



# **Groton's Trails Vision, 2014-2019**

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## Executive Summary

This report describes how Groton can use and enhance its infrastructure of non-motorized trails<sup>1</sup> to significantly increase the quality of life for its citizens and visitors. It describes how the exceptional infrastructure we have today came to be and also highlights the limitations of the current infrastructure that prevent us from using it for much greater recreational, business-related, and social benefit.

Section VII of this Trails Vision provides summaries of 23 potential projects that would notably add to the use of, and people's enjoyment of, the many kinds of trails that Groton has. Each project location is shown with a map or other relevant pictures, the basic design features of the project are outlined, and a list of challenges are included that will need to be addressed before the project can be implemented. The 23 projects are organized into three categories. The first category comprises projects that involve connecting existing pathways with places where people want to go. By simply extending a path a short distance, or making a short connection between two paths, more people could get to more places of interest without the need for a motorized vehicle. The projects in the second category either enhance access over existing pathways so that people with young children in strollers, senior citizens, or people with mobility impairments can get to points of interest; create new recreational opportunities (e.g., fitness trails, blue trails); or increase educational opportunities along the pathways. The third category comprises projects that involve developing new long pathways that would increase the number of major non-motorized "arteries" both within Groton as well as between Groton and its neighboring towns.

In Section VIII, the 23 projects are prioritized within each of the three categories, based on the Trails Vision Committee's estimate of how long it might take for each project to be implemented, how many people would benefit from each project, and the cost of each project. This prioritization scheme is a very simple one and does not consider aspects of each project that might make it very important to the community; nevertheless, the Trails Vision Committee feels it is a useful initial way to "rack and stack" the projects. In fact, the factors most critical to the successful implementation of any project will end up being: a) whether or not the project is feasible due to legal and environmental issues, b) whether the project has a strong advocate that will pursue obtaining the necessary approvals and funding, and c) whether the project is supported financially by the Town of Groton and external grants that may be available.

Finally, this report provides plans for the first five years after it is completed and approved by the Selectmen of the Town of Groton. Some projects can be implemented within just one or two years, and these should be pursued to demonstrate quickly the kind of improvements that can be made to Groton's trail infrastructure. Additionally, groundwork must begin in Year 1, and

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<sup>1</sup> Throughout this report, we will use the terms "trail," "path," "pathway," "sidewalk," "dirt road," "rail trail," and even river trail somewhat interchangeably. They are all considered part of the non-motorized pathway infrastructure that this Trails Vision for Groton seeks to expand and enhance to improve the quality of life for all of Groton's citizens and visitors.

continue every year, for the longer-term projects. Legal issues, land surveys, support from abutters of the projects, permits from various commissions and agencies, cost estimates, grant writing, preliminary and detailed design work, and other planning activities need to be investigated and resolved positively, and this kind of groundwork is very time consuming. By Year 3, as the successes and lessons learned of the previous two years are compiled, and as the groundwork now pays off on the mid-term projects, additional projects can be implemented. It may be found that some of the projects planned for that time period in this report are infeasible for one reason or another, or new projects (ones not described in this report) might even come to light. Because of these potential changes, the mid-term planning will need to adapt, as will the long-term planning. By Year 5, we anticipate that the initial plan provided in this report will need to be updated in a new Groton Trails Vision report for the subsequent five years, 2020-2024.

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## **I. Introduction**

Throughout this report, we will use the terms “trail,” “path,” “pathway,” “sidewalk,” “dirt road,” “rail trail,” and even river trail somewhat interchangeably. They are all considered part of the non-motorized pathway infrastructure that this Trails Vision for Groton seeks to expand and enhance to improve the quality of life for all of Groton’s citizens and visitors.

The core of this report is Section VII, which describes 23 projects that could significantly enhance Groton’s trail infrastructure. In Section VIII, the projects are prioritized by the Trails Vision Committee based on their relative benefit, the length of time required for each project, and their relative costs. To lay the foundation for these projects, this report begins by describing the following:

- a) How the Trails Vision Committee believes this report can be used by the state, the region, and the Town of Groton;
- b) Who uses the trails in Groton;
- c) What the benefits are to the Town of Groton and the region by enhancing our trails infrastructure;
- d) Who is on the Trails Vision Committee and what the current committee’s purpose, vision, and values are;
- e) The history of the current trails infrastructure, and
- f) The limitations in the current trails infrastructure

It is the Trails Vision Committee’s hope that this initial Trails Vision report will serve to stimulate discussion and actions that will lead to the implementation of many of the projects described herein. Our Groton Trails Vision is a long-range view of what is possible and the benefits that could be achieved, but it will need to be updated every five years or so to incorporate lessons learned along the way and to reassess priorities. As we move forward, membership on the Trails Vision Committee is expected to be dynamic as advocates for the different projects come forward to take them from concept to completed infrastructural enhancement. The Trails Vision Committee believes this could be a sustainable approach to enhancing the trails infrastructure for the benefit of all the citizens of, and visitors to, the Town of Groton.

## **II. How This Trails Vision Will Be Used**

### **A. By the Commonwealth of Massachusetts**

The impetus for developing a Trails Vision for Groton was a request from the Montachusett Regional Trails Coalition<sup>2</sup> (MRTC) to each of its participating towns<sup>3</sup> to develop their Trails Visions. The MRTC will integrate the Trails Visions from its participating towns into a regional vision and implementation plan. The Trails Visions of all the active regional trail coalitions will be integrated to provide an update to the current state-wide recreational trails vision, “Commonwealth Connections”<sup>4</sup>. The goals of “Commonwealth Connections” have been used to prioritize Recreational Trail Program grants that are administered by the Department of Conservation and Recreation (DCR) and funded from the state’s alternative transportation funds. The updated Commonwealth trails vision will seek increased state funding for trail projects at all levels to help achieve the vision.

### **B. By Other Nearby Towns**

Groton’s Trails Vision may help other nearby communities in developing their own Trails Vision. Our Trails Vision may also stimulate greater interest in developing long-distance town-to-town pathways with our neighboring towns. To the extent that parts of our Trails Vision are in common with those of nearby communities, they are more likely to become part of the future state-wide Trails Vision and thus give the projects a higher probability of being at least partially funded with state resources.

### **C. By the Town of Groton**

The development of this Groton Trails Vision uses ideas put forth for trails improvements in the Groton Master Plan<sup>5</sup> and Groton’s Open Space and Recreation Plan<sup>6</sup> as its baseline. Committee members added many other ideas for projects that serve parts of the town and/or groups of users that have not been

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<sup>2</sup> The Montachusett Regional Trails Coalition (MRTC) began meeting in March 2012 through the cooperative efforts of the Nashua River Watershed Association, the Montachusett Regional Planning Commission, and the Leominster Trail Stewards. Mr. Dick O’Brien is the current Chairman of the MRTC. Al Futterman of the Nashua River Watershed Association is the Co-Chairman. It is the first regional trail coalition to form in the Commonwealth of Massachusetts but two others have very recently been formed (viz., North Quabbin and Pioneer Valley) and another is in the formative stage (Westborough-Southborough-Northborough area). The MRTC’s Mission is to “...enrich the lives and communities within its boundaries by advancing the development of diverse, high quality trails and greenways.” The MRTC’s Core Values are to provide “...trails and greenways that promote accessibility, healthy lifestyles, economic vitality, sustainable development, best practices, experiences in the outdoors, appreciation for the outdoors, learning in the outdoors, and connectivity.”

<sup>3</sup> The towns encompassed by the MRTC are Ashburnham, Ashby, Athol, Devens, Fitchburg, Gardner, Groton, Harvard, Hubbardston, Lancaster, Leominster, Lunenburg, Petersham, Phillipston, Princeton, Royalston, Shirley, Sterling, Templeton, Townsend, Westminster and Winchendon. Not all of these towns currently have representation on the MRTC.

<sup>4</sup> Department of Environmental Management, “Commonwealth Connections – A greenway vision for Massachusetts,” 2001.

<sup>5</sup> The Master Plan is prepared by the Planning Board.

<http://www.townofgroton.org/Town/TownDepartments/LandUseDepartment/MasterPlan.aspx>

<sup>6</sup> The Open Space and Recreation Plan is spearheaded by the Conservation Commission with assistance from the the Parks Commission.

<http://www.townofgroton.org/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&EntryId=13519>

specifically addressed before. Unlike either Plan, this Trails Vision also provides an initial design and implementation plan for each project and provides an initial attempt at prioritizing the projects. Several of these projects have been dreamed about for many years but they have not been previously assembled in one place and prioritized. By bringing all the ideas together in one document, we believe it will be easier to take a comprehensive and balanced approach toward growing and enhancing our trail network.

This Trails Vision describes a variety of projects that use and enhance Groton's trails network to improve the quality of life for all Groton residents. To this end, this Trails Vision provides examples of short-term, mid-term, and long-term projects that serve the following needs:

- Outdoor recreational opportunities of all types for all ages
- Healthy and safe activities for residents of all levels of ability
- Business growth via easier access and increased tourism, and
- Increase in connectedness between neighborhoods and points of interest (library, religious facilities, cultural/historic sites, schools, post office, ball fields, parks, offices, restaurants, town facilities, mass transportation nodes, etc.) via woods trails, field trails, roadside paths, abandoned roads and rail lines, and sidewalks.

The projects in this Trails Vision have very different levels of feasibility. None of them have been approved. Some could be relatively easy to do and some could be very difficult. A few might better be considered conceptual since they are not specific as to what should be done but rather they illustrate an idea with the aim of encouraging public discussion of exactly what could be implemented. The projects in this report are intended to stimulate excitement about what the future of non-motorized transportation could look like in Groton and to provide an initial set of priorities for the detailed studies and discussions that they will require to become more than just ideas.

By developing Groton's Trails Vision, we have begun to lay out some directions our town can take to enhance the great potential of our network of trails, waterways, pathways, and sidewalks. As each project described in this Trails Vision is implemented, we believe the quality of life will be significantly improved for a large number of Groton's citizens. Some projects focus on particular types of trail users and some projects support multiple trail users. We believe that as each project is completed, we will all be very pleased with the new opportunities that will be provided.

Some of the projects to enhance the trails network may require considerable resources and so will involve hard decisions. Other significant projects can be accomplished with minimal cost if accompanied by a spirit of cooperation and a collective "will" to do them. The Trails Vision identifies numerous projects having varying degrees of difficulty and benefits so that we can begin a more systematic approach to tapping into the potential our exceptional trails infrastructure holds. We will know that our Trails Vision is successful if we enjoy the benefits of each successful project enough so that we want to continue to work on the next and plan additional ones.



### **III. Trail Users Considered in this Report**

The non-motorized trails in Groton have many uses and people with many different interests use them. The following list of potential users is certainly not complete, but it gives an idea of the many uses that our trails have.

- Bicyclists
- Boaters (e.g., canoers, kayakers)
- Commuters
- Cross-country skiers
- Equestrians
- Exercisers (e.g., laps around tracks, calisthenics; physical fitness)
- Fishermen
- Hikers
- Hunters
- Mobility-impaired individuals (e.g., wheelchairs, walkers, canes, crutches)
- Motorized wheelchair users
- Mountain bikers
- Nature observers (e.g., birdwatchers, educational groups; scenic views; geologic features)
- People going to and from churches
- People going to and from historical sites
- People going to and from recreational facilities
- People going to and from retail stores
- People going to and from schools
- People going to and from town and private offices
- People walking their pets
- People with children in strollers
- Rock climbers
- Runners
- Senior citizens
- Skaters (e.g., roller skates, in-line skates, ice skates)
- Students going to and from their schools
- Snowshoers
- Swimmers (e.g., in pools, ponds, lakes, and rivers)
- Trailrunners
- Walkers

## IV. Benefits of Non-Motorized Pathways

The benefits of non-motorized pathways are as varied as the interests of the people that use them. In addition to the specific personal benefits that each user wishes to derive from the pathways, there are community-wide benefits as well that include the following:

**Health** – The more that people can safely use non-motorized pathways, the more they will benefit from increased exercise they will get and the reduced stress they will enjoy due to driving less on our town’s busy and narrow roadways.

**Cleaner air** – The less that people use motorized vehicles, the cleaner the air will be for all.

**Community connections** – The more that people go from place to place using the non-motorized pathways the more likely they are to meet people they know and to make new acquaintances. Over time, this can provide an increased sense of community, and with it a sense of safety, support, and pride.

**Educational opportunities** – The Town of Groton is rich in history and natural diversity. Improved signage or other means (e.g., pamphlets) to identify places of archaeologic and historic interest, flora, fauna, geologic points of interest (e.g., drumlins, eskers, kettle holes), and agricultural areas and activities can educate citizens and visitors alike about the things that make Groton unique and thus worth living in or visiting.

**Business opportunities** – An improved non-motorized infrastructure will attract people to live in Groton and to come to Groton for leisure activities. There will be opportunities for increased business in general due to more “eco-tourism” as well as for new businesses that support the recreational interests of the trail users (e.g., hiking, biking, cross-country skiing, snowshoeing, runners, boaters).

These benefits and more are discussed in the following initiatives that have emerged in the past decade:

- The Massachusetts “Safe Routes to Schools” (SRTS) program<sup>7</sup>. “In 1969, roughly 48% of students bicycled or walked to school. Today only 13% of children do so. And, travel to school can account for up to 25% of all morning traffic. That’s why we work...to teach and inspire children to start walking and bicycling more often to and from school, improving their physical health, safety, and community. The Massachusetts SRTS program promotes healthy alternatives for children and parents in their travel to and from school. It educates students, parents and community members on the value of walking and bicycling for travel to and from school.”
- “Walkable communities”<sup>8</sup> – These are described as “...thriving, livable, sustainable places that give their residents safe transportation choices and improved quality of life. They are the oldest, and until quite recently, the only towns or cities in the world...” They are “...designed around the human foot, truly the only template that can lead to sustainability and future community prosperity. Increased walkability also helps improve resource responsibility, safety, physical fitness and social interaction.”
- The Massachusetts Department of Transportation’s (MassDOT’s) GreenDOT<sup>9</sup> Policy - One of the three primary objectives of the “GreenDOT Implementation Plan”<sup>10</sup> is to “Promote healthy transportation options of walking, bicycling, and public transit.” An important aspect of the Policy,

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<sup>7</sup> <http://www.commute.com/schools>

<sup>8</sup> <http://www.walkable.org>

<sup>9</sup> <http://www.massdot.state.ma.us/GreenDOT.aspx>

<sup>10</sup> <http://www.massdot.state.ma.us/Portals/0/docs/GreenDOT/finalImplementation/FinalGreenDOTImplementationPlan12.12.12.pdf>

Planning, and Design component of The Plan are the guidelines offered by the “Complete Streets”<sup>11</sup> concept. “In 2009, MassDOT became the second New England state to adopt a Complete Streets design policy. Complete Streets “...are designed and operated to enable safe access for all users. People of all ages and abilities are able to safely move along and across streets in a community, regardless of how they are traveling. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work.”

None of these initiatives can prescribe what Groton needs to improve its non-motorized infrastructure for the benefit of the quality of life for its citizens and visitors, and none of them tries to do so. They simply offer a variety of approaches and guidelines that can be adopted by Groton as appropriate. The broad acceptance of these initiatives throughout the country speaks to the need and desire of communities to purposely build and sustain a greater number of healthy, safe, and convenient non-motorized transportation pathways to counter the emphasis we have all put on motor vehicles to get us where we want to go. Groton will make its own decisions about how it views the benefits of improved public pathways relative to their costs and to other important quality of life issues. The Trails Vision Committee hopes that this report will help the citizens of Groton make those decisions with a better vision of what is possible.

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<sup>11</sup> <http://www.smartgrowthamerica.org/complete-streets>

## **V. The Trails Vision Committee**

### **A. Organizations Represented on the Committee**

The Trails Vision Committee was chartered by the Selectmen in September 2013. Volunteers to serve on the committee were solicited from seven town committees that have traditionally been strong proponents of planning for, implementing, and sustaining non-motorized pathways. Each committee member thus represented an important constituency as the Trails Vision Committee members proposed, discussed, and evaluated the many potential projects that could be undertaken. The town committees represented on the Trails Vision Committee are the following:

#### **Trails Committee**

The Trails Committee was chartered by the Selectmen in March 1998. Groton remains as one of a very few towns in the region that has a town-appointed Trails Committee. However, its focus on the goal of building and maintaining a unified network of trails has taken it beyond just working on town-owned land. It maintains over 110 miles of trails that include those on private land trust properties (those of the Groton Conservation Trust (GCT) and New England Forestry Foundation (NEFF)) and state forest lands and wildlife management areas managed by the Division of Conservation and Recreation (DCR) and the Division of Fisheries and Wildlife (DFW), respectively. Good communications and cooperation with all landowners has always been a priority of the Trails Committee. The Trails Committee has also focused on educational outreach in the following ways:

- 1) Asking community members to volunteer with the trail development and maintenance activities
- 2) Providing monthly guided hikes on the many trails around town
- 3) Building a website and a Facebook page that provides interactive trail maps and other educational material such as hunting season information and trail use guidelines.

#### **Planning Board**

The Planning Board has protected existing trails threatened by new subdivisions through flexible development, has set aside corridors for new trails in subdivision plans for neighborhood recreational use and/or to connect with the larger Groton trails network, and has consistently advocated for greater trail connectedness in their Master Plans. The Planning Board has also ensured that each new subdivision includes sidewalks along the subdivision's roadways. Such work by the Planning Board over several decades has been instrumental in providing for the rich pathway infrastructure that Groton now enjoys. In fact, many of the projects described in this Trails Vision have been listed in the Master Plans that the Planning Board has produced.

#### **Conservation Commission**

The Commissioners have been diligent and also fiscally responsible in purchasing key parcels and conservation restrictions that have provided innumerable important trails and trail connections. The Conservation Commission owns and manages the largest amount of open space of any organization in Groton and their parcels contain the second highest number of miles of trails. The Commission has regularly updated the Open Space and Recreation Plan in which they have highlighted a number of the projects described in this Trails Vision document.

## **Council on Aging**

The Groton Council on Aging seeks to enrich the lives of Senior Citizens by, among other things, providing opportunities for health and fitness. Senior citizens have a wide variety of health and fitness needs, as some are quite active and independent while others are mentally and/or mobility-impaired. For many senior citizens, the existing woods trails are difficult for them to walk on due to rough surfaces, steep inclines, and the lack of any seating along the way to allow them to take a rest. For these citizens, the sidewalks are the only safe places where they can walk. While Groton has a rich trail system, it does not have a single traditional “town park” that is bigger than a postage stamp and that has trees, a peaceful setting away from the noise of traffic, smooth pathways, benches, tables, and toilets. Furthermore, Groton’s sidewalk system is disconnected and does not get people where they want to go. For example, there is no safe way for senior citizens to get to the Senior Center other than by a motorized vehicle. West Groton has a large number of senior citizens, including residents of the Hale Village retirement condominiums and RiverCourt (which has combined independent, assisted living, and memory care residential apartments). There is a wide and inviting sidewalk that goes along W. Main St. from Rivercourt to Hale Village (at 0.2 miles) but it ends (at 0.3 miles) half way to the Senior Center (at 0.6 miles) further down the same street. For these and other reasons, the Council on Aging was very interested in participating on the Trails Vision Committee to advocate for senior citizens who have very few recreational opportunities, and for whom those opportunities typically have the additional barrier of requiring motorized transportation for their access.

## **Commission on Accessibility**

Groton’s Commission on Accessibility has been an effective advocate for removing many barriers to public access in Groton for handicapped individuals. They represent many of the same individuals that the Council on Aging does, but handicaps are not restricted to the elderly. As already noted, the only accessible paths in Groton are paved sidewalks and they do not connect to important places that people want to go. Groton has no paths in the woods or along a body of water that are suitable for handicapped individuals. Even the Nashua River Rail Trail, which itself is paved and suitable for handicapped individuals, does not have a single place in Groton that is appropriate for handicapped parking and access. For these reasons, the Commission on Accessibility was eager to participate on the Trails Vision Committee.

## **Parks Commission**

As noted above, Groton has a number of small commons, but does not have any traditional town parks, except for a very small one with some benches in the heart of West Groton. The Parks Commission manages several Town Commons, a few small parks and several recreation areas including a couple of playgrounds, a basic outdoor ice rink, and a few tennis courts, and several large sports fields. However, they also manage a large parcel of land that was used historically as the Groton Fairgrounds but now is known as Hazel Grove. Its large “track” is currently used exclusively for equestrian sports and Hazel Grove also acts as an entry point to Groton’s trail system. Part of Hazel Grove is wooded and could potentially be used for new recreational activities. The Parks Commission would like to see greater access to the parcels that it manages by non-motorized traffic, it strives to increase recreational opportunities for residents of Groton, and it joined the Trails Vision Committee to advance its goals.

## **Sustainability Commission**

Groton's Sustainability Commission supports initiatives that put our community's activities on a more sustainable trajectory for maintaining a high quality of life. Therefore, the Sustainability Commission supports activities that are

- healthier (e.g., provide exercise, are safe, provide relaxation, promote good social interactions, are fun for all ages)
- less consumptive of energy (e.g., more places where people work, play, go to school, go for goods and services, etc., can be reached without using motorized vehicles)
- more self-educational (e.g., self-guided paths, directional signage, historical and natural points of interest identified and explained), and
- easier and less costly to maintain (e.g., trails vs. tracks, sidewalks vs. roads, roadside paths vs. sidewalks, community volunteers vs. Department of Public Works).

In addition to the above seven organizations, the members of the Trails Vision Committee also are current or former members of the following committees and commissions and thus brought the following perspectives to the Trails Vision Committee as well:

## **Economic Development Committee**

The manner and extent to which Groton develops and manages its infrastructure of pathways can have very significant impacts on its business development potential. A well-developed trail system will draw visitors to the town for the recreational, exercise, and travel opportunities they provide. Businesses can advertise their proximity to parts of the trail system to encourage visitors to their products and services. Eco-tourism businesses can be enticed to Groton as the natural and historical resources become more accessible (e.g., easier to find and to reach) and educational (e.g., informational signs posted along the pathways, guidebooks, brochures, and pamphlets made available at Town Hall and businesses).

## **Historical Commission**

Trails often have historical connections that can be used to bring history to life for both the citizens of Groton and for visitors. Connections between towns, such as via old railroad rights of way, rivers, or abandoned roads, may have great historical significance. Historic points of interest such as old factory sites, quarries, homesites, school sites, railroad stations, farm buildings, and so on, can bring a clearer understanding of how our town has been used and changed over many centuries.

## **Community Preservation Committee**

Groton's Community Preservation Committee (CPC), per MGL Chapter 44B, is responsible for making "...recommendations to the Town Meeting for the acquisition, creation and preservation of open space; for the acquisition, preservation, rehabilitation and restoration of historic resources; for the acquisition, creation and preservation of land for recreational use; for the creation, preservation and support of community housing; and for the rehabilitation or restoration of such open space, land for recreational use and community housing that is acquired or created as provided in this section." The funds managed by the CPC are sustained through surcharges on the town's property tax bills and the state supplements those tax funds with matching funds of its own. Many of the projects identified in this Trails Vision report are clearly eligible for funding through the CPC process and would provide significant improvements to the quality of life in Groton at relatively small cost.

## **B. Purpose, Vision, and Values**

At its first meetings, the Trails Vision Committee discussed its purpose, vision, and values. The Committee developed the following consensus statements:

### **Purposes**

- a) Help the Town of Groton – preserve and improve our quality of life by identifying what we want and need for getting around town without motorized vehicles
- b) Support the regional trail plan – take advantage of Commonwealth funds, to the extent available, by contributing to the region’s input to the state’s Trails Vision
- c) Create an initial implementation plan for our Trails Vision – identify basic resource needs, set priorities (short, medium and long term), and suggest a timeline for possible implementation

### **Vision**

Our vision for Groton’s trails is a safe and easy-to-use network of ways that will connect people to each other, to places they want to go in town and in surrounding towns, and to the unique natural, geological, and historical points of interest throughout our town

### **Values**

- a) We believe that sustainable community support for improving the quality of paths in Groton will develop through more complete understanding by the community of its unique and substantial natural, historical, and geological features
- b) We believe increased and improved connectedness of our network of paths will provide significantly improved health, recreational, business, and educational opportunities for people of all ages and abilities
- c) We believe that Groton’s paths should promote accessibility, healthy lifestyles, economic vitality, appreciation of our diverse biohabitat and history, education, and connectivity with each other and the places we want to go

## **VI. Existing Conditions: Groton's Trails Network Yesterday and Today –**

### **A. The Groton Trail System: An Unparalleled Treasure for Groton and Beyond - A True Community Effort**

Groton has done an exceptionally good job in building a “best in region” trails network infrastructure, consisting of well over 110 miles of trails, which is more than all of its paved roads. This accomplishment is the result of decades of cooperation between the following town groups:

#### **Users of the Trails**

The most significant user group over the past century has been the strong equestrian community that has maintained and advocated for many trails through land purchases or easements throughout the town. While now not permitted in most all open spaces in Groton due to increased population density and changes in recreational preferences, personal motorized vehicles (motorcycles, all-terrain vehicles, snowmobiles) also played a strong role in keeping many trails open. In the past decade, the mountain bike riders have become very active in maintaining and developing our trails network. In addition, there has been greater use of our trails, in general, by many different types of users (hikers, runners, cross country skiers, snowshoers, dog walkers, geo-cachers, letter boxers, nature lovers, et al.), and many of these people have also been dedicated stewards of the trails.

#### **Planning Board**

The Planners have protected existing trails threatened by new subdivisions through flexible development, they have set aside corridors for new trails in subdivision plans that have been used for neighborhood recreational use and/or to connect with the larger Groton trails network, and they have consistently advocated for greater trail connectedness in their Master Plans. They have also ensured that new subdivisions include sidewalks along the subdivisions roadways.

#### **Highway Department**

The Highway Department has been gradually expanding Groton's sidewalk system as best it has been able given the money and manpower resources it has. The recent extension of the sidewalk down Long Hill Rd. to Riverbend Dr. now provides a safe and convenient path between the Partridgeberry Woods subdivision, Groton School, and Groton Center.

In January 2000, the Selectmen chartered a **Sidewalk Advisory Committee**. It gave this committee a six-month charter to work with the Highway Department Director to perform an inventory of existing sidewalks and make recommendations for repair and expansion of Groton's sidewalk system. At the time, most of the sidewalks were in fair to poor condition. A great deal of repair and replacement work was done over the past 14 years and most of the sidewalks in Groton are currently in very good condition. However, of the eight recommended expansions, only the sidewalk down Long Hill Rd. has been completed in the past 14 years. As noted in the June 30, 2000 Summary Report to the Selectmen, the Highway Department's budget had only about \$20,000 per year allocated for sidewalks and would require double that amount to complete the repairs and expansions over a period of six years. That doubling never occurred, and so maintenance work alone has consumed the budget ever since. Four of the



sidewalk expansion projects recommended in 2000 are included in this report because of their continued high importance to the citizens of the Town of Groton.

### **Conservation Commission**

The Commissioners have been diligent in purchasing key parcels and conservation restrictions that have provided innumerable important trails and trail connections. The Conservation Commission owns and manages the largest amount of open space of any organization in Groton and that open space contains the second highest number of miles of trails. The Commission has regularly updated Groton's Open Space and Recreation Plan, which has identified goals, objectives, and specific actions that could provide new recreational and educational opportunities.

### **Trails Committee**

The Trails Committee owes its existence to a far-sighted group of Selectmen who, in March 1998, chartered the Committee. The chartering of a separate committee to focus solely on the goal of building and maintaining a network of trails made Groton unique among the regional towns. But the work required to meet that goal far exceeds what even a dedicated committee of volunteers can do. The progress in building up the trails infrastructure since 1998 is really a result of the hundreds of additional town citizens that have volunteered thousands of hours on trails projects organized by the Trails Committee.

### **Greenway Committee**

The Greenway Committee (in cooperation with the Conservation Commission and the Planning Board) has done for Groton's waterways what the Trails Committee has done for its land-based trails. Groton's Trails Vision includes developing its "blue trails" on the many rivers and lakes within Groton as well as those that connect with neighboring towns. The successful culmination of a decade of effort by the Greenway Committee that resulted in replacing Fitch's Bridge in June 2013 is the single most important improvement in Groton's land trail network in 50 years. Fitch's Bridge now provides a safe recreational pathway from one side of town to the other across the Nashua River, thereby connecting the large networks of trails on both sides of the river.

### **Private Organizations**

Many private organizations have received gifts of and purchased open space in Groton and have enthusiastically supported the development of trails on their lands. These include the **Groton Conservation Trust** (the organization that owns and manages the second largest total acreage of open space in Groton and whose lands contain the highest number of miles of trails), the **New England Forestry Foundation**, and the **Massachusetts Audubon Society** (whose 422-acre Rocky Hills Wildlife Sanctuary, with over 3 miles of trails, is now a destination for the many members of Mass Audubon and the general public). In addition, organizations such as **The Groton School** have spent much time, effort, and money to develop trails across their property that connect the Surrenden Farm/General Field area with the Sabine Woods/Groton Place parcels along the Nashua River.

## **Department of Conservation and Recreation (DCR) and Division of Fisheries and Wildlife (DFW)**

The Commonwealth's DCR and DFW own and manage large parcels of land containing many miles of trails and providing water access throughout Groton. These include the J. Harry Rich Tree Farm State Forest, the Nashua River Rail Trail, Surrenden Farms West Wildlife Conservation Easement, Squannacook River Wildlife Management Area, and the Petapawag, Baddacook Pond, and Knopps Pond Boat Launches.

### **B. History of the Groton Trails Network**

Until as recently as thirty-five years ago, when Groton had half the population it does now, the town was criss-crossed by trails that were used by equestrians, motorbikes, and snowmobilers. Why, there were even car/truck "races" on the "roads" in the Town Forest! There were certainly also a few hikers and runners, but not many, and virtually no other forms of non-motorized recreation were observed in Groton "back then." The equestrians, motorcyclists, and snowmobilers could go from one side of the town to the other over fields, through the woods, and over the many dirt roads that existed. Few property owners had any concerns about their friends and neighbors using the trails over their private property. The trails offered social and recreational opportunities for all those involved, and no doubt were an important factor in the perceived quality of life for all in Groton. Today, there are very few "public trails" remaining on lands owned by individuals; nevertheless, if you ask people in town, most will say we have a very good trail network. The history of this transformation is informative.

Groton has long held a strong vision for sustaining its natural resources, as evidenced by creating the Groton Town Forest by a vote of the Town Meeting in 1922, which made it the second town forest in the Commonwealth. The original 180 acres has been expanded to its current 513 acres by purchases and donations of abutting properties. William P. Wharton, who was instrumental in the effort to establish the Town Forest, also donated the Fairgrounds (now Hazel Grove) in the 1940s to serve the equestrians of the town. However, through the mid-20<sup>th</sup> century, the need to protect public land in Groton, for conservation or recreation, except for a few small parks and fields, was minimal. Equestrian travel was very popular and there were few restrictions on where people could travel by horse.

It was not until the 1960s and 1970s that Groton began to preserve some of the parcels that provide the beautiful landscape we enjoy today. These included the Bertozzi Conservation Area (CA) on the Squannacook River (1963), the Petapawag Canoe Launch (1966), and the Farmers and Mechanics CA (1967). In addition, the Commonwealth's DFW purchased the Squannacook River Wildlife Management Area (WMA) next to Bertozzi over the period 1965-1977 (partially through the efforts of the Middlesex County League of Sportsmen's Clubs). A new private organization also came to Groton in 1968 called the New England Forestry Foundation (NEFF)<sup>12</sup>. William P. Wharton was one of the incorporators of NEFF and he was a NEFF Director for many years. NEFF was gifted the 704-acre Wharton Plantation (1968), the 140-acre Sabine Woods (1972), and the 47-acre Groton Place (1975).

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<sup>12</sup> While NEFF lands can be sold without restriction, part of NEFF's mission is "...permanently protecting forests through gifts and acquisitions of land for the benefit of future generations." While Groton enjoys the recreational opportunities afforded by over 1000 acres of NEFF-owned open space parcels, the possibility that their land could be developed in the future is a continuing risk.

Despite those early efforts at protecting Groton's open spaces for public use, a large proportion of Groton's current open spaces remained privately owned and not open to the general public into the early 1980s. Up until 1980, only about 2,000 acres (27%) of a current total of about 7,350 acres of land was available for use by the general public. Then, in the late 1980s and 1990s, conservation land purchases rapidly escalated. It was during this 20-year period that Groton doubled in population, subdivisions were developed, and many house lots were sold off from larger parcels to capitalize on the rising demand for homes in town. Many of the trails that had been used for decades, and in some cases centuries beforehand, were interrupted by these newly introduced boundaries. Fortunately, this trend was recognized and even anticipated by a) Groton's Planning Board, established in 1946 when Town Meeting adopted the Subdivision Control Law, b) the Conservation Commission, chartered in 1963, and c) the conservation-minded people who created the Groton Conservation Trust in 1964 to protect key open space parcels in Groton in perpetuity for their ecological and aesthetic values. Through the collective efforts of the GCT, NEFF, Town of Groton, Conservation Commission, DCR, and DFW over this 20-year period, a total of nearly 3,276 acres, including over 47 miles of trails, were made available for public use. This represents 44% of the current land that can be accessed by the public in Groton. Many of the best-known parcels in town were acquired (purchased or received as a gift) during this 20-year period, including Skitapet, Skinner Forest, Shepley Hill, Hayes Woods, Duck Pond, Fitch-Woods, The Throne, Kemp Woods, Phebe R. Keyes Woods, the Groton Country Club, Longley II CA, McLains Woods CA, Groton Woods CA, Flavell Crossing CA, Williams Barn/Sorhaug CA, the J. Harry Rich State Forest, and the Nashua River Rail Trail.

Since 2000, conservation land purchases have slowed a bit and have become more strategic as land prices continued to rise. Many of the parcels were received from developers in exchange for them being able to develop subdivisions under Groton's Flexible Development bylaw. Altogether, the same organizations listed above, plus a newcomer, Mass Audubon (2006), acquired more than 2,063 acres, including over 16 miles of trails that are now available for public use. The parcels added included several more on The Throne, Gamlin Crystal Springs, Batten Woods CA, Baddacook CA, Hurd CA, Sawtell CA, Surrenden Farm CA, The General Field, and Audubon's 422-acre Rocky Hill Nature Sanctuary.

What may not be obvious from this brief history is the fact that the trails that we enjoy today are predominantly the same trails that have existed in Groton for many, many decades. While some new trails have been developed to connect or expand the network, these account for less than 10% of the total miles of trails. What has happened is that the existing trails on private property owned by individuals have been made publicly accessible through acquisition of the parcels and/or trail easements.

While not a conservation land acquisition, the approval by the January 26, 2013 Town Meeting of the demolition of the old bridge and purchase and installation of a replacement for Fitch's Bridge was a highly significant milestone in the history of Groton's trails network. The old bridge across the Nashua River was built for heavy horse-drawn vehicles and provided an important link from 1898 until sometime in the early 1980s when it had deteriorated to the point that it was finally closed because it was no longer safe for people to use. While two state highways, Rtes. 119 and 225, made Fitch's Bridge unnecessary for people using motorized vehicles to get from West Groton to the rest of Groton, the closing of Fitch's Bridge left pedestrians, equestrians, and bicyclists with no safe path for doing the same thing. With the opening of the new Fitch's Bridge in July 2013, over 70 miles of public trails on the east side of the Nashua River were connected with over 30 miles of public trails on the west side. Pedestrians,

equestrians, and bicyclists can now go to places on both sides of the Nashua River using a safe pathway that excludes motorized traffic and provides direct connections to the existing networks of trails.

### **C. Types of Existing Pathways**

Groton's pathways are currently of three types: wood trails, paved (asphalt or concrete) pathways, and dirt roads. The roughly 110 miles of woods trails in Groton include many historic farm roads and other graded (to some extent) roadways that are simple dirt pathways with little subsurface foundation except perhaps an occasional culvert. Some of these former roads have become "single track" trails as the surrounding vegetation has encroached in from the sides while others have maintained a wider tread due to the type of surrounding vegetation and/or the type and quantity of use the trails have experienced. Except for their widths, there is little to distinguish the treads of woods trails from those of historic roads and they are all considered "wood trails" in this report. All woods trails have uneven natural surfaces that may consist of dirt, rocks, and sand in various proportions. While Groton has no large hills (lowest point in the northeast corner of Groton is about 160 feet above sea level while Chestnut Hill, the high point, is 516 feet above sea level), its landscape is very hilly due to deposited glacial sediments in the form of eskers and drumlins. A number of rocky outcroppings can also be found, particularly in Mass Audubon's Rocky Hill parcel and The Throne, but also in Wharton Plantation, Gamlin Crystal Spring, and the Groton Woods, Fletcher Hill, McLain's Woods, Fitch-Woods, and Cox-Walker CAs. As a result, the trails are generally of moderate difficulty due to unevenness and steepness of the tread. Essentially none of the woods trails is accessible to the mobility-impaired.

The Nashua River Rail Trail opened officially on October 25, 2002. It is paved with asphalt over its entire length. While the trail itself is suitable for anyone who is mobility impaired, there are very few places where the trail can actually be accessed by someone who is mobility impaired, and none of those are in Groton. The Nashua River Rail Trail passes through beautiful woodlands, wetlands, farmlands, and along ponds, streams, and of course the Nashua River; however, there is not a single rest area or scenic viewpoint that is accessible by Americans with Disabilities Act standards. The only public toilet facilities are located at the two ends of the Nashua River Rail Trail, in Ayer, MA and Hollis, NH, about 13 miles apart.

Groton has roughly 10 miles of sidewalks. The greatest concentration of sidewalks is in the Town Center area, where the sidewalks are concrete for the most part: along Main St. from Old Ayer Rd. to the Groton-Dunstable Regional Middle School and Florence Roche Elementary School, down Hollis St. to the Groton Cemetery, between Hollis St. and Main St., and along Pleasant St. The Pleasant St. sidewalk connects to the (asphalt) sidewalk along Farmers Row that goes to the Groton School as well as to the sidewalk down Long Hill Rd. (Rte. 225) that connects to the Partridgeberry subdivision. West Groton also has concrete sidewalks along the major roadways, W. Main St., Pepperell Rd., and Townsend Rd., that terminate  $\frac{1}{2}$ - $\frac{3}{4}$  of a mile from the center of W. Groton. There are also sidewalks (mostly asphalt) in essentially all of the subdivisions in Groton, and notable among them are the extensive sidewalks in the Partridgeberry, Meadowview, Deerhaven, and Groton Woods subdivisions.

Groton still has several public roads that are dirt or partially dirt (viz., Burnt Meadow Rd., Fitch's Bridge Rd., Gratuity Rd., Maple Ave., Rocky Hill Rd, Shattuck St., Shirley Rd., Town Forest Rd., West St., and Whitman Rd.). Because these dirt roads are less extensively used by motor vehicles than the paved roads, pedestrians, equestrians, and bicyclists can use these pathways with somewhat better relative safety. Each

road, except Whitman Rd., provides connections between trails that intersect at different points along the road and so those portions of the roads are considered part of the trails network. In addition, Nate Nutting Rd. to Indian Hill Rd. was discontinued as a public way beginning 1,150 feet from Rte. 119 by Town Meeting in May 1975 but the right was reserved for the public to use the right-of-way as a footway and bicycle path in accordance with MGL Chapter 82, Sections 33 and 35, respectively.

#### **D. Education**

The Groton Trails Committee uses the following means to educate residents and neighbors of Groton about the Groton Trails Network.

- **Grotonfest:** The Trails Committee has had a booth every September at the annual celebration of Grotonfest on Legion Common. Information on trails and maps, guided hikes, and volunteer opportunities have all been provided to passersby.
- **Groton Town Forest Trail Races:** The Trails Committee started the two trail races (3.4 and 9.5 mile courses) in 1998 and continued to organize the races until 2012, when the local running club, the Squannacook River Runners took over the sponsorship of the races. The trail races introduced over 1,900 men, women, and children to the trails in the Groton Town Forest as well as introducing many of them to a new healthy activity.
- **Groton Trails Committee Website:** The Trails Committee website ([www.grotontrails.org](http://www.grotontrails.org)) has evolved as technology has evolved. Several years ago interactive digital maps were added to the hardcopy maps that were put on the website for downloading. The Trails Committee uses GPS technology to record the digital “tracks” of the trails, sidewalks, and dirt roads that constitute the Groton Trails Network; these tracks are then put into the interactive map that can be accessed on the website. Recently, “QR codes” that are optically “read” by smart phones to automatically connect to the coded website have been put on trailhead posts so that people can access the trail maps with their smart phones. Technology now also allows their position on the trail map to be shown so that people can actually follow their position on the trails as they move, thus eliminating the need for a paper trail map.
- **Groton Trails Committee Listserver:** The Trails Committee maintains a listserver with the e-mail addresses of people who want to be notified of trail development and maintenance projects at which they can offer their help. An e-mail is sent out ahead of each project to describe the project details to everyone and to indicate the types of tools they should bring that will be most useful.
- **Groton Trails Committee Guided Hikes:** The Trails Committee began advertising (through the Trails Committee listserver as well as the local news media) and leading Guided Hikes in 2008, with typically four hikes per year from 2008 through 2010. Subsequently, the Trails Committee ramped up the Guided Hike program and led five, eight, and 13 hikes in 2011, 2012 and 2013, respectively. More than 500 hikers have participated in over 40 Guided Hikes since 2008. Beginning in 2012, some hikes have been co-sponsored by the Appalachian Mountain Club; this has doubled hiker participation, with over half of participants coming from out of town. Families with children have enjoyed the Guided Hikes, as well as seasoned hikers and naturalists.
- **Groton Trails Committee Trail Projects:** Volunteers from the community have been providing between 200 and 350 man-hours of help each year at the projects organized by the Trails Committee. This very significant contribution of effort to the trails has been essential for developing and maintaining the trails in Groton since 1998. In addition, it gives the volunteers an appreciation for, and connection to, the trails they would not have otherwise.

Other organizations that have been educating and involving the public in the stewardship of Groton's open spaces that are accessible to the public include the Conservation Commission, the Groton Conservation Trust, the Nashua River Watershed Association (NRWA), and the Groton Greenway Committee. While their missions are different from that of the Trails Committee, all share similar goals. The GCT's vision is to conserve "...land that will never be developed and will forever provide habitat for wildlife, protection for water supplies, and quiet places for people to get out and enjoy spectacular woodlands, wetlands and headlands that make our community such a beautiful place to live." The NRWA states that "We believe that people protect what they love. Connecting people with nature and helping them to understand local environmental issues leads to better decision-making and greater engagement in preserving our natural landscape." The Groton Greenway Committee "...encourages public access to and enjoyment of our beautiful waterways," and "...seeks to educate about the Nashua River and animals who live in and near the river." The Greenway Committee has "...advocated for trail extensions, Conservation Commission funding, restrained timber harvests, and assisted riverfront landowners interested in preserving portions of their holdings."

- **Conservation Commission Land Stewards:** The Conservation Commission has developed a small group of land stewards who monitor the town's conservation parcels for misuse, invasives<sup>13</sup>, potential hazards, encroachments by abutters, and informal surveys of flora and fauna diversity. The land stewards are not focused on maintaining the trails, but most stewards personally help maintain the trail corridors and report more significant maintenance needs to the Commission and/or the Trails Committee.
- **GCT Land Stewards:** The GCT has also developed its own group of land stewards that have essentially the same responsibilities as those of the Conservation Commission. The GCT has recently been taking steps to invigorate their land stewardship efforts and is improving their communication and recruitment efforts to that end.
- **NRWA:** The NRWA is fully invested in a multi-pronged professional educational program. Among their programs are the following:
  - **Canoe-based River Classroom®.** This program "...combines scientific research and data collection with a day of outdoor paddling adventure."
  - **Scientist-in-Residence.** This is a "...multi-visit program that assists teachers with curriculum development that meets the requirements of Massachusetts and New Hampshire standards for science and technology at a variety of grade levels." The NRWA also tailors these programs "...to the needs of homeschoolers, scouts and other youth groups, as well as those looking for Service Learning opportunities."
  - **Eco-Adventures.** In these afterschool, summer, and school vacation week programs, "...professional educator/naturalists are trusted guides for children as they explore the natural world."
  - **Family Workshops.** "Throughout the year, the NRWA takes the whole family outdoors for...workshops on animal tracking, maple sugaring, and nocturnal wildlife."
  - **Environmental Education Programs.** These "...feature presentations by leaders in wildlife biology, forest management, land use planning, and notable authors; environmental film screenings; guided walks; and workshops on a wide range of topics, from building bluebird boxes to best pasture and barn management practices for horse owners."
- **Groton Greenway Committee.** The Greenway Committee began putting on their annual **Groton Greenway River Festival** (aka Riverfest) in 1989. This family-friendly day-long event

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<sup>13</sup> Somers, P., Kramer, R., Lombard, K, and Brumback, B., "A Guide to Invasive Plants in Massachusetts," Massachusetts Division of Fisheries and Wildlife, 2nd Edition, 2008.

celebrates the Nashua River with such activities as arts and crafts, live music by many performers, canoeing, yoga, bike rides, trail walks, nature exhibits, booths manned by the GCT, NRWA, and Trails Committee, live animals, and a make-your-own-canoe for the cardboard canoe race that ends the festival.

## **E. Limitations of Current Trails Network**

As has been described above, Groton's Trails Network is extensive and well-utilized by many users. However, it has been designed neither for any particular group of user(s) nor to accommodate all potential trail users. In fact, few if any of the trails have actually been designed at all but rather they have appeared and evolved through a process driven mostly by user convenience. Over many, many years, equestrians, and more recently snowmobilers and motorcyclists, used existing farm roads, driveways, etc., and also created paths to get them wherever they wanted to go. If enough other users had the same destination, the path became commonly used and "established." Unfortunately, this historic ad hoc process, uninformed by more recent revelations of the fragility of rare and endangered species habitats (streams, ponds, rivers, wetlands, upland nesting areas, etc.), erosion risks, potential damage to historic and geologic sites (e.g., stone walls, historic/ancient building remnants, eskers, etc.) has given us a trails network that lacks the following characteristics:

- **Sustainable** – Trails should be designed to be easy and relatively inexpensive to maintain over a long period of time. This requires sensitivity to the vegetation through which the trail passes (e.g., mature woods, transitional woods, open fields, dense ground cover, vines, bushes), the risk of erosion (which depends on the nature of the tread material and the speed and volume of water that can be expected to go across and down the trail), and the number and types of users (e.g., horses, bikes).
- **Accessible** – Accessible trails are also sustainable trails, but they are additionally designed so that a) in-line and cross-trail slopes are within prescribed ranges for prescribed distances to allow mobility impaired individuals to traverse them on their own or with assistance; and b) the tread is flat (according to specific guidelines) and firm. They also have additional safety features (railings, edges, etc.) and signage (describing obstacles, maximum slopes, etc.). As noted above, even the accessible Nashua River Rail Trail has no place in Groton where the trail itself is actually accessible from a parking area or a sidewalk. As a consequence, our current Trails Network does not serve well those users who are impaired (mobility, vision, hearing, etc.), our senior citizens, or our youngest who are in strollers.
- **Provides Directional and Educational Signage** – The Trails Committee has put trail markers on many of the trails to help users stay on the trails. Trailhead posts have also been put on roadsides where trails intersect. However, there is not a single sign on any path in Groton that points to a destination such as another trail or parcel, a road, a point of interest (scenic, geologic, historic, businesses, buildings, parks, etc.), or a parking area.  
Except along the sidewalks in the downtown Groton area and along the Nashua River Rail Trail, where there are some historical signs, there are no historical signs along any other pathway of Groton. Further, there is not a single sign on any path in Groton that describes natural or geological points of interest.
- **Full Connectedness** – Many of Groton's trails connect to trails on other parcels but there are still a number of parcels that contain trails that are isolated due to being surrounded by private property. Among the isolated parcels are the Hemlock Grove and Lawrence Park CAs (off Integrity Way and Fox Run), Hawtree and Torrey Woods CAs (off Raddin Rd.), Whispering Brook CA (off Old Dunstable Rd.), Baddacook Woods (off Allen's Trail), Skitapet (off Lost Lake Dr.), Keyes Woods (off Peabody St.), Wiewel CA (off Skyfields Dr.), and the Groton-

Dunstable Regional High School property. In addition, many of the larger groups of connected parcels are disconnected from each other so that there are no continuous routes around or across town except for the Nashua River Rail Trail. Finally, while many residents live within 0.5 miles of a trail or sidewalk, there are still many who do not.

- **Safety** – Except for the Nashua River Rail Trail, there are very few places to ride a road bike safely due to the narrow and/or busy main roads. Several sidewalks end just before getting to popular destinations and so people are forced to walk along narrow and/or busy roads. Examples of this are the following:
  - the sidewalk coming down Pepperell Rd. into W. Groton that ends roughly 275 feet from the W. Groton Post Office and Clover Farms store
  - the sidewalk to Groton School that ends at Peabody St. just a few hundred feet before getting to the main entrance of the school
  - the sidewalk going down W. Main St. from W. Groton stops about 1,350 feet before getting to the driveway that leads to the Senior Center and the trails to Town Forest and Fitch's Bridge
  - the sidewalk only goes several hundred feet down Main St. toward the Nashua River Rail Trail and the Mill Run Plaza from the Groton-Dunstable Middle School/Florence Roche School campus
  - the sidewalk going down Old Ayer Rd. from Main St. towards the Bates-Blackman parcel and Peabody St. ends 500 feet and 800 feet before getting to those places, respectively

Safety also has a perception component to it. Some people fear that they or their children may be accosted while walking in the woods or any place that is not visible to large numbers of people. While statistics do not support this perception, it is nevertheless a common one. By increasing the use of non-motorized pathways, this concern can be significantly reduced simply by the sight of more people on the pathways.

Safety can also be enhanced by signage, such as that used on the Nashua River Rail Trail to show who should yield to who in terms of equestrians, rollerbladers, and pedestrians. Some bridges need signs to indicate whether they are safe for horses or heavy vehicles (e.g., motorized wheelchairs) to pass over. Signs may be needed in some particularly complex trail areas (e.g., Town Forest, Skitapet, McLain Woods and Fitch-Woods, the Throne) to help people that get lost find a parking area or a nearby road.

Due to the limitations noted above, the potential of our Trails Network for improving the quality of life for citizens and visitors of Groton is still largely untapped. There is still a lot of work to do in integrating our Trails Network into our everyday lives so that we can be less reliant on motor vehicles, more connected to our open spaces, and more connected to our neighbors. Our trails can make us healthier by making us more active and safer by keeping us off the roads. Our trails can make us happier and more socially connected by giving us pathways and sidewalks where we can interact with and get to know more of our neighbors, as now happens on the Nashua River Rail Trail. To get these benefits, we need to provide our citizens with more information, including signage, about what trails exist and what is of interest along the trails. It is also important to have our citizens let us know what improvements they would like to see and then we can try to make as many of those improvements as possible. This will allow them to become participants in the process and feel more connected to, and receive more benefit



from, the infrastructure they have paid for and continue to pay for. The scenic views<sup>14</sup> of Groton attract many people to Groton and this aspect of life in Groton always ranks at the top of the quality of life that people find in living and visiting here. But we could be much more active within those views and enjoy more aesthetic, health, and community life benefits if we create a shared vision of “what could be” and work together to implement those aspects of it that are most important to us.

The potential of our Trails Network to boost our local businesses is nearly entirely untapped, with a few notable exceptions. The Gibbet Hill Grill not only used the name of one of our premier open spaces, but they also developed a trail on their property and provided a map so that their customers, and the public, could explore it. They also use the hill and the scenic views it has for weddings and other functions. Mass Audubon’s Rocky Hill Wildlife Sanctuary will bring in many visitors from around the state as it becomes better known first to their membership and subsequently to the general public. Our Squannacook River is a premier fishing location that attracts fishermen from throughout Massachusetts and New Hampshire. The Nashoba Paddler is a successful business due to the returned beauty of the Nashua and Squannacook Rivers and the canoeists and kayakers that the rivers attract. The Nashua River Rail Trail carries many dozens of bicyclists through Groton every weekday and many hundreds every weekend day. They are attracted by the natural beauty but also by the ice cream stands and other stores that are adjacent to the Nashua River Rail Trail in Ayer and Pepperell, but not so much by the stores in Groton that are a block or two away and cannot be seen from the Nashua River Rail Trail. Many bicyclists tour north central Massachusetts, but they tend to avoid Groton because of the narrow roads, absence of “bicycle friendly” signs and road markings, and lack of signs pointing to interesting destinations.

Each project described in this Groton Trails Vision Report addresses one or more of the limitations in the current Trails Network that have been noted above. Not every project may be feasible but each one will bring the Town of Groton closer to the Trails Vision Committee’s vision of having a safe and easy-to-use network of ways that will connect people to each other, to places they want to go in town and in surrounding towns, and to the unique natural, geological, and historical points of interest throughout our town.

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<sup>14</sup> Views are defined as those features that provide a range of sight that is identified as a community asset, including pleasing vistas, scenes, and views that provide a sense of place and character.

## **VII. The Groton Trails Network of the Future - Projects to Enhance and Expand the Trails Network**

In this section, we provide brief descriptions of each of the projects recommended in this 2014-2019 version of Groton's Trails Vision. The projects are organized into the following three categories:

- A. Connecting Existing Pathways with Destinations: These ten projects connect an existing pathway to a destination that is currently disconnected from the existing pathway.
- B. Enhancing Accessibility & Recreational/Educational Opportunities: These six projects make pathways accessible or provide new recreational and educational opportunities using the current infrastructure.
- C. New Local and Inter-Town Pathways: These six projects involve significant additions to the pathways in Groton using land that is currently all, or predominantly, privately owned.

### **A. Connecting Existing Pathways with Destinations**

#### **1. Path on Broadmeadow Rd. from Farmers Row to Playground Rd.**

By connecting from Playground Rd. to the existing sidewalk along Farmers Row, this project would provide a safe route to the Groton Public Library, to the Nashua River Rail Trail, and to Groton Town Center for Groton School students as well as residents along Farmers Row, Long Hill Road, and the Partridgeberry subdivision. By connecting to the existing sidewalk along Main St., this project would also provide a safe loop path in the heart of Groton Center between Station Ave. and Broadmeadow Rd. and would provide a more direct access to the Nashua River Rail Trail from Lawrence Academy and the Groton Public Library.

This project could be done in two phases. The first phase would be from the Nashua River Rail Trail to Groton Public Library (450 ft.) because there are no large challenges involved with this part of Broadmeadow Rd. There is sufficient shoulder on the southern side Broadmeadow Rd. up to Playground Rd. for a sidewalk to be added with little difficulty. East of that intersection, Broadmeadow Rd. is a one-way street and already has markings for a pedestrian lane. The second phase would be from Farmers Row (Rt. 111) to the Nashua River Rail Trail (2800 ft.). This section of Broadmeadow Rd. is narrow in spots and currently has two-way vehicular traffic. There are also wetland issues for approximately 300' west of the Nashua River Rail Trail. This is where the road is often flooded in the spring.

The map below shows Broadmeadow Rd. between Farmers Row to the west and Main St. to the east. The new path is indicated by the orange line.



## Design

- Concrete or asphalt sidewalk from current sidewalk on Farmers Row (Rt. 111) to Playground Rd. Sidewalk would most likely be on the south side of Broadmeadow Rd. for a distance of approximately 0.62 miles (3250 ft.).
- A pedestrian lane will be marked on Playground Rd. in accordance with Complete Streets guidelines. The pedestrian lane on Broadmeadow Rd. between Playground Rd. and Main St. will also be brought up to Complete Streets guidelines.

## Challenges

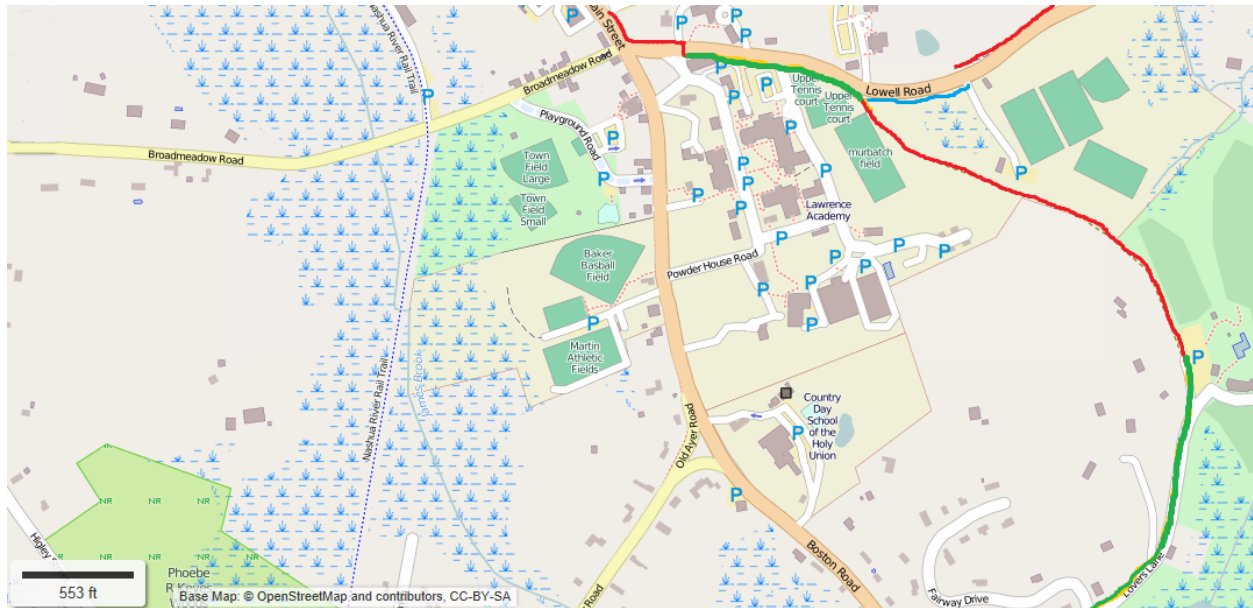
- The sidewalk would need to be cantilevered or constructed as a bridge for a distance of approximately 300' west of the Nashua River Rail Trail due to the wetlands, the low height of the road surface above the wetlands, and the narrowness of the road.
- There are eight homes on Broadmeadow Rd. whose frontage on Broadmeadow road will be affected by the sidewalk. Landscaping and trees will need to be considered and the cooperation of all the homeowners will be needed.

## 2. Path on Lowell Road to Lovers Ln.

This project would extend the sidewalk that comes up from Main St. to the Lawrence Academy driveway across the street from First Parish Church (shown in red on the map below). The proposed pathway (shown in green) would go along the southern side of Lowell Rd. (Rte. 40) to Lovers Ln., which intersects Lowell Rd. across from the driveway to Gibbet Hill Grill. Lovers Ln. (shown in red) is an existing footpath (following an old dirt road) that goes behind Lawrence Academy's football field to the parking lot of the Groton Pool and Golf Center. Although it exists as a dirt path, this project would make the path accessible by providing a flat packed crushed rock surface. A pedestrian pathway on the paved portion of Lovers Ln. that goes to Boston Rd. (Rte. 119) may or may not be necessary as the traffic on Lover's Ln. is generally not too heavy; a marked pedestrian/bicycle lane may be sufficient. This project provides an alternative, and more scenic, non-motorized route from Groton Center to the Post Office and

other businesses along Boston Rd. If both this project and Project A10 (Extend Sidewalk on Rte. 119 to Skyfields Dr.) were implemented, they would constitute a Groton Center loop pathway.

This project could easily be extended down Lowell Rd. (shown in blue) to the existing trail (shown in red) that goes up to the top of Gibbet Hill, thus providing a convenient means for walking from the center of Groton to one of the most scenic points of interest in Groton.



## Design

- Asphalt or concrete sidewalk from existing crosswalk on Lowell Road (Rt.40) to Lovers Ln.; 6-8 ft. wide; 0.18 miles (950 ft.)
- Packed crushed rock surface along the discontinued portion of Lovers Ln.; 6-8 ft. wide; 0.42 miles (2200 ft.)
- A crosswalk at the driveway to Gibbet Hill Grill as well as a crosswalk at Rte. 119.
- Possible extension (550 ft.) to the trail that goes up Gibbet Hill to the Bancroft Castle; crosswalk required due to short sight distances.

## Challenges

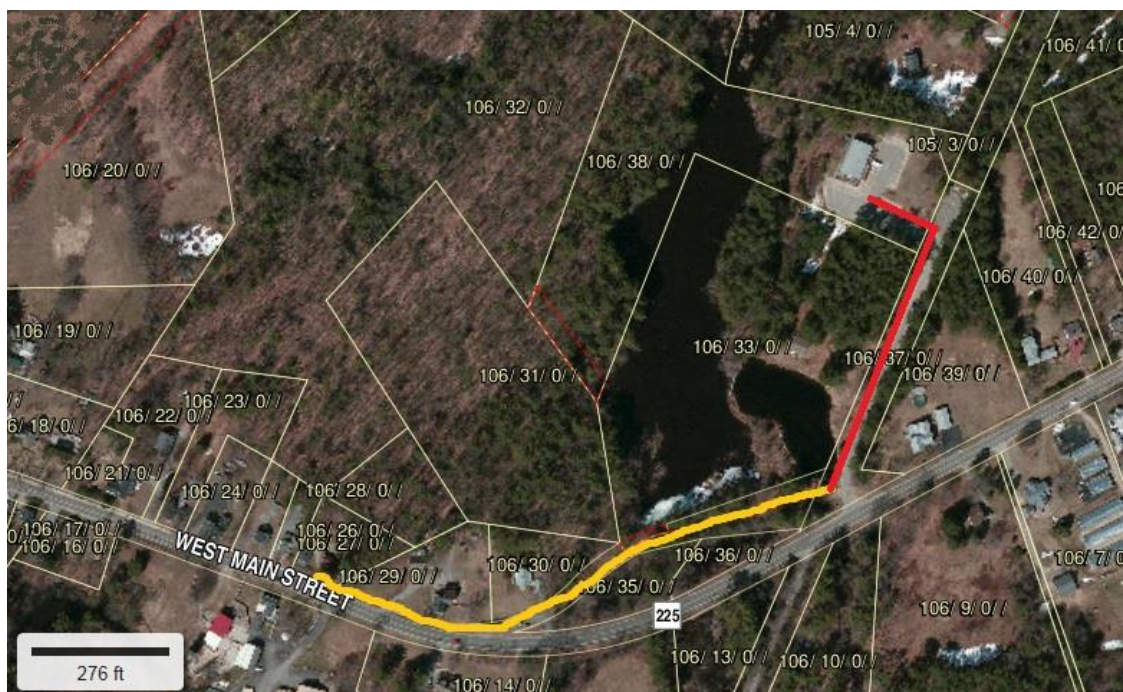
- Lovers Ln. is a discontinued road that is now owned by Lawrence Academy. While it is currently used informally as a pathway, a formal easement with Lawrence Academy would need to be negotiated to allow full public access.
- The steep embankment alongside First Parish Church might require construction of a retaining wall.
- There are drainage ditches in the area along Lowell Rd. where the pathway would be built and so cantilevering or bridging of the sidewalk might be necessary.
- Safety of crosswalks across Lowell Rd. (to the Gibbet Hill Grill driveway and to the trail that goes to the top of Gibbet Hill) could be difficult due to the bend and slope of road that limit sight distances.



### 3. Extend Sidewalk on W. Main St. to Groton Senior Center

This project would extend the sidewalk along W. Main St. to where the old road intersects with the current road (roughly at the mid-point of the orange line in the first map shown below). At that point, a packed crushed rock pathway would be created that follows the old road right-of-way to the driveway to the Groton Senior Center. The driveway to the Senior Center (shown in red in the second map below) is over an old railroad right-of-way that goes south to the Town Forest and north to Fitch's Bridge.

The sidewalk from W. Groton Center ends across W. Main St. from Blood Farm. Many senior citizens who live in RiverCourt, Hale's Village, and others along Townsend Rd., Pepperell Rd., and W. Main St. would walk to the Senior Center if they could. Some now walk along the road after the sidewalk ends, which is very dangerous. In addition, many other residents of W. Groton would bike or walk to Fitch's Bridge and the Town Forest if they could avoid bicycling or walking directly on W. Main St.



## Design

- Concrete or asphalt sidewalk from current sidewalk (ends across from Blood Farm) to intersection with old road right-of-way. Standard curbing. Approx. 500 feet long.
- Crushed stone pathway along the old W. Main St. right-of way to the Senior Center driveway. This is a scenic path that goes through the woods parallel to the current W. Main St. Approx. 840 feet long.
- Benches for rest/scenic area overlooking pond of the old Squannacook Sportsmen's Club, now owned by Groton Emergency Medical Services (GEMS).

## Challenges

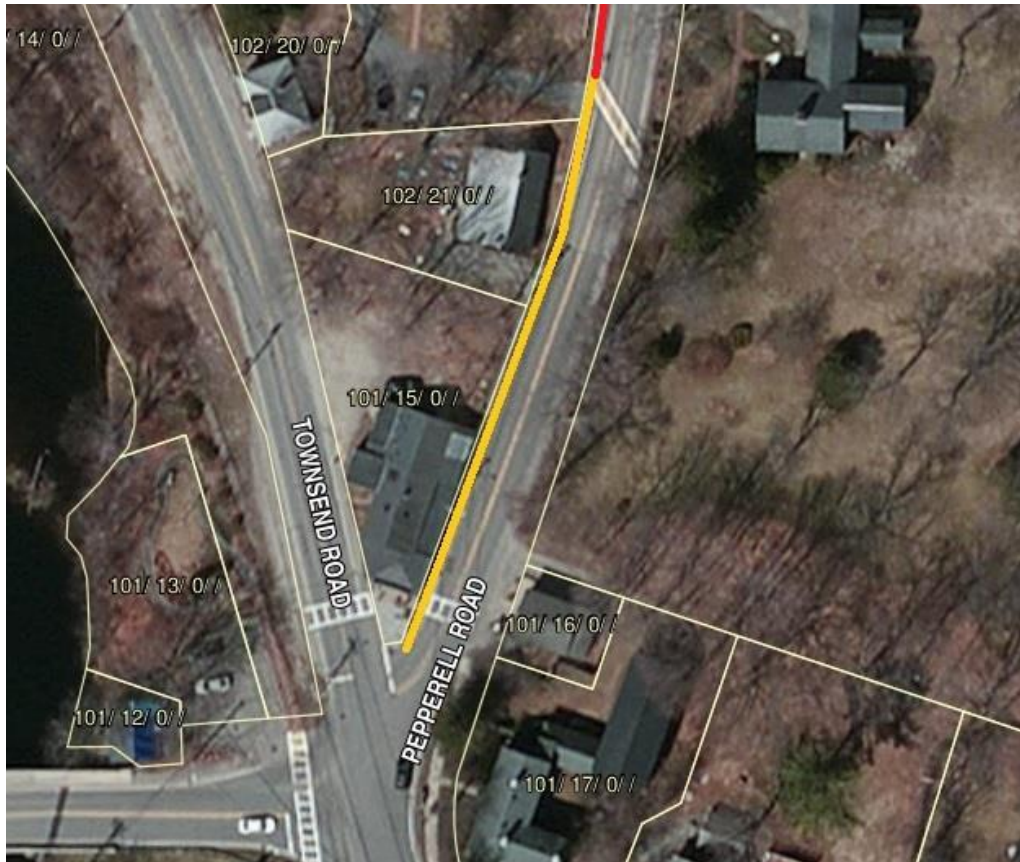
- There is a large tree and steep side slope where the current sidewalk ends across from the Blood Farm.
- Possibly excessive slope in direction of travel where current sidewalk ends that might require grading to meet accessibility guidelines.
- The Old W. Main St. right-of-way is currently being used as a driveway to access parcel 106-30. The design would have to consider the proper alignment of the pathway and the driveway to provide adequate safety for users of the pathway as well as convenient access to the house.

### **4. Extend Sidewalk on Pepperell Rd. to W. Groton Center & Integrity Way**

This project would extend the existing sidewalk on Pepperell Rd. from where it ends just 275 feet short of W. Groton Center and from where it ends near Fox Run, which is just 340 feet short of the sidewalk on Integrity Way. The short gap in the sidewalk going into W. Groton Center prevents all residents of W. Groton who live on or off Pepperell Rd. from walking safely to W. Groton Center. This means that there is no safe route for those citizens to walk to the West Groton Post Office, the Clover Farm Market, the park overlooking the Squannacook River Oxbow, RiverCourt, the sidewalk along W. Main St. to the Blood Farm, and the sidewalk along Townsend Rd. to Hollingsworth & Vose. Likewise, this means that those citizens who live along W. Main St. (including Hale's Village), in RiverCourt, or along Townsend Rd. are unable to access the playground behind the Tarbell School or the trails behind Fox Run and Integrity Way. The short gap in the sidewalk between Fox Run and Integrity Way means that the sidewalk in the Integrity Way subdivision is unconnected to the main sidewalk along Pepperell Rd. and there is therefore no safe route for those subdivision residents to walk anywhere beyond their street.

The picture below shows where the current sidewalk (shown in red) ends and where a crosswalk has been painted on the street to direct walkers to the shoulder on the east side of Pepperell Rd. This hill is a dangerous place to cross the street and the lack of a smooth surface sidewalk and curbing makes this an unsatisfactory route, particularly for the elderly, mobility-impaired individuals, and for those pushing young children in strollers. It would be preferable to extend the sidewalk (shown in orange) along the west side of Pepperell Rd. to the Clover Farm Market and to a crosswalk that is protected by a stop sign for traffic.





The picture below shows where the current sidewalk (shown in red) ends just north of Fox Run. It also shows the existing sidewalk along Integrity Way (shown in red) on the east side of Pepperell Rd. The gap between the sidewalks that needs to be filled is shown in orange.



## **Design**

- Into W. Groton Center: asphalt or concrete sidewalk; 6 ft. wide; 275 ft. long
- To Integrity Way: asphalt or concrete sidewalk; 6 ft. wide; 340 ft. long
- Curbing to separate and protect from traffic
- Crosswalk painted on Pepperell Rd. at Integrity Way and Fox Run
- Crosswalk painted on Pepperell Rd. at stop sign in W. Groton Center

## **Challenges**

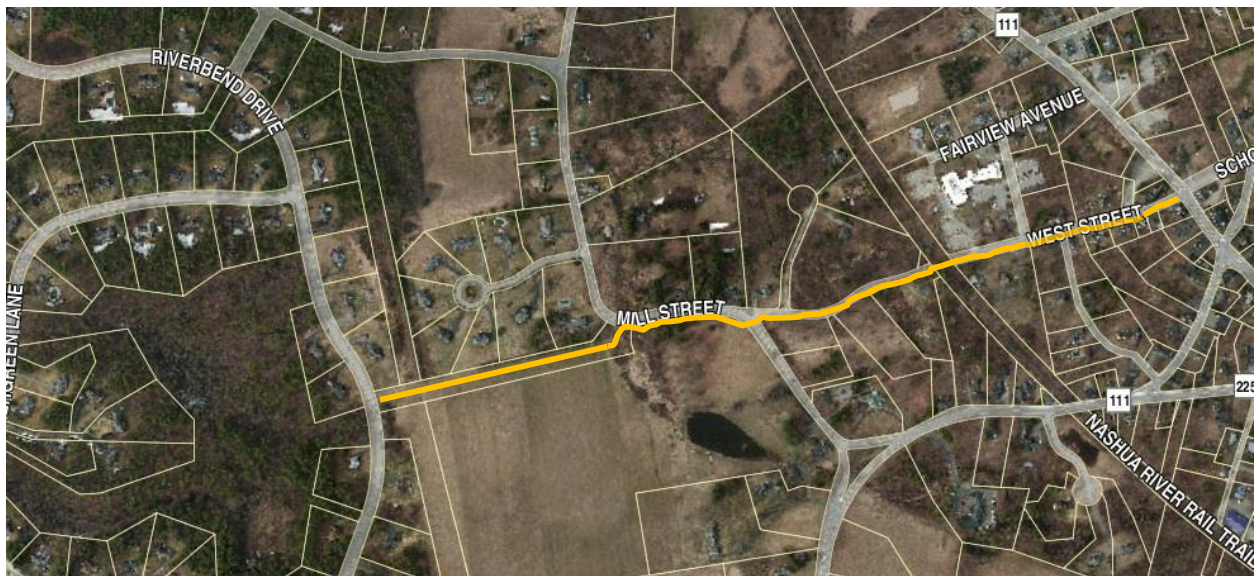
- There is currently a very narrow shoulder on the west side of Pepperell Rd. as it enters W. Groton Center. The entire roadway would likely need to be shifted toward the eastern edge of the right-of-way to allow for the addition of a sidewalk with curbing on the west side.
- There may need to be negotiations with the property owners on both sides of Pepperell Rd., depending on where the boundaries of the right-of-way are and what impacts there might be to trees and other landscaping associated with those homes.



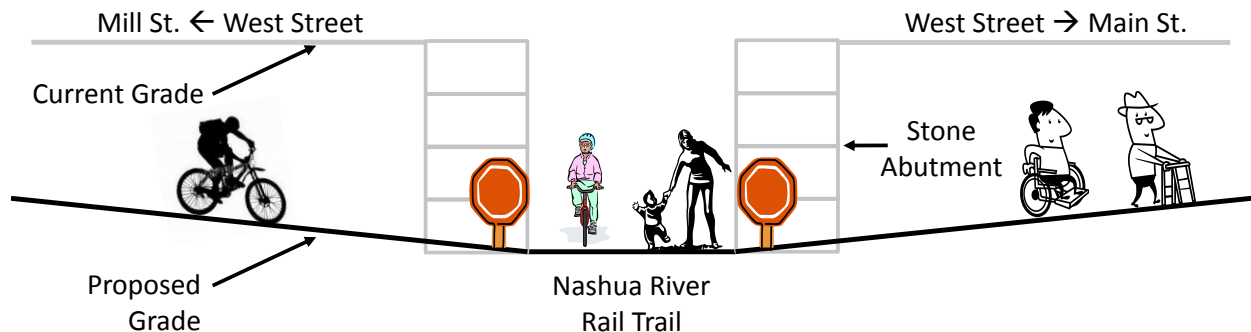
## 5. Path from Partridgeberry to Nashua River Rail Trail to Main St.

This project would provide access to the Nashua River Rail Trail, the downtown area, the Groton-Dunstable Regional Middle School and the Florence Roche Elementary School by pedestrian and bicycle traffic from a large subdivision (Partridgeberry; 86 homes), two smaller subdivisions (Canterbury Ln.; 9 homes and Westbrook Ln., 4 homes), and many additional homes along Jenkins Rd., Mill St., and West St.. It would also provide a much more convenient access to the Nashua River Rail Trail from Seven Hills (a pediatric long-term care facility for nearly a hundred severely disabled residents), West St., Whiting Ave, Fairview Ave., Hillside Ave., Elm St., Main St., Champney St., and School St. than the present access on Station Ave.

The map below shows the proposed path (in orange) going between Riverbend Dr. in the Partridgeberry subdivision and Main St.



The figure below is a cross-section at the intersection of West St. with the Nashua River Rail Trail. It shows the current grade high above the Rail Trail that ends at the stone abutments. This project proposes regrading West St. so that it crosses the Nashua River Rail Trail at the same level as the Rail Trail, as depicted in the figure.



## Design

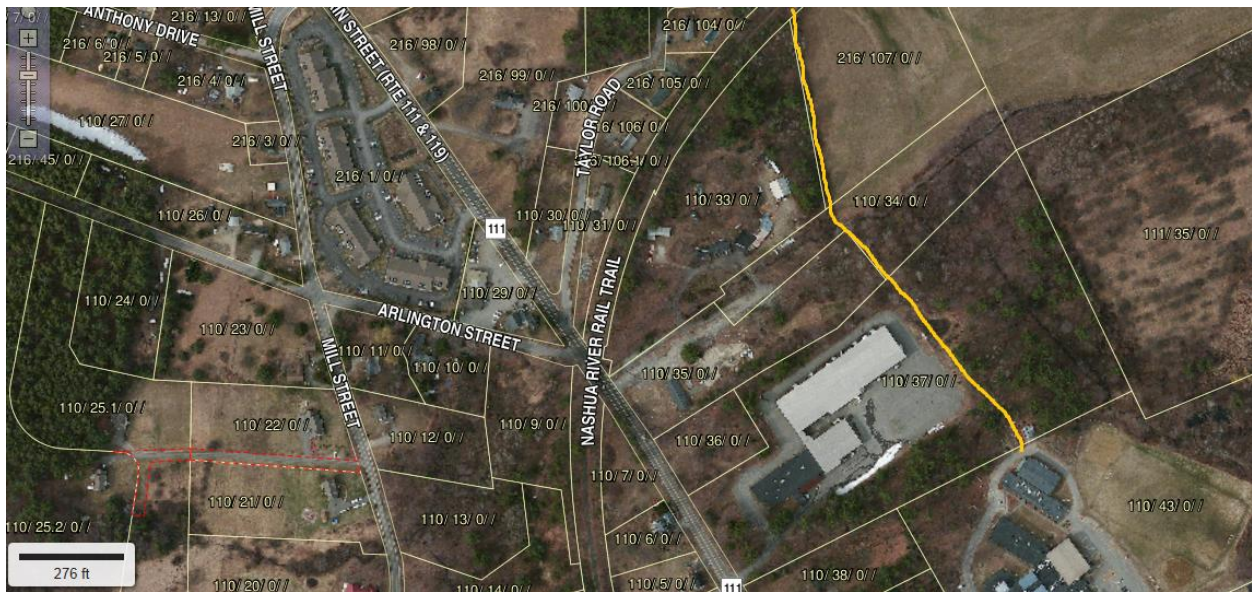
- Asphalt or packed crushed rock pathway from Riverbend Dr. to Mill St.; 8-10' wide; 1,250 feet long
- Asphalt sidewalk along south side of Mill St. to West St.; 6-8' wide; 575 feet long. Possible extension to Farmers Row would add an additional 775 feet long.
- Packed crushed rock pathway 8-10' wide along West St. to Nashua River Rail Trail; 1,000 feet long
- Grading of West St. at Nashua River Rail Trail intersection to remove the steep drops on both sides of the Rail Trail so that West St. and the Nashua River Rail Trail intersect at the same level; would likely require removal of stone abutments; will require long gradual slopes (one inch per foot) that are compliant with Americans with Disability Act requirements.
- May require one-way traffic on West St. between Nashua River Rail Trail and Main St. to allow for a dedicated bicycle/pedestrian pathway.
- Will require barriers to prevent motorized traffic from going through on West St. or accessing the Nashua River Rail Trail.
- Might require pedestrian/bicyclist safety features at Main St. intersection such as additional lighting, marking, alerts, etc.

## Challenges

- Land from Riverbend Dr. to Mill St. is private property (Parcel 109-7) on which the Town of Groton obtained a utility easement (water, sewer, electrical, and phone lines), although it is currently used by the public as an informal trail. To be used as a pathway, the land will need to be acquired or an easement that allows public passage over the land will need to be negotiated.
- Creating the sidewalk along Mill St. may require negotiation with the abutter due to narrowness of the right-of-way as well as the presence of some large trees and stone walls. A survey may be required and an easement may be required if the right-of-way is not sufficiently wide to accommodate the sidewalk.
- Grading of West St. down to the level of the Nashua River Rail Trail level would require permission and cooperation from the Department of Conservation and Recreation (DCR), which owns the Rail Trail.
- Removal of the old stone abutments would have historical impact and this change might face some opposition. Possible mitigations for the dismantling of the abutments will need to be discussed, such as using the stones for benches, barriers, or edging along the new pathway or even along other pathways in town.

## 6. Path from Nashua River Rail Trail to GDRMS Campus

This project would provide the safest route (not requiring any road crossings) to the Groton-Dunstable Regional Middle School and Florence Roche Elementary School campus (bottom right of picture below) for anyone using the Nashua River Rail Trail. The path, shown in orange, would connect the Nashua River Rail Trail to the north with the school campus to the south. It would go along the edge of a large field that abuts the Rail Trail and then go through some wooded areas behind INSCO before ending behind the Peter Twomey Center.



### Design

- Packed crushed rock pathway from Nashua River Rail Trail to Middle School North; 10 feet wide; 1,400 feet long

### Challenges

- Purchase of land or an easement for public use would be required across three parcels:
  - The western edge of Parcel 216-107, along the boundary between the large farm field and Parcel 110-33 to the west
  - The eastern part of Parcel 110-34, a “land-locked parcel” between Parcel 110-33 and Parcel 110-37
  - The eastern part of Parcel 110-37, which is owned by INSCO, to the east of the parking lot



## 7. Extend Sidewalk on Old Ayer Rd. to Peabody St.

This project would extend the existing sidewalk on Old Ayer Rd. that goes south from Main St. (shown in red on the map below) to Peabody St. and thence to Temple Dr., as shown in orange. This sidewalk would provide a connection from Main St. to the Groton Conservation Trust's Bates-Blackman parcel (entrance is to the east of the "A" in the label OLD AYER RD on the map below). It would also connect the residents of Temple Dr. to the Bates-Blackman parcel as well as to Groton Center, and potentially to the Post Office and other stores to the east on Boston Rd. (Rte. 119) when Project A10 is implemented. The extension of the sidewalk to Peabody St. was presented to the Groton Town Meeting as part of Thomas More College's plan for providing a safe route for their students to reach Groton Center. Perhaps this project could be implemented in conjunction with the relocation of the college to Groton.



### Design

- To Peabody St.: asphalt or concrete sidewalk; 6 ft. wide; 835 ft. long
- To Temple Dr.: asphalt or concrete sidewalk; 6 ft. wide; 605 ft. long
- Curbing to separate and protect from traffic

### Challenges

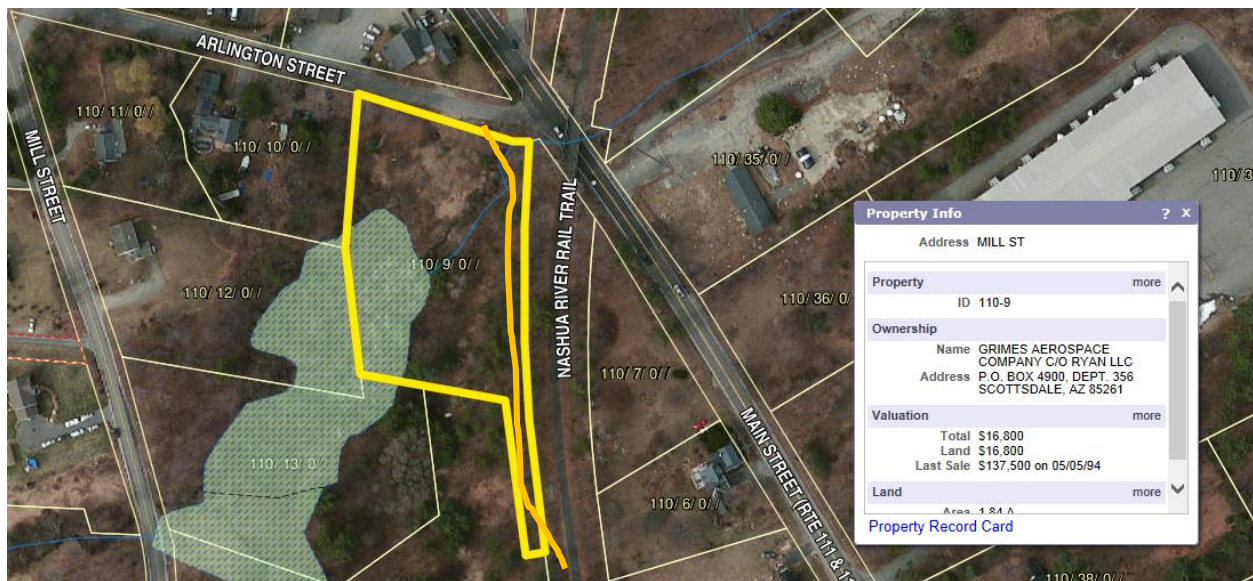
- There may need to be negotiations with the property owners Old Ayer Rd. and Peabody St., depending on where the boundaries of the right-of-way are and what impacts there might be to trees and other landscaping associated with those homes.

## 8. Nashua River Rail Trail Access at Rte. 119

This project will provide access to Arlington St. and thence the Mill Run shopping plaza (stores, restaurants, bank, etc.) for users of the Nashua River Rail Trail. This could provide a boost to those businesses in Mill Run as well as provide a convenient rest stop for users of the Nashua River Rail Trail. It also provides very convenient access, via Arlington St. and Gratuity Rd., to Fitch's Bridge.

This project could also provide access from the Nashua River Rail Trail to the Groton-Dunstable Regional Middle School campus complex if the sidewalk on Main St. is extended from the campus as proposed in Project A9.

There is an old roadway where this pathway is being proposed and its grade is gradual enough for this to likely be a safe and fully accessible access point to the Nashua River Rail Trail.



### Design

- Follows an old access path (dirt roadway) up to the Nashua River Rail Trail grade
- A bridge over a stream near Arlington St. will be required.

### Challenges

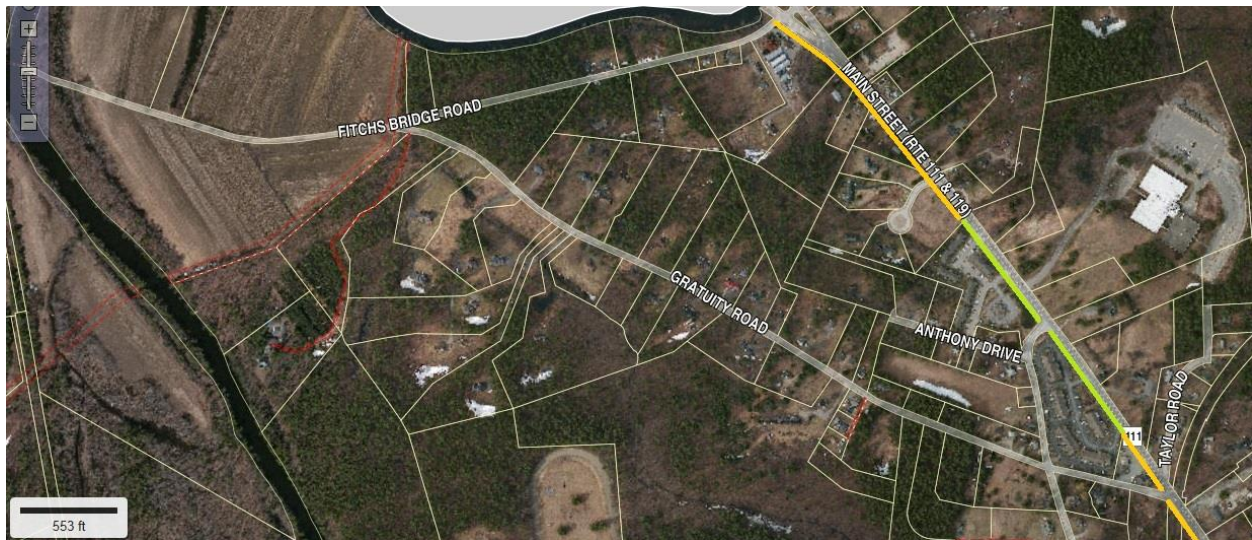
- Requires transfer of land ownership (parcel 110-9 bordered in yellow in the map above) from Grimes Aerospace to the Town of Groton
- Requires approval by DCR.



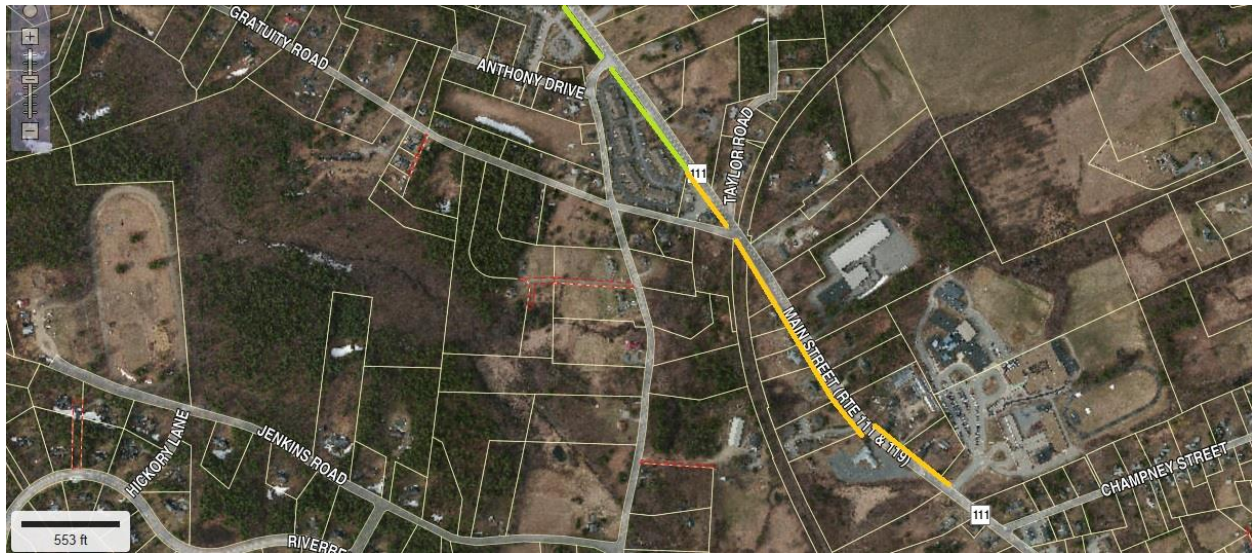
## 9. Extend Sidewalk on Rte. 119 from GDRMS to Fitch's Bridge Road

This project would provide safe pedestrian access between the GDRMS campus and the Pepperell line. This would include connections to the Nashua River Rail Trail (if Project A8 (NRRT Access at Rte. 119) is done), the Mill Run Plaza businesses, the Deluxe Corporation, the homes along and nearby to Main St., and nearby recreational parcels (Petapawag Canoe Launch, J. Harry Rich State Forest, and Fitch's Bridge). It would create a nearly 3-mile long continuous sidewalk from the Pepperell line through the heart of Groton Town Center when paired with the proposed sidewalk extension from Old Ayer Rd. to Skyfields Dr. (Project A10).

The map below shows the proposed sidewalk (in orange) from Fitch's Bridge Rd. to the existing sidewalk that starts at Groton Residential Gardens housing and continues in front of Mill Run Plaza. The next segment of the proposed sidewalk would extend to Arlington St. and continue on the other side of Arlington St.



The map below shows the proposed sidewalk (orange) continuing up to the Baptist Church, where there is currently an unmarked crosswalk to the sidewalk on the eastern side of Rte. 119. This crosswalk should be marked and the deteriorated existing sidewalk would need to be replaced, which is why it is shown in orange.



## Design

- Asphalt or concrete sidewalk. Total length of new sidewalk approximately 1.8 miles.
  - New sidewalk on the east side of Rte. 119 from GDRMS Campus to the crosswalk at the Baptist Church.
  - New sidewalk on west side of Rte. 119 from Baptist Church to Arlington St.
  - New sidewalk on west side of Rte. 119 from Arlington St. to Mill Run Plaza.
  - Existing sidewalk (0.3 miles) in front of Mill Run Plaza and Groton Residential Gardens can be used as is.
  - New sidewalk on west side of Rte. 119 from Groton Residential Gardens to Fitch's Bridge Rd.
- Crosswalks at GDRMS and Fitch's Bridge Road with signs, lights, and street markings for safety.

## Challenges

- Rte. 119 is a state highway and requires the Department of Transportation's (DoT's) permission/cooperation in designing and constructing a sidewalk that is in accordance with Complete Streets guidance. The permission/cooperation of DoT will be required for the crosswalks as well.
- There are numerous homes along Main St. whose frontage on Main St. will be affected by the sidewalk. Landscaping and trees will need to be considered and the cooperation of all the homeowners will be needed. Purchase of land or an easement for public use may be required in some cases.



## 10. Extend Sidewalk on Rte. 119 from Old Ayer Rd. to Skyfields Dr.

This popular project has been discussed ever since the United States Post Office moved from the heart of Groton Center to its current location in 1996. Many people enjoyed walking to the post office when it was across from the Prescott School in Groton Center. Now, Rte. 119 east of Old Ayer Rd. has no sidewalk to allow anyone to make this simple but enjoyable daily trip. There are other businesses nearby, including Groton Community School, Emerson Hospital Health Center, Middlesex Savings Bank, CVS, and more are being planned down to Skyfields Dr. These would also be popular destinations for people to walk to from the Groton Center area.

At Skyfields Dr. there is an entrance to the Hurd CA and further up Skyfields Dr. is the entrance to the Wiewel CA. The Hurd CA connects to the Bates-Blackman parcel and thence to Old Ayer Rd., which would make a complete scenic loop (if the sidewalk was extended down Old Ayer Rd. as described in Project A7). The Wiewel CA connects to the Blackman Field and Woods parcel and thence to Indian Hill Rd. and the Bates-Blackman parcel, which would make a much longer scenic loop. Across Rte. 119 from the entrance to the Post Office is Lovers Ln. This provides a connection to the Groton Pool and Golf Center and then potentially back to Rte. 40 (if Project A2 is developed) and then back to Main St. This could become a very popular Groton Center loop pathway.

The map below shows the proposed sidewalk extension (in orange) from Old Ayer Rd. (top left) to Skyfields Dr. (bottom right).



### Design

- Concrete sidewalk; 6-8' wide for bicycles and pedestrians; 0.55 miles
- Guard rail to separate from road traffic; breaks in rail for business and home driveways
- Painted crosswalks at road and driveway crossings and pedestrian crossing warning signs/lights at Old Ayer Rd. and Lovers Lane.
- Could possibly be extended to Johnson's Restaurant if there is interest and support from the businesses.



## Challenges

- Rte. 119 is a state highway and requires DoT's permission/cooperation in designing and constructing a sidewalk that is in accordance with Complete Streets guidance.
- Costs could be high but might be covered/shared by state highway funds. Several of the businesses are required to put sidewalks along Rte. 119 but so far have not done so since they would not be useful. This will reduce costs somewhat.
- Entrances to businesses would be restricted to driveways rather than wide parking areas.
- Pedestrian safety could be a concern at busy driveway crossings; might require additional lighting, marking, alerts, etc., thus increasing costs.
- There are a few places where bridges or cantilevered sidewalks will be necessary to get over wetlands.

## B. Enhancing Accessibility & Recreational/Educational Opportunities

### 1. Nashua River Accessible Trail

This project represents the first non-paved trail in Groton that will be designed for use by people of all abilities. It will be the first trail of any kind in Groton to provide access for people of all abilities to a peaceful forest experience (in the J. Harry Rich State Forest) as well as beautiful views of the Nashua River and one of its oxbow ponds. The proposed trail will provide a unique recreational experience along the Nashua River for all, including parents with children in strollers, wheelchair-bound individuals, and anyone who needs a flat stable surface upon which to travel.



#### Design

- About 0.25 miles long; 6 feet wide; packed crushed rock ; flat
- One multi-use trail crossing, using “cobblestones” for hardening
- Two granite benches along the trail; two granite benches and an accessible table at the river overlook
- Curbstones for safety at river overlook
- Parking lot on Nod Rd. for two handicapped and two regular vehicles

#### Challenges

- Because of its locations along the Nashua River, in Priority Habitat, the trail will need approval from the Department of Conservation and Recreation (DCR), which manages J. Harry Rich State Forest, the Groton Conservation Commission, the Natural Heritage and Endangered Species Program, and the Massachusetts Historical Commission.

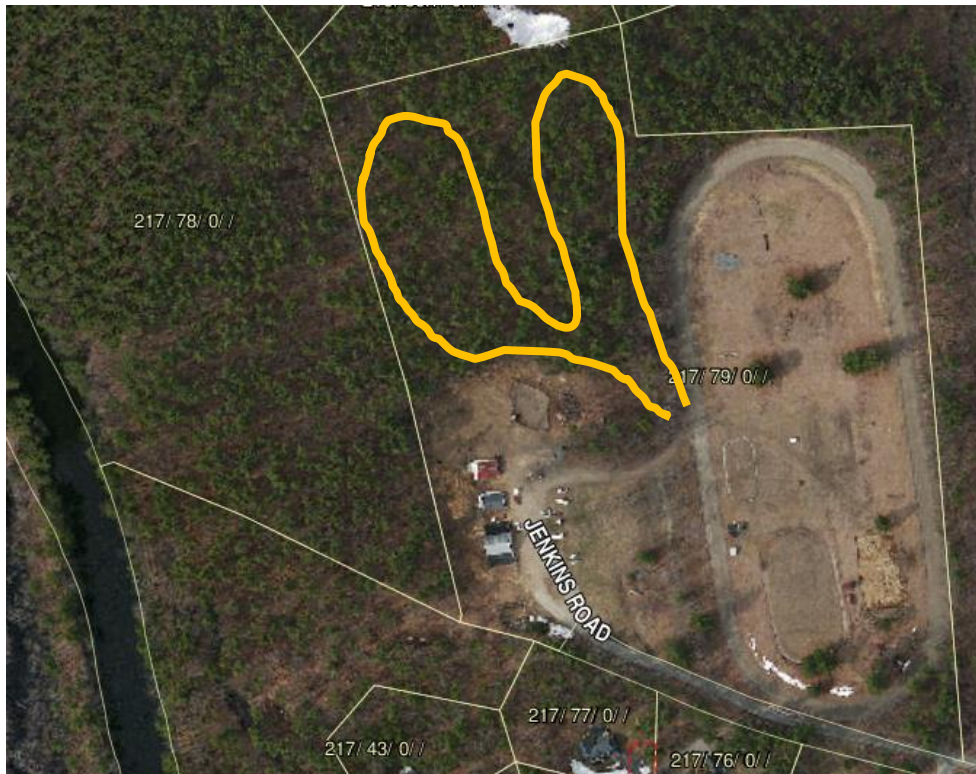
## 2. Fitness Trail at Hazel Grove

This project would provide a unique outdoor exercise facility for the Town of Groton. A fitness trail (also known as outdoor exercise equipment and also known as a parcourse) consists of a path or course equipped with obstacles or stations distributed along its length for exercising the human body to promote good health. This Fitness Trail (e.g., Fit Trail™, Life Trail™, Health Trail™, or any similar commercially available product) would provide a woods trail experience with various exercises (e.g., stretches, toe raise, leg raise, quadriceps climb (step) and sit, pull-ups, push-ups, hand walk, body dip, bar jump, body raise, reverse pull-up, overhead ladder, balance walk, back extension, pull-downs, sit-ups, etc.).

This Fitness Trail could also be combined with two runner/walker lanes around the Hazel Grove track, to provide a very complete exercise regimen in an outdoors setting.

In addition to the above benefits, this project would provide an additional accessible trail through the woods that could be accessed from the same parking area that would be developed for Project B4, the Nashua Riverwalk.

A possible configuration of the Fitness Trail is shown in orange in the map below. It would be in the woods next to the Hazel Grove track.



The picture below shows an example of a fitness trail exercise station.



### **Design**

- Trail approximately 0.5 miles long; 6 feet wide; packed crushed rock; flat.
- A twenty-station Fitness Trail course would probably be appropriate for the size of the land available while still maintaining a feeling of being in the woods.

### **Challenges**

- The equipment for this Fitness Trail and the construction of the trail itself would cost several tens of thousands of dollars.
- Approval of the project by the Hazel Grove Agricultural Association would be required.



### 3. Accessibility of Nashua River Rail Trail in Groton Center

There are only two places in Groton where the public can park to access the Nashua River Rail Trail: at the end of Station Ave. and at its intersection with Sand Hill Rd. However, these parking areas do not provide either handicapped parking spaces or an accessible entrance for mobility impaired individuals. The area at the end of Station Ave. is used by many more people and it is the “gateway” to Groton Center, and for these reasons is the priority spot for providing accessibility. In addition, enhancing the transition from Station Ave. to the Nashua River Rail Trail will make it a generally more appealing destination or rest stop for eco tourism in the Groton Center area.



#### Design

- Asphalt paving of 120' x 30' section of Court Street abutting Nashua River Rail Trail (shown in green in the map above). Additional paving and parking going down what is now the GELD property toward Broadmeadow Rd. would also improve the limited parking capacity at this key access to the Rail Trail.
- Handicapped parking spots with appropriate markings and signs.
- Asphalt or concrete paving of existing 6' x 10' pathway through rail trail fencing to connect the Rail Trail with the handicapped spots in the parking area.
- Portable toilets (seasonal)
- Water fountain (or signs to the fountain at Town Hall)
- Additional benches/picnic tables
- Plantings, including trees for shade
- Marked pedestrian lanes or sidewalks along the motorized vehicle corridor

#### Challenges

- Water connection may not be available for drinking fountain.
- Future development of GELD property may limit paving for additional parking spaces.

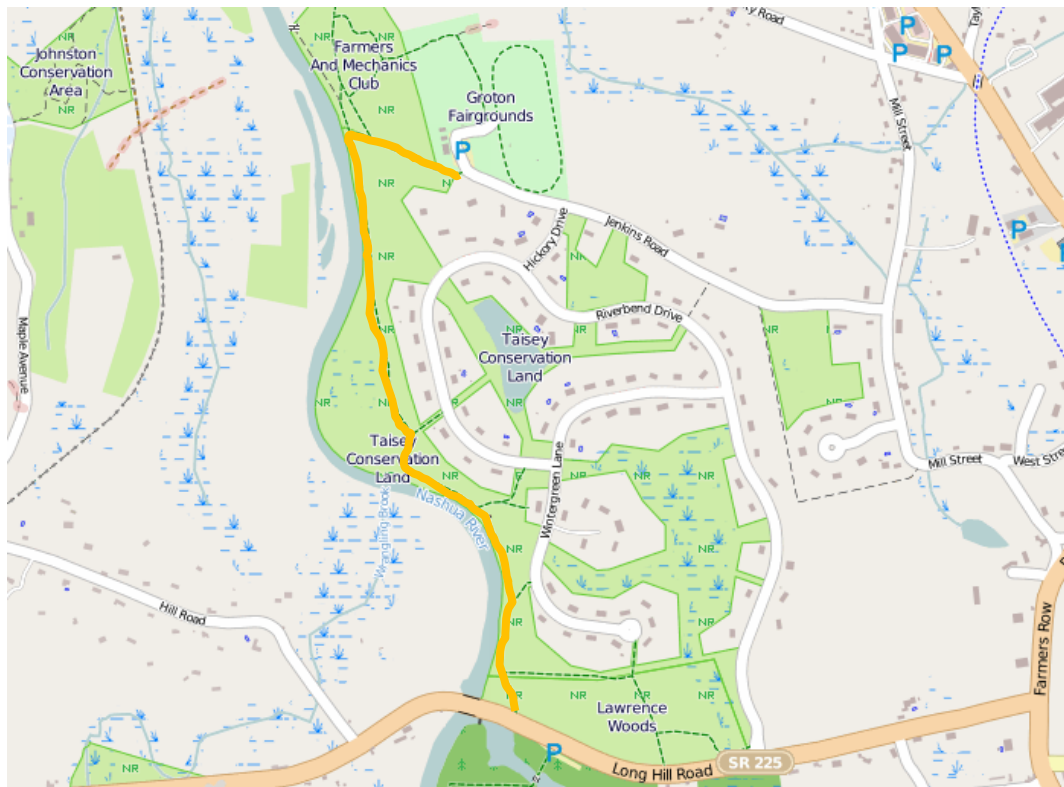
#### 4. Nashua Riverwalk

This project will provide a beautiful and long promenade in the woods for people of all abilities. As noted elsewhere in this report, there are currently no wooded trails in Groton other than the paved Nashua River Rail Trail that can be used by mobility-impaired individuals, strollers, and wheelchairs. This Nashua Riverwalk could become an extremely popular destination both because it combines beauty and serenity with accessibility for all and because it has large parking areas on both ends.

This Nashua Riverwalk has scenic views along a long stretch of the Nashua River and connects two major recreational destinations, Groton Place and Hazel Grove. It is also a segment of a continuous trail that is open to the public along the Nashua River that goes from Surrenden Farm at the border with Ayer to Fitch's Bridge near the border with Pepperell.

There is currently a large parking area available at Groton Place across Rte. 225 at the southern terminus of the Nashua Riverwalk as well as another at Hazel Grove (the old Groton Fairgrounds) at the northern terminus. While these parking areas (indicated with a "P" in the map below) would require upgrading for accessibility, having these large areas available for parking is a critical infrastructure requirement for this potentially popular destination.

The map below shows the proposed Nashua Riverwalk in orange. It follows the course of an existing dirt trail between the Nashua River and the Partridgeberry subdivision (homes on Jenkins Rd., Riverbend Dr., and Wintergreen Ln.).



## **Design**

- About 1.2 miles long; 6-8 feet wide; packed crushed rock surface; flat
- Four or more granite benches along the trail for rest and scenic viewing
- Two bridges for stream crossings
- A parallel equestrian trail will be required to prevent damage to the packed crushed rock tread
- Parking areas at Groton Place and Hazel Grove will need to be upgraded to provide suitable handicapped parking spaces

## **Challenges**

- Will require approval from the owner of the land, Robert G. Taisey, as the trail easement does not permit such an extensive alteration without approval. The Partridgeberry Homeowners Association's approval of the project would likely be critical in obtaining Mr. Taisey's approval.
- Will require approval from Groton Conservation Trust, which owns the Lawrence Woods parcel south of the Taisey easement.
- This project will be somewhat costly and so state Recreational Trail Program grant applications and Community Preservation Act (CPA) fund requests should be prepared.

## 5. Develop Blue Trails Along Rivers

This project would develop trails on the Nashua and Squannacook Rivers both within Groton and connecting to Pepperell, Shirley, Townsend, and Ayer. Maps could be developed to show the rivers in sufficient detail to aid in navigation and to identify points of interest along the rivers.

In addition, or alternatively, signage along the river such as that described in Project B6 for land trails, could be part of this project. Signs could point to destinations (e.g., Pepperell, Fitch's Bridge, Ayer, Townsend, Surrenden Farm, Groton School, Groton Town Forest, Dead River, Oxbows on the Nashua River, J. Harry Rich State Forest) or describe points of interest (e.g., the above destinations, the old mill site at the Petapawag Canoe Launch)

Rest/picnic areas could be developed at intervals on the riverbanks, and intersections with land trails could be developed so that a combined canoe and hike could be planned (e.g., in the Town Forest, at Surrenden Farm, in the J. Harry Rich State Forest).



### Design

- Maps of the rivers could be developed for download and distribution.
- Signage could be designed and installed on trees or posts at strategic locations along the rivers.
- Rest areas with rustic benches could be created in public parcels along the rivers. Places to park boats could be created on the riverbanks where land trails come close to the rivers so that people could combine their boating with a hike on land.

### Challenges

- Permission from the landowners would be required to develop rest areas and install signage.



## **6. Directional, Point of Interest, and Interpretive Signs**

As noted in Section VIII.E., the Groton Trails Committee has put trail markers on many of the 110 miles of trails in Groton to help users stay on the trails, and has installed trailhead posts where trails intersect Groton's roadways to highlight the trails. However, except for the Hayes Wood Nature Trail, there is not a single sign on any path in Groton that points to a destination such as another trail or parcel, a road or parking area, or a point of interest.

In a word, Groton's trails are currently a mystery. They do not provide any information to users to indicate where they go, what might be seen along the way, what uses are recommended or not (e.g., hiking, horseback riding, mountain biking, cross-country skiing, or nature study), and what levels of difficulty and accessibility they have, if any. This project is a long-term one to develop a consistent set of signs that can guide users to and along the trails of Groton so that they can plan their use of the trails appropriately and have good experiences.

There is potential for savings in signage by using the buying power of a region, or even the entire Commonwealth of Massachusetts. There would also be advantages to having consistency in signs for each type (directional, point of interest, recommended or prohibited trail users, etc.) through standards for size, color, lettering, logos, etc., for each type. If a region or the Commonwealth could publish a set of standards for signs, develop a list of qualified vendors, and negotiate some prices with the vendors that local trails organizations could take advantage of, this could be of significant benefit to the towns.

There are many types of signs that need to be considered and the following photos provide some examples to choose from and tailor as needed. In addition to signs, some trails themselves need to be named in such a way that it is obvious why one would choose to take such a trail. Examples might include names such as Gibbet Hill Trail, Esker Trail, Pepperell-Brookline Railroad Trail, Town Forest Loop Trail, Top of Groton Trail, Kettle Hole Trail, Sunset Trail, Sunrise Trail, Wetlands Trail, and Throne Hill Trail.

The following are a variety of types of signs that could be tailored for use on Groton's Trails:

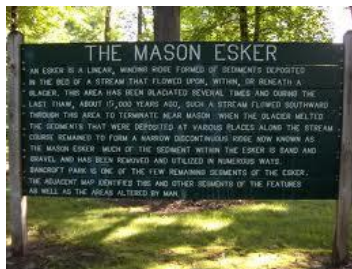
## Mountain bike trails



## No mountain bikes



## Geological education sign



## Historical sign



## Equestrian trail



## Bicycling and XC skiing trail



## Multi-trail sign



## Handicapped accessible sign



Handicapped accessible activity



Courtesy sign ☺



Point of interest sign



Directional signs



Caution sign ☺



Courtesy sign



Courtesy signs



## **Design**

- It is helpful if signs are small, distinctive, and consistent from parcel to parcel (and even town to town) because they will not need to be read each time they are seen and they will seem less obtrusive.

## **Challenges**

- Costs are significant for the number of signs that might be needed for the Town of Groton
- What is helpful and reassuring to one person using a trail may be “clutter” akin to billboard advertising to another. A difficult balance must be achieved between information/education, safety, and aesthetics.



## 7. Road Bicyclist Pathways Based on “Complete Streets”

“Complete Streets is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Complete Streets allow for safe travel by those walking, bicycling, riding automobiles...,”<sup>15</sup> etc.

The photo below shows a wide shoulder marked, clearly with the white stripe, that can be used by bicycles. The road was reduced to one lane in each direction for motorized vehicles by the addition of the wide shoulder and the median strip. Note the curb protection/visibility for the pedestrian crossing in the median strip, which allows pedestrians to cross the road one lane at a time if necessary.



The photo below shows a bicycle lane clearly marked with a border line and a bicycle symbol. The road width has been reduced from two lanes to one lane for motorized vehicles by the combination of the bicycle lane and the marked median strip. In addition, no parking is permitted on the side with the bicycle lane in this area.



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<sup>15</sup> Wikipedia, [http://en.wikipedia.org/wiki/Complete\\_streets](http://en.wikipedia.org/wiki/Complete_streets)

In addition to markings on the roadways, road signs, such as those shown below, can also notify drivers of motorized vehicles that the road is a Bike Route. These signs will also serve to concentrate bicyclists on the Bike Routes and by increasing the number and visibility of bicyclists, their overall safety will improve.



## Design

The specific design elements of Complete Streets vary based on context, but for bicycles they may include:

- Traffic calming measures to lower speeds of automobiles and define the edges of automobile travel lanes; elimination of free-flow right-turn lanes; angled, face-out parking; etc.
- Protected or dedicated bicycle lanes, with appropriate markings and signage
- Wide paved shoulders.

The narrow width and poor visibility around the many turns of even major roadways in Groton are a challenge for improving the safety of bicyclists, which is the major goal of this project. Precisely because

bicyclist safety is difficult to achieve with our roads, it is important to select a very few routes that we want to make as safe as possible. By “advertising” them with Bike Route signs and road markings, we can encourage as many cyclists as possible to use those few routes and benefit from their “safety in numbers.” The first priority should be several “trans-Groton” routes that connect with all of our neighboring towns. The following routes are offered as possibilities that would need to be discussed with the other towns so that they could make complementary connections with Bike Routes they would hopefully develop as well:

- **Westford, Pepperell, and Townsend:** A safe **southeast-northwest** route is the most needed due to the many dangers of biking on Rte. 119. To by-pass Rte. 119, a Bike Route could be established along Rte. 225 coming from Westford. It could then follow Whiley Rd.-Pine Trail-Lost Lake Dr. to Rte. 40. At that intersection, bikers would take a left turn onto Rte. 40 to Schoolhouse Rd. and then take Martins Pond Rd. to Hollis St. Taking a right turn, going north a block, and then taking a left turn onto Longley Rd. would get bikers to Pepperell where there are several alternatives to Rte. 119 to go north and west. An alternative Bike Route could be to take a left turn at Hollis St., go south a block, and then take a right on Common St. and go down to the Nashua River Rail Trail; this might be good for some bicyclists, but faster “through bikers” would probably prefer to avoid the more congested Rail Trail. Another safe **southeast-northwest** route would be for bicyclists to use Townsend Rd. (reached via the **east-west** route described below) from W. Groton Center to Townsend and Pepperell.
- **Westford and Shirley:** The combination of Rtes. 225 and 40 (using Broadmeadow Rd. to connect between them in Groton Center) would be a good **east-west** route for travelling between Westford and Shirley.
- **Ayer and Dunstable:** Farmers Row-Pleasant St.-Elm St.-School St.-Hollis St.-Chicopee Row would provide a good **north-south** route for travelling between Ayer and Dunstable.
- **Littleton:** The only safe way to get between Groton and Littleton (i.e., that avoids using the dangerous Rte. 119) is to use Sandy Pond Rd./Westford Rd. and Willow Rd. off Rte. 2A.
- **Tyngsborough and Dunstable:** The only road that connects between Groton and Tyngsborough is Island Pond Rd., which is off Old Dunstable Rd. Old Dunstable Rd. is very narrow and winding but, as a consequence, the traffic speed is reasonably low. Old Dunstable Rd. could offer bikers an alternative north-south route from the east-west route described above that could take them to Tyngsborough and Dunstable.

Whenever major re-paving or restructuring of Groton’s major roadways occurs in the future, consideration should be given to using Complete Streets concepts for improving safety for all. It is not just the safety of a bicyclist or pedestrian that is of concern, but also the impact on the well-being of the driver of a motorized vehicle who accidentally hits a bicyclist or pedestrian.

## Challenges

Since many bicyclists cover long distances, Bike Routes that Groton designs need to be coordinated with Groton’s neighboring towns. It is hoped that the neighboring towns will also develop Bike Routes of their own, but which roads each town identifies as Bike Routes really becomes a regional issue because the increase in bicycle traffic along particular routes in one town will obviously create more traffic on the streets in neighboring towns to which they connect.

Complete Streets design concepts should also be considered in Groton Center. It is understood that eliminating motorized vehicle lanes would be an initially unpopular suggestion because of concerns it will cause reduced traffic flow and greater congestion. However, some steps like the following that have been used in other cities and towns can mitigate the loss of a traffic lane:

- Reducing the number of places where vehicles can turn left, or eliminating them entirely, so that traffic flow is not impeded by one car having to wait to cross the other travel lane and holding up all the cars behind. By having vehicles pass through a congested area before allowing them to make a U-turn or a series of turns to return in the other direction, the traffic flow can be controlled where there are fewer vehicles and where the controls are less disruptive to the flow.
- Eliminating parking (and/or bicycling) during peak traffic periods so that the additional lane can be made available to increase traffic flow at those times.

Roadway changes can be very expensive. But there are financial impacts of reduced exercise, increased motor vehicle use, more accidents, building more parking areas, having fewer business visits due to inconveniences in getting to them, and becoming a town that is not as appealing to people searching for a place to live because it does not allow them to walk and bike safely to places they want to go. A more balanced approach to accommodating both bicyclists and motorized vehicles in Groton is certainly possible and we believe it would enhance our town in many ways.



## **C. New Local and Inter-Town Pathways**

### **1. Squannacook River Rail Trail**

This project is being spearheaded by the Squannacook Greenways, Inc., a 501(c)3 organization established for that purpose. It is included in this report because it is not yet a “done deal” and it requires maintained community support and successful fundraising to be brought to the point where work can commence. It is also included in this report because it is an excellent example of how some large projects need to be managed by a core group of dedicated individuals who can maintain focus on all the work required to build and maintain community support, obtain necessary approvals, do the necessary design work, raise the required funds, and manage the implementation of the project. All of these aspects of a project must be carried out successfully if it is to succeed.

As the Squannacook Greenways group describes on their website<sup>16</sup>, “The proposed rail trail [in Townsend] would access Route 119 at Depot Street in the center of town, Old Meetinghouse Road, South Street, and via Harbor Village Shopping Center. It would provide a safe route to bicycle between two of the major population centers in town - Townsend Harbor and the town center. Traffic on Route 119 is only likely to increase, making the road more unsafe for pedestrians and bicyclists with every passing year... The list of Townsend and Groton destinations close to the rail trail is a long one. It includes North Middlesex High School, Harbor Village, the historic Harbor Pond area, Shepherd's with its restaurant and planned golfing attractions, Squannacook River State Forest, Bertozzi (Squannacook) Wildlife Management Area, Townsend Common, Central Plaza, Townsend Library, and the stores in the center of Townsend.”

The Squannacook River Rail Trail will create a key inter-town trail connection. When Project C4 (Rail Trail from W. Groton Center to Ayer) and Project C5 (Pathway Along Townsend Rd.) are also completed, their combination will create a continuous trail connection through Groton from Ayer to Townsend. With potential expansion of the Squannacook River Rail Trail to Old Turnpike Rd. in Townsend and then the New Hampshire border (Mason, NH), it could connect with the Mason-Greenville Railroad Trail, forming an inter-state rail trail.

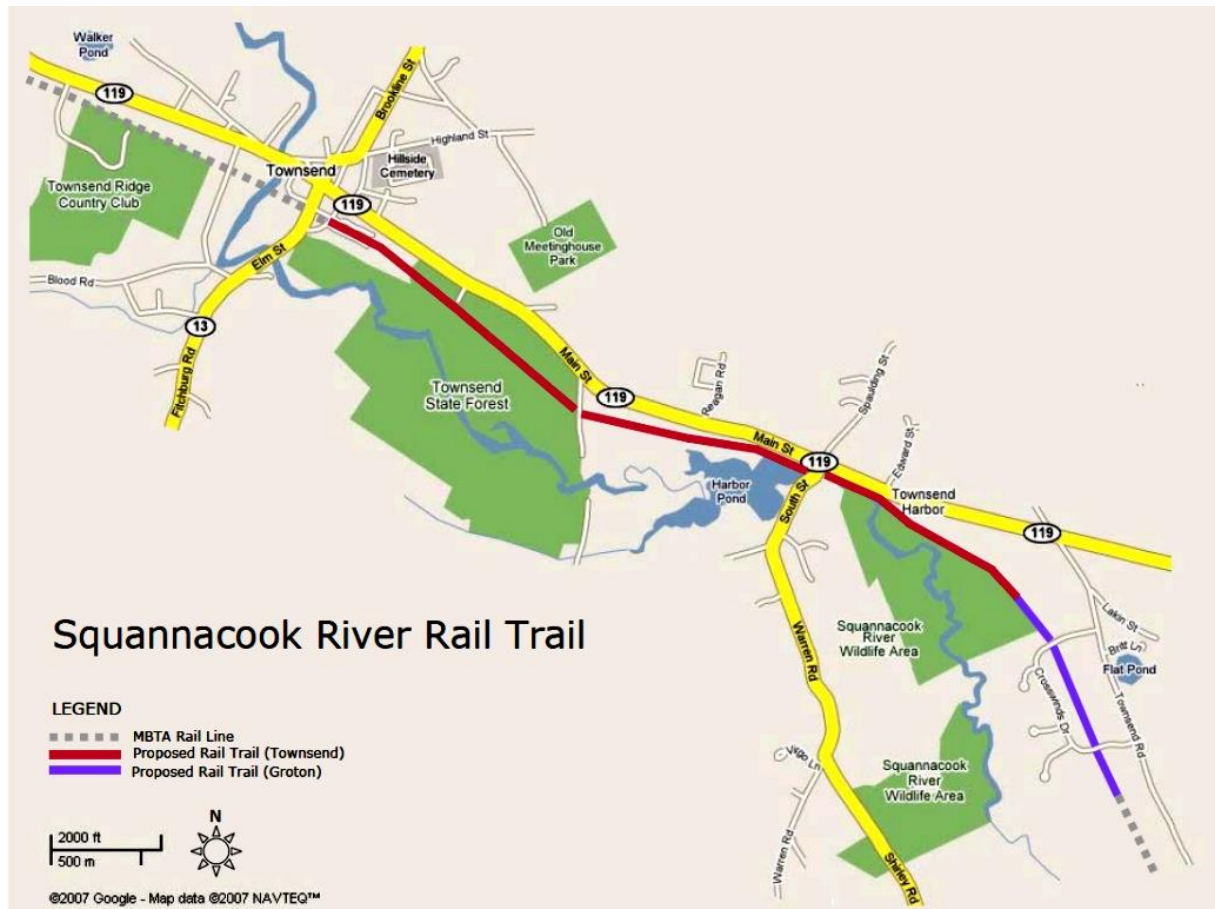
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<sup>16</sup> <http://www.squannacookriverrailtrail.org/index.html>

The photo below shows a view of the Squannacook River Rail Trail pathway as it exists today. Imagine the possibility of walking or riding a bike down this trail! To the right is a photo of a rest spot along the Nashua River Rail Trail, which is very similar to views along the Squannacook River.



The map below shows the proposed route of the Squannacook River Rail Trail in Townsend (in red) and Groton (in blue).



## Design

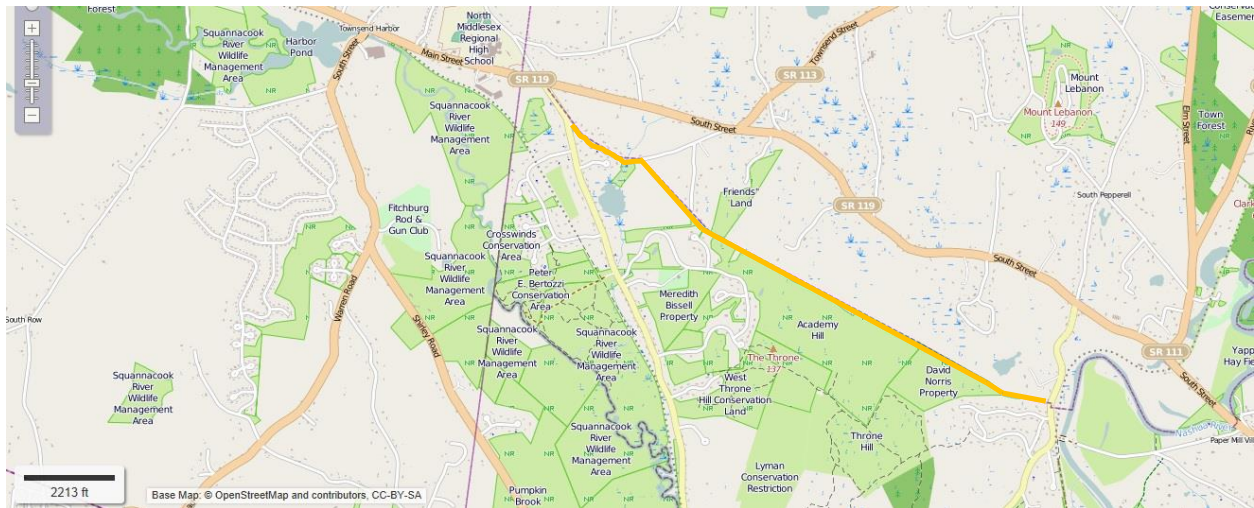
- Packed crushed rock surface; 3.7 miles

## Remaining Challenges

- Securing the lease from the MBTA
- Raising funds to design and build the Squannacook River Rail Trail

## 2. Path on Old County Road to Pepperell

This project would connect Fitch's Bridge (bottom right of picture) with Pepperell (Lakin St.) and the Squannacook River Rail Trail (north-south dotted line to the east of the Squannacook River Wildlife Management Area in the map below) that will connect to Townsend. The Old County Road (shown in orange on the map below) is of significant historical, scenic, and trail network significance. It goes along the boundary between Pepperell and Groton for its entire length and was the original route from Groton, across Fitch's Bridge, to the west. There are stone walls on either side of Old County Road. It passes through and connects to the Throne conservation areas of Groton. The Old County Road was discontinued early in the 1900s, but it is still informally traversed by pedestrians and mountain bicyclists.



### Design

- Packed crushed rock pedestrian/bicyclist/equestrian trail; 10' wide; 1.8 to 2.2 miles long
- Would extend from Shirley Rd./Pepperell Rd. intersection to either Academy Hill Conservation Land (Arbor Way or Cherry Tree Ln.) or to Lakin St. in Pepperell.

### Challenges

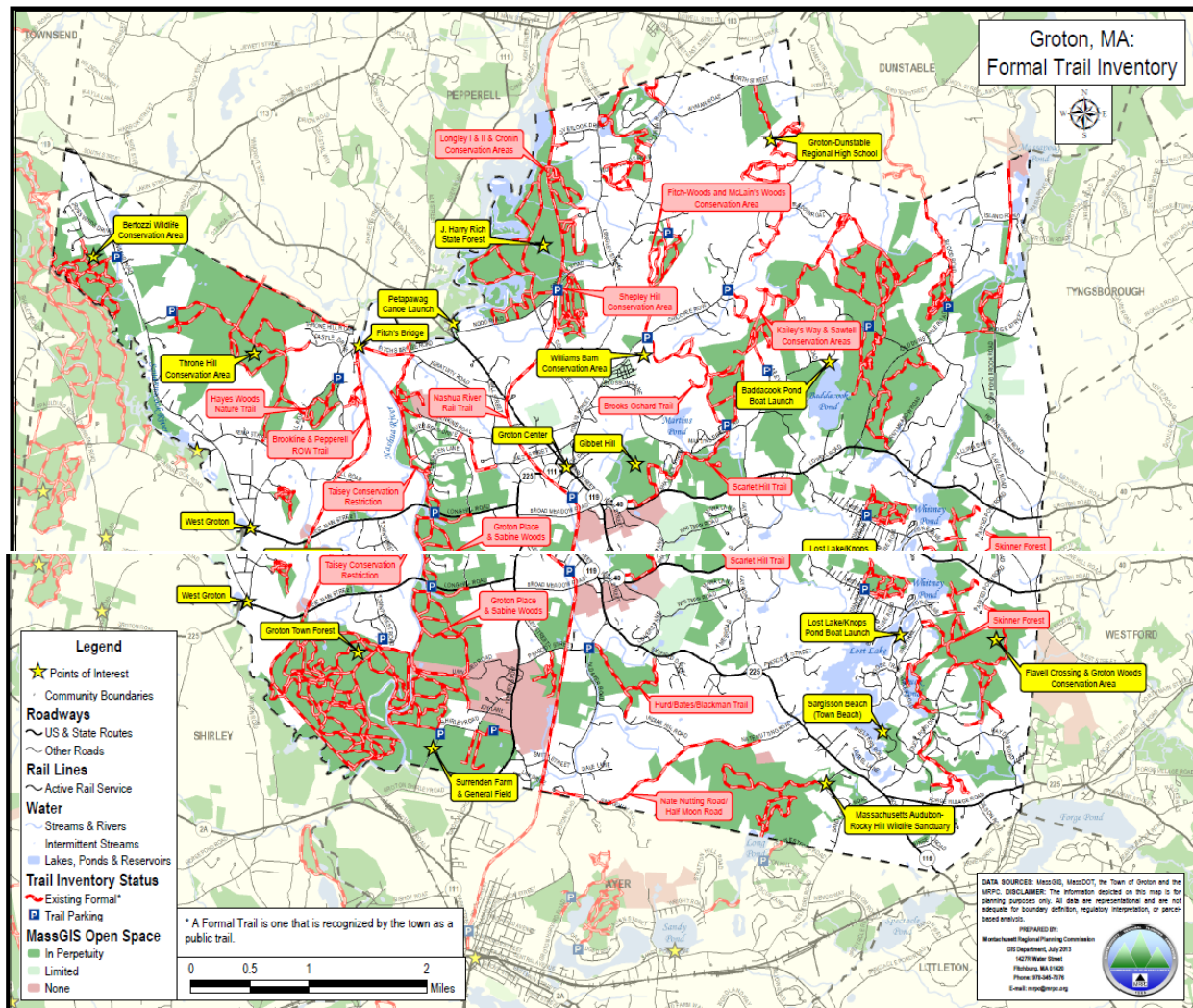
- The road was discontinued, which means the public right-of-way was extinguished and the property lines of the abutters reverted to the center line of the roadway. As a consequence, except for some sections where the Town of Groton or the Groton Conservation Trust owns property over which the Old County Road passed, the road is now on private property that is not accessible to the public. Much of the road was on the Groton side of the border, but it weaves across the Pepperell boundary in several places. Re-establishing the road right-of-way may require purchases of land and/or easements and may therefore be potentially costly. At a minimum, it will involve cooperation by Groton and Pepperell abutters as well as the towns themselves.
- Access to the Old County Road from the Pepperell Rd./Shirley Rd. intersection is currently over private property, although it has been used by the public for many years. Purchase of land or an easement for public use would be required across this parcel if a suitable workaround could not be found.
- Drainage is a problem in spots along the road and water flow control measures and some bridges would likely be required.



### 3. Increase Connectedness of Trails Network

The two pictures below, which are from a map being developed by the Montachusett Regional Trails Coalition, show most of the 110 miles of public trails in Groton, although they do not show any of the sidewalks (for a more complete picture of the trails, including sidewalks, see the Interactive Trails on the Trails Committee's website at [www.grotontrails.com](http://www.grotontrails.com)). What this project focusses on are the “gaps” between the trails.

While some areas of Groton have many miles of continuous connected trails, other trails are disconnected from those nearby. In some cases, these “gaps” are short as measured by distance, but they are large in terms of limiting the usefulness of the trails for getting from one place to another. There are some cases where even a short disconnected trail or group of trails may still be very popular because of a particular point of interest to which the trail leads (e.g., Mass Audubon's Rocky Hill Nature Sanctuary), but generally a trail that is disconnected will not be used by many people and it will thus require more work to maintain it. Another benefit of a more connected network is that it reduces the amount of traveling by motorized vehicle that is required to get people to where they want to go.



## **Design**

- Expand trail network by making new connections with existing trails in Groton when opportunities arise through purchase of land or easements.
- Expand trail connections with Groton's neighboring towns when opportunities arise through purchase or easements.
- Connect sidewalks to trails wherever possible.

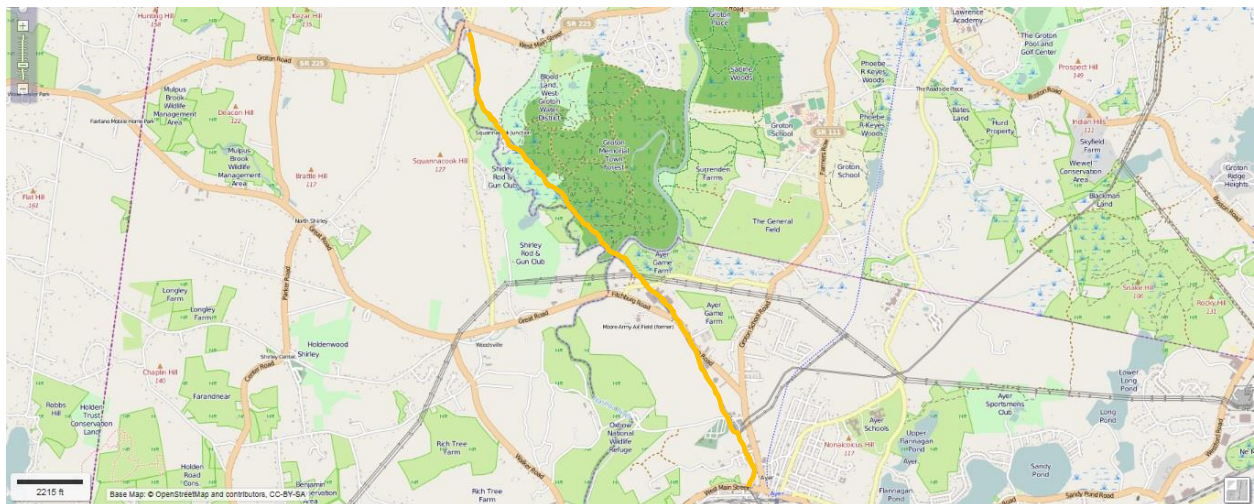
## **Challenges**

- The "gaps" in the trails network are private property parcels. Some property owners may be unaware of the value of their property for improving the trails network. Other owners may not want their property to be purchased or used by the public regardless of its value to the public. Attitudes will change over time so communications regarding the needs for public trails with private property owners should be sustained over long periods even if they do not occur frequently.
- Opportunities for purchasing land or easements cannot be planned and may last only briefly due to personal time constraints that the buyer may have. Funds must be built up and reserved so that they can be used rapidly if needed. The Conservation Commission has a Conservation Fund for this purpose, but the CPA funds that are used to replenish it have been stretched lately by many more competing proposals. Keeping enough funds in the Conservation Fund so that time-sensitive opportunities for key land and trail purchases can be met with available funds will be an ongoing challenge.
- There will always be limited funds available for land or easement purchases, so the "gaps" need to be considered in their totality and then prioritized to get the most value out of the money that is available when opportunities arise. Selecting one purchase over another can be very difficult when most all potential opportunities only arise once in a lifetime and then are not available again for another lifetime, but funds must be used strategically to get the most value from them.

#### 4. Rail Trail from W. Groton Center to Ayer

This relatively short segment of rail trail would connect W. Groton with Town Forest (and north to Fitch's Bridge on the west side of the Nashua River), Surrenden Farm (and north to Fitch's Bridge on the east side of the Nashua River), and Ayer. When the Squannacook River Rail Trail is completed, and if a safe pathway along Townsend Rd. is developed (Project C5), then there will be a continuous inter-town pathway from Ayer through Groton to Townsend. This could provide a safe alternative commuting route to the Ayer MBTA station if, for example, Rte. 111 from the Groton-Shirley Rd. into downtown Ayer was upgraded in accordance with Complete Streets guidelines.

The railroad right-of-way from W. Groton center to the Groton-Shirley Rd. in Ayer (shown in orange on the map below) is not being used by PanAm and no future use is planned because there are no potential customers along this section of the line. There is a bridge over the Nashua River at the border with Ayer that is unsafe for railroad cars without upgrading, but could be made safe for non-motorized traffic at reasonable cost.



#### Design

- Asphalt or packed crushed rock rail trail; 2.1 miles
- Railings and decking on bridge over Nashua River will be required for safety and possibly to support emergency vehicle passage

#### Challenges

- MBTA will need to agree to sell/lease the railway right-of-way to Ayer and Groton
- Ayer-Groton cooperation will be required for this project
- Significant costs of designing and building this rail trail will need to be addressed by grants and/or fundraising and/or town funds (CPC, et al.)

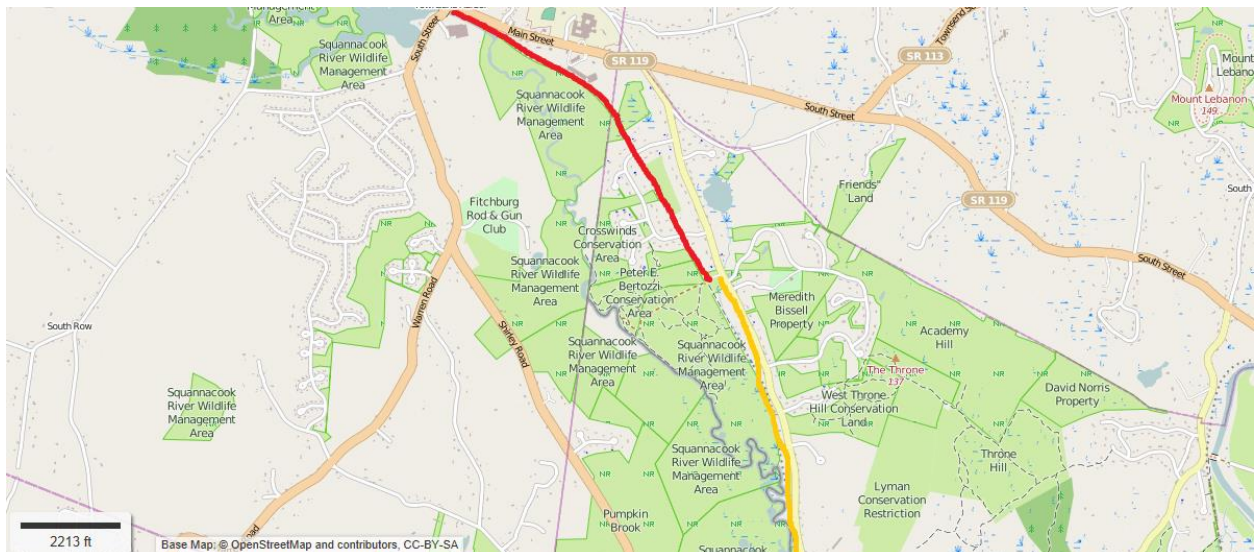


## 5. Pathway Along Townsend Rd.

This project addresses the fact that hundreds of people live along Townsend Rd. and in the subdivisions that connect to it, and yet they have no safe way to travel on Townsend Rd. except by motorized vehicle. There are beautiful conservation and recreation parcels along the length of Townsend Rd., including the Squannacook River Wildlife Management Area, the Bertozzi and Crosswinds CAs, the three Throne Hill properties of the Groton Conservation Trust, the canoe launch area on the Squannacook River at the W. Groton Water Department, and the Hollingsworth and Vose field, but only the immediate abutters of those properties can access them safely by foot, horse, or bicycle. The subdivisions have their own sidewalks, but they do not connect to any other sidewalks or pathways along Townsend Rd.

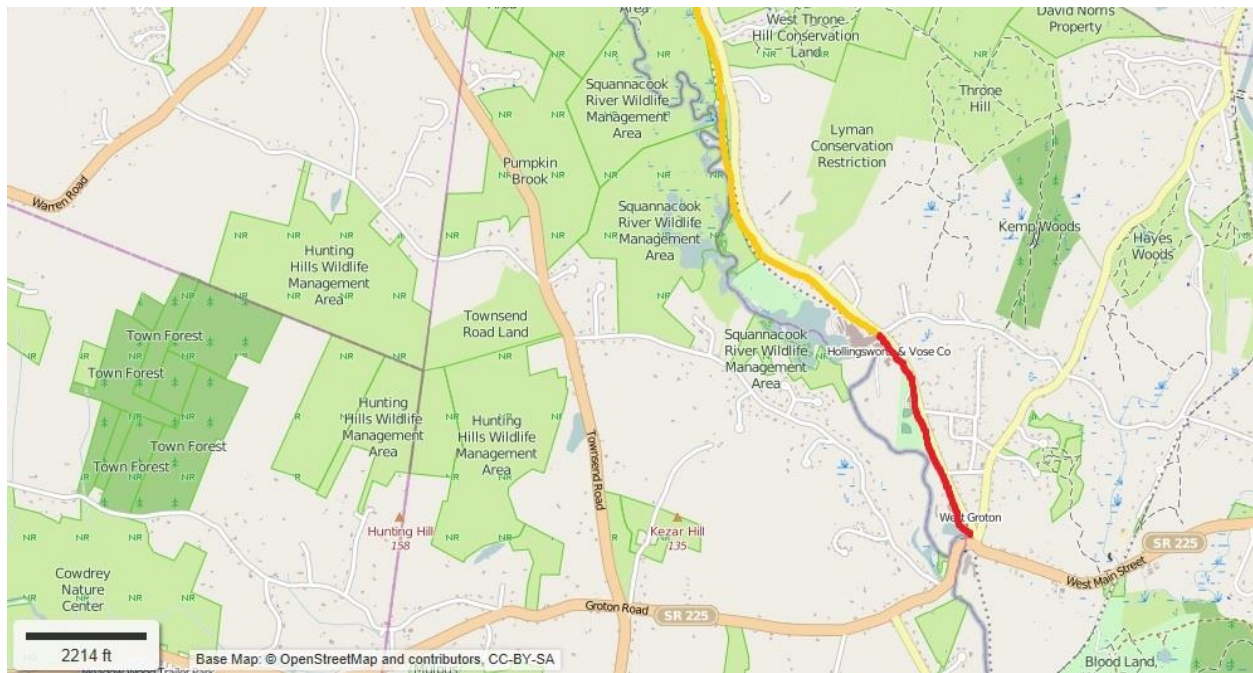
Project C1, the Squannacook River Rail Trail, may soon become a reality after more than a decade of obtaining necessary permits and approvals; it is shown in red in the map below. It only goes for 0.7 miles in Groton, but it will continue for an additional three miles in Townsend. However, because it is not safe or comfortable for all to walk or bike along Townsend Rd., this scenic and useful trail will be available largely only to the residents of the Crosswinds subdivision unless a motor vehicle is driven to the subdivision and parked.

This project proposes putting in a pathway along the western side of Townsend Rd. beginning where the future Squannacook River Rail Trail ends at the Bertozzi CA and continuing south to where the existing sidewalk coming from W. Groton Center ends at the Hollingsworth & Vose plant. The proposed pathway is shown in orange on the map below. The old Peterborough and Shirley Railroad right-of-way, over which the Squannacook River Rail Trail will be developed, continues all the way to W. Groton Center and thence to Ayer. It parallels Townsend Rd. and in some places it is right next to the road while in other places it goes behind the homes. The reason that the Squannacook River Rail Trail does not continue all the way to W. Groton Center is because there are endangered species in or near the wetlands along some stretches of the right-of-way that preclude its use as a Rail Trail. However, there are likely to be some stretches of the right-of-way that are not near the sensitive environmental areas and perhaps these could be used for parts of the pathway. These segments could be combined with new pathways constructed along Townsend Rd. to provide a continuous path.





The map below shows the southern portion of the Townsend Rd. pathway (shown in orange) and its connection with the existing sidewalk coming from W. Groton Center ends at the Hollingsworth & Vose plant.



The pathway along Townsend Rd. could be as simple as a marked wide shoulder as shown in the photo below. However, this is not a level of safety that many would find comfortable, particularly for pedestrians, people with strollers, and young children on bikes.



Where it can be accommodated, a packed crushed rock or asphalt pathway that is isolated from Townsend Rd., similar to the two examples below, would be most desirable.



### **Design**

- Asphalt and/or packed crushed rock pathway; 6-8 ft. wide; 1.9 miles (10,150 ft.) long

### **Challenges**

- It will need to be determined by the Groton Conservation Commission to what extent segments of the Shirley and Peterborough right-of-way might be suitable for constructing this pathway.
- There are numerous homes along Townsend Rd. whose frontage will be affected by the sidewalk. Landscaping and trees will need to be considered and the cooperation of all the impacted homeowners will be needed.

## 6. Pathways Along Major Roadways

This project is identical to Project C5 for Townsend Rd. but applies to the other main roads in Groton: Longley Rd., Chicopee Row, Lowell Rd., Forge Village Rd., Old Dunstable Rd., Lost Lake Rd./Whiley Rd., Pepperell Rd., Old Ayer Rd., and Martins Pond Rd. These roads would be very attractive and useful pathways for pedestrians, bicyclists, and equestrians but they cannot be used safely as they are because they are too narrow, often having no shoulder at all, and they have many blind corners. There are no realistic solutions for making any of these roads safe for non-motorized use in the foreseeable future, but a vision where the Town of Groton has found a way to give non-motorized travel a more balanced position with respect to motorized travel is a powerful one and for that reason this project is included. It may be a long time away, but it is a goal that is worthwhile to keep in mind should an opportunity to redesign any of these roads ever arise.



## VIII. Prioritization of Projects

The Groton Trails Vision Committee assessed all of the projects included in this report on the following three dimensions:

- **Benefit** – This dimension considers the number of users that the project could benefit. The scale ranges from + (benefits a relatively small number of users) to +++ (benefits large numbers of users).
- **Time Period** – This dimension considers how long it might take to do all the planning, design, and implementation work for the project. Three time periods were considered: one to two years (1-2), three to four years (3-4), and five or more years (5+).
- **Cost** – This dimension provides a very rough estimate of the magnitude of the costs required for the project. The scale chosen was less than \$25,000 (\$), \$25,000-\$250,000 (\$\$), and more than \$250,000 (\$\$\$). Obtaining grant funds and/or fundraising could significantly reduce costs to the Town of Groton, but these sources of income were not considered in the Committee’s assessment.

The projects were prioritized within the three major groups that the projects were organized into for this report:

- A. Connecting major nodes/activity centers
- B. Enhancing accessibility & recreational/educational opportunities
- C. New local and inter-town pathways

Within each grouping, the projects are prioritized first by Time Period (shortest to longest), then Benefit (highest to lowest), and then Cost (lowest to highest). The results are shown in Table 1. The rationale for this prioritization was that the Committee wanted to identify the best projects to work on that had the highest probability of success in the shortest period of time. Using common metaphors, the Committee wanted to focus on the “low-hanging fruit” with the “biggest bang for the buck.” The Committee felt that the community would support more of the projects if they saw several examples of what could be done within the first 5 years.

It should be emphasized that the Trails Vision Committee recognized that the prioritization scheme used does not rank the projects by their importance. For example, for sheer usefulness to the most people, Project C4 (Rail Trail from W. Groton Center to Ayer) would probably be viewed as having a very high importance. However, it may take many years to secure a lease or purchase of the railroad right of way and, like the Nashua River Rail Trail, it could be a very expensive project because of its length and the work involved in making the bridge across the Nashua River safe for users. In contrast, making a short trail in the J. Harry Rich State Forest fully accessible will only benefit a relatively small number of people. However, it would create the first such trail in Groton and the first such trail along the Nashua River, and thus would provide access to a beautiful woods trail and river view for some users (mobility-impaired individuals and those pushing young children in strollers) who currently have no such places that they can access. Thus, for reasons unrelated to time, money, or number of potential users, it is a very important project for Groton to pursue.

**Table 1. Prioritization of Projects Within Major Groupings**

<b>Description</b>	<b>Sect. IX Para.</b>	<b>Benefit</b>	<b>Time Period (yrs)</b>	<b>Cost</b>
<b>A. Connecting major nodes/activity centers</b>				
Path on Broadmeadow Rd. from NRRT to Playground Rd.	A1	++	1-2	\$
Path on Lowell Road to Lovers Ln.	A2	+	1-2	\$
Extend Sidewalk on W. Main St. to Senior Center	A3	+	1-2	\$\$
Extend Sidewalk on Pepperell Rd. to W. Groton Center & Integrity Way	A4	++	3-4	\$
Path from Partridgeberry to NRRT to Main St.	A5	++	3-4	\$\$
NRRT to GDRMS Campus	A6	++	3-4	\$\$
Extend Sidewalk on Old Ayer Rd. to Peabody St.	A7	+	3-4	\$
Path on Broadmeadow Rd. from Farmers Row to NRRT	A1	+	3-4	\$\$
NRRT Access at Rte. 119	A8	+	3-4	\$\$\$
Extend Sidewalk on Main St. from GDRMS to Mill Run	A9	++	5+	\$\$
Extend Sidewalk on Rte. 119 from Old Ayer Rd. to Skyfields Dr.	A10	++	5+	\$\$\$
Extend Sidewalk on Main St. from Mill Run to Fitch's Bridge Rd.	A9	+	5+	\$\$
<b>B. Enhancing accessibility &amp; recreational/educational opportunities</b>				
Nashua River Accessible Trail	B1	+	1-2	\$
Fitness Trail at Hazel Grove	B2	+	1-2	\$\$
Accessibility of NRRT in Groton Center	B3	+++	3-4	\$
Nashua Riverwalk	B4	++	3-4	\$\$
Blue Trails Along Rivers	B5	+	3-4	\$
Directional, Point of Interest, and Interpretive Signs	B6	+++	5+	\$
Road Bicyclist Pathways Based on "Complete Streets"	B7	++	5+	\$
<b>C. New local and inter-town pathways</b>				
Squannacook River Rail Trail	C1	++	3-4	\$\$
Path on Old County Rd. to Pepperell	C2	+	3-4	\$
Increase Connectedness of Trails Network	C3	+++	5+	\$\$\$
Rail Trail from W. Groton Center to Ayer	C4	+++	5+	\$\$\$
Pathway Along Townsend Rd.	C5	++	5+	\$\$
Pathways Along Major Roadways	C6	++	5+	\$\$\$



## **IX. Year One Vision – Short-Term Improvements to the Trails Network**

### **A. Prioritized Projects for Year 1**

The short-term projects that should be focused on during Year 1 are the following:

- A1. Path on Broadmeadow Rd. from NRRT to Playground Rd.
- A2. Path on Lowell Road to Lovers Ln.
- A3. Extend Sidewalk on W. Main St. to Senior Center
- B1. Nashua River Accessible Trail
- B2. Fitness Trail at Hazel Grove

Of these, the only project that has had some planning work performed, has preliminary approval from the landowner, and has a potential source of funding (a grant from DCR's Recreational Trails Program) is B1. For the other projects, an advocate (individual or organization) would need to be identified who could do the necessary planning, obtaining of permits, securing of funding sources, and oversight of the implementation.

### **B. Planning Ahead in Year 1**

The other projects identified in the report will require more time to plan, obtain the necessary approvals and permits, and identify funding sources. Nevertheless, some should be started as soon as possible, and preferably in Year 1, because they are either: a) projects that serve ongoing needs that have no particular start and end dates associated with them; or b) projects that require a long lead-time to develop the consensus that is needed for the project to be successful. Additional discussions with stakeholders for the long-lead time projects should take place to determine the level of support that can be expected and this information should be used to re-prioritize future planning efforts as necessary. Example of such projects are as follows:

#### **Ongoing needs**

- B5. Blue Trails Along Rivers
- B6. Directional, Point of Interest, and Interpretive Signs
- B7. Road Bicyclist Pathways Based on "Complete Streets"
- C3. Increase Connectedness of Trails Network

#### **Long lead-time requirements**

- A4. Extend Sidewalk on Pepperell Rd. to W. Groton Center & Integrity Way
- A5. Path from Partridgeberry to NRRT to Main St.
- A10. Extend Sidewalk on Rte. 119 from Old Ayer Rd. to Skyfields Dr.
- B3. Accessibility of NRRT in Groton Center
- B4. Nashua Riverwalk
- C2. Path on Old County Rd. to Pepperell
- C4. Rail Trail from W. Groton Center to Ayer
- C5. Pathway Along Townsend Rd.

## **X. Year Three Vision – Mid-term Improvements to the Trails Network**

### **A. Prioritized Projects for Year 3**

The mid-term projects that could be focused on during Year 3 are listed below. By the third year, some of these projects may have been found to be infeasible for one reason or another, so this list is expected to be dynamic as more information is obtained during early project planning.

- A4. Extend Sidewalk on Pepperell Rd. to W. Groton Center & Integrity Way
- A5. Path from Partridgeberry to NRRT to Main St.
- A6. NRRT to GDRMS Campus
- A7. Extend Sidewalk on Old Ayer Rd. to Peabody St.
- A1. Path on Broadmeadow Rd. from Farmers Row to NRRT
- A8. NRRT Access at Rte. 119
- B3. Accessibility of NRRT in Groton Center
- B4. Nashua Riverwalk
- C1. Squannacook River Rail Trail
- C2. Path on Old County Rd. to Pepperell

### **B. Planning Ahead in Year 3**

As described under Year 1, other projects will need to be worked on in parallel with those listed above because they are either ongoing needs or they are projects with long lead-time requirements. The ongoing needs will require relatively steady efforts, but the efforts for the long lead-time projects will likely have highs and lows from time to time. From the projects identified in this report, the following will continue to require intensive planning during Year 3 and Year 4 if they are to be implemented in Year 5 or beyond:

- A10. Extend Sidewalk on Rte. 119 from Old Ayer Rd. to Skyfields Dr.
- C4. Rail Trail from W. Groton Center to Ayer
- C5. Pathway Along Townsend Rd.

## **XI. Year Five Vision – Long-term Improvements to the Trails Network**

### **A. Prioritized Projects for Year 5**

The long-term projects that might be focused on during Year 5 are listed below. By the fifth year, some of these projects may be found to be infeasible for one reason or another, so this list is expected to be dynamic as more information is obtained during early project planning.

- A9. Extend Sidewalk on Main St. from GDRMS to Fitch's Bridge Rd.
- A10. Extend Sidewalk on Rte. 119 from Old Ayer Rd. to Skyfields Dr.
- C4. Rail Trail from W. Groton Center to Ayer
- C5. Pathway Along Townsend Rd.

## **XII. Sustaining the Vision**

The development of this report by the newly formed Groton Trails Vision Committee is only the first step in making progress towards the collective trails vision for Groton. The Committee will need to continue to exist to provide a sustaining voice for the vision, to develop solutions that work for Groton, and to identify and assist the advocates for the projects. At least one dedicated advocate for each project, and for some, many more, will be required to see it through its planning, designing, and implementing phases. As time goes on, the Groton Trails Vision Committee membership will be dynamic, reflecting the turnover of projects that are being focused on at any point in time.

New projects that are identified, as well as new information obtained during the planning of the current projects, will constantly alter planning priorities as time goes on. It is for this reason that the Trails Vision Committee recommends that a new Groton Trails Vision report be generated every five years so that lessons learned over the past five years and new priorities can be laid out. This is also a good interval for providing a summary to the Town of Groton (Selectmen and Town Meeting) of the progress made toward achieving Groton's Trails Vision.

Ultimately, the Groton Trails Vision Committee believes the following:

- That the best measure of success of Groton's Trails Vision will be how long it is sustained;
- That the Trails Vision will resonate with Groton's past support for projects that provide public open spaces for recreation, quiet reflection, and building community bonds; and
- That each successful project will increase the community's demand for more enhancements to Groton's Trails Network.

In summary, if Groton is given a glimpse of how improvements to its non-motorized trails network could improve everyone's quality of life over the next 20 years, and if Groton sees progress towards that vision via several short-term projects, we believe that those improvements will be responded to by increased support, if not demand, for more such projects. When this happens, the Groton Trails Vision will become self-reinforcing and thereby sustained by a community that is safer, healthier, happier, and more connected.

### **XIII. Epilogue: The New Normal on Groton's Trails of the Future**

Sometime in the future, the following may be everyday experiences:

As commuters in their cars and trucks head to work in the morning during the fall and spring, they are stopped at several key intersections not by school busses, of which there are few to be seen, but by several hundred students crossing the street on foot, bicycle, and skateboards to get to their schools. Instead of being aggravated by being slowed by one of the stop-and-go school busses, they enjoy seeing the students (for whom they are paying taxes to provide for their education) as they chat, play, and get exercise on their own daily commute to their schools.

A bicyclist from out of town passes through Groton on the Nashua River Rail Trail around lunch time and sees a sign pointing towards a deli in the downtown area. She decides to investigate and finds Main St. busy with people walking and biking in every direction. She gets a bite to eat and while inside the business she sees a map of the downtown area with several loop trails, one of which can be used by a bike and goes by an ice cream shop, and one of which is called the Gibbet Hill Trail and can only be used by pedestrians and horses. She also notes that there are bicycle racks nearby where she can leave her bike while she explores the Gibbet Hill Trail. After heading off the ice cream shop for a quick dessert, she parks her bike on one of the bicycle racks, and heads off on the Gibbet Hill Trail. After a 15-minute hike up the hill, she is bowled over by the view she has on the hilltop of the town and region below, smiles from the memories conjured by the smell of the cattle grazing on the hill, and fascinated by the walls of the Bancroft "castle." On her way back to her bike and the Rail Trail, she is intrigued by the bits of Groton's history that she reads on plaques along the way. When she gets back home that evening, she tells her family and friends about the fun she had in Groton and they all decide to plan a future trip to Groton to see it for themselves.

Two college friends in Boston find a website that describes a Blue Trail adventure in Groton and they decide to try it out. They rent bikes and go to North Station where they take an MBTA train to Ayer. They get on the scenic Nashua River Rail Trail and get off it at Broadmeadow Rd. They follow the pathway that takes them to the pathway on Farmers Row and they take that one to the pathway on Long Hill Rd. They go down Long Hill Rd. to the Nashua River where they rent a canoe. They first go north to Fitch's Bridge. Along the way they see dozens of people walking along the riverbank on the Nashua Riverwalk. They make a note to themselves that they should check that popular trail out sometime in the future when they get a chance. Farther down the river they pass by some signs that indicate there is a rest stop they could use that would also allow them to access a Fitness Trail at Hazel Grove, which is noted to be Groton's historic Fairgrounds. They make another note to themselves. When they finally get to Fitch's Bridge, they see dozens more people crossing the bridge in both directions on foot, on bike, and even a few horses. They throw away the notes to themselves because they know they will not forget to check out the trails to Fitch's Bridge at another time! They turn around and go back to where they started and then continue further south on the Nashua River. As they pass Groton Place and Sabine Woods, they see many people walking and many dogs playing with each other. They then see the sign for the Groton Town Forest rest stop and trail connection that they had read about on the website. They secure their canoe and follow the marked trail that takes them along the Nashua River and the Dead River (taking another mental note to explore this beautiful stillwater area). After another mile or so, they get to the kettle holes and eskers they had read about on the website that motivated their trip to Groton in the first



place and they marvel at the fact that where they are standing was covered by thousands of feet of ice in the past. After an hour of hiking, and a snack when they get back to the Nashua River rest stop, they finish up their canoe ride and then bike back to Groton for a quick dinner (using a coupon they received with the canoe rental) before heading back to Boston. On the T ride home, they read some of the brochures they picked up in the restaurant that describe more points of interest they would like to see, like the Gibbet Hill drumlin and the Groton Historical Society, and they start making plans for their next trip to Groton.

The West Groton Boy Scout Troop has offered to help with an activity at the Groton Senior Center on Sunday afternoon. When it's time to get over to the Groton Senior Center, the scouts make plans to meet up with each other as they walk from their houses. Most join up on the sidewalks leading into W. Groton Center along Townsend Rd. and Pepperell Rd. but when they hit the sidewalk along W. Main St. another couple of scouts join them. They alternately run, walk, and tease each other as they follow the path through the woods to the Senior Center, where they meet their leader who has brought some things they will need for the activity in his truck. After helping out, the Scouts head home the way they came, getting another 20 minutes of exercise before eating dinner with their families and telling their parents what they did that day.