61A	14 0 9	12.6
Zak Michael	61A	15 0 2	57.8

Owner	Chapter Program	Map Lot	Acres
CH61A SUBTOTAL			**733.1**
Kane Brian	61B	1 0 20	11.0
Mt Toby Meeting of Friends	61B	8 0 10	10.3
Laukaitis Maryanne M.	61B	13 0 27	17.8
Laukaitis Maryanne M.	61B	13 0 64	3.8
Cowls W. D., Inc.	61B	16 0 3	6.6
CH61B SUBTOTAL			**49.5**
CH61, 61A, and 61B TOTAL			**1,472.6**

Source: 2020 Sunderland Assessor Records.

Table 14. Summary of Public or Non-Profit-Owned Land in Sunderland

Owner(s)	Managing Agency	Map / Parcel	Location	Total Parcel Acres	Site Name / Current Use	Public Access	Recreation Potential	Zoning	Level of Protection	Grants Received
Comm. of Massachusetts	DCR	1 0 107	Falls Rd.	0.5	CT River Greenway State Park	Yes	Unknown	RR / CR	Permanent	
Comm. of Massachusetts	DFG	1 0 132	Montague Rd.	180.0	Mt Toby State Forest	Yes	Recreational Trails	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 14	Whitmore Cross Rd.	10.6	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 15	Whitmore Cross Rd.	3.9	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 152	Reservation Rd.	7.0	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 16	Whitmore Cross Rd.	12.3	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 3	Falls Rd.	0.3	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 34	Reservation Rd.	42.6	Mt Toby State Forest	Yes	Recreational Trails	RR / CR	Permanent	
Comm. of Massachusetts	DFG	1 0 36	Long Plain Rd	27.2	Montague Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	C-2 / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 38	Long Plain Rd	2.4	Mt Toby State Forest	Yes	Recreational Trails	C-2 / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 40	Long Plain Rd	3.0	Mt Toby State Forest	Yes	Recreational Trails	C-2 / CR	Permanent	
Comm. of Massachusetts	DFG	1 0 41	340 Montague Rd	46.4	Mt Toby State Forest	Yes	Recreational Trails	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 5	Falls Rd.	1.1	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 66	Falls Rd.	17.0	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DCR	1 0 67	Falls Rd.	2.9	CT River Greenway State Park	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DFG	12 0 26	Amherst Rd.	6.7	Sunderland Fish Hatchery	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	12 0 27	Amherst Rd.	1.0	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	12 0 28	Amherst Rd.	0.0	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	13 0 1	Amherst Rd.	22.0	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	13 0 2	Amherst Rd.	6.0	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	13 0 3	Amherst Rd.	2.9	Sunderland Fish Hatchery	Yes	Limited	RR / WP	Permanent	
Comm. of Massachusetts	DFG	13 0 32	Amherst Rd.	0.6	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	13 0 33	559 Amherst Rd.	43.5	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	13 0 34	Amherst Rd.	0.2	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	13 0 35	Amherst Rd.	2.3	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	13 0 36	Amherst Rd.	1.2	Sunderland Fish Hatchery	Yes	Limited	RR	Permanent	
Comm. of Massachusetts	DFG	2 0 12	North Mtn. Rd.	8.9	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DFG	2 0 24	North Mtn. Rd.	13.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	2 0 25	North Mtn. Rd.	18.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	2 0 6	Gunn Mtn. Rd.	35.5	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	DFG	2 0 64	Second Island	8.0	Great Island / Sunderland Islands Wildlife Management Area	Yes	Boating; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	2 0 67	North Mtn. Rd.	40.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	2 0 7	Gunn Mtn. Rd.	21.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
Comm. of Massachusetts	UMass Amherst	3 0 3	Toby Wdlt	726.3	Mt Toby State Forest	Yes	Recreational Trails	RR	Permanent	

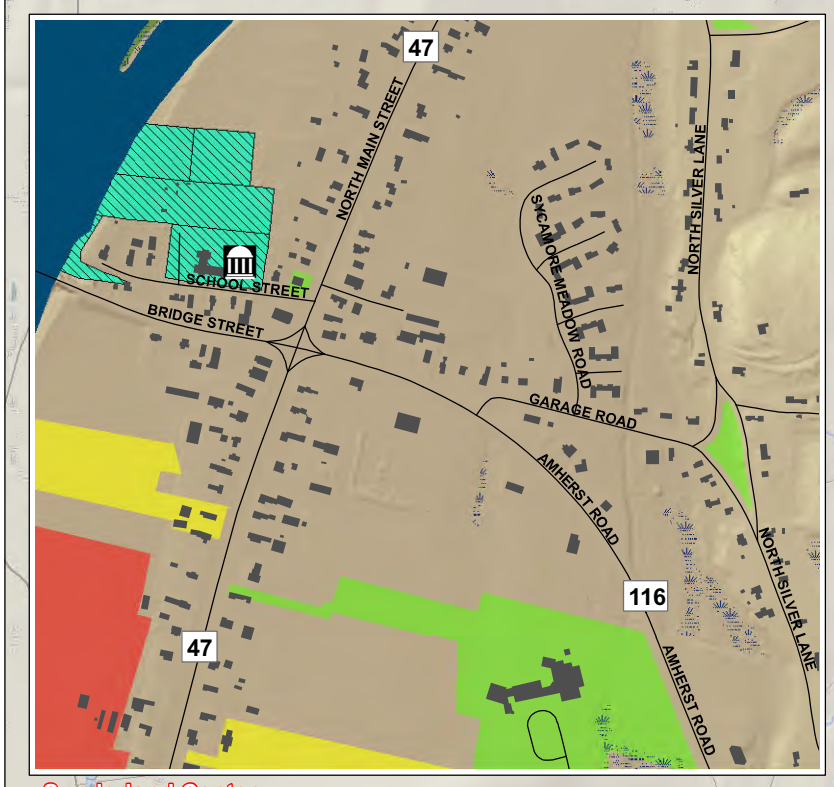
Owner(s)	Managing Agency	Map / Parcel	Location	Total Parcel Acres	Site Name / Current Use	Public Access	Recreation Potential	Zoning	Level of Protection	Grants Received
Comm. of Massachusetts	DFG	3 0 31	Middle Mtn. Rd.	42.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	3 0 32	off Middle Mtn. Rd.	30.7	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	3 0 4	Toby Wdlt	54.5	Mt Toby State Forest	Yes	Recreational Trails	RR / WP	Permanent	
Comm. of Massachusetts	DCR / UMass Amherst	3 0 5	Toby Wdlt	524.3	Mt Toby State Forest	Yes	Recreational Trails	RR / WP	Permanent	
Comm. of Massachusetts	DFG	3 0 6	Middle Mtn. Rd.	44.8	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DFG	3 0 8	Middle Mtn. Rd.	7.7	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DFG	3 0 9	Middle Mtn. Rd.	11.3	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	4 0 6	Toby Wdlt	5.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	4 0 11	Middle Mtn. Rd.	10.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DFG	4 0 12	Middle Mtn. Rd.	18.2	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	4 0 25	Middle Mtn. Rd.	0.7	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DFG	4 0 28	Sheephill Wdlt	8.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DFG	4 0 30	Middle Mtn. Rd.	7.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DFG	5 0 103	First Island	4.3	First Island / Sunderland Islands Wildlife Management Area	Yes	Boating; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	7 0 120	Middle Mtn. Rd.	9.4	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	7 0 4	Middle Mtn. Rd.	19.7	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR	Permanent	
Comm. of Massachusetts	DFG	7 0 83	Kellogg Hill	11.2	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DFG	8 0 1	Reservoir Rd.	104.0	Mt Toby Wildlife Management Area	Yes	Recreational Trails; Hunting; Fishing	RR / WP	Permanent	
Comm. of Massachusetts	DCR	8 0 21	Russell Hill Rd.	25.5	Adjacent to TNC Mohawk Brook Conservation Area	Yes	Passive recreation	RR / WP	Permanent	
Comm. of Massachusetts	DFG	8 0 22	Russell Hill Rd.	7.8	Adjacent to TNC Mohawk Brook Conservation Area	Yes	Passive recreation	RR / WP	Permanent	
STATE SUBTOTAL				**2,260.6**						
United States of America		13 0 66	E. Plumtree Rd.	21.6	Sunderland Fish Hatchery	Yes	Limited	RR / WP	Limited	
United States of America		13 0 21	E. Plumtree Rd.	0.2	Sunderland Fish Hatchery	Yes	Limited	RR / WP	Limited	
United States of America		13 0 65	51 Amherst Rd.	10.4	Sunderland Fish Hatchery	Yes	Limited	RR / WP	Limited	
United States of America		16 0 16	E. Plumtree Rd.	24.0	Sunderland Fish Hatchery	Yes	Limited	RR / WP	Limited	
United States of America (Interior)	USFWS	1 0 147	Gunn Mtn. Rd.	2.6	Silvio O. Conte Refuge	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
United States of America (Interior)	USFWS	1 0 148	Gunn Mtn. Rd.	6.1	Silvio O. Conte Refuge	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
United States of America (Interior)	USFWS	1 0 149	Gunn Mtn. Rd.	18.6	Silvio O. Conte Refuge	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
United States of America (Interior)	USFWS	1 0 150	Gunn Mtn. Rd.	1.3	Silvio O. Conte Refuge	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
United States of America (Interior)	USFWS	1 0 151	Gunn Mtn. Rd.	1.4	Silvio O. Conte Refuge	Yes	Recreational Trails; Hunting; Fishing	RR / CR	Permanent	
FEDERAL SUBTOTAL				**86.3**						

Owner(s)	Managing Agency	Map / Parcel	Location	Total Parcel Acres	Site Name / Current Use	Public Access	Recreation Potential	Zoning	Level of Protection	Grants Received	Condition
Sunderland, Town of	Conservation Commission	1 0 25	Montague Rd.	17.7	Meadow habitat	Yes	Passive recreation	RR / CR	Permanent		Good
Sunderland, Town of	Selectboard	1 0 146	Reservation Rd.	6.8	closed landfill	Yes	Limited	RR / CR	Limited	N/A	N/A
Sunderland, Town of	Public Safety	10 0 3	105-113 River Rd.	8.0	Public Safety Building, wastewater treatment plant	No	None	RR / PA	Limited	N/A	N/A
Sunderland, Town of	Selectboard	12 0 148	Country Lane	0.9	Accepted as town road	Yes	Walking, biking	RR	Limited	N/A	N/A
Sunderland, Town of	Conservation Commission	13 0 109	Hubbard Hill Rd.	1.5	Open space, water supply protection	No	None	RR / WP	Permanent	N/A	N/A
Sunderland, Town of	Selectboard	3 0 17	Reservation Rd.	7.6	Wooded open space	Yes	Passive recreation	RR / WP	Limited	Tax Title	Good
Sunderland, Town of	Selectboard	3 0 40	Reservation Rd.	0.9	Wooded open space	Yes	Passive recreation	RR / WP	Limited	Tax Title	Good
Sunderland, Town of	Selectboard	3 0 41	Reservation Rd.	2.5	Wooded open space	Yes	Passive recreation	RR / WP	Limited	Tax Title	Good
Sunderland, Town of	Selectboard	4 0 15	Middle Mountain Rd.	5.1	Wooded open space	Yes	Passive recreation	RR	Limited	Tax Title	Good
Sunderland, Town of	Sunderland Town Park Trustees	4 0 18	48 Park Rd.	13.0	Town Park; picnic pavilion	Yes	Picnicking	RR	Limited	N/A	Excellent
Sunderland, Town of	Selectboard	4 0 47	Park Rd.	2.0	Town Park; wooded/ wetland	Yes	Picnicking	RR	Limited	N/A	Excellent
Sunderland, Town of	Selectboard	5 0 15	North Main St.	0.1	Open space	Yes	Limited	VR	Limited	N/A	Good
Sunderland, Town of	Selectboard	5 0 24	North Silver Lane	0.2	Open space	Yes	Limited	VR	Limited	N/A	Good
Sunderland, Town of	Selectboard	5 0 59	School St.	1.5	Riverside Park / ballfield, walking path	Yes	Ballfield, walking path	RR / PA	Permanent	Sunderland CPA, PARC, DFG, USFW	Excellent
Sunderland, Town of	Selectboard	5 0 60	School St.	1.5	Riverside Park / ballfield, walking path	Yes	Ballfield, walking path	RR / PA	Permanent	Sunderland CPA, PARC, DFG, USFW	Excellent
Sunderland, Town of	Selectboard	5 0 61	School St.	3.6	Riverside Park / ballfield, walking path	Yes	Ballfield, walking path	RR / PA; VC	Permanent	Sunderland CPA, PARC, DFG, USFW	Excellent
Sunderland, Town of	Selectboard	5 0 65	20 School St.	0.9	Sunderland Public Library	Yes	Riverside Park parking & trail access	VC	Partial recreation restriction	Sunderland CPA, PARC, DFG, USFW	Excellent
Sunderland, Town of	Selectboard	5 0 65	12 School St.	1.6	Town Offices / Veterans Memorial	Yes	Picnicking; adjacent to Riverside Park and ballfields	VC	Recreation restriction	N/A	Good
Sunderland, Town of	Selectboard	5 0 67	109 North Main St.	0.2	Graves Memorial Library / Swampfield Historical Society	Yes	Limited	VC	Limited	N/A	N/A
Sunderland, Town of	Selectboard	6 0 128	South Main St.	4.0	Riverside Cemetery	Yes	Walking	RR / PA	Permanent	N/A	N/A
Sunderland, Town of	Selectboard	6 0 129	South Main St.	1.9	Riverside Cemetery	Yes	Walking	RR / PA	Permanent	N/A	N/A
Sunderland, Town of	Selectboard	6 0 142	27 Old Amherst Rd.	0.1	Pumping station	No	None	VR	Limited	N/A	N/A
Sunderland, Town of	Selectboard	6 0 197	Old Amherst Rd.	0.9	Driveway & sidewalk for school use	Yes	Walking, biking	VR	Limited	N/A	N/A

Owner(s)	Managing Agency	Map / Parcel	Location	Total Parcel Acres	Site Name / Current Use	Public Access	Recreation Potential	Zoning	Level of Protection	Grants Received	Condition
Sunderland, Town of	Selectboard	6 0 30	76 Swampfield Rd.	22.7	Sunderland Elementary School / playgrounds, multi-use path, ballfield	Yes non-school hours	Walking, biking, playgrounds, ballfield	VR / C-1	Limited	Complete Streets	Excellent
Sunderland, Town of	Selectboard	6 0 72	North Silver Lane	1.1	"Sadowski Park" traffic island / wooded open space	Yes	Picnicking	VR / WP	Limited	N/A	Fair
Sunderland, Town of	Selectboard	6 0 99	Old Amherst Rd.	0.4	Driveway & sidewalk for school use	Yes	Walking, biking	VR	Limited	Complete Streets	N/A
Sunderland, Town of	Selectboard	6-0-205	School St.	0.5	Riverside Park	Yes	Boat launch; accessible path	VC	Recreation restriction	Sunderland CPA, PARC, DFG, USFW	Excellent
Sunderland, Town of	Selectboard	8 0 43	Bull Hill Rd.	14.2	Open space	No	None	RR / WP	Limited	N/A	Good
Sunderland, Town of	Selectboard	8 0 47	Bull Hill Rd.	0.2	Wooded open space	No	None	RR / WP	Limited	N/A	Good
TOWN SUBTOTAL				**121.7**							
Sunderland Water District	Sunderland Water District	13 0 13	Hubbard Hill Rd.	19.8	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	13 0 28	Hubbard Hill Rd.	29.5	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	13 0 29	Amherst Rd.	3.6	Hubbard Well protection	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	3 0 18	off Reservoir Rd.	27.0	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	7 0 20	Cross Mountain Rd.	10.5	Public water supply	Yes	Passive recreation	RR / WP	Permanent	EEA Drinking Water Supply Program, CPA	Good
Sunderland Water District	Sunderland Water District	7 0 21	Cross Mountain Rd.	30.0	Public water supply	Yes	Passive recreation	RR / WP	Permanent	EEA Drinking Water Supply Program, CPA	Good
Sunderland Water District	Sunderland Water District	7 0 28	Reservoir Rd.	3.2	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	7 0 29	Reservoir Rd.	23.3	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	7 0 30	Reservoir Rd.	0.5	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	7 0 73	Reservoir Rd.	3.4	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	7 0 74	Reservoir Rd.	0.7	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	7 0 79	Reservoir Rd.	4.6	Public water supply	No	None	RR / WP	Permanent		N/A
Sunderland Water District	Sunderland Water District	9 0 54	Clark Mtn. Rd.	6.3	Public water supply	No	None	RR / WP	Permanent		N/A
WATER DISTRICT SUBTOTAL				**162.4**							

Owner(s)	Managing Agency	Map / Parcel	Location	Total Parcel Acres	Site Name / Current Use	Public Access	Recreation Potential	Zoning	Level of Protection	Grants Received
The Nature Conservancy	The Nature Conservancy	8 0 26	Bull Hill Rd.	35.5	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
The Nature Conservancy	The Nature Conservancy	9 0 57	Clark Mtn. Rd.	32.3	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
The Nature Conservancy	The Nature Conservancy	8 0 3	Russell Hill Rd.	10.5	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
The Nature Conservancy	The Nature Conservancy	8 0 19	off Bull Hill Rd.	10.2	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
The Nature Conservancy	The Nature Conservancy	9 0 56	Clark Mtn. Rd.	19.7	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
The Nature Conservancy	The Nature Conservancy	7 0 84	Reservoir Rd.	10.0	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
The Nature Conservancy	The Nature Conservancy	8 0 51	Bull Hill Rd.	9.1	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
The Nature Conservancy	The Nature Conservancy	8 0 27	Bull Hill Rd.	21.7	Mohawk Brook Conservation Area	Yes	Trails, passive recreation	RR / WP	Permanent	
Amherst College	Amherst College	7 0 26	Reservoir Rd.	15.1	Forested open space	No	None	RR / WP	Permanent	
Amherst College	Amherst College	7 0 81	Reservoir Rd.	1.0	Forested open space	No	None	RR / WP	Permanent	
NON-PROFIT SUBTOTAL				**165.2**						
PUBLIC & NON-PROFIT TOTAL				**2,796.2**						

Notes: DCR = Department of Conservation and Recreation; DFG = Department of Fish and Game (MassWildlife); USFWS = United States Fish and Wildlife Service; CPA = Community Preservation Act; PARC = Parkland Acquisitions and Renovations for Communities grant; EEA = Massachusetts Executive Office of Energy and Environmental Affairs; RR = Rural Residential zoning district; VR = Village Residential zoning district; VC = Village Commercial zoning district; C-1 = Commercial zoning district; WP = Water Protection overlay zoning district; PA = Prime Agriculture overlay zoning district; CR = Critical Resource overlay zoning district.
Source: 2020 Sunderland Assessor Records.



Sunderland Center

Protected Open Space

Permanently Protected

- State Owned
- Federal Owned
- Agricultural Preservation Restriction
- Conservation Restriction
- The Nature Conservancy (non-profit)
- Water District
- Town Owned
- Conservation
- Recreation

Limited Protection

- Limited

Temporary Protection

- Chapter 61A (Agriculture)
- Chapter 61B (Recreation)
- Chapter 61 (Forestry)

- Town Hall
- Building Footprint
- Road
- River, Stream
- Water Body

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.

Town of Sunderland Open Space & Recreation Plan 2022

Open Space

0 0.25 0.5 1 Miles

N

frcog Franklin Regional Council of Governments

5. c. Inventory of Recreational Resources

Sunderland is fortunate to have many outdoor recreational assets within its borders. This section inventories outdoor recreation areas open to the public, and evaluates open space equity and needs.

Town-Owned Recreation Resources

The new stone dust, accessible riverwalk, part of Sunderland's Riverside Park. Photo credit: Friends of Riverside Park.

The town owns 19 acres that are classified as recreational lands. The Town Park, 10 acres in size, is open for public use. The remaining town-owned recreation lands are located around the Town Hall. This site is well developed for recreational activities with parking, restrooms, and baseball and soccer fields. In 2019, this area became known as the Sunderland Riverside Park. Improvements included a reconstructed boat ramp on the Connecticut River, an accessible river walk and observation deck with views of Mt. Sugarloaf, a sand volleyball court, a 3/4 mile pedestrian loop linking the boat ramp, river walk, playing fields, Public Library, Town Offices, and Veterans' Memorial, and a 1/4 mile inner walking loop. The 8-acre site is universally accessible and permanently conserved as recreation land. The project was funded through a PARC grant from the MA Division of Conservation Services, as well as Sunderland CPA funds, Massachusetts Department of Fish and Game Office of Fishing and Boating Access, the Connecticut River Conservancy, U.S. Fish and Wildlife Service, the Sunderland Conservation Commission, and the Sunderland Youth Baseball league. All States Materials Group and Delta Sand & Gravel donated materials.

Parking is available in the Sunderland Public Library lot at 20 School Street and extends behind the Sunderland Town Office Building. Eight boat trailer spaces are available. The parking lot is accessible, and has several designated handicapped parking spaces. While the recreational facilities at Riverside Park are fully accessible, the bathrooms are not, as the stalls are too narrow to accommodate wheelchairs. The Sunderland Public Library, built in 2004, has fully accessible bathrooms adjacent to the playing fields. The Town is currently exploring additional upgrades at the Park, including renovating the bathrooms to meet ADA standards, constructing an ADA accessible sidewalk adjacent to the boat ramp, and adding a new multi-purpose recreational building with space for kayak rentals.

The Conservation Commission manages the Mt. Toby Meadows Conservation Area (18 acres). Pull-in parking is available at this site and there is one handicapped parking space directly adjacent to the trailhead. The Conservation Commission manages one other site, a small area, 1.5 acres, which is primarily used for conservation. No public access is provided at this site, nor is there any planned in the future. At present the Conservation Commission works on a case-by-case basis with permitees, thus ensuring the permitting processes are accessible for those with visual or auditory impairments. Future educational and informational material will include large-print and auditory material, where practical.

The Sunderland Elementary School has two playgrounds and a ballfield for use by residents when school is not in session. In 2014 Sunderland approved the use of Community Preservation Act (CPA) funds to renovate the softball field at the school, and to upgrade the elementary school playground, including accessibility improvements. In 2018, CPA funds were used to restore and rehabilitate the Early Childhood Playground at the school. Sunderland utilized Complete Streets funding to

The Sunderland Elementary School playground at sunset. Photo credit Sunderland Elementary School PTO Facebook page.

improve the emergency access road to the Sunderland Elementary School for use by pedestrians and bicyclists. The road, which provides access to the school from South Main Street, was repaved, signed and striped as a multi-use pathway. Finally, in 2020 CPA funds were approved for creating a raised bed pollinator garden at the school for educational use.

In 2017, improvements were completed at the Sunderland Public Library courtyard to make the space more viable and comfortable for the community to use for group and individual recreational activities, including outdoor concerts, movies, knitting circle, Qigong, and other programming.

An outdoor concert at the Sunderland Public Library. Photo credit Sunderland Public Library Facebook page.

Connecticut River Greenway State Park

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. There are more than 12 miles of permanently protected shoreline, and numerous river access points along the Greenway, including the Sunderland boat ramp at the end of School Street. The next closest river access point is located to the south, one mile north of Hatfield Center off of Kellogg Hill Road.

Robert Frost Trail

This 47 mile trail passes through ten towns on a mixture of state and town conservation lands, state and town roads, and private property. The trail extends from the south side of the Holyoke Range north, crossing through the Mt. Toby State Forest in Sunderland and ending in the Wendell State Forest. The trail is open to hiking, snowshoeing, cross-country skiing and other passive activities. Fishing and swimming are possible at locations along the trail. Parking and access to the trail is available at multiple locations.

Mt. Toby State Forest

At more than 1,200 feet in height, Mt. Toby looms over the middle Connecticut River Valley offering panoramic views to those who will make the trek on a moderate hiking trail of about 6 miles. There are shorter hiking trials as well. Mt. Toby features cliffs, caves, waterfalls, wetlands and open fields. Cranberry Pond is a small pond at the foot of Mt Toby and offers opportunities for kayaking. Parking is located off Route 47 about one half mile east on Reservation Road.

Connecticut River Scenic Byway Bicycle Routes

Federal Scenic Byway Program funding was awarded in 2012 to develop a print and online bike map of the bicycling resources in the tristate (Massachusetts, New Hampshire, and Vermont) area of the Connecticut River Scenic Byway, and to install wayfinding signs and bicycle racks to enhance bicycling in the region. The project includes route connections between communities such as Northampton, Amherst, and Greenfield, Massachusetts, Keene, New Hampshire, and Brattleboro, Vermont. The project is meant to build upon the growing bicycle touring industry in the region and enhance economic development related to tourism.

The map details the level of difficulty of the routes as “advanced,” “intermediate,” “easier,” and “off road bike trail” routes are identified on the map, as well as bike shops, public parking and restrooms, picnic areas, ice cream stands, and other points of interest. Trailblazing signs will be added to routes along and adjacent to the byway between Greenfield, Brattleboro, and Keene.

Maps were completed in 2014 and are available from the FRCOG, area bike shops, and other locations in the CT River valley, and online at http://frcog.org/program-services/transportation-planning/.

The Franklin County Bikeway

The Franklin County Bikeway is a region-wide bicycle network that creates connections within the county and to neighboring counties and states. Three Franklin County Bikeway maps - Western Franklin County, Central Franklin County, and Eastern Franklin County - show recommended routes, rated as "novice", "intermediate", or "advanced" based on their suitability for different level bicycle riders. Sunderland is included on the Central Franklin County and Eastern Franklin County bikeway maps. The Central Franklin County map includes the routes that were part of the original 44-mile section of the Franklin County Bikeway that is centered along the Connecticut River. This part of the bikeway consists of both off-road multi-use trails and shared roadway routes. The shared roadway routes are marked with Franklin County Bikeway logo signs.

The Connecticut River Route is the main bikeway route travelling through Sunderland. This is a shared roadway route that travels near the Connecticut River along low volume scenic roads in Montague and Sunderland. From the Montague town line, the route travels along Falls Road in Sunderland and turns onto Route 47, ending in the village center. In 2020, North Main Street (Route 47) was reconstructed through the Transportation Improvement Program, and includes marked bicycle lanes from Claybrook Drive south to the intersection with Route 116.

Complete Streets

As noted in Section 3, Sunderland adopted a Complete Streets policy in 2016 committing the town to plan roadway improvements with the safety of all users in mind, including cyclists, pedestrians, transit users, and automobiles. With assistance from the Franklin Regional Council of Governments, Sunderland prepared a Complete Streets Prioritization Plan in 2017, identifying priority projects in town. In 2018, Sunderland was awarded funding through MassDOT's

Complete Streets program for projects on Garage Road and South Main Street for sidewalk improvements and extensions, and for sidewalk and crosswalk improvements on Hadley Road, from Old Amherst Road past Sugarloaf Estates. A new sidewalk on South Silver Lane was completed in 2021 using Complete Streets funding, adding about 2,000 linear feet.

In 2021, Mass DOT is planning improvements along Route 116 from the intersection with Route 47 to the Frostie Ice Cream stand that will include new sidewalks, buffered bike lanes, and a new crosswalk with flashing beacons. These improvements were recommended in Sunderland's 2014 Transportation and Circulation Master Plan chapter and will improve bicycling and pedestrian safety along this route. Both the 2014 Transportation and Circulation Chapter, and the 2017 Complete Streets Prioritization Plan, contain additional recommendations that remain to be implemented.

5.c.1 Open Space Equity

Sunderland is committed to ensuring that all townspeople benefit from and have access to the unique scenic, cultural and recreational resources and opportunities in town. Sunderland meets the administrative requirements of the ADA Self-Evaluation report in that: the town has a designated ADA Coordinator; there is a grievance procedure for the general public; the town has an EOE clause; and individuals with disabilities are active on town committees that assisted with the development of this plan update. Also, the town's ADA Coordinator confirms that the town's employment practices are consistent with ADA regulations. The ADA Self-Evaluation Inventory can be found at Appendix 3.

Park and open space equity means taking a look at conservation and recreation opportunities available in the town and determining if there are areas lacking resources. In particular, access to recreation and open space for low income residents is prioritized. As noted in Section 3, Sunderland qualifies as an Environmental Justice Population area, where the poverty level is higher, and median income is lower, than the County and State. Residents may be unable to afford recreational opportunities that require a fee, and may lack transportation to open space and recreation resources not located on a transit route. It is therefore important to ensure free access to an adequate amount of well-maintained open space and recreational resources within walking

distance of homes and bus stops, and to provide free or affordable recreational programming for residents.

The Trust for Public Land (TPL), a conservation organization that works with communities across the country to develop parks and outdoor recreation opportunities, has established a half mile, or 10 minute, walk from home to a park or publicly accessible open space as a common national standard for communities to strive for. In more developed areas, this could mean a park, playground, or bike path within a ten minute walk from all homes. In more rural areas, where homes are spread apart and roads tend to lack sidewalks, this standard is more challenging.

2014 Sunderland Transportation and Circulation Vision Statement:

In Sunderland, we see transportation not only as a way to reach a destination, but also as a means to cultivate health, connect socially, and enjoy our beautiful town. Therefore we envision a holistic transportation network that supports our community by being:

- Safe
- Efficient
- Multimodal
- Recreational
- Community-oriented
- Environmentally conscious
- Economically supportive
- Fun

According to Sunderland's 2014 Transportation and Circulation Master Plan Chapter, "Sunderland seeks a transportation system that serves not only the transportation needs of all residents, but one that also fosters community, improves public health, and provides access to the myriad of resources the Town has to offer," (see the Vision Statement in the sidebar). The plan recognizes the many recreational assets the community provides, but also identifies the need to make better connections between these resources and where residents live.

Sunderland has made much progress towards this goal in recent years. Sunderland Center and the residential areas between Routes 116 and 47, are well-served by existing recreational resources, many of which have been improved with town and state funds since the last OSRP update in 2014, discussed in the beginning of this section. Sidewalk, crosswalk, and bus stop improvements in this area of town through the Complete Streets program have enhanced walkability and bike-ability for residents. The major apartment complexes are served well by transit, which provides access to the Library, Riverside Park, and the Sunderland Elementary

School. Mass DOT improvements along North Main Street, and planned improvements on Route 116, will further increase pedestrian and bicycle access in the town center.

A gap in safe pedestrian and bicycle access from homes on the north side of Route 116 to the Sunderland Elementary School (located just south of Route 116), was identified in the Transportation and Circulation chapter. The planned sidewalk extensions and addition of a crosswalk on Route 116 at Northstar will be a major improvement. Pedestrian and bicycle access to the elementary school from Route 116 will still be needed to complete this connection for families.

The northern part of town, north of Claybrook Drive, is adjacent to the extensive trail network on Mt. Toby. Recreational facilities in this section of town are in need of some improvements, however. More parking is needed at the Mt. Toby parking area off of Reservation Road, where only a few cars can currently park. Bicycle and pedestrian safety along Montague Road (Route 47) is a concern, and creates a gap for residents wishing to bike or walk to the town center. The 2017 Complete Streets Prioritization Plan includes several recommendations for improving bicycle safety along Route 47 and Falls Road in the northern section of town. The 10-acre Town Park on Park Road could also be promoted and better utilized.

Plumtree Road, near the southern border of town, is another area of concern for pedestrian and bicycle access. The road lacks sidewalks, and is used as a cut-through by traffic travelling between Route 47 and Route 116. A bus stop is located near the intersection of Route 116 and Plumtree Road, but residents do not have a safe way to get to the bus stop. The Complete Streets Prioritization Plan includes adding bike lanes and a sidewalk on Plumtree Road, but this would be an expensive project. Other traffic calming options could be explored to help make this road safer for all users.

Overall, there is a need to better publicize the existing network of trails and routes so that people are more aware of the connections that already exist. A town map identifying popular loops and trails, along with coordinated way-finding signage on roads and at trailheads, could display all of the resources in town as a coherent network.

6. Community Goals and Vision

6. a. Description of Process

Sunderland residents have played an important role in shaping this plan, through an online survey and public forum. In addition to public participation, members of various boards and committees were involved to help further enhance and refine the goals.

During 2020, over 400 residents completed an online survey (see detailed results in the appendix). In summary, the survey found:

- Protecting forested land, especially Mt. Toby was a high priority for 77% of survey respondents;
- Making Sunderland more resilient to climate change was the next highest priority at 56%;
- Adding more trails for walking, wheelchairs and hiking was a high priority for 49% of survey respondents; and
- Town-wide events and youth sports were seen as a high priority for 32% and 35% of survey respondents, respectively.

A public forum was held on August 2 as a hybrid meeting. A handful of residents participated in-person, while almost a dozen people participated remotely. Protecting Mt. Toby was again emphasized as a high priority, along with continued farmland protection. Expanding outdoor recreation opportunities, especially for adults, and continuing to foster relationship with local land trusts, were also identified as priorities. An overall theme from discussions at the forum was the need for greater education, outreach, and communication regarding a variety open space and recreation topics. These needs are explained in greater detail in the following section.

6. b. Statement of Open Space and Recreation Goals

In essence, the goal of this plan is to balance the desire for protecting what is "Sunderland" with the rights of landowners, the needs for recreation, and responsible natural resources stewardship.

Sunderland has many rich and valuable natural resources. The water supplied by the aquifer on Mt. Toby is extraordinarily pure and abundant. There are outstanding views of farm, field, river and mountain. The town has some of the most productive farmland in New England, and outstanding recreational and cultural opportunities. There are also regionally important fish and wildlife habitats. These exceptional natural and cultural resources provide many values to the residents of Sunderland. It was obvious in survey responses that the residents of Sunderland

hold many of these resources close to their hearts. Protecting these resources, and building resilience in the face of climate change, are priority concerns for residents.

The overall goal of this plan can best be stated using the words of one of the board members interviewed during the previous plan update: "What I'd like to see in 50 years when I stand on top of Sugarloaf and look down on Sunderland is what I see now: productive farmlands, beautiful green mountains, and a nice place to live."

7. Analysis of Needs

7. a. Summary of Resource Protection Needs

7.a.1: Agricultural Preservation

Agricultural preservation continues to be an important concern, although there are only a few large tracts left unprotected. Sunderland has a large amount of state prime and significant agricultural soils, and is thus of regional and state importance. The remaining unprotected fields are under threat as land prices continue to rise: since 1971, Sunderland has lost at least 400 acres of agricultural land, mostly due to residential development. Although there are programs that help reduce these pressures, their effectiveness varies. Chapter 61A, which provides a tax abatement for enrolled agricultural lands, provides only temporary protection. In recent years, some prime agricultural land in Sunderland has been removed from the program for development, and the Conservation Commission believes that significant additional acreage is at risk of being developed in the next few years. The best long-term conservation tool for preserving farmland in town remains the APR Program, although the program is increasingly cumbersome and slow for farmers to use.

7.a.2: Water Supply Protection

The town's water supply also needs to be protected. The primary tool used to date to address water supply protection is Sunderland's Water District Overlay Zone, added to the zoning bylaws in 1982. There is also a similar aquifer protection district designation for portions of the watershed that are in neighboring Leverett. However, even with these overlay districts, zoning alone cannot ensure the protection of Sunderland's water supply. Unsuitable development - either housing development or commercial resource development - could still occur in the various recharge areas. This could impact recharge areas and cause contamination, reduction in recharge ability or changes in drainage patterns that could put the aquifer at risk. The other major water supplies in town also receive their waters from the same general area as the Long Plain aquifer, and are similarly at risk. Zoning, even at low densities, does not address all contamination threats facing the water supply (i.e. use of pesticides and fertilizers, severe erosion and disruption of recharge ability).

Most of the innovative planning tools in town, (i.e. flexible development, Transfer of Development Rights, and open space developments), are only suitable for subdivision type development. What is lacking are equally innovative tools for frequent single-lot development along existing roads (known as Approval Not Required, or ANR lots). For this type of

development, current zoning may not be adequate for fulfilling the goals of the town or for the protection of critical resources. This may especially be true in the Watershed District. In the past, the added costs of road building and special septic design kept building pressure low in this area. If housing demands increase, however, these added costs may not be an adequate deterrent. Moreover, with low-density development, fragmentation of habitat may be increased due to road building, lot clearing and utility access. This fragmentation reduces the amount of forest interior available for those wildlife species that require it. These same factors may also pose risks to the aquifers. The majority of this area is privately held forest lands. A small portion of this land is in Chapter 61. Permanently protecting open space in the aquifer recharge areas continues to be the best protection method. This can be accomplished through Conservation Restrictions on private land, or through purchase of land by a non-profit or state conservation agency. New zoning tools such as Natural Resource Protection Zoning, which places a greater emphasis on open space protection in critical resource areas, may be worth exploring for this area as well.

7.a.3: Wildlife and Fish Habitat Protection

There is also a continued need to ensure adequate wildlife and fish habitat protection, particularly in the northern part of town in the area of Mt. Toby. This area of town is identified in BioMap2 as an area of high biodiversity, and a significant amount of land around Mt. Toby remains unprotected. Sunderland also contains a number of cold water fish resources – streams and tributaries that support cold water species and that are most vulnerable to changes in the surrounding landscape. There also needs to be increased awareness of the threats to Sunderland's ecosystems, including climate change, invasive species, pollution and habitat degradation. Finally, some of the habitats found in town, such as old fields, may need to be actively managed to support biodiversity. Working with private landowners to promote wise land stewardship and conservation on their lands is a vital part of ensuring the viability of the fish and wildlife species and natural communities in town.

7.a.4: Scenic Resource Protection

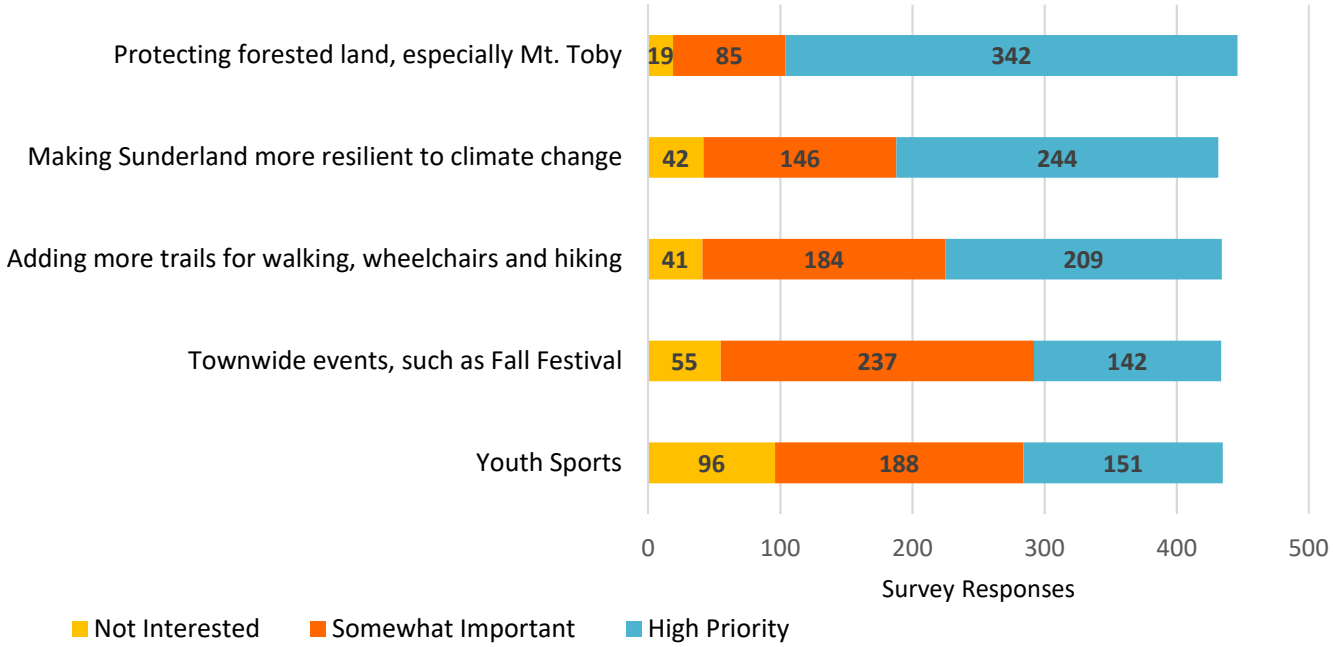
The protection of scenic resources is also important to maintaining the overall rural, small-town feeling of Sunderland. The loss of over 400 of agricultural land and forest over the past 40 years demonstrates how the rural, small town feeling of Sunderland can be changed by development pressures. Progress towards the goal of maintaining the scenic character of the town has been achieved in recent years, through passage of the River Protection Act and Scenic Byway designation for Route 47. The Town continues to refine its land-use regulations to encourage development in appropriate locations, limit the impact of development on natural and scenic resources, and promote a scale that fits into the existing development pattern. Tools such as

Planned Unit Development are already in place in the Village Center zoning district. Additional tools such as design guidelines and Smart Growth Overlay Zoning Districts could be explored to further promote development that fits into Sunderland's small-town feel without detracting from scenic resources.

7. b. Summary of Community's Needs

In 2020 the Open Space Committee conducted a public survey to identify community priorities for open space and recreation. Nearly 500 residents responded. Results are summarized below (the complete survey results and comments are included in the appendix). Residents consider protecting forested land especially around Mt. Toby to be the Town's highest priority, followed by making Sunderland more resilient to climate change. Adding more trails was also an important or high priority for many respondents. Town wide events and youth sports are important but did not rise to a high priority for the majority of respondents. An additional 180 comments were collected with the survey, falling into the following categories: trails & pathways (16), Riverside Park expansion (15), adult recreational activities (14), sidewalks (13), gardens & farm protection (12), park for kids/playground (9), dog park (5), pool (3), better use of Town Park (3), and ditches & drainage (3).

Figure 12: Summary of 2020 Open Space and Recreation Survey Results



In August 2021, more than a dozen residents attended a public forum to hear key findings from the updated plan and to provide feedback on priorities for the next seven years. Comments from participants emphasized the need for education and outreach to the next generation of residents about Sunderland's natural resources and being good stewards of the town's open spaces. Having a backyard full of wildflowers and butterflies just might be more rewarding than having a perfect lawn!

Participants also noted that Sunderland's black bear population is growing, and people are having more encounters with them, sometimes frightening ones. There is a need for educational outreach on how to avoid attracting bears to your back yard, and what to do if you have a close encounter. This outreach should be not only for adults but also at the Sunderland Elementary School and Frontier Regional School.

Participants discussed the need for improved communication between Town government and residents, and a greater effort to include more people in open space and recreation efforts, especially renters living in the apartment complexes in town. In addition, one participant raised concerns about improving zoning in areas without public sewer, to better protect natural resources and scenic character. The forum ended with a conversation about Mt. Toby and the surrounding forested area, and the need for the Town to take leadership on pulling together various stakeholders to address usage and management of this important recreational and natural resource.

7.b.1: Rural Character and Farmland Protection

Preserving Sunderland's rural character, and especially its prime farmland, remains very important to many residents. Between 2001 and 2013, the amount of farmland enrolled in the APR program increased from 700 acres to 1,140 acres. From 2014 to 2020, almost 200 more acres of farmland were protected. A study conducted in 1998 by Kristen K. Norwood helped to identify and prioritize key agricultural lands in Sunderland for future protection.

The Cranberry Pond Watershed Conservation and Management Plan, established in 1996, also demonstrates progress towards achieving the goals set forth in prior Open Space Plans. Management of the Cranberry Pond Watershed has led to the protection of a highly diverse area that also provides an important habitat linkage between the Mt. Toby highlands and the Connecticut River. The area also provides numerous recreational opportunities including hiking, fishing, and canoeing. In addition to the Cranberry Pond Watershed, the Conservation Commission also established the Mt. Toby Meadows Conservation area in 1996, for the purpose

of the conservation and protection of wildlife habitat and natural environmental systems as well as outdoor recreational uses.

7.b.2. Connecticut River Access

Access to the Connecticut River is also an important issue for many residents. In 2018, the Sunderland Boat Ramp near the Sunderland Bridge was graded and paved, after many years with the access road being nearly impassable. The project involved complex efforts to trace ownership of an adjacent triangular plot and reimburse the owners. Fortunately, the Connecticut River Watershed Council (now the Connecticut River Conservancy) was able to help fund the reimbursement, using fines obtained from its 2016 federal lawsuit against river polluters. Another major step was transferring responsibility for maintaining the boat ramp to the state Department of Fish and Game. The Sunderland Boat Ramp is operated as a "fisherman's access" for small boats only. The mostly shallow stretch of river to the north makes it a perfect (and now popular) place to paddle.

7.b.3. Scenic Area Access

Many of the most scenic spots in town are on private property, especially the many popular waterfalls. Many residents are concerned about having access to these valued places denied in the future.

7.b.4. Fostering a Sense of Community

Another concern is how to foster the sense of community in Sunderland. During the pandemic, residents benefitted greatly from all of the recent improvements to Sunderland's outdoor recreational resources. Additional opportunities for recreation and town activities that could occur adjacent to the school and town offices are in the process of being assessed. Taxes are an issue for many Sunderland residents. Some people feel that the town cannot afford to protect land or natural resources because it will increase the tax burdens on the landowners in town. Thus, the Conservation Commission has developed a special information pamphlet on the financial benefits to the town of protecting open space.

Sunderland also has access to a local funding source that includes money specifically for open space and recreation improvement. By adopting the Community Preservation Act, local funds collected through a property tax surcharge are matched by State funds. These funds are locally controlled, and at least 10% of the funding each year must be spent or set aside for open space and recreation purposes. CPA funds may also be used to match State and Federal grants, leveraging these additional funding sources.

In addition, western Massachusetts legislators are advocating for better Payment in Lieu of Taxes (PILOT) funding to communities with State-owned open space. State-owned land is exempt from taxation, but the State provides a payment to help cover the loss in tax revenue from State-owned forests and open spaces. However, the PILOT program has been underfunded for many years, disadvantaging many communities in Franklin County and surrounding counties where the majority of State conservation land is located. An increase in PILOT payments to Sunderland would help to fully reimburse the town for removing land for conservation from its tax rolls.

7.b.5. Meeting the Needs of the Elderly, People with Disabilities, and Youth

Although the college student population of Sunderland remains eternally young, the average age of other Town residents continues to rise. Currently, Sunderland does not have an Elder Recreation Program Committee to oversee recreational facilities and programs for its aging population, however, it is a member of the South County Senior Center, which offers exercise programs for the elderly. In general, the elderly need indoor exercise facilities for the winter months, along with flat outdoor walking trails and short trail circuits that can provide exercise without being overly strenuous. One of the favorite spots for the elderly to get exercise outdoors is the relatively flat walking trails at Riverside Park and the adjacent River Walk.

The needs of the elderly may in some cases overlap with the needs of people with disabilities, particularly regarding pathways that are flat and handicapped accessible. The town needs more handicapped-accessible bathrooms, particularly at the town playing fields. The town has worked hard to improve sidewalks so that they can be navigated in wheelchairs, providing access to town facilities and playing fields. Many sidewalks have been improved since the 2014 plan update, including along North Main Street and Route 116, and more projects are planned. Additional town facilities such as the Town Park need to be upgraded to meet ADA regulations.

The needs of youths are generally met by the Recreation Department and schools – the exception being the private non-profit Sunderland Youth Baseball. The Recreation Department has a number of programs for youth, ranging from tee ball, softball and soccer clinics, to skiing and basketball. Teenagers residing in Sunderland also have access to facilities and programming through the Frontier Regional School District. Regionally, teenagers lack adequate after school activities, recreation facilities, and gathering spaces. Because of the relatively small population of teenagers in Sunderland, the opportunities available through Frontier, and the lack of survey responses focused on recreational activities for teens, there isn't a significant groundswell of support to create additional recreational opportunities for this age group.

7.b.6. Statewide Comprehensive Outdoor Recreation Plan

In 2017 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. Informed by their survey of Massachusetts residents' desires and needs for outdoor recreation, as well as priorities identified in municipal open space and recreation plans, the SCORP identified the top four outdoor recreation goals for the state as:

1) Access for underserved populations,
2) Support the statewide trails initiative,
3) Increase availability of water-based recreation, and
4) Support the creation and renovation of neighborhood parks.

Though Sunderland has developed its own set of priorities, a few priorities intersect with some of the themes represented by these statewide goals. The SCORP identifies trails as important for connecting communities, providing a non-vehicular mode of transit, improving public health, and increasing the value of homes and businesses in the area. According to 2020 Sunderland survey results, many residents are also interested in expanding the trail network in town. The Town could adopt similar trail network objectives as the State: supporting the acquisition of land and development of new open spaces that can provide a trail network, connecting existing trails to create a trail network, and ensuring that there are trails that are fully accessible to people with disabilities.

The SCORP recognizes the dual benefit of protecting water for the environment and society, including increased opportunities for water-based recreation. Access to the Connecticut River continues to be important for Sunderland residents, and water quality in the river and tributaries directly impacts the recreational opportunities in town. Finally, the SCORP outlines a statewide need to develop outdoor recreation areas close to where people reside, and increase access for currently underserved populations. The recent development of Riverside Park creates a centrally located recreation area accessible to nearby residents and close to bus stops. Improving connections between residents in the larger apartment complexes in town and the available recreational resources in town came up during the public forum. In addition, this plan has documented the need for safe walking and bicycling routes in the southern part of town.

As the climate crisis continues to unfold, the present and potential impacts of climate change on the environment, people, and the local economy are coming into focus in small communities like Sunderland. A recent update to the Town's Hazard Mitigation Plan (HMP) and designation as Municipal Vulnerability Preparedness (MVP) community, has helped raise awareness and bring the community together to talk about climate change and its effects. Making Sunderland more resilient to climate change was the second highest priority for respondents of the 2020 survey. Open space and natural resources play an important role in mitigating future climate change, but are also vulnerable to its impacts. Local decisions about land use, land protection, and how open spaces are managed, will affect how Sunderland adapts to the challenges of climate change.

7.b.7. Additional Needs and Ideas

Sunderland residents submitted many excellent ideas for improving open space and recreation opportunities in town through the 2020 survey and at the August 2021 public forum. If town volunteers get inspired, some of these could become reality!

- More trails & pathways
- Riverside Park expansion
- More adult recreational activities
- More sidewalks
- Support for gardens & farms
- Community garden
- Playground/park for young kids
- Dog park
- Pool or swimming area
- Better use of Town Park
- Maintenance of ditches

7. c. Management Needs, Potential Change of Use

Communication could be improved between the autonomous Water District and other town boards. The Water District is politically autonomous from the Sunderland Selectboard, established by authority of the State legislature. The Water District may install water lines, raise rates, or reallocate water amounts, independently from the Selectboard, other town boards or input from a wide cross-section of Sunderland residents. This often leads to decisions being made by the Water District that can directly threaten many town goals for resource protection

and growth management. By working together, the town can use the provision of town services to guide growth into areas that are most suitable.

Communication is also very important between the Planning Board, Conservation Commission, and Select Board. This is especially important when considering the town's right of first refusal option for Chapter 61 lands and areas in the resource protection districts.

It is important to recognize that aquifers and other water resources do not necessarily fall within the limits of a single town. For example, town wells in Montague and Turner's Falls are fed by an aquifer that originates from the area of Cranberry Pond in Sunderland. This aquifer is the source of public water for three communities of Montague. This demonstrates the critical need for cooperation between towns to ensure the future quality and quantity of these important resources.

As noted earlier in this section, Mt. Toby was a key topic of discussion at the public forum in August 2021. Sunderland needs to convene stakeholders to discuss priorities and planning for Mt. Toby. The town-owned dirt roads on the mountain are not being maintained, and they are eroding and increasingly hazardous. Debris from the roads is getting washed into streams, impacting water quality. The lack of designated parking areas leads to cars parking along narrow roads, impacting access for residents. The town needs to organize a meeting about the future of the mountain, together with the Police, Highway, and Fire Departments, Sunderland Water District, and the many stakeholders who use the mountain, for everything from rock climbing to dirt biking to birdwatching.

8. Goals and Objectives

Above all, the goal of this plan is to ensure the protection and conservation of the resources that create the high-quality living environment treasured by Sunderland residents. Many town residents are interested in making Sunderland a greener place, whether that means adding more pathways or preserving wildlife habitat. In the wake of the COVID-19 pandemic, Sunderland is now seeing an influx of homebuyers from New York and other cities, adding development pressure that the town has not seen in many years. This makes thoughtful planning for open space and recreation even more important. The following list of goals and objectives was developed with input from town committees and the public, via a survey of town residents, as well as informal discussions with committee members who have a vision for the future. As always, achieving these goals will involve collaboration among town boards, state and federal agencies, and conservation organizations.

While residents have suggested many excellent ideas for additional programs and facilities, it is important to set realistic goals. Limiting factors include Sunderland's small population, its tight budget, and the decline of volunteerism. In addition, it is crucial to recognize that any new facilities – whether a new trail or a new pollinator garden – will need to be maintained over the long term. Responsibility for upkeep must be clearly designated, and long-range costs must be taken into consideration.

Moreover, the goals set forth here must take account of open space and recreation priorities already agreed upon by other town committees, including the Community Preservation Committee and the Selectboard. Many people have invested long hours in developing these objectives, and this plan – in light of the town's limited resources – should enhance those efforts, rather than divert energy away from them.

Goal One: Protect and Restore the Natural Resources of Sunderland

a. Protect critical wildlife habitats, especially on Mt. Toby in the northern part of town. In the southern part of town, protect land with rare species habitat and important wildlife corridors.

b. Strengthen protection of water supply. Work with the Board of Health to prevent water pollution from septic systems, residential and commercial activities, and storm water overflow.

c. Support development of solar farms and other forms of alternative energy production, without sacrificing prime farmland.

d. Promote conservation of private forest lands, especially on Mt. Toby.

e. Work toward improving stream continuity and water quality.

f. Promote water conservation and drought awareness.

g. Identify and protect resources such as forest tracts that can help mitigate the effects of climate change.

Goal Two: Preserve Sunderland's Rural Character

a. Protect and enhance historic and cultural sites, buildings and landscapes that give Sunderland its rural character.

b. Promote farmland preservation through the State's Agricultural Preservation Restriction Program (APR), or other public and private conservation programs.

c. Monitor properties in the Chapter 61 program and assess their value to the town. Be prepared to exercise the town's Right of First Refusal if acquisition funding can be found.

d. Promote pollinator gardens, small-scale farming and lawn reduction.

e. Protect the town's scenic resources.

f. Explore zoning changes that could protect critical habitat.

g. Preserve the trees along main thoroughfares.

Goal Three: Provide Diverse Recreational Opportunities for Residents

a. Enhance Sunderland's sense of community, embracing the diversity of its residents.

b. Build more pathways, trails and sidewalks, especially in the underserved southern part of town.

c. Support bikeways and other alternatives to car travel.

d. Expand opportunities for outdoor activities and recreational activities, especially for adults.

e. Continue to improve access to the Connecticut River.

f. Promote educational programs about climate change and protecting Sunderland's wildlife and rare habitats.

g. Explore the possibility of creating a Community Garden.

h. Continue to improve existing sports fields and facilities.

Goal Four: Improve Management, Communication and Coordination

a. Enhance communication and coordination between town boards and offices.

b. Improve communication and coordination with neighboring towns.

c. Continue to foster relationships with local land trusts, especially Franklin Land Trust and Kestrel Land Trust.

d. Coordinate with state and federal agencies and private groups to achieve open space and recreation planning objectives. Work toward understanding of our local situation and unique priorities, by building relationships.

e. Foster communication and coordination with the University of Massachusetts, and find ways to draw on the expertise of local academics, organizations, environmental studies departments, students, and entities that oversee the protection of Mt. Toby and other wildlife areas.

9. Seven-Year Action Plan

Listed are actions needed to achieve the goals and objectives identified above. These actions are not rigidly prioritized, because achieving them depends on many unknowns, such as availability of funds and volunteer workers, development pressure and public support.

Table 15: Seven-Year Action Plan

PRIORITY	*OBJECTIVES*	*ACTIONS*	*RESPONSIBLE BOARD AND POTENTIAL PARTNERING ORGANIZATIONS**	*FUNDING SOURCE & START DATES*
GOAL 1: Protect and Restore Sunderland's precious natural resources, including farmland, wildlife habitat, and water resources.				
High Priority	Continue to encourage the protection of farmland.	Support public education around the value of farmland in Sunderland through periodic public forums and workshops.	Ag Comm and Con Comm; Land Trusts; AFT; LFG; CISA; MDAR; MFB; FRCOG	Volunteer. Ongoing.
		Promote the availability of funds to help preserve farmland, through Agricultural Preservation Restriction (APR) Program, or other public and private conservation programs.	Ag Comm; Land Trusts; AFT; LFG; CISA; MDAR; MFB; FRCOG; CPC	Volunteer. Ongoing.
		Support education of agricultural landowners, especially concerning protection options.	Ag Comm; Land Trusts; AFT; LFG; CISA; FRCOG	Volunteer. Ongoing.
		Provide administrative support for APR application process.	Town Ag Comm; Volunteers	Volunteer. Ongoing.
		Provide local matching funds for APR applications.	Ag Comm; CPC	CPA. Ongoing
High Priority	Continue to encourage the protection and stewardship of wildlife habitat, especially on and near Mt. Toby.	Continue to identify and prioritize important wildlife areas and unique habitats for conservation, especially on and near Mt. Toby. In the southern part of town, protect land with rare species habitat and important wildlife corridors.	Con Comm; FRCOG; CRC; NHESP; CPC; Land Trusts	Volunteer. Ongoing.
		Promote educational programs about climate change and protecting Sunderland's wildlife and rare habitats.	Con Comm; FRCOG; UMass	MVP. Volunteer. 2022
		Support efforts to connect existing open-space areas, in order to create continuous wildlife corridors.	Con Comm; FRCOG; CRC; NHESP; Land Trusts	Volunteer. Ongoing.
		Support public education for willing landowners to support wildlife management and conservation on private lands through periodic public forums and workshops.	Con Comm; FRCOG; CRC; NHESP; DCR; NRCS; Land Trusts	MassWoods Neighborhood Outreach Grants. Volunteer. Ongoing.
		Identify opportunities to promote the conservation and responsible management of private timberland and working forests.	Con Comm; MWI	Volunteer. Ongoing.
		Promote increased recycling and composting to reduce the amount of materials going into the solid waste stream.	Energy Comm; FCSWMD; Volunteers	Volunteer. Ongoing.
		Enhance surface water quality by improving public awareness and promoting the annual household hazardous waste collection day.	Energy Comm; FCSWMD; Volunteers	Volunteer. Ongoing.
		Support efforts to re-open the town brush pile to minimize inappropriate disposal of materials.	Energy Comm; Volunteers	Volunteer. Ongoing.
	Strengthen protection of Sunderland's water supply.	Evaluate the aquifer protection provided by current zoning overlay zone.	Planning Board; DCR; FRCOG	Volunteer. Ongoing.
		Work to implement any changes needed to ensure aquifer protection.	Planning Board; FRCOG	Volunteer. Ongoing.
		Support acquisition of threatened aquifer lands in north Sunderland.	Town; Land Trusts	CPA. MVP. DCS or EEA grants. Volunteer

PRIORITY	OBJECTIVES	ACTIONS	RESPONSIBLE BOARD AND POTENTIAL PARTNERING ORGANIZATIONS*	FUNDING SOURCE & START DATES
		Work to prevent water pollution from septic systems and storm-water overflow.	BOH; MassDEP	Volunteer. Ongoing.
		Promote water conservation and drought awareness in town through public outreach and education.	Energy Comm; Volunteers	Volunteer. Ongoing.
	Support the development of solar arrays and other forms of alternative energy production.	Conduct public outreach and education on alternate forms of energy production for homeowners and landlords.	Energy Comm; DOER; Schools; FRCOG	Volunteer. Ongoing.
		Continue to encourage energy conservation on the residential, commercial, and municipal levels through public outreach and education.	Energy Comm; DOER; Schools; FRCOG	Volunteer. Ongoing.
		Encourage the installation of solar energy for residential, commercial, and municipal sites.	Energy Comm; DOER; FRCOG	Volunteer. Ongoing.
		Encourage siting of solar collectors on land that is not prime farmland.	Energy Comm; MDAR; Ag Comm; FRCOG	Volunteer. Ongoing.
		Provide information to farmers on state programs for agricultural energy	Energy Comm; MDAR; Ag Comm; FRCOG	MDAR. Volunteer. Ongoing.
	Work toward improving stream continuity and water quality.	Ensure new or replacement culverts are designed to accommodate new rainfall projections and are wide enough to allow for aquatic and terrestrial species passage. Seek to meet the MA Stream Crossing Standards at crossing of high ecological value.	Con Comm; Highway; FRCOG; MA DEP	MVP. MA DER Culvert Replacement Municipal Assistance Grant
		Educate landowners about the importance of Cold Water Fish Resources and ways to protect them.	Con Comm; OSRP Comm.	Volunteer. 2022
		Assess and implement storm water Best Management Practices on dirt roads in town, especially in steep areas experiencing erosion and sedimentation of nearby streams or water bodies.	Con Comm; Highway; FRCOG	MVP. MA DEP 604b & 319 grants
		Promote water conservation practices and healthy soil practices on farms in town.	Ag Comm; Con Comm; NRCS; AFT	MVP. AFT. NRCS. MDAR. Volunteer. 2023
		Integrate Low Impact Development (LID) sustainable storm water practices into public projects such as parks, streetscapes, parking lots, and building projects.	Con Comm; Highway; FRCOG	MVP. MA DEP 604b & 319 grants
GOAL 2: Ensure that Sunderland sustains its rural character.				
	Protect important and valued scenic resources.	Monitor properties in the Chapter 61 program and assess their value to the town. Be prepared to exercise the town's Right of First Refusal if acquisition funding can be found.	Land Trusts	CPA. Volunteer. Ongoing
		Support creation of Scenic Byway overlay district, in town's zoning bylaw.	Planning Board; FRCOG	Volunteer. Ongoing.
		Provide public education about potential negative impacts to scenic resources.	Volunteers	State & Federal grants.
		Protect scenic corridors along Connecticut River.	CRC; FRCOG	CPA, Town. Ongoing.

PRIORITY	OBJECTIVES	ACTIONS	RESPONSIBLE BOARD AND POTENTIAL PARTNERING ORGANIZATIONS*	FUNDING SOURCE & START DATES
		Help improve maintenance of scenic vistas along Connecticut River.	CRC;	Volunteer. Ongoing.
	Protect and enhance historic and cultural sites, buildings and landscapes that contribute to the Town's rural character.	Support activities that educate town residents about its historic district and other historic resources.	Hist Comm; Cultural Council	
		Work with Historical Commission to foster education and appreciation of Sunderland's historical resources.	Hist Comm; Cultural Council	Volunteer. Ongoing.
	Promote pollinator gardens, small-scale farming and lawn reduction.	Incorporate pollinator plantings and practices in public spaces	Highway; FRCOG	Volunteer. Ongoing
		Provide educational materials and events about the benefits of planting pollinators and having less lawn space.	Con Comm; FRCOG	Volunteer. Ongoing
		Connect residents with resources for gardening and farming, such as UMass Extension services and Community Involved in Sustaining Agriculture	Ag Comm; CISA; UMass	Volunteer. Ongoing
	Preserve the trees along main thoroughfares	Conduct a street tree inventory and planting plan to ensure new trees are planted when old trees need to be removed, and to fill in gaps where public shade trees are missing.	Tree Warden; Hist Comm; Highway; FRCOG	MVP. MA DCR. Volunteer. 2022
GOAL 3: Ensure that the town provides diverse recreational opportunities for residents.				
High Priority	Develop and expand opportunities for outdoor activities and recreation.	Build more pathways, trails and sidewalks, especially in the underserved southern part of town.	SCPC; Highway; Rec Comm	CPA. Complete Streets. MassTrails. Ongoing
		Explore the possibility of creating a community garden	Rec Comm; CPC	CPA. Volunteer. 2024
		Continue to promote public awareness of outdoor recreational opportunities, such as hiking and fishing, in Sunderland.	SCPC; Rec Comm; DFG	Volunteer. Ongoing.
		Evaluate possible linkages of present and future trails into a regional trail system.	SCPC; Rec Comm; Planning Board; FRCOG	Volunteer. Ongoing.
		Work with public and private landowners for development of the trail system.	SCPC; Rec Comm; Planning Board; FRCOG	Volunteer. Ongoing.
		Enhance opportunities for fishing and hunting in Sunderland.	Rec Comm; DFG	
	Enhance Sunderland's sense of community, embracing the diversity of its residents, through recreation.	Support efforts to create the Sunderland Community Pathways, a series of biking and walking paths in the center of town that would link key attractions and provide places to meet.	SCPC; Rec Comm; Volunteers; Private cycling or hiking-focused businesses and organization	CPA. Ongoing.
		Explore possibility of building a pavilion behind Town Hall, to provide a place for more community activities.	Rec Comm	CPA. Volunteer. Ongoing.
		Promote town-wide activities and events, including the Fall Festival.	FF Comm; Rec Comm; Volunteers	Volunteer. Ongoing.
		Promote use of the Town Park for recreational opportunities.	Rec Comm	CPA. Volunteer. Ongoing.
	Increase and enhance recreational facilities in Town.	Complete phase 2 of Riverside Park improvements.	CPC; Rec Comm	CPA. PARC. 2022
		Support creation of the Sunderland Community Pathways, to promote exercise in the town center and throughout Town.	SCPC; Rec Comm; Volunteers	Volunteer. Ongoing.

PRIORITY	OBJECTIVES	ACTIONS	RESPONSIBLE BOARD AND POTENTIAL PARTNERING ORGANIZATIONS*	FUNDING SOURCE & START DATES
		Enhance the capability of the school to provide for recreational activities, nature study and community activities.	Rec Comm; Volunteers; School officials	CPA. Ongoing.
		Continue to improve existing sports fields and facilities	Rec Comm; school officials	CPA. Ongoing
		Ensure equal access to recreation for all people in Sunderland.	Rec Comm	CPA. Ongoing.
	Assess the Town's ability to provide adequate recreational facilities and programs for its aging population.	Form an Elder Recreation Program Committee.	Selectboard	Volunteer. 2023
		Conduct an assessment of the Town's existing recreational facilities and programs and their suitability for the elder population.	Elder Recreation Program Committee	Volunteer. Ongoing.
		Engage with the Council on Aging as well as other local and regional elder-focused groups to strategize and collaborate on future recreational facilities and programs.	Elder Recreation Program Committee; Sunderland Council on Aging; Neighboring towns; FRCOG	Volunteer. Ongoing.
	Improve public access to the Connecticut River.	Continue talking to landowners about expansion of the river pathway.	Rec Comm; Highway; Planning Board; CRC	CPA. Ongoing.
	Support efforts to promote biking and other alternatives to automobile travel.	Add to the new bike lanes on Route 47, with the goal of providing safer bike travel on the popular stretch between Claybrook Road and Falls Road.	MassDOT; MassBike; Planning Board; FRCOG; Rec Comm	Complete Streets. Volunteer. Ongoing.
		Explore improvements to bikeways for bike commuters.	MassDOT; MassBike; Planning Board; FRCOG; Rec Comm	Complete Streets. CPA. MassTrails. Volunteer. Ongoing.
		Explore the possibility of linking Sunderland's bikeways with rail trails in other towns.	MassDOT; MassBike; Planning Board; FRCOG; Rec Comm	Complete Streets. CPA. MassTrails. Volunteer. Ongoing.
		Study other improvements to bicycle lanes in town, to make biking safer for families with young children.	MassBike; Planning Board; FRCOG; Rec Comm	Complete Streets. CPA. MassTrails. Volunteer. Ongoing.
GOAL 4: **Improve management, communication and coordination between Town officials, boards, committees and other organizations working on open space and recreation related projects and initiatives.**				
High Priority	Work with State and Federal agencies and private groups to achieve the Open Space and Recreation objectives.	Strengthen the working relationships with staff from the U.S. Fish and Wildlife Service's Silvio O. Conte National Fish and Wildlife Refuge along the Connecticut River.	Con Comm; U. S. Fish and Wildlife Service	Volunteer. Ongoing.
		Promote state partnerships on priority acquisition and management projects.	State organizations	Volunteer. Ongoing.
		Continue to foster relationships with local land trusts, especially Kestrel Land Trust and Franklin Land Trust.	Land trusts	Volunteer. Ongoing.
High Priority	Foster communication and coordination with the University of Massachusetts, and find ways to draw on the expertise of local academics, organizations, environmental studies departments, students, and entities that oversee the protection of Mt. Toby and other wildlife areas.	Bring together stakeholders to develop a management plan for recreation and land stewardship activities on Mt. Toby. Identify resources to implement the plan.	Rec Comm; Con Comm; DPW; UMass; MA DCR; MA DFG; Land Trusts; private landowners	MVP. MA DCR. 2023

PRIORITY	OBJECTIVES	ACTIONS	RESPONSIBLE BOARD AND POTENTIAL PARTNERING ORGANIZATIONS*	FUNDING SOURCE & START DATES
	Support an ongoing and active Open Space and Recreation Committee to help oversee the success of the plan in the coming seven years.	Work to identify a group of willing volunteers to serve on an ongoing and active OSRP Committee.	Selectboard; Town Administrator; Volunteers	Volunteer. Ongoing.
	Improve communication and coordination between Town boards and offices.	Investigate strategies for enhancing communication with all boards.	Selectboard; Town Administrator	Volunteer. Ongoing.
		Investigate strategies for the inclusion of wildlife conservation and recreational values in the design of major developments.	Planning Board	Volunteer. Ongoing.
		Seek endorsement of the OSRP by all town boards and committees, highlighting any goals and strategies that require their attention	Town Administrators; Town boards and committees	Volunteer. Ongoing.
	Improve communication and coordination with neighboring towns and the region.	Work with towns that share water resources to ensure water protection for all towns.	Land trusts	Volunteer. Ongoing.
		Coordinate with wildlife conservation land-acquisition efforts to link large areas of natural habitats and protect wildlife corridors.	SCPC; Rec Comm; Deerfield, Montague, Leverett, and Whately officials	Volunteer. Ongoing.
		Work with other towns to coordinate actions on creating a regional trail system.	SCPC; Rec Comm; Deerfield, Montague, Leverett, and Whately officials	Volunteer. Ongoing.
		Provide copies of the approved OSRP to all neighboring towns with a note highlighting any items that specifically impact or involve them.	Town Administrator; Deerfield, Montague, Leverett, and Whately officials	Town. 2022

*Legend for responsible boards / groups

Abbreviation	Board / Group
AFT	American Farmland Trust
Ag Comm	Sunderland Agricultural Commission
BOH	Sunderland Board of Health
CC	Sunderland Cultural Council
CISA	Community Supporting Agricultural
Con Comm	Sunderland Conservation Commission
CPC	Sunderland Community Preservation Committee
CRC	Connecticut River Conservancy
DCR	Massachusetts Department of Conservation
DFG	Massachusetts Department of Fish and Game
DOER	Massachusetts Department of Energy Resources
Highway	Sunderland Highway Department
Energy Comm	Sunderland Energy Committee
FLT	Franklin Land Trust
FCSWMD	Franklin County Solid Waste Management District

Abbreviation	Board / Group
FF Comm	Fall Festival Committee
FRCOG	Franklin Regional Council of Governments
Hist Comm	Sunderland Historical Commission
LFG	Land for Good
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
MDAR	Massachusetts Department of Agricultural Resources
MFB	Massachusetts Farm Bureau
MGLCT	Mount Grace Land Conservation Trust
MWI	Massachusetts Woodlands Institute
NHESP	Natural Heritage and Endangered Species Program
NRCS	Massachusetts Natural Resources Conservation Service
SCPC	Sunderland Community Pathways Committee
KLT	Kestrel Land Trust
Rec Comm	Sunderland Parks and Recreation

DEERFIELD

WHATELY

HATFIELD

LEVERETT

AMHERST

HADLEY

BULL HILL

OX HILL

PULPIT HILL

CONNECTICUT RIVER

CLAPP POND

HITMORE POND

CHARD POND

GREENE SWAMP

Sawmill River

Spaulding Brook

Cranberry Pond Brook

Gunn Brook

Bloody Brook

Sugarloaf Brook

Dry Brook

Mohawk Brook

Russellville Brook

Eastman Brook

Cushman Brook

Long Plain Brook

116

47

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.

Town of Sunderland
Franklin County Ma.

Town of Sunderland Open Space & Recreation Plan 2022

Action Plan

0 0.5 1 Miles

Franklin Regional Council of Governments

10. Public Comments

A draft of this plan update was posted on the town website for the month of August, 2021. . Although the Open Space Committee did not receive any formal comments about the draft from town residents responding to the draft online, comments from the public forum held on August 2, 2021, were incorporated into the final plan.

Letters of endorsement for this update appear below, from the Sunderland Selectboard, the Sunderland Planning Board, the Sunderland Conservation Commission, and the Franklin Regional Council of Governments (FRCOG).

The Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Bethany A. Card
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181

June 13, 2022

Megan Rhodes
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301

Re: Open Space and Recreation Plan

Dear Ms. Rhodes:

Thank you for submitting the Open Space and Recreation Plan for Sunderland 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 town is eligible to apply for DCS grants through January 2029. Please contact me melissa.cryan@mass.gov if you have any questions or concerns.

Sincerely,

Melissa Cryan

Melissa Cryan
Grant Programs Supervisor

The Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Kathleen A. Theoharides
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181

January 14, 2022

Alyssa Larose
Senior Land Use & Housing Planner
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301

Re: Open Space and Recreation Plan

Dear Ms. Larose:

Thank you for submitting the draft Open Space and Recreation Plan for Sunderland to this office for review and compliance with the current Open Space and Recreation Plan Requirements. This plan was particularly thorough and has been conditionally approved through January 2029. Conditional approval will allow the town to participate in DCS grant rounds through January 2029, and a grant award may be offered to the town. However, no final grant payments will be made until the plan is completed.

Once the following items are addressed, your plan will receive final approval:

1. Introduction – the Planning Process and Public Participation section should discuss how the survey and public forum were advertised.
2. History of the Community – more information on twentieth and twenty-first century history is needed.
3. Population Characteristics – information on the town's population density is needed.
4. Fisheries and Wildlife – the Wildlife Corridors section should discuss where in the town they are found.
5. Scenic Resources and Unique Environments – a section on unusual geologic features is needed.
6. Section 5 – please note that land dedicated to recreation purposes is also considered to be protected. The table that lists town-owned conservation and recreation properties should be expanded to include columns on current use (list specifics), condition, recreation potential (list specifics, "unknown" is not sufficient). Note that this information is needed for town-owned conservation and recreation properties only. Since Riverside Park has received two PARC grants, it is protected under Article 97 and that should be reflected in the degree of protection column.
7. Analysis of Needs – the Community's Needs section should include the needs of special groups, such as teens.

8. Maps – the Water Resources map should include watersheds, the Unique Features map should include unusual geologic features, and the Inventory map should denote the difference between town-owned conservation and recreation properties.
9. ADA – was the facility inventory form from the Open Space and Recreation Planner's Workbook used as the basis for the information provided for the town's conservation areas? If not, it should be.

Congratulations on undertaking such an important task! Please contact me at melissa.cryan@mass.gov if you have any questions or concerns, and I look forward to reviewing your final plan.

Sincerely,

Melissa Cryan

Melissa Cryan
Grant Programs Supervisor

TOWN OF SUNDERLAND

Conservation Commission
12 School Street, Sunderland MA 01375
PHONE: (413) 665-1441
EMAIL: Conservation@TownOfSunderland.us

September 10, 2021

Dear Ms. Cryan,

The Sunderland Conservation Commission enthusiastically supports this latest update to the town's Open Space and Recreation Plan. The process of updating the plan has involved input from many Sunderland residents regarding what is important to protect, preserve and enjoy in town. The goals stated in the update are clear and attainable, while at the same time being in alignment with the Conservation Commission's priorities.

Over the past seven years, Sunderland has made impressive progress towards achieving the environmental and recreational goals laid out in the 2014 Open Space and Recreation Plan. Looking ahead to the next seven years, this new update provides a roadmap for building on those successes, with an added emphasis on making the town more resistant to climate change. During the past difficult year of COVID restrictions, many Sunderland residents expressed their profound gratitude that they live where the beauty of nature—river, farmland and forest—is just out their doorways. Perhaps they will be more motivated than ever to preserve what is here.

The Conservation Commission encourages the Commonwealth of Massachusetts to approve the updated Open Space and Recreation Plan, with its critically important vision for the future.

Sincerely yours,

Jennifer Unkles, Chair
Sunderland Conservation Commission

TOWN OF SUNDERLAND

OFFICE OF THE SELECTBOARD
12 School Street, Sunderland, MA 01375
PHONE: (413) 665-1441
FAX: (413) 665-1086

October 4, 2021

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

RE: Town of Sunderland Open Space and Recreation Plan

Dear Ms. Cryan:

The Town of Sunderland is pleased to submit the attached update of its Open Space and Recreation Plan which reflects a thorough assessment of the Town's open space and recreation needs. As in the past, the Town will be using this plan as a guide to protect and manage its open space and recreation resources and to develop new resources to meet its recreational needs. Sunderland is proud of the Town's significant open space and recreation accomplishments since approving the 2014 plan, including:

- Creation of Sunderland Riverside Park (opened 2019)
- Improvements and paving of the Sunderland Boat Ramp (2018)
- Sunderland Water District protected 40 key acres (2020)
- Nearly 200 more acres of farmland permanently protected
- North Main Street sidewalk and bike improvements (2021)
- Complete Streets sidewalk, pedestrian, and bike improvements
- Merritt Field built at Sunderland Elementary School (2015)
- Municipal Vulnerability Preparedness designation (2020)

This plan update is based on several efforts which continue to focus on preservation and enhancement of the community's character and resources, as well as incorporating elements of the Town's Municipal Vulnerability Preparedness Plan.

The Selectboard, at its October 4, 2021 meeting, unanimously voted to endorse this update. The Board authorizes its submittal, and urges the Division to approve the plan, which was developed through a robust process of public participation and stakeholder input, with the leadership and coordination of the Open Space and Recreation Plan Committee. Additional letters of support

from various Town departments and boards are enclosed, and reflect the broad community support for the recommendations contained herein.

Should there be any questions regarding this draft, please contact the Selectboard's office at (413) 665-1441.

Sincerely,

Thomas D. Fydenkevez, Chair
Selectboard

David J. Pierce, Vice Chair

Christyl Drake-Tremblay, Clerk

TOWN OF SUNDERLAND

Planning Board
12 School Street, Sunderland MA 01375
PHONE: (413) 665-1441

September 21, 2021

Dear Ms. Cryan,

The Sunderland Planning Board has reviewed and supports the latest update to the town's Open Space and Recreation Plan. This update provides a roadmap for building on the existing Open Space and Recreation Plan goals, with an added emphasis on making the town more resistant to climate change. During the past difficult year of COVID restrictions, having access to valuable Sunderland natural resources like the Connecticut River and Mount Toby has provided town residents and visitors with an invaluable respite.

The Sunderland Conservation Commission should be commended for their dedication to preserving and expanding opportunities to enjoy our public lands and resources. Please help us advance these goals by endorsing our Open Space and Recreation Plan.

Sincerely,

Dana Roscoe, Chair
Sunderland Planning Board

Franklin Regional Council of Governments

September 14, 2021

Melissa Cryan
Massachusetts Division of Conservation Services
100 Cambridge Street, 9th Floor
Boston, MA 02114

RE: Sunderland 2021 Open Space and Recreation Plan

Dear Ms. Cryan,

The Franklin Regional Council of Governments (FRCOG) is pleased to endorse the work of the Sunderland Open Space Committee in completing an update to the Sunderland Open Space and Recreation Plan (OSRP). We enthusiastically support their submission of the 2021 Sunderland OSRP to the Massachusetts Division of Conservation Services for review.

Sunderland achieved many accomplishments since the last OSRP update in 2014 – creation of Sunderland Riverside Park, protection of nearly 200 acres of prime farmland through the APR program, and completion of numerous sidewalk and bicycle upgrades through the Complete Streets program – to name just a few. These accomplishments were keenly felt and appreciated during the COVID-19 pandemic, when access to nature and outdoor recreation became even more important to residents and visitors alike. This update is also influenced by the Town's recent Community Resilience Building process through the Municipal Vulnerability Preparedness (MVP) program. Impacts of climate change to the Town, and also the importance of Sunderland's natural resources in building resilience to these impacts, are highlighted in the plan. FRCOG staff assisted the Open Space Committee with the key inventory sections and maps with funding from the MVP program, as well as Local Technical Assistance funding from DHCD.

We commend the members of the Open Space Committee for their dedication to this project. The 2021 Sunderland OSRP will provide Town officials and volunteers with an invaluable resource to help inform and prioritize open space protection and recreation improvements. This plan update, once approved by the State, will allow Sunderland to apply for funding to implement actions in the plan. The plan will also enable Sunderland to continue to collaborate with neighboring towns, local land trusts, and regional organizations to work towards meeting the regions' open space and recreation goals. We congratulate the Town of Sunderland for completing this project!

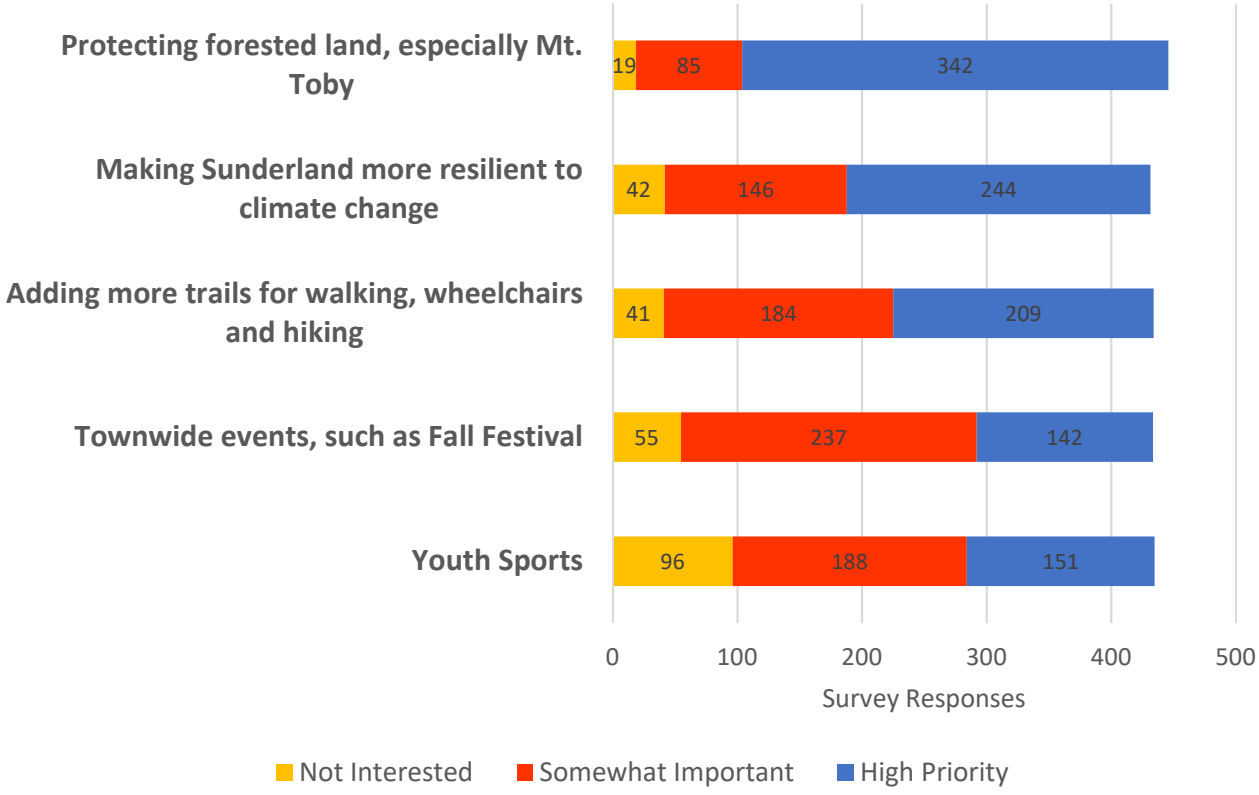
Sincerely,

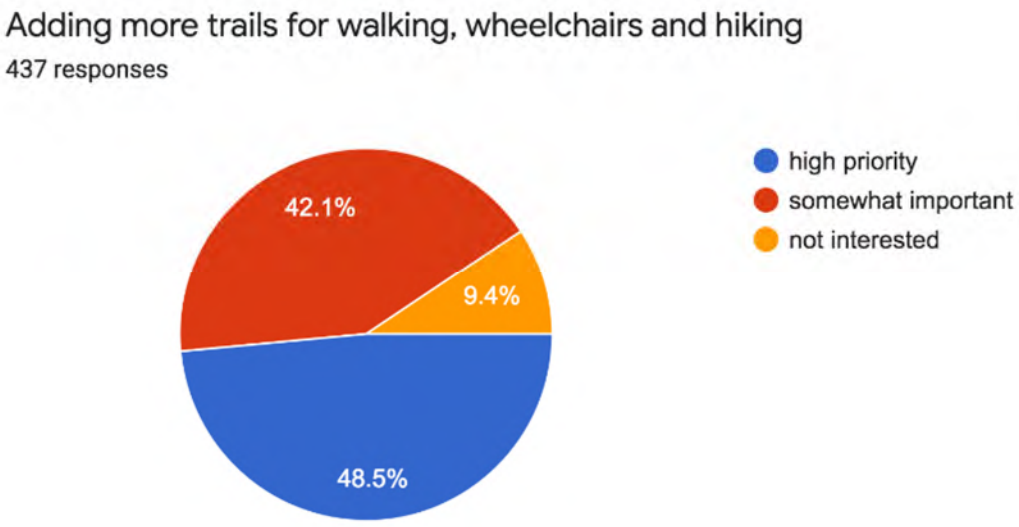
Kimberly Noake MacPhee
Land Use and Natural Resources Program Manager

12 Olive Street, Suite 2, Greenfield, MA 01301-3351 · 413-774-3167 · www.frcog.org

Appendix A: 2020 Sunderland Open Space and Recreation Survey Results

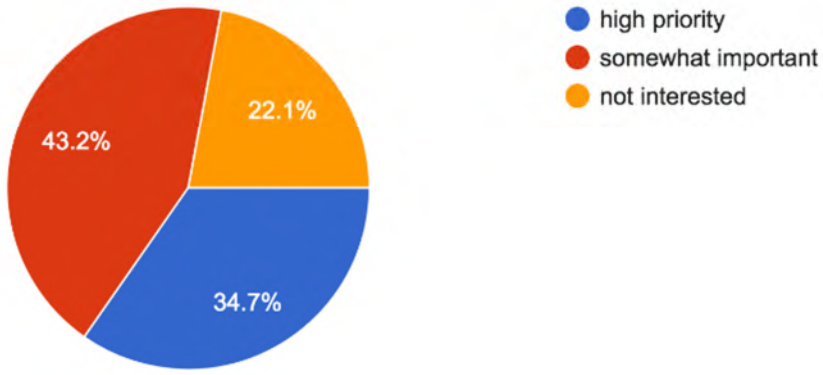
Summary of Responses





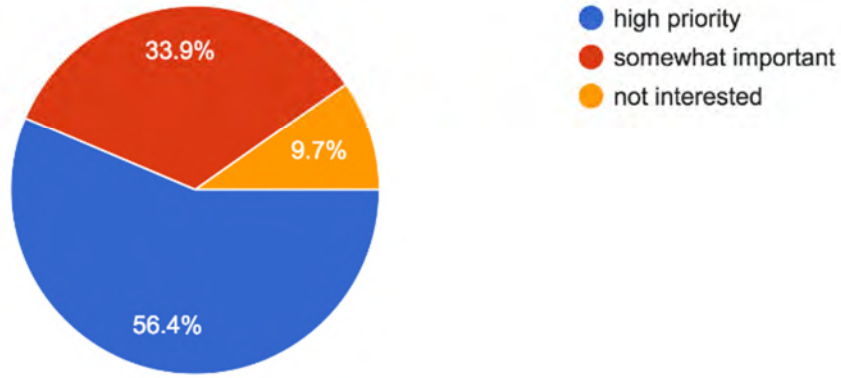
Youth Sports

435 responses



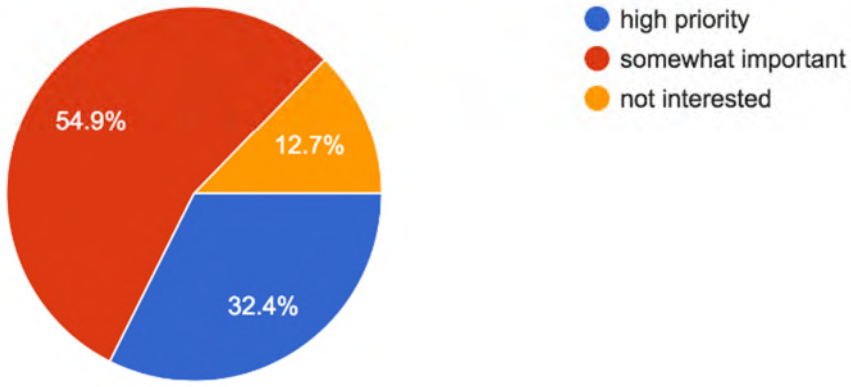
Making Sunderland more resilient to climate change

431 responses



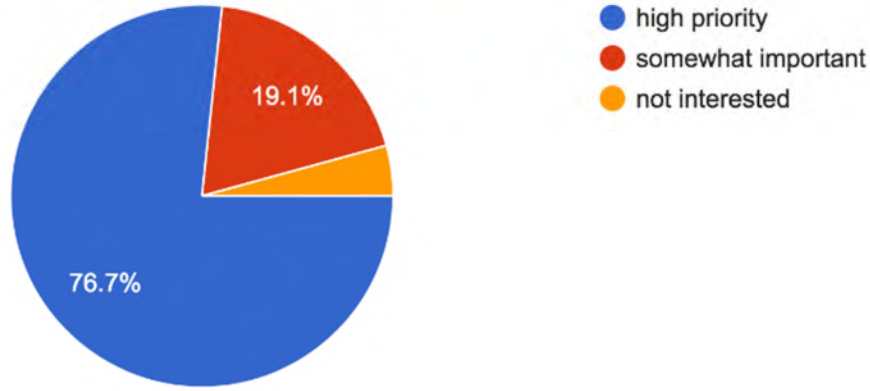
Townwide events, such as Fall Festival

432 responses



Protecting forested land, especially Mt. Toby

446 responses



Lastly, what are your ideas for making Sunderland a better place, in terms of its open space and recreation?

Summary of times mentioned:
Trails & pathways - 17
Riverside expansion - 15
Adult recreational activities - 14
Sidewalks - 13
Gardens & farms - 12
Playground/park for kids - 9
Dog Park - 7
Pool - 3
Better use of Town Park - 3
Ditches - 3

Actual Comments:
- More park for kids.
- Extending the River walk, which has improved life in Sunderland greatly!
- How about some recreation for senior citizens- like silver sneakers exercises, yoga, meditation, line dancing, etc.
- farm land protection
- Bike lanes. Hosting more activities.
- Not just for kids. Adults like activities too.
- horse shoe pit dog park tennis court
- Open Wifi at recreational spots
- Organizing volunteers to maintain walking & hiking trails. Guided tours of Mt Toby; Ct River Archeological tours; careful removal of invasive species.
- Adult recreational activities.
- Extend the pathway along the River Walk.
- farm land protection encourage organic farming
- More trails along the river. Dog park.
- Human rights commission
- Playground for small children. Public swimming pool.
- John Bartos acknowledgement at the bridge property...
- Protecting water supply area on Reservoir Rd through signage and monitoring. Area has become littered with dog feces, large camp site above run-off basin, and ATVs and motorcross vehicles in multiple times weekly destroying foot paths and flora.
- Keep protecting open space, farm land, forest land so that our rural character is maintained. Post river speed limits upstream of the boat launch. Many boats speed in this restricted area, disturbing animals, fish, birds, residents, other boaters and recreationists.
- Making sure that everything done is through the lens of "age friendly" to ensure our older citizens can participate and enjoy.
- Trail heads with parking into Mt Toby area. If we can improve access that would be great.
- Provide restroom facilities, benches & lighting where appropriate.
- Guided hiking trips on Mt Toby. Bus trips. Protecting our wetlands.
- Protecting forested land on Mt Toby, especially since that is where our drinking water comes from.
- Mountain is too restive for ATVs.
- fix/clean ditches
- Although I do not live in that area, I see many residents walking Plumtree, N. Plain, and Silver Land. I think for safety and recreation a sidewalk is very much needed.
- Bike trail along the river.
- To raise awareness about mental health and addiction to help combat the stigma.
- Better utilization of Town Park.
- Cleaning of drainage ditches.
- Proper management of forested land.

- Dog park Hiking trails around Mt Toby with better parking & trail signage.
- Post speed limits for boats at boat launch.
- Remove yellow line on pavement path that runs between S. Main and Elementary School. How silly, detracts from natural beauty - visual pollution. Change cross walk blinking lights to push button activated. More light pollution and it really does not seem to slow drivers or increase awareness of pedestrians.
- Do not allow the senior housing facility to be built on North Main St., and do not build Sugarbush Meadows. These developments will have a negative impact in Sunderland.
- Easier, safer trails up MT Toby would be great!
- More recreation for adults and senior citizens.
- I love the new pathway and would love to see it expanded. Also better trail ways on Mt Toby would be nice.
- A park or town green.
- Dancing please, Gordon Space, Parks more
- More alternate & renewable energy use: solar farm, wind, water. More local businesses in town. More walking & hiking trails. Abandoned buildings razed and wild forests to return.
- Improve wildlife habitat near Ct River Boat Ramp with a "Living Shorelines" project. Invasive species removal in riparian areas along CT River. Improve boat ramp access to include fishing pier or swimming access. Create town swimming area on Ct River. Outreach on Bald Eagle nesting along CT River. Preserve habitat of century sycamore.Invasive species removal and study needs of this tree to ensure its health. Pollinator garden planting. Identify town-owned lands which have unique natural resource value. Keep these parcels open space. Incentive easements for recreational or conservation use of private property. Proactive assessment to identify all wetlands and vernal pools within town boundaries. Kids fishing outreach for more family friendly activities at the boat ramp.
- Make new river walk longer. Make other ways to have river be accessible.
- Purchase property at former nursery location for future high school and library (2040?) Convert existing library to Town Hall. Dem existing Town hall. Construct additional athletic fields.
- Youth sports- always a fun & valuable focus. Flood control
- Pickleball is becoming popular. Greenfield has a court.
- Continue protecting land and consider purchasing Klemyk land between South Plain & Rte 47.
- More sidewalks would increase the quality of life for residents. We have so many walkers in the North Plain, Plumtree, Silver lane area and it is not pedestrian friendly.
- Build a pavilion behind the Town Offices by the sand filled volley ball court similar to Town Park. This would be more accessible to all.
- Concentrate more on lowering taxes and less on open space & recreation.
- Conservation and more open spaces without cars. Restricting development.
- Plant more Milkweed.
- Better parking at trail heads. Reservation Road seems to be the only one.
- Things like a bus trip to the Bronx Zoo would be lots of fun.
- More park for kids
- Ditches & drainage high priority
- Traffic backup at intersection seems better. Could still be improved, especially when new apartments at 116 are fully leased.
- We love living near the Klemyk open space land and want it to be preserved from any development. Thank you for all you do!
- I actually don't support road widening, it runs counter to all the ideas mentioned. Let's keep what we have in good condition and have an attractive Main Street. Not sure what is meant by climate change resilience? Water issue? Soil erosion? What specific issue with forest protection?
- Use as much open space as possible for solar panels or other renewable energy generation. What's already being done is great! Keep going!
- Dog park public indoor pool for youth & seniors senior van service to get to Greenfield doctor appointments
- Actively encourage land preservation (both agricultural & forested land) as alternatives to development or logging. Maybe create a packet of info about alternatives, area land trusts, community info session with representatives from these groups. Thanks for all your good work!
- Climate resilience is very important to me!
- Protect as much space as possible.

- Any chance of making a bike path along the river?
- athletic center
- Add more age groups to youth sports. Maintain as much green space as possible. There is so little staff & resources available for maintenance. Town spaces should be maintainable. It is nice to ave amenities like bigger towns, but we have limited resources.
- More outdoor recreation activities for the public that are aimed for our youth and ADA compliant. Thank you for all your hard work.
- Increasing river walk.
- Fix sidewalks where they exist and add where they are not.
- I am happy about plans for senior housing and I assume planning will take this into account. Sunderland is a wonderful town!
- Love Sunderland, if I could change one thing it would be to add a rotary at the light by the bridge.
- Wonderful as is!
- Sidewalks! So many people walk along Hadley Road every day and it is really dangerous.
- A town park that is actually a usable space. Change location or make more open and add electricity for night functions.
- I moved here for the forests and hiking trails. As I age, I'm starting to wonder what Sunderland offers for supporting seniors.
- Like to keep MT Toby woods wild - not too much development of trails, etc.
- Perhaps curb development in favor of more woods and open spaces. We are concerned to see the last stands of trees fall for more large houses to be built.
- Continue the walking bike path from the highway garage all the way down to Williams Farm "The Rocks" and access to the new sidewalk by Claybrook Rd.
- Protect farms
- Deer tick control on trails. Sidewalks - especially Plumtree Rd., please
- More food & retail in town.
- More conservation land. Bike lane on Rte 47 going north.
- Need more specifics on climate resilience. Adding AC to the SES gym would allow year round activities for all, long overdue.
- Improve upon the path already in place with lighting and benches, before adding more paths.
- Extending bike path along the river from Hadley/Northampton (Rte 47 or otherwise).
- Add a child friendly park.
- Love increased access to CT River. Wish library was open on Thursdays. Guided nature walks or kayak group paddles to get people using the trail & kayak rental.
- Forest protection beyond Mt Toby too.
- Protecting Mt Toby Help for the elderly
- Early childhood playground at the library/Town Hall.
- The intersection at 116 & 47 has greatly improved for pedestrian safety with no right on red and now with the timing of the arrows. We are very opposed to the idea of a rotary. This would not be pedestrian friendly at all! No Rotary!
- Finish repaving the sidewalks.
- More sidewalks up Montague Rd to town center.
- Sunderland Park pavilion should be used more for town events.
- Town Selectmen should keep and find ways to control homeowners property taxes, especially while adding non-paying residents of property taxes and these initiatives.
- Town playground. Continue addition of sidewalk on North Silver Lane, very popular for walkers.
- Preserving wetlands and not introducing non-native materials for fill. Trails at existing Town Park, Bull Hill Rd., French's Ferry Rd. to river. Stop building on North Main St. and focus on South Main St. and other areas in town. A free grant is not free if the town cannot afford to maintain it (project, structure, landscaping, etc.). Example: Town Park (Warner)
- Summer library concerts. Town wide tag sale. Return intersection traffic pattern to "Right Turn on Red". Continue to expand sidewalks for walking safety. Youth offerings in art, film-making, chess, checkers, games...
- Dog friendly places like dog parks and outdoor cafes.
- river access

- expand river walk
- conserve, conserve, conserve!
- more paths along the river

Appendix B: Public Forum Presentation and Survey Results

Sunderland Open Space & Recreation Plan Update

PUBLIC FORUM

MONDAY AUGUST 2, 2021

7:00 PM

Forum Agenda

1. Presentation of OSRP update process, key findings and changes since the last plan
2. Review of draft Seven-Year Action Plan
3. Action Plan prioritization

OSRP update process, so far…

The last update was completed in 2014 - OSRPs need to be updated every 7 years for the Town to be eligible for certain State grants

The Sunderland Open Space Committee formed in 2020 to update the plan and includes representation from the following:

- Conservation Commission
- Community Preservation Committee
- Recreation Committee
- Agriculture / Farming
- Community Pathways Committee

A public survey was conducted in 2020 to gather feedback on open space and recreation needs and priorities – nearly 500 townspeople responded

Franklin Regional Council of Governments (FRCOG) staff helped with updating maps and inventory sections and integrating climate change data into the plan, with funding from the Executive Office of Energy and Environmental Affairs (EEA) and the Department of Housing and Community Development (DHCD)

Purpose of an Open Space & Recreation Plan

- Inventories cultural, natural, and recreational resources in Sunderland
- Identifies open space and recreation needs in town
- Establishes Goals, Objectives, and Actions to meet these needs
- Enables the town to apply for state grants for land conservation and recreation facility improvements

Accomplishments Since the 2014 Plan

- **Sunderland Riverside Park** created (opened 2019)
- **Sunderland Boat Ramp** paved and improved (2018)
- **Sunderland Water District** protected 40 key acres (2020)
- **Tricentennial Celebration** (2018)
- Nearly **200 more acres of farmland** permanently protected
- **North Main Street** sidewalk and bike improvements (2021)
- **Complete Streets** sidewalk, pedestrian, and bike improvements
- **Merritt Field** built at Sunderland Elementary School (2015)
- **Municipal Vulnerability Preparedness** designation (2020)

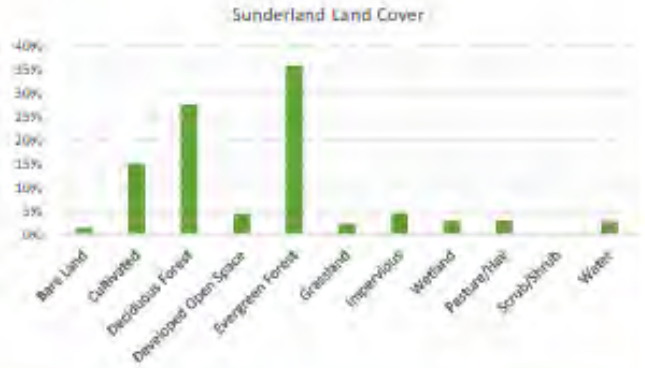
Key Findings - Population

- Sunderland's population declined slightly between 2000 and 2019, to about 3,600 residents. New multi-family housing developments built in 2020 and 2021 will increase the population in town.
- The town's housing stock has been growing. From 2005 – 2018, an average of 3 building permits for new single-family homes were issued each year. In 2020, North 116 Flats opened with 150 units. In 2021, Sanderson Place will open with 33 senior units.
- Excepting the college-age population, Sunderland is graying. The percent of residents age 65 and over is expected to increase from 10 percent in 2010, to 27 percent in 2030.
- Sunderland has a much more diverse population than other Franklin County towns: 82% of the population is white, 7% is Asian, 6% identify as two or more races, 3% is Native Hawaiian or Other Pacific Islander, and 2% is Black or African American. Five percent (5%) of Sunderland's population is Hispanic or Latino (of any race).

Key Findings – Natural Resources

Sunderland has many locally and regionally significant natural resources

- Prime farmland soils and active agriculture
- Core habitat and connected landscapes that support biodiversity (BioMap2)
- Coldwater fish resources

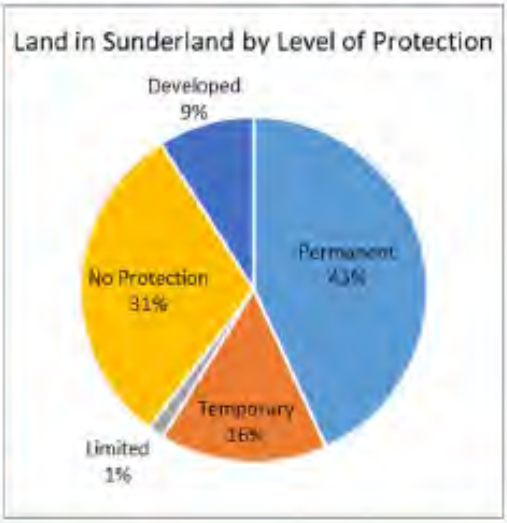


Key Findings – Open Space Protection

Permanent = Owned by State or non-profit conservation organization; owned by Town and under control of the Conservation Commission; or privately-owned with a CR or APR

Temporary = Private land enrolled in one of the Chapter 61 current use programs

Limited = Town-owned land not under the control of the Conservation Commission



Key Findings – Farms

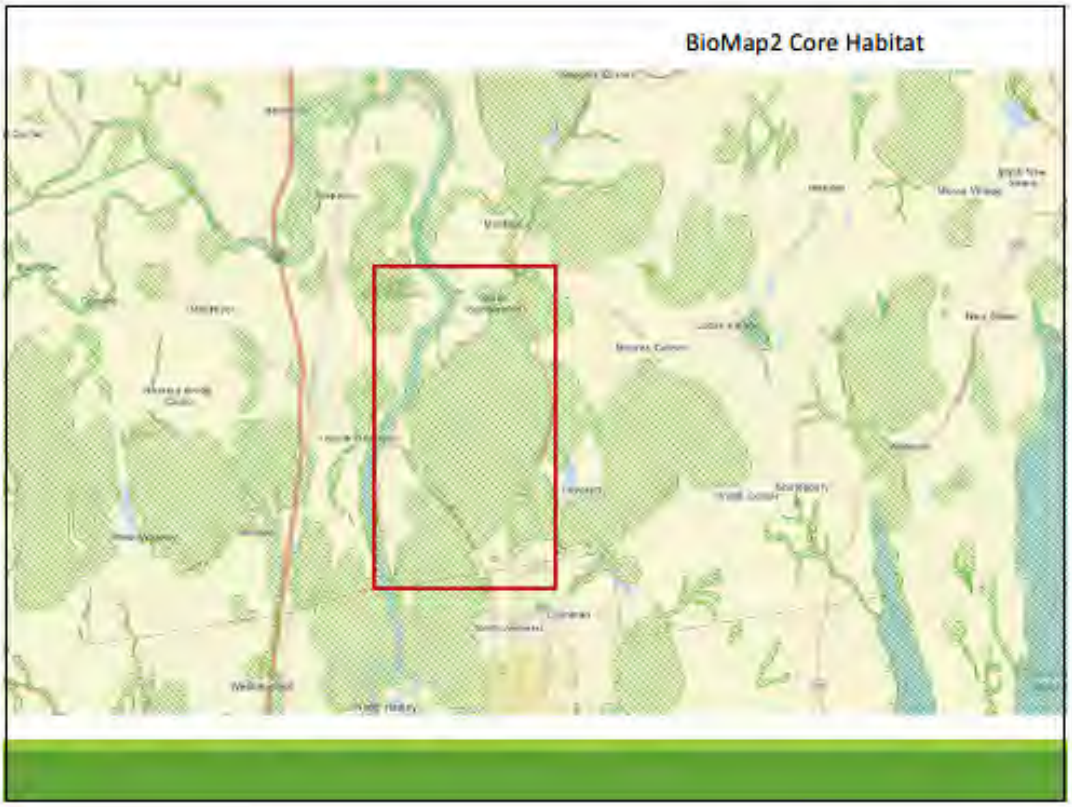
- 18% (1,727 acres) of Sunderland is classified as agricultural land cover, including intensive cropland, hay fields and pasture.
- Prime agricultural soils comprise 2,073 acres (22%) of Sunderland.
- **1,318 acres of farmland in Sunderland is permanently protected** through the Agricultural Preservation Restriction (APR) Program – an increase of almost 200 acres since 2014.
- Another 733 acres of farmland is enrolled in the Chapter 61A program, providing temporary protection and first right of refusal to the Town

SUNDERLAND FARM COLLABORATIVE

Key Findings - Forest

Forest comprises 63% (6,030 acres) of total town acres

- 2,753 acres (29% of Sunderland) of forest are permanently protected from development; the majority of this is publicly-owned
- 690 acres of private forestland are enrolled in the Chapter 61 program and considered temporarily protected
- An estimated **75% of Sunderland** (about 7,000 acres) is **important state-listed biodiversity habitat,** much of it forested
- **Much of Mt. Toby remains unprotected**



Key Findings - Water

- **Connecticut River**
  - Important resource for boating, swimming, and fishing, wildlife habitat, farm irrigation
  - Water quality has improved significantly in the past 50 years, but challenges remain
  - Historic PCB contamination restricts fish consumption
  - Contaminants carried in stormwater runoff from nearby land uses is now a major source of pollution – E.coli, pesticides, sediment
- **Flooding and a high water table** are issues in the low, flat areas of town
- **Cold Water Fish Resources**
  - Support trout and other cold water fish
  - Particularly sensitive to changes in land use

Cold Water Fish Resources in Sunderland:

- Cranberry Pond Brook
- Long Plain Brook
- Russellville Brook
- Dry Brook
- Unnamed tributary to Dry Brook (along Reservoir Road)
- Mohawk Brook

Key Findings - Recreation

Town Resources:

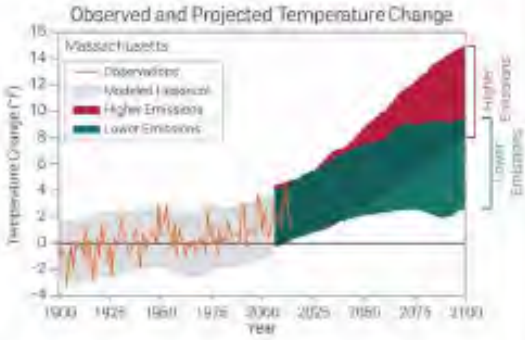
- Riverside Park
- Town Park
- Mt. Toby Meadows Conservation Area
- Merrit Softball Field
- Elementary school playgrounds
- Elementary school multi-use path
- Library courtyard & outdoor programming

Regional Resources:

- CT River Greenway State Park
- Mt. Toby State Forest
- CT River Bikeway
- Franklin County Bikeway
- Robert Frost Trail

Key Findings – Climate Change

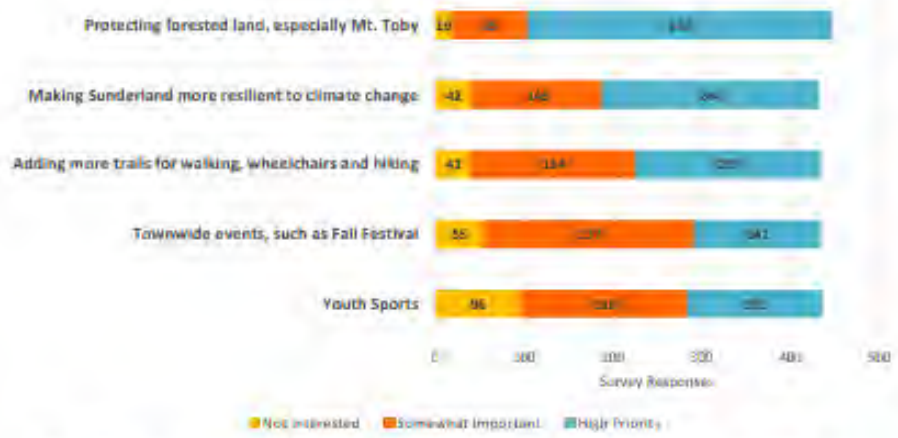
Sunderland's open space resources help mitigate climate change, but are also threatened by climate change.




Sunderland 2020 MVP Top Hazards
High Wind Events:
• Microbursts
• Power outages
• Wildfire
Increased / Changing Precipitation:
• Heavy rain, ice, snow
• Flooding
• Drought
• Wildfire
Extreme Temperatures:
• Insect borne diseases
• Extreme fluctuations
• Wildfire
Human-Made Hazards:
• Hazardous Materials
• Dam Failure
• Cyber Security
• Power Grid
• VT Yankee


Tools for Climate Change Resiliency
MASSACHUSETTS COORDINATED
SOIL HEALTH PROGRAM
MDAR
STOCKBRIDGE
UMASS

2021 Needs & Priorities – What We've Heard So Far



Plus 180 comments about trails & pathways (16), Riverside Park Expansion (15), adult recreational activities (14), Sidewalks (13), Gardens & farm protection (12), Park for kids/playground (9), dog park (5), pool (3), better use of Town Park (3), ditches & drainage (3)

2021 Update Goals

Goal One: Protect and Restore the Natural Resources of Sunderland

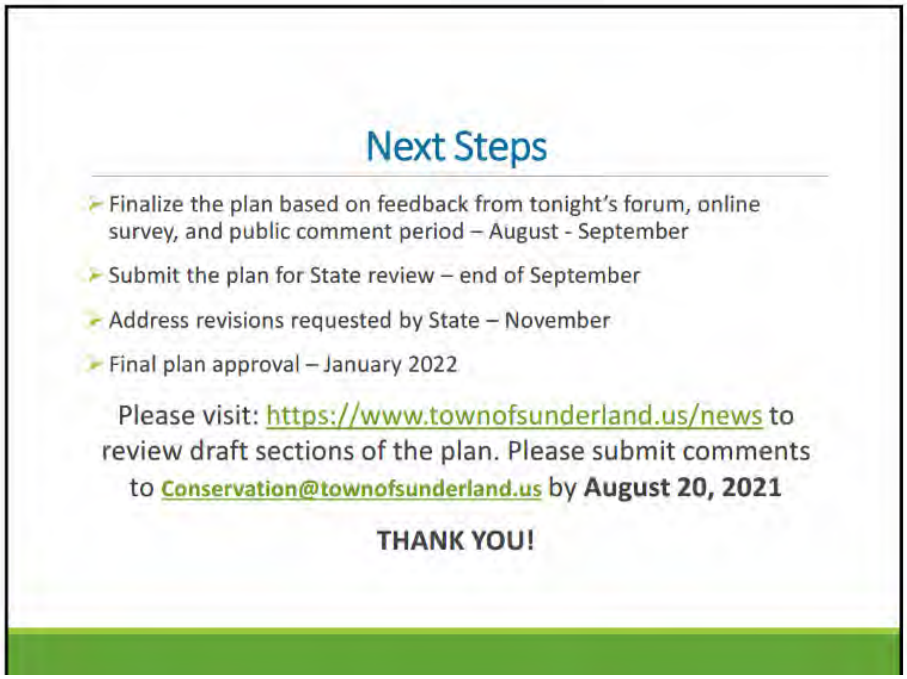
Goal Two: Preserve Sunderland's Rural Character

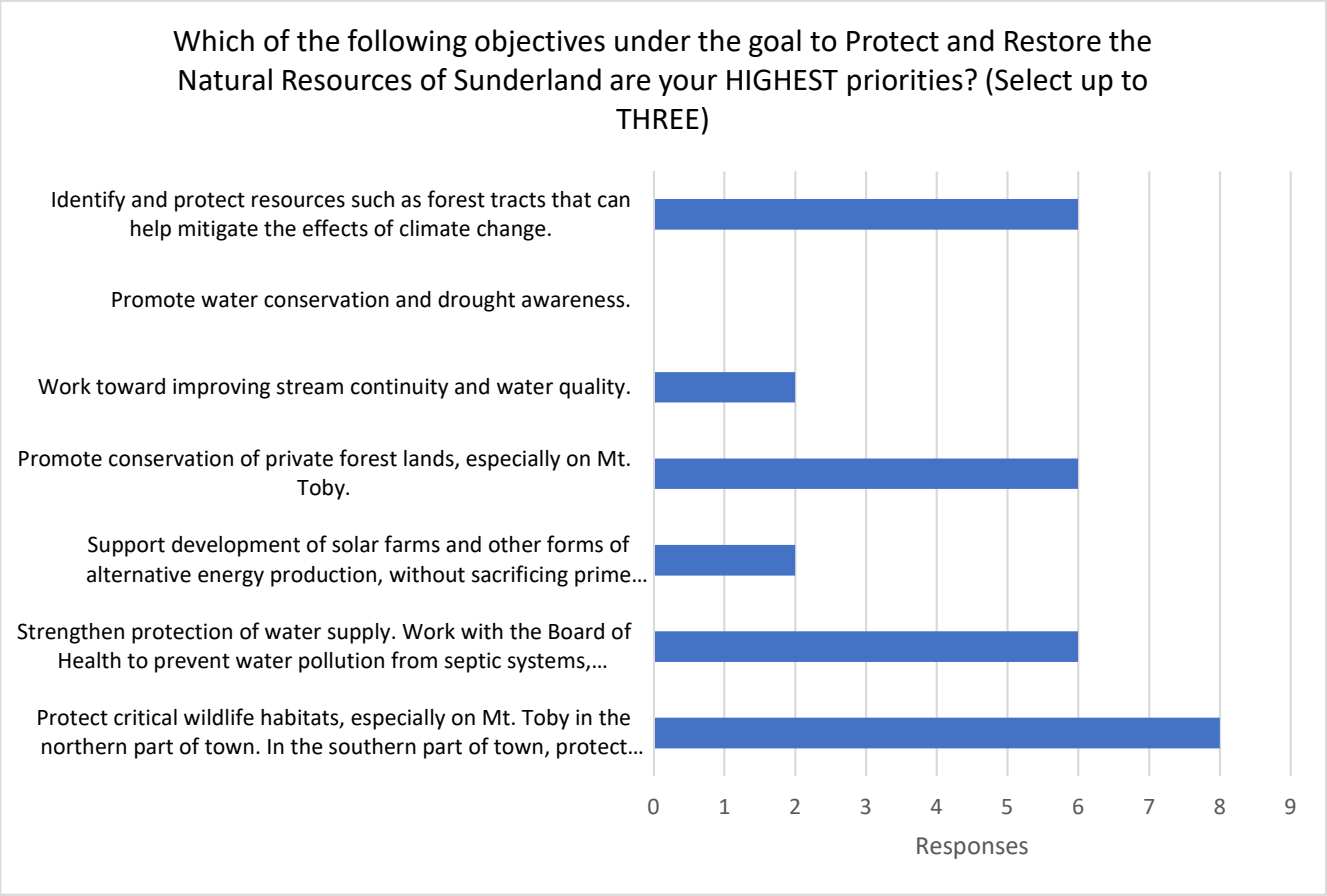
Goal Three: Provide Diverse Recreational Opportunities for Residents

Goal Four: Improve Management, Communication and Coordination

If you are participating remotely, please go to this link to fill out the prioritization survey:

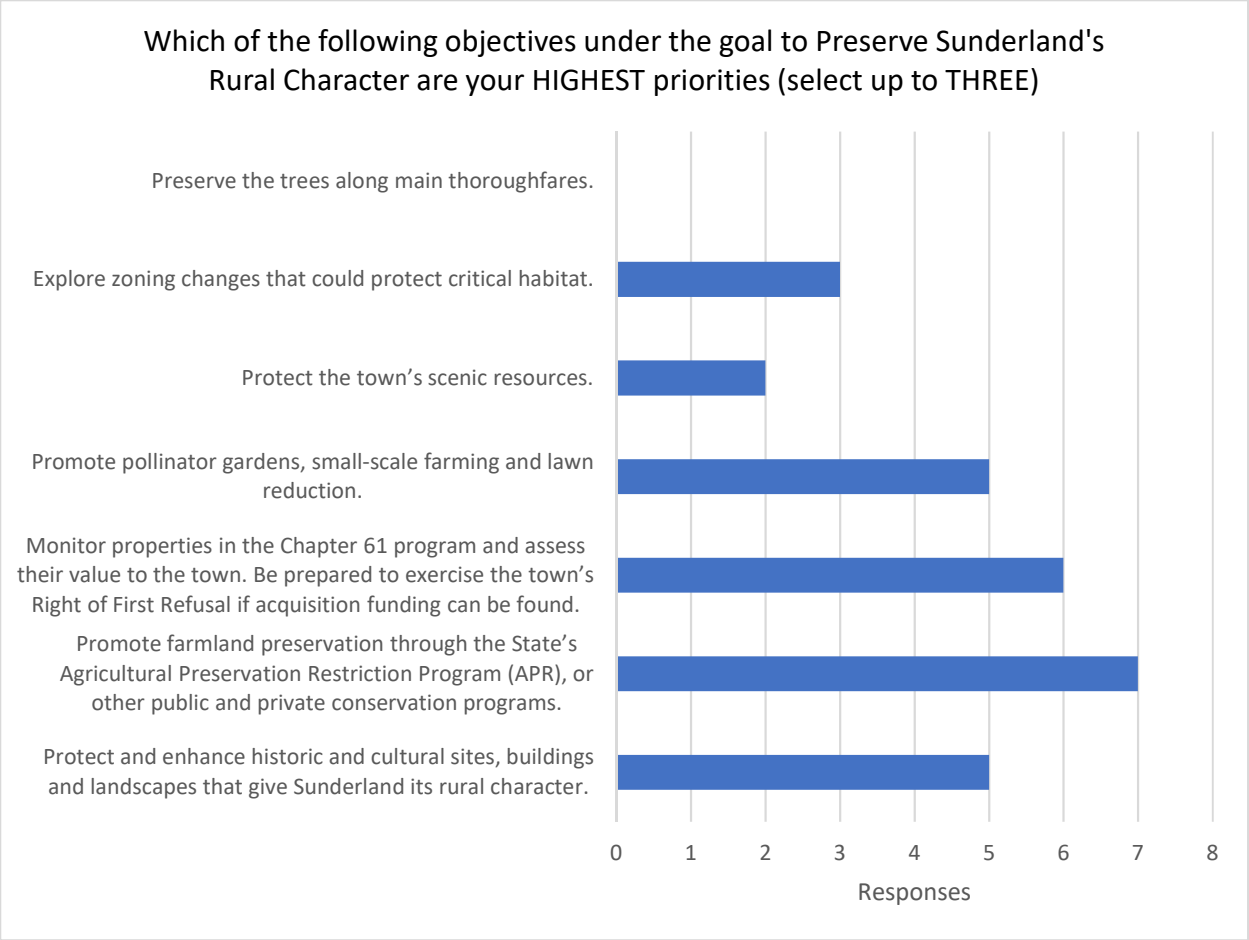
https://www.surveymonkey.com/r/RDQDJZ2





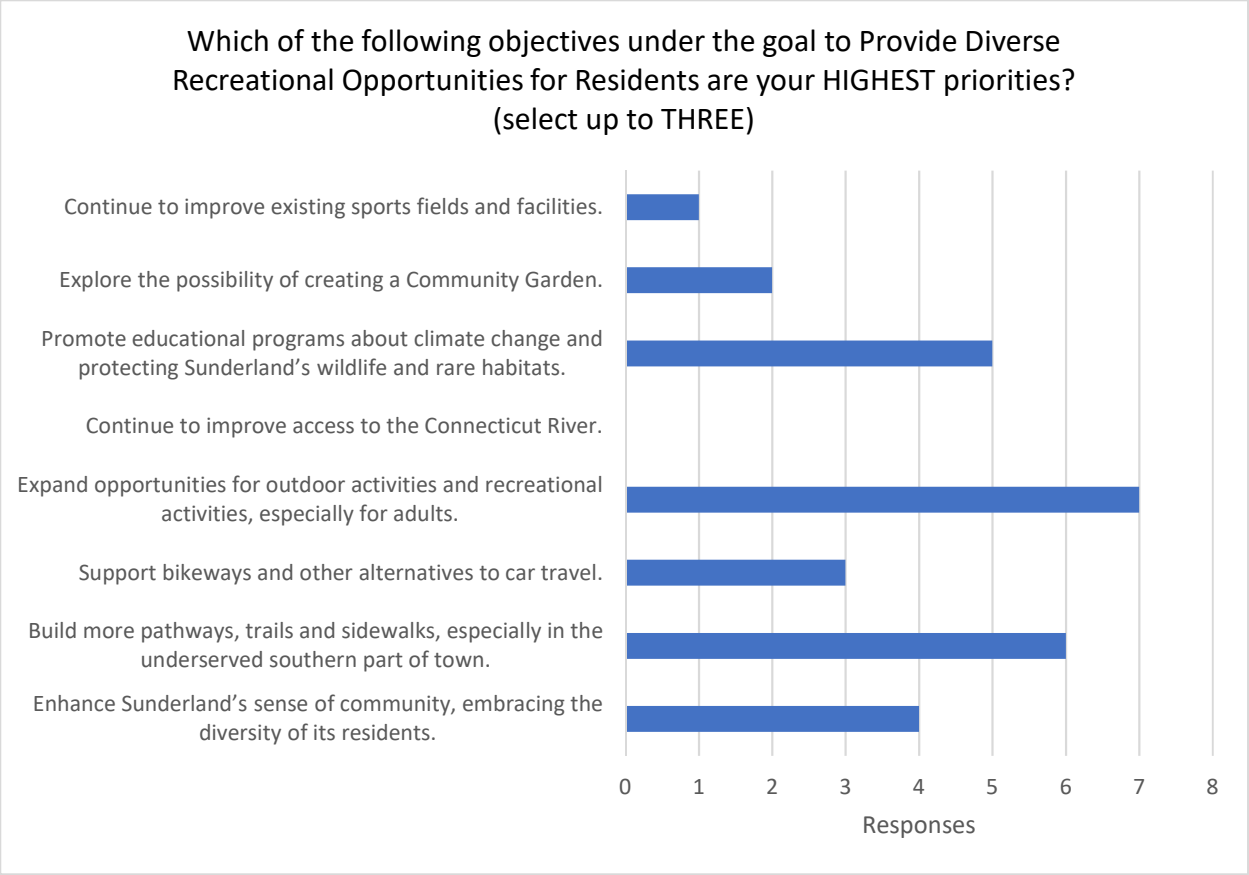
Other:

- Protect wetlands and hydric soils, especially in areas of Town with no public sewer
- educate the new residents about the biodiversity.



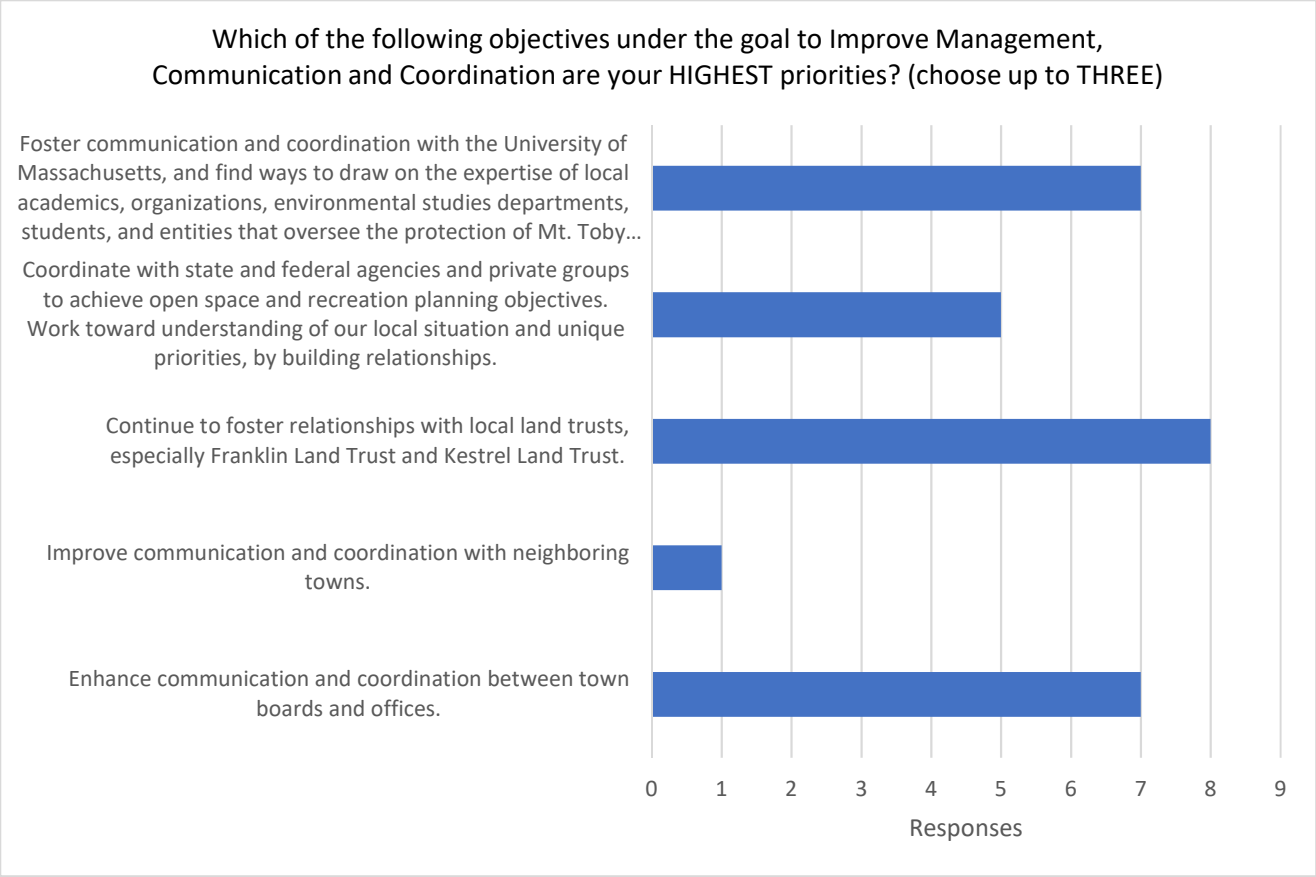
Other:

- Current Planning/Zoning laws do little to protect asthetics and rural character, and this needs to be improved



Other:

- Need vastly improved communication systems to reach and engage residents. Too few are actually getting messages/announcements.
- thank you for mentioning underserved south Sunderland



Other:

- Make sure all residents, including apartment dwellers, are included and invited in activities and planning.
- IMPROVE TOWN COMMUNICATATION WITH RESIDENTS !!!!!!

Please provide any additional open space or recreation priorities you would like to see the town pursue over the next 7 years:

- Fix zoning laws in areas that have no town sewage. Current laws allow developers to exceed unit/acre recommendations for private septic systems. The laws gives "reward" EXTRA units to developers who add affordable housing units, do flex development, or "exchange" development rights with prime agricultural land. All these are good ideas that work if there is adequate town sewer available, but overload lands that require private septic...NOT good for the land, especially in wet areas. Creating artificial hills by using fill to elevate houses on land that won't perk, or adding septic mounds is NOT the answer. The Town needs to either provide more public sewer connections or better manage development of housing in non-sewer areas. Perhaps more land would be available for just open spaces and recreational land that way. Cluster heavy development in areas that can handle it, and preserve the rest as much as possible. Keep it rural and beautiful.

- I have talked to a few people in town that have expressed interest in having a community garden. We were wondering what is happening with the small plot of land between Subway and The O's Bar. We assumed it's privately owned but it would be a perfect area for a small garden. I also think Riverside Park could be improved, maybe people can donate money and sponsor a park bench or a named brick to raise funds?
- continue to identify open spaces for protection that might be inappropriate for development that also have high value for wildlife habitat and connectivity, agriculture, scenic qualities, water resources and other natural resources
- Work collaboratively -- with permitting and actual implementation -- to keep ditches cleared of vegetation to ensure good water flow through the three main town ditches. The town has responsibility for more culverts and ditches than is feasible - how can we bring more resources to help the town maintain ditch areas to which it has access.
- Educate the town about all the wildlife diversity sitting in their backyards if they allow it to happen. Since they were allowed to develop it on the biodiversity map.

Appendix C: ADA Self Evaluation and Transition Plan

OFFICE OF THE SELECTBOARD

TOWN OF SUNDERLAND
Town Offices: 12 School Street Sunderland, MA 01375
PHONE: 413- 665-1441 FAX: 413-665-1446
Email: selectmen@townofsunderland.us

TOWN OF SUNDERLAND
Grievance Procedure under
The Americans with Disabilities Act

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990 ("ADA"). It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the **Town of Sunderland.** The Town of Sunderland's Personnel Policy governs employment-related complaints of disability discrimination.

The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date, and description of the problem. Alternative means of filing complaints, such as personal interviews or a tape recording of the complaint will be made available for persons with disabilities upon request.

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

Geoff Kravitz
ADA Coordinator and Town Administrator
12 School Street, Sunderland, MA 01375

Within 15 calendar days after receipt of the complaint, **Geoff Kravitz** or ***his*** designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, **Geoff Kravitz** or ***his*** designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the **Town of Sunderland** and offer options for substantive resolution of the complaint.

If the response by **Geoff Kravitz** or ***his*** designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the Selectboard or ***their*** designee.

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

All written complaints received by **Geoff Kravitz** or ***his*** designee, appeals to the **Selectboard** or ***their*** designee, and responses from these two offices will be retained by the **Town of Sunderland** for at least three years.

Adopted: 7/1/19
Amended: 8/9/21

OFFICE OF THE SELECTBOARD

TOWN OF SUNDERLAND
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NOTICE UNDER THE AMERICANS WITH DISABILITIES ACT

In accordance with the requirements of title II of the Americans with Disabilities Act of 1990 ("ADA"), the **Town of Sunderland** will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities.

Employment: **Town of Sunderland** does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the U.S. Equal Employment Opportunity Commission under title I of the ADA.

Effective Communication: **Town of Sunderland** will generally, upon request, provide appropriate aids and services leading to effective communication for qualified persons with disabilities so they can participate equally in the **Town of Sunderland's** programs, services, and activities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications accessible to people who have speech, hearing, or vision impairments.

Modifications to Policies and Procedures: the **Town of Sunderland** will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all of its programs, services, and activities. For example, individuals with service animals are welcomed in the **Town of Sunderland** offices, even where pets are generally prohibited.

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service, or activity of **Town of Sunderland,** should contact the office of ***Geoff Kravitz, Town Administrator and ADA Coordinator, by calling 413-665-1441, email: townadmin@townofsunderland.us*** as soon as possible but no later than 48 hours before the scheduled event.

The ADA does not require the **Town of Sunderland** to take any action that would fundamentally alter the nature of its programs or services, or impose an undue financial or administrative burden.

Complaints that a program, service, or activity of **Town of Sunderland** is not accessible to persons with disabilities should be directed to ***Geoff Kravitz, Town Administrator and ADA Coordinator, by calling 413-665-1441, email: townadmin@townofsunderland.us.*** **The Town of Sunderland** will not place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

The Town of Sunderland completed an *ADA Self-Evaluation and Transition Plan* in June 2019. In 2018, the Town of Sunderland secured a grant from the Massachusetts Division of Local Services and hired the Franklin Regional Council of Governments (FRCOG) to conduct the ADA Self-Evaluation and prepare the ADA Transition Plan. The FRCOG assessed all Town-owned buildings, sidewalks, parks and fields, as well as the Town's programs, services, and activities to determine their accessibility to people with disabilities. This assessment used the latest 2010 ADA Standards for Accessible Design (ADAAG 2010) to evaluate all of the Town's buildings and the Proposed Accessible Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) as published July 26th, 2011. The 2021 Open Space and Recreation Plan includes information from the 2019 ADA Self-Evaluation and Transition Plan relating to Town parks, fields and playgrounds, and provides updates on progress towards some of the issues.

Town Park (Park Road)

The Town Park has been rated as moderately accessible because users may have difficulty using the bathrooms and there is no designated accessible parking spaces near the pavilion. In addition, there are currently no picnic tables available for wheelchair users. Adding a few picnic tables with spaces for a wheelchair to slide under would help enable full accessibility for users. To further improve accessibility, the Town should provide connecting paths to the pavilion and the bathrooms.

Location	Element	Issues	Recommendations	Priority	Timeframe	Cost	Responsible Department
Approach and Entrances							
Main Entrance	Accessible Route	There is no path connecting the pavilion.	Create a smooth, path from roadway to pavilion.	Low	Long	$$	Highway
Parking							
Parking	Accessible Parking	There are no parking spaces designated as accessible.	Designate 1 space as acessible that is 8' wide with a 5' wide aisle near pavilion.	High	Short	$	Highway
Access to Goods and Services							
Pavilion	Tables	The picnic tables are not accessible for wheelchair users.	Provide at least one accessible picnic table or bench.	Low	Short	$$	Highway
Bathroom	Accessible Route	There is no path connecting the bathrooms.	Create a smooth, path from roadway to bathrooms.	Low	Long	$$$$	Highway

	Signage	There is no tactile signage on bathroom doors.	Install signage with visually contrasting/tactile lettering and braille on the wall on latch side of door no higher than 60".	Low	Short	$	Highway

Photos of Sunderland Town Park

Riverside Park (School Street)

Riverside Park has a walking trail, including a stone dust river path and overlook, that is newly constructed in 2019 and meets all current ADA requirements. The park won an accessibility award from the Western Massachusetts Stavros organization in 2019. The playing field has been rated as moderately accessible because users can access the site without too much difficulty (although connecting paths would greatly improve the accessibility of the site), but the bathrooms are not accessible and need to be improved. The bathrooms will be updated to ADA compliance as part of Phase II of the Riverside Park project, due to be complete by June 2022.

Location	Element	Issues	Recommendations	Priority	Timeframe	Cost	Responsible Department
Approach and Entrances							
	Accessible Route	There is no accessible route to the dugouts.	Create a smooth, path from roadway to dugouts	Low	Long	$$	Highway
Access to Goods and Services							
Bathroom	Accessible Route	There is no path connecting the batrhooms.	Create a smooth, path from roadway to bathrooms.	Low	Long	$$$$	Highway
	Signage	There is no tactile signage on bathroom doors.	Install signage with visually contrasting/tactile lettering and braille on the wall on latch side of door no higher than 60".	Medium	Short	$	Highway
	Toilet Room	Bathrooms are not accessible.	Remodel bathrooms to meet ADA requirements.	Medium	Long	$$$$	Highway

Photos of Riverside Park

IMG_1960

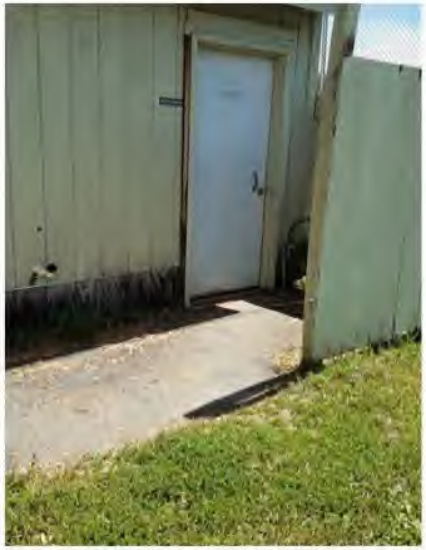
IMG_1961

IMG_1962

IMG_1963

IMG_1964

IMG_1965



Bathroom Facilities to be renovated to ADA standards

Merritt Field at Sunderland Elementary School

These playing fields have been rated as moderately accessible because users can access the site without too much difficulty (although connecting paths would greatly improve the accessibility of the site). The portable bathroom facilities are not accessible and need to be improved.

Location	Element	Issues	Recommendations	Priority	Timeframe	Cost	Responsible Department
Approach and Entrances							
	Accessible Route	There is no accessible route to the bleachers.	Create a smooth, path from roadway to bleachers	Low	Long	$$	Highway
Access to Goods and Services							
Dugouts	Accessible Route	Threshold to dugouts is too high.	Regrade approach to dugout entrances so that threshold does not exceed 1/4" in height.	Low	Short	$	Highway
Bathroom	Accessible Route	Portable toilet is not accessible.	Provide a portable toilet that is accessible.	High	Short	$$	Highway

Photos of Merritt Field

Playgrounds at Sunderland Elementary School

While there are accessible routes leading to the playground areas, there are not accessible routes leading to each of the ground level playground components. The Town is working on plans to improve the playground at Sunderland Elementary School, although the project is not yet fully funded. The planned new equipment and surfaces would improve ADA accessibility.

Location	Element	Issues	Recommendations	Priority	Timeframe	Cost	Responsible Department
Parking							
Main parking lot	Accessible parking	Signs marking accessible parking are too low to the ground.	Move signs higher to a minimum of 60" above the ground.	Medium	Short	$	School District
	Accessible parking	With approximately 87 spaces in the parking lots, there should be 4 accessible spaces.	Designate an additional accessible space for a total of 4 spaces.	High	Short	$	School District
Bicycle Racks	Accessible Route	Not all bike racks are located on an accessible route.	Relocate bike racks next to an accessible route via a smooth, stable route.	Low	Short	$	School District
Playground							
Front Playground	Accessible Route	Surface is covered in pea stones making access difficult.	Make sure that ground surface complies with current *ASTM Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.*	Medium	Medium	$$$	School District
	Accessible Route	Brick walkway connecting to playground is uneven with cracks.	Repair walkway to create a smooth surface.	Medium	Medium	$	School District
	Accessible Route	There is not an accessible route to each of the play structures.	Provide an accessible route with smooth surface to each ground level play component.	Medium	Medium	$$$	School District

Location	Element	Issues	Recommendations	Priority	Timeframe	Cost	Responsible Department
Rear Playground	Accessible Route	Surface is covered in mulch and large stone making access difficult.	Make sure that ground surface complies with current *ASTM Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.*	Medium	Medium	$$$	School District
	Accessible Route	There is not an accessible route to each of the play structures.	Provide an accessible route with smooth surface to each ground level play component.	Medium	Medium	$$$	School District
	Water Fountain	Fountain does not have clearance underneath and is too tall. There is also no accessible route connecting to it.	Upgrade fountain and connect it with a smooth, stable pathway.	Medium	Medium	$$$	School District

Photos of the Sunderland Elementary School Playgrounds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IMG_2034


IMG_2035


IMG_2036


IMG_2037


IMG_2038


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Other Publicly-owned Open Space and Recreation Areas

In addition to the Town-owned facilities discussed on the previous page, the table below was updated from the 2014 Open Space and Recreation Plan for several other publicly-owned open space and recreation areas in town.

Overall there is a need for handicap parking at facilities, and for more accessible trails. As noted previously, the Town created a fully accessible walking trail and river path at the Riverside Park in 2019, which adds to the accessible outdoor recreation options in town. The Conservation Commission, Recreation Committee, and others will continue to seek out opportunities to improve accessibility of Sunderland's open spaces and recreational resources.

Name	Address	Description	Handicap parking	Site Access (ramps, handrails)	Picnic Facilities	Accessible / Paved Trails	Playground Equipment	Fields & Courts	Docks & Fishing
Connecticut River Byway Scenic Overlook	Rt. 47/ Montague Rd.	Scenic Pull-off	No	Yes (flat)	Yes	No			
Cranberry Pond	Reservation Road	Pond	No	Yes (flat to pond)		No			Yes
Mt. Toby Trails	Reservation Road	Hiking, Snowshoeing Trails	Yes	No		No			
Riverside Cemetery Pathways	Cemetery Road	Walking Paths	No	Yes (flat)		Yes			
Town Common	North & South Main Streets	Walking Paths	Yes	Yes		Yes			