

TOWN OF ERVING

2018 OPEN SPACE AND RECREATION PLAN

November 2018

Submitted to Executive Office of Energy and Environmental Affairs for Review



Prepared by the
ERVING OPEN SPACE PLANNING COMMITTEE
and the
FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS

This project was funded by a District Local Technical Assistance Grant provided by the Massachusetts Department of Housing and Community Development and by the Town of Erving

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SECTION 1

PLAN SUMMARY

The Erving Open Space and Recreation Plan (OSRP) focuses the interest and motivation of community members towards the maintenance and promotion of existing recreational resources and the identification and protection of Erving's natural, recreational, and historical resources. The OSRP acknowledges the balance between conservation and economic development, and the promotion of the long-term vitality of the Town. The OSRP's purpose is to provide a framework for decisions dealing with land uses that may impact valuable natural resources and the lands that contain unique historical, recreational, and scenic values.

The 2018 Erving Open Space and Recreation Plan (OSRP) represents the understanding of Erving residents of the interdependence of forests, streams, swamps, wetlands, agricultural fields, scenic views, and significant historical structures and landscapes with the Town's rural character.

The OSRP illustrates the role that all parks have in providing safe spaces to recreate and that undeveloped open spaces have in providing wildlife habitat and in ensuring that residents have access to forests and fields to walk, hike, and view nature. At the same time, the OSRP also recognizes that the Town already has many recreational facilities and that approximately one-third of land in Erving is considered to be publicly owned protected land.

The Seven-Year Action Plan gives concrete substance to the goals and objectives, which were developed from the results of the 2017 Open Space and Recreation Survey and from community members' understanding of and input regarding their Town's natural resource base. The 2018 Erving Open Space and Recreation Plan prioritizes actions that will:

- ❖ Promote the many existing recreational facilities in Town with increased resident awareness and improved way-finding signage.
- ❖ Provide amenities, such as parking and signage, to facilitate the use of existing recreational and open space resources.



Town Welcome Sign

- ❖ Support the Recreation Commission to be more effective in providing needed recreational facilities and programming for all of Erving’s residents, especially teens, adults, and seniors.
- ❖ Improve access to parks and open space for all residents by coordinating with all relevant Town boards and committees.
- ❖ Improve access to parks and open space for the physically disabled and the elderly by coordinating with all relevant Town boards and committees.
- ❖ Develop multi-user (walking, hiking, bicycling, cross country skiing, paddling) trail systems that tie into existing ones, which can be safely accessed from publicly owned land or private lands with trail easements.
- ❖ Work with the Conservation Commission, private conservation land trusts, and state agencies to identify and facilitate the acquisition of land and easements for conservation areas and trails for walking, biking, hiking, rock climbing, bird watching, and other recreational activities.
- ❖ Coordinate with regional and state land protection efforts, in and around Erving, to ensure the continued conservation of important natural, recreational, and open space resources.
- ❖ Identify, promote and help protect historically significant areas and facilities, such as cemeteries and historic structures.

SECTION

2

INTRODUCTION

A. STATEMENT OF PURPOSE

The purpose of this plan is to provide an accurate and thorough basis for decision-making involving the current and future open space and recreation needs of the residents of Erving. This plan brings together and builds upon the planning efforts of the past thirty years, beginning with the 1990 Open Space and Recreation Plan and the 2002 Master Plan and continuing to the 2018 OSRP.

This 2018 OSRP is based on the 2009 OSRP, but has been revised and updated to reflect current thinking and consensus in Town on the most important recreation and natural resource needs and the best solutions for addressing them, while balancing the potential need for economic development. The detailed Seven-Year Action Plan provides a step-by-step guide that, when carried out by an Open Space Planning Committee and other Town boards and commissions, will successfully implement the Town's open space and recreation goals and objectives.

Since the 2009 OSRP, the Town of Erving has worked to implement many of the Plan's recommendations, including creating an officially appointed Open Space Committee; hiring an Assistant to the Recreation Committee on a part-time basis; and converting the abandoned Usher Mill property into the new Riverfront Park.

B. PLANNING PROCESS AND PUBLIC PARTICIPATION

An Open Space and Recreation Survey was developed and reviewed by Erving residents. The survey was mailed to all residents in Town in the Summer of 2017 via the *Around Town* Newsletter and distributed at a special Town Meeting and at the ribbon-cutting of the new Riverfront Park. Hard copies were also placed at the Library, Senior Center, Town Hall, and Elementary School. In addition, the survey was available electronically through the Town's website. The rate of return of the completed surveys was 9 percent. The results were used to inform discussions by the Open Space Planning Committee in its development of Sections: 6 – Community Goals, 7 – Analysis of Needs, and 8 – Goals and Objectives.

There have been six public meetings of the Erving Open Space Planning Committee, including the Public Forum, which was held on May 21, 2018. The following boards and commissions were represented on the Open Space Planning Committee:

- Conservation Commission;
- Council on Aging;
- Historical Commission;
- Recreation Commission;
- Select Board; and
- Planning Board.

The Franklin Regional Council of Governments (FRCOG) provided assistance to the Town in updating the Plan by coordinating meetings, producing maps, and writing sections of the Plan based on input received at the Open Space Committee meetings, the survey, and at the Public Forum. The regular working meetings were posted at Town Hall. Before each meeting, members were sent drafts of sections of the Plan to read. This form of work review was a significant and consistent vehicle for public participation in the development of the Open Space and Recreation Plan. Comments on these sections were discussed at the meetings and incorporated into the revised versions of the chapters.

Any comments expressed at the Public Forum were recorded and included in Section 10 – Public Comments. Any ideas, comments, and corrections pertaining to different sections of the Plan and the action steps have also been included in the final version of the Erving Open Space and Recreation Plan. As part of additional public outreach, the draft Plan was posted on the Town of Erving’s website and made available at the Library to obtain further feedback from the community, especially for those residents that were not able to attend the Public Forum.

The Town of Erving does not have any Environmental Justice populations or any significant non-English speaking residents. As a result, the survey and outreach materials were not translated and enhanced outreach did not need to be conducted.



Riverfront Park Pavilion at the Ribbon Cutting

SECTION 3

COMMUNITY SETTING

The Town of Erving contains rural landscapes that have been developed and affected by its human inhabitants over the past several hundred years. Planning for open space in Erving must account for the complex relationships between people, the open spaces, and the natural resources upon which they depend. Continued growth without consideration of the natural systems, such as biodiversity and the water cycle, will reduce the quality of life for future generations.

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



French King Bridge over the Connecticut River

developed over time and the potential future impacts that the current zoning may have on open space, drinking water supplies, and municipal services.

A. REGIONAL CONTEXT

Regional Context concentrates on the location of the Town of Erving relative to natural and socio-economic resources and demonstrates the significant influence that physical location can have on Erving's community characteristics. This includes the quality and quantity of open space in the Town as well as its recreational resources. Regional Context also considers the impact that different land uses, located within the Town of Erving and in surrounding communities, have on regional open space and recreational resources. Finally, potential regional strategies for environmental and open space protection are offered.

The Town of Erving (14.24 square miles) lies in the eastern part of Franklin County in the rugged highlands east of the Connecticut River. It is bounded by the Towns of Northfield and Warwick on the north, Orange and Warwick on the east, Wendell on the south, Montague on the southwest, and Gill on the northwest. The principal highway serving Erving is State Route 2, referred to as the Mohawk Trail, a major east-west thoroughfare, passing along Erving's southern border and paralleling the boundary between Erving, Wendell and Montague. Route 63, on the western edge of Erving, is the only north-south route in Franklin County located east of the Connecticut River. The Millers River also passes along Erving's southern border parallel to Route 2.

A.1 Natural Resources Context

In order to plan for the protection of open spaces, natural resources, and its rural character, the Town of Erving should consider the roles these resources play across the landscape. A pond for example may be regionally important due to the presence of rare species habitat, or because the pond helps to link a regional chain of wetlands that support amphibian population movements. Erving's major natural resources and topographical characteristics include its abundant contiguous forestland, high elevations, and the Millers River. The regionally important natural resources include the Quabbin Reservation and the Millers and Connecticut River Watersheds. Erving's residents also enjoy the presence of Laurel Lake located on its western border with Warwick. Laurel Lake, located in Erving State Forest, is a great site for swimming, boating, and fishing. Regionally important local resources present both opportunities and challenges to open space planning.

A.1.1 Contiguous Forestland

Forests constitute the most abundant and one of the most important natural resources in the Town of Erving. These forests, including many large tracts of uninhabited or roadless land, provide Erving its rugged and rural character. Some of this land lies within Erving State Forest.

Erving State Forest includes approximately 2,524 acres of forested hills, streams, ponds, old roads and trails in two separate blocks within Erving. It is broken up into two main sections east of the Northfield Mountain Reservoir. The largest contiguous block of the State Forest is the easternmost section, which includes the Laurel Lake recreation area. This eastern section of the State Forest is also the southern end of an uninterrupted stretch of permanently protected contiguous forestland that begins in the north with the Mt. Grace State Forest in the Town of Warwick, Massachusetts. The Hermit Mountain section of Erving State Forest is the westernmost section and is located between the FirstLight Power Resources' Northfield Mountain Station property and Mountain Road. The Department of Conservation and Recreation (DCR) manages Erving State Forest for recreation, forest products and wildlife habitat protection. It is one of the most popular recreation and wilderness areas used by residents of Erving and surrounding towns.

In western Erving, FirstLight Power Resources owns approximately 1,760 acres of contiguous forestland. This area is comprised of the Northfield Mountain Station and the Northfield Mountain Environmental and Recreation Center. Roughly 800 acres are developed for recreation, approximately 600 acres are in undeveloped recreation, and the Reservoir itself is comprised of 342 acres.

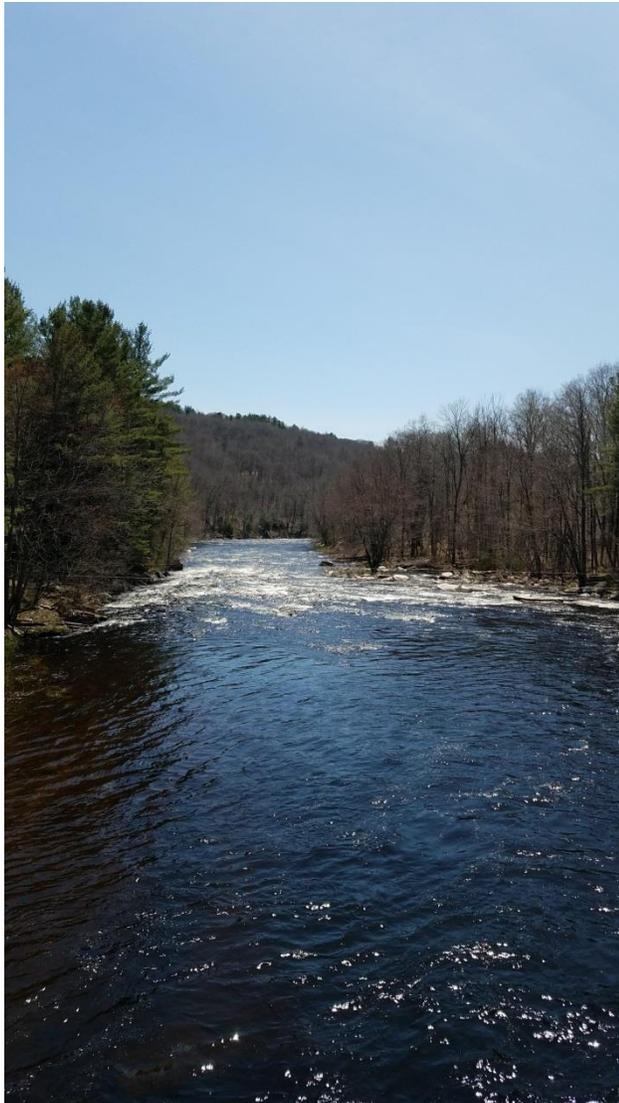
A.1.2 The Quabbin Reservation

The Quabbin Reservoir and surrounding lands, which comprise the Quabbin Reservation, are owned by the Commonwealth of Massachusetts and managed by the Department of Conservation and Recreation. These lands provide an important ecosystem service for the people of the metropolitan Boston area by helping to maintain the quantity and quality of their drinking water supply. An indirect benefit of these more than 56,000 acres of protected land is the wildlife habitat they provide. Nowhere else in Massachusetts can you find a larger block of contiguous forestland permanently protected from development. The contiguous forested areas in Erving extend the habitats of many mammals and birds, which require larger home ranges.

A.1.3 Millers and Connecticut River Watersheds

Erving represents the convergence of two major watersheds in Eastern Franklin County: the Millers and Connecticut River Watersheds. The relative importance of the first watershed lay in the impact of the Millers River on the development of Erving and surrounding communities and vice versa. The Connecticut River Watershed is important to Erving due in part to the presence of anadromous fish and the Silvio O. Conte National Fish and Wildlife Refuge.

Millers River Watershed: Erving is located in the western portion of the Millers River Watershed, which includes portions of seventeen Massachusetts communities and four towns in New Hampshire. The Millers River Watershed is located in north central Massachusetts and southwestern New Hampshire. It is bordered on the north by the Ashuelot River Watershed, on the east by the Nashua River Watershed, on the west by the Connecticut River Watershed, and on the south by the Chicopee River Watershed. From its tributaries of origin in New Hampshire, the Millers River flows south, then gradually west, ultimately flowing into the Connecticut River. The Millers River drains a regional landscape that is 392 square miles in size, 320 of which are in Massachusetts. The total river length is fifty-one (51) miles, forty-four (44) of which are in Massachusetts. Although the Millers River fluctuates between sluggish and rapid flows, there is an average drop of twenty-two (22) feet per mile. This feature made the Millers River and its main tributaries a magnet for manufacturing and hydroelectric power generation, which provided the impetus for initiation of industrial activities in neighboring towns in the late 1700's.



Millers River Flowing West

One of the main issues for the Millers River is the continued presence of dangerous levels of mercury and poly-chlorinated biphenyls (PCB's), which are buried in the stream sediments of the Millers River. The river is classified as Class "B" (appropriate for swimming and fishing), however this classification is a goal and does not necessarily mean the river meets these standards. The Massachusetts Department of Public Health's Fish Consumption Advisory for the Millers River Watershed currently warns against the consumption of several types of fish caught in the Millers River. The full extent of the PCB's contamination of the sediments is under continued study by the Massachusetts Department of Environmental Protection. Continued water quality improvements are needed to help mitigate the negative long-term impact that PCB contamination could

have on the recreational potential of the Millers River for the Town of Erving and surrounding communities.

In 2013, the Franklin Regional Council of Governments was awarded a s.319 Nonpoint Source Pollution Grant from the Massachusetts Department of Environmental Protection to work with watershed towns to identify ways to reduce pollution from stormwater runoff and protect sensitive watershed areas. The grant focused on the use of Low Impact Development (LID), which treats stormwater as a resource not a waste product. LID techniques preserve and recreate natural landscape features at a development site, using rain gardens, vegetated rooftops, rain barrels and permeable pavements to treat runoff and return it to the ground or a stormwater collection system. This project produced a series of LID white papers and three workshops to introduce local officials and residents to LID, and a field trip to view LID installations in Franklin County.

Connecticut River Watershed: The Connecticut River Watershed is the largest river ecosystem in New England. The River enters Massachusetts through the Town of Northfield and drains all or part of forty-five (45) municipalities before entering the State of Connecticut where it eventually empties into Long Island Sound at Old Saybrook. The Connecticut River itself creates a portion of the western boundary of the Town of Erving.

As an American Heritage River, the Connecticut can receive special attention from federal agencies for the cultural, economic and environmental values it possesses. The Connecticut River Watershed was designated the “Silvio O. Conte National Fish and Wildlife Refuge” by an act of Congress in 1991. This refuge is the first of its kind, encompassing an entire watershed ecosystem and is a benchmark in environmental conservation. The Massachusetts Executive Office of Energy and Environmental Affairs has outlined watershed priorities for this watershed that include: protecting and creating riparian buffer zones along waterways within the watershed; reducing the negative effects of non-point source pollution, primarily storm runoff; reducing the barriers to migratory fish passage; and improving upon the limited amount of water quality data available within the Watershed.

There are two large hydroelectric projects on the Connecticut River in Franklin County. One of them is the Northfield Mountain Pumped Storage Project in Erving and the other is the Turners Falls Project, which includes two run-of-the-river hydro stations and is located just outside Erving in Montague. The Federal Energy Regulatory Commission (FERC) licenses for these projects expire in 2018. The FERC licenses outlines conditions under which a project can operate and includes requirements to protect, mitigate, or enhance environmental resources impacted by the project. The FRCOG’s Connecticut River Streambank Erosion Committee is actively involved in the relicensing process to ensure that stream bank erosion is mitigated to protect the loss of farmland and habitat for rare and endangered species.

A.1.4 Major Landscape-Level Patterns

The major landscape-level patterns existing in and around the Town of Erving include large patches of contiguous forest, hills, wetlands, both clusters of built environments and scattered residential development, and river corridors that focus the energy of the watershed's water flows and the movement of its human inhabitants. These patterns have impacted development of the landscape, but in some cases they are also the result of human use of the land.

Erving's large contiguous areas of forest are more important and valuable today to statewide conservation efforts because when compared to the high cost of land in the eastern part of Massachusetts, Erving and other surrounding towns are considered by conservationists to still enjoy relatively low development pressures. Hills and wetlands produce unique patches of wildlife habitat that offer resources to wildlife and by their nature limit human development. A mix of forests, hills with steep slopes and wetlands including beaver-modified areas, provide changes in soils and microclimates that help to ensure a continuous diversity of plants and animal life.

The Millers River to the south is a westward flowing river. The river has played a significant role in the community's development and is now known for mostly scenic, wildlife, and recreation values. It accompanies commuters traveling on Rt. 2 in the south. Land uses abutting and upstream of the Millers River have an impact on the quality of the water. The Millers River still acts as the disposal system for residential and industrial waste streams, albeit in a manner that complies with all permitting. It is a river that has been plagued with contaminants (polychlorinated bi-phenyls (PCBs) and mercury) that limit the full and free use of the Millers River resources by residents and tourists.

A.2 Socio-Economic Context

Historically, farming, logging, waterpower, manufacturing, the railroad, and the Mohawk Trail, all had an influence on the development and growth of the Town of Erving. Erving's industrial development has been tied to the use of the Millers River and other smaller fast flowing streams. The mid-nineteenth century saw Erving develop into a strong manufacturing community. Furniture was a specialty product shared with the neighboring Town of Orange. Regional rail connections developed along the Millers River and Erving Center expanded into the civic and commercial hub of the Town. During the late Industrial Period, the growing dominance of the furniture industry in Worcester County provided a deterrent to the expansion of the industry in Erving. It was at this time that paper mills began to replace the furniture industry with the development of facilities along the Millers River. Erving was one of the few towns in Franklin County to continue its growth through the Early Modern period. This growth was presumably associated with expansion of the paper mill industry.

Currently, Erving is divided into three distinct villages within the Town, each clustered around Route 2 and the Millers River. From east to west, the villages are Erving Center, Farley, and Erving'side. Development pressures to Franklin County and Erving may increase as broadband internet expands in the region and north-south commuter

passenger rail between Greenfield and New York City is implemented. Currently, a large amount of land in Erving is protected from development and existing zoning and subdivision bylaws help control large growth in ways that help mitigate potential negative impacts. The Town of Erving would like to prioritize the utilization and promotion of its many existing natural, open space, and recreation resources. The Town understands that the balance between protection and development is a critical relationship and seeks to ensure that the Town keeps its valuable natural resources while allowing residents to live and enjoy the Town's unique character.

A.3 Regional Open Space and Recreation Opportunities and Issues

A parcel of land that is permanently protected from development can create real value for a community by being a potential site for recreational activities, by conserving habitat for wildlife and fisheries, and by protecting the integrity of first and second order streams, which are the most extensive and vulnerable water resources within a watershed. If the parcel of land is located within the recharge areas of the public water supply it can also contribute to protecting wells from contamination by point and non-point source pollution. When abutting parcels of land are permanently protected over time, based on a plan, the result can be a network of open spaces that can cover thousands of acres. When land is protected to link the open spaces of each community, together this can create a regional greenway.

Currently, Erving is part of a potential regional greenway. There is a circular belt of permanently protected open space that stretches northwest from the 60,000 acre Quabbin Reservation through New Salem, Wendell, Erving and western Orange into Warwick. The eastern half of the circular belt continues up to the state line through Royalston, extends south to Tully Mountain in North Orange, Tully Lake, Birch Hill and Harvard Forest in Petersham. Another network connects the western part of the belt in Erving and western Orange through Erving, Wendell, Montague, and Sunderland to the Connecticut River. Within these networks of open spaces there are eleven (11) state forests or reservations that are popular for activities such as camping, fishing, hiking, and swimming. These include Erving State Forest, Wendell State Forest to the south of Erving, Orange State Forest to the east, Warwick State Forest to the northeast, Montague State Forest to the southwest, and the Shutesbury and New Salem State Forests which lie to the south of Erving. According to the Mount Grace Land Conservation Trust, these lands together are the single largest continuous tract of protected land in southern New England.

Other protected open space and natural resources in the region, of which Erving residents may take advantage, include the New England Scenic Hiking Trail, which passes along the Millers River and through Erving State Forest. The Quabbin Reservoir, Lake Wyola, Lake Mattawa, Laurel Lake, Tully Lake, and the Northfield Mountain Recreation Area are other nearby regional attractions used by outdoor enthusiasts throughout the region and the State. Clearly, there are many critical natural and recreational resources that can only be conserved for current and future generations by the permanent protection of land encompassing resource networks that cross town boundaries. In addition, because of the

presence of this potential greenway, there may be more opportunities for the Town of Erving to protect key parcels that add to this regional resource.

A.4 Regional Strategies for the Protection of Open Space, Natural and Recreational Resources

Actions that impact the quality of open space, natural, and recreational resources in Erving and surrounding communities take place at different political levels. Regional efforts are needed because regional planning agencies, land trusts, and watershed/landscape planning groups together can attract political and funding resources of which individual towns may not be capable. Towns on the other hand have the power to implement changes in land use patterns directly through local zoning and open space protection.

The main regional issues identified in this first part of Section 3, Regional Context include: 1) the presence of large corridors of protected open space; 2) current land protection opportunities presented by lower land values and population growth relative to other parts of Massachusetts; 3) the need for continued monitoring and clean-up of the Millers River; and 4) the need for addressing the potential negative impacts of future growth and sprawling development patterns on the open space, natural, and recreational resources in Erving and surrounding communities.

Land protection opportunities currently exist within the Town of Erving and the region as a whole because of two factors: low property values, and the presence of large blocks and corridors of protected open space. Regional groups like the North Quabbin Regional Landscape Partnership (NQRLP)¹ and the Millers River Watershed Council² have the attention of state conservation agencies like the Department of Conservation and Recreation. This is because these groups represent many local constituencies and the region currently is one of the last areas in the State with large contiguous forested blocks with significant biodiversity. The Nature Conservancy has identified the North Quabbin as one of the two areas in Massachusetts most suitable for designation as a large-scale priority region within which land protection at the landscape scale could be accomplished. The Town of Erving should work with this group and others to identify and sponsor land protection efforts that conserve regional open space and recreation resources in Erving.

Clean up of the Millers and Connecticut River Watersheds is currently being addressed by the Department of Environmental Protection. Town zoning bylaws adopted include a Groundwater Protection District to protect the Town's drinking water supply. The Massachusetts Wetlands Protection Act protects wetlands and the public interests they serve by requiring review of proposed work within 100 feet of wetland resource areas by a community's Conservation Commission. Towns also have the option to adopt a more stringent local wetlands protection bylaw than mandated by the Act.

¹ <http://northquabbinrlp.wixsite.com/northquabbinrlp>

² <https://millerswatershed.org/>

The Commonwealth has completed The Statewide Comprehensive Outdoor Recreation Plan (SCORP), *Massachusetts Outdoors 2012*, an update of the SCORP 2006 five-year plan. SCORP plans are developed by individual states to be eligible for federal Land and Water Conservation Fund (LWCF) grants and serve as a tool for states to use in planning for future needs and uses of outdoor resources for public recreation and relaxation. As part of the update process to the 2012 SCORP, a survey was conducted to assess residents' desires and needs for outdoor recreation. The surveys show that the top priority for survey respondents is the desire for more trails of all kinds. Respondents said that want more town-wide trail systems, loop trails, and rail trails for both walking and bicycling. The SCORP noted that a regional difference in survey responses is that the Central and Western Massachusetts regions prefer more hiking rails than in the other regions of the state.

The Franklin Regional Council of Governments has established the Franklin County Bikeway, which is a regional biking network throughout Franklin County, linking employment, recreational, and educational destinations. Bicycling opportunities are limited in Erving. The Bikeway includes "The Northfield Connector", which follows Dorsey Road along the western border of Erving. This portion of the bikeway utilizes shared roadway and provides a link to the Northfield Mountain Recreation Center. Future plans for expanding the network through Erving are in preliminary stages, including a proposed route that would connect Erving's village centers with the town of Wendell to the south.

The Franklin Regional Council of Governments has prepared corridor management plans for the Mohawk Trail Scenic Byway along Route 2 and the Connecticut River Scenic Byway, which follows Route 63 and 47. The vision for these Plans is to expand economic, tourism and recreational opportunities along these roadways while educating people about the Byways and preserving their unique scenic qualities, natural resources, historical structures/places, industrial and agricultural heritage and community character.

Finally, planning for the protection of critical natural resource systems requires both regional and local planning. The Town's zoning bylaws adopted in 2005 and amended in 2013 include: a Groundwater Protection District to protect the Town's drinking water supply and conserve natural resources; a Conservation Development option allowing the clustering of residential units on a parcel while requiring at least 35% of the land to be left undeveloped for recreation, agriculture, or conservation; a Phasing of Growth bylaw to control the amount of new residential development that can occur annually; and a Floodplain District to limit development within areas vulnerable to flooding. The Phasing of Growth bylaw has since expired. The Planning Board does not intend to renew it since the Town has never come close to the levels of development that would trigger it and is unlikely to do so in the foreseeable future.

B. HISTORY OF COMMUNITY

Erving is an historically industrial town along a primary corridor between Boston and Greenfield. Native fishing sites are suspected along the Millers River at French King Meadows and Laurel Lake. Erving was settled as Erving's Grant during the Colonial Period. Erving was developed as a roadside village along the Fifth Massachusetts Turnpike from Athol during the Federal Period with its economic focus established at Erving Center around the Millers River dam. Significant development occurred during the Early Industrial period with regional railroad connections along the Millers River corridor and expansion of Erving Center as the civic and commercial focus. An important economic center was established at Ervingside after the Civil War with a secondary center developed at Farley. Erving Center was maintained as the local civic and industrial focus through the early 20th century. Route 2, the Mohawk Trail, developed as an early auto tourist corridor.



Erving Center Cemetery

B.1 Contact Period (1500 -1620)

Historians consider Erving to be part of the original Mohawk Trail, with a probable east-west corridor along the north bank of the Millers River. A major Native American north-south route from Montague to Northfield (Squakeag) apparently went from the Millers River fordway below the French King Bridge, along River Road to Northfield Farms. A secondary path from Erving Center to Northfield probably followed Mountain Road over the highlands.

Although there have been no native-period sites confirmed by trained archaeologists, the Erving area is considered as having potential for surviving period locations, particularly in the Millers River floodplain west of River Road, where native agricultural tracts were established. Archaeological sites are thought to have existed in the vicinity of the falls at

Erving side and at the Millers River confluence with Briggs Brook and Jack's Brook, because fishing for trout, pickerel, shad and salmon was plentiful at that time during spawning runs. Woodland occupation was exposed east of the French King Bridge, and undated rock shelters were reported in the uplands southeast of Rattlesnake Mountain.

Vestiges of period settlement may survive north of Erving side along the river floodplain and on the terraced lowlands east of the French King Bridge. The shores of Laurel Lake and the terrace, which holds Farley Village, should also be considered archaeologically sensitive. Local collectors report an abundance of arrowheads near the Millers River and in adjoining areas.

B.2 Plantation Period (1620 - 1675)

During the Plantation Period, Erving's native settlement patterns were similar to the earlier era and the waterfalls at Erving side continued to be an important native fishing area. The Mohawk Trail remained the primary east-west route and improvements were made to the north-south Swamp field to



Old Stone Wall in Erving

Squakeag (Sunderland to Northfield) path. Local indigenous residents probably participated in the Anglo-Native fur trade that was established during the 1630's in the Connecticut River Valley. The Erving area may have fallen under the control of either the Squakeag or the Pocumtuck tribes, since the Town was situated near the nineteenth century border between these two groups.

Colonial interest in Erving was moderate because the area's steep slopes and sandy soils were no match for the high quality agricultural lands in the Connecticut River Valley. Furthermore, the territory was located near the northern boundary of the Massachusetts colony. While the area reputedly lacked an English population until about 1800, colonial residents of Northfield may have fished at the Millers Falls, especially during spring spawning season, and may have hunted in Erving's lowlands.

B.3 Colonial Period (1675 - 1775)

Hostile native camps may have been established during this period near Erving side as part of the large population of "River Indians" which occupied Deerfield, Greenfield, and Northfield during King Philip's War in the 1600s. During the 1700s, the natives "Jack"

and “Keyup” reportedly established residences along those brooks, with sites either in Erving or Northfield.

The primary east-west highway during this period continued to be the Mohawk Trail along the Millers River. By 1775, improvement of the north-south highway corridor to Northfield included a bridge, replacing the old Millers Fordway, with another trail across Rose Ledge connecting Northfield to the Millers River along the present Schoolhouse Brook.

In 1751, the Honorable John Erving, Esq. of Boston purchased eleven thousand and sixteen (11,016) acres of Hampshire County land, called the “Great Farm” on “Erving’s Grant,” which later became the largest portion of the Town of Erving. Smaller, earlier grants made in the 1730s to Clesson, Quincy and Hacks comprised the remainder of the town. John Erving was an absentee landlord and no documented settlement on this land has yet been found during this period. However, because this area was located near colonial settlements in Northfield, Gill, and Montague, some development may have occurred on the Town’s western lowlands where good agricultural soils were prevalent. Another area of possible settlement in Town is along Mountain Road, which was a period trail. Eventually, increased fishing, hunting, and timbering spread into upland areas of Erving and colonial settlement followed.

B.4 Federal Period (1775-1830)

During the Federal Period, the Commonwealth began improvements on the Mohawk Trail as the Fifth Massachusetts Turnpike in 1799. The present Routes 2 and 2A follow most of the old turnpike route. In Erving Center, the highway ran over East Prospect Street, with a tollgate at the eastern end, and then along Gary Street. In Erving’side, the turnpike traveled down Papermill Road and crossed the Millers River into Montague. Also at this time, the Mill Road Bridge connecting Erving’side to Northfield was laid out along Route 63 while North Street became a secondary road joining Erving Center to Northfield along Keyup Brook, with a bridge constructed over Millers River to Wendell (c.1805).

Colonel Asaph White moved to Erving in 1801 to supervise turnpike construction from Greenfield to Leominster and built the first documented structure in Erving Center, a log house. In 1803, he also constructed the first dam across Millers River with a sawmill. Within a few years, other families moved to the area, attracted by an abundance of waterpower, timber, and proximity to transportation routes. For the next one hundred years, wood shops and mills were common along the Town’s river as woodworking became the primary industry.

Although no structures are known to have survived from the Federal Period, a Town map dated 1830 verifies that a Col. White kept a tavern in Erving Center during this period and schoolhouses existed both at Erving Center and at Schoolhouse Brook along the turnpike.

In 1820, the first schoolhouse was built behind the store and post office in Erving Center. Until 1852, all Town meetings were held there and warrants were posted in the nearby Public House. The elements of a village center were now in place, though the Town was not officially incorporated until 1838. Unlike many earlier village centers located around a town common in an agricultural plain, Erving's organization was linear, following the Millers River as a dominant axis. Steep hillsides further defined the Town's layout along the floor of the river valley.

Steep slopes shaped by glacial activity and covered by thin soils grew forests of oak, hemlock, beech, maple, white birch and white pine. Agriculture was a major industry only on the western edge of Town, where soils were comprised of glacial floodplain and lake deposits. Small farms were scattered on higher ground, but they were seldom supported solely by agriculture. In fact, Erving practiced substantial lumbering activity to support its woodworking industries as five sawmills were in use by 1830.

Although the community was located along a major thoroughfare, population figures for Erving's Grant did not appear until 1810, when a listing of 160 persons showed the area to be the least populated locale in the county. In 1830, with a residency of 488 persons, the community was still the second smallest district.

B.4.1 Historical Resources

Very little construction was likely to have occurred in the Federal Period and no structures are known to survive. It is believed that the houses that were built in Erving between 1801 and 1830 were likely to have been simple center-chimney plan cottages.

The Erving Center and Holton Cemeteries were established in 1814 and 1815, respectively.

B.5 Early Industrial Period (1830-1870)

During this period, Erving saw growth in infrastructure, population and economy with railroad construction adding new commerce and inhabitants to the Town. The expansion of the east-west transportation corridor occurred with the arrival of the Vermont & Massachusetts Railroad (later the Fitchburg Railroad) in 1848 and included a depot in Erving Center. The north-south axis to Northfield was improved in 1850 with the New London and Northern Railroad through Erving's side.

The opening of the railroad stimulated industrial expansion at Erving Center along the Millers River axis with Washburn's pail factory in 1844. Erving, along with Orange, began to develop a strong woodworking and furniture industry due to the abundance of lumber, waterpower and transportation. By 1855, Erving Center was home to the production of Washburn's chair shop, Baker's chair seat millworks, J. Trask's match woods plant and Stone's piano case factory. The street grid in Erving Center expanded along Keyup Brook with High and Church Street. After the Civil War, Grout's Corner (now Millers Falls in Montague) became an economic hub with local hardware

manufacturing at the Millers Falls Tools Company (1868). A corresponding suburban residential district formed along Prospect, River, Lester, and Moore Streets across the river in Erving side.

Foreign citizens began to expand the population of the Town during this era. In 1855, the largest group of immigrants in Erving were Canadians (half of the foreign-born population that numbered forty-eight), with Irish immigrants in second place. By the end of the period in 1870, the town population registered 579.

B.5.1 Historical Resources

The earliest surviving residences in Erving date from the Early Industrial period. Clusters of Greek Revival and Italianate homes developed in Erving Center and Erving side and to a lesser extent in Farley. The Center includes a number of center chimney plan Greek Revival cottages, sidehall plan Italianate cottages, and one Gothic Revival cottage with board and batten siding. Erving side housing appeared after 1850, comprised mainly of sidehall plan and L-plan Italianate one-and-a-half and two-story structures. Most of the homes built along the Town's rural roads also date from this period and are of a similar style. Of the several churches organized in the 1830s, only the Congregational Society prospered sufficiently enough to build the Erving United Church of Christ in 1842, now standing on the Mohawk Trail in the Center.

B.6 Late Industrial Period (1870-1915)

During the Late Industrial Period, the Fitchburg Railroad remained as the primary transportation for the east-west corridor while the Vermont Central Railway assumed control of the north-south route through Erving side.

Erving side continued to expand as a residential district with a primary axis along Moore Street. In Erving Center, civic and commercial activities remained focused along the Mohawk Trail, residential growth extended north along Keyup Brook, and an industrial arm extended towards the east near the former Stone Piano Case Works (now Stoneville) with the Erving Paper Mills. A third industrial village formed in 1883 at Farley with the start of the Farley Pulp and Paper Mill and a bridge to Wendell. There, a residential community developed with an affluent district along Maple Avenue.

The growing dominance of furniture centers in nearby Orange and Gardner probably provided competition and the industrial impetus for Erving's mills to change from furniture to other products. During the Late Industrial period, paper mills replaced the woodworking industry. In 1883, the new mill was opened at Farley, on the Wendell side of the Millers River, stimulating residential growth across the river. In 1902, the Millers Falls Paper Company opened a factory in Erving side. Eight years later, the Erving Paper Company expanded the Stoneville mill with a brick addition. In the Center, the Washburn & Heywood Chair Company was the dominant member of the dwindling furniture industry.

During this period, Erving's population grew by 101.7 percent, the fourth highest rate in the county. Most of the growth occurred in the first five (5) years in Ervingside and in the final fifteen (15) years near the new paper mills at Stoneville and Ervingside. The French Canadians and Irish remained the dominant immigrant groups until 1905, but by 1915, when foreign-born nationals had risen to almost 18 percent of the population, 30 percent of immigrants were Russian and 12 percent were Polish.

B.6.1 Historical Resources

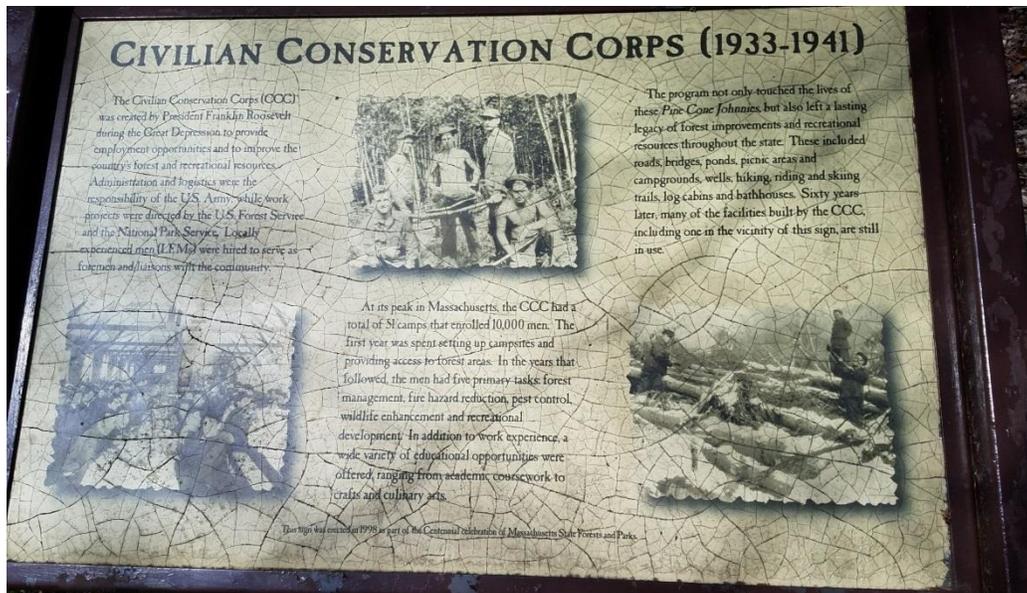
Most of the residences in Ervingside and Farley date from the Late Industrial period, as well as many in Erving Center and Stoneville. The majority of structures are small one-and-a-half or two-story Queen Anne or Stick-style workers' houses with side hall plans built before 1900.

Very little institutional construction is documented during this period, although in Farley a Queen Anne school and chapel were constructed, along with a two-story fire station in Erving Center. Also, little commercial construction is recorded during this period. In Ervingside, commerce developed on the Montague side of the village. In Erving Center, commercial construction included the hip roofed Stick Style railroad depot (formerly the Box Car Restaurant) and the two-story Italianate store with a gable roof and central entrance. However, major industrial structures were assembled in Ervingside and the Center, with the most notable architecture at the Millers Falls Company (c.1870) in Ervingside, a two-story, well-detailed red brick structure (now Renovator's Supply). Other factories were two- or three-story functional brick mills of pier and spandrel construction with flat or shallow gable roofs located on Papermill Road.

B.7 Early Modern Period (1915-1940)

The Early Modern Period saw changes in transportation as improvements to the highways were made for the benefit of local and tourist automobile traffic. The east-west Mohawk Trail corridor was designated as auto Route 2 from Athol to Greenfield, including a bypass around Ervingside with concrete bridges (1931) and the monumental Art Deco-style French King Bridge (1931) across the Connecticut River. The north-south highway through Ervingside from Amherst to Northfield was improved as U.S. Route 63. Following a forest fire in 1918, the state purchased land in Town for the Erving State Forest and Laurel Lake Road was improved. The Civilian Conservation Corps maintained camps in the forest during the 1930s and many forest and road improvements date from that era.

Civic and commercial activities remained focused at Erving Center with expansion along the Mohawk Trail as an automobile tourist highway. Limited residential development continued in Ervingside with affluent construction along River Road and commercial highway construction along Route 2 near the French King Bridge. During this period, Farley gradually declined as a residential village while upland recreational cottages at Laurel Lake were developed in the 1920s.



Sign Kiosk at Laurel Lake Explaining the Role of the CCC in the Erving State Forest

Erving expanded its population through this period with a 13.6 percent growth rate, third highest in the county. Most of this growth occurred in the first five years, associated with paper mill expansion. By 1940, the Town’s population was one 1,328.

B.7.1 Historical Resources

Little construction has been identified during the Early Modern period, except in Ervingside and at Laurel Lake. In Ervingside, simple one- and two-story residences, most with hip roofs, were constructed in the 1920s. Unique properties include the two-story brick rectilinear plan of the Erving Elementary School (ca.1925), which now serves as offices for the Union 28 School District and Recreation Commission. At Laurel Lake, several hip and gable roofed summer cottages were constructed. Most were shingled or novelty-sided homes and are still maintained for summer use. While no new industries were identified in town beyond a boxboard maker and a heel factory, new commercial enterprises, which arose along Route 2 to serve the increasing automobile-related tourist trade included several restaurants and a one-story concrete block garage.

B.8 Modern Period (1940-Present)

Changes that took place in the early 1900’s were largely continued after 1940 to the present. The Erving Paper Mill continued to grow and become a regional and national leader in paper manufacturing. During World War II, the paper mill was established by the government as an “essential war production plant” with 75% of its production going to the war effort. Small, commercial development continued to develop along Route 2 in Erving and residential uses expanded along Mountain and High Streets in Erving Center. The population in Erving remained relatively stable since the 1940’s, dropping slightly to 1,260 during the 1970’s, and climbing back to its largest at 1,467 people in 2000.

The most significant change in the Town during this time period was the construction of the Northfield Mountain Reservoir which began in 1968. It is an underground pumped-storage hydroelectric plant. The Reservoir began producing electricity in 1971 and at the time of its construction was the largest of its type in the world – capable of producing 1,080 megawatts of electricity. The capacity has since expanded and it is now producing 1,167 megawatts. Other major changes to the Town during this time period include safety improvements to Route 2 throughout Erving, including the construction of a bypass at the Erving Paper Mill to a safer right-of-way just north of the plant in 2006. Previously, trucks going to the plant needed to routinely stop traffic on Route 2 in order to access the loading docks. The relocation of the road in this area eliminated a serious safety hazard and congestion problem. Since 2006, more safety improvements along Route 2 in Erving were completed. They included intersection realignments and the creation of protected turn lanes.

C. POPULATION CHARACTERISTICS

In this section, Erving's needs for open space and recreational resources are assessed based upon an analysis of demographic and employment statistics. The demographic information includes changes in total population, changes in the relative importance of different age groups in Erving, and changes in development patterns.

C.1 Demographic Information

C.1.1 Population and Population Change

Demographics are useful for forecasting the need for open space and recreational resources that will be required by residents. Currently, the population density in Erving is 131 people per square mile based on population estimates as of 2015 from the U.S. Census Bureau Population and land use data from MassGIS. The most recent population estimates from 2015 show Erving's population continuing to grow at a faster pace than both County and State, at 4.8% from 2000, though at a lesser rate than in the previous period (formerly 6.9%), reflective of a regional and state population slowdown during this same period. The population in Erving is estimated to have grown by 53 residents between 2010 and 2015, the eighth highest population growth in the County out of 26 communities. Erving falls just above the median population size for the County (1,875).

Table 3-1: Population Growth for Erving, Franklin County, and Massachusetts 1990, 2000 and 2015

Location	1990 Census Population	2000 Census Population	% Change 1990 - 2000 Population	2015 Estimated Population	% Change 2000 - 2015 Population
Erving	1,372	1,467	6.9%	1,875	4.8%
Franklin County	70,092	71,535	2.1%	71,602	0.1%
Massachusetts	6,016,425	6,349,097	5.5%	6,449,755	1.6%

Source: U.S. Census Bureau – Decennial Census of Population and Housing 1990, 2000; U.S. Census Bureau, American Community Survey 5-Year Estimates, 2015.

It is important to understand the age makeup of a community when planning for recreation and open space, as different age groups require different recreational opportunities. Table 3-2 displays the population of Franklin County and Erving by four age cohorts for both 2000 and 2015, and the percent of change for each cohort during this time period.

Table 3-2: Number of People by Age Cohort between 2000 and 2015 in Franklin County and Erving

Age Cohort	Franklin County Population			Erving Population		
	2000	2015	% Change	2000	2015	% Change
0-19 years	18,447	14,732	-20.1%	376	445	18.3%
20-44 years	24,285	20,703	-14.7%	503	586	16.5%
45-64 years	18,560	23,356	25.8%	389	553	42.1%
65+ years	10,243	12,353	20.6%	196	291	48.4%

Source: U.S. Census Bureau – Decennial Census of Population and Housing 2000 and 2011-2015 Five Year Estimates.

From 2000 to 2015, Erving experienced a slight increase of 18.3% in the number of school age population (0-19 years), and a smaller increase in the 20-44 age group (16.5%). The number of residents between the ages of 45-64 experienced a large increase of 42.1%, while the number of residents 65 or older increased the most with a 48.4% increase.

While Erving experienced population growth in every age category during this time, the County instead saw losses in its younger populations (0-44 years). Both the County and Erving saw large increases in the older age groups, primarily driven by the aging of the large Baby Boomer population. This oldest cohort will continue to grow as the Baby Boomers continue to age and move into this category.

Seniors require different recreational facilities and services including accessible walking paths, arts, and leisure programs. Residents between the ages of 20–44, representing the largest portion of the Town’s total population, may desire different types of recreation choices, both for themselves and for their families. The data shows that the Town of Erving needs to be concerned about providing for an aging population in its open space and recreation programming, while continuing to provide opportunities for all residents.

As Baby Boomers age, they may also require different housing options than are currently available in Town. This demand for new housing will impact the available open space in Erving. The Town should proactively identify the types of housing this population group will need and determine the best locations for development, taking into consideration the needs of an older population while also working to protect open space and natural resources. Planning for growth before it happens will help to protect open space and recreation resources into the future.

To this end, the Town has begun planning studies related to the development of senior housing near the Senior Center, Elementary School, and potentially near a new library in Erving. The location of the potential housing near all of these amenities will lend itself to the creation of recreational walking paths linking these sites together to create a walkable community for both seniors and the rest of the community.

When identifying the best location for the development of new open space and recreation resources, the Town should consider where population growth will occur and which parts of the local citizenry require specific needs. As of 2015, Erving has a population density of 131 people per square mile. This statistic represents the average density over the entire area of Erving, and does not take into account that some areas, such as villages, have a higher density of population, while other areas, such as undeveloped forests, have a very low density of population. These patterns will be discussed in more detail in Section 3, Growth and Development Patterns. As will also be seen in this section, future growth depends in large part on zoning, soil and groundwater related constraints, and on which lands are permanently protected from development. The Town could identify parks and walking trails that are close to current neighborhoods for possible expansion, or to increase public awareness. The Town should continue looking for opportunities to better utilize its current protected land and increase public access to trail networks and open spaces.

C.1.2 Economic Wealth of Residents and Community

Measures of the income levels of Erving residents as compared to the County and State are helpful in assessing the ability of the citizenry to pay for recreation resources and programs and access to open space. Table 3-3 describes the earning power in Erving based on median and per capita income, as compared to the County and the State. Median income figures describe the middle income among residents, thus eliminating any extreme numbers (either the very wealthy or very poor) from influencing the overall figure. Median household figures include data for families, for households of non-related people, and for individuals living alone. Erving households earn median incomes (\$60,769) that are slightly higher than the median for the County (\$55,221) and lower than the median for the State (\$68,563). Interestingly, the household median income increased for Erving much more than the County's between 2000 and 2015. Erving's household median income increased by 52% during this time period compared to an increase of only 35% for the County. The household median income in 2000 for Erving was \$40,039.

Per Capita Income is determined by dividing the total amount of income earned in the area by the total number of the residents (which includes residents who may not be generating much income, such as children and the elderly). The per capita income is consistent with the County (\$30,584), and lower than the State (\$36,895). The percentage of people living below the poverty line in Erving at 8.4% is still lower than both the County (11.7%) and the State (11.6%).

Table 3-3: Median Household Income, Per Capita Income, and Percentage below Poverty Level in 2015 for Erving compared to Franklin County and the State

Location	Median Household Income	Per Capita Income	Percentage Below Poverty Level
Erving	\$60,769	\$26,817	8.4%
Franklin County	\$55,221	\$30,584	11.7%
Massachusetts	\$68,563	\$36,895	11.6%

Source: U.S. Census of Population, 2011-2015 Five-Year Estimates

*Persons living below poverty level for whom the poverty status has been determined.

C.2 Employers and Employment Statistics

C.2.1 Labor Force: Erving residents that are able to work

Table 3-4 displays Erving’s labor force from 2000 through 2015. The labor force is defined as the pool of individuals 16 years of age and older who are employed or who are actively seeking employment. Enrolled students, retirees, stay-at-home parents and other persons not actively seeking employment are excluded from the labor force. In 2015, Erving had a labor force of 1,066 people, with 969 employed and 97 unemployed. This represents a 34% increase in Erving’s labor force since 2000, when 797 residents were counted as part of the labor force. In contrast, Franklin County’s labor force decreased by -2.2% over the same time period, from 39,024 in 2000 to 39,908 in 2015.

Table 3-4: Labor Force in Erving, and Unemployment Rate in Erving, Franklin County, and Massachusetts, 2000-2015

Year	Erving's Labor Force	Unemployment Rates		
		Erving	Franklin County	Massachusetts
2015	1,066	9.1	6.7	7.6
2000	797	2.5	2.5	2.7
% Change 2000-2015	34%	N/A	N/A	N/A

Source: Massachusetts Executive Office of Labor and Workforce Development, Labor Force and Unemployment data.

Table 3-4 also shows Erving’s unemployment rate since 2000, as compared to the County and State. The unemployment rate describes the percentage of people in the labor force who are presently not employed, but who are actively seeking employment. According to Massachusetts Executive Office of Labor and Workforce Development, since 2000, Erving’s unemployment rate has fluctuated, from a low of 2.5% in 2000, to the current

statistic of 9.1% in 2015. Unemployment rates increased for the Town, County and State from 2009, reflecting the recent national and global recession. In 2015, the unemployment rate for Erving was 9.1%, slightly higher than the County (6.7%) and closer to that of the State (7.6%).

C.2.2 Employment in Erving: People who work in Town (residents and non-residents)

Table 3-5 shows the number of establishments and average monthly employees working for Erving employers from 2001 through 2015. This includes residents as well as those who reside elsewhere but commute to Erving for work. The number of establishments has varied throughout the time period, with a low of 21 establishments in 2005 to a high of 38 in 2015, with an overall increase of 13 establishments since 2001. The number of total employees working in town has increased over the same period by 28 additional employees.

Table 3-5: Employment in Erving, 2001-2015

Year	# of Establishments	Average Monthly Employment
2001	25	359
2015	38	387

Source: Massachusetts Executive Office of Labor and Workforce Development, ES202 data.

The U.S. Census Bureau provides information on the main industry sectors in towns across the State. Table 3-6 shows the largest industries for Erving residents. The largest industry serving the Erving labor force is Education Services, Health Care, and Social Assistance, which employs 32.9% of Erving’s labor force. The second largest industry is Manufacturing with 19% of the labor force.

Manufacturing is one industry that has had a long presence in Erving. In 1990, there were 623 manufacturing jobs in Erving, making up 79.5% of the Town’s total employment. By 1998, the number of jobs had declined by 61.2% to 239. The closure of International Paper’s facility in 2000 further reduced the total manufacturing jobs in Erving. While, manufacturing remains a primary industry in Franklin County, the continual success of this sector in Town may depend on proactive economic development efforts as well as outside factors.

Table 3-6: Major Industries for Erving’s Labor Force

Industry	Labor Force	Percentage of Labor Force
Educational services, and health care and social assistance	319	32.9%
Manufacturing	188	19.4%
Retail trade	126	13.0%
Transportation and warehousing, and utilities	53	5.5%
Finance and insurance, and real estate and rental and leasing	51	5.3%
Other services, except public administration	47	4.9%
Public administration	45	4.6%
Construction	42	4.3%
Arts, entertainment, and recreation, and accommodation and food services	38	3.9%
Professional, scientific, and management, and administrative and waste management services	28	2.9%
Wholesale trade	23	2.4%
Agriculture, forestry, fishing and hunting, and mining	6	0.6%
Information	3	0.3%
Total Labor Force	969	--

Source: U.S. Census Bureau, 2000 Census SF3 and American Community Survey Five Year Estimates, 2011-2015.

Table 3-7 displays commute times for residents living in Erving in 2000 and 2015. In 2015, the highest percent of workers in Erving had commute times between 10 and 19 minutes (34.2%), with the next most frequent commute time between 30 and 59 minutes (26.2%). Since 2000, the data shows that generally Erving residents are traveling farther for work than in the previous decade. While the percentage of residents traveling 20-29 minutes declined, the other categories show increases in commute times.

Table 3-7: Travel Time to Work, 2000 and 2015

Year	Total Workers*	Work at Home	Less than 10 Min.	10 - 19 Min.	20 - 29 Min.	30 - 59 Min.	60 + Min.
2000	748	3.2%	13.4%	29.1%	26.7%	22.8%	4.6%
2015	969	1.1%	7.3%	34.2%	8.8%	26.2%	6.3%

* Employed workers 16 years and over.

Source: U.S. Census Bureau, 2000 Census SF3 and American Community Survey Five Year Estimates, 2011-2015.

C.2.3 Major Employers in Erving

Table 3-8 lists the major employers (those with at least 20 employees) in Erving in 2012. The quality of this employment is generally very high, given that these employers provide mostly full time jobs with benefits. The Town should encourage the continued creation of such positions in larger companies. However, according to research by the Small Business Administration, small businesses are typically responsible for approximately seventy-five percent (75%) of net new jobs nationwide. The current shortage of small and medium sized businesses in Erving also suggests that new and/or growing businesses may need support as well as the major employers. A final reason to support small businesses is that they are more likely to be locally owned.

Table 3-8: Number of Employees per Major Employer in Erving, 2012

Major Employers in Erving by Industry Type	Number of Employees
Manufacturing Erving Industries	50-99
Transportation, Communication, and Public Utilities Northfield Mountain Pumped Storage Facility	20-49
Government/Public Education Town of Erving (including schools)	100+

Source: Committee input and calls made by FRCOG staff.

C.3 Environmental Justice Populations

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

- Block group whose annual median household income is equal to or less than 65 percent of the statewide median (\$62,072 in 2010); or
- 25% or more of the residents identifying as minority; or
- 25% or more of households having no one over the age of 14 who speaks English only or very well - Limited English Proficiency (LEP)

According to these criteria, the Town of Erving does not currently have any environmental justice populations based on race, income, or language proficiency. Almost 94% of the Town's population is White with the next largest racial group is Black at 1.4% of the total population. There are two block groups in Erving and neither have a higher concentration of minorities greater than 8% of the total population. In terms of income, the annual median household income of Erving is well above 65% of the State's annual median household income of \$68,563. In addition, according to the latest U.S. Census's American Community Survey, there are no households that have Limited English Proficiency (LEP).

C.4 Analysis

Erving's population has been growing at a moderate rate, about 4.7% higher than population growth in the County during the period from 2010 to 2015. This rate may begin to increase as development pressure from the Boston area continues to move west. Proactively planning for future growth now will help assure that adequate open space and recreation resources are available in the future. Low cost recreation facilities and

opportunities for an aging population should especially be considered given the data on the large percentage of Baby Boomers living in Erving. For example, existing trails located in close proximity to the town center, could be expanded or publicized to make residents more aware of these resources. Social and cultural activities could also be expanded for residents of all ages, further enhancing the sense of community in town. All residents of Erving should benefit from recreational programming.

Strategies to work with existing resources to provide for local and regional needs are important, since Erving's economy is showing some signs of decline. This decline is most evident in the total employment figures. While the number of establishments in Erving has been stable or growing slightly, unemployment has increased.

Erving should find creative ways to move ahead with economic development efforts through the use of existing resources, both natural and human, to provide for the needs of local residents and businesses. Manufacturing has historically provided the economic backbone of the community, but continues to decline on the State, Regional, and Local levels. Erving may want to consider promoting and supporting locally owned businesses that help create a sustainable market for locally produced goods and natural resources, thereby keeping money within Erving's economy.

Promoting and protecting Erving's natural resources and improving the quality of life for Erving residents, through efforts such as open space and recreation planning, would have the additional effect of bringing tourists to Town who would be attracted to those amenities, and may spend their money at local businesses. A high priority focus should



East Mineral Street Bicycle and Pedestrian Bridge over the Millers River to Erving

be placed on encouraging the outdoor recreation and education industry within Erving. The Town has many natural resources and existing recreational opportunities that could be used as a way to increase employment while also protecting its natural beauty. The outdoor recreation industry is a fast growing one and has had success in the western portion of Franklin County focusing on skiing, mountain biking, and white water rafting. To this end, the redevelopment of the vacant International Paper (IP) Mill on the Millers River would be an excellent way to attract recreation-focused businesses to Town and provide additional income for Erving.

D. GROWTH AND DEVELOPMENT PATTERNS

D.1 Patterns and Trends

A review of the history of Erving's settlement demonstrates five patterns of land use that occurred consistently throughout the Town's first one hundred years (1838-1940):

- Population followed industrial expansion;
- Most of the population settled in villages;
- Farming occurred along the Connecticut River;
- Working forests supported the local wood products industries; and,
- Transportation upgrades played an important role in population expansion and the location of commercial uses.

It is important to understand how these past patterns affect the landscape today. In each of the historical periods from the mid-1800s on, dramatic increases in local population occurred in distinct villages following the expansion of industries:

- Millers Falls Tool Company in 1868 established a suburban residential district in Erving'side;
- Farley Mill established in 1883 in Wendell, resulting in the settlement of a village on the Erving side of Millers River;
- In 1902 the Millers Falls Paper Company opened a factory in Erving'side, which spurred later affluent residential development; and
- In 1910, the Erving Paper Company expanded the Stoneville mill with a brick addition causing population numbers to rise in Erving Center.

Although most of the population settled in villages during Erving's first one hundred years as an established town, earlier settlers followed fishing, hunting, grazing, and lumbering activities up the hills towards Northfield, along Rt. 63 (before it was a state road), and Mountain, North and High Streets. Many homes along the rural roads are from the mid-to late-1800s, which demonstrates that since the beginning of the industrial period, some residents lived relatively far from the village center. One reason for this could have been these areas' better access to pasture land and to narrow, fast moving streams used to power sawmills. In addition, many of the forested slopes were cut to support local wood products mills below on the Millers River. Though most of the cultivated cropland in the 1800's was where it is today, along the upper floodplain of the Connecticut River, some farms were also located off of Mountain and North Streets.

Transportation corridors have played a dominant role in Erving's establishment and development over the past 250 years. The Mohawk Trail was the primary east-west route during the 1700s and its development as the Fifth Massachusetts Turnpike in 1799 brought to Erving its first European settler and mill owner, Colonel Asaph White in 1801. The Vermont Massachusetts Railroad helped to sustain both Erving Center and later Ervingside as industrial and commercial hubs. Finally, the reconstruction of Rt. 2 in the early 1930s initiated the location of highway-related commercial businesses in Erving. The Town's zoning bylaws help control the types and intensity of development that can occur along the highway to mitigate the sprawl of commercial highway-related businesses.

In summary, prior to the middle of the twentieth century, Erving's incoming residents lived mostly in villages and in homes scattered along Mountain, North and High Streets. People lived not far from where they worked. This was possible in Erving as local industries, using the Millers River for power, employed many workers in paper, chair, and tool manufacturing. Farms and sawmills could provide their owners income because their products were needed locally. Stores, restaurants, and hotels were supported by traffic along the Turnpike in the 1800s and later in the 1900s when it was called Rt. 2. Between 1940 and 1970, the main land use changes appear to be the establishment of additional commercial uses along Rt. 2 and residential uses on Mountain and High Streets in Erving Center. In addition, the Erving Paper Mill and Maple Avenue landfills were developed during this time period.

During the time period from 1971 and 1997, the Northfield Mountain Reservoir was constructed, the three Erving publicly-owned wastewater treatment facilities were developed, the active landfills were either closed or expanded (as in the case of the one used by Erving Paper Mill), the elementary school and Weatherhead's apartments were built, and large lot residential uses expanded. The types of residential uses that grew in overall acreage include multi-family (off Rt. 63), ¼ to ½-acre lots (off River Road in Ervingside), and greater than ½ acre lots on almost every road outside of the village centers.

In the 26 years prior to 1997, the predominant land use change was new houses being built along existing public ways, called frontage or approval-not-required lots. It was also during this time that Erving lost 100 acres of forestland and converted 99 acres of land to residential uses 0.5 acres and larger. During this period, all but the units built on Ridge Road and Old State Road had access to municipal sewer. However, since 1997 there have been approved subdivisions and approval-not-required lots developed that do not have access to sewer, which shows that a lack of sewer is not a constraint to development in Erving.

The majority of Town land is currently zoned as Rural Residential, which allows a minimum of 2-acre residential development. As a result, large lot residential development will likely be the dominant pattern of land conversion in Erving. However, factors such

as slope and depth to bedrock may limit the development of septic systems and result in larger lots in the Rural Residential district. Within the Central Village and Village Residential zones, the minimum lot size is ½-acre, or 21,780 square feet.

The Ridge Road project, approved in 2000, is a 23 lot subdivision on 83 acres. This acreage represents a loss of contiguous forestland nearly equal to the total woodland acreage lost in Erving between 1971 and 1997. Since the Great Recession in 2009, there have been no new residential subdivisions since 2000. The Town's Phasing of Growth bylaw's goal was to promote more orderly growth in the future if housing development in the region should pick up. However, this bylaw expired on December 31, 2015.

Forest fragmentation, the loss of forestland along the edges of large blocks of woodland, is a concern with land conversion for residential development. Fragmentation of the landscape can negatively impact the quality of wildlife habitat, watershed protection, recreation opportunities, forest management opportunities, and ultimately, the municipal services budget. The more fragmented land uses become, the more expensive it becomes to manage and to provide services to residents or businesses, based on additional travel time and fuel costs. Fragmentation of the landscape affects the viability of forest management operations. Development is limited to the road corridors in many rural communities in Western Massachusetts. The roadways occur within a landscape of large blocks of contiguous forestland. When forestland is sold for residential development, the resulting lots, usually associated with single-family homes, are often too small to manage individually for forestry purposes.

In addition to losses in forestland, new residential development has other less obvious community impacts. Fiscal impacts to communities are shown by Cost of Community Services (COCS) studies, completed by American Farmland Trust in communities in Massachusetts and throughout the country. These COCS studies show that open space, farmland, and commercial and industrial development typically require less in Town services than the revenue that these land uses generate for the local tax base. On the other hand, residential development typically costs more to the Town in services (including education) than the revenue that it generates for the Town through taxes.

D.2. Infrastructure

D.2.1 Transportation

Transportation resources are the highways, roads, railroad tracks, bus routes, bike paths, and sidewalks that exist within a town. The road infrastructure of Erving is comprised of two state highways (Route 2 and Route 63), and a network of roads serving the various village centers and outlying rural areas. Due to its rural nature, cars and trucks are the primary modes of transportation for people and goods. In 2015, 97 percent of Erving households owned at least one vehicle. In addition, 96 percent of Erving's working population commuted by car, truck or van to their place of work. This places great importance on the road network to provide a safe and efficient system to accommodate this level of use.



Construction of the Erving Paper Mill Route 2 Bypass

Route 2 is the primary east/west highway across the northern half of Massachusetts, running from the center of Boston into New York State. This major road follows along the southern border of the Town parallel to the Millers River bisecting the Town Center and the Village of Erving. This route has received much study in recent years, particular with the “Route 2 Safety Study and Improvement Study.” This study recommended a number of major road improvements to increase safety along the corridor. Some of these improvements have been completed or are currently under design. The largest safety improvement, in terms of both impact on safety and size of the project, is the completed relocation of Route 2 at the Erving Paper Mill. Route 63, located along the western edge of Town provides the only north/south route in Franklin County east of the Connecticut River.

A fixed route transit service, formerly called the “G-Link” and is now known as Route 32, is operated by the Franklin Regional Transit Authority (FRTA) and traverses Route 2 between Greenfield, Orange and Athol, with one scheduled stop in Erving Center. This service links with routes to Gardner and on to Boston via bus or commuter rail from Fitchburg.

Erving has additional transportation infrastructure in two rail lines, which traverse the Town. The first operated by Pan Am Systems (formerly Guilford Rail System), runs east/west parallel to Route 2 and the Millers River along the length of Erving. The

second line operated by New England Central Railroad (NECR) runs north/south parallel with Route 63 on the western edge of the Town. Both lines are primarily used for freight purposes. The “Vermont,” an Amtrak passenger service, which runs twice a day between Rutland, Vermont and New York City utilizes the north/south rail line operated by NECR. This train began stopping in Franklin County in Greenfield in 2014. The FRCOG is investigating the possibility of more frequent commuter service on this line between Greenfield and Springfield. It is anticipated that this enhanced service will begin in mid-2019.

Erving State Forest and Northfield Mountain Recreation areas provide many recreational walking activities. The streetscape project along Route 2 in the Erving Town Center, which was completed in 1998, dramatically improved the feeling of comfort and safety for pedestrians in that area. Another streetscape project is slated to begin construction in 2019. This project is in Ervingside on Route 63 from River Street to Care Drive. Further improvements in the pedestrian infrastructure to improve the sidewalk connectivity within the various village centers, should be investigated.

Bicycling opportunities are limited in Erving. Route 2 is the only direct east/west route through Town. The traffic volumes and speeds combined with the twisting and narrow road layout makes Route 2 a very dangerous and undesirable location to be riding a bicycle. Many of the north/south roadways involve long and steep inclines limiting these routes to the most experienced cyclists. “The Northfield Connector” of the Franklin County Bikeway follows River Road along the western border of the Town. This portion of the bikeway utilizes shared roadway and provides a link to the Northfield Mountain Recreation Center. The Connector crosses the Millers River over the East Mineral Road Bridge, which has been redesigned and reconstructed for use as a pedestrian- and bicycle-only bridge. This section of the Bikeway includes roadway signage that clearly indicates the bikeway route and alerts motorists to the presence of bicyclists. Route 63 is also part of the Connecticut River Scenic Byway Tri-State Bikeway, which follows the Scenic Byway through Franklin County in Massachusetts through Vermont and into Keene, New Hampshire.

Because of the difficulty of bicycling along Route 2 in Erving, several possible alternatives have been identified and preliminary assessments have been conducted. Considered routes include potential connections from Mountain Road to the east, and a potential route through the Town-owned cemetery on Cemetery Road to Flagg Hill Road. Another option that has been identified as a potential off-road walking/bicycling route is a discontinued dirt road (Old Farley Road) that is located to the south of the Millers River in Wendell. The route can be accessed from Arch Street off of Route 2 in Erving Center. Old Farley Road travels west for approximately two (2) miles and connects to Posk Place Road in the Farley section of Wendell. The FRCOG staff has mapped this potential route, but there are land ownership access issues that are currently constraining the advancement of this project.

D.2.2 Water Supply

Erving residents get their drinking water from private wells and springs or public water supplies. The public distribution system in Erving and private wells pump water from underground. Usually a public distribution system that utilizes groundwater accesses a large volume of water in sand and gravel deposits called an aquifer while private wells for single-family homes for example, have wells that draw water from bedrock and other shallow sources. Underground aquifer levels are maintained by groundwater flow from aquifer recharge areas. When rain falls in the hills some of it ends up in the small streams that course down to the Millers or Connecticut Rivers but much of it enters the groundwater. Protecting groundwater and aquifers from contamination by hazardous materials, sewage, salts, pesticides, etc. is critical to the quality of both public and private drinking water sources.

Public water supplies are classified as community and non-community sources. Community sources supply water to a public distribution system. A non-community source is one that serves twenty-five (25) or more persons, such as a school, factory, campsite, or restaurant and is not part of a public distribution system. This may be transient or non-transient, depending upon the usage period. Sources that are in use for less than six months are considered transient. Non-transient non-community, public water sources are those located at private locations where people stay for longer than six months. This could be a source for a company like Erving Paper where people are drinking from the same source of water day after day.

The types of public water systems determine the level of testing required by the Massachusetts Department of Environmental Protection (DEP). Transient non-community water sources must test for coliform bacteria, sodium, nitrates, and nitrites but not for pesticides. Non-transient non-community water sources must test for a more extensive list of contaminants because the people at these locations are drinking from the same sources for a potentially longer period of time.

Community ground water sources (i.e. wells) are required by the Massachusetts Department of Environmental Protection to be thoroughly tested for a list of organic and inorganic compounds including pesticides. In addition they need to be surrounded by a Zone I wellhead protection area so that the water in the well does not become contaminated. The wellhead protection area is designed to restrict the types of land uses allowed within that zone. Gas stations are typically prohibited, as are industries that work with a significant quantity of hazardous materials. The interim wellhead protection area is drawn on a map as a circle with a radius of one half of a mile. That protection area is approximately 503 acres in size. Usually, the actual recharge area (DEP Approved Zone II Wellhead Protection Area) for a given well is much larger. The recharge area's boundaries are the farthest areas from which the well would draw during an extended dry period without precipitation. Zone II areas normally consist of land areas that are underlain with permeable sand and gravel that were deposited during the later stages of glaciation. The recharge areas for Zone II areas are called the Zone III's.

These are usually land areas that have soils of glacial till atop bedrock, which are far too permeable to hold water. The Zone III's recharge the Zone II's (Tighe & Bond; 1999).

There is one community water supply serving most residents and businesses in Erving. Both public water and sewer extends to Care Drive, the approximately 50 or more homes north of that in Erving are on private well and septic systems. All other areas of Town including Farley and Erving Center are served with non-community public and private wells or springs. The community drinking water supply source is Erving Well #1, which was installed along the Millers River in 1983. Located off of Public Works Boulevard on the south side of Route 2, it is approximately 0.5 miles from the confluence of the Millers and the Connecticut Rivers. The wellfield is a single, twelve-inch (12") gravel packed production well installed to a depth of fifty-two feet (52') below grade. Massachusetts Department of Environmental Protection has not established an approved pumping rate but the safe yield is equivalent to 374,400 gallons per day. The Town of Erving currently pumps the well at a rate of 260 gallons per minute on an as needed basis with average daily withdrawals of 60,000 gallons per day. River terrace deposits of sand, silt and gravel including floodplain deposits and higher terraces along the Millers River underlie the Town of Erving's well field. These layered sand units are up to 150 feet deep throughout the aquifer.

Tighe & Bond prepared a study titled, "Source Water Assessment Program, Conceptual Zone II Delineation, for Erving Well #1, Erving, MA" in July of 1999. Their conceptual Zone II delineation used modeling techniques that analyzed historic pumping tests and hydrological and geological surveys. This methodology was used instead of using a full capacity pumping test during an extended dry period based on the notion that the aquifer boundary most likely would exist between the low yielding bedrock till areas and the water bearing unconsolidated materials.

The delineated Zone II recharge area for Erving's Well #1 occupies an estimated 0.7 square miles in Erving between Poplar Mountain and East Mineral Hill (*Please see the Water Resources Map where the boundary of the recharge area is identified*). The area is currently zoned for commercial and residential uses, but has a Groundwater Protection District superimposed over these zones. This district calls for additional construction and use requirements with the intention of preventing contamination of the groundwater. Developed properties are currently connected to the Erving municipal sewer system. Routes 63 and 2, and the railroad tracks are located within the Zone II recharge area as well. A Wellhead Protection Plan has been completed for the Erving Water Department. This aquifer's Zone III is east of the recharge area for Well #1 in the till and bedrock along the northwestern slope of Poplar Mountain.

According to Tighe & Bond's 1999 study, the Erving Well #1 recharge area has three (3) potential sources of contamination. These include the Massachusetts Highway Department garage, the Town of Erving wastewater treatment facility, and Renovator's Supply. These three (3) land uses are included because their use of particular materials presents a risk to the continued quality of the water in the aquifer. Table 3-9 describes

information included in the 1999 Tighe & Bond Source Water Assessment study that ranks the potential sources of contamination by Massachusetts Department of Environmental Protection risk category. Both the Erving Wastewater Treatment facility and Renovator's Supplies earned a "High" risk rating. These potential sources of contamination remain the same according to the Massachusetts Department of Environmental Protection's 2007 SWAP report.

Table 3-9: Potential Sources of Contamination the Zone II Recharge Area for Erving Well #1

Site #	Name of Potential Sources of Contamination	Description	DEP Risk Category
1	Mass. Highway Garage	Road Maintenance Depot	Medium
2	Wastewater Treatment Plant (WWTP)	Waste Storage, Treatment, Recycling, and Underground Storage Tanks	High
3	Renovator Supplies, Inc.	Furniture stripping, refinishing, storage of transformers, recycling, and demolition materials	High

Source: Tighe & Bond Conceptual Zone II Delineation for Erving Well #1 Source Water Assessment Program, 1999.

Water quality testing shows that the sodium levels within the well fluctuate periodically. This is most likely the result of runoff from the nearby roads within the Zone II area. Route 2 passes approximately 500 feet from the well. Town officials have expressed their opinion that the sodium levels are caused by road salt use in the winter along Route 2. In response, MassDOT has designated Route 2, from the end of the French King Bridge to approximately 200 feet west of the Moore Street overpass, as a Reduced Salt Area.

Water quality testing for Erving Well #1 between 2014 and 2016 has shown that sodium was the only substance that exceeded Massachusetts Drinking Water Standards Guidelines for Chemicals in Massachusetts Drinking Waters. In 2014, 2015, and 2016 average levels of sodium were found to be 49 mg/L, 35.5 mg/L, and 27.6 mg/L. The Office of Research Standards and Guidelines criterion for sodium is 20 mg/L.

According to the Massachusetts Department of Environmental Protection, there are ten (9) non-community and two (2) community public water suppliers in Erving (See Table 3-10). The Department of Conservation and Recreation and the Erving Paper Mill each have three (3) individual water supplies.

Table 3-10: Public Water Supplies (PWS) in the Town of Erving

Public Water Supply Name	Class*	Service Type	Source(s) Status**
Erving Water Dept. (Well 1)	COM	Public Distribution	A
Erving Town Offices	NC	Offices	A
DCR Erving State Forest	NC	Summer Camp	A, A, A
Erving Paper Mills	NTNC	Industrial/Agric.	A, A, A
French King Motor Inn & Restaurant	NC	Hotel/Motel/Restaurant	A
Freight House Antiques	NC	Commercial	A
Charles Zilinski Memorial Field	NC	Ball Fields	A
Crooked Tap	NC	Restaurant	I
Erving Station (formerly Box Car Restaurant)	NC	Restaurant	A

Source: Massachusetts Department of Environmental Protection; 2017.

Note: *COM=Community source for public distribution; NC=non-community source; NTNC=non-transient, non-community source. **Water Source Status: A=Active, I=Inactive

D.2.3 Wastewater Treatment

There are three (3) areas in the Town of Erving served by public sewer. Public sewer and its expansion have the potential to both limit and encourage development. The ability to expand a sewer collection system is dependent on the capacity of the wastewater treatment facility, the quality of the existing collection system, and the amount of available land surrounding the existing treatment facility. Any expansion of the collection system may contribute to development pressures on lands that were previously without sewer. The Town just recently upgraded all of its pump stations for both water and wastewater.

Erving Center enjoys wastewater treatment via the Erving Paper Company and its subsidiary, ERSECO, which manages the plant (POTW #2). Farley Center has a small public sewer system (POTW #3) designed to handle waste from a set number of residences. The Erving Wastewater Treatment Plant (POTW #1) located off of River Road serves Erving. Each facility serves a unique population and disposes of its waste quite differently.

The POTW#1 is located off River Road in Erving. It serves most of Erving (up to Care Drive) and the Village of Millers Falls, located in the Town of Montague. POTW#1 is an extended aeration system. The wastewater inflow arrives at the WWTP carrying waste solids and enters aeration tanks where bacteria in the water break down the solids into sludge. Then the wastewater flows into a circular clarifier where the sludge settles. The sludge is pumped to a gravity thickener. Normally, as the sludge settles in the final clarifier, the clear water flows over the top, gets disinfected with chlorine gas, and is then discharged into the Millers River.

The POTW #2 in Erving Center has a similar system except that there is only one (1) aeration tank, and two (2) primary and two (2) secondary clarifiers. The water is treated

with chlorine gas before it is diverted to the Millers River. The sludge is hauled to the Erving Landfill off Rt. 2.

Farley’s POTW #3 is similar to a large septic tank for a limited number of residents. In this case the influent passes through five (5) large settling tanks. The sludge, which settles at the bottom of these tanks, is pumped out once per year and transported to the POTW #1 where it is run through their system. The water is pumped from the top of the settling tanks to sand beds, after which a chlorine treatment is applied before the water is discharged to the Millers River.

Table: 3-11: Statistics for Wastewater Treatment Facilities in Erving

Facility Name and Location	Facility Type	Number Persons Served	Design Capacity (MGD)	Average Monthly Flow	% of Design Capacity Remaining	Sludge Treatment or Disposal	Effluent Disposal Location
POTW #1 (Erving) (Erving) (Erving)	Extended Aeration	1,500	1.02 MGD	0.130 MGD	84%	Waste Stream	Millers River
POTW #2 (Erving Center)	Extended Aeration	500	3.15 MGD	1.97 MGD	37%	Erving Landfill	Millers River
POTW #3 (Farley Village)	Septic Tank	50	10,000 gpd	5,000	50%	Sludge goes to POTW #1	Millers River

Source: Massachusetts Department of Environmental Protection; 2000.

Note: MGD = Millions of Gallons per Day. Gpd = Gallons per Day. POTW = Publicly owned Treatment Works

Table 3-11 summarizes statistics for the three (3) wastewater treatment plants in Erving. Wastewater treatment plants are required by the DEP to initiate plans for expansion when the rate at which wastewater comes into the system, called the influent loading rate, reaches 80 percent of the facility's design capacity for ninety (90) days. All of the facilities are running well below their design capacity. Only when a wastewater treatment facility’s percentage of remaining design capacity reaches 20 percent, would expansion be necessary. The Erving Center facility, with 33 percent of design capacity remaining, is the plant most likely to require expansion in the near future if the customer base for the other two plants remains the same.

Table 3-12: A Comparison Between National Pollution Discharge Elimination System (NPDES) Permit Limitations

Wastewater Treatment Facility	NPDES BOD Average Limit	NPDES TSS Average Limit
POTW#1 (Erving) (Erving) (Erving)	30 mg/l	30 mg/l
POTW#2 (Erving Center)	3,400 lbs/day	4,700 lbs/day
POTW#3 (Farley Village)	30 mg/l	30 mg/l

Source: Massachusetts Department of Environmental Protection; 2008.

Note: BOD = Biological Oxygen Demand. TSS = Total Suspended Solids.

Biological oxygen demand (BOD) and total suspended solids (TSS) are two (2) design criteria that describe wastewater, both the quality of the water coming into the system, and the water being discharged to the rivers. Biological oxygen demand (BOD) is a measure of the amount of oxygen consumed by the wastewater in a given period, typically five (5) days. Total suspended solids (TSS) measures the number of particles in the water. The United States Environmental Protection Agency and the Massachusetts DEP regulate the levels of these parameters found in the water discharged from wastewater treatment plants. Each plant has a National Pollution Discharge Elimination System (NPDES) permit that quantifies the allowable levels of BOD and TSS in the discharged wastewater.

The NPDES permit limits for BOD and TSS are the same for POTW #1 and #3, thirty (30) milligrams per liter, while at POTW #2 in Erving Center, the TSS limits are measured in pounds. In either case the actual BOD and TSS averages for all three (3) facilities are significantly below their permit limits. It appears that on the average, these facilities are providing environmentally sound wastewater treatment operating in compliance with their NPDES permits.

It is quite clear from the tables that all of the plants are operating within their design capacities and NPDES permits. Unlike other communities that have wastewater treatment facilities that are in need of expansion, Erving appears to have excess capacity.

Due to the excess capacity that exists within POTW #1 as noted in Table 3-12, the potential for expansion of the collection system may seem real. However, the question of expansion should be studied carefully. For example, in two (2) engineering studies, the costs of expanding the POTW #1 collection system to the French King Restaurant has been shown to be significant.

Although the POTW #3 in Farley has some capacity to expand, it may be desirable to plan any new development as infill within the village center, instead of expanding to include other areas such as Old State Road. Infill expansion would seem prudent as it continues to concentrate development near existing infrastructure.

It is important to carefully consider whether expansion of the sewer collection system is desirable as compared to encouraging infill development in the village centers. A potential result of expanding the sewer to Old State Road, the French King Restaurant, or north along Rt. 63 is an increase in the development value of all lands with access to these roads. Whether land percolates water would no longer be a limiting factor for builders. Only lands that were permanently protected from development would be passed over. Development of frontage lots and small subdivisions along existing roads would likely accelerate. Coupled with the low property tax rate, sewer line expansion would allow developers to overcome the barriers that Title 5 currently produces. By focusing new development closer to existing village centers, Erving would be encouraging historical development patterns and discouraging creeping development of residential, commercial, and industrial uses.

D.3 Long-term Development Patterns

Long-term development patterns will be based on a combination of land use controls and population trends.

D.3.1 Land Use Controls

The Town of Erving has multiple local land use controls including: various zoning districts, Site Plan Review, Flexible Development for Small Projects, and Conservation Development. The zoning districts include: the Central Village, Village Residential, Rural Residential, French King Commercial, Groundwater Protection District, Wireless Communication Facilities Overlay, and the Large-Scale Ground-Mounted Photovoltaic Installation bylaws. The Town also requires Site Plan Review for projects that result in the creation of 4 or more lots, or more than 5,000 square feet of enclosed space. The Site Plan Review allows greater Town control in ensuring that large projects are in harmonious relationship with their surroundings.

Table 3-13: Selected Features from Town of Erving Zoning Bylaws

District Dimensional Requirements	Type of Use	Min. Lot Area in Sq. Ft.	Min. Frontage in Ft.
Central Village	Residential/ Commercial	21,780	125
Village Residential	Residential	21,780	125
Rural Residential	Residential	87,120	225
French King Commercial	Residential/ Commercial	87,120	225

Source: Town of Erving Zoning By-Law; June 27, 2005.

In essence, Erving’s current zoning will create a pattern of development today that is similar to that which was developing in the Town center at the turn of the last century, around 1900. It encourages dense residential development in and around the villages, if and where land is available. Industrial and commercial development is encouraged to expand in Erving’side and Erving Center within the designated Central Village and French King Commercial zoning districts.

The challenge for Erving is to define what well balanced looks like for their community. This might mean, for example, allowing the development of commercial and light industrial uses in a way that encourages local entrepreneurship and business expansion, or concentrating residential development where infrastructure already exists, and away from important open space resources. A Master Plan was completed in 2002 to help the Town move forward with proactive planning, with sections devoted to Natural Resources and Open Space, Community Facilities and Services, Housing, Historic and Scenic Resources, Transportation Resources, Economic Development, and Land Use and Zoning. Goals and findings encourage balancing future land use decisions to support a stable tax base while protecting important open space, farmland, ecological, scenic, and historic resources.

SECTION 4

ENVIRONMENTAL INVENTORY AND ANALYSIS

This section of the Erving Open Space and Recreation Plan provides a comprehensive inventory of the significant natural and cultural resources in Town. It identifies and qualifies the Town's soils, special landscape features, surface waters, aquifers, vegetation, fisheries and wildlife, and unique environments and scenic landscapes. This section examines in detail the basic ecological services and cultural amenities the Town's natural resources provide the residents of Erving. Ecological services include drinking water filtration, flood storage capacity, maintenance of species diversity, and soil nutrient levels. Cultural amenities include the recreational use of open spaces, the quality of life benefits that are maximized by maintaining the area's rural character and scenic beauty, and the direct and indirect benefits that well-conserved natural resources have on the local economy.



New England Scenic Trail in Erving

A. DOCUMENTING AND MAPPING ECOSYSTEMS

Just as the Town of Erving contains multiple and varied ecosystems, the State of Massachusetts, while relatively small, has many diverse ecosystems and habitats. Documentation and mapping of such ecosystems and habitats can be a first step toward protecting and preserving these resources.

A.1 BioMap2

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

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* identifies and categorizes lands into two classes of sensitive lands, which are described below:

Core Habitat Statewide Summary: Core Habitat consists of land that is 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. Core Habitat includes:

- Habitats for rare, vulnerable, or uncommon mammal, bird, reptile, amphibian, fish, invertebrate, and plant species;
- Priority Natural Communities;
- High-quality wetland, vernal pool, aquatic, and coastal habitats; and
- Intact forest ecosystems.

Critical Natural Landscape Statewide Summary: Critical Natural Landscape (CNL) consists of land complementing the Core Habitat, including large natural Landscape Blocks that provide habitat for wide-ranging native species, support intact ecological processes, maintain connectivity among habitats, and enhance ecological resilience. The areas include buffering uplands around coastal, wetland and aquatic Core Habitats to help ensure their long-term integrity. CNL, which may overlap with Core Habitat, includes:

- The largest Landscape Blocks in each of 8 ecoregions; and
- Adjacent uplands that buffer wetland, aquatic, and coastal habitats.

A.2 NHESP Priority Habitats

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

A.2.1 Benefits of BioMap2 and NHESP Priority Habitats

On the statewide level, mapping Core Habitat and Critical Natural Landscapes helps to guide strategic conservation to protect those areas that are most critical to the long-term survival and persistence of rare and other native species and their related habitats and ecosystems. On the local level, Erving can use this information to better understand where the Town's ecosystems and habitats fit into the bigger picture. For example, a small parcel of land could be a key link to two larger, intact ecosystems.

On an individual landowner level, *BioMap2* – as well as NHESP Priority and Supporting Habitats – is an important tool that can be used to apply for grants to help improve, manage and monitor certain lands. An example is the MassWildlife Habitat Management Grant Program, which helps fund efforts to enhance wildlife habitat and increase recreational opportunities on private properties, with preference given to land that is classified as, or located nearby, NHESP areas.

Information and mapping from *BioMap2* and NHESP Priority Habitats will be referenced throughout this section on Environmental Inventory and Analysis. BioMap2 Core Habitat Landscapes and NHESP Priority Habitats are shown on the Scenic, Recreation, & Environmental Resources Map at the end of this section.

A.3 Resiliency to Climate Change

In 2011, the Massachusetts Executive Office of Energy and Environmental Affairs issued the *Massachusetts Climate Change Adaptation Report*. Climate change will result in potentially profound effects on the economy, public health, water resources, infrastructure, energy demand, natural features, and recreation throughout the state. The impacts of climate change will vary not only geographically but temporally—some of the impacts may not be felt for another 30 years or further in the future, while others are already upon us. When considering land conservation strategies and suitable sites for recreation facilities, climate change adaptation and resiliency should enter into the decision-making process of the Town.

The Nature Conservancy (TNC) released a report in 2013 entitled “Resilient Sites for Terrestrial Conservation in the Northeast and Mid-Atlantic Region.” According to the report, climate change is expected to alter species' distributions. As species move to adjust to changing conditions, federal, state and local agencies and entities involved in land conservation need a way to prioritize strategic land conservation that will conserve the maximum amount of biological diversity despite shifting species distribution patterns. Current conservation approaches based on species locations or on predicted species' responses to climate, are necessary, but hampered by uncertainty. TNC states that it offers a complementary approach, one that aims to identify key areas for conservation based on land characteristics that increase diversity and resilience. The central idea of this project is that by mapping key geophysical settings and evaluating them for landscape characteristics that buffer against climate effects, conservationists can identify the most resilient places in the landscape.

B. TOPOGRAPHY, GEOLOGY, AND SOILS

Decisions about land use should consider the inherent suitability of a site for different kinds of development. Understanding the geology, soils, and topography of Erving are essential for determining the suitability of sites for residential, commercial and industrial development. This information will help the Town identify areas that should continue as agriculture or forestry operations as well as areas to preserve as open space such as parks and trails.

B.1. Topography

The Town of Erving has two different landscapes: riparian corridors with either steep banks or sloping sand flats, and highlands with associated slopes, hills, mountains, ridgelines, and plateaus. The banks of the Connecticut River in Erving, north of the French King Bridge, are steep and wooded, and include the southern portions of Northfield Mountain and First Bald Hills, which stretch south from the Town of Northfield. The mountains in Erving include Poplar Mountain (1,021 feet) and Rose Ledge (1,093 feet) in the west, Rattlesnake Mountain (1,067 feet) and Hermit Mountain (1,206 feet) in the central portion of the Town, and several mountains in Erving State Forest (1,055 to 1,200 feet). The banks of the Millers River, Erving's southern boundary, are comprised of sand and gravel flats.

Approximately three-fourths (75.8%) of Erving drains to the Millers River. It is fed by many small brooks that flow toward the west and south from Erving's uplands. The Millers River drains a 392-square-mile area in north-central Massachusetts and southwest New Hampshire. The rest of the Town drains to Four-Mile Brook in Northfield or directly to the Connecticut River via four small streams.

Overall, forestland in Erving represents 83 percent of the total land area. Surface water and non-forested and forested wetlands represent a total of 505 acres or 5.5 percent of Erving's total land area. They include the Millers and Connecticut Rivers and any associated wetlands, the Northfield Mountain Reservoir, Laurel Lake, and Spruce Swamp which is located on top of Rattlesnake Mountain. Pasture and cropland represent 136 acres or 1.5 percent of the total area.

B.2 Geology

The underlying bedrock of Erving is predominantly Poplar Mountain and Dry Hill Granite gneiss¹ and the Crag Mountain Formation with large banded areas of schist² rock forming the upland ridges in the Erving Center-Farley area. These are hard bedrock that have no inherent suitability limitations by themselves. However, there may be limitations based on their relationship to the soils and vegetation. Development elsewhere may be

¹ Gneiss is a coarse layered rock. The coarse-grained high-grade metamorphic rock is formed at high pressures and temperatures in which light and dark mineral constituents are segregated into visible bands.

² Schist is a rock whose minerals have aligned themselves in one direction in response to deformation stresses with the result that the rock can be split in parallel layers.

constrained by significant areas of shallow bedrock and rocky ledges that are common in the region and by aquifer recharge areas and many small wetlands.

The land of the Millers River Valley bottom is underlined predominantly by the Bernardston Formation. The bedrock tends to strike northeast to southwest setting the pattern for drainage from the area's streams and brooks. Westernmost Erving is composed of floodplain soils deposited by the Connecticut and Millers Rivers and lake-bottom sediments from post-glacial Lake Hitchcock.

Surficial geology includes deposits of glacial till, areas of sand and gravel, and lake bottoms. Unconsolidated deposits are: 1) upper and lower till, which are heterogeneous mixtures of clay, silt, sand, and cobble to boulder sized gravel with low to moderate hydraulic conductivity commonly covering the hilly areas, 2) stratified drift, consisting primarily of fluvial (produced by stream action) and glaciofluvial (produced by streams from glaciers) derived sands and gravels with moderate to high hydraulic conductivities, which serve as a storage reservoir for precipitation and an easy passage for recharge to underlying permeable deposits and fractured bedrock and 3) swamp and lacustrine (formed in lakes) deposits, which have high hydraulic conductivity but are undesirable as aquifers because of insufficient thickness.

The Town of Erving's distinctive physical base has determined the distribution of the Town's water bodies, its soils and vegetation, and its settlement patterns, both prior to and since colonial times.

B.2.1 Mountain Building: 700 Million Years to 190 Million Years Ago

The pressure of mountain building folded the earth, created faults, and produced the layers of metamorphosed rock typically found in New England today. Collision stress also melted large areas of rock, which cooled and hardened into the granites that are currently found in some of the hill towns in Massachusetts. Preceding the collisions, lines of volcanoes sometimes formed, and Franklin County shows evidence of this in bands of dark schist rock metamorphosed from lava flows and volcanic ash.

B.2.2. Earthquakes and Dinosaurs: 190 Million to 65 Million Years Ago

A great continent known as Pangaea formed through the plate collisions; it began to break apart almost 200 million years ago (and continues today). This caused earthquakes and formed large rift valleys, the largest of which became the Atlantic Ocean. The Connecticut Valley was one of many smaller rifts to develop, and streams flowing into it from higher areas to the east which brought alluvium including gravels, sand and silt.

By the close of the Dinosaur age, the entire eastern United States including Erving was part of a large featureless plain, known as the Peneplain. It had been leveled through erosion, with the exception of a few higher, resistant areas. Today, these granite mountaintops, named monadnocks, are still the high points in this region. Such mountaintops are named for Mt. Monadnock in New Hampshire; Mt. Wachusett and Mount Grace are other nearby examples.

As the peneplain eroded, the less resistant rock eroded to form low-lying areas, while bands of schist remained to form upland ridges. By this time, the Connecticut Valley had been filled with sediment, while streams that would become the Westfield, Deerfield, and Farmington Rivers continued to meander eastward. The Miller's River and other westward-flowing streams would become more significant later on.



View of the Millers River Valley in Erving

B.2.3. Cenozoic Era and the Ice Age, to the Present: 65 Million Years Ago to Today

A long period of relative quiet followed the Dinosaur era. Then, as the Rocky Mountains were forming in the west eight million years ago, the eastern peneplain shifted upward a thousand feet. As a result of the new steep topography, stream flow accelerated, carving deep valleys into the plain. The plain rose one more time, and the Millers River, once a slowly meandering westward stream, now carved its course through the sediment and bedrock. Today, the visible remnants of the peneplain are the area's schist-bearing hilltops, all at about the same 1,000-foot elevation.

Mountain building, flowing water, and wind had roughly shaped the land; now the great glacial advances would shape the remaining peneplain into its current topography. The earth's climate cooled until a point about two million years ago, when accumulated snow and ice in the far north began advancing under its own weight. A series of glaciations followed, eroding mountains and displacing huge amounts of rock and sediment. The final advance, known as the Wisconsin Glacial Period, completely covered New England before it began to recede about 13,000 years ago. It scoured and polished the land into its present form, leaving a layer of glacial debris and landforms that are still distinguishable.

While the Miller's River probably first formed prior to the glacial period, most of Erving's hydrological system is a remnant of that time. The major streams follow a southwestern course with the topography. Smaller streams flow from uplands feeding the wetlands formed by sedimentation that filled drainage points when the glacier receded.

The glacier left gravel and sand deposits in the lowlands and along stream terraces. These are the present day locations of the Miller's River. Where deposits were left along hillsides, they formed kame terraces and eskers. Kames are short hills, ridges, or mounds and eskers are long narrow ridges or mounds of sand, gravel, and boulders. Both are formed by glacial melt waters.

B.3 Soils

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

There are two main soil associations in Erving that intersect along a north-south line represented by Rose Ledge and Schoolhouse Brooks near Erving Center: the Hinckley-Windsor-Muck association in west Erving and the Scituate-Essex-Ridgebury association in the remaining east-central section of Town.

Soils in the Hinckley-Windsor-Muck association were formed in water-sorted materials like glacial outwash and in pockets of organic material (Muck soils). These soils are usually located in valleys, on nearly level to rolling terraces, deltas, kames, and eskers. The large percentage of sand and gravel in these soils means water permeates through the surface layers easily often making them suitable for agriculture with droughtiness being their only limitation. Hinckley soils constitute roughly 40 percent of the association and have a sandy and gravelly substratum. Windsor soils are sandy and are 30 percent of the association. The wet organic muck soils make up 10 percent of the association and often are too wet for crops. Minor components comprise the remaining 20 percent of the association.

The Scituate-Essex-Ridgebury association was also formed in glacial till. Its soils occupy nearly level to sloping drumlins, ridges, and associated swales in the east central part of the region. The surfaces of wooded areas located in this association often have many scattered stones and boulders. The major soils have compact, slowly permeable subsoils. The Scituate soils (40% of the soils in the association) are moderately well drained with a fine sandy mantle over a sandy substratum. The well-drained Essex soils contain loamy sand in all layers and represent 30 percent of the association. Ridgebury soils (20% of the association) are poorly drained.

As Erving plans for the long-term use of its land, it is important to determine which soils are best for various land uses including agriculture, forestry, development, and recreational opportunities and wildlife habitat. This information will help lay the foundation for open space and recreation planning in Erving. The following describes the

soils in Erving and their uses for agriculture, drinking water, wastewater, recreation, and wildlife habitat.

B.3.1 Soils for Development

One good way to determine whether Erving has soils suitable for development is to identify existing farmland and developed lands that used to be farm fields. These soils in Erving are deep, well-drained sandy loams like those found in the Connecticut River Valley and are best for crop farming. They are also very good for development and recreational fields because often they are level and support in-ground septic and drainage systems.

A good soil for septic systems will filter released wastewater in a manner that protects groundwater quality. Soils that are too wet will not allow wastewater to move or be filtered by the natural decomposition processes that occur in these soil layers. On the other hand soils that are too dry cannot hold wastewater long enough to be naturally filtered and purified by organisms in the soil allowing untreated septage to move into the groundwater. Prime farmland soils often have the best characteristics for both farming and developing houses.

Steep slopes, and to a lesser extent, wet soils, prohibit and limit development on a significant portion of Erving's land. Slopes over 25 percent, identified wetlands, and lands already built upon, are located primarily in the southern half of Erving with smaller blocks along the western town line and along North Street and Swamp Road.

B.3.2 Soils for Agriculture

Only a portion of Erving's prime farmland soils is actively used as pasture, tilled or otherwise productive agricultural land. Prime farm soils are scattered throughout Erving along the floodplains of the Millers and Connecticut Rivers, on the gentle slopes north of Rt. 2 and in small pockets on Mountain Road. Since agricultural lands are the most likely to be developed, Erving residents may want to prioritize farm soils for conservation.

B.3.3 Soils for Forestry

Forestland in Erving is extensive, covering 83 percent of the community. The University of Massachusetts, Department of Forestry and Wildlife Management in cooperation with state and federal conservation agencies have identified the Commonwealth's prime forest soils and developed nine different categories including: Prime 1, 2, and 3, Statewide, Local Importance, and Unique.³ Prime forestland soils support a production of wood fiber at a rate greater than eighty-five cubic feet per acre per year. Only forestland with Prime 1, 2, and 3 soils would be worthwhile to manage intensively for wood products. Soils of statewide and local importance still have the potential for producing wood products but the potential financial return is not as high. Almost the entire Town is composed of Prime 1, 2, 3 soils with some statewide and local importance soils. Prime forestland soils are not the only criteria for choosing land to manage for timber

³ The University of Massachusetts, Department of Forestry and Wildlife Management. "Prime Forestland Classification for Forest Productivity in Massachusetts" October 1985.

production. Three important other factors include: the forest's condition, its accessibility, and its slope.

B.3.4 Soils for Recreation and Open Space Preservation

Different recreational uses are constrained by different soil and topographical characteristics. For instance, sports fields require well-drained and level soils. Lands with slopes over 25 percent may be attractive to mountain biking and hiking enthusiasts. However, such soils should only be used for these purposes if the soils are not easily eroded. And, those soils that best support a variety of wildlife habitats. More than likely these soils would provide a diverse array of species habitats. In addition, protecting any remaining high slope areas along ridge tops would also provide for the protection of habitats for large mammals as well as scenic views.

B.4 Analysis

Overall, Erving is a forested landscape with small, scattered patches of cropland; surface water; and residential development surrounding a modest area of dense cultural uses collected around and along the east/west running Millers River. The scenic values come from forested hills, pastoral landscapes, both flat and fast running sections of the Millers River, and views of the Connecticut River Valley. Understanding the topography, geology and soils of Erving will help the Town make decisions about protecting important natural resources and siting development in appropriate locations.

Erving residents may want to develop a conservation plan to protect remaining prime forest and farmland soils for future wood fiber and food production while preventing the loss of these soils through development.

C. LANDSCAPE CHARACTER

The Town of Erving is situated on steep slopes overlooking two river valleys, the Connecticut River Valley in the west and the Millers River Valley to the south. Travelers, who journey through Erving along Route 2, which is also known as the Mohawk Trail Scenic Byway and is the major east-west roadway across northern Massachusetts, experience a small New England mill town landscape. The road through the Farley Flats section of Erving contains one of the last remaining sections of the late eighteenth century highway, called the Fifth Massachusetts Turnpike. It is scenic and winding where the forest meets the river's edge. The panoramic view of the Connecticut River Valley from the French King Bridge is a magnificent western gateway for the Town. Mountain Road in the east and Route 63 in the west of Erving offer glimpses of Erving's agricultural heritage in the form of historical agricultural farmsteads and rolling pasture. Route 63 is also known as the Connecticut River Scenic Byway, which has been federally designated as a scenic byway. Both the Mohawk Trail Scenic Byway and the Connecticut River Scenic Byway have completed Corridor Management Plans, which recommends many ways for communities to protect these scenic resources.

The Town of Erving is unique in the region as it combines an industrial heritage with large tracts of protected forestland. Erving State Forest, which is divided into two sections, encompasses 2,522 acres. There are many other outdoor recreational resources in Erving that provide a unique character to the Town. These resources are outlined later in this Section and are shown on the Scenic, Recreation, & Environmental Resources Map.

D. WATER RESOURCES

D.1 Watersheds

The Town of Erving lies in the Connecticut River watershed which encompasses the Millers River and Poplar Mountain Brook sub-watersheds. The northwestern slopes of Northfield and Poplar Mountains in the western portion of Erving drain directly to the Connecticut River, while the majority of the Town drains to the Millers River which then flows into the Connecticut River.

The Connecticut is a nationally significant waterbody. 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 is located in New Hampshire, Vermont, Massachusetts, and Connecticut. In 1998, the Connecticut River became one of only fourteen rivers in the country to earn Presidential designation as an American Heritage River.

The Millers is one of the Connecticut River's 38 major tributaries and a large river of statewide importance and historical significance in Massachusetts. Its headwaters are located in Winchendon, New Hampshire.

D.2. Surface Water

The Town of Erving has approximately 103 acres of fresh open water. The Millers River is the Town's southern border with Wendell and Montague. Laurel Lake, forty-eight acres in size, is Erving's only natural body of fresh open water. The following is an inventory describing Erving's rivers, streams, brooks, and ponds. It focuses on the extent of the public access and recreational value of these waters as well as any water quality issues.

D.2.1 Millers River

The Millers River is located in north central Massachusetts and southwestern New Hampshire. From its headwaters in New Hampshire, the Millers River flows south, then gradually west, ultimately flowing into the Connecticut River. The villages of Erving Center, Farley and Erving'side are located on the Millers River. There are six tributaries to the Millers in Erving. From west to east, these include Schoolhouse Brook, the unnamed stream draining Spruce Swamp, Briggs Brook, Packard Brook, Jack's Brook, and Keyup Brook.



Millers River Flowing Rapidly

Although the Millers River fluctuates between sluggish and rapid flows, there is an average drop of twenty-two (22) feet per mile. The river and its tributaries powered industrial development in the region since the late 1700s. Over time, serious water pollution problems resulted from industrial and human uses of the river as a sewer.

Today, the Millers River is valued for its recreational and natural resources. The stretch of the river that passes through Erving has been classified as a warm water fishery and for primary and secondary recreation uses.⁴ These uses have been supported by the Millers River Watershed Council's 2014 Bacteria Sampling Report, which said that conditions have been met for primary contact, except just after wet weather events. The Watershed Council recommends that primary contact be avoided for at least 48 hours after a rain event.

The Millers provides opportunities for fishing, wildlife and scenic viewing, whitewater boating and swimming. There are many public access sites to the Millers River in Erving, the most popular of which is at its confluence with the Connecticut River. The recently created Riverfront Park in Erving Center on the previously abandoned Usher Paper Mill site also offers river access.

Although the river is considered Class "B" (appropriate for fishing and swimming), consumption of fish caught there is not advisable. The stated class for a particular river is

⁴ Primary contact recreational use is supported when conditions are suitable for any recreational or other water related activity during which there is prolonged and intimate contact with the water and there exists a significant risk of ingestion. Activities may include wading, swimming, diving, and water skiing. Secondary contact recreational use is supported when conditions are suitable for any recreational or other water use during which contact with the water is either accidental or incidental. This may include fishing, boating, and limited contact related to shoreline activities.

in fact only the State's goal for that river and does not necessarily mean that the river meets the standards for that classification. Hence, there are public health warnings against eating native fish species caught in the Millers River due to the presence of PCBs. The given classification also implies that the future recreational potential for the Millers River may in part depend on continued water quality improvements. Currently, the river supports a variety of species including freshwater mussels. Freshwater mussels are particularly good indicators of water quality and therefore their presence may indicate improving conditions along the Millers River.

According to the Executive Office of Energy and Environmental Affairs (EOEEA), the “top three” watershed priorities for the Millers River are: perform hydrologic assessment and water supply forecasts to identify flow and yields throughout the watershed and stressed sub-watersheds; develop a non-point source assessment to identify existing and potential sources of water quality problems; and work with the North Quabbin Regional Landscape Partnership (NQRLP) to protect biodiversity and open space in the region.

The Millers River has significant value to the residents of Erving. The development of Erving Center, Farley and Erving side historically depended on Millers River waterpower, which is evidenced by the mill buildings found at river’s edge. Today, the Millers River is primarily a recreational asset. It is one of the best catch-and-release rivers in the State. Catch-and-release rivers are especially popular among anglers because the fish are available and remain stocked year round. The Millers River also contains the proper habitat for several state-listed freshwater mussel species and several species of Special Concern.

Area municipal officials and residents have worked hard to improve the water quality of the Millers River since the days when raw sewage was discharged from area homes and industries directly into the river. The water quality of the Millers River is much higher than it used to be due to more than fifty years of research and effort to clean the river by state and private institutions. Federal and state legislation, passed in the 1960s and 1970s, greatly affected the treatment wastewater received before it was discharged into rivers and streams.

Between 1973 and 1977, eight wastewater treatment plants were constructed at sites along the Millers River. Toxicity tests in 1987 found that four of the eight (Athol, Orange, South Royalston, and Winchendon) demonstrated acute toxicity, which MA DEP thought to be chlorine. In addition, testing of fish caught in the Millers River basin between 1995 and 1997 identified problems of polychlorinated biphenyls or PCB contamination resulting in fish advisories by the Massachusetts Department of Public Health.

The 2014-2019 MA DEP’s “Nonpoint Source Management Program Plan” lists the 17.5 miles segment of the Millers River which runs from South Royalston to the Erving Paper Company as having issues of fecal coliform and excess phosphorus. However, MA DEP’s Proposed 2016 Integrated List of Waters recommends removing the fecal coliform and phosphorus impairments due to improvements on this segment. However, there is

still a Department of Public Health fish advisory in effect for this segment due to Mercury and PCBs in fish.

PCBs can last in sediments for centuries. Cleanup treatments depend on the extent of the contamination. In severe cases, PCBs collect together into contaminant plumes where they slowly move through sediments like oil. Dredging may be the best solution in this situation. However, dredging is very expensive and can end up mixing contaminated sediments throughout the river ecosystem. Where the contamination is not severe, allowing river sediments to bury the PCBs naturally may be more reasonable. Until the PCBs are cleaned up, the wildlife, fisheries, and recreational benefits of the Millers River can never be fully realized.

The information on the Millers River in the 2016 Proposed Massachusetts Integrated List of Waters⁵ prepared by DEP is shown in Table 4-1 below for those segments that fall within the Town of Erving. The Millers River is one of the water bodies in the state which requires TMDLs. A TMDL, or a Total Maximum Daily Load, is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards.

Table 4-1: The Massachusetts Proposed 2016 303d List for the Millers River Basin: Segments Requiring TMDLs (Pollutant Needing a Total Maximum Daily Load)

Name	Segment ID	Description	Size	Pollutant Needing TMDL
Keyup Brook (3522375)	MA3516	Headwaters Great Swamp Northfield State Forest, Northfield, to confluence with Millers River, Erving.	5.0 miles	-Escherichia coli -PCB in Fish Tissue
Laurel Lake (35035)	MA35035	Erving/Warwick	44.4 acres	-Oxygen, Dissolved
Lyons Brook (3522175)	MA3519	Outlet of Ruggles Pond, Wendell to confluence with Millers River, Montague/Wendell	2.1 miles	-PCB in Fish Tissue
Millers River (3522150)	MA35-04	South Royalston USGS Gage, Royalston to Erving Center POTW#2, Erving (operated by ERSECO).	18.5 miles	-PCB in Fish Tissue
Millers River (3522150)	MA35-05	Erving Center WWTP, Erving to confluence with Connecticut River, Erving (operated by ERSECO).	9.2 miles	-PCB in Fish Tissue
Mormon Hollow Brook (3522225)	MA35-15	Headwaters just north of Montague Road, Wendell to confluence with Millers River, Wendell.	3.8 miles	-PCB in Fish Tissue
Whetstone Brook (3522450)	MA35-18	Headwaters northeast of Orcutt Hill near New Salem Rd, Wendell to confluence with Millers River, Wendell.	4.9 miles	-PCB in Fish Tissue

June, 2016 (5), Proposed Massachusetts Year 2016 Integrated List of Waters

⁵ In 2004, the EPA required Massachusetts to combine Section 303(d) and 305(b) listings into one report, called the Integrated List of Waters. The listings of water bodies in need of TMDLs is the 303(d) listing.

D.2.2 Connecticut River

The Connecticut River is Erving's western boundary. Its banks are steep, often forming two steppes between the normal daily flow and the floodplain areas. The Connecticut River watershed is the largest river ecosystem in New England. It encompasses approximately 11,000 square miles and flows from its headwaters of Fourth Connecticut Lake in New Hampshire at the Canadian border to Long Island Sound at Old Saybrook Connecticut. Although wholly in New Hampshire, it forms the border with Vermont. The River travels through Massachusetts entering the Commonwealth at Northfield, draining all or part of 45 municipalities before entering the State of Connecticut. The watershed is 80 percent forested, 12 percent agricultural, 3 percent developed and 5 percent wetlands and water. There are ten federally listed endangered or threatened species that occur within the watershed.

Fifty years ago the Connecticut River was described as “the best landscaped sewer in the Nation” however, today it is classified as swimmable and fishable (Class B) and in some areas drinkable (Class A). This is a result of the Federal Clean Water Act and the investment of more than \$600 million in wastewater treatment.



Connecticut River at the Junction of the Millers River

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 covers 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.

The priorities of the Massachusetts Executive Office of Energy and Environmental Affairs for the Connecticut River watershed include: promote the protection and/or creation of riparian buffer zones along its waterways; reducing the negative effects of non-point source pollution, primarily storm runoff; restore aquatic diversity by removing barriers to fish and eel passage on the tributaries to the Connecticut; and improving upon the limited amount of water quality data available within the Watershed.

Years of deforestation, industrialization, and widespread dumping took their toll on the river's water quality causing a mass disruption of ecological processes. The effects were more pronounced in the urban sections of the river, although pollution and erosion are concerns in all areas of Franklin County. In recent years, the water quality of the Connecticut River has improved. Fish and wildlife that virtually disappeared from the region twenty years ago have begun to return including the Atlantic salmon, American shad, the peregrine falcon, and the bald eagle. However, present threats to the river are many. They include increased development resulting in nutrient and heavy metals loading, hydroelectric generation as it relates to fisheries and documented toxic and bioaccumulations effects on fisheries resulting from historic discharges or waste sites.

The Connecticut River in Erving is one of the most scenic reaches of the River because of the French King Gorge. Boat ramps are located in Barton's Cove just south of Erving, in Northfield just north of Erving and near the confluence of the Millers River. The Quinnetuket II has daily tours of the Gorge in the summer from Northfield Environmental and Recreation Center. The Connecticut River Watershed Council has *The Complete Boating Guide of the Connecticut River*, which details recreational opportunities for all of the Connecticut River – wildlife viewing, boating, fishing, swimming and camping. The Connecticut River also represents a wildlife corridor for mammals like bobcat and moose and birds such as songbirds and raptors.

The Connecticut River is a Class B from the New Hampshire/Vermont/Massachusetts border to Holyoke and is classified as a warm water fishery. The water is also used for irrigation and other agricultural uses. A report entitled "The Health of the Watershed" published in January 1998 by the New England Interstate Water Pollution Control Commission listed bioaccumulation and toxicity as specific water quality issues for the entire length of the Connecticut River in Massachusetts and specifically identified polychlorinated biphenyls (PCBs) in fish. While there have been significant improvements over recent decades in water quality, these issues still remain. Monitoring of the water quality has also greatly improved. Recreationalists can now view the real-time water quality of the river at the www.ConnecticutRiver.us/site website for up-to-date information about bacteria levels.

In 2008, the Massachusetts Department of Public Health issued a public health advisory which remains in effect for certain species of fish contaminated by PCBs in the Connecticut River. The general public should not eat any affected fish species, which include Channel and White Catfish, American Eel and Yellow Perch. Pregnant women and nursing mothers are advised not to eat any fish from the River. Table 4-2 summarizes the current water quality status for the Connecticut River within Massachusetts.

Table 4-2: Summary of Surface Water Quality Information for the Connecticut River near Erving

Location	Water Quality Information
Connecticut River from New Hampshire to Route 10 Bridge Northfield (MA34-01) 3.5 miles	Class B – Fishable/Swimmable <i>Primary contact is supported. However, it is listed as Non-Supporting of “Fish, other Aquatic Life” due to alteration in streamside covers and flow regime alterations. There is a fish advisory because of the presence of polychlorinated bi-phenyls (PCBs) in resident fisheries and accordingly the “Fishable” use is not supported.</i>
Route 10 Bridge to Turners Falls Dam, Gill/Montague (MA34-02) 11.2 miles	Class B – Fishable/Swimmable <i>Primary contact is supported. However, it is listed as Non-Supporting of “Fish, other Aquatic Life” due to alteration in streamside covers and flow regime alterations. There is a fish advisory because of the presence of polychlorinated bi-phenyls (PCBs) in resident fisheries and accordingly the “Fishable” use is not supported.</i>
Turners Falls Dam, Gill/Montague to confluence with Deerfield River (MA34-03) 3.6 miles	Class B – Fishable/Swimmable <i>Primary or secondary contact has not yet been assessed. It is listed as Non-Supporting of “Fish, other Aquatic Life” due to Total Suspended Solids, flow regime alterations, and low flow alterations. There is a fish advisory because of the presence of polychlorinated bi-phenyls (PCBs) in resident fisheries and accordingly the “Fishable” use is not supported. In 2016, an impairment was added for this segment for levels of E. Coli.</i>

Source: Massachusetts Department of Environmental Protection Proposed 2016 Integrated List of Waters.

D.2.3 Other Rivers and Brooks

- Keyup Brook:

A tributary of the Millers River, it originates in the Great Swamp located in Northfield State Forest. It travels through Erving State Forest where it is joined by Damon Brook, an intermittent stream. Keyup Brook contains brook trout, brown trout, rainbow trout, blacknose dace, longnose dace, white sucker and American eel. Favored fishing spots are located at bridge crossings and natural holes, especially the bridges at Church and North Streets, Swamp Road and North Streets, and Pete's Pond.

- Jack's Brook:

Jack's Brook, located in the northeast corner of Erving, originates in the Town of Northfield at Pete's Pond. Jack's Brook parallels North Street in Erving, joining Keyup Brook, which flows into the Millers River near Erving Center.

- Briggs Brook:
Briggs Brook is an intermittent stream originating atop Northfield Mountain near the southern end of the Northfield Mountain Reservoir. It then flows through the village of Farley on its way to the Millers River.
- Packard Brook:
Packard Brook is an intermittent stream which also originates on Northfield Mountain. It flows into the Millers River east of the village of Farley.
- Schoolhouse Brook:
Schoolhouse Brook, located in the southwestern section of Erving, originates near Poplar Mountain and flows into the Millers River.
- Spruce Swamp:
Spruce Swamp, one of the most significant upland swamps in the Town of Erving, is located due west of Rattlesnake Mountain. It is a remote wetland system, which may contain amphibian habitat typical of vernal pools.

D.2.4 Laurel Lake

Laurel Lake, approximately 30 acres in size, straddles the Town boundary between Erving and Warwick in Erving State Forest. It is managed by the Department of Conservation and Recreation (DRC) as part of Erving State Forest. Laurel Lake is an enhanced natural lake, which is stratified and mesotrophic, capable of sustaining both coldwater and warm water fish. It has a public boat access ramp and a public swimming beach and is stocked annually with trout. Laurel Lake is listed on the Proposed 2016 Massachusetts Integrated List of Waters due to low dissolved oxygen (DO).



Laurel Lake in Erving State Forest

D.3 Wetlands

The National Wetlands Inventory has estimated that there are approximately nine acres of non-forested wetlands and almost 86 acres of forested wetlands in the Town of Erving. All of the wetlands and streams in Erving are either adjacent to the Millers River or drain into the river from a north to south direction flowing from the steep adjacent hills. Most of the wetlands along the corridor are formed by impounded water from streams or a fluctuating water level in the Millers River. There are three types of known wetlands in the Town of Erving. These are the palustrine broad-leaved deciduous forested wetlands with a dominance of hardwoods and a mixture of conifers; palustrine broad-leaved deciduous scrub/shrub wetland; and persistent emergent wetland (wet meadow).

Wetlands represent unique and special habitats that help maintain biological diversity and support approximately 43 percent of the nation's threatened and endangered species. Both inland wetlands and floodplains are important natural resources that are of tremendous value to the community. They provide flood storage and control, pollution filtration, and habitat for fish and wildlife. Since they are commonly recharge zones for groundwater sources, it is important that communities identify and protect their wetlands and floodplains to protect public drinking water supplies.

The Wetlands Protection Act requires a permit for any alteration of wetland areas or for any landscape disturbance within 100 feet of wetlands bordering a river or stream, or within 100 feet of isolated wetlands larger than one quarter of an acre. Permits are also required for landscape alterations within 200 feet of rivers and perennial streams.

The conversion of wetlands is a serious problem with high-priced consequences. Watersheds with degraded or destroyed wetlands experience substantially higher flood peaks. Moreover, wetlands replicated with engineered solutions do not function nearly as well ecologically as undisturbed natural wetland systems. Wetlands also provide vital habitat to a diverse range of wildlife including game species and songbirds. In addition, wetlands and other types of surface water are interconnected to ground and drinking water supplies. Due to this connectivity, the contamination of any wetland could potentially degrade the quality of Erving's only public drinking water supply. Erving could follow the example set by three other communities in Franklin County (Sunderland, Shutesbury, and Heath) and adopt local wetlands bylaws that would protect their wetlands better than the State's Wetlands Protection Act.

D.4 Aquifer Recharge Area

In Erving, there is one community water supply serving residents and businesses – Erving Well #1. All other areas of Town including Farley and Erving Center are served with non-community public and private wells or springs.

Erving's Well #1 pumps water from an aquifer with a high degree of transmissivity. This means that the aquifer contains a tremendous amount of water, which a well can pull from a great distance away. It also implies that a contaminant spilled several miles away from the well could be moved through the aquifer to the well. Erving's Well #1 is a productive well with access to a good and steady supply of drinking water located

underground in layers of saturated sand and bedrock. According to the DEP, Well#1 is located one-half mile southeast of the confluence of the Millers and the Connecticut Rivers and is screened to a depth of thirty-nine to fifty-four feet (39'-54') below grade in an unconfined aquifer consisting of outwash sand and gravel deposits within a bedrock trough oriented in a northeast-southwest direction. The saturated thickness of this trough is approximately one hundred and fifty feet.

The transmissivity of the aquifer was estimated in 1988 to be approximately 89,000 gallons per day per foot. While the transmissivity is representative of materials in the subsurface favorable for productive wells, it also indicates a degree of vulnerability with respect to the ease in which contaminants can be transported. This means that if there were a spill of hazardous materials within the recharge area, some of that material could be pulled into the well. However, because the aquifer contains such a large quantity of water, it is likely that the hazardous materials would be diluted to safe levels (Rick Larsen, DEP; 2001). This may not be true if the spill were to occur close to the well site.

The Town of Erving has taken specific steps towards conserving the quality of drinking water pumped from Erving's Well #1 through its Groundwater Protection District which establishes use, density, impervious cover, and groundwater recharge regulations for the overlay district. This area follows the delineated Zone II recharge area for Erving Well #1. The district occupies an estimated 0.7 square miles in Erving between Poplar Mountain and East Mineral Hill and Rt. 63, Rt. 2, and the railroad tracks. The area is currently zoned for commercial and residential uses.

D.5 Flood Hazard Areas

The FEMA Flood Insurance Rate Maps (FIRM) show that the Town has a large one hundred year floodplain on the western border of the Town near Erving'side and a narrower floodplain along the length of the Millers River through Town. Much of the floodplain land in the western portion is protected from development. A large area of it is permanently protected. While there is only one dwelling unit located within this specific area, there are several important buildings within the Town's larger one hundred year floodplain. These include the following:

- Erving Paper Mill
- Erving Center Wastewater Treatment Plant
- Farley Wastewater Treatment Plant
- Erving'side Wastewater Treatment Plan & Dept. of Public Works
- Pearl B. Care Building (Historical Commission)
- Usher Boiler Room (currently vacant)

The 2012 Erving Hazard Mitigation Plan identified several other potential flooding hazards in the Town. Key areas of concern include:

Keyup Brook

This brook runs through the center of the Erving Center section of Town. There is periodic localized flooding where the brook intersects Laurel Lake Road and where it

runs into the Millers River. In past years, heavy spring runoff has flooded the area of Hanson Court and flash flooding has also washed out parts of North Street and threatened the safety of some homes. An historically significant structure, the Pearl B. Care building lies within the potential flooding area of Keyup Brook. The structure, formerly the fire station, was beautifully restored in 2010 and contains historically significant artifacts. Flood proofing the structure is of high interest to the Town.

A sewer pipe, installed in 1998, runs under the Keyup Brook near Route 2 and could potentially be impacted by flooding. Route 2 runs over the Keyup Brook. With past riverbank stabilization projects failing, dense brush and trees growing near that bridge are beginning to cause some accumulation of debris in the brook during flooding events. Continued accumulation could potentially cause localized backup and flooding.

Krusiewick Pond Dam (also known as Pete's Pond Dam)

This dam is located off Swamp Road and is owned by a private party living on North Street. The pond was historically used as an ice pond. It now contains high levels of silt. During heavy rains, the water regularly overflows the pond, circumventing the dam entirely. If the dam gave way altogether, Keyup Brook would flood local residences.

West Main Street

In the spring of 2004, floodwaters by the underpass and turnout west of Town came to within a foot of the edge of Route 2.

The River Street area in Erving

The area where the Millers River bends northwest near the wastewater treatment plant in Erving has been identified as having chronic flooding issues and as being a potential site for serious flood damage, given the more densely populated nature of that area.

E. VEGETATION

E.1 Forests

Forest areas are considered one of the Town of Erving's most prominent natural resource, comprising 81.7 percent of the Town's total land area. The Town of Erving does not contain vegetation significantly different from other towns in the region and watershed. However, forests are different with respect to age, density, height and diameter, and species of trees in different locations in the watershed and hillside elevations.

On a large scale, the dominant vegetation in Erving is characterized by mixed hardwood-softwood forest. For nearly 150 years the hills have been recovering from a sequence of clearing and heavy lumbering that has been the historical use of the landscape. Nearly all forest cover in Erving is considered second and third growth forest. This means that the most dominant trees present today are at least the second, and more likely the third generation of trees that have grown in the same place. First generation trees existed in Erving during the pre-Colonial period.

The mixed forest stands include northern red oak, hickory, red and sugar maple, white pine, and eastern hemlock. The softwood stands are predominantly white pine and eastern hemlock. The riparian corridors often have sandy flats along their banks, which support white pine and northern red oak. Younger communities in these areas are comprised of quaking aspen and white and grey birch. Occasionally eastern hemlock, yellow birch, and American beech are found along these low sand flats, which typify the original northern hardwood forest type found on these sites. The upland areas of this type support coniferous species such as eastern hemlock in the moist sites with the drier sites dominated by hardwood species such as northern red oak, white ash, sugar maple, and white birch.

Old growth forests, found in small patches throughout Massachusetts, contain trees that are 150-350 years old. According to Robert Leverett, Executive Director of the Friends of the Mohawk State Forest and an expert in ancient forests in Massachusetts, there are two areas in Erving that likely contain old growth forests. The steep slopes of Rattlesnake and Hermit Mountains are similar to other old growth forest sites that are extremely inaccessible. In addition, the tree species commonly found in old growth forests are native to the woodlands of Erving. Old growth species that are thought to exist on Hermit and Rattlesnake Mountains include eastern hemlock, black birch, and chestnut oak.

Vegetation along the banks of the Millers and Connecticut Rivers as well as their tributary streams provides several important benefits. Forested buffers purify water by filtering out harmful nutrients from runoff, reducing the amount of suspended solids and phosphates that can enter the river. Vegetation also adds to the organic matter content of local soils, shelters and feeds wildlife, and cools water temperatures, preventing the excessive growth of algae and aquatic vegetation. Vegetation acts as a natural sponge that absorbs, holds, and slowly disperses water toward rivers.



Farmland in Erving

This is particularly important during major storm events and the springtime thaw when flooding may be an issue.

E.2 Public Shade Trees

Erving has an elected Tree Warden, whose responsibility is to oversee the care, maintenance, or removal of all public shade trees. There is funding available for the planting of public shade trees, but the Town would like to create a Tree Maintenance Plan first before trees are planted.

E.3 Agricultural Land

There are 136 acres of cropland and pasture in the Town of Erving. The soil suitability and the topographical characteristics of the landscape determine the locations of the two types of farmland use. There are 75 acres of pastureland located primarily in the gently rolling upland areas that are either within the stream valleys like Jack and Keyup Brook, or alongside Mountain and North Streets and Murdock Hill Road. A few scattered parcels of pasture are located near Erving Center and along Routes 2 and 63 as well as cropland which is located where the topography is more level and the soils have higher silt content. These floodplain soils straddle Route 63 from Route 2 north to Northfield, east to the slopes of Poplar Mountain, and west to the Connecticut River. Some of this cropland was purchased by the Split River Farm, LLC who sold the development rights to Massachusetts under the Agriculture Preservation Restriction (APR) Program which protects it from development in perpetuity.

E.4 Wetland Vegetation

The forested deciduous swamp is a predominant wetland type in the Town of Erving. These areas are essentially red maple swamps, although in New England, the usual swamp hardwood type is referred to as elm-ash-red maple. Black spruce can also be found. Also common in Erving are mixed deciduous swamps, which include eastern hemlock. Wetlands under story shrubs are common in these swamps and can include mountain holly, highbush blueberry, and winterberry. Herbaceous vegetation such as sedges, ferns, false hellebore and skunk cabbage are also found. There are a number of shrub-scrub wetlands in Erving. These include both shrub deciduous swamps and bogs.

Emergent marsh wetlands can also be found in Erving. These are rare and occur only in small isolated locations or intermixed with trees in the deeper more permanently flooded portions of swamps. Typical emergent marsh vegetation consists of cattail, burreeds, and sedges.

E.5 Rare, Threatened and Endangered Plant Species

The Natural Heritage and Endangered Species Program (NHESP), a program of the Massachusetts Department of Fish and Game, has identified 258 native plant species as endangered, threatened, or of special concern in the Commonwealth. NHESP has documented nine of these vascular plants within Erving – one of which has Endangered status.

Table 4-3: Rare Plants Found in the Town of Erving

Scientific Name	Common Name	MESA Status	Most Recent Observation
<i>Deschampsia cespitosa</i> ssp. <i>glauca</i>	Tufted Hairgrass	Endangered	2016
<i>Sagittaria cuneata</i>	Wapato	Threatened	2016
<i>Potamogeton confervoides</i>	Algae-like Pondweed	Threatened	2015
<i>Utricularia resupinata</i>	Resupinate Bladderwort	Threatened	2015
<i>Adlumia fungosa</i>	Climbing Fumitory	Special Concern	2015
<i>Alnus viridis</i> ssp. <i>crispa</i>	Mountain Alder	Special Concern	2016
<i>Amelanchier sanguinea</i>	Roundleaf Shadbush	Special Concern	1911
<i>Corallorhiza odontorhiza</i>	Autumn Coralroot	Special Concern	2015
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	Special Concern	2014

Source: Division of Fish and Wildlife, Natural Heritage and Endangered Species Program; 2017.

F. FISHERIES AND WILDLIFE

F.1 General Description and Inventory of Wildlife and Wildlife Habitats

Erving's landscape consists of a mountainous region with forests of white pine, eastern hemlock, northern red oak, and mixed hardwoods with patches of cultivated fields, pasture, and sparsely populated areas along the transportation corridors. The region's wildlife travels across the landscape in patterns that disregard the political boundaries of towns. Rivers, wetlands, hardwood, coniferous, and mixed forests, open meadows, croplands, and mountain ridges all provide sustenance, mating grounds, and cover to wildlife. The following lists of wildlife species is representative of those species found in Western Massachusetts.

F.1.1 Amphibians

These following species are found in forest, wetland, and open upland habitats and require a home range 1-10 acres:

Red-spotted Newt	Northern Two-lined Salamander	Green Frog
Northern Dusky Salamander	Eastern American Toad	Wood Frog
Redback Salamander	Fowler's Toad	Gray Tree Frog
Four-toed Salamander	Northern Spring Peeper	Pickerel Frog
	Bullfrog	

Jefferson Salamander, Blue-spotted Salamander, Tremblay's Salamander, and Northern Spring Salamander may be present.

This species is found in forest habitats and requires a home range 11-50 acres:

Spotted Salamander

F.1.2 Reptiles

These species are found in forest, wetland, and open upland habitats and require a home range 1-10 acres:

Wood Turtle	Eastern Garter Snake	Northern Black Racer
Spotted Turtle	Eastern Ribbon Snake	Eastern Smooth Green Snake
Eastern Painted Turtle	Northern Ring-neck Snake	
Northern Redbelly Snake	Northern Water Snake	

This species is found in forest, wetland, and open upland habitats and requires a home range 11-50 acres: Common Snapping Turtle

This species is found in forest, wetland, and open upland habitats and requires a home range >50 acres: Eastern Milk Snake

F.1.3 Birds

The following species are found in forest/non-forested habitats and require a home range 1-10 acres:

Alder Flycatcher	Common Yellowthroat	Northern Parula
American Bittern	Dark-eyed Junco	Northern Pintail
American Black Duck	Downy Woodpecker	Northern Water Thrush
American Goldfinch	Eastern Bluebird	Ovenbird
American Goldfinch	Eastern Kingbird	Philadelphia Vireo
American Redstart	Eastern Phoebe	Pied-billed Grebe
American Robin	Eastern Wood-Pewee	Pine Siskin
American Wigeon	European Starling	Prairie Warbler
Black-and-White Warbler	Evening Grosbeak	Purple Finch
Blackburnian Warbler	Field Sparrow	Red Crossbill
Black-capped Chickadee	Golden Crowned Kinglet	Red-eyed Vireo
Blackpoll Warbler	Grasshopper Sparrow	Ring-necked Duck
Black-throated Blue Warbler	Gray Catbird	Rose-breasted Grosbeak
Black-throated Green Warbler	Great Blue Heron	Ruby Crowned Kinglet
Blue Jay	Great Crested Flycatcher	Ruby-throated Hummingbird
Blue-gray Gnatcatcher	Green-backed Heron	Rufous-sided Towhee
Blue-winged Teal	Green-winged Teal	Scarlet Tanager
Blue-winged Warbler	Hairy Woodpecker	Solitary Vireo
Bobolink	Henslow's Sparrow	Song Sparrow
Boreal Chickadee	Hermit Thrush	Sora
Brown Thrasher	Hooded Merganser	Spotted Sandpiper
Brown-headed Cowbird	House Wren	Tennessee Warbler
Canada Warbler	Indigo Bunting	Tree Swallow
Canvasback	Killdeer	Tufted Titmouse
Carolina Wren	Least Flycatcher	Veery
Cedar Waxwing	Lincoln Sparrow	Virginia Rail
Chestnut-sided Warbler	Mallard	Warbling Vireo
Chipping Sparrow	Mourning Dove	White-throated Sparrow
Common Goldeneye	Mourning Warbler	Willow Flycatcher
Common Grackle	Nashville Warbler	Wilson's Warbler
Common Merganser	Northern Cardinal	Winter Wren
Common Snipe	Northern Flicker	Wood Duck
	Northern Mockingbird	Wood Thrush
	Northern Oriole	

Worm-eating Warbler
Yellow Warbler

Yellow-bellied Flycatcher
Yellow-bellied Sapsucker

Yellow-rumped Warbler
Yellow-throated Vireo

The following species are found in forest/non-forested habitats and require a home range 11-50 acres:

American Woodcock
Bank Swallow
Barn Swallow
Black-billed Cuckoo
Brown Creeper
Common Nighthawk

Horned Lark
Northern Rough-winged Swallow
Pine Grosbeak
Red-breasted Nuthatch
Ring-necked Pheasant

Ruffed Grouse
Swainson's Thrush
Upland Sandpiper
Whip-poor-will
White-breasted Nuthatch
Yellow-billed Cuckoo

The following species are found in forest/non-forested habitats and require a home range >50 acres:

American Crow
American Kestrel
Bald Eagle
Barred Owl
Belted Kingfisher
Broad-winged Hawk
Chimney Swift

Common Raven
Cooper's Hawk
Great Horned Owl
Long-eared Owl
Northern Goshawk
Northern Harrier
Northern Saw-whet Owl

Peregrine Falcon
Pileated Woodpecker
Red-shouldered Hawk
Red-tailed Hawk
Sharp-shinned Hawk
Turkey Vulture
Wild Turkey

These species are found in forest/non-forested habitats with unknown home ranges:

American Tree Sparrow
Bohemian Waxwing

Northern Shrike
Common Redpoll

F.1.4 Mammals

These species are found in forest habitats and require a home range 1-10 acres:

Eastern Cottontail
Snowshoe Hare
Eastern Chipmunk
Gray Squirrel
Red Squirrel

Beaver
Deer Mouse
White-footed Mouse
Meadow Vole
Star-nosed mole

Least Shrew
Water Shrew
Muskrat.

These species are found in forest habitats and require a home range 11-50 acres:

Virginia Opossum
Porcupine

Ermine
Long-tailed Weasel

These species are found in forest habitats and require a home range >50 acres:

Woodchuck
Coyote
Red Fox
Grey Fox
Black Bear

Raccoon
Fisher
Mink
Striped Skunk
River Otter

Bobcat
White-tailed Deer
Moose

These species are found in forest/non-forested habitats with unknown home ranges:

Little Brown Myotis	Eastern Pipistrelle
Silver Haired Bat	Big Brown Bat

F.2 Vernal Pools

As of 2017, the Massachusetts Natural Heritage and Endangered Species Program notes that the Town of Erving has no certified vernal pools.

F.3 Corridors for Wildlife Migration

Erving is located within several regional belts of protected open space that contribute to the value of the already protected land in Town. The Quabbin Reservoir Reservation is a particularly important source of wildlife for surrounding communities. The Quabbin Reservoir covers 39 square miles just to the east of Erving.

The Connecticut and Millers Rivers play a dual role for the region's wildlife. Riparian corridors often have a greater degree of species diversity than other portions of the landscape. The two rivers also serve as important regional migration corridors. The Silvio O. Conte National Fish and Wildlife Refuge states that over 200 bird species are supported throughout the year by the Connecticut River watershed habitats.⁶ According to the Natural Heritage and Endangered Species Program, riparian areas along the Millers and Connecticut Rivers are critical habitats for species that are endangered, rare, or threatened and of special concern. Finally, the rivers are also habitat for native freshwater fisheries and anadromous fish species.

The Connecticut and Millers Rivers have native freshwater fisheries and are being stocked with Atlantic salmon, American shad, blueback herring, and shortnose sturgeon in the local stretch of the Connecticut River. Historically, the Millers River has supported natural populations of salmon and trout, but due to the contamination by industrial and domestic wastes throughout the last century, the cold-water fishery was eliminated in the lower stretches of the river. Within the recent past, Atlantic salmon restoration work has been accomplished each spring in the Millers River and trout are stocked in various water bodies throughout the Millers watershed.

The Division of Fisheries and Wildlife stocks a variety of trout species (non-native rainbow, eastern brook, and brown) for sport fishing in the Connecticut and Millers Rivers. Resident fish species in the Connecticut River include walleye, channel catfish, northern pike, small and largemouth bass, and pickerel. Anadromous fish species (those which are born in fresh water, migrate to salt water where they mature and then return to freshwater to spawn) include striped bass, sea lamprey, blueback herring, American shad, and Atlantic salmon. The river also has the American eel, which is a catadromous species of fish (fish that live in freshwater but spawn saltwater). The Conte National Fish & Wildlife Refuge and other federal and state agencies are responsible for restoring migratory fish to the Connecticut River Watershed and fund a number of projects to enhance existing populations.

⁶ Silvio O. Conte National Fish & Wildlife Refuge, https://www.fws.gov/refuge/Silvio_O_Conte/wildlife_and_habitat/birds.html, November 2017.

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

The construction of fishways at key points on the Connecticut River has reduced some of the harmful effects of dams. Regular stocking has led to marginal populations of Atlantic salmon and increased populations of American shad. Lamprey eel numbers have also increased significantly which indicates improving water quality throughout the Connecticut River Watershed and more efficient fish passage installations. Fisheries in the Massachusetts portion of the Connecticut River Watershed are also threatened by sedimentation, erosion, toxicity, bacterial contamination, elevated stream temperatures, bioaccumulation, and low flow due to damming for hydroelectric operations.

F.4 Rare, Threatened and Endangered Species

Erving provides habitat for wildlife species that are endangered or considered to be of special concern by the Massachusetts Natural Heritage and Endangered Species Program. Permanently protecting the habitat areas of these species should be a top priority.

Table 4-4: Rare Wildlife Species Found in the Town of Erving

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Fish	Catostomus catostomus	Longnose Sucker	Special Concern	Historic
Mussel	Strophitus undulatus	Creepers	Special Concern	2010
Bird	Falco peregrinus	Peregrine Falcon	Threatened	2016
Bird	Vermivora chrysoptera	Golden-winged Warbler	Endangered	1988
Bird	Haliaeetus leucocephalus	Bald Eagle	Threatened	2016
Reptile	Glyptemys insculpta	Wood Turtle	Special Concern	2004
Reptile	Terrapene carolina	Eastern Box Turtle	Special Concern	1978
Dragonfly/Damselfly	Gomphus abbreviatus	Spine-crowned Clubtail	Special Concern	2014
Dragonfly/Damselfly	Neurocordulia yamaskanensis	Stygian Shadowdragon	Special Concern	2016
Butterfly/Moth	Pyrrhia aurantiago	Orange Sallow Moth	Special Concern	2008

Source: Division of Fish and Wildlife, Natural Heritage and Endangered Species Program; 2017.

F.5 Analysis

The Town of Erving is close to a huge wildlife source, the Quabbin Reservoir. The Millers and Connecticut Rivers are corridors for both fish and terrestrial and amphibious wildlife. Large blocks of forestland are protected from development and several major stream corridors provide habitat and recharge to streams and potential future drinking water supplies. Linkages and connections are important to consider as Erving plans for its open space and recreation resources. Recreational trails may be inappropriate for some areas due to proximity to sensitive areas containing erodible soils and/or rare and endangered species. On the other hand, trails laid out with care and sensitivity can be a popular basis for the protection of linked parcels of open space that in turn serves area wildlife.

Careful timber harvesting as part of a forest management plan, can provide a landowner with periodic income with the least amount of damage to the residual stand. Harvesting the best trees and leaving the rest without concern for future generations of trees within a stand is coined “high grading.” It is in effect worse than clear cutting, because the trees that are left to help create the next generation are often inferior in form and health. On a small scale this practice may be considered very damaging to the forest and wildlife. However, on a landscape scale, infrequent, poor forest harvesting practices may simply provide a different habitat type to the diversity of forest conditions across tens of thousands of acres.

G. SCENIC RESOURCES AND UNIQUE ENVIRONMENTS

This section identifies scenic resources and special environments that most residents agree represent the Town’s unique essence. The purpose of inventorying scenic resources and unique natural environments is to provide a basis for prioritizing efforts to protect them. Table 4-5 lists different landscapes and sites and describes their scenic, natural/ecological, and cultural/historical values. The Scenic, Recreation, and Environmental Resources Map shows the location of these scenic, ecological, and cultural features. It also lists the many recreational resources in Erving.

In the far right column of Table 4-5, the resources’ protection status is estimated. For the purposes of this Open Space and Recreation Plan, a landscape is defined as a land area with a particular land use pattern (farmland), or a physiological landform (ledge) distinguishable from adjoining areas. Often ownership patterns do not coincide with the boundaries of a landscape. A ridgeline may have portions of it protected while the rest is in unprotected. Protected landscapes are only those located on land that is permanently protected from development as are the Erving State Forest lands and the farmland along the Connecticut River in the APR Program.

Scenic resources and valued natural environments fall into several categories as described in the following sections.

Table 4-5: Significant Scenic/Ecological/Recreational/Historic Resources in Erving

SCENIC RESOURCE	ECOLOGICAL/ GEOLOGICAL RESOURCE	RECREATION AL VALUE	HISTORICAL VALUE	PROTECTION STATUS
Water Resources				
Millers River	Priority Habitat / Wildlife Habitat Medium Due to PCB problems	High	Associated Mill sites	Southern banks mostly protected within Wendell State Forest
Connecticut River	Wildlife Habitat	High		Unprotected
Keyup Brook	Wildlife Habitat	Med-Trout		Unprotected
Jack's Brook	Wildlife Habitat			Partially Protected
Laurel Lake	Wildlife Habitat	High	<i>Significant Historical Conservation/Recreation Landscape</i>	Protected by Erving State Forest
Recreation Areas				
Erving State Forest/ Laurel Lake Recreation Area	Wildlife Habitat	High	<i>Significant Historical Recreation/Conservation Landscape</i>	Protected
Northfield Mountain Recreation Area	BioMap Core Wildlife Habitat	High		Unprotected
New England Trail	Wildlife Habitat	High		Partially Protected
Farley Ledges	BioMap Core Wildlife Habitat / Priority Habitat	High/One of the Best Rock Climbing Areas in New England	Of Potential Archaeological Value	Unprotected
Historical Areas				
Erving Castle/Hermit's Cave	Wildlife Habitat	High	Historical Recreation Site	Protected/ESF
Old Dam Site	Wildlife Habitat	Low	Historical Site of Calvin Priest Saw and Shingle Mill	Unprotected
Holton Cemetery	Wildlife Habitat	Low	1815	Unprotected
Erving Center Cemetery		Low	1814	Unprotected
Scenic Views				
Mohawk Trail/Rte. 2				Protected
Northfield Road				Unprotected
Maple Avenue				Unprotected
Upper North Street				Unprotected
River Road				Most Likely Unprotected
French King Bridge, Route 2				Partially Protected Views

Source: Erving Open Space and Recreation Plan, 2018; Mohawk Trail Scenic Byway East Corridor Management Plan, 2009; Franklin County Rural Landscape Preservation Plan Report, Franklin County Commission, 1992.



View from East Mineral Street Bridge at the Junction of the Millers and Connecticut Rivers

G.1 Significant Water Resources

G.1.1 Connecticut River

The Connecticut River comprises Erving's western boundary. Its main stem includes riverine habitats for American shad, blueback herring, and shortnose sturgeon. There is no public access to the Connecticut River in Erving other than by way of the Millers River. The Connecticut River offers a variety of untapped recreational opportunities – fishing, camping, wildlife viewing and boating. The River is a recreational "blueway" given its Class B designation.

G.1.2 Millers River and Its Tributaries

The Millers River is Erving's largest and most historically significant river, providing whitewater boating and fishing. Tributaries of the Millers River include Schoolhouse Brook, an unnamed stream draining Spruce Swamp, Briggs Brook, Packard Brook, Jack's Brook and Keyup Brook. The Millers River in Erving has been mapped as a Priority Habitat under the Massachusetts Endangered Species Act (MESA).

Keyup Brook offers several favored fishing spots especially at bridge crossings such as at Church and North Streets, Swamp Road and North Streets, and above the dam at Pete's Pond.

G.1.3 Laurel Lake

Laurel Lake, named for the profusion of mountain laurel along its banks, is the Town's only natural freshwater body. Located in the north central part of Erving State Forest, Laurel Lake is approximately fifty acres in size; roughly 30 of those acres are in the Town of Erving. The Lake is a popular spot for swimming, boating and fishing. Amenities included a state boat ramp, public beach with facilities, parking area, picnic areas, pavilion, bath house and snack bar. Today, the lake is handicapped accessible with the construction of a ramp across the sand and into the water.

G.1.4 Wetlands

Spruce Swamp is located on a relatively level area west of Rattlesnake Mountain and its eastern face, Farley Ledges.

G.2 Significant Recreational Resources

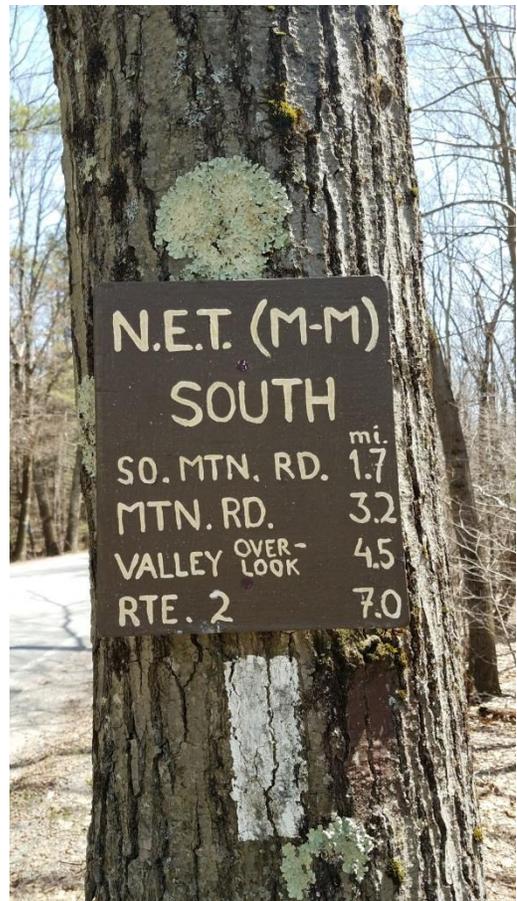
Erving has many recreational resources which helps provide the Town with its unique character. Below is a description of the most prominent resources in Erving, while the map depicts the location of all outdoor recreational features.

G.2.1 Erving State Forest

Erving State Forest, owned by the Department of Conservation and Recreation (DCR), is the Town's most notable scenic landscape. Located north of the Millers River, Erving State Forest covers 2,522 acres of scenic forested hills with streams and wetlands. It includes an extensive trail system of dirt roads and paths used by hikers, horseback riders, cross country skiers and snowmobilers. The State Forest has two sections east of Northfield Mountain Reservoir. The largest contiguous block of forest is the easternmost section, which can be accessed off of High Street and from Laurel Lake Road. It is at the southern end of an uninterrupted stretch of permanently protected contiguous forestland that begins in the north with Mt. Grace State Forest in the Town of Warwick. The western section is located between the Northfield Mountain Reservoir property and Mountain Road.

G.2.2 Northfield Mountain Recreation Area

Northfield Mountain is a pumped storage hydroelectric facility owned and operated by FirstLight Power Resources in the northwest corner of the Town of Erving. It is part of approximately 1,826 acres of contiguous forestland owned by the utility in Erving. In



**Sign for the New England Scenic Trail
Heading Toward Erving from Northfield**

accordance with its federal license, it offers the public an extensive array of recreation and environmental programs, and facilities. Northfield Mountain Environmental and Recreation Center offers cross country skiing, hiking, mountain biking and horseback riding on 26 miles of steep, scenic upland trails.

G.2.3 New England Scenic Trail

The New England Scenic Trail (NET) enters Erving over the Farley-Wendell Bridge and continues north, crossing both private and public land. The trail is 117 miles long, beginning at Hanging Hills in Meriden, Connecticut and continuing to Mount Monadnock in New Hampshire. It is comprised primarily of the Metacomet-Monadnock-Mattabesset Trail

systems (MMM Trail) The trail corridor links several state forests including Erving, Wendell, Northfield, Mt. Grace, and Warwick State Forests. The NET Trail is classified as a “National Recreational Trail” by the National Park Service. A National Recreational Trail “recognizes exemplary trails of local and regional significance.”

G.2.4 Farley Ledges

The Farley Ledges, located off of Route 2 in Farley, is a popular rock climbing site in the region. The Farley Ledges are a southeast facing chain of ledges composed of granite gneiss that offers a variety of climbs for climbers with a range of abilities. Access to the Farley Ledges is primarily through private parking and trails and informal agreements with the property owners. The popularity of this site has led to overflow parking along residential streets in Farley and along Route 2. Relatedly, many recreationalists will walk along and cross Route 2 in order to access the site. This can be dangerous due to the high speeds and volumes of this roadway. The Town would support assisting in the development of additional parking for the Farley Ledges that is safer for climbers and hikers.



Parking for the Farley Ledges on a Mid-Weekday

G.3 Significant Cultural, Archeological, and Historical Sites and Landscapes

G.3.1 Farley Village Area

Farley Village lies in central Erving along the Mohawk Trail, between Maple Avenue and Wheelock Street. The Farley area of Route 2 is considered to be a significant *Community Development* landscape. Farley Village developed during the 1880s in direct response to the opening of the Farley Paper Mill located on the Wendell side of the Millers River.

The wrought iron pin-connected truss bridge in Farley was built in 1889 and is the only known example in the state to use patented wrought iron “Phoenix columns.” The Farley family owned large tracts of land on both sides of the Millers River and constructed housing for their employees as well as for themselves. The large Maple Avenue houses were fully equipped with the latest conveniences in 1890 and are well maintained today.

The Farley Hotel, located on the well-traveled Mohawk Trail stagecoach route, flourished until the route became an automobile tourist highway. In 1915 the hotel was dismantled and moved to 73 State Road. A fire in 1950 destroyed the mill, but the stone and concrete foundations still remain along the Wendell side of the river. The Towns of Erving and Wendell might explore designation for the site as a historic park.

G.3.2 Hermit's Castle

A rock shelter in the ledges overlooking the Millers River was the home site of John Smith, the Hermit of Erving's Castle, who came to America in the mid 1800s. This site is protected by DCR as part of Erving State Forest.



Sign for the Hermit's Cave in Erving State Forest

G.3.3 Old Dams

A number of dams remain on the Town's waterways and mill foundations are still extant. Calvin Priest's Mill foundations near the end of Murdock Hill Road are extensive. Other structures of this nature are scattered throughout the Town of Erving have not yet been documented.

G.3.4 Town Cemeteries

Burial grounds are very important resources rich in historic monuments, art, genealogical data, and Town history. Cemeteries should be identified, cared for, and protected. Only two historic cemeteries are documented in Erving: the Erving Center Cemetery dated 1814 and located on Mountain Road and the Holton Cemetery dated 1815 located on Old State Road.

Table 4-6: Historic Burial Grounds in Erving

Historic Name	Year	Street Name	MHC Inventory Number
Erving Center Cemetery	1814	Mountain Road	801
Holton Cemetery	1815	Old State Road	802

Source: Massachusetts Historical Commission; 2000.

G.4 Scenic Views and Scenic Roads

Because Erving is situated on steep slopes overlooking two river valleys, several scenic roadways offer sweeping vistas across river lowlands. The western end of historic Old State Road presents an extensive view across the Connecticut River Valley to the Berkshire Hills. West of Farley, Route 2 heading west reveals a broad sight down the Millers River Valley. Mountain Road and Route 63 are home to several historic agricultural farmsteads with views of farmland and rolling pasture.

In many parts of Erving, historic landscapes blend with scenic viewsheds. Scenic roads, which access these special places, overlap both. The Town has not yet adopted any locally designated scenic roads pursuant to Chapter 40, Section 15C of the Massachusetts General Laws. Local scenic road designation provides limited protection to historic and scenic resources.

State maintained roads, such as Route 2 and Route 63 are nominated as scenic roads by the State under the Federal Scenic Byway program. While Massachusetts does not have a formal process for designating Scenic Byways, Special Legislation can be passed by the State Legislature once a Corridor Management Plan has been completed. Route 63 in Montague, Erving and Northfield received Scenic Byway designation as a part of the Connecticut River Scenic Farm Byway in 1999 and a Corridor Management Plan was last updated in 2016. Route 2 in Erving is part of the Mohawk Trail Scenic Byway. A Corridor Management Plan was completed in 2009 for the eastern section of the Mohawk Trail from Athol to Greenfield. A Corridor Management Plan’s purpose is to provide an inventory and assessment of important resources within the mile-wide corridor and to articulate specific strategies and actions designed to achieve identified and measurable results for expanding “economic, tourism and recreational opportunities along the Byway while educating people about the Byway and preserving its unique scenic qualities, natural resources, historic structures/places, industrial and agricultural heritage and community character.”⁷

G.4.1. Mohawk Trail, Route 2 and 2A Corridor

The Mohawk Trail is considered to be a significant historic roadway. Previous to European settlement, it was a Native American east-west footpath along the Millers River gorge. Later, the path was widened during the Colonial Period for packhorses and carts. In 1799, the route was widened for horse-drawn wagons and coaches as the Fifth Massachusetts Turnpike between Greenfield and Athol, a toll road built by the State. The highway ran over Prospect and Gary Streets through Erving Center and the Toll House still exists on the eastern end of Prospect Street. The Mohawk Trail became a renowned stage coach route with accompanying inns and stables until the roadway was improved as

⁷ 2009 Mohawk Trail Scenic Byway Corridor Management Plan.

the auto Route 2 highway in 1914. The automobile tourist industry spawned gas stations, garages, restaurants, and roadside cabins along the Trail. Old State Road and Route 2 through the Farley Flats contain surviving sections of the original scenic auto roadway.

G.4.2 French King Bridge, Route 2

The French King Bridge, constructed in 1932, is considered to be a significant historic structure. The original Mohawk Trail wound through Ervingside and used the Millers River fordway (later replaced by bridges) to travel west. When the auto tourist highway was completed, an increasing number of cars were traveling through Ervingside Village. The Art Deco concrete and steel bridge enabled transportation engineers to reroute automobile traffic around the village. It also provides a stunning panoramic view high above the Connecticut River Valley to Northfield and Gill’s abundant fields and forests. The two supported, cantilevered bridge ends are joined in the middle with a deck spandrel. At the time of construction, the braced arch French King Bridge was the only one of its particular type in the country and the American Institute of Steel Construction granted it an award of merit for the most beautiful bridge of its time.

Table 4-7: Scenic Roads in Erving

Status	Name of Road	Portions of Road Considered as Scenic
State Designation	Mohawk Trail, Route 2	Farley Flats, and east of Farley to Ervingside
State Designation	Northfield Road, Route 63	Entire Road as part of CT River Scenic Farm Byway
Potential Local	Swamp Road/Laurel Lake Road	Entire Road
Potential Local	Mountain Road	Northern half of road towards Town Line
Potential Local	River Road	North of East Mineral Road Bridge
Potential Local	Old State Road	Entire Road

Source: 2009 Mohawk Trail Scenic Byway Corridor Management Plan.

H. ENVIRONMENTAL CHALLENGES

H.1 Landfills and Hazardous Waste Sites

The one landfill in Erving was capped and closed in 1981. Residents dispose of garbage and recycling via curbside collection. Waste is then transported to the Franklin County Solid Waste Management District which handles recycling and hazardous waste disposal for the Town of Erving. There is also a former sludge dump in Town that was once used by the Erving Paper Mill. It was closed and capped in 2002. According to the MassGIS 2017 data, there are no hazardous waste sites in Erving.

H.2 Chronic Flooding

Chronic flooding is not an issue within the Town of Erving.

H.3 Erosion and Sedimentation

Erosion and sedimentation is also not an issue within the Town of Erving.

H.4 Impacts of Development

New residential development across Town could increase the prevalence of nonpoint source pollution, reduce the rural character, and cause a reduction in the acreage and value of remaining wildlife habitat. “Sprawl” can increase runoff (potentially including

contaminants such as road salt), decrease the amount of water available as ground water, decrease stream flow, and result in excess erosion. Also, it could diminish biodiversity in first and second order streams and reduce water quality town-wide. Unplanned residential development also can negatively impact wildlife habitat by fragmenting wildlife corridors and reducing food supply. To mitigate these effects, Erving has instituted zoning bylaws that try to prevent unplanned development and instead attempt to steer it to more appropriate locations within Town.

H.5 Habitat Fragmentation

Erving's rural character is mostly dependent on the vast stretches of forest, the eastern portions of which are protected from development by being State-owned. FirstLight Power Resources⁸ and private citizens own the remaining acreage. Contiguous forests benefit the community by providing scenic views, wildlife habitat, and protection of water quality. These resources would be diminished if large blocks of forest were to be fragmented by development.

H.6 Ground and Surface Water Pollution

Another critical environmental issue is the danger of contaminating the aquifer that supplies drinking water to Erving via Well #1. There is a direct link between this aquifer and above ground land use. Erving has adopted the Groundwater Protection District bylaw, which regulates land uses within the Zone II and III Recharge Areas for Well #1. The nearby presence of Route 2, which closely follows the border of the Zone II, poses a danger to the recharge area from the potential of hazardous spills. The stretch of Route 2 from the French King Bridge to just past the Moore Street overpass has been identified by MassDOT as an official "Reduced Salt Area."

H.7 Impaired Water Bodies

At present, the Millers River contains high levels of poly-chlorinated biphenyls (PCB's) and mercury that impair its potential as a Class B fishable and swimmable water body. Every stream, brook, and river in Erving continues to be threatened by nonpoint source pollution from acidification to sedimentation. Continuing to work cooperatively with Massachusetts DEP and the Millers River Watershed Council to cleanup the river will be of environmental and economic benefit.

H.8 Invasive Species

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

⁸ FirstLight Power Resources owns the Northfield Mountain Pumped Storage Facility and Northfield Mountain Recreation and Environmental Center.

A 2008 study used ecological principles to predict the potential response of several pests, pathogens, and invasive species to climate change in the forests of North America. Of the six species studied the authors were most confident in their ability to predict that the Hemlock woolly adelgid, a small insect that attacks and kills Hemlocks and has been sighted at several locations in nearby Wendell, may spread unimpeded, leading to widespread hemlock mortality.

Thus the Town would be wise to take a proactive approach to environmental problems related to the spread of introduced pests, including invasive species, and stay abreast of the latest information about related problems that may impact local vegetation, agriculture, forestry wildlife, and public health, as well as related strategies for sustainable management. Such efforts will require cooperation with state and regional efforts and may involve several Town boards and departments including the open space committee, the board of health, the tree warden, and the conservation commission, as well.

H.9 Environmental Equity Issues

Environmental equity is not an issue within the Town in terms of open space in one or more sections of the Town. Approximately, 50 percent of the Town's total land area is protected open space, either as part of the Erving State Forest, Northfield Mountain Recreation Area, or Town of Erving Conservation Commission lands. These open space resources are located throughout the Town and are easily accessible by Erving residents.

SECTION 5

INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

Open space in Erving consists of forests, farms, parks and recreation areas under both public and private ownership and management. This section of the Erving Open Space and Recreation Plan inventories and categorizes parcels of undeveloped land and open space by ownership, use, and level of protection from development. It identifies parcels of undeveloped land that are individually, or in the aggregate, considered to be of interest because they help conserve ecosystems and ecosystem services, scenic landscapes, the area's rural character, and current and future recreation resources for Erving's residents. Lands of conservation interest are those parcels of land that are considered important because they are already protected from development or because they could be a priority for protection.

Communities across the country have determined that protecting land from development is a means to ensure certain aspects of their landscape are conserved. Erving's productive forests, wetland systems, remaining farmland and scenic views could be marred by the impacts of inappropriate development.

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. Permanently protected land enjoys the highest degree of protection from development. Under Article 97, the only way that permanently protected land can be developed is if two-thirds of the State legislature was to vote to change the use of the land. In



Small Stream in Erving

Massachusetts, there are a number of ways in which land can be considered permanently protected from development: a conservation restriction can be attached to the deed, or the land may be owned by a state conservation agency, a conservation land trust, or a municipal conservation commission. Town-owned land with recreational purposes, as stated in its deed, is also permanently protected under Article 97.

This section of the Erving Open Space and Recreation Plan provides a comprehensive inventory of most of the lands that provide open space, wildlife habitat, agricultural and forest products, watershed protection, scenic beauty, and recreation opportunities for the benefit of all of Erving's residents. The inventory accompanied by the Open Space Map shows the location, types, and distribution of conservation lands in Erving. This inventory is divided into two main sections based on type of ownership: 1) private, and 2) public and non-profit. Within each of these major categories, parcels are differentiated by use (farm or forestland), by ownership and management, and by level of protection: permanent, limited, and temporary (See Table 5-1).

All municipal property must be accessible to people with disabilities. The municipal parks and conservation areas in Town were evaluated for accessibility by the Erving Open Space and Recreation Commission and the results of the evaluation and recommendations for improvement are located in Appendix A of this OSRP. The Town of Erving does not have any identified environmental justice areas. However, protected open space is located throughout Erving and is particularly close to all of the village centers in Town.

Table 5-1: Summary Areas of Farmland and Forest Open Space by Ownership and Level of Protection from Development

PRIVATELY OWNED PROTECTED OPEN SPACE	Area in Acres
Farmland	
<i>Permanently Protected by Agricultural Preservation Restriction</i>	31.7
<i>Temporarily Protected under Ch. 61A</i>	(31.7)
Forestland	
<i>Permanently Protected by a Conservation Restriction</i>	145.8
<i>Temporarily Protected</i>	
Chapter 61	78.5
Chapter 61B	112.1
Total Temporarily Protected	190.6
TOTAL PRIVATELY OWNED PROTECTED OPEN SPACE	222.3
PUBLICLY OWNED PROTECTED OPEN SPACE	
<i>Permanently Protected by State Conservation Agencies</i>	
State Department of Recreation and Conservation	2,720.1
<i>Land Permanently Protected & Owned by Town of Erving</i>	134.2
<i>Land with Limited Protection & Owned by Town of Erving</i>	354.0
TOTAL PUBLICLY OWNED PROTECTED OPEN SPACE	3,208.3

Source: Erving Assessors Records, February 2018.

A.1 Permanently Protected Land

Land permanently protected from development can be owned by a state agency or the town. For example, the Erving State Forest is owned by the Commonwealth of Massachusetts and under the management and oversight of the Massachusetts Department of Conservation and Recreation (DCR). Land owned by the Town of Erving under the authority of the Conservation Commission is also considered permanently protected. Land that is permanently protected from development is protected under Article 97, which requires a two-thirds majority vote of the State Legislature to convert the open space to another use.

Farmland can become permanently protected from development when a landowner chooses to sell his/her development rights to a land trust or state agency. The Massachusetts Department of Agricultural Resources (MDAR) purchases the development rights of farmland through their Agricultural Preservation Restriction (APR) Program. The APR Program typically pays the landowner the difference between the market value and the agricultural value of the land. MDAR favors towns that provide matching funds, which are typically 5 percent of that amount or up to \$500 per acre. In this way towns can leverage 95 percent of the cost of purchasing development rights towards protecting the farmland of willing landowners.

Currently the only farm in the APR program in Erving is the Split River Farm (consisting of two parcels), located near the town's border with Northfield. The portion of the farm under APR is owned by Split River Farm, with the remaining land owned by the Massachusetts Department of Conservation and Recreation and therefore protected.

A.2 Temporarily Protected Land

Land considered to be of limited protection includes any town owned open space that is not under the authority of the Conservation Commission, which could be developed through a decision by the Select Board or by Town meeting vote. Examples of town-owned open space include cemeteries, small parks, and old landfills.

The Chapter 61, 61A and 61B lands are also considered to have a temporary level of protection from development. The Chapter 61 programs offer a reduced assessment on privately owned working land. Landowners that choose to participate in this program therefore receive a reduction in property taxes on the portion of their land that is in active production as agriculture or forestland, or available for public recreation. There are three Chapter 61 programs: Chapter 61 for Forestry, Chapter 61A for Agriculture, and Chapter 61B for Recreation.

In order to participate in the Ch. 61 Program, landowners must manage their forestland under a ten-year management plan. The aim of this program is to temporarily keep working forests undeveloped.

In order to participate in the Chapter 61A program, a landowner must have at least 5 acres of land currently in active agriculture, and apply every year to enroll their parcels of land in the program. The aim of this program is to temporarily keep farmland in active agricultural production.

The 61B program also promotes the private ownership of open space, with the requirement that land enrolled in the program be used for public and private recreation purposes, or as open space. No management plan is required, but the tax savings are smaller. Commercial timber harvesting is not allowed on lands in the Ch. 61B program.

Lands in the Chapter 61 program are considered only temporarily protected because a landowner may remove land that is enrolled in the Ch. 61 Program at any time and pay a penalty tax. If the landowner receives a formal offer from another party to purchase his/her parcel of land, which is in one of the Ch. 61 Programs (61, 61A, 61B), they must notify the Town. The Town then has 120 days, from the day the offer is made, to exercise its right-of-first-refusal by matching the bona-fide offer, or to transfer this right to a conservation organization.

Often private conservation land trusts have the ability to produce creative and successful fundraising campaigns in a short period of time, while DCR and the Massachusetts Division of Fisheries and Wildlife (MassWildlife) may be interested in purchasing the land in the near future. Often this negotiating process between the land trust, a state conservation agency, and the landowner can be completed in a shorter period of time than if the Town were to bring the decision to purchase the land to a Special Town Meeting. It is helpful when town officials and/or committees maintain established relationships with conservation organizations such as DCR, MassWildlife, New England Forestry Foundation (NEFF), and Mount Grace Land Conservation Trust (MGLCT). This way, if the town is not able or interested in exercising its right of first refusal by purchasing the property, they would be able to act to assign its right of first refusal to a conservation organization within the limited timeframe required after the landowner expressed interest in selling the land to a developer.

B. PRIVATELY OWNED PARCELS

Although there is a large amount of open space in Erving that is owned by the state, the rest is privately owned by residents, non-residents, and two corporations. Two farmland parcels are permanently protected from development through the Massachusetts Department of Agricultural Resources APR program. Others are temporarily protected from development through the Massachusetts Ch. 61 Program. The remaining privately owned lands are unprotected. They are discussed in this Open Space and Recreation Plan because privately owned open space may contain important wildlife habitat, offer unique recreational opportunities, or provide a potential connection between other permanently protected parcels. In some cases, unprotected parcels may be deemed valuable enough

by the community to consider purchasing, if available for sale, or helping to protect through conservation easements of other options.

In the following tables, privately owned agricultural land, privately owned forest land, and open space parcels owned by FirstLight Power Resources and Western Massachusetts Electric Company are identified by assessors' map and lot numbers. FirstLight owns approximately 1,758 acres of open space in Erving, including some of the more remote and scenic ridge lands in Town.

Private landowners together control approximately 65 percent of the open space in Erving. Some of this privately owned land is in pasture but most is in forest. These open space parcels are still on the tax rolls, whether the land is protected or not. Very few landowners have taken advantage of the Chapter 61 programs as is evidenced by the fact that there are only 190.6 acres of open space in the 61 and 61B Programs combined. This lack of participation is largely due to the fact that the Town of Erving has a split tax rate and Chapter 61 lands are taxed at the higher commercial rate – making it often financially more expensive to use the Chapter 61 program.

In the following tables, Privately Owned Agricultural and Forest Lands are listed by level of protection from development. The ownership of the land is provided with the associated assessors map-lot number and acreage. The current use is based on the vegetation. Farmland may most likely be pasture in Erving, while forest is presumed to be used as such, whether it is managed for timber or not. Public access on private land may not be permitted, and if it is, is subject to change. State conservation agencies often require some level of public access before paying for, or accepting conservation restrictions. Public access is not a requirement for enrollment in any of the Ch.61 programs including the Ch.61B Recreation Program. It is assumed that given the nature of these open space parcels, access to them by people with disabilities is also not guaranteed.

Important characteristics that could motivate the Town to consider acting on their right of first refusal for a Ch.61 parcel, or negotiating with a willing landowner for a fair purchase price, may include the presence of prime farmland soils, pasture, wetlands, a portion of the land that is above an aquifer, or rare or endangered species habitat. In addition, the parcel may be deemed very important as a link in a potential greenway or as a component of a large block of contiguous forest.

B.1 Privately Owned Agricultural Land

According to the Erving Assessor's records, there are approximately 32 acres of agricultural land that are permanently protected in Erving. Not as bountiful as forests, Erving's agricultural lands are a unique part of the landscape that contributes significantly to the Town's rural character. Most agricultural land that is protected from development in the region becomes so only after being prioritized by the State's Department of

Agricultural Resources (MDAR), which is the main source for farmland preservation funds in eastern Franklin County. MDAR normally requires the land to be actively farmed and to contain prime farmland soils.

The parcels in Table 5-2 below are currently farmed and are permanently protected from development. The owner is Split River Farm and the holder of the easement is MDAR. There are no public grants awarded as a result of the program, although the owner received payment when the land was placed under an APR from MDAR. These parcels are also enrolled in the Chapter 61A program. The zoning of the parcels is Rural Residential.

Table 5-2: Privately Owned Agricultural Land Permanently Protected from Development

Owner	Holder of the Conservation Easement	Map-Block	Lot	Acres	Recreational/ Other Value
Split River Farm	Department of Agricultural Resources (MDAR)	1-4	1	22.40	Prime Farmland Soils
Split River Farm	MDAR	1-4	6	9.27	Prime Farmland Soils
Total				31.67	

Source: Town of Erving Assessors Records; February 2018.

All other privately owned farmland in Erving is unprotected, as there are no other farms enrolled in APR or Chapter 61. These open space areas are mostly pasture lands and are located along Rte. 63 and Mountain Road, with hayed pasture located along North Street.

B.2 Privately Owned Forested Land

Most natural processes do not follow political boundaries, but land ownership is an important consideration. Land owned by DCR or MassWildlife is considered to be permanently protected from development, while privately owned land is only protected if a conservation restriction is attached to its deed. Although other factors relating to ownership are important to consider such as level of management and public access, these are often considered secondary to the level of protection from development. This is because development can have a permanent impact on natural and cultural resources. Development can impact the forest on a regional scale through fragmentation. Large blocks of contiguous forest form the basis for sustaining biological diversity.

The following inventory includes privately owned forestland with different levels of protection from development. Permanently protected forestland exists when landowners have donated or sold their development rights to a state conservation organization or a land trust. The landowners retain the other rights of ownership and they continue to pay property taxes, though they will be less due to the reduced value of their land. Erving

currently has several privately owned properties that are permanently protected from development with a conservation restriction (see Table 5-3).

Table 5-3: Forestlands with Permanent Protection from Development

Owner	Holder of Conservation Restriction	Map-Lot	Acres
Brule, David and Monique	Franklin Land Trust	0-4-1	7
Fellows, Verne and Caroline Heirs/Devises		3-04-48	113.9
Fellows, Verne and Caroline Heirs/Devises		3-04-49	21.9
Campoli, Timothy/Yargeau, Ronald		1-4-5	3
Giniusz, Bunny		4-0-12	6.7
Total			152.5

Source: Town of Erving Assessors Records; February 2018.

Forestland that is considered temporarily protected from development includes those lands enrolled in the Ch.61 and 61B Programs. All of the parcels in Table 5-4 are temporarily protected in the Ch.61 Forestland and the Ch. 61B Recreational Open Space Classification and Taxation Program and the degree of protection of these parcels is short term. The owner noted is also the manager of the parcel with current use of the parcel being forest. There are no public grants awarded as a result of the Program, however, the owner does receive a property tax break over a ten-year period. The zoning of all parcels in Erving are Rural Residential.

Table 5-4: Forestlands with Temporary Protection from Development Enrolled in the Ch. 61 Forestland and the 61 B Recreational Open Space Taxation Program

Owner	Chapter Program	Map-Lot	Acres
Black, Jeanne	61 - Forestry	3-0-50	4.70
Black, Jeanne	61 - Forestry	3-0-51	4.50
Dubay, Jeff and Rita	61 - Forestry	6-0-8	22.90
Zilinski,, John M.	61 - Forestry	6-0-17	30.45
Eversource	61 - Forestry	3-0-1	16
Verner, Robert F.	61B – Open Space	1-4-18	15.70
Eversource	61B – Open Space	5-1-36	3.8
Eversource	61B – Open Space	5-1-38	1.00
Eversource	61B – Open Space	5-1-39	10.00
Quinnechtuk Company	61B – Open Space	3-0-11	50
Quinnechtuk Company	61B – Open Space	3-0-12	31.6
Total			190.65

Source: Town of Erving Assessors Records; February 2018.

Unprotected Parcels of Developable Land of Special Interest

There is nothing that would slow, or stand in the way of, the development of any of the lands included in Table 5-5. The parcels do not have any legal or procedural mechanism that could be used by the Town to restrict or slow development. These particular parcels

are potentially developable and currently provide public benefits including access to recreational activities and open spaces and the maintenance of vast scenic areas. These parcels are also important because they are owned by one landowner, FirstLight Power Resources.

Table 5-5: Unprotected Open Space Parcels in Erving owned by FirstLight Power Resources Company

Map-Lot	Acreage
1-3-1	.60
1-3-2	7.70
1-3-27	10.60
1-4-32	5.35
1-4-33	4.85
1-4-34	15.08
1-4-36	23.10
1-4-37	59.20
2-0-6	1,496.00
2-0-12	15.66
2-0-15	1.00
3-0-9	4.00
4-0-81	57.50
5-0-1	55.22
5-1-27	2.81
	1,758.67

Source: Town of Erving Assessors Records; February 2018.



Trail along a Stream in Erving

Within the Town of Erving, the FirstLight Power Resources owns approximately 1,758 acres. FirstLight owns and operates the Northfield Mountain Environmental and Recreation Center which consists of roughly 800 acres of developed recreation areas with trails, signage and active maintenance of facilities. This area also includes roughly 600 acres of undeveloped recreation land used for activities including hiking, rock climbing, mountain biking, orienteering, horseback riding, skiing, snowshoeing, and hunting. The New England Scenic Trail passes through a portion of this section, which is used primarily by hunters and hikers. Also included in this area are Rattlesnake Mountain and parts of the Farley Ledges and most of the Rose Ledges. The power reservoir takes up 342 acres.

Eversource Electric Company, another private land owner in Erving, owns approximately 273 acres (Table 5-6). These unprotected parcels are primarily utility transmission lines, and could potentially provide linkages between surrounding open space parcels.

Table 5-6: Unprotected Open Space Parcels in Erving owned by Eversource Electric Company

Map-Lot	Acreage
1-4-25	2.05
1-4-26	1.16
1-4-28	3.94
1-4-29	11.16
1-4-30	9.62
1-4-31	5.79
1-4-35	4.50
1-4-38	58.62
1-4-39	11.61
4-0-2	2.55
4-0-3	2.58
4-0-14	136.17
4-0-29	3.05
4-0-30	5.43
5-1-36	3.80
5-1-38	1.00
5-1-39	10.00
5-1-43	0.07
	273.1

Source: Town of Erving Assessors Records; February 2018.

The Erving Paper Mills own three parcels (Table 5-7), consisting of roughly 171 acres. Much of this acreage is forested and is surrounded on three sides by the Erving State Forest. These parcels are accessible from Route 2 and the Prospect Street Extension, and are not protected from development.

Table 5-7: Unprotected Open Space Parcels in Erving owned by the Erving Paper Mills

Map-Lot	Acreage
6-0-28	127.78
6-0-27	35.70
6-0-26	7.40
	170.88

Source: Town of Erving Assessors Records; February 2018.

C. PUBLIC AND NON-PROFIT PARCELS

State conservation agencies and the Town of Erving own a significant portion of Erving's land. Almost all of this land is permanently protected from development. Only the Town owned parcels not under the authority of the Erving Conservation Commission are under limited protection. The following inventory includes those parcels that are owned by the Commonwealth of Massachusetts and the Town.

C.1 Publicly Owned Open Space

Publicly owned open space in Erving includes land owned by the Commonwealth of Massachusetts and the Town of Erving. The State owned land is managed by the Department of Conservation and Recreation (DCR).

DCR's lands are spread throughout the Town in the form of Erving State Forest and lands leased by Split River Farm. The entire 2,524 acres of Erving State Forest are broken up into two main sections east of the Northfield Mountain Reservoir. The largest contiguous block of forest is the eastern most section, which can be accessed off of High Street and from Laurel Lake Road. The western section is located between the Northfield Mountain Reservoir property and Mountain Road. The eastern section of the Erving State Forest is the southern end of an uninterrupted stretch of permanently protected contiguous forestland that begins in the north with the Mt. Grace State Forest in Warwick, Massachusetts.

The Erving State Forest is located in Erving and Warwick and includes the Laurel Lake recreation area. The Laurel Lake area, which straddles the Town Line between Erving and Warwick, includes a thirty-two (32) site camping area, picnic sites, and the most popular public swimming beach in the region. In 1994, DCR estimated that there were over 60,000 visitors to the lake. This estimate is an older one and it is likely that the number of visitors has increased since then. Laurel Lake is also popular for boating and fishing, which is enhanced with the Division of Fisheries and Wildlife's trout and salmon-stocking program. The rest of the large rugged forestland is used for hunting, trapping, fishing, and a variety of trail activities throughout all seasons.

Table 5-8 lists parcels of permanently protected public land owned by the Commonwealth of Massachusetts or by the Town of Erving and under the control of the

Conservation Commission. All of the State owned parcels are forested and managed by DCR.

The parcel owned by DCR on River Road was part of an Eversource Electric Company's (the land is now owned by FirstLight) land sale that took place in 1999. DCR and three farmers bought abutting land that was part of the same sale. This 125-acre property is located on the eastern bank of the Connecticut River and is part of the French King Gorge. By purchasing this land, DCR has helped to ensure the future of farming in the region and at the same time helped to protect one of the most significant historic and scenic landscapes in the Connecticut River Valley.

The former Giniusz Estate was transferred to the Town of Erving in 2007. In 2018, it will be combined with the adjoining Mt. Grace Land Conservation Trust parcel to create the Poplar Mountain Conservation Area. These two parcels are a combined 173 acres and will both be owned by Erving's Conservation Commission and therefore permanently protected.



Land Protected in Erving

Table 5-8: Publicly Owned Land Permanently Protected from Development

Property Owner	Property Manager	Site Name	Acres	Map-Lot	Current Use	Condition	Recreation Potential	Public Access*	Zoning	Type of Grant Received (if any)
Town of Erving	Town of Erving	Poplar Mountain Conservation Area	118.6	4-0-78	Hiking and walking trails	Good	High – maintain and formalize trails	Old State Road – needs sign	RR	
Town of Erving	Town of Erving	Arch Street	0.23	6-4-83	Riverfront Park	Good	High – maintain park	Free	CV	PARC/Town Funding
Town of Erving	Town of Erving	Arch Street	1.70	6-4-84	Riverfront Park	Good	High – maintain park	Free	CV	PARC/Town Funding
Town of Erving	Town of Erving	Park Street Park	0.63	4-5-44	Park Street Park	Good	High – maintain park	Free	VR/GP	
Mt. Grace Land Trust	Mt. Grace Land Trust	Poplar Mountain Conservation Area	55.0	4-0-79	Hiking and walking trails	Good	High – maintain and formalize trails	Old State Road	RR	
DCR	DCR	Greenway State Park	124.6	1-3-4	Forestland	Good	Medium	River Road	RR	
DCR	DCR	Dorsey Road	2.1	1-3-12	Forestland	Good	High – formalize trails	Dorsey Road	RR	
DCR	DCR	Dorsey Road	8.71	1-3-26	Forestland	Good	High– formalize trails	Dorsey Road and Route 2	C	
DCR	DCR	Dorsey Road	2.16	1-3-36	Forestland	Good	High– formalize trails	Dorsey Road	RR	
DCR	DCR	Dorsey Road	2.26	1-3-37	Forestland	Good	High– formalize trails	Dorsey Road	RR	
DCR	DCR	Dorsey Road	2.31	1-3-38	Forestland	Good	High– formalize trails	Dorsey Road	RR	
DCR	DCR	Dorsey Road	2.27	1-3-39	Forestland	Good	High– formalize trails	Dorsey Road	RR	
DCR	DCR	Open Space	16.66	1-3-40	Open Space	Good	High– formalize trails	Dorsey Road and Route 2	RR	
DCR	DCR	Erving State Forest	509.5	2-0-13	State Park	Good	High – maintain trails and provide signage	Mountain Road/Hermit Cave Trail	RR	
DCR	DCR	Erving State Forest	108.0	3-0-35	State Park	Good	High – maintain trails	Great Swamp Rd.	RR	
DCR	DCR	Erving State Forest	1,895.0	3-0-55	State Park	Good	High – maintain trails, campgrounds, picnic & swimming facilities	Laurel Lake Road	RR	
DCR	DCR	Erving State Forest	35.5	3-1-25	Water	Good	High – improve & maintain water quality	Laurel Lake Road	RR	

Property Owner	Property Manager	Site Name	Acres	Map-Lot	Current Use	Condition	Recreation Potential	Public Access*	Zoning	Type of Grant Received (if any)
DCR	DCR	Erving State Forest	1.4	6-2-8	State Park	Good	Medium – maintain trail access	High Street	RR	
DCR	DCR	Erving State Forest	9.6	6-14-4	State Park	Good	High – maintain trail access	Prospect Street EXT	RR	
Total			2,896.3							

Source: Town of Erving Assessors Records; February 2018. *Public access for all these properties is free.

The Town of Erving owns approximately 472 acres of open space. Of this amount, 354 acres are under the authority of the Select Board and are therefore considered to have limited protection from development (Table 5-9). If residents wanted to convert the Town forest to sports fields, a Town Meeting vote could provide the authority. If the land was held by the Conservation Commission, it would take a majority vote by the Massachusetts State Legislature to convert open space to another non-conservation use. Many of these open spaces are parks, currently help protect wetlands and tributaries, or are set aside for other potential future municipal uses like an industrial park. Of all the types of town-owned public open spaces in Erving, the cemeteries and the three main parks – Riverfront, Veteran’s, and Zilinski – are the best-maintained, park-like environments, within which people can walk and recreate.

Erving’s Conservation Commission is working on identifying and prioritizing potential corridors for protection in Erving. The Commission is pursuing these linkages between protected land by assisting interested landowners in protecting their land through conservation restrictions and other methods. The Conservation Commission has also been working closely with organizations such as the North Quabbin Regional Landscape Partnership, the Mt. Grace Land Conservation Trust, and the Franklin Land Trust for assistance in land protection projects.

It is not unusual for a community to set aside land for future expansion of schools, sports fields, police and fire stations, and drinking water supplies. Open space planned for these purposes might be used as open space today and placed under the authority of the Select Board. It may also make sense to place Town-owned land that clearly contains wetlands or wildlife habitat but, which does not provide for easy development, under the authority and protection of the Conservation Commission.

Table 5-9: Town-Owned Parcels of Land with Limited Protection from Development

Property Owner	Property Manager	Location	Acres	Map-Lot	Current Use	Condition	Recreation Potential	Public Access	Zoning	Type of Grant Received (if any)
Town of Erving	Town of Erving	Northfield Road	27.80	1-3-15	Forest	Medium	High- formalize trails	Free	RR/GP	
Town of Erving	Town of Erving	Northfield Road	17.80	1-3-16	Forest	Medium	High - formalize trails	Free	RR/GP	
Town of Erving	Town of Erving	10 Public Works Boulevard	23.57	1-3-28	Riparian forest	Good	Low	Free	RR/GP	
Town of Erving	Town of Erving	River Road	3.86	1-3-34	Well #1	Good	Low	Discouraged	RR/GP	
Town of Erving	Town of Erving	Northfield Road	54.76	1-3-7	Forest	Good	High- formalize trails	Free	RR	
Town of Erving	Town of Erving	Mountain Road	37.00	3-0-5	Sewer Treatment/Landfill	Medium	None	Discouraged	RR	
Town of Erving	Town of Erving	Murdock Hill Road	0.92	3-0-57	Forest	Good	High- formalize trails	Free	RR	
Town of Erving	Town of Erving	Murdock Hill Road	8.00	3-0-58	Forest	Good	High- formalize trails	Free	RR	
Town of Erving	Town of Erving	Old State Road	15.57	4-0-11	Forest	Good	High- formalize trails	Free	RR/WD	
Town of Erving	Town of Erving	French King Highway	49.99	4-0-21	Capped landfill	Poor	None	None	RR/WD	
Town of Erving	Town of Erving	Papermill Road	0.25	4-0-36	Forest	Poor	High – formalize access to Millers River	Potential access to Millers River	CV	
Town of Erving	Town of Erving	River Road	7.37	4-1-1	Wastewater treatment	Poor	None	None	RR/GP	
Town of Erving	Town of Erving	Rear River Road	11.80	4-3-1	Wastewater treatment	Poor	None	None	RR	
Town of Erving	Town of Erving	18 Moore Street	13.20	4-3-13	Veteran's Memorial Park	Good	High – maintain park	Free	CV/GP	

Property Owner	Property Manager	Location	Acres	Map-Lot	Current Use	Condition	Recreation Potential	Public Access	Zoning	Type of Grant Received
Town of Erving	Town of Erving	Moore Street	0.28	4-3-17	Veteran's Memorial Park	Good	High – maintain park	Free	CV/GP	
Town of Erving	Town of Erving	Northfield Road	7.19	4-8-4	Forest/Open space	Good	High – create walking trails for senior center	Free	RR/GP	
Town of Erving	Town of Erving	French King Highway	8.23	4-8-51	Off-road vehicles/Forest	Medium	High – formalize off-road vehicle paths or walking trails for senior center	Free	CV/GP	
Town of Erving	Town of Erving	28 Northfield Road	15.00	4-8-6	Elementary School	Good	High- maintain trail & park	Free	CV/GP/RR	
Town of Erving	Town of Erving	1 Care Drive	9.70	4-8-8	Senior center	Good	High – maintain grounds	Free	RR/GP	
Town of Erving	Town of Erving	State Road	0.11	5-1-26	Open space	Poor	None	Free	VR	
Town of Erving	Town of Erving	Maple Avenue	15.94	5-2-8	Landfill	Poor	None	None	VR/RR	
Town of Erving	Town of Erving	29 Maple Avenue	2.60	5-2-9	Landfill	Poor	None	None	VR	
Town of Erving	Town of Erving	East Main Street	1.12	6-0-34	Riverbank	Medium	Low	None	CV	
Town of Erving	Town of Erving	10 Arch Street	5.76	6-10-1	Riverfront Park	Good	High- maintain park	Free	CV/WD	PARC/ Town funding
Town of Erving	Town of Erving	Arch Street	0.10	6-10-2	Wastewater	Poor	None	None	CV/WD	
Town of Erving	Town of Erving	East Main Street	2.30	6-13-3	Riverbank	Poor	Low	Potential access to Millers River	CV	
Town of Erving	Town of Erving	Prospect Street Extension	9.10	6-13-5	Zilinski Memorial Field	Good	High – maintain park	Free	VR/CV	
Town of Erving	Town of Erving	Highland Avenue	0.32	6-2-37	Riverbank - Keyup Brook	Poor	Low	Free	VR	

Property Owner	Property Manager	Location	Acres	Map-Lot	Current Use	Condition	Recreation Potential	Public Access	Zoning	Type of Grant Received
Town of Erving	Town of Erving	East Main Street	0.09	6-4-13	Riverbank - Keyup Brook	Poor	Low	Free	CV	
Town of Erving	Town of Erving	2 West Main Street	0.04	6-4-54	Riverbank - Keyup Brook	Poor	Low	Free	CV	
Town of Erving	Town of Erving	East Main Street	0.22	6-4-55	Riverbank - Keyup Brook	Poor	Low	Free	CV	
Town of Erving	Town of Erving	12 East Main Street	1.50	6-4-63	Town Hall	Good	Low	Free	CV	
			351.5							

Source: Town of Erving Assessors Records; February 2018.

SECTION 6

COMMUNITY GOALS

A. DESCRIPTION OF PROCESS

The Town of Erving's open space and recreation goals were developed through the following planning process:

- In 2002, the Town of Erving completed an Open Space and Recreation Plan in concert with the completion of its Master Plan.
- In 2009, the Town updated the Open Space and Recreation Plan to reflect existing conditions in Erving and public consensus.
- Beginning in April 2017 to May 2018, the Open Space Planning Committee and the Franklin Regional Council of Governments Planning Department developed and updated the Open Space and Recreation Plan using several methods for involving public participation:
 - The Open Space and Recreation Survey results were used to support the development of Section 8 Goals and Objectives as well as the overall open space and recreation goals and vision.
 - Six public meetings were held by the Open Space Planning Committee and were open to the public.
 - Drafts of each section of the plan were sent to the Open Space Planning Committee members representing key Town boards and community groups.
 - A public forum was held on May 21, 2018, where residents reviewed and discussed the inventory, analysis, community goals, objectives, and seven-year action plan. All public comments were recorded and incorporated into the plan.

B. STATEMENT OF OPEN SPACE AND RECREATIONAL GOALS

People live in Erving because they like its rural, small town character. On the whole, residents value safety from crime and vandalism, the Town's low real estate property taxes, clean air and water, peace and quiet, an excellent Elementary School, open fields, bountiful forests, recreational facilities, and the availability of public services. According to the 2017 Open Space and Recreation Survey, respondents felt that these aspects of Erving, as well as its lakes, streams, and ponds, its scenic views, forests, and wildlife

habitat were all important and worth conserving; with particular focus on maintaining existing Town-owned natural and recreational resources.

According to the 2017 Open Space and Recreation Survey and the Open Space and Recreation Committee, the ideal Erving would have managed to conserve the majority of its uninterrupted forests along its ridgelines and with that ensure the presence of diverse wildlife habitats, the purity of its water and air, and the use of an easily accessed trail system connecting public and privately owned open space. New development, especially in the villages of Erving, Farley and Erving Center, would be designed to ensure the continued quality of the Town's groundwater, wetlands, swamps, aquifers, and drinking water supplies. Development along the rural roads would occur in a manner that protected open fields and habitat areas where possible. A multi-use trail would connect all three villages. Residents would be able to gain universal access to the Millers and Connecticut Rivers for fishing and boating by way of Town-owned waterfront lands. Outdoor recreation and related businesses would provide a significant contribution to the local economy of Erving.



View of Ridgeline from an Erving Forest

SECTION 7

ANALYSIS OF NEEDS

The Erving Open Space and Recreation Plan incorporates the inventory of all the land-based natural, scenic, and cultural resources that are available in Town (Section 4), identifies the most important parcels of land that contain these resources (Section 5), and based on the community's general goals (Section 6), makes comparisons between the supply of resources and the demand (Section 7). In the following section, the recreation and open space needs of residents are identified using the 2017 Open Space and Recreation Survey, data from Sections 3, 4, and 5, and committee input. Finally, the obstacles to the effective resolution of these needs are addressed including organizational barriers and the most significant land use conflicts concerning open space and natural resource use.

A. SUMMARY OF NATURAL RESOURCE PROTECTION NEEDS

Erving residents value their forests, water bodies, and the quality of the air and drinking water in Town. According to the 2017 Open Space Survey, 80 percent or more of survey respondents stated that it was important or very important to protect lakes, streams, and ponds, clean drinking water, forests, clean air, scenic views, and farmland. However, it is important to note that a significant number of respondents (20%) also said that Erving has enough protected land and does not need any more.

According to the 2017 Open Space survey results, respondents' highest open space protection priorities are:

- 1) Protect drinking water (54%);
- 2) Protect land along rivers and streams (37%);
- 3) Protect land for wildlife habitat (37%); and
- 4) Protect forestland (34%).

Fortunately, these priorities are highly compatible. The protection of forestland and land along rivers and streams has the added benefit of also protecting drinking water and wildlife habitat.

A.1 Drinking Water

Erving's Groundwater Protection District is a zoning district that overlays designated recharge areas and applies to all new construction and any change or expansion to existing buildings or uses. This district requires a special permit for any use that creates an impervious surface greater than 15% or 2,500 square feet, whichever is greater, of the lot, provided that a groundwater recharge system is put in place to prevent degradation of groundwater quality.

The Groundwater Protection District also protects Erving’s water supply by prohibiting or regulating the use, storage, and disposal of hazardous materials. However, this new bylaw does not take into consideration existing uses. This means that household, private commercial, and industrial uses of hazardous materials need to be addressed by a Town-wide educational effort to minimize the potential for drinking water supply contamination.

A.2 Riverfront Areas

Protecting land along rivers and streams provides multiple benefits. Riparian buffer areas help protect water quality by filtering and slowing stormwater runoff from adjacent land uses and supports habitat for species that rely on cool water temperatures. Permanently protected land along rivers can also provide public access, depending on whether it is publically or privately owned, and the details of the restriction on the property. Improving and expanding river access in Erving is a priority for the Town and was noted by many respondents in the Erving Open Space and Recreation Survey. The former International Paper Mill site would provide ideal river access for town residents and river recreationalists.

A.3 Forestland and Wildlife Habitat

A total of 82 percent of Erving’s land is forested and provides a rich habitat for wildlife, while helping maintain the Town’s clean drinking water. A significant portion of forested land in Erving is owned by FirstLight Power Resources. FirstLight owns over 1,700 acres of land in Erving. The FirstLight land surrounding the pump storage facility will only remain in



Forestland in Erving

recreational and forestry uses if mandated in the new operating license issued by the Federal Energy Regulatory Commission (FERC). The FERC relicensing process, which is currently underway, is the Town’s opportunity to ensure that this status will be maintained for the next fifty years. Nonetheless, it is important to remember that the land is not permanently protected from development. Other important parcels include three owned by the Erving Paper Mills, consisting of 171 acres. These parcels are surrounded on three sides by the Erving State Forest, but are not protected from development.

B. SUMMARY OF COMMUNITY'S NEEDS

Planning for a community's open space and recreation needs must work to satisfy the present population's desires for new facilities, spaces, and services and also interpret and act on the available data to prepare for the future needs of Erving residents. Although the Erving Open Space and Recreation Plan will be updated in seven years, the types of actions that are identified in Section 9 take into account the needs of the next generation as well.

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

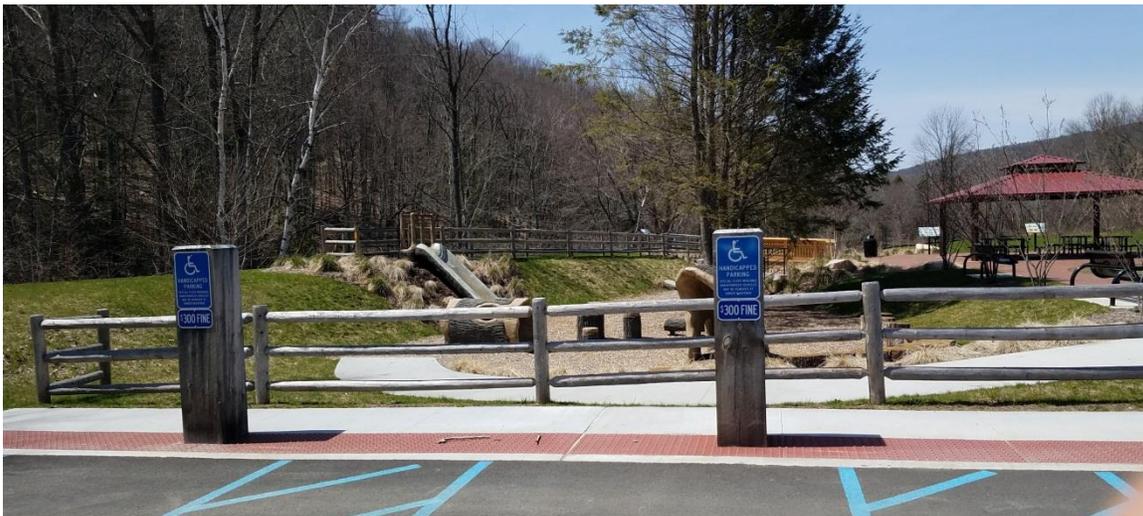
The 2017 Open Space and Recreation Survey, discussions at Open Space Planning Committee meetings, and research into the ownership, protection status, and use of existing open space parcels in Erving, helped to identify several potential community needs relating to open space and recreation resources. They are: maintenance of recreation open space and facilities; extent of available recreational programs; trail development in Wendell State Forest for recreational use by Erving residents; and the need for increased awareness of existing recreational resources.

According to the 2017 Open Space Survey, and Committee Meeting discussions, the most popular recreational resources in Town are:

- 1) Erving State Forest (Laurel Lake) (67%)
- 2) Northfield Mountain Recreation Area (46%)
- 3) Library Programming (46%)
- 4) Millers River (42%)
- 5) Erving Riverfront Park (38%)
- 6) Elementary school playground & facilities (36%)
- 7) Veteran's Memorial Park (34%)
- 8) Zilinski Memorial Field (33%)
- 9) Senior Center programming (31%)
- 10) Community events (28%)



Playground in Erving



Riverfront Park in Erving

In the 2017 Survey, respondents were asked not only to mark how many recreational resources in Town they use (see above for top results), but also indicate if they were aware that all of these resources existed in Erving. A total of 60 percent of respondents said that they did not know that the Town had all of these resources. There is a clear need for increased marketing of these resources and facilities. Almost half of all respondents felt that the existing facilities are in good condition. Another twenty-seven percent said that the facilities are not in good condition and need to be better maintained.

Town land may be needed in the future for recreational facilities, such as land for park and playground facilities for its elderly and youth and improved access to a network of recreational trails. There are roughly 490 acres of open space owned by the Town of Erving, of which the cemeteries and the Poplar Mountain Conservation Area are

protected from development. It would be important to determine if the potential future uses of these parcels could include parks, playgrounds, or sports fields. If parcels were to be developed as parks, there would be a need for making them accessible to the physically handicapped and the elderly. The Town is interested in pursuing the construction of senior housing near the Senior Center that would ideally incorporate accessible walking trails. In addition to recreational trails and playgrounds, another potential future use could be a dog park – a suggestion from seven percent of survey respondents.

Some residents are interested in developing a greenway recreational trail that would connect existing villages in Erving. The trail could be used as both a walking and bicycling path. The proposed trail is located on the Wendell-side of the Millers River and is primarily on Wendell State Forest land. The connection to the potential trail is along Farley Road out of Erving Center and travels west to Farley via a power line easement and some private lands. In Farley, it appears as if the trail could link with the New England Scenic Trail. The Franklin Regional Council of Government's 2009 Bikeway Plan includes this recreational trail as a proposed bikeway route that should be further investigated in terms of feasibility. One major limiting factor in terms of feasibility is that there are a number of private properties that the proposed trail would potentially cross.

When planning for the recreational needs of a community, all age groups and populations need to be considered. As the population of Erving continues to age, as is the trend in Town and throughout the country, there may be more pressure placed upon the Town to provide open space and recreational activities for older citizens. Any future development of land or facilities for open space and recreation should include careful consideration of access for older citizens, as well as for the disabled. These needs should be also addressed as a matter of course under ADA requirements. However, specific programs could be specifically targeted at those citizens with special needs. In addition, a quarter of the respondents to the Erving 2017 Open Space Survey said that more recreational programming is needed for the Town's teens.

C. MANAGEMENT NEEDS

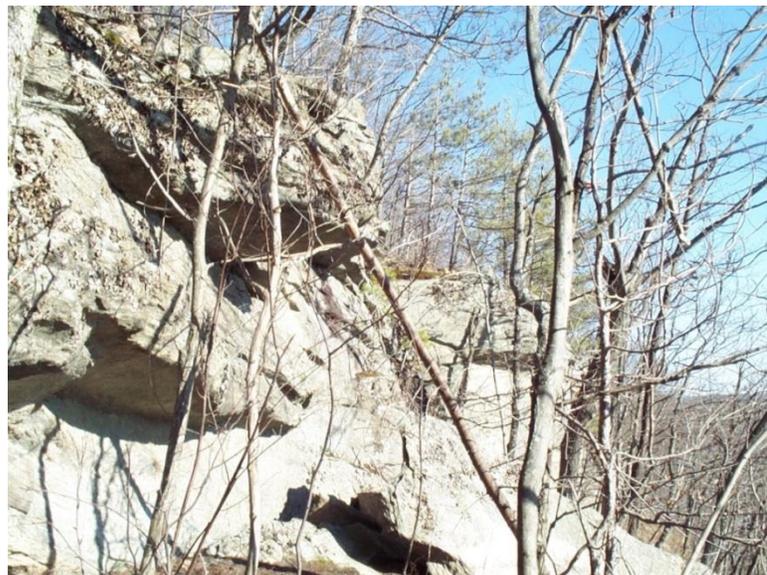
Erving is fortunate to have a great number of organizations interested in the environment in, and around, Erving. There are a number of federal, state, and regional environmental organizations sponsoring land and natural resource protection projects including Mount Grace Land Conservation Trust, Franklin Land Trust, the North Quabbin Regional Landscape Partnership, Massachusetts Audubon Society, Trustees of Reservations, New England Forestry Foundation, Department of Conservation and Recreation, Division of Fisheries and Wildlife, Department of Agricultural Resources, Harvard University, U.S. Army Corps of Engineers, and the Millers River Watershed Council. The Conservation Commission should continue to work with these organizations on land protection projects in Erving. Additionally, there may be a need for the Town to have the ability to facilitate and coordinate the activities that occur within Erving so that they most benefit local

residents. An appointed Open Space Committee could be given the responsibilities to act as the liaison to these organizations reporting back to Town Officials as necessary. Similarly, if Town Officials were kept abreast of these local and regional efforts, there would be more opportunities for cooperation with adjoining towns.

How a community chooses to spend its fiscal resources is often decided at Town Meeting. But in many communities the warrant articles prepared ahead of time are often the result of policy discussions among boards and a small proportion of the total population. A major obstacle to implementing the recommendations of this Open Space and Recreation Plan will be the effective coordination of all Town Boards and Commissions in a manner that promotes communication and discussion of open space and recreation issues between Boards and among the general public.

One general open space issue relates to the different ways people believe land should be used. When these different uses can be planned, so that the value of each use is represented in the action plan, it can often be the result of consensus building among people holding different positions. Gaining consensus among people with strong positions and feelings can take time, resources, and the commitment of each participant in the group. Gaining consensus requires good leadership that understands that tradeoffs on both sides are required to resolve conflict. The open space and master planning process can embody consensus building. A balanced master plan will likely contain elements of both economic and residential development and open space protection. Deciding where to direct new development and where to protect land from development is how the consensus process is realized. In open space planning, determining the most important areas to protect is an important step in determining locations to send growth and ultimately in the formulation of a sustainable land use plan.

It is likely that Erving residents would agree that the permanent protection of private land should only occur with willing landowners and in a manner that in no way reduces the equity of the land without just compensation. There are several techniques that are used by towns and by conservation land trusts, which direct new growth by protecting those areas that are recognized to contain the most important natural, recreational, and historical resources.



Climbing Boulders in Erving

Purchasing a landowner's development rights is a very common technique used by federal, state, and non-profit conservation agencies. A landowner has many rights associated with owning land including the right to farm, the right to drill water, mine gravel and the right to develop the land. The amount of money that a land trust might pay a landowner for his/her development rights is equal to the difference between the value of the land as buildable residential lots and its value as open land in its undeveloped and protected state.

SECTION 8

GOALS AND OBJECTIVES

The following preliminary draft goals and objectives were formulated from the results of the 2017 Erving Open Space and Recreation Planning Survey and reviewed and modified through the public meetings of the Open Space Planning Committee, the public forum process, and associated public comment.

Goals and Objectives

- Ensure that the Town of Erving maintains or improves the quality of its air and water, and the diversity and integrity of native wildlife populations and plant communities through the protection of locally important forests, fields, lakes, streams, ponds, scenic views and wildlife habitat.
 - Coordinate with regional and state land protection efforts, in and around Erving, to ensure the continued conservation of important natural, recreational, and open space resources.
 - Ensure that the OSRP continues to be up-to-date and reflects the current situation of the Town.
 - Take advantage of the Town's right-of-first refusal with Chapter 61 parcels or assign the right to a third party, such as Mount Grace Land Conservation Trust.

- Ensure that the Town of Erving maintains or improves the quality, quantity, and accessibility of its parks, playgrounds, and other recreational facilities as well as programming for current and future generations, especially for teens, adults and seniors.
 - Develop multi-user (walking, hiking, bicycling, cross country skiing, paddling) trail systems that tie into existing ones , which can be safely accessed from publicly owned land or private lands with trail easements.
 - Improve the recreational opportunities in Town and explore the potential for further development of existing recreational resources.
 - Improve access to parks and open space for all residents, including those with disabilities, by coordinating with all relevant Town boards and committees.
 - Support the Recreation Commission to be more effective in providing needed recreational facilities and programming for all of Erving's residents, especially teens, adults, and seniors.

- Support, maintain, and enhance the quality of outdoor recreational experiences in order to promote the potential of recreational tourism within the Town of Erving.
 - Increase the awareness of both Town and regional residents of the many existing recreational and open space resources in Erving.
 - Identify, promote and help protect historically significant areas and structures.



View of Millers River Valley in Erving

SECTION 9

SEVEN – YEAR ACTION PLAN

The Seven-Year Action Plan fulfills the Open Space and Recreation Plan objectives. The objectives address open space, natural resources, recreation, and community development needs because the quantity and quality of accessible open space relates directly to the state of Erving’s environment; the Town’s recreational opportunities; and the quality of future development in Erving.

The objectives are listed in the far left column of Table 9-1 in order of priority and are followed in the same row by recommended actions, responsible board or group, start date, and potential funding sources. By implementing the recommended actions, each objective will begin to be realized.

Implementing the Open Space and Recreation Plan will not only require the participation of the Open Space Committee, but it will also necessarily involve many other Town groups, including: the Board of Selectmen, Planning Board, Board of Health, Conservation Commission, Recreation Commission, and the Historical Commission.

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

A successful Open Space and Recreation Program, under the primary stewardship of an Open Space Committee, can achieve all of the action steps listed below over time. However, it will be important to establish priorities for the first seven years. The Open Space Planning Committee has prioritized action steps by the objectives. These action steps are represented graphically (where possible) on the Seven-Year Action Plan Map and are outlined in greater detail in Table 9-1. The most important objectives are:

1. Increase the awareness of both Town and regional residents of the many existing recreational and open space resources in Erving.
2. Develop multi-user (walking, hiking, bicycling, cross country skiing, paddling) trail systems that tie into existing ones , which can be safely accessed from publicly owned land or private lands with trail easements.
3. Improve the recreational opportunities in Town and explore the potential for further development of existing recreational resources.

4. Coordinate with regional and state land protection efforts, in and around Erving, to ensure the continued conservation of important natural, recreational, and open space resources.
5. Improve access to parks and open space for all residents, including those with disabilities, by coordinating with all relevant Town boards and committees.
6. Support the Recreation Commission to be more effective in providing needed recreational facilities and programming for all of Erving's residents, especially teens, adults, and seniors.
7. Identify, promote and help protect historically significant areas and structures.



Riverfront Park in Erving Center

Table 9-1: Recommended Actions of the Open Space and Recreation Plan

OBJECTIVE	ACTION	RESPONSIBLE BOARD/GROUP	START DATE	POTENTIAL FUNDING SOURCES¹
Increase the awareness of both Town and regional residents of the many existing recreational and open space resources in Erving.	Educate the general public and town officials through the use of promotional materials, such as the “Around Town” newsletter and Town web site, about existing recreational resources and open space.	Open Space Committee and Historical Commission	2019	Volunteer time, Town staff
	Install wayfinding signage, information kiosks, and other amenities at popular hiking trails, climbing locations, parking lots, and other facilities.	Open Space Committee, Board of Selectmen, Planning Board, Historical Commission, Conservation Commission	2019	Volunteer time, DCR, and/or grants, Town staff
	Create GIS-based maps for existing recreational resources (hiking, skiing, climbing, fishing, etc.) within Town to be published either in print and/or online.	Open Space Committee, Conservation Commission, and Board of Selectmen	2019	Volunteer time; DCR; and/or grants
Develop multi-user (walking, hiking, bicycling, cross country skiing, paddling) trail systems that tie into existing ones which can be accessed from publicly owned land or private lands with trail easements.	Identify and map potential new trails.	Open Space Committee and Conservation Commission	2019	Volunteer time; State funds; or other grants
	Create an East-West multi-modal linkage that connects Erving Center and Farley.	Open Space Committee, Board of Selectmen, Planning Board, MassDOT, and Route 2 Task Force	2019	State funds, Town funds
	Map and promote the trail system between Zilinski Memorial Field and the Erving State Forest.	Open Space Committee, Recreation Commission	2019	Volunteer time, Town funds
	Work with Millers River Watershed Council to extend the Blue Trail through Erving on the Millers River.	Open Space Committee, Conservation Commission, Board of Selectmen	Ongoing	Volunteer time, Town funds

¹ Like many small towns, Erving relies heavily on its dedicated, knowledgeable, and unpaid volunteers who contribute countless and priceless hours to various town boards, commissions, causes, and projects. Volunteer time is noted for those objectives that would otherwise not be accomplished due to lack of town, state, and/or federal government funding for specific projects or lack of funding for technical assistance and other services that non-profit organizations, the regional planning agency and/or state agencies could provide to the Town.

OBJECTIVE	ACTION	RESPONSIBLE BOARD/GROUP	START DATE	POTENTIAL FUNDING SOURCES¹
Improve the recreational opportunities in Town and explore the potential for further development of existing recreational resources.	Explore the potential for walking and hiking trails on the Poplar Mountain Conservation Area and the need for associated signage, parking, and amenities.	Open Space Committee, Historical Commission, Conservation Commission, Board of Selectmen	2020	Town funds, Volunteer time
	Explore the need for improved parking and access to the Rose Ledges and Farley Ledges.	Open Space Committee, Conservation Commission, Board of Selectmen	2019	Town Funds, Volunteer time
Coordinate with regional and state land protection efforts, in and around Erving, to ensure the continued conservation of important natural, recreational and open space resources.	Maintain working relationships with regional entities as land protection opportunities arise.	Open Space Committee, Board of Selectmen, and Planning Board	Ongoing	Town staff
	Maintain working relationships with recreational-focused groups such as DCR, Appalachian Mountain Club, and the Western Massachusetts Climbing Club.	Open Space Committee, Board of Selectmen, Recreational Commission, and Planning Board	Ongoing	Town staff
Improve access to parks and open space for all residents by coordinating with all relevant Town boards and committees.	Prioritize projects that increase accessibility for those with disabilities and implement them.	Recreation Commission Board of Selectmen Open Space Committee	Ongoing	Volunteer time
	Establish parking information and signage for recreational facilities.	Open Space Committee Planning Board, Recreation Commission, Board of Selectmen	2019	Volunteer time, Town Funds
	Explore potential ways to ease access to Hermit's Cave. Discuss potential access easements with willing landowners.	Conservation Commission, Board of Selectmen, Open Space Committee	Ongoing	Volunteer time, Town funds
Support the Recreation Commission to be more effective in providing needed recreational facilities and programming for all of Erving's residents, especially teens, adults, and seniors.	Continue to ensure the Town's operating budget for the Recreation Commission supports the maintenance of the town's parks and playgrounds.	Recreation Commission, Board of Selectmen, Historical Commission, Open Space Committee	Ongoing	Town funds, Volunteer time
	Work with other groups to identify and develop additional community events in Erving.	Recreation Commission, Council on Aging	Ongoing	Volunteer time
Identify, promote and help protect historically significant areas and structures.	Identify and map all of Erving's significant historical areas and structures, particularly in the three villages (Farley, Erving'side, and Erving Center).	Open Space Committee, Cemetery Sexton, and Historical Commission	2019	Town funds; Volunteer time;

OBJECTIVE	ACTION	RESPONSIBLE BOARD/GROUP	START DATE	POTENTIAL FUNDING SOURCES¹
	Develop a plan for their protection taking advantage of preservation grants from the Massachusetts Historical Commission.	Open Space Committee, Cemetery Sexton, and Historical Commission	2020	Volunteer time; state or foundation grants
Take advantage of the Town's right-of-first refusal with Chapter 61 parcels or assign the right to a third party, such as Mount Grace Land Conservation Trust.	Maintain working relationship with land conservation organizations.	Open Space Committee, Town Staff	Ongoing	Town funds
Ensure that the OSRP continues to be up-to-date and reflects the current situation of the Town.	Perform biannual evaluations of this Action Plan.	Open Space Committee	Ongoing	Volunteer time, Town funds

SECTION 10

PUBLIC COMMENT

Public feedback, sought throughout the entire open space and recreation planning process, is difficult to document due to the fact that the draft plans constantly incorporated these changes and enhancements. A more direct request for feedback was presented in the public forum, which was held on May 21, 2018. Comments received during the public forum and the period prior to the forum have all been incorporated into the Plan.

Copies of the final version of the Erving Open Space and Recreation Plan were sent to the Massachusetts Division of Conservation Services (DCS), the Erving Select and Planning Boards and the Recreation and Conservation Commissions, and the Mount Grace Land Conservation Trust for comment. Their comment letters are inserted into the plan at the end of this section.

The following comments were recorded during the feedback session at the Erving Open Space and Recreation Plan Public Forum held on May 21, 2018, at the Town Hall at 6:30 p.m. This meeting was held concurrently with the Select Board meeting. Flyers advertising the meeting were distributed to all municipal buildings two weeks prior to the meeting. Notices about the meeting were also posted on the Town website and Facebook page. Eighteen residents attended the forum, including members of the Select Board, Planning Board, Open Space Committee, Recreation Commission, Library, Highway Department, Wastewater Treatment, and Council on Aging.

Several of the comments led to discussions that supported the goals and actions of the plan. Promoting recreational tourism was considered as a priority goal, as many people already visit Erving from all over each year for the large array of recreational resources in Town. In particular, there was a long discussion about the high numbers of rock climbers that visit the Farley and Rose Ledges. It was also acknowledged at the meeting that promotion of the recreational facilities needs to also be focused on current residents. There were several ways of marketing and promotion that were discussed at the meeting. These include through the Town website, Town newsletter, publication of maps, signage and kiosks, and the creation of a tourist brochure.



TOWN OF ERVING

BOARD OF SELECTMEN

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Scott Bastarache, Chair
William A. Bembury
Jacob A. Smith
Board of Selectmen

Bryan Smith
Administrative Coordinator

June 04, 2018

Melissa Cryan
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, 9th Floor
Boston, MA 02114

Dear Melissa Cryan,

The Erving Board of Selectmen are writing this letter of support for the revised Open Space and Recreation Plan prepared by the Open Space Committee with the administrative support of the Franklin Regional Council of Governments (FRCOG). The Open Space Committee was established as a recommendation of the previous plan and appointed by the Board of Selectmen. The Committee composition provides representation from the Board of Selectmen, Recreation Commission, Conservation Commission, Historical Commission, Planning Board, and Council on Aging. Each representative provides a unique perspective to help develop a comprehensive plan that will meet the recreational and open space needs, challenges, and opportunities of our community.

The Committee has thoughtfully conducted a community survey process and reflected on the feedback provided by the citizens of our community. With this information the Committee spent months reviewing each chapter of the plan, identifying priority action items and goals to achieve within the next seven (7) years. The Board of Selectmen have reviewed the revised Open Space and Recreation Plan that the Committee has prepared and supports its submission to your office for approval.

Respectfully,

Scott Bastarache, Chairman
Erving Board of Selectmen

Melissa Cryan
Executive Office of Energy and Environmental Affairs
100 Cambridge Street
9th Floor
Boston, MA 02114

June 7, 2018

Dear Ms. Cryan,

The Erving Planning Board is very pleased to submit this letter of support for the Town of Erving's 2018 Open Space and Recreational Plan.

The 2018 Open Space and Recreational Committee has been working diligently with the Franklin Regional Council of Governments to craft a plan that will help the Town of Erving with its Open Space and Recreational needs for the next seven years. This comprehensive plan includes action steps to help promote the many existing natural recreational opportunities that the Town of Erving has within its boundaries that when completed have the potential to spur on recreational development opportunities, therefore increasing the economic viability of the Town of Erving.

This plan also addresses the need for the Town of Erving to take inventory of its historical buildings and landscape and to document those items for future grant opportunities.

This plan also acknowledges that we need to continue to ensure that there is continued conservation of important, natural, recreational and open space resources and to promote those existing resources. Additionally, we need to improve access and signage to our parks and open space to all of Erving residents, especially those who are physically disabled or elderly so all of us can see the beauty in Erving.

Finally, this plan acknowledges that we have work to do when it comes to finding a way to connect all the unofficial villages of the Town of Erving either through a multi-user trail system including using the Millers Rivers Blue Trail, creating bike paths or walking trails so that one day it will be possible to visit the natural splendor of Erving from end to end.

Sincerely,



Jacquelyn Boyden, Chairman
Erving Planning Board
12 East Main Street
Erving MA 01344

Cc: Open Space Committee
Erving Board of Selectmen



Franklin Regional Council of Governments

July 6, 2018

Ms. Melissa Cryan
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, 9th Floor
Boston, MA 02114

Dear Ms. Cryan,

The Franklin Regional Council of Governments (FRCOG) is pleased to endorse the work of the Erving Open Space Committee in their update of the Erving Open Space and Recreation Plan (OSRP). We support their submission of the 2018 Erving OSRP to the Massachusetts Division of Conservation Services for final review and approval.

The Plan was developed by the Erving Open Space Committee, which included representation from the Town's Select Board, Planning Board, Recreation Commission, Historic Commission, Conservation Commission, and Council on Aging. The FRCOG provided technical assistance to complete the update. The Plan represents a year of work to gather public input, build consensus, and prioritize natural, recreation, and open space needs in Town. The goals and objectives in the Open Space and Recreation Plan reflect the vision and values of Erving residents gathered during the public input process.

The 2018 OSRP will provide Town officials and volunteers with resources to help inform decisions regarding land use, recreation, cultural, and open space issues. The Plan update, once approved by the State, will make Erving eligible for funding to implement open space and recreation projects. In addition, the Town will be better able to collaborate with neighboring towns, local land trusts, the FRCOG, and others to work towards the OSRP goals and objectives of protecting and enhancing Erving's significant natural, cultural, and recreational resources. We congratulate the Town of Erving on completing this project!

Sincerely,

A handwritten signature in blue ink that reads "Kimberly N. MacPhee".

Kimberly Noake MacPhee, P.G., CFM
Land Use and Natural Resources Program Manager



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

Matthew A. Beaton
SECRETARY

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

September 21, 2018

Megan Rhodes
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301-3351

Re: Open Space and Recreation Plan

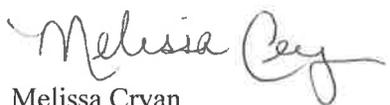
Dear Ms. Rhodes:

Thank you for submitting the draft Open Space and Recreation Plan for Erving 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 September 2025. Conditional approval will allow the town to participate in DCS grant rounds through September 2025, and a grant award may be offered to the town. However, no final grant payments will be made until the plan is completed.

1. Fisheries and Wildlife – a general inventory of fish and wildlife species is needed.
2. Section 5 – please note that any town-owned land with park and recreation purposes stated in its deed is protected under Article 97. The table that lists town-owned conservation and recreation properties must be expanded to include columns on recreation potential (list specifics), type of grant (if any) used to purchase and/or renovate the property, and degree of protection. Any Conservation Restrictions in town must be listed.
3. Analysis of Needs – the Community's Needs section should include a discussion of the 2017 SCORP and how its findings relate to Erving. It can be found online at <https://www.mass.gov/files/massachusetts-scorp-2017-for-submission.pdf>. The needs of special groups, such as teens and the elderly, must be added.
4. Goals and Objectives – please list one goal with objectives underneath it, then the next goal with its objectives, not just a list of goals, then a list of objectives.
5. ADA – were the facility inventory forms from the Open Space and Recreation Planners' Workbook used as a basis for the information included?
6. Maps – the Unique Features map must include information on historic resources in town.

Congratulations on working on such an important task for your community! Please contact me at (617) 626-1171 or melissa.cryan@state.ma.us if you have any questions or concerns, and I look forward to reviewing your final plan.

Sincerely,

A handwritten signature in cursive script that reads "Melissa Cryan". The signature is written in dark ink and is positioned above the printed name.

Melissa Cryan
Grant Programs Supervisor

SECTION 11

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