
ACTON, CONCORD, AND CARLISLE
REGIONAL ACCESSIBILITY PLAN
COMMUNITY TRANSFORMATION GRANT



Draft

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ACTON, CONCORD, AND CARLISLE REGIONAL ACCESSIBILITY PLAN COMMUNITY TRANSFORMATION GRANT

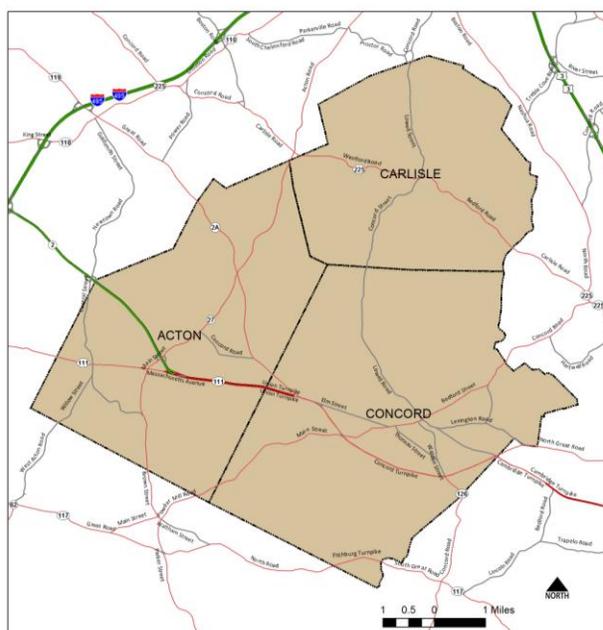
A healthy community is one that promotes the well being of its residents by providing opportunities for physical fitness as well as for community gathering and does both in an equitable manner. Promoting healthy living is a growing priority for all communities.

Acton, Concord, and Carlisle have banded together to review their plans and regulations that affect the built environment for inclusion of elements and opportunities that would improve public health in each town and to explore a regional plan for making trails more accessible.

According to the Center for Disease Control (CDC), chronic diseases affect almost 50% of Americans and account for 7 of the 10 leading causes of death in the United States. Chronic diseases and conditions such as heart disease, stroke, diabetes, cancer, obesity, and arthritis cause suffering and limitations to daily functioning. Many of these chronic diseases are at least partly related to choices we all make about diet and our daily levels of activity. The CDC and several other organizations like the YMCA have programs to encourage local communities to develop policy and environmental strategies to improve healthy eating and active living.

SECTION 1: GENERAL BACKGROUND INFORMATION

The three Massachusetts communities in suburban Boston, Acton, Carlisle, and Concord are proud of their rural character and visitors are often surprised at the natural beauty of the area so close to a major city. At the same time lack of public transportation and accessible trails and other recreational facilities sometimes limit physical activity and often amplifies the isolation of senior citizens, residents with physical disabilities, and teenagers. Automobile oriented development in the last fifty years and other factors have often worked against walking and biking and resulted in fewer opportunities for everyday exercise. Identifying opportunities for healthy



living and making reasonable accommodations will result in safer and more comfortable parks and trails for everyone.

CARLISLE

2010 population – 4,852

15.5 square miles

313 people per square mile

Walk Score® = 32 (Car Dependent)

The Town of Carlisle is a predominantly residential community located approximately 22 miles northwest of Boston. Once called “...city of the woods...” by Henry David Thoreau, Carlisle is still a very rural community with over 30% of the land under some form of conservation restriction. Carlisle residents enjoy the rural charm of a New England farming community with winding roads weaving past stone walls, fields farmed for generations, unspoiled woods, and a working cranberry bog.

The center of Carlisle contains a library, two churches, a country store, a dentist's office, Town Hall, a post office, an automated teller machine and many residential buildings. Kimball Farms, an ice-cream store, has one of its four locations in Carlisle. On the east end of town there is also a small bookstore, an auto body shop, and a recording studio.



CARLISLE LIBRARY

Besides town-owned land overseen by the town's conservation committee, Carlisle is home to Great Brook Farm State Park and a portion of the Great Meadows National Wildlife Refuge along the Concord River.

Carlisle has more than sixty miles of trails and pathways and has pursued becoming a “walkable” town through the efforts of its volunteer Carlisle Trails Committee and the Carlisle Conservation Foundation for more than 25 years. Carlisle has one fully ADA accessible trail and is in the process of evaluating all of its trails for accessibility.

Carlisle is striving to relate land use to healthy outcomes through an examination of existing resources and future planning of the local and regional trail systems. Linking trails from one area to another involves identifying the existing trail network and other open space resources and gaps in those

resources and developing a strategy for closing those gaps. In accordance with the U. S. Dept. of Justice regulations amending the Americans with Disabilities Act (ADA) effective March 15, 2011, the Carlisle Conservation Commission has adopted the first policy regulating Other Power Driven Motorized Devices (OPDMDs) in Massachusetts.

CONCORD

2010 population – 17,668

25.8 square miles

685 people per square mile

Walk Score® Concord Center = 80 (Very Walkable)

West Concord = 74 (Very Walkable)

Located 20 miles west of Boston, Concord’s population has remained stable over the past several decades. It is a picturesque New England community of handsome residences, preserved open spaces, family-owned farms and thriving commercial centers. The town is served by an MBTA commuter rail station in West Concord with service to Boston, Cambridge and Fitchburg; and a commuter bus to Boston. State highway Route 2 runs through Concord, and Routes 128/95 and 495 are conveniently accessed.

Concord has two multi-use villages, Concord Center and West Concord. The town has an abundance of historic and cultural resources. Within walking distance of Concord Center are The Concord Museum, Orchard House, the Old Manse, the Old North Bridge, Minuteman National Historic Park, Emerson House, and Sleepy Hollow Cemetery. Walden Pond, which served as the inspiration for Thoreau’s Walden in 1854, is nearby and offers a variety of recreational opportunities and hiking trails. The Concord Free Public Library, Concord Art Association, Emerson Umbrella studios for visual and performing arts, and the Performing Arts Center (which is home to the Concord Orchestra, the Concord Band, and the Concord Players) are all in the downtown area. Still many of the neighborhoods outside of these villages are largely car dependent for daily errands.

More than thirty five percent (5,803 acres according to the 2004 Open Space and Recreation Plan) of Concord’s land is protected open space. The existing trail network includes 42.2 miles of public trails, more than 47 miles of sidewalks, and numerous trails on private land, especially Easterbrook



CONCORD CENTER

Woods, owned by Harvard University. Three existing trails in Concord are said to meet the standards for accessibility to persons with disabilities (Dike Trail in Great Meadows, all but a 200-foot section of the Battle Road Trail, and Chamberlin Path in Concord Center), but can easily become unusable if not maintained. Concord has a Trails Committee under its Natural Resources Commission that is charged with monitoring existing trails, identifying locations for new trails, coordinating with landowners, developing trail maps, and assisting the NRC in maintaining the trail system.

Concord is working to improve and expand its network of existing trails, bikeways, and regional trails in order to increase accessibility for all residents.

ACTON

2010 population – 21,924

20.3 square miles

1,080 people per square mile

Walk Score® = 46 (Car Dependent)

West Acton Village = 63 (Somewhat Walkable)

Acton is a suburban town located about 21 miles west-northwest of Boston along Route 2, west of Concord and about ten miles southwest of Lowell. Almost all of Acton is forested, except for where it has been cleared for residential or agricultural use.

Acton Center has been the civic center of the town since the revolution and is the site of the town hall, the main public library, a children's playground, an obelisk monument commemorating Acton deaths in "the Concord Fight" of the Revolutionary War, a fire station, a Congregational church, a 64-acre arboretum and conservation area, and the former post office. The modern post office and the police station are each located about one-half mile away in opposite directions along Main Street. Otherwise, Acton Center is generally a residential area.



ACTON LIBRARY

There are four other village centers that were named for their corresponding railroad station. West Acton is an important commercial area of town, consisting of several commercial developments centered along Route 111. It developed in response to the growth of the Fitchburg Railroad in the 19th century. The West Acton Station was located on land now occupied by New London Pizza. South Acton used to be the most industrialized area of the town of Acton. In the 18th century, this area held many mills and other small industrial developments that used water power generated by Fort Pond Brook. The area includes the Faulkner Homestead ('Faulkner House'), the oldest home still standing in Acton. The Faulkner Homestead was owned by the Faulkner family who also owned and ran a mill across the street. Jones Tavern is another still-standing revolutionary-era structure in South Acton that is listed on the National Register of Historic Places. The South Acton MBTA station is the only rail station on the Fitchburg line still active in Acton. East Acton was originally a small commercial area that grew up around the East Acton train station in the 19th century. With the advent of the automobile, and the demise of this branch of the railroad, East Acton became a largely residential area with a commercial base that is situated along the Route 2A corridor. North Acton has had major growth in the period since 1975-80. With the growth of the Rte 2A/119 corridor, North Acton has developed many commercial complexes and condominium buildings. The North Acton Recreation Area (also called NARA Park) contains a small swimming pond, an open air auditorium, playing fields, and hiking trails.

Approximately 29% of Acton's 13,000 acres of land (3,717 acres) is in some form of public open space or recreation use. The existing trail network includes over 28 miles of trails and over 6 miles of paved paths/sidewalks. Acton, in conjunction with the Miracle League of Massachusetts, has developed the first Miracle Field in Massachusetts at NARA Park. This "field of dreams" is specially designed to give children with physical and emotional handicaps the chance to participate in a baseball. A handicapped accessible trail at the Acton Arboretum provides access to the herb garden, butterfly garden, hosta garden, daylily garden, rhododendron garden, and a pond planting. Parking is available at the Arboretum's main entrance, off Taylor Road. Much of the area adjacent to the parking lot is handicapped-accessible, and is open, with graveled paths, gardens, bridges, and picnic tables. An accessible trail is also planned at Ice House Pond. Acton has a Land Stewardship Committee that works with the Acton Conservation Commission to manage the town's trail system.

Acton's Open Space and Recreation Plan calls for improved recreational opportunities with the objective of ensuring handicapped accessibility is available for recreation activities (e.g. trails, picnic sites, athletic fields, water based recreation and camping sites) at both recreation and conservation areas.

SECTION 2: ACHIEVING COMMUNITY HEALTH THROUGH COMMUNITY PLANNING AND DESIGN

Recently the World Health Organization reported that worldwide people's waistlines are expanding, with the "total combined weight of human beings on Earth now exceeding 287 million tons. About 3.5 million tons of that global human biomass is due to obesity, a third of which exists in North America,

although we account for only 6 percent of the world's population"¹. Study after study suggests that sedentary lifestyles, what is referred to as "voluntary inactivity," are one of the primary contributors. A recent study has concluded that "sitting around for most of the day has become as deadly as smoking or obesity."²

Health care experts agree that the minimum recommendation for staying fit is twenty minutes of walking a day most days of the week. This level of activity used to be a part of everyday life. Municipalities can help to support, promote and encourage us to return to a more physically active and healthier life. Additional benefits of getting out doors and out of cars include opportunities for interacting with neighbors as well as reducing the consumption of fuel and its negative impacts on the environment.

The way we plan, design, and build our communities can have a significant impact on the health of those who live there as well as on the health of the community as a whole, on the strength of its social fabric, and therefore, on its ability to support residents throughout their lifecycle. That is, the environment in which we live, work and play has a direct affect on our physical and psychological wellbeing. Municipalities can and should take an active role in promoting the health and wellness of their residents. It should be noted that while providing the environment in which to be physically active, for example, can help individuals to be more physically fit, it doesn't guarantee it. A municipality can provide the support to residents who must be willing to make the necessary changes in their lifestyle in order to take advantage of these opportunities. The most striking example is that of car dependence for most of us living in suburbia. Making a community more walkable cannot make people walk, that is each individuals choice to make, however, ensuring that walking is safe and pleasant is a necessary first step (pun intended) and can only act to encourage and promote such behavioral changes.

"Providing opportunities for active lifestyles seemed to be an inadvertent or even accidental impact of certain policies or plans.... The absence of deliberate intent to improve health outcomes means that there are unexplored opportunities for collaboration between health and planning practitioners."³

A study conducted in Montgomery County attempted to understand the reasons why there seemed to be a gap between the county's proactive planning, its deliberate intent to improve the walking environment, its connections to healthy lifestyles, and the increasing inactivity and obesity. The study found that few of the planners interviewed thought that their plans and actions deliberately focused on

¹ Reynolds, Gretchen, "The Coach Potato Goes Global", New York Times, July 18, 2012

² Reynolds, Gretchen, "The Coach Potato Goes Global", New York Times, July 18, 2012

³ Rodrigues, Daniel, "The Healthy Choice," Planning, March 2007. P. 4.

increasing active lifestyles. Instead they said their work improved quality of life by, for example, taking steps to encourage more people to use bike paths, resulting in reduced traffic congestion. Additionally, few of the health professionals interviewed viewed planning as a way to increase active lifestyles. The study concluded that there are many potential opportunities for improving the way planning can affect health if there is better coordination and collaboration and communication with health professionals. This document supports this premise and should be considered a first step towards that end.

PROMOTE PHYSICAL ACTIVITY AND WELLNESS

The relationship between physical activity and health is well established. Physical activity when integrated with everyday life -- “active living”⁴ -- has been demonstrated to be a strong preventive health measure, for both physical and mental health.

Regular physical activity has been found to reduce the risk for developing a number of diseases (e.g. heart disease, diabetes, high blood pressure), to prevent mental illness (e.g. depression, anxiety), and reduce the risk of dying prematurely. The overall aesthetics, perceived safety and convenience of the pedestrian environment, may play a role in encouraging and supporting walking on a regular basis.⁵

“It’s important to turn off our computers and do things in the real world.” (humorist Andy Borowitz)⁶

Our car-dependent lives, especially those of us living in suburbia have a number of consequences, on the individual, family and on the community as a whole; these include:

- Obesity
- Dependence on family members to drive younger and older (seniors) family members
- Contributes to larger carbon footprint, pollution and use of fuel
- Social isolation which in turn leads to a reduction of social capital (individuals’ willingness to invest their time in the community)

The benefits of physical activity are multiple⁷:

⁴ Active living refers to “opportunities for incorporating physical activity into the routines of daily life as well as for sport and recreation. Examples of active living include walking or cycling with children to school; walking, cycling or catching public transportation to work or replacing short car trips to corner shops and parks by walking or cycling.” (from Shaping Suburbia, the form and future of our suburbs: <http://www.shapingsuburbia.com/2-suburbia-now/being-active-and-healthy-in-suburbia>)

⁵ CDC: <http://www.cdc.gov/healthyplaces/>

⁶ “Is the web driving us mad?” <http://www.thedailybeast.com/newsweek/2012/07/08/is-the-internet-making-us-crazy-what-the-new-research-says.html>

⁷ Keeping Teens Healthy- Benefits of Physical Activity, <http://www.education.com/reference/article/teens-health-physical-activity-benefits/>

- weight control
- lower blood pressure
- lower cholesterol
- improved cardiovascular system
- increased energy and stamina
- stronger immune system
- increased suppleness and flexibility
- stronger, more toned muscles
- stronger bones
- improved mental health (reduces the risk for depression, eating disorders, distorted body image and low self esteem due to being overweight)

“Chronic diseases such as diabetes and asthma are leading health concerns which are influenced by environmental conditions. Decisions about zoning, transportation, land use, and community design influence the distances people travel to work, the convenience of purchasing healthy foods, and the safety and attractiveness of neighborhoods for walking. It is clear that public health can and should be a strong ally to ensure that decisions about neighborhood design are made with the health of the community members at the fore.”⁸

The way to help individuals have an active life with physical activity as an integral part is for communities to create supportive environments and policies so that people find it easier to incorporate physical activity into the routines of daily life. A municipality can:

- Help to increase awareness by providing information, even undertaking a town-wide health and wellness campaign
- Provide information regarding existing resources in a centralized way including a strong web presence
- Provide the physical infrastructure to support active living (including sidewalks, bike lanes, trails, recreational facilities, furniture such as benches and lighting, etc.)

Note: technology while to a large degree responsible for our decrease in physical activity, can also be used to help encourage and promote a more active lifestyle. One example are cell phone applications that are being developed to help people monitor their fitness progress by measuring the number of steps taken, etc., even by setting up “competitions” with others for additional motivation (See : <http://www.sciencedaily.com/releases/2010/04/100426113106.htm>)

⁸ “The Built Environment and Health, Prevention Institute.
http://thrive.preventioninstitute.org/pdf/BE_South_Los_Angeles_CA.pdf

INCREASE WALKABILITY

Walking is the oldest and most basic form of human transportation. It requires no fare, no fuel, no license, and no registration. Walking is beneficial to one's health and can also be a pleasurable experience. With the exception of devices to assist the mobility-impaired, walking demands no special equipment. Thus, walking is the most affordable and accessible of all modes of transportation. (Kansas City Walkability Plan)⁹

While most communities developed based on the assumption that people would walk to daily destinations, certain potentially unhealthy consequences resulted from the mixed uses of the industrial revolution. Planning attempted to address these potentially harmful affects by separating land uses, resulting in separating work places from homes so that most people rather than walk to work, commute daily in cars. As a result most adults are physically active only during their leisure time, and often not even then. After WWII, the primary mode of transportation in American became the automobile, most of the transportation funded auto-related infrastructure , people began to travel greater distances for work and other activities and as result, Americans became increasingly auto dependent. We have gotten to the point where this dependency is negatively affecting our health.

Many people find fitting physical activity into their daily lives challenging. It is also costly to belong to a gym and sometimes ironic to drive there on a sunny day in order to walk on a treadmill. Carving out the time, finding convenient locations, and finding something enjoyable to do over and over again are commonly reported obstacles to daily physical activity. A recent study found that every extra hour in a car per day was associated with a 6% increase in the likelihood of obesity¹⁰. Additionally the average resident in a walkable neighborhood weighs 7 pounds less than someone who lives in a neighborhood that is not walkable¹¹.

Walking, if made easy, attractive, safe and fun, can provide an opportunity to incorporate physical fitness into everyday life once again. Walkability is linked to:

- Researchers have found that “individuals who live in [communities] that are walkable and have lower body mass indices and weight-related chronic illness
- Better public health and reduced rates of chronic illness and therefore, health care cost savings
- Social well-being and mental and spiritual health
- Environmental sustainability: decreased driving rates – tied to reduced CO2 emissions and GHGs

⁹ Kansas Walkability Plan: <http://citydocs.fcgov.com/?cmd=download&vid=10&pageid=1161021&docid=783917>

¹⁰ from Shaping Suburbia.

¹¹ from Shaping Suburbia

- Acts to connect people as there are more opportunities for casual and spontaneous interactions resulting in a healthy, more interconnected community.
- Higher property values

Ways to make a community more walkable include the following:

- Provide sidewalks/walking paths to connect main destinations in an efficient, pleasant and safe manner
- Traffic calming so as not to create feeling of discomfort or threat to walkers
- Provide “complete streets” (space for bicyclists and pedestrians as well as automobiles)
- Buffer areas, where possible, between pedestrians and automobiles (buffers can be created by bike lanes, planting strips, street furniture, or on-street parking)
- Safe intersections with clear crosswalks. Review intersections for potential barriers to pedestrians such as:
 - No crosswalk signals, or insufficient time to cross the street;
 - No islands or medians (especially at wider or higher-volume streets);
 - Uneven curbs or no curb ramps;
 - Pavement treatments (decorative treatments may confuse drivers, or may deter visually impaired pedestrians);
 - Heavy turning volume that deters pedestrian crossing (especially heavy right-turn movements, that can occur on red lights); and
 - Discontinuous walking route through intersection (curb cuts that occur at different locations within an intersection).
 - Designs not favorable for visually impaired pedestrians (no curb cuts, unfamiliar pavement treatments, lack of audible crossing signals); and
 - Designs not accessible for disabled pedestrians (pavement treatments, no curb cuts, inadequate crossing time).
- Buildings that are encouraged (by regulation) to create a streetscape along sidewalks, with minimal set back from the street (with parking tucked behind or along sides of buildings, but not in front)
- Enhance the enjoyment of the walk by providing aesthetic pleasure and amenities such as landscaping (for shade and sunlight), benches for resting, lighting to increase the feeling of safety
- Dedicate space in parking lots and from parking lots to buildings to pedestrians so that they are not forced to walk on asphalt actually intended for cars
- Promote Transit-Oriented Development in communities with train stations or other mass transit modes.



SIDEWALKS, BRISTOL, RI

- Encourage uses and create destinations that attract other people so that there are reasons to walk

Traffic Impact Study Guidelines should include requirements for addressing pedestrian travel; the Town should define levels of service (for pedestrians) and state what it defines as acceptable in different parts of the town. The pedestrian element of transportation studies should also address proposed pedestrian connections to the surrounding street and sidewalk system and connections to local pedestrian destinations.

Consider making requirements in Site Plan Review that include:

- Safe and convenient pedestrian access from the development site should be required to existing designated trails or greenways located on or adjacent to the development site.
- On-site connections should be made at points necessary to provide direct pedestrian travel from the development to major pedestrian destinations located within the adjacent neighborhood(s), including but not limited to parks, schools, commercial districts, and transit stops.
- In order to provide direct pedestrian connections to these adjacent destinations, the Town may require additional sidewalks, walkways, or bike paths not associated with a street, or the extension of a sidewalk from the end of a cul-de-sac to another street or walkway and connections between developments.

In commercial development over a specified size, encourage the following:

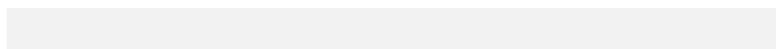
- canopies in front of stores for weather protection
- pedestrian plazas, pedestrian-only connections from parking to stores, transit shelters
- landscaped buffer between sidewalks and traffic
- provision of bike amenities
- provision of access through walls, fences, and other obstructing features and elements.

OTHER WALKABILITY IDEAS TO EXPLORE

- Consider a bylaw that requires residents to clear ice and snow from the sidewalks in front of their houses within 24 hours of snowfall.
- Award annual Sidewalks Are for Everyone (SAFE) Golden Shovel Award to recognize individuals who have helped others clear ice and snow from sidewalks.
- Develop a “Healthy Walking Map” of short walks and place distance markers along the way so that people can monitor their progress.

BIKEABILITY

Supporting the bikeability of a community gives people a healthy and affordable option for travel while benefiting the environment.



“Danish statistics show that every 6 miles biked instead of driven saves 3 1/2 pounds of carbon dioxide emissions and 9 cents in health care costs. But many cite happiness among the chief benefits of bicycle commuting”.¹²

Ways to improve bikeability include:

- Provide bike racks in multiple and strategic locations (could be part of a Transportation Management Plan)
- Explore design choices of bike racks to ensure compatibility with town character, especially in historic districts) (see: <http://blog.heimsath.com/blog-0/bid/68655/Historic-District-Bike-Rack-An-Artful-Opportunity>)
- Ensure that biking is safe and connected by providing bike lanes/paths where possible and by considering the interconnectivity of these
- Bikers also appreciate water fountains where they can refill their water bottle, as well as a meeting spot where they can meet up with other bikers (in addition to the water fountain other desirable elements include benches, shade from trees, etc.)
- Share the Road program¹³



BIKEPATH, BOSTON

CONNECTIVITY

How connected a community is physically by walking and biking is a pretty good indicator of things such as the likelihood of obesity, a community's carbon footprint, and how often individual residents see friends and family.



SAFE, CLEARLY MARKED CROSSWALK, ARLINGTON, MA

¹² In Denmark, Pedaling to Work on a Superhighway, <http://mobile.nytimes.com/article;jsessionid=7FEACA11E0FC99C7669719E64D8BC20E?a=949100&f=19>

¹³ A Share the Road Program helps to educate residents on ways of sharing the road with pedestrians and bicyclists in a safe and equitable manner. See: <http://www.sharetheroadsafely.org/>



PEDESTRIAN SPACE IN PARKING LOT, SANDWICH, MA



CONNECTING SHOPS, LIBRARY, AND PARKING, LEXINGTON, MA

RECREATION AND OPEN SPACE

Access to recreational facilities and open space affect the health of area residents by providing opportunities for physical activity and social interaction.

- The existence of common recreation facilities, open space, and other opportunities for gathering has been shown to build social capital; beneficial both on the individual level as well as at the scale of the community
- Research has suggested that exposure to parks and other green spaces improves children's ability to focus and concentrate¹⁴
- A number of studies have demonstrated that direct contact with vegetation or nature positively impacts mental health; even being able to look at nature (through a window) has a positive effect¹⁵
- Regular physical activity has been demonstrated to have direct benefits to health.

ENCOURAGE USE OF EXISTING FACILITIES

- Provide and disseminate information regarding existing recreational facilities (including conservation lands, trails, playgrounds and playing fields)
- Consider lighting to increase hours of use (taking care to address abutters concerns including those regarding potential noise and light on their yards/houses).
- Make the connections between spaces more evident, safe, comfortable and attractive
- Make it easier and more enjoyable to use existing facilities.
- Provide fun and innovative outdoor facilities that inspire participation. See examples which follow.

¹⁴ CDC: <http://www.cdc.gov/healthylives/>

¹⁵ University of Minnesota, Mental Health

Example 1: The **Fitness Playground** on Memorial Drive in Cambridge, MA. The fitness playground is a place where people work out outdoors; it also serves as a gathering place for surrounding neighborhoods.



FITNESS PLAYGROUND, MEMORIAL DRIVE, CAMBRIDGE, MA

Some examples of equipment for fitness playground:

<http://www.motionusa.net/?gclid=CKKJ66nCnrECFUIN4Aod5XpYdA>

Example 2: **Eco-Wellness Zone**, Orchard Park, Hull, United Kingdom (a human powered outdoor gym). The outdoor gym (called “Green Heart”) uses the power generated by the cardio equipment and converts it into useable electricity. The renewable energy generated by the users of the gym is used to extend the operating hours of the facility by powering the lighting for the gym.

- “It’s green, it’s shiny and it lights up at night.
- It’s great for your health and it generates electricity.
- It encourages kids and adults alike to learn about their health, energy generation and energy consumption.”



ECO-WELLNESS ZOE, ORCHARD PARK, HULL, UNITED KINGDOM (A HUMMAN-POWERED OUTDOOR GYM)

See More:

<http://www.solarpowerportal.co.uk/news/power-to-the-people-hull-opens-electricity-generating-gym>

<http://www.thisishullandeastriding.co.uk/Free-outdoor-gym-opens-Hull-s-Orchard-Park-estate/story-15812642-detail/story.html>

<http://inhabitat.com/finally-an-outdoor-gym-that-generates-energy-instead-of-wasting-it/>

Example3: **Fitness Trails.** A fitness trail is a trail that has fitness stations along the way. These can be used by all, including children as play and fitness equipment.

The Teresa and Roberta Lee Fitness Path (which opened in 2007 in Lexington, MA and was built by the town) is a fitness/nature path with 16 self-directed fitness stations. The trail is located so that it connects recreational facilities (fields, track, town pool, etc.) and is combined with a natural trail with informational/interpretative plaques that are also written in Braille. It begins at Lincoln Park and winds through woods, meadow and wetlands. Enjoyed by joggers, walkers and bicyclists, it is 1.35 miles long and is wheelchair accessible.



FITNESS/NATURE TRAIL, LEXINGTON, MA

Example 4: **Dog Parks** are very popular with dog owners as they can give their dogs an opportunity to exercise (and meet other dogs) while getting exercise themselves (and potentially meeting other dog-owners). An innovative dog park in Cambridge, MA is a scientific-art intervention that transforms dog waste into energy. Artist Matthew Mazzotta has installed the first Dog Park Methane Digester in the United States at Pacific Street Park in Cambridge. Funded through MIT, and in partnership with the City of Cambridge, The Park Spark Project¹⁶ is a simple and effective solution to this problem; converting the

¹⁶ Dog Poo Powers a Streetlight in Massachusetts Park: <http://www.popsci.com/science/article/2010-09/fidos-poo-powers-streetlight-massachusetts-dog-park>

waste to methane on-site, dramatically reducing greenhouse emissions and creating usable energy. Currently, at Pacific Street, the Park Spark project burns the methane in a lamppost. However, the energy can be used in any number of ways - a shadow projection box, a popcorn stand, or even a tea house. In fact, in the spring of 2010, Mazzotta developed a similar project in the Netherlands that used the energy to boil water for a tea house where the community would convene and share tea.

Example 5: **Nature Trails** are a good way to increase enjoyment of walking as well as being educational and providing information, especially to young people who increasingly are getting their information from a screen rather than from direct experience. A number of studies have demonstrated that direct contact with nature (water, trees, bushes, flowers, and other vegetation, whether cultivated or wild) reduces stress and leads to improved mental health¹⁷.



LINCOLN PARK, NATURE PATH, LEXINGTON, MA

Interpretative plaques are an important way to provide information along a nature trail

Example 6: **Community Gardens** are a wonderful way to increase time spent in natural setting, providing opportunities to interact with neighbors and increasing access to healthy foods as often vegetables are grown in these gardens.

¹⁷ Mental Health. <http://www.designforhealth.net/resources.mentalhealthissu.html>

SPECIFIC NEEDS BY AGE

Needs change with age.

SENIORS

As the “senior boom” becomes established in the suburbs, communities will have to adapt to meeting the needs of this demographic. Not only are the numbers of the elderly increasing, but their life spans are lengthening. Some seniors choose to move to warmer climates, but many, having established roots and social connections in the communities in which they brought up their children, choose to “age in place.” While older people have some service and facility needs that are specific to them, designing a community to meet the needs of seniors will also meet the needs of young people who don’t drive and parents with strollers and in many cases people with physical handicaps.

As medical technology has improved health and extended lifespans, seniors are more active than in previous generations and thus more interested in physical fitness and enjoying parks, recreation, and community facilities. They also need social and intellectual stimulation. “YES (Young Energetic Seniors) are especially interested in walking and other physical activities. Senior centers are no longer the only gathering place desired; national research indicates that older people do not want to be isolated and segregated from the rest of the community, at least not all of the time.

When planning for seniors, it is important to recognize the diversity of abilities, needs and preferences of this population and the need to support the full range. To this end it is important to neither underestimate nor to overestimate individual abilities (which continually change over time).

Example: **Fitness playground geared specifically to seniors:**



SENIOR FITNESS PLAYGROUND, BERLIN, GERMANY

See more: <http://www.spiegel.de/international/zeitgeist/young-at-heart-germany-s-first-playground-for-seniors-a-481962.html>

OTHER IDEAS TO EXPLORE that could help seniors to keep fit and socially connected by increasing their comfort level with walking include:

- Benches
- Transportation (key for keeping mobile)
- Public restrooms
- Water fountain
- Call buttons for calling for help in case of a fall
- Railings on trails (with careful attention to materials and design)
- Making available for loan equipment or devices which facilitate movement (e.g. large wheel wheelchairs for riding on trails)
- Rating system for walking trails which gives seniors information regarding the level of difficulty, whether or not there are benches



BENCH ON PATH PROVIDES A PLACE TO REST

along the way, location of public restrooms, approximate amount of time the walk is expected to take, etc.

- Could also show video of trail (e.g. http://www.youtube.com/watch?v=-5dcj_ztK0Q)

CHILDREN

Families often move to the suburbs to offer their children safety, access to nature, open space and other recreational opportunities. These features offer children much in the way of opportunities for physical activity, however; ironically suburban living can often simultaneously reduce such opportunity. Children are spending a significant amount of time being driven to and from school and then to and from after school activities; an additional staggering amount of hours are spent “plugged in” either playing video games, texting “connecting” on Facebook, or watching television.

- Diseases such as obesity, diabetes, and asthma are on the rise in children, as is also attention deficit disorder. Physical activity and exposure to safe outdoor environments has been found to help reduce the incidence of these conditions.
- For young children living in neighborhoods where walking and biking are not safe, it may actually hinders them as they may be developmentally able to venture further from home, but the lack of safe opportunity to do so, holds them back.

- If there are no sidewalks, children can feel isolated and they do not have the chance to experience the feeling of what is “reachable” by human power (walking, biking), what are the boundaries of the neighborhood, who lives there, and they miss the opportunity to form relationships with neighbors beyond those that live next door.
- Children need opportunities that are attractive and safe to leave behind the video games and Facebook and experience the outdoors and active and healthy living directly.

Walking to school has been demonstrated to have multiple benefits including:

- Provides children with an opportunity for physical activity
- Serves to connect the neighborhood as children and adults have an opportunity to greet neighbors
- Reduces automobile traffic on the roads
- Results in giving students an opportunity to expend some energy and be fully awake has been demonstrated to make them more ready to sit and learn when they get to school

“In 1969, roughly 48% of students bicycled or walked to school. Today only 13% of children do so. Additionally, travel to school can account for up to 25% of all morning traffic.”¹⁸

The **Massachusetts Safe Routes to School** program promotes healthy alternatives for children and parents for their travel to and from school. It educates students, parents, and community members on the value and the ways to make walking and biking to and from school. It also can provide support to help a community find funding for necessary infrastructure improvements.

The program’s intent is to:

- Promote walking to school to promote a healthy lifestyle that includes the health benefits of walking
- Teaches children how to safely walk to school, cross streets,, etc.
- Reduces dependence on automobiles

See: <http://www.commute.com/schools/>

There is also a national program run by the CDC, Kids Walk-to-School, that “advocates for communities to build partnerships with the school, PTA, local police department, department of public works, civic associations, local politicians, and businesses to create an environment that is supportive of walking and bicycling to school safely. By creating active and safe routes to school, walking to school can once again be a safe, fun, and pleasant part of children's daily routine” .

¹⁸ From Safe Routes to School, <http://www.commute.com/schools/>

Healthy Eating. Also important for children’s health is their nutrition. While parents can do their best at home, often school lunches are not especially healthy. There are new national standards to be implemented across the country starting July 1, 2012. This is an opportunity to review each community’s school lunch program and take steps to ensure that is healthier, but could also be tied into local foods, children helping to grow food, etc.

Learn more: <http://www.wickedlocal.com/belmont/news/education/x738245448/Healthier-school-lunches-starting-July-1#axzz20uOIT8sE>

Access to sports for handicapped children: The Miracle League supports children with mental, emotional and/or physical challenges so that they may play baseball in an organized league. (See: <http://www.miracleleague.com/>)

Acton is in the process of building a playing field accessible to such children, the first of its kind in Massachusetts.

<http://acton.patch.com/articles/the-miracle-of-a-donation-nara-s-miracle-league-field-project>

Play with Nature: As a response to the large and increasing role that technology has begun to play in children’s lives, there is a movement to emphasize the benefits of playing in nature. Research has indicated that “play in nature, particularly during the critical period of middle childhood, appears to be important for developing the capacities for creativity, problem-solving, and emotional and intellectual development.”¹⁹

Outdoor learning has also been shown to enhance school achievement and self-esteem. Unstructured free play outdoors has been shown to have cognitive, social and physical health benefits to children. Emotional benefits include stress reduction and reduced aggression while social benefits include cooperation and self-awareness.²⁰

Additionally, by direct experience with the magic and beauty of nature, children learn to love the natural world and thus grow up wanting to protect it.

The Mass Audubon Society has developed Nature Play Guidelines that contain useful information regarding the design and maintenance of such areas.

Play England has developed a helpful document outlining best practices for maintaining nature play areas.

See: <http://www.playengland.org.uk/media/120468/nature-play-maintenance-guide.pdf>

¹⁹ <http://www.childrenandnature.org/>

²⁰ <http://www.childrenandnature.org/documents/C118/>

OTHER IDEAS TO EXPLORE:

- Create a centralized list of existing resources: “What to do with kids around Town” (on web, brochure). Include playgrounds, parks, trails, library story times, recreation programs, etc.
- Provide common green spaces where possible that are walkable with safe routes to and from them, with well-designed facilities including playgrounds and sports facilities can help children to stay physically active and make social connections.
- Consider providing an opportunity for active involvement in constructing play infrastructure: Adventure Playground. <http://www.ci.berkeley.ca.us/contentdisplay.aspx?id=8656>

TEENS

It is very important for teens to be physically active. It helps their bodies grow strong, release stress, feel better about themselves, and develop lifelong habits regarding physical fitness and wellness. The National Institute of Health says that all teenagers must aim for a minimum of 60 minutes of physical activity on most days. “Some teens enjoy and participate in team sports. Others may feel awkward about their bodies, and don’t want to look clumsy in front of their peers.”²¹ Additionally, physical activity tends to decline during the teen years (e.g. many drop out of organized sports and many high schools no longer require daily physical education classes)²². Studies show that teens on average spend more than 6 hours a day on various media, including watching TV, listening to music, surfing online, and playing video games. **Studies show that more than 80 percent of young people ages 13 to 15 worldwide are not getting the hour a day of vigorous exercise recommended for their age group.**²³ Teens need to be encouraged to be active and have opportunities available to them to meet the recommendations for maintaining their health.²⁴

Why does it matter?

- The habits formed in youth do make a difference when we get older. Staying fit lowers the risk of heart disease, stroke and diabetes—the leading causes of premature death.
- Physical activity helps self-esteem and reduces stress. It promotes a positive self image and a sense of achievement.
- Regular physical activity helps teens learn to meet challenges.

²¹ Keeping Teens Healthy – Benefits of Physical Activity: <http://www.education.com/reference/article/teens-health-physical-activity-benefits/>

²² Kids Health: http://kidshealth.org/parent/nutrition_center/staying_fit/fitness_13_18.html

²³ Reynolds, Gretchen, “The Coach Potato Goes Global”, New York Times, July 18, 2012

²⁴ Minimum recommendations: Moderate physical activity, equivalent to brisk walking, 30 minutes a day, at least 10 minutes at a time, 5 or more days a week and vigorous physical activity—such as jogging—for at least 20 minutes a day, 3 or more days a week. (From Keeping Teens Healthy – Benefits of Physical Activity: <http://www.education.com/reference/article/teens-health-physical-activity-benefits/>)

Read more: <http://www.livestrong.com/article/333590-what-are-the-benefits-of-physical-activities-for-teenagers/#ixzz210UYmxQ8>

PUBLIC TRANSPORTATION

Adolescence is a challenging time for a number of reasons, one of which is the attempt to achieve independence from parents and other adults by venturing out into the community with peers. In addition to safe walking and biking, providing a public transportation option accessible to teens can be very beneficial for their development and sense of independence. It can also help teens access recreation facilities not located within walking distance of their homes. Many small regional or local bus systems are surprised to find that many riders are teens.

LEADERSHIP OPPORTUNITIES

Teenagers tend to respond well when they are given the opportunity to lead younger children. An innovative example which combines physical activity, intellectual skill and leadership is the Adventure Playground.

Learn more: <http://www.ci.berkeley.ca.us/contentdisplay.aspx?id=8656>

LIMIT JUNK FOOD

Teens are especially susceptible to the lure of junk food. They spend more time and meals away from the family than younger children, and are under the influence of peers. Junk food is inexpensive and often marketing for such products is directed at teens. In addition to the fact that it is unhealthy, youngsters are forming lifelong habits, eating healthy is extremely important for future health. A number of municipalities are exploring ways to provide guidance to healthful eating through regulations.

For example, Lawrence, MA, the state's most obese city, has developed a plan to combat obesity. "A draft of the plan calls for limiting sugary drinks and candy in vending machines on city property and in local schools and hospitals, building more hiking and bicycling trails, and propping up the twice-a-week farmers markets beside City Hall and on Lawrence Street, which now attract only a handful of fruit and vegetable vendors."²⁵

OTHER IDEAS TO EXPLORE: For improving suburban living for teens include the provision of:

- safe alternatives to driving including municipal shuttle, sidewalks and bike lanes/paths
- opportunities to be involved in planning , designing, building and even maintaining facilities for teen use and enjoyment
- a space, place or facility that is specifically dedicated for teens to use (e.g. skate park, teen center, etc.)
 - skateboard parks are very popular

²⁵ "City looks to restrict junk food" : <http://www.eagletribune.com/local/x748661767/City-looks-to-restrict-junk-food>

PROMOTE AN ACTIVE AND HEALTHY LIFE-STYLE

Promoting health and wellness on a town-wide level can result simultaneously in increasing opportunities for physical activity and improving social capital, that is, people's willingness to participate in the community and its improvement.

CREATE A HEALTHY TOWN INITIATIVE

As mentioned in the introduction to this section, a municipality can provide the physical infrastructure that increases the opportunity for physical activity, but it can go even further in supporting the health and wellness of its residents by helping to encourage usage by promoting an active and healthy lifestyle. This can be done by making the promotion of physical activity a community priority by taking a number of steps including:

- Provide information regarding existing resources (including how to enjoy them, e.g., where to buy bicycle helmets, popular walking routes, etc.)
- Provide information and links regarding healthy living (including healthy food choices, etc.)
- Organize and/or support groups to organize walking groups/clubs, trail tours, etc.)
- Conduct a Resident Wellness and Health Survey
- Develop a town-wide wellness campaign

See Examples:

Shape Up Somerville: <http://www.somervillema.gov/departments/health/sus>

Healthy City Fall River: <http://www.gfrpartners.com/healthycity.htm>

Medford Health Matters: <http://www.medfordhealthmatters.org/>

Make Boston Healthy: (Make Boston Your Gym):
<https://boston.fivi.com/publicBlogViewStory.xhtml?articleId=2702>

Wray Health Initiative: <http://www.preventioninstitute.org/tools/focus-area-tools/communities-taking-action-profiles-of-health-equity/location/370.html>

Northeast Center for Healthy Communities: http://nc4hc.org/?page_id=1055

INVOLVE RESIDENTS IN ASSESSING "ACTIVITY-FRIENDLINESS"

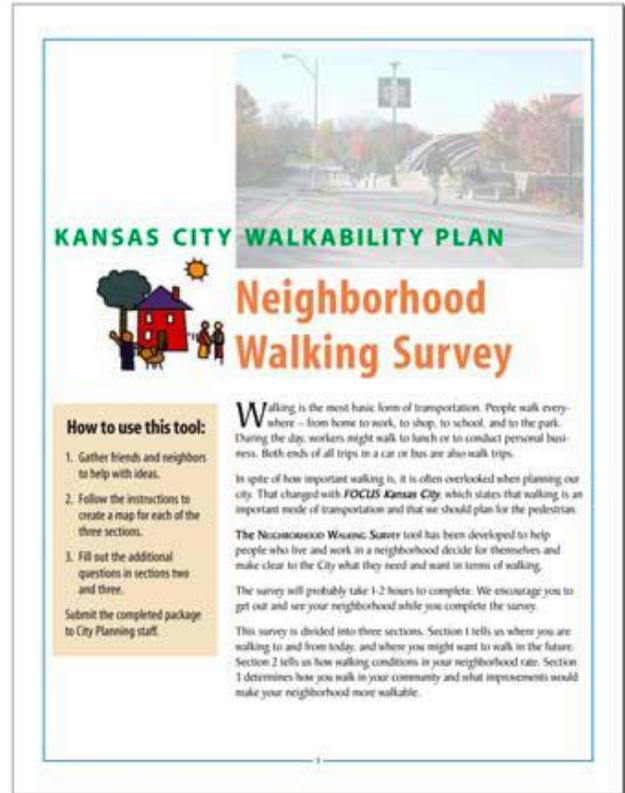
A municipality can raise awareness and engage residents in the process of promoting wellness by asking residents to assist in assessing how activity-friendly the town is. This can include surveying walkability, identifying recreational needs, connectivity between desired destinations, etc.

Example: **Kansas City Walkability Plan**: Residents were given a survey form to evaluate the walkability of their neighborhood. It includes mapping instructions for identifying the neighborhood's strengths and weaknesses for walking. For example, residents are asked to evaluate sidewalks in terms of their completeness and condition, while street crossings are to be considered in terms of ease to cross. Other items residents are asked to map include barriers to direct walking connections; areas where they feel unsafe walking; and physical features that make walking more (or less) pleasant²⁶. See the Walkability Plan:

<http://citydocs.fcgov.com/?cmd=download&vid=10&pageid=1161021&docid=783917> .

DEVELOP A HEALTH COMMUNITY MEASUREMENT TOOL

A municipality can develop a tool to help measure health impacts (negative and positive) of new development, the potential health benefits of redevelopment, as well as identify municipal interventions that can provide health benefits.



Example: **San Francisco** has developed a Healthy Development Measuring Tool. There are numerous Health Impact Assessment Tools developed across the country for a variety of purposes that can be adapted.

INCREASE SOCIAL CAPITAL/ INCREASE OPPORTUNITIES FOR COMMUNITY GATHERING

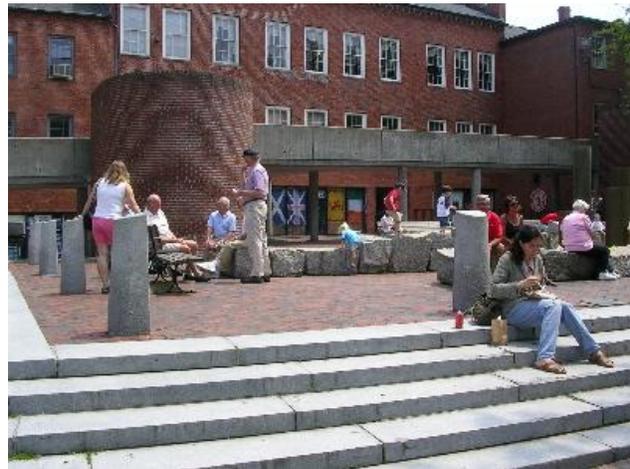
Community planning and design, in addition to affecting physical health, also impacts a community's social capital. Social capital refers to the individual and communal time and energy that is available for things such as community improvement, social networking, civic engagement, personal recreation, and other activities that create bonds between individuals and groups. The fabric of a community, its connections, both physical as well as the opportunities that people have to experience themselves as a community; these in turn effect the development of social capital.

²⁶ Walkable Neighborhoods": http://www.plannersweb.com/Kansas_City_walkable.pdf

“Circumstances that prevent or limit the availability of social capital for a community and its members can have a negative effect on the health and well-being of the members of that community. These negative effects and well-being can in turn have negative effects on the community as a whole.”²⁷

The relationship between planning and social capital:

- A community with places and events for gathering:
- Increases the “sense of community” by making ties stronger
- Reduces isolation especially for mothers with young children, seniors, newcomers, single/divorced individuals, etc.
- Research has found that exposure to green spaces (nature) improves children’s ability to focus and concentrate
- Walkable communities provide opportunities for spontaneous interactions with neighbors which in turn gives individuals a sense of belonging to the neighborhood;
- Accessibility of public spaces is critical to being an open and welcoming community for all (not just the disabled, but seniors, mothers with strollers, temporarily injured persons, etc.)



ROCK FOUNTAIN, NEWBURYPORT, MA

Provide INFORMATION regarding existing resources in order to maximize their usage

- Open space and recreational facilities, trails
- Library programs, Community Education programs, other
- Cafes and restaurants
- Places to go with children (e.g. playgrounds, playgroups, tot lots, library programs/story times, etc., stores with play areas/programs, places where you can change a diaper, etc.)



BENCHES, LEXINGTON, MA

²⁷ “Social Capital”, CDC, <http://www.cdc.gov/healthyplaces/healthtopics/social.htm>

- Museums, zoos, other attractions (in town as well as nearby)
- Events

Ways of disseminating information include:

- Web site
- Community bulletin board
- Kiosk in central location
- Brochure, posters, etc.
- Cell phone applications
- Social networking site, such as Facebook



OUTDOOR SEATING, BRISTOL, RI

SOCIAL EQUITY AND ACCESS

Access to opportunities to physical activity should be equitable. Municipalities should examine their affordable housing and senior congregate housing locations and survey the surroundings.

- How easy is it to walk in the neighborhood?
- Is there anything to walk to?
- Can people living here reach recreational facilities and areas of community gathering with relative ease?
- Are destinations fairly well connected?



BIKING & WALKING, A GREAT PLACE TO MEET, ARLINGTON, MA

For example, encourage developers to provide trail linkages and/or common space in cul-de-sac developments so that instead of dead space they are opportunities for socializing between neighbors.

This could be part of a density bonus incentive to provide gathering and/or fitness space in developments over a certain size (number of units). The developer could provide infrastructure for sporting activities (e.g. a common basketball hoop), game table, access to trails, links to nearby trails, etc. The neighbors would then be responsible for maintaining it.

OTHER IDEAS TO EXPLORE:

- Town pool
- Community-based walking programs
- Neighborhood pools: these are set aside on common land and maintenance and other fees shared by members.



KIOSK PROVIDES INFORMATION ON ACTIVITIES & GATHERING OPPORTUNITIES

- Playground with spray pool for warm months
- Community Gardens
- Picnic areas
- Events (holiday events, sidewalk sales, concerts , youth talent show (at schools), etc.
- Community Center
- Senior Center
- Environmental Education (at farms, trails, conservation lands, etc.)
- Pocket parks (in left over spaces)
- Temporary uses of vacant lots
- Flea market
- Farmer’s market
- Central park/ plaza
- Support private efforts to build community by making it easy to obtain permits, etc. if relevant (e.g. block parties, “Safari Suppers” or “Progressive Dinners” where each course is eaten at a different house).



COMMUNITY GARDENING IS A WAY TO BRING NEIGHBORS TOGETHER AROUND A WHOLESOME AND PLEASURABLE ACTIVITY

TOWN REGULATIONS AND THEIR IMPACT ON HEALTH

Town regulations are discussed for each town in a later section. In summary the land use regulations of the three towns are supportive of including well designed pedestrian facilities and walkways in developments. Coverage and emphases are different in each town, with Acton having greater specificity in its zoning bylaw, and Carlisle and Concord having more details in their subdivision rules and regulations. None of the towns have specific regulations that recognize the needs of people who use OPDMDs, although Carlisle in its Subdivision Rules and Regulations includes a reference to the Massachusetts Architectural Access Board and the Americans with Disabilities Act ("ADA") and requires that all footpaths shall comply with the ADA.

Both Concord and Carlisle require cul-de-sacs that are large enough to contain an unpaved area in their centers that could support gathering facilities, such as a gazebo, for neighboring residents. These sites could be points along paths that traverse subdivisions and adjacent lands. The sites could also simply facilitate community gatherings and events.

There appears to be an opportunity to connect one of Concord’s newest and largest residential developments, Concord Mews with 350 rental apartments and townhouses, with paths/trails in its immediate vicinity on the Concord/Sudbury town line.

SECTION 3: TRAIL ACCESSIBILITY BACKGROUND AND OPDMDS

Since it was enacted in 1990 the Americans with Disabilities Act (ADA) has required new construction of public facilities to be readily accessible to and usable by individuals with disabilities. Guidelines for recreation facilities have been developed under the Act, but few of those guidelines addressed trails. Conditions such as severe slopes, cross-slopes, and/or surface impediments are generally recognized as part of the trail experience. There have been ongoing efforts to construct ADA accessible trails at many recreation sites that follow the guidelines for accessibility.

In March of 2011 new rules governing access under the ADA became effective. The rules make it clear that all areas open to the public should also be open to persons with limited mobility. In essence the rules clarify that all public trails are available to persons in wheelchairs and mobility aids, such as walkers, crutches, canes, braces, or other similar devices designed for use by individuals with mobility disabilities regardless of terrain or other factors that may make it difficult. Physical challenge is as much a right of the people with limited mobility as it is of the able-bodied. The rules do not require physical modifications to existing trails.

A wheelchair is defined as a manually or power-driven device that is designed and marketed *primarily for use* by an individual with a mobility disability for the main purpose of indoor or of both indoor and outdoor locomotion.

The rules do require managers of publicly accessible areas to also make reasonable modifications in their policies, practices, or procedures to permit the use of other power-driven mobility devices (OPDMDs) by individuals with mobility disabilities, unless the public entity can demonstrate that the class of OPDMD cannot be operated in accordance with legitimate safety requirements that the public entity has adopted based on actual risks, not on mere speculation, stereotypes, or generalizations about individuals with disabilities.

Other power-driven mobility devices are defined as any mobility device powered by batteries, fuel, or other engines—*whether or not designed primarily for use by individuals with mobility disabilities*—that is used by individuals with mobility disabilities for the purpose of locomotion, including golf carts, electronic personal assistance mobility devices (EPAMDs), such as the Segway PT, or any mobility device designed to operate in areas without defined pedestrian routes, but that is not a wheelchair, such as an all-terrain vehicle (ATV).



A POWER DRIVEN WHEELCHAIR

In determining whether a particular type of OPDMD can be allowed in a specific facility a management entity can consider:

- i. The type, size, weight, dimensions, and speed of the device;
- ii. The facility's volume of pedestrian traffic (which may vary at different times of the day, week, month, or year);
- iii. The facility's design and operational characteristics (e.g., whether its service, program, or activity is conducted indoors, its square footage, the density and placement of stationary devices, and the availability of storage for the device, if requested by the user);
- iv. Whether legitimate safety requirements can be established to permit the safe operation of the other power-driven mobility device in the specific facility; and
- v. Whether the use of the other power-driven mobility device creates a substantial risk of serious harm to the immediate environment or natural or cultural resources, or poses a conflict with Federal land management laws and regulations.



SEGWAY PT, A TYPE OF OPDMD

WHAT OTHER MANAGERS OF PUBLIC TRAILS ARE DOING

Since 2011 a number of policies have been developed to allow OPDMDs with restrictions based on the above considerations. Not all of the following examples have been legally challenged, and may be subject to revision.

TYPE OF ENGINE

Several management entities have prohibited internal combustion engines (Massachusetts Audubon, Santa Monica Mountains) or set limits on the type of internal combustion engine. For example the State of Illinois limits internal combustion engines to four-stroke cycle, equipped with an approved spark arrestor muffler, and meet Clean Air standards in effect at the time of its manufacture. Two-stroke cycle engines are not allowed.

The most common power-driven mobility device allowed by land managers is the class of "Electronic Personal Assistance Mobility Devices" (EPAMD) such as the Segway PT. Examples include:

- OPDMD must be electric powered (Jefferson County)
- Any electric propulsion device that does not exceed 750 watts or 1-HP in power (West Penn)
- All-electric mobility devices that can access the trails from the trailheads (Puente Hills)
- EPAMD (e.g., Segways®), electric-assisted bicycles and the following electric-powered devices: foot scooters, tracked mobility chairs or tricycles (MN)

SPEED LIMIT

Many policies specify a maximum speed for accessibility devices:

- EPAMD must not exceed a speed of 5 miles per hour (Fort Collins)
- 5 mph when other users are present; 10 mph when other users are not present (Jefferson County)
- Power-driven mobility devices must be operated on Mass Audubon trails at a safe speed, not exceeding four (4) mph
- 5 miles per hour (Santa Monica Mountains)
- Typical walking speed, based on the particular soil type and existing environmental conditions, not to exceed 5 miles per hour (Florida)
- 10 mph for fuel-driven devices or devices over 36" wide (COSCA)
- 10 mph for fuel-driven devices or devices over 36" wide; EPAMD 12 mph (Conejo Open Space)
- 15 miles per hour for electric personal assistive mobility devices
- 20 mph for all devices operated on the trail (West Penn)

SIZE AND WEIGHT

Specifying dimensions or weight is one way to determine the kinds of devices, such as ATVs, that would be excluded.

- OPDMD may be up to 32 inches wide, up to 6 feet long, and weigh up to 150 pounds (Jefferson County)
- No wider than 36 inches (West Penn)
- On Single Track Trail, devices not to exceed 26" width and a maximum wheel width of 6" (Orange County)
- Due to design constraints, power-driven mobility devices used on trails with boardwalks, bridges, culverts and observation platforms shall be limited to a total weight of 500 pounds (Massachusetts Audubon)
- OPDMD "shall not typically exceed" 34" width, 62" length, and 550 pounds in weight (Florida)
- Combined width of the OPDMD, operator, and additional load does not exceed 45% of the surface width of the circulation path (Illinois)

TRAIL LIMITATIONS

Some policies refer to specific measurements or characteristics of the trail.

- OPDMD may only be operated on trails with grades (slopes) of 12% or less (Jefferson County)
- List of specific trails where "mobility devices over 36" wide may be used" (Conejo Open Space)
- Trails designated for hiking, interpretation, horseback-riding, cross-country skiing, biking, and mountain biking are open to individuals with mobility disabilities using wheelchairs, but not open to OPDMDs due to assessment factors (i), (ii), (iv) and (v). (Illinois)
- Due to the physical damage likely to be done to trails from their use, tracked vehicles of any kind are prohibited (Massachusetts Audubon)

OTHER RESTRICTIONS

Some policies further restrict use of OPDMDs.

- OPDMDs may only be used during regular operating hours on Mondays through Thursdays (no weekends or holidays) (Conejo Open Space)

PERMITS

The Department of Justice does not address the issue, but some agencies see permits as a way to ensure both safety and legality of vehicle use.

- For safety purposes, individuals seeking to use fuel-driven mobility devices or mobility devices over 36" must obtain a permit from (COSCA, Massachusetts Audubon)
- "The permit identifies the individual responsible for the OPDMD. It also gathers contact information, describes the stated use, defines time frame for access, confirms the motorized device is for use because of a disability, requires proof of vehicular insurance, and sets guidelines for safety precautions including for fire as it pertains to devices with fuel powered engines" (Puente Hills)

SECTION 4: REGIONAL NETWORK OF TRAILS FOR ACCESS AND HEALTH

A trail network that not only provides access and enjoyment for natural areas, but also makes connections between frequent destinations is a “walkability” principle. The Walk Score® rating²⁸ is a number between 0 and 100 that measures the walkability of any location:

Walk Score®	Description
90-100	Walkers’ Paradise Daily errands do not require a car.
70-89	Very Walkable Most errands can be accomplished on foot.
50-69	Somewhat Walkable Some amenities within walking distance
25-49	Car Dependent A few amenities within walking distance
0-24	Car Dependent Almost all errands require a car.

Acton, Concord, and Carlisle have initiated this project to assess current walking accessibility and to find ways to encourage walking accessibility in the future. Daily errands involve destination like recreation sites, schools, parks, groceries, restaurants, book stores/library, coffee shops, banking, and entertainment. The more of these destinations that are accessible from a trail network, the more likely a locale is to receive a higher Walk Score.

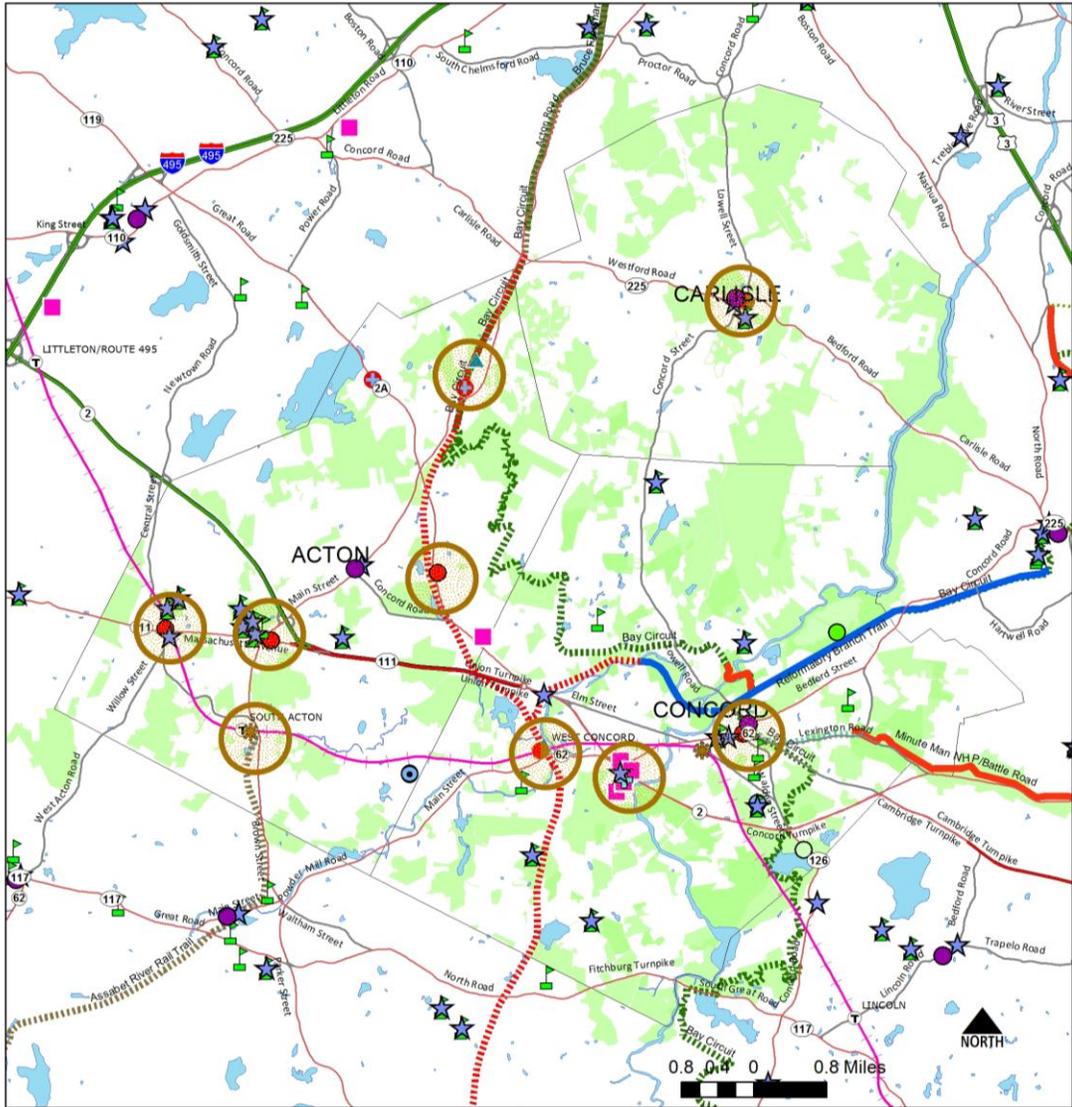
The first step is to inventory the existing major destinations and the trail network between the towns and explore opportunities to expand that network to make more connections.

DESTINATIONS AND REGIONAL TRAILS²⁹

The map on page 33 shows major destinations (large circles) in the three-town region and the existing and proposed regional trails. The major destinations include the village centers (Carlisle Center, West Acton, Kelley’s Corner, North Acton, West Concord, and Concord Center), the medical complex around Emerson Hospital, commuter rail stations (South Acton and West Concord), shopping along Route 2A (Great Road), major school clusters (Acton-Boxborough Regional High School, Concord-Carlisle High School, Concord Academy, Alcott School, and Walden School). The map also includes a number of other

²⁸ See <http://www.walkscore.com/>

²⁹ Trails shown on the maps come from a variety of sources. Concord provided a GIS trail layer for their trails on public lands. The Acton Land Stewardship Committee provided a Google Earth KML file of most of their trails that included slope information. The Carlisle Trails Committee provided a GIS layer of their trails. MAPC provided a GIS trail layer largely based on Open Street Map GPS information of trails in the region. Some trails are on private land and may not be publicly available.



Legend

Nodes

- Schools (PK - High School)
- Medical
- Natural
- Recreational
- Library
- Town Hall
- Shopping
- Shopping/School
- Shopping/Work
- Transportation
- Transportation/Shopping
- Work

Long Term Care Residences

- Assisted Living Facility
- Nursing Home
- Rest Home
- Active Commuter Rail Station
- Open Space

Regional Trails

- Existing
- Existing unimproved
- On-road link
- Underway
- Potential
- Bay Circuit Trail

MAJOR DESTINATIONS AND REGIONAL TRAILS

destinations like libraries, schools, and medical service areas that are not in the major destination circles.

BRUCE FREEMAN RAIL TRAIL (RED-DASHED LINE)

The 25-mile Bruce Freeman Trail, 6.8 miles now completed in Chelmsford, will be an important connection between several major destinations in Acton and Concord when it is completed. Construction is scheduled in 2021-2025. It will connect North Acton, Route 2A shopping areas, and West Concord. Unfortunately it only passes through a corner of Carlisle. See www.brucefreemanrailtrail.org/.



COMPLETED PORTION OF BRUCE FREEMAN RAIL TRAIL

ASSABET RIVER RAIL TRAIL (BROWN-DASHED LINE)

The partially completed Assabet River Rail Trail will connect the commuter rail station at South Acton to Maynard and Hudson. See www.arrtinc.org/.

MINUTE MAN BATTLE ROAD TRAIL (SOLID-RED LINE AND LIGHT BLUE-DASHED LINE)

The Minute Man Battle Road Trail connects Lincoln and Concord and the connection along Lexington Road reaches to Concord Center. See <http://www.minutemanbikeway.org/Pages/intro.html>.

REFORMATORY BRANCH TRAIL (SOLID BLUE LINE AND RED-DASHED LINE)

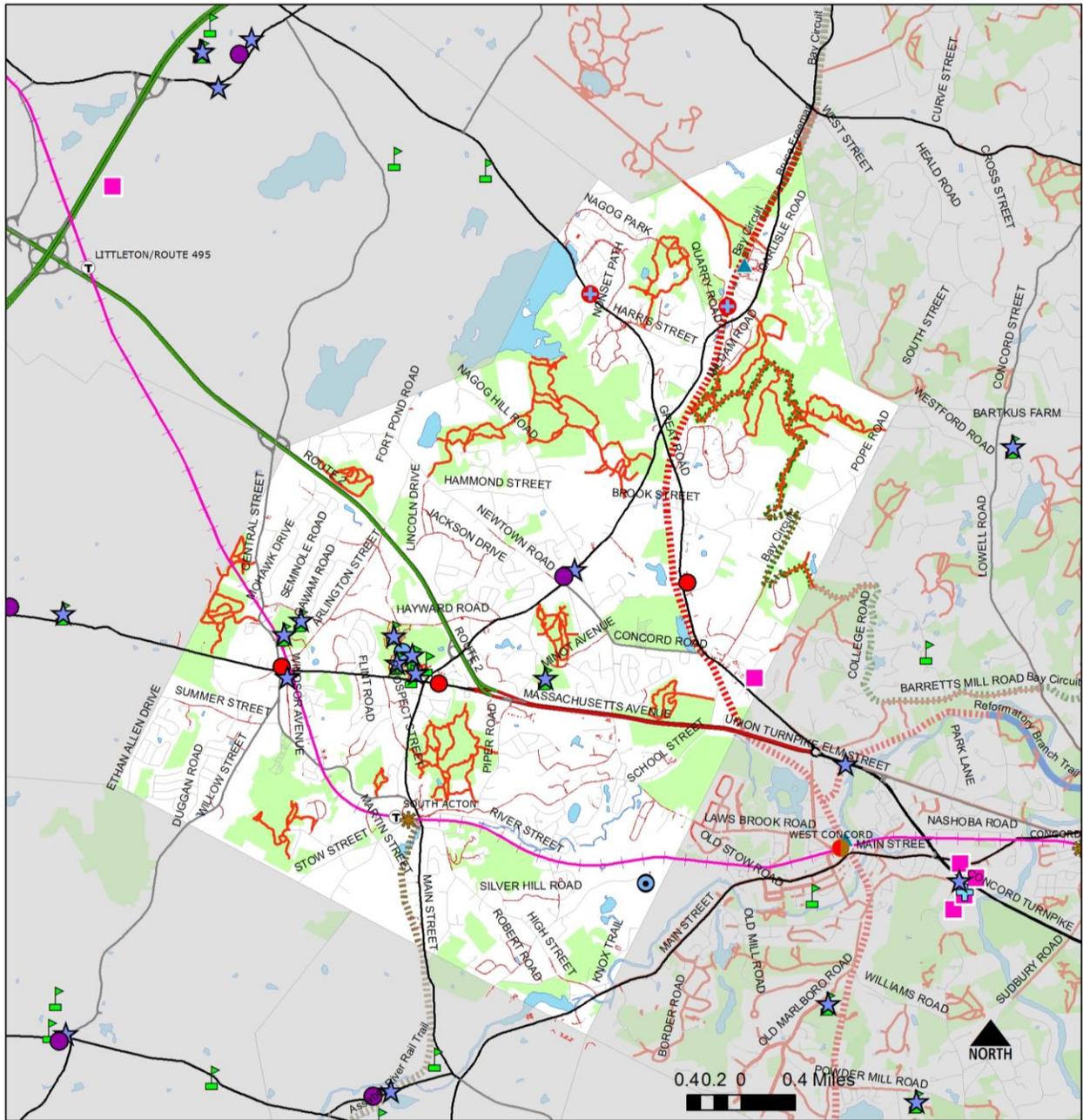
The gravel, and sometime rough, Reformatory Branch Trail is 4 miles long and connects Bedford to Concord Center. In Bedford it almost connects to the Minuteman Commuter Bikeway (which connects to West Cambridge – 10.5 miles) and the Narrow Gauge Tail Trail (which connects to Billerica – 3 miles) at Depot Park. It passes Great Meadows Wildlife Sanctuary in Concord. A proposed extension could connect from Concord Center to West Concord and the Bruce Freeman Rail Trail. See www.bedforddepot.org/railtrails/index.html.

BAY CIRCUIT TRAIL

The Bay Circuit Trail is a recreation trail and greenway corridor extending through 34 towns in Eastern Massachusetts for 200 miles from Plum Island and Ipswich to the Duxbury/Kingston shore and linking the parks and open spaces surrounding metropolitan Boston. The trail passes through Acton and Concord. It will use the route of the Bruce Freeman Rail Trail as it passes through a corner of Carlisle and North Acton. It proceeds through Acton using trails in the Nashoba Brook, Camp Acton, and Springhill conservation areas and then follows roads to the Stoneymeade Conservation Area where it enters the Concord Annursnac Hill Conservation Area after which it follows roads to the Minuteman National Historical Park near Concord Center. It continues on beyond Concord Center on a combination of trails and roads to Walden Pond and then crosses into Lincoln. See <http://www.baycircuit.org/>.

SECTION 5: TOWN BY TOWN FINDINGS AND RECOMMENDATIONS

In addition to the above major destinations and regional trails each of the three towns have extensive trail networks and active trail committees. Making an interconnected trail network involves inventorying the existing trails and sidewalks and identifying opportunities for making connections both within each town and between them.



ACTON TRAILS

ACTON

Acton's more than 28 miles of trails and existing sidewalks are shown in red on the map on page 35.

OPEN SPACES AND TRAILS

Trails are concentrated on conservation lands and provide good access to enjoyable natural areas found in the town's open spaces. There are several opportunities to make connections both within Acton and between Acton and the other towns in the three-town study area.

OPPORTUNITIES FOR CONNECTING TRAILS WITHIN ACTON

The Bruce Freeman Rail Trail will help make connections to several areas along its route. In addition to connecting to the East Acton Village it will connect to several conservation areas with trails. These open spaces include NARA (the North Acton Recreation Area), Wills Hole and Town Forest, Nashoba Brook, Spring Hill, Camp Acton, Nagog Hill, Grassy Pond, and Weatherbee.

Sidewalks are another way of connecting trails within Acton. Several opportunities exist:

KELLY'S CORNER WEST ACTON AREA

- Sidewalk along Hayward Road almost connects the school complex and Kelly's Corner to the Arboretum and the Jenks/Guggins Brook conservation areas and West Acton
- Sidewalks along Hayward Road and Arlington Street connect the Kelly's Corner and the school complex to West Acton.
- Sidewalk along Arlington Street almost connects to the Bulette/Town Forest area
- Sidewalk along Prospect Street (with a short interruption) almost connects to Great Hill

SOUTH ACTON AREA

- Sidewalk along School Street connects the South Acton Commuter Rail Station to Great Hill
- Sidewalk along Central Street connects the Commuter Rail Station to the Pacy Conservation Land, Mt. Hope Cemetery and Heath Hen Meadow
- Pratts Brook is near South Acton but does not currently connect with sidewalks.

In general, the elderly or individuals with limited mobility need information to help them decide if a trail will be too difficult for them. The appendix includes a table showing the length and maximum slope for most of the trails in Acton. Slopes over 15% are generally more difficult for seniors and individuals with limited mobility. Making this information readily available will help trail users be more informed.

OPPORTUNITIES FOR MAKING CONNECTIONS BETWEEN TOWNS

New open space associated with the Robins Mill Estate neighborhood may provide an opportunity to connect the Nashoba Brook/Spring Hill/Camp Acton open spaces to the Benfield Lands and Spencer Brook Reservation, protected lands in Carlisle. Likewise, a short walk along Pope Road also connects Camp Acton to the Spencer Brook Reservation.

As mentioned in the discussion of Regional Trails, the Bay Circuit Trail connects trails in Acton via the Stoneymeade Conservation Land to the Annursnac Conservation Area in Concord and continues on into Concord.

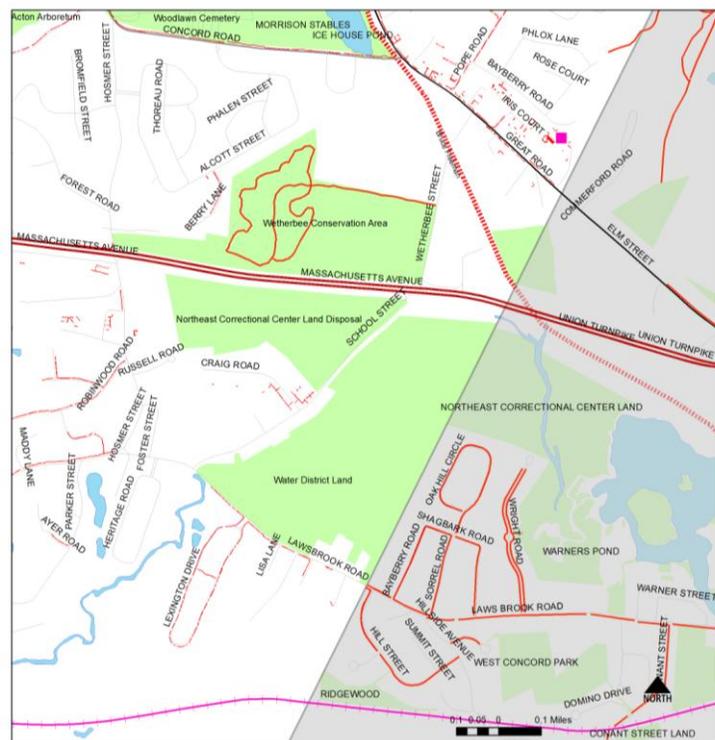
Sidewalks along Great Road in Acton almost connect to a sidewalk along Elm Street in Concord. An almost continuous sidewalk along School Street in Acton connects to Laws Brook Road in Concord and forms a potential walking route from South Acton to West Concord and from West Concord on to Concord Center.

ZONING AND OTHER REGULATION OPPORTUNITIES

Acton has a number of regulations that can be used to promote pedestrian facilities and increase the opportunities for more healthy life styles.

ZONING; AMENDED THROUGH APRIL, 2005

Acton's zoning provisions dealing with pedestrian facilities are quite specific in sections in the bylaw covering development in village areas. For example, ten foot wide sidewalks are required in the East Acton Village Zoning District and the Kelley's Corner Zoning District. Additional



width can be required “where necessary to spill out on to the sidewalk.” Sidewalk width is not mentioned in the provisions for the North Acton Zoning District.

EAST ACTON VILLAGE

Specific provisions for the East Acton Village area are as follows:

“Section 5.5B.1.2: The following standards shall apply to all STRUCTURES and additions to STRUCTURES for which a Site Plan Special Permit is required on LOTS in the East Acton Village District. (Note: Words in all capitals have definitions in the bylaw.)

- a) The Sidewalks – The Site Plan Special Permit Granting Authority shall require sidewalks along the LOT’S FRONTAGE on a STREET or STREETS. The sidewalk shall be at least 10 feet wide but wider where necessary to allow pedestrian shopping and activities to spill out onto the sidewalk. Sidewalks may be located wholly or partially within the STREET layout. If on LOTS, sidewalks shall be considered part of the minimum required OPEN SPACE. The sidewalk shall be separated, where feasible, from the vehicular roadway with a landscaped buffer to provide both safety to pedestrians and to create the sense of village. The landscaped buffer shall consist of shade trees placed at appropriate intervals and other landscaping and STREET design elements such as benches and shrubs, and it may consist on part of on-STREET vehicular parking spaces.
- b) Walkways – The Site Plan Special Permit Granting Authority shall require walkways among BUILDING entrances using straight and/or gently curving paths connecting BUILDINGS to BUILDINGS, BUILDINGS to STREETS, and BUILDINGS to sidewalks with minimal interruptions by driveways. Parking lot aisles, along with access and interior driveways, do not count as walkways. Walkways should include “bulges” to allow for gathering points that may include special features (e.g., water elements, sculptures, statues, etc.). Special features should be designed for public interaction. Benches and other places for people to wait, bicycle racks, stroller bays, and other pedestrian amenities may be required near BUILDING entrances if deemed appropriate by the Site Plan Special Permit Granting Authority. Where feasible, walkways should have some degree of enclosure achieved through the use of BUILDING fronts, trees, low hedges, arcades, trellised walks, or other means in order to positively define its space. Walkways and related pedestrian amenities on LOTS under this Section b) and the following Sections c) and d) shall be considered part of the minimum required OPEN SPACE.
- c) Connections between LOTS – The Site Plan Special Permit Granting Authority shall require driveway and walkway connections to abutting LOTS within the East Acton Village District using standards from Section b) above. Where such connections are not available due to existing conditions on abutting LOTS, provisions shall be required to connect to such abutting LOTS at a future date in locations determined by the Site Plan Special Permit Granting Authority.
- d) Connections to East Acton Village Surroundings – The Site Plan Special Permit Granting Authority shall require pedestrian connections to abutting neighborhoods and facilities outside the East Acton Village District using the standards from Section b) above. Where such connections are not available

due to existing conditions in the surrounding area, provisions shall be required for such connections at a future date in locations determined by the Site Plan Special Permit Granting Authority.

- e) The Pedestrian Plaza – Where a LOT has on it STRUCTURES totaling a NET FLOOR AREA of 30,000 square feet or more, it shall have one or more pedestrian plazas on it.
- i. The combined area of pedestrian plazas shall measure at least 5% of the NET FLOOR AREA on the LOT, but not more than 3,000 square feet in combined areas shall be required. At least on the pedestrian plazas shall measure 1,500 square feet or more with a minimum side dimension of 20 feet. No pedestrian plaza shall measure more than 3,000 square feet.
 - ii. The pedestrian plaza shall be a natural gathering spot at the STREET level in front of a BUILDING, or in between BUILDINGS, which is to be used exclusively by pedestrians and connects to the sidewalk and walkways. For the purposes of the Section, a pedestrian arcade located within a BUILDING footprint and open to the outdoors may be counted toward the minimum area required for a pedestrian plaza.
 - iii. The pedestrian plaza shall be designed open on one side to an adjacent larger space, natural view, or activity area such as an outdoor café, coffee cart, food stand, basketball hoop, game tables, or playground. Within the pedestrian plaza, at least one seating area of activity pocket shall be placed along the edge of the plaza looking into the plaza. The pedestrian plaza shall be accented with pedestrian amenities such as benches, kiosks and other partly enclosed outdoor structures to facilitate waiting and/or group activities. Where feasible, add a few steps at the edge where stairs come down or where there is a natural change in grade. Make these raised areas immediately accessible from below so that people may congregate and sit to watch the local activity. To create minor boundaries between outdoor areas and/or BUILDINGS where there is no grade change, add “sitting walls.” Sitting walls should be no higher than 16 inches and wide enough to sit on (at least 12 inches wide).
 - iv. Shade trees, ornamental trees and other landscaping shall be included to provide shelter from the sun, to reduce noise, to beautify/enhance the appearance of the East Acton Village District and to mitigate fumes. All landscaping shall use species that are tolerant to the climatic conditions in Acton and shall be designed to facilitate ongoing maintenance and watering.
 - v. Notwithstanding any other provisions of the Bylaw to the contrary, the serving of foods and drinks at outdoor tables shall be permitted in a pedestrian plaza.
 - vi. A pedestrian plaza shall be considered part of the minimum required OPEN SPACE. The area required for a sidewalk shall not be included in the pedestrian plaza.”

KELLEY’S CORNER

The Kelley’s Corner zoning provisions for sidewalks and walkways are quite extensive and largely duplicate those for the East Acton Village District., as documented in the following excerpts.

“Section 5.6.1: Pedestrian access and circulation are favored in order to limit vehicular congestion and air pollution. Adjacent residential neighborhoods will be connected to the Kelley’s Corner District via pedestrian ways but are otherwise separated with landscape buffers.

It is widely recognized that the mere provision of sidewalks and crosswalks will not encourage pedestrian use of a commercial area unless the layout and design of the sites and BUILDINGS are also conducive to pedestrian use. The leading design principles and therefore to provide convenient and efficient pedestrian access within the Kelley’s Corner District and to surrounding neighborhoods and facilities, to provide a safe and comfortable pedestrian environment with walkways, pedestrian conveniences and amenities, and to encourage BUILDINGS with a pedestrian oriented scale and design.

“Section 5.6.2: The following standards shall apply to all LOTS in the Kelley’s Corner District.

“Section 5.6.2.1: The Site Plan Special Granting Authority shall require sidewalks along the LOT’S FRONTAGE on a STREET or STREETS and walkways between BUILDING entrances and the nearest STREET or STREETS with minimal interruption by driveways. Parking lot aisles and access and interior driveways do not count as walkways.

“Section 5.6.2.2: The Site Plan Special Permit Granting Authority shall require driveway and walkway connections to abutting LOTS within the Kelley’s Corner District. Where such connections are not available due to current conditions on abutting LOTS, provisions shall be required to connect to such abutting LOTS at a future date in locations determined by the Site Plan Special Permit Granting Authority.

“Section 5.6.2.3: The Site Plan Special Permit Granting Authority shall require pedestrian connections to abutting neighborhoods and facilities outside the Kelley’s Corner District. Where such connections are not available due to current conditions in the surrounding area, provisions shall be required for such connections at a future date in locations determined by the Site Plan Special Permit Granting Authority.

“Section 5.6.3: The following standards shall apply on all LOTS in the Kelley’s Corner District where the FLOOR AREA RATIO exceeds 0.20.

“Section 5.6.3.1: A sidewalk shall be provided along the LOT’S FRONTAGE on a STREET or STREETS. The sidewalk shall be at least 10 feet wide. Sidewalks may be located wholly or partially within the STREET layout. The sidewalk shall be separated from the vehicular roadway with a landscaped buffer at least 10 feet wide, which shall consist of shade trees placed at 40-45 foot intervals and other landscaping or STREET design elements, and which may consist in part of on-STREET vehicular parking spaces.

“Section 5.6.3.2: The Pedestrian Plaza – A pedestrian plaza shall be provided on any LOT where the NET FLOOR AREA is 30,000 square feet or more and the FLOOR AREA RATIO exceeds 0.35.

- a) The pedestrian plaza shall be an area at the STREET level in front of a BUILDING, on the side of a BUILDING, OR IN BETWEEN buildings, which is to be used exclusively by pedestrians and connects to the sidewalk. For the purpose of this section, a pedestrian arcade located within a

BUILDING footprint and open to the outdoors may be counted toward the minimum area required for a pedestrian plaza.

- b) A pedestrian plaza shall contain a minimum of 1,500 square feet in area and shall measure at least 20 feet in width. If the NET FLOOR AREA of the BUILDINGS on a LOT exceeds 100,000 square feet, the minimum area for a pedestrian plaza shall be 3,000 square feet. The area required for a sidewalk shall not be included in the pedestrian plaza.
- c) The pedestrian plaza shall be next to the STREET and sidewalk, and shall be open on one or more sides to the sidewalk.
- d) The pedestrian plaza shall be accented with pedestrian amenities such as benches and kiosks. Shade trees, ornamental trees and other landscaping shall be provided to create a separation between pedestrian and vehicular traffic, to highlight BUILDINGS and pedestrian spaces, to provide shelter from the sun, to minimize glare for drivers, to reduce noise, and to mitigate fumes.
- e) All landscaping shall use species that are tolerant to the climatic conditions in Acton and shall be designed to facilitate ongoing maintenance and watering.
- f) Notwithstanding any other provisions of this Bylaw to the contrary, the serving of foods and drinks at outdoor tables shall be permitted in a pedestrian plaza.”

OTHER ZONING PROVISIONS

There are three other sections of the Acton Zoning Bylaw where pedestrian facilities and walkways are mentioned. They are Section 5 – Transferable Development Rights, Section 9 – Planned Conservation Residential Community and Section 9B – Senior Residence.

TRANSFERABLE DEVELOPMENT RIGHTS

Section 5.4.6.4 under Transferable Development Rights contains the provision; “Different USES may be apportioned between two or more BUILDINGS provided all the BUILDINGS are functionally integrated through the use of attractive OPEN SPACE design and pedestrian walkways. Combined residential and nonresidential BUILDINGS are permitted provided that the residential portions of such BUILDINGS are located above the nonresidential portions.”

PLANNED CONSERVATION RESIDENTIAL COMMUNITY

Section 9 – Planned Conservation Residential Community in its Section 9.5.2 states the “The Planning Board may require changes to the Planned Conservation Residential Community Site Plan and impose additional conditions, safeguards and limitations as it deems necessary to secure the objectives of this Bylaw, including without limitation, any conditions, safeguards or limitations listed in Section 10.3.6.” Section 10.3.6 allows the Special Permit Granting Authority to impose a number of conditions and restrictions including those mentioned in Section 10.3.6.9 which reads as follows: “Installation of sidewalks along the entire FRONTAGE of a LOT and of other walkways and paths as it deems necessary to accommodate the safe movement of pedestrians and bicyclists. Such a sidewalk or other walkways or paths may be located on the LOT or within the layout of the STREET and shall be designed to connect with existing sidewalks on adjacent LOTS, if any. Sidewalks, walkways or paths shall be designed and

constructed according to standards established in the Town of Acton Subdivision Rules and Regulations, except when otherwise approved by the Special Permit Granting Authority.”

Section 9.6.3.2. d) states that “A portion of the Common Land may also be used for ways serving as pedestrian walks, bicycle paths, and emergency access or egress to the Planned Conservation Residential Community or adjacent land, if such USE, in the opinion of the Planning Board, enhances the general purpose of the Bylaw and enhances better site and community planning, and if the Planning Board finds that adequate assurances and covenants exist, to ensure proper maintenance of such facilities by the owner of the Common Land.”

SENIOR RESIDENCES

In the Senior Residence Section, 9B.9.2.4, the Bylaw almost identically states “In addition, a portion of the Common Land may also be used for ways serving as pedestrian walks, bicycle paths, and emergency access or egress to the SENIOR Residence development or adjacent land, if such a USE, in the opinion of the Planning Board, enhances the general purpose of this Bylaw and enhances better site and community planning, and if the Planning Board finds that adequate assurances and covenants exist, to ensure proper maintenance of such facilities by the owner of the Common Land.”

This same language is found in Section 4.2.3.5.d) under Open Space Development: “In addition, a portion of the Common Land may also be used for ways serving as pedestrian walks, bicycle paths, and ACCESS or egress to the Open Space Development or adjacent land, if such a USE, in the opinion of the Planning Board, enhances the general purpose of this Bylaw and enhances better site and community planning, and if the Planning Board finds that adequate assurances and covenants exist, to ensure proper maintenance of such facilities by the owner of the Common Land.”

SUBDIVISION REGULATIONS; LAST AMENDED: DECEMBER 6, 2011

Acton’s subdivision regulations deal with sidewalks in two sections, 9.6; SIDEWALKS, PEDESTRIAN WAYS, CROSS WALKS and BICYCLE PATHS, and 9.9; Situations where the design of a proposed subdivision appears to have detrimental effects, and situations where there is an inadequately constructed STREET or WAY. The provisions are as follows:

“9.6.1 To provide for safe pedestrian travel, sidewalks shall be required in all SUBDIVISIONS in accordance with the following schedule:

- LOCAL STREET: Sidewalk required on one side of traveled STREET only.
- COLLECTOR STREET: Sidewalk required on both sides of traveled STREET.
- ARTERIAL STREET: Sidewalks required on both sides of traveled STREET.

“9.6.2 A sidewalk shall be required along that portion of any existing public STREET upon which the SUBDIVISION has frontage.

“9.6.3 In general, sidewalks shall be constructed within the STREET layout. The sidewalks shall be a minimum of five (5) feet in width and constructed in accordance with the requirements of the

Massachusetts Architectural Access Board, the typical structural cross section (see Appendix) and with Sections 701.20, 701.40, 701.60, 701.62 of the Commonwealth of Massachusetts “Standard Specifications for Highways and Bridges”, unless the BOARD authorizes different design to respond to local topography or other circumstances. Sidewalks should be designed around public shade trees and may meander around streetside utilities and equipment such as hydrants, mailboxes, utility poles, etc., if necessary. On ARTERIAL and COLLECTOR STREETS, where possible, a green strip shall be provided between the edge of pavement and the sidewalk to separate pedestrians from vehicular traffic.

“9.6.4 Sidewalks, walk WAYS and bicycle PATHS shall consist of six (6) inches of bank run gravel (or equivalent) covered with three (3) inches of processed grading gravel. The gravel base shall be covered with a wearing surface of 2.5 inches of Class I, Type I, bituminous concrete applied in two courses.

“9.6.5 Walk WAYS and bicycle PATHS shall be required where appropriate to improve circulation and connections with existing, proposed and potential future STREETS and WAYS.

“9.6.6 Bicycle PATHS shall be constructed to a minimum width of ten (10) feet.

“9.6.7 Handicapped ramps shall be installed at all cross walks and driveways in accordance with the requirements of the Massachusetts Architectural Access Board. In the location of crosswalks or bicycle PATH crossings the BOARD may require a reduction in the standard pavement width in order to shorten the crossing distance, and a raised pavement to reduce vehicle speed.

EXISTING ADJACENT STREETS AND WAYS

In order to ensure vehicular and pedestrian safety the BOARD will consider the adequacy of STREETS and WAYS adjacent to or providing access to a proposed SUBDIVISION. It is the BOARD'S intent that a proposed SUBDIVISION does not overly strain the capacity of existing or planned STREETS and WAYS so as to result in traffic congestion and safety problems.

“9.9.1 When, in the opinion of the BOARD, a SUBDIVISION is deemed to have a detrimental effect on existing or proposed STREETS, WAYS and intersections or where a SUBDIVISION borders on an existing but inadequately constructed STREET or WAY, the BOARD may require appropriate and reasonable improvements in STREETS and WAYS bordering or providing access to the SUBDIVISION to minimize congestion and to insure safe and adequate vehicular and pedestrian travel in a coordinated system of STREETS and WAYS.

“9.9.2 Improvements that the BOARD may require in adjacent and nearby STREETS and WAYS shall include, but shall not be limited to, grade adjustments and realignments of horizontal and vertical curves, corrections of drainage deficiencies, improvements of bridges and culverts, widenings and additions of travel lanes, installation of traffic control signage and traffic signals, and construction of sidewalks and bikeways.

“9.9.3 A traffic impact study will be required with all preliminary plan submissions where deemed necessary by the BOARD, but in any case where the proposed or potential uses, in the opinion of the

BOARD, will be likely to produce an additional 30 trip ends per peak hour (AM, PM or weekend, whichever is highest) or an average of 400 additional trip ends per weekday based on the most recent edition of the Institute of Transportation Engineers' (ITE) publication "Trip Generation".

"9.9.3.1 If the proposed or potential uses are not listed in said publication, the BOARD may approve the use of trip generation rates for another listed use that is similar, in terms of traffic generation, to the proposed or potential uses. If no such use is sufficiently similar, a detailed traffic generation estimate, along with the methodology used, shall be prepared by a person or firm who is a member of the ITE and has documented experience and qualifications in traffic planning and traffic engineering, and shall be submitted to the BOARD.

"9.9.4 To avoid lengthy delays in the processing of the definitive plan submission, the applicant shall consult with the BOARD or its designee during the preliminary plan review to determine whether a traffic study will be required.

"9.9.4.1 If a traffic impact study is deemed necessary, it shall be prepared by a person or firm who is a member of the ITE and has documented experience and qualifications in traffic planning and traffic engineering, and it shall examine the following:

"9.9.4.2 Existing Traffic Conditions including STREET geometries, traffic volumes, safety, delays and levels of service for adjacent STREETS, WAYS and intersections potentially affected by the proposed SUBDIVISION.

"9.9.4.3 Future Traffic Conditions including trip generation, trip distribution, volume to capacity ratios, and levels of service for adjacent STREETS, WAYS and intersections affected by the proposed SUBDIVISION and for the proposed STREETS, WAYS and intersections, at the time of completion and 5 years beyond anticipated completion taking into account background growth projections.

- a) Approach and departure route assignments shall be based on existing traffic patterns, minimum time paths and market studies.
- b) Trip generation for the proposed or potential uses shall be based on ITE Trip Generation (latest edition) averages and must include weekday AM, weekday PM, and weekend peak hour trips, as well as average weekday daily trips.
- c) Any anticipated reduction in trips due to special characteristics of the SUBDIVISION (i.e. mixture of uses, internal capture) must be fully explained and documented.
- d) Sight distances for turning movements to and from the SUBDIVISION and within the SUBDIVISION must be analyzed using AASHTO standards.
- e) The adequacy of vehicular queuing storage at the SUBDIVISION entrance shall be demonstrated.
- f) The impact and mechanics of any proposed phasing shall be outlined.

"9.9.4.4 Mitigation Measures that could be taken to reduce the impacts of the proposed SUBDIVISION and their estimated costs.

- a) These should include demand management strategies (i.e. staggered work hours, car and van pooling, facilities for pedestrians and bicyclists) and capacity enhancements (i.e. lane additions, signalization).
- b) The study shall take into account any improvements that may be planned by the Town of Acton or the State within the study area.”

DESIGN GUIDELINES; LAST REVISED NOVEMBER, 2011

Acton Design Guidelines deal with the desirability of creating attractive spaces, buildings and circulation patterns. The following excerpts cover the subjects of public spaces and pedestrian facilities.

“These guidelines seek to:

- Promote attractive and appropriately scaled development;
- Preserve the existing New England character of the Town;
- Facilitate a circulation system that integrates multiple forms of
- transportation-vehicles, bicycles and pedestrians;
- Protect and increase property values by improving the Town’s overall
- appearance;
- Adhere to the objectives of the Town and individual Village Master Plans.

PUBLIC SPACES

Development should strive to create appealing public spaces by:

- Providing pedestrian access and connections to existing public sidewalks;
- Providing benches, water features, and shaded gathering spaces.

SIDEWALKS

Well-designed walkways attract pedestrians. They should:

- Connect to building entrances, parking areas and key public spaces;
- Where setbacks permit, be separate from the street with a green buffer;
- Use attractive paving materials such as pavers instead of asphalt or concrete.”

HISTORIC DISTRICT GUIDELINES; JULY,1999

Acton’s Historic District Design Guidelines have limited references to walkways and other pedestrian facilities as shown in the following excerpt.

“Acton’s Historic District Bylaw limits the jurisdiction of the Commission to site features such as fences, walls, gazebos, decks, raised terraces, permanent play structures and septic vent pipes. Therefore, the Commission has no policy regarding plantings and structures located at grade level such as walkways, although on occasion the use of plantings for the purpose of screening parking, lighting or other structures may be prescribed.”

AFFORDABLE HOUSING DEVELOPMENT GUIDELINES

The Acton Community Housing Corporation has adopted a set of project development guidelines for affordable housing. Provisions relevant for pedestrian facilities and walkways are:

“Preliminary plans and the Local Initiative Program (LIP) application must include:

b. Project description, including unit mix with respect to ownership/rental, bedrooms, subsidized/market sales, subsidized/market rental, proposed density, total site area, total buildable site area, total building coverage of site, site coverage for walks, parking and roads, open space on site at completion and amenities.

Step 6. ACHC Meeting with Developer

The ACHC will meet with the developer to discuss concerns that have arisen to "negotiate" project trade-offs. Options will be clarified.”

Both internal and external pedestrian circulation concerns could arise as issues to be negotiated.

ACTON 2020 PLAN

The recently completed Acton 2020 Comprehensive Community Plan process included extensive outreach which resulted in a great deal of consensus regarding residents desires as they relate to health and wellness issues. Residents expressed being very interested in a more walkable and connected community with more opportunities for fitness, socializing, and the independent travel for teens and seniors that public transportation provides. Consequently the Plan makes numerous recommendations addressing these concerns and desires ranging from the construction of more sidewalks, searching for more permanent funding for the Minuteman shuttle, providing more indoor and outdoor recreational facilities for all ages, a community/senior center, etc.

The Master Plan does not have a separate section dealing with personal health or walkability. The plan advances and uses the terms fitness and wellness goals and personal health in several places where pedestrian facilities are discussed. In Phase I of the planning process (visioning and preliminary goal establishing) sidewalks, bike paths and open space and recreation facilities emerged as highly desirable components of the master plan. Accelerated construction of sidewalks and bike facilities are given medium to high priorities in several places in discussions of plan implementation in Phase II. The following are excerpts from the plan where the terms fitness and/or wellness and/or personal health are mentioned.

“By concentrating growth, it becomes feasible to serve more of Acton’s population by public transportation, reducing greenhouse gas emissions, saving money for residents, and providing access for Actonians who can’t drive or don’t wish to be automobile-dependent. It also gives residents the opportunity for walking, which benefits fitness goals and increases sense of connection to others.”

Executive Summary-page 6

“Construct more sidewalks and facilities for safe bicycling, in centers and Town-wide. This will help connect people and places and provide opportunities for fitness while also being beneficial for the environment (by reducing car fumes).” Executive Summary- page 9.

By concentrating growth, it becomes feasible to serve more of Acton’s population by public transportation, reducing greenhouse gas emissions, saving money for residents, and providing access for Actonians who can’t drive or don’t wish to be automobile-dependent. It also gives residents the opportunity for walking, which benefits fitness goals and increases sense of connection to others.

Background Section- page 17.

“Now, the Roadmap’s proposed TDR mechanism has stronger incentives for property owners to use it, demographic trends are being reflected in a residential market for quality smaller housing units in vibrant walkable centers, and people’s understanding of the benefits of this kind of development (for the environment, personal health, and quality of life) has created the political will to make it happen. Background Section-page 23.

“Construct more sidewalks and facilities for safe bicycling, in centers and Town-wide. This will help connect people and places and provide opportunities for fitness while also being beneficial for the environment (by reducing car fumes). Key Implementation Strategies- page 44.

“Residents recognized that extending sidewalks, providing safe biking and extending the Town shuttle improve connections between people and places, provide opportunities to meet fitness and wellness goals, and takes better care of the environment. Implementation Strategies for Goal Three; Improve Connections- page 77.

ACTON HEALTH OPPORTUNITIES

The following is a brief discussion of some of Acton’s existing facilities and ways the Town supports the health and wellness of its residents, followed by a discussion of what residents have said about how they view the needs and priorities of the Town in terms of health and wellness. Finally, there is a discussion of some ideas to consider for increasing those efforts.

EXISTING RESOURCES

Approximately one-third (29%) of Acton’s 13,000 acres of land is in some form of public open space or recreational use. The Recreation Department manages facilities at:

7 baseball/softball fields	2 fishing areas
9 soccer fields	1 swimming beach
1 outdoor basketball court	1 amphitheater
7 playgrounds	1 skate park
2 practice fields	3 picnic areas

Schools have fields and indoor recreation facilities. There are two community garden sites and major recreation sites at NARA Park, School Street Field, Veteran’s Field, Elm Street Fields, Great Hill, Jones Field, and Gardener Field. There is one golf course in town.

Acton is in the process of building a playing field accessible to children with mental, emotional and/or physical challenges so that they may play baseball as a team member in an organized league (the Miracle League). They playing field, which will be ready by September 2012, will be the first of its kind in Massachusetts.

In addition to its network of trails, Acton has a sidewalk improvement plan and DPW makes a concerted effort to implement it, but is often slowed down due to budgetary constraints. While there is much resident support for the activity of biking, many Acton roads are narrow, often making bike lands difficult, if not impossible.

The town has recently initiated a town-wide shuttle, called the MinuteVan shuttle that is currently not on a fixed route.

RESIDENT OPINION

The following is a brief overview of some of the thoughts of Acton residents regarding what they see as health and wellness priorities in the town.

“Promote physical wellness” was the number one response of Acton’s residents to a town-wide survey³⁰ with the purpose of gathering Actonians thoughts regarding what would make Acton a healthier community. This category received the highest priority rating by the most respondents. The other three top categories were Transportation, Environmental Awareness, and Food and Nutrition.

Highlights of HOPE (Health Outreach Planning Essentials) Resident Survey Results (2009–2010)

Physical Wellness (Total Survey Comments = 121)	Number of respondents	Percent
General	23	19.0%
Pool	22	18.2%
Bike Trails	22	18.2%
Walking Trails	16	13.2%
Facilities	14	11.6%
Recreation	10	8.3%
Community Center	9	7.4%
Walking/Biking Trails	7	5.6%
Fitness Indoors	4	3.3%

³⁰ HOPE (Health Outreach Planning Essentials), March 2009 – September 2010

Resident comments from the survey include:

- Create a multi-use, multi-generational community center
- Consider a town pool as part of a community center
- Refresh/enhance existing walking trails and create new ones
- Support the rail trails; interest in the completion of these projects is high
- Boost utilization of NARA Park. It is considered a plus and a town asset that needs to be more widely known (some consider it underutilized).

Transportation-related suggestions included:

- Create more sidewalks, especially around schools and village areas.
- Increase commuter rail parking and/or provide shuttle service to train
- Provide shuttle service around town

RECOMMENDATIONS FOR ACTON

The following is a listing of some specific ways Acton can support the health and wellness of its residents. See Section 2 of the report where many more options are described.

INCREASE AWARENESS REGARDING HEALTH AND WELLNESS, COMMUNITY-WIDE.

- Consider embarking on a Healthy Town Initiative and involving residents in assessing how “activity-friendly” the town is by developing a healthy community measurement tool.

See Section 2 for a more complete discussion.

- The current Development Impact Report is 6-8 pages long, written 20 years ago. Perhaps this is an opportunity to re-do by removing less relevant questions and including some new ones regarding health impacts.

PROVIDE INFORMATION ON EXISTING RESOURCES

- Providing information on existing resources is a critical first step. Often existing resources are underutilized because people are unaware of all that is offered. A centralized location, both physical (e.g. at Town Hall) and on the web, where resources can be listed, described and updated, can go a long way in promoting health and wellness, by providing information and encouraging their use.
- Acton’s Land Stewardship Committee maintains information on trails in Conservation Areas and provides information and maps on their website and publish a guidebook. In future revisions it would be good to provide more information of the difficulty of the trails for seniors and show connections to sidewalks and other nearby sites.
- Resources can also be sorted by those places and activities as they appeal to different age groups (e.g. pre-school, school-aged children, teens, adults, seniors, etc.) and/or by interest.

See Section 2 for a more complete discussion.

INCREASE WALKABILITY/BIKEABILITY

- Acton has many available tools for influencing pedestrian accessibility and promoting healthy lifestyles. The town’s 2020 Master Plan includes goals for an expanded network of sidewalks. The existing town regulations offer many opportunities for improving connections to open

spaces, trails, and sidewalks. The town should continue to pursue both private and public investments in such facilities.

- Opportunities for expanding the trail network in Acton were described above. See page 36 to 37.
- Acton needs a policy for allowing OPDMDs on its trails. Such a policy can follow the precedent of Carlisle. It could also be modeled on some of the precedents outlined in Section 3. For example, data on Acton trails includes the maximum slope on each trail and several public trail managers have excluded OPDMDs on trails with slopes over 12%.
- Encourage the redevelopment of commercial areas, especially in Kelley's Corner and along Great Road, so that they are more oriented to pedestrians by encouraging a number of features such as that of providing sidewalks, pedestrian space in large parking lots connecting the car space to the entries of the buildings, tucking parking in back of buildings when possible, and providing canopies in front of stores for weather protection, and providing bike racks.
- Sidewalk repairs and extensions should be prioritized so that those connecting schools, public buildings, parks and recreational facilities and the village centers should be completed first.
- Sidewalks are currently required along commercial buildings, but no sidewalks are required to go to the building which sometimes is set back significantly from the street or the parking. Could consider requiring some space in parking lots (over a certain size) be dedicated to pedestrians.
- Currently, the Board of Selectmen can ask for additional paths to be created. When reviewing a project they can prioritize pedestrian connectivity.
- There is no mention of sidewalks in North Acton in the Zoning Regulations; perhaps this should be reviewed.

INCREASE RECREATION AND OPEN SPACE (indoor/outdoor, for all ages)

- Locating the recreation department in a separate building where many facilities can be centralized may help to improve access to existing resources. Also strengthening the department's web presence would help to increase awareness of existing resources.
- Lighting NARA park for nighttime use has been under discussion, and would increase the hours available for use, but the Police Department has some concerns regarding opening up the park after dusk. Additional concerns include selecting lighting that is aesthetically pleasing, consistent with the park's character, durable (not easy to vandalize), easy to maintain (snow removal if low to the ground) and does not shine in neighbor's yards (e.g. low LED solar lightings shining down may be a good choice). These issues should be addressed as it might be a good opportunity to increase use time of the park.
- Consider providing portable and/or composting toilets at heavily used facilities during the busy season(s), especially if they are to be used by seniors.
- Explore the feasibility and desirability of providing golf carts at the Arboretum to avoid rocky terrain and increase access to seniors and handicapped individuals. Maybe the town can rent the carts out for revenues?
- Community gardens. Existing community gardens seem to be very popular, especially with seniors. Need more (South Acton and/or West Acton). Include raised beds (table high) for the handicapped.

POSSIBLE PROVISIONS FOR SENIORS

- Increase trail access for seniors from senior housing
- Currently Conservation Commission leads Senior Nature Walks
 - It would help seniors if they had a map of the trails that indicated the level of difficulty (maximum slope as show in Appendix and other obstacles like rocks and roots, a trail rating system is discussed in the Appendix)
 - Safety is a big concern for seniors
 - Lighting
 - Think about ways of providing emergency call capabilities using state-of-the-art electronic devises
- Seniors need resting spots and public restrooms
 - Benches in strategic locations would help so that seniors could rest on their way to the village centers (for example)

NOTE: Committee on Disabilities noted that many handicap residents have their access to health care limited due to the fact that many buildings in Acton where medical offices are located are not handicap accessible. A map or website indicating which medical office buildings are accessible would be helpful to many seeking services.

POSSIBLE PROVISIONS FOR TEENS

- Need for more to do – involve teens in planning (see Section 2)
- Continue funding for the MinuteVan shuttle so that teens have a way of getting to recreational and other facilities on their own.
- The Acton Skate Park is reportedly popular and also a regional draw, but is frequently vandalized. Involving teens in planning, designing, building and even maintaining facilities for teen use and enjoyment has often been found to increase their sense of ownership, increase use, and reduce the incidence of vandalism.

POSSIBLE PROVISIONS FOR CHILDREN

- Explore ways of increasing opportunities to walk to school (Safe Routes to School)

METHODS FOR INCREASING SOCIAL CAPITAL

Ways in which Acton can increase opportunities for residents to meet and socialize include:

- Consider creating a community /senior center
- Consider tweaking the subdivision regulations so that they encourage developers (through a density or other bonus) to provide infrastructure for creating a gathering space (e.g. paving, benches, lighting, etc.) on cul-de-sacs.

POTENTIAL RESOURCES

- Friends of the rail trails
- Friends of the Arboretum
- Land Stewardship Committee (sub-committee of Conservation Committee responsible for trail maintenance)
- CPA bill currently pending that would allow the use of funds to upgrade and maintain existing recreation and conservation facilities. Explore whether CPA funds can be used to maintain

existing playgrounds and other recreational facilities (this might be the impetus needed to convince residents to increase their participation from 1.5% to 3%).

CONCORD

Concord's more than 42 miles of public trails and 47 miles of sidewalks along with some trails on privately owned land is shown in red on the map on page 54.

OPEN SPACES AND TRAILS

As in Acton, most trails are on conservation lands and provide good access to enjoyable natural areas. There are several opportunities to make connections both within Concord and between Concord and the other towns in the three-town study area.

OPPORTUNITIES FOR CONNECTING TRAILS WITHIN CONCORD

As in Acton, the Bruce Freeman Rail Trail will help make connections to several areas along its route. In addition to connecting to West Concord it will connect several conservation areas with trails, including; the Old Rifle Range and White Pond Park. The proposed extension of the Reformatory Branch Trail mentioned in the section on Regional Trails would also connect West Concord to several areas along the Assabet and Concord Rivers and Concord Center.

The extensive network of sidewalks also makes many connections between trails within Concord.

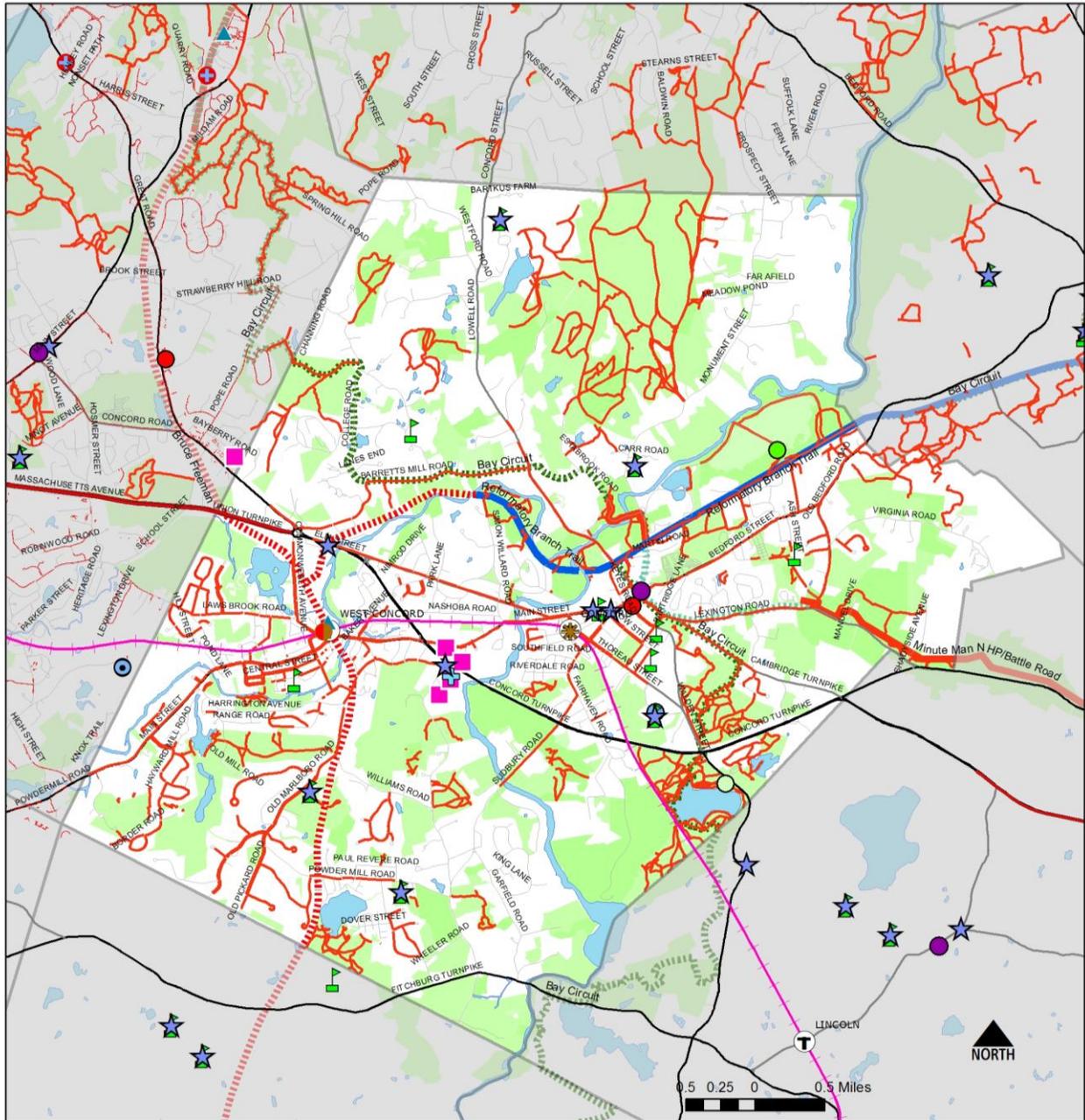
CONCORD CENTER AREA

- Sidewalk along Cambridge Turnpike connects to the Hapgood Wright Forest/Walden Woods/Walden Pond areas
- Sidewalk along Keyes Road connects to the Reformatory Branch Trail which connects to the Minute Man National Historical Park/Old Calf Pasture/Great Meadows/Sleepy Hollow Cemetery and on into Bedford to the Bedford Depot and the Minuteman Commuter Bikeway. Sidewalk along Bedford Street also provides an opportunity to connect to these areas and make a loop. Sidewalk along Sudbury Road connects to the South Meadow Playground and Fairhaven Hill
- Sidewalk along Main Street connects Concord Center to West Concord
- Sidewalk along Lexington Road connects to the Minute Man National Historical Park to the east and to Lincoln

WEST CONCORD AREA

- As mentioned above, the Bruce Freeman Rail Trail when completed will connect West Concord to the Old Rifle Range, White Pond Park and neighborhoods with sidewalks Old Marlboro Road and Old Pickard Road. Meanwhile sidewalks make these connections possible.
- Sidewalk along Brown Street connect to Cousins Park Trail that provides views of the Assabet River

In general, the elderly or individuals with limited mobility need information to help them decide if a trail will be too difficult for them. The appendix includes a table open spaces in Concord with areas where slopes exceed 15%. Slopes over 15% are generally more difficult for seniors and individuals with limited mobility. Making this information readily available will help trail users be more informed.



CONCORD TRAILS

OPPORTUNITIES FOR MAKING CONNECTIONS BETWEEN TOWNS

Estabrook Woods, a 1200-acre ecological study area, is owned by Harvard University and its network of trails and old cart paths are on private land. Access for walking is generally allowed. Two Rod Road connects Concord's Punkatasset Hill Conservation Area to the Davis Corridor and a network of trails in Carlisle.

A sidewalk along Lowell Road in Concord and Concord Street in Carlisle would make a good connection between these two towns. However it would require extending existing sidewalk in Concord two miles and extending roadside pathways in Carlisle by 1.5 miles.

Elmbrook abuts National Park and Conservation land, there is an opportunity to connect these areas and to make all of this connected to Battle Road park. The Bedford trails were recently connected to Hanscom so there is a possibility in the future to connect to these.

Opportunities to connect Concord and Acton are discussed and illustrated on page 37.

ZONING AND OTHER REGULATION OPPORTUNITIES

Concord has a number of regulations that can be used to promote pedestrian facilities and increase the opportunities for more healthy life styles.

ZONING; AMENDED THROUGH TOWN MEETING, APRIL, 2011

“7.2 Flood Plain Conservancy District

7.2.3.2 Construction and maintenance of at-grade sidewalks, duckwalks, bicycle, equestrian and foot paths or bridges, and unpaved recreation areas which do not alter the existing topography;

“Section 9: Residential Cluster Development

9.2.4 Open Space. The area of the open space shall equal at least fifty (50) percent of the total area of the Residential Cluster Development tract.

9.2.4.1 The open space shall have a shape, dimension, character, and location suitable to assure its use for park, recreation, conservation, or agricultural purposes by at least all the residents of the Residential Cluster Development. In determining whether the intent of this section has been satisfied, the Planning Board shall consider the extent to which land having one or more of the following eight characteristics is included in the proposed open space:

(f) Land which preserves existing trail networks or land on which new trails will be developed as part of the cluster for integration into an existing trail network;

(h) Land providing desirable public access to existing Town or State recreational or conservation land.

SECTION 10. PLANNED RESIDENTIAL DEVELOPMENT (PRD)

“10.2.9.1 The common open space shall have a shape, dimension, character and location suitable to assure its use for park, recreation, conservation, or agricultural purposes by at least all the residents of the Planned Residential Development. In determining whether the intent of this section has been satisfied, the Board shall consider the extent to which land having one or more of the following eight characteristics is included in the proposed open space:

(f) Land which preserves existing trail networks or land on which new trails will be developed as part of the PRD for integration into an existing trail network;

(h) Land providing desirable public access to existing Town or State recreational or conservation land.”

SUBDIVISION RULES AND REGULATIONS; AMENDED THROUGH JUNE 2007

Concord’s Subdivision Rules and Regulations mention pedestrian facilities and walkways in several sections. Mentions are not extensive. Regulations governing cul-de-sacs are included because they have the potential to become focal points for pedestrian activities.

6.8 Streets – Design Standards

Cul-de-Sacs

R. O. W. Diameter	150’	150’	150’	170’
Pavement Width	22’	22’	22’	30’
Center Island Diameter	76’	76’	76’	90’
Outside Paving Diameter	120’	120’	120’	150’
Max. Length of Cul-de-Sac	600’	600’	600’	600’
Min. Length of Cul-de-Sac	200’	150’	125’	80’

“6.10 Sidewalks

“6.10.1 Requirement: Sidewalks will be required on both sides of the street along all arterials. Sidewalks will be required on one side of the street along all local and collector streets unless the Planning Board determines that pedestrian movement is otherwise provided for.

“6.10.2 Design Standards: All sidewalks and ramps shall meet the most current ADA/MAAB standards. The design and construction of sidewalks shall be based upon the nature and density of development as shown in the following Table:

REQUIREMENTS FOR IMPROVEMENTS AND DESIGN

Table 2: Minimum Design Standards for Sidewalks

Zoning District

Street Classification	Residential			Non-Residential	
	Residential A	Residential A&B	Residential C	Business District	Non-Residential Other
Local	bituminous meandering ¹ or standard ² 5’ wide	bituminous meandering or standard 5’ wide	bituminous meandering or standard 5’ wide	concrete standard 6’ wide	bituminous standard 5’ wide
Collector	bituminous meandering or standard 5’ wide	bituminous meandering or standard 5’ wide	bituminous standard 5’ wide	concrete standard 6’ wide	bituminous standard 5’ wide

Minor Arterial	bituminous meandering or standard 5' wide	bituminous meandering or standard 5' wide	bituminous standard 5' wide	concrete standard 6' wide	concrete standard 5' wide
Major Arterial	bituminous standard 5' wide	bituminous standard 5' wide	bituminous standard 5' wide	concrete standard 6' wide	concrete standard 5' wide

¹Meandering – follows existing terrain and major features such as stone walls, large trees, rock outcroppings, etc. Requires approval of the Planning Board.

²Standard – uniform width parallel to the street.

“6.10.3 Exceptions: Where new sidewalks are to be constructed in short sections to connect existing sidewalks, the new sections shall be constructed to the same specifications as the existing sidewalks.

“6.17.5 Cul-de-sac Plantings: The center island of a cul-de-sac shall be landscaped using one of the following options:

- (a) Planting of perennial grass by either sod or seed on a six (6) inch depth of loam;
- (b) Planting of nursery-grown, well-rooted shrubs and ground cover;
- (c) Planting of street trees, shrubs and perennial grass, or;
- (d) Retaining existing vegetation, if approved by the Planning Board.

“6.21 Reservation of Land for Housing Purposes

“6.21.3 Designation of Lots: After such consideration of comments from other Town boards and committees as the Planning Board deems appropriate, the Planning Board shall designate on the subdivision plan the specific portion of the tract to be reserved. Such land may be in one or more locations within the subdivision as the Board may determine.

“In determining the areas to be designated for reservation, the Planning Board shall consider, at a minimum, the following seven characteristics of the land:

- (g) Location of the area(s) to be reserved in relation to existing and proposed open space, active recreation areas, and trail networks.”

WEST CONCORD DESIGN GUIDELINES; JULY 2011

The recent design guidelines for development and redevelopment in the West Concord area stress making the area much more pedestrian oriented as revealed in the following excerpts from the guidelines.

“7.1.1B Shared Parking - Where individual parking areas for each business are difficult or impossible to add without negatively impacting the streetscape, alternative solutions should be considered. West Concord business and property owners are strongly encouraged to work collectively to address some of these parking needs and concerns through cooperative efforts. Shared use or remote lots may be a

positive option for providing additional parking by pooling area resources towards a common goal. In addition, centralized or shared lots encourage shoppers to combine errands and walk around West Concord, potentially promoting fewer vehicle trips and increasing pedestrian traffic past area businesses.

“7.1.1D Pedestrian and Bicycle Access - Property owners should also consider the needs of bicycles in planning parking areas and incorporate bicycle storage areas where possible.

“8.1.1.A Parks - A formal preserve available for passive and active recreation and public gatherings. A park may be independent of surrounding building frontages. Its landscape should consist of paths and trails, meadows, woodland and open shelters, all naturalistically disposed. Parks may be lineal, following the trajectories of natural corridors. The minimum size should be 20,000 square feet.

“8.1.1.B Greens - An open space, available for unstructured recreation and public gathering. A green may be spatially defined by landscaping rather than building frontages. Its landscape should consist of lawn and trees, naturalistically disposed. Greens in the West Concord Village Center should have a minimum size of 12,500 square feet and a maximum size of 2 acres.

“8.1.1.C Squares - An open space available for unstructured recreation and civic purposes. Building frontages spatially define a square. Its landscape should consist of paths, lawns and trees, formally disposed. Squares should be located at the intersection of important thoroughfares and have a minimum size of 4,000 square feet and a maximum size of 8,000 square feet in the West Concord Village Center.

“8.1.1.D Plazas - An open space, available for civic purposes and commercial activities. A plaza shall be spatially defined by building frontages. Its landscape shall consist primarily of pavement. Trees are optional. Plazas should be located at the intersection of important streets and have a minimum size of 2,000 square feet and a maximum size of 4,000 square feet in the West Concord Village Center.

“9.1.1.A Streetscape Elements - Streetscape Elements should be compatible with the design, style and character of surrounding building and landscape features. The scale of ground-level design elements such as porches, plazas, parks, pedestrian furniture, plantings and other street and site elements should be determined by, and directed towards, the use, comprehension and enjoyment of pedestrians.

“9.1.1.B Landscape Elements - Landscape Elements should include topography, plantings and paving patterns to provide continuity and definition to the street, pedestrian areas and surrounding landscape. Generous and extensive landscaping should be included on property grounds and within parking areas.

“9.1.1.D Alleyways - The construction of any new buildings should provide for the creation of pedestrian alleyways, where appropriate, in order to allow for passageways to parking and adjoining streets.

“9.1.3B Street Furnishings in Business District - Benches, bicycle racks, sculptures, lighting, or water features may be positive additions to the streetscape but should be carefully chosen so as to assure compatibility with the existing character of West Concord’s Business District.”

PAVING

“Pedestrian areas were often packed gravel with wooden ‘duck boards’ placed over the gravel during wet, snowy or icy weather. Towards the end of the 19th century, walks were paved with brick or occasionally flat fieldstone stepping-stones. Some walks were composed of peastone contained by either a row of bricks or wooden boards placed on edge. By the 1940s, most walks were brick or concrete poured in place.

WALKWAYS

“Brick and stone are appropriate in most cases. For early period homes, gravel or peastone (with duckboards) is recommended. For more utilitarian areas, plain concrete or exposed aggregate concrete is often acceptable. Asphalt is discouraged and concrete and asphalt made to simulate other material is not acceptable.”

CONCORD 2005 COMPREHENSIVE LONG RANGE PLAN REFERENCES TO PERSONAL HEALTH, PEDESTRIAN AND WALKWAY/BIKEWAY FACILITIES.

The Concord 2005 Comprehensive Long Range Plan makes multiple mentions of the desire to provide footpaths, trails, paths and sidewalks for both recreational purposes as well as for alternative transportation use. There is also a recommendation to connecting neighborhoods with schools and recreational facilities and much emphasis on recreational facilities and open space overall.

There are relatively few mentions of personal health either as objectives or outcomes of plan investments and objectives. The following highlighted passages and page references document the mentions in the master plan.

Sidewalks and bicycle paths will provide additional alternatives to the automobile. Page xix of the Executive Summary.

The issues of parking in the commercial areas and increased traffic volume need to be addressed proactively by community officials, and in a manner which preserves the town’s scenic and rural roads, and accommodates pedestrian and bicycle circulation throughout the community. Page xxv of the Executive Summary.

Public transportation will carry an increasingly larger share of local traffic, and sidewalks and bicycle paths will provide additional alternatives to the automobile. Page 3 of Chapter 1 (Concord Today/Vision for the 2020 Themes).

The town’s roads, bridges, sidewalks and curbs, aquifers, cemeteries, and bike pathways all need adequate funding to protect the capital investments the town has made over the years, and to assure that these facilities continue to function (FS-1; TC-2.4; TC-3.4.1). Page 9 of Chapter 1.

“Smart Growth” is a principle of land development that emphasizes mixing land uses; increases the availability of affordable housing by creating a range of housing opportunities in walkable neighborhoods; takes advantage of compact design; fosters distinctive and attractive communities; preserves open space, farmland, and natural beauty and critical environmental areas; strengthens existing communities; provides a variety of transportation choices; makes development decisions predictable, fair and cost effective; and encourages community and stakeholder collaboration in development decisions. Footnote on page 10 of Chapter 1.

Concord offers 25 miles of sidewalks, many miles of walking, hiking, riding, or biking trails on conservation land and in Minuteman National Historic Park, and a significant inventory of ponds lakes and rivers for canoeing, kayaking or fishing throughout the community, which greatly enhances the quality of life for all ages. Efforts should be made to promote the use of existing trails and pathways, to adequately maintain them, and to create new trails and pathways where feasible (TC-4, OS-3.1, OS-3.3.2, R-2.1). Steps should be taken to increase and improve access to existing trails by making trail maps more accessible to the public (OS-3.1.2). Additional trails, paths, and boat launching areas should be developed within the town for these interests, and support should be given to the development of the Bruce Freeman Rail Trail initiative (R-2.1.1). Pages 12 and 13 of Chapter 1

Create a system of pedestrian/bike pathways to provide a safe alternative network for moving around Concord. Transportation and Circulation Goal TC-4. Page 19 of Chapter 1.

The redevelopment of a lumberyard in the Depot Area into a shopping area with residential units above many of the stores. This is an exceptional "mixed-use" development because it is within walking distance of the train station, a supermarket, a drug store, a hardware store, and several restaurants and other businesses in downtown Concord, and is a good example of a “Smart Growth” development. Page 27 of Chapter 2 (Land Use).

Near town centers the roads and sidewalks are a unique challenge, since they often pit aesthetics against the need for pedestrian sidewalks and curbing. Safety concerns and inappropriate parking are cited as the rationale for more hardscape. Recent construction near Concord Center has seen an increase in paved sidewalks and straight granite curbing, which combined with wider roadways create a more urban look. Page 93 of Chapter 5 (Cultural and Historic Resources).

Protect and maintain historic and cultural scenic vistas, including farm land, scenic roadways, stone walls, road widths, sidewalks, major trees, and village centers. Page 99 of Chapter 5 (GOAL CH-2)

Continue to repair cemeteries, gravestones, memorials, paths, stone walls, fences, and trees in conjunction with preservationists working under the auspices of the CPW, Concord Cemetery Commission, Melvin Memorial Committee, Friends of Sleepy Hollow Cemetery, and Minuteman National Historic Park. Page 100 of Chapter 5 (Action CH-2.3.1).

Establishing a wider network of trails to access conservation land and connect conservation parcels will make these lands more widely available for use and enjoyment by the public, and encourage more widespread stewardship. Page 120 of Chapter 7 (Open Space).

The following eight Objectives and Actions are part of Open Space Goal Number 3 – Promote use of and access to existing open space resources.

Objective OS-3.1 Develop a system of trails and bike paths connecting open spaces. Action OS-3.1.1 Increase the number of trails that connect conservation lands to individual neighborhoods.

Action OS-3.1.2 Prepare a comprehensive map of trails and bike paths that are open to the public throughout town – on federal, state, town, and privately held land – and make it accessible to the public.

Objective OS-3.2 Enforce those existing conservation restrictions that allow public access.

Action OS-3.2.1 Employ a part- or full-time field ranger to monitor restrictions and coordinate work of volunteer stewardship committees.

Objective OS-3.3 Work with regional towns and agencies to identify and protect common wildlife, water and human corridors.

Action OS-3.3.1 Maintain present level of functioning corridors and increase co-operation with other towns, while keeping needs of Concord in the forefront.

Action OS-3.3.2 Open the Bruce Freeman Rail Trail linking Concord to Sudbury and Acton.

Action OS-3.3.3 Work through regional agencies such as the Metropolitan Area Planning Council, HATS, SUASCO, River Stewardship Council and neighboring towns to address watershed issues and issues of regional importance (e.g. Hanscom Field, Bay Circuit Trail, etc.). Pages 122 and 123 of Chapter 7 (Open Space).

3.5 miles of old railroad right-of-way running from Route 2 Rotary through West Concord and parallel to Old Marlboro Road, across Powder Mill Road to Sudbury line (future site of the Concord section of the Bruce Freeman Trail, which is a 25-mile trail along the abandoned Framingham-Lowell Railroad right-of-way)

Miles of trails through conservation land and town owned forests and fields. Above two items from page 126 of the inventory section of Chapter 8 (Recreation).

One of the recommendations from the 1987 Long-Range Land Use Plan was to establish bike/walking paths around town, connecting open spaces and recreational areas. There was also an interest in an inter-town bike trail. The Bruce Freeman Trail Initiative has been working to increase support for converting and connecting 25 miles of old railroad track for a Lowell-Framingham multi-use trail. Concord should continue to be an active player in this planning

process. Inter- and intra-town trails and paths continue to be of interest to the community for both recreational and alternative transportation uses. Page 127 of Chapter 8 (Recreation).

Growing senior population and increasing demand for health and fitness programs to meet their needs. Page 129 of the Challenges Section of Chapter 8 (Recreation). [Then related only to indoor recreation for seniors.]

Objective R-1.3 Expand programs for the increasing numbers of youth, young adults, active adults and seniors seeking new recreational, health and fitness activities.

Action R-1.3.4 Respond to increased interest in health and fitness as a life-long commitment for adults and seniors. Both the objective and action are related to Goal R-1: Provide active recreational programs on fields and facilities that are well maintained and remain responsive to the challenging needs of the community. Pages 130, 131 and 132 of Chapter 8 (Recreation).

GOAL R-2: Develop a broad range of passive recreational resources to accommodate the interests/needs of all citizens. This and the following four objectives and actions are from page 132 of Chapter 8 (Recreation).

Objective R-2.1 Support efforts to create trails and paths within town for cycling, walking, jogging, cross-country skiing, and other non-motorized activities.

Action R-2.1.1 Conduct engineering study for the 3.5 mile section of Concord within the Bruce Freeman Rail Trail initiative.

Action R-2.1.2 Create footpaths and trails that connect business areas with transportation and neighborhoods with schools and recreational facilities.

Action R-2.1.3 Periodically review, update, and make available for public distribution or sale, the Town trail map, to insure that all trails and paths are properly identified and utilized.

Decisions about safety improvements, road widening and alignment, signalization, parking, sidewalk design, tree and shrub planting and mowing practices should balance speed, capacity, convenience and safety with historic qualities. Where possible, sidewalks should be separated from the roadway by berms and plantings so as to avoid a visual widening of the road and provide a more attractive path for pedestrians. Page 153 of Chapter 10 (Transportation and Circulation).

Sidewalk improvements were among the most frequently mentioned needed transportation and circulation items at public “mind-mapping” sessions. Page 154 of Chapter 10 (Transportation and Circulation).

Item 8: Addressing pedestrian, wildlife and bicycle crossing concerns is listed as an issue relative to Route 2 improvements. Page 162 of Chapter 10 (Transportation and Circulation).

BICYCLE AND PEDESTRIAN PATHS AND TRAILS

Bike paths and recreation trails serve a variety of purposes – walking, jogging, observing nature, bicycling, horseback riding, cross-country skiing, and rollerblading. People use the trails for these recreational purposes, health purposes, or to get from one point to another. As traffic congestion increases within the community, there is a need to create alternatives to driving the family car. A good system of sidewalks, trails and bikepaths can provide this alternative. The July 1995 Report of the Bikeways Task Force took a critical look at the policy implications of developing bikeway routes in Concord. The Bikeways Task Force set its goals as:

- Identify characteristics of existing path use;
- Identify the needs of various users of paths;
- Identify corridors that should be studied;
- Identify the range of issues related to bicycle use; and
- Prepare a set of recommendations to the Board of Selectmen.

Five corridors were identified for consideration, including the Lowell-to-Sudbury corridor (also known as the Bruce Freeman Rail Trail), the Concord-to-Bedford corridor (connecting to the Minuteman Bike Path), the National Park Service Trail, the Route 126 bikepath, and the Assabet River former right-of-way. Of these five, the National Park Service Trail was actually constructed in 2001, serving the Meriam Corner area easterly into Lincoln and Lexington. Currently, there is a local group of residents interested in pursuing development of the Bruce Freeman Rail Trail (Lowell-to-Sudbury corridor) and the Town is undertaking a feasibility study of the trail. Page 163 of Chapter 10 (Transportation and Circulation).

Lack of adequate bikepaths around and through town and: Safe passage for vehicles and pedestrians crossing Route 2 are listed as challenges on page 165 of Chapter 10 (Transportation and Circulation).

Action TC-1.1.3 Provide accommodations for pedestrian and bicycle traffic including bike racks. Page 166 of Chapter 10 (Transportation and Circulation).

Action TC-3.3.2 Seek funding to investigate the feasibility of providing satellite parking and pedestrian access from the Baker Ave. commercial area to the West Concord business area. Page 169 of Chapter 10 (Transportation and Circulation).

Action TC-3.4.3 Design and construction of the Bruce Freeman Rail Trail. Page 170 of Chapter 10 (Transportation and Circulation).

GOAL TC-4: Create a system of pedestrian/bike pathways to provide a safe alternative network for moving around Concord. This goal and the following seven objectives and actions are all on page 171 of Chapter 10 (Transportation and Circulation).

Objective TC-4.1 Optimize the usefulness of existing paths and connections.

Action TC-4.1.1 Identify and publicize existing paths and connections within the Town.

Action TC-4.1.2 Link to other regional paths (e.g. Minuteman National Historic Park paths and the Bruce Freeman Rail Trail) and commuter rail connections (Concord and West Concord stations).

Action TC-4.1.3 Identify areas where bike stands could be safely located and easily accessed, and seek funding for acquisition and installation.

Objective TC-4.2 Identify new opportunities for paths and connections.

Action TC-4.2.1 Investigate the need for pedestrian bridges over rivers, streams, railroad tracks, and Rte. 2. Consider bridges connecting transportation with business areas and the possibility of a Walden Pond-to-Town path (aka “Thoreau Amble”).

Action TC-4.2.2 Provide pleasant pathways through and around business districts.

CONCORD HEALTH OPPORTUNITIES

The following is a brief discussion of some of Concord’s existing facilities and ways the Town supports the health and wellness of its residents, followed by a discussion of what residents have said about how they view the needs and priorities of the Town in terms of health and wellness. Finally, there is a discussion of some ideas to consider for increasing those efforts.

EXISTING RESOURCES

Concord engaged in long-range planning several decades ago with the goal of preserving its character and as a result has protected a significant amount of open space, conservation land, as well as a number of family-owned farms. These, in addition to recreational facilities, cultural institutions, and very walkable village centers, provide Concord residents with multiple opportunities for physical activity and spontaneous socializing. Some of these locations include the following:

Walden Pond

Great Meadows

Fairyland Pond

Playgrounds and playing fields at the schools

In West Concord there is a new playground that is fully accessible to any disability.

Beede Swim Fitness Center

Harvery Wheeler Community Center

Minuteman National Historic Park

Concord has at least 25 miles of sidewalks and many miles of walking, hiking, riding or biking trails on conservation land and in the Minuteman National Historic Park. There are also opportunities for canoeing, swimming, bird watching and ice skating in the town’s conservation lands, rivers, ponds, trail systems, etc.

Senior Walking Program: The Division of Natural Resources and the Council on Aging have developed a walking program for seniors that organizes walks, generally no longer than two miles (lasting about an

hour) to promote enjoyment of the town's trail system. This popular program has a web presence with schedule of walks, trail maps, estimate of how long each walk will last.

There are several designated walking tours of the town's top sites, hiking and walking trails maps and other tourist-oriented activities. In West Concord, behind the Depot, there are some fitness stations located along a walk.

Biking. Concord is somewhat of a biking hub, where many bicyclists from other towns meet before taking off in a variety of directions for long bike rides. They appreciate the water fountain, benches and shade tree on the Green, which many of them use as a meeting spot. There is a perceived conflict between providing more bike racks and design in historic district. The extension of Bruce Freeman rail trail will provide more options for bicyclists

Community Gardens. There are currently three gardens and a waiting list for more.

Gathering Places. In addition to the village centers which provide opportunities for running into neighbors, gathering places include: The Concord Free Public Library, Concord Art Association, Emerson Umbrella studios for visual and performing arts, and the Performing Arts Center (which is home to the Concord Orchestra, the Concord Band, and the Concord Players) area of Concord Center.

RESIDENT OPINION

Concord has recently been awarded a Healthy Communities Grant and will be developing a program by identifying health related directions by talking with all the town's departments and reaching out to residents.

Concord residents tend to have a strong orientation to an enjoyment of the outdoors and the Town is a significant regional draw to walkers and bicyclists.

RECOMMENDATIONS FOR CONCORD

The following is a listing of some specific ways Concord can support the health and wellness of its residents. See Section 2 of the report where many more options are described.

INCREASE AWARENESS REGARDING HEALTH AND WELLNESS, COMMUNITY-WIDE

- Consider embarking on a Healthy Town Initiative and involving residents in assessing how "activity-friendly" the town is by developing a healthy community measurement tool.

See Section 2 for a more complete discussion.

PROVIDE INFORMATION ON EXISTING RESOURCES

- Providing information on existing resources is a critical first step. Often existing resources are underutilized because people are unaware of all that is offered. A centralized location, both physical (e.g. at Town Hall) and on the web, where resources can be listed, described and updated, can go a long way in promoting health and wellness, by providing information and encouraging their use.

- Resources can also be sorted by those places and activities as they appeal to different age groups (e.g. pre-school, school-aged children, teens, adults, seniors, etc.) and/or by interest.
- Increase awareness of existing trail system, e.g. by developing a trail map and web presence; could also try to encourage private groups to get involved in promoting trail system (like in Carlisle)

See Section 2 for a more complete discussion.

INCREASE WALKABILITY/BIKEABILITY

- Concord has many available tools for influencing pedestrian accessibility and promoting healthy lifestyles. The existing town regulations offer many opportunities for improving connections to open spaces, trails, and sidewalks. The town should continue to pursue both private and public investments in such facilities.
- Provide more pedestrian space in parking lots (especially larger ones). The current Mill Brook Terry plaza redesign is a good model (it will provide a river walk and parking lot with more pedestrian space)
- Opportunities for expanding the trail network in Concord were described above. See pages 54 to 55.
- Concord also needs a policy for allowing OPDMDs on its trails. Such a policy can follow the precedents set by Carlisle and those outlined in Section 3. The Concord GIS trails layer provides no information on the maximum slopes of its trails but the appendix to this report provides a list of sites with slopes over 15% that could be used to limit use of trail on those sites.
- Explore ways of resolving the potential conflict between providing more bike racks in an historic district.
- Explore implementing a Share the Road program.
- Explore what needs to be done in order to make for a “seamless” transportation system so that, for example, there is a continuous flow from the bike to the bus to the van to the train.

CONNECTIVITY

- Explore ways of connecting the Muse Housing Development (350 units, all rental, 25% affordable, on town line with Acton), and other affordable housing and senior congregate housing concentrations, with little or no access to open space, to provide opportunities for walking.

RECREATION

- The Recreation and Open Space Plan soon to be initiated will help to identify existing resources and outline priorities for the future (the last Recreation Plan was completed in 2003 and is thus significantly outdated).

RIVER ACCESS

- There are currently four canoe launches. Better connections to and between these and possible future boat launches would help increase the opportunity to enjoy the rivers.

POSSIBLE PROVISIONS FOR SENIORS

In a recent COA survey seniors expressed a desire to have more opportunities to walk and said that they would like to “get off the sidewalks” and into nature. The Senior Walking Tours are apparently very popular. These could benefit from having:

- good information regarding the trails, including a rating system (identifying level of difficulty – see discussion of rating systems in Appendix)
- Benches for resting along the way
- Railings (with careful selection of materials and compatible design)
- Explore possibility of providing public restrooms (rental or composting) in key conservation land with trails

POSSIBLE PROVISIONS FOR CHILDREN

Currently only one Concord elementary school is in the Safe Routes to Schools program. The town should explore this program which helps make walking to school safe and increases awareness regarding the benefits of doing so. Also, the Peabody School may need to have more sidewalks constructed to connect it to the neighborhood.

METHODS FOR INCREASING SOCIAL CAPITAL

Ways in which Concord can increase opportunities for residents to meet and socialize include:

- Community gardens – the demand seems to be there for more (as there is a waiting list).
- Consider using cul-de-sacs for community gardening

POTENTIAL RESOURCES

Youth Services, Town of Concord

Other??

CARLISLE

Carlisle has more than 60 miles of trails and pathways and has a very active Trails Committee and Land Stewardship Committee. In 1997 Carlisle started to develop a network of pathways alongside roads to both connect notable destinations in town and to make walking safer.

OPEN SPACES AND TRAILS

The majority of the town's trails are on conservation lands. The pathways serve to connect important destinations around Carlisle Center and many of the open spaces. The street-side pathways are a terrific idea. There continued expansion will increase the walkability and safety of Carlisle.

OPPORTUNITIES FOR CONNECTING TRAILS WITHIN CARLISLE

Continuing the East Street Pathway to Ice Pond Road or Rutland Street as proposed by the Carlisle Pedestrian and Bike Safety Advisory Committee, would connect Carlisle Center to the Great Brook Tophet Loop and the rest of the Great Brook Farm State Park.

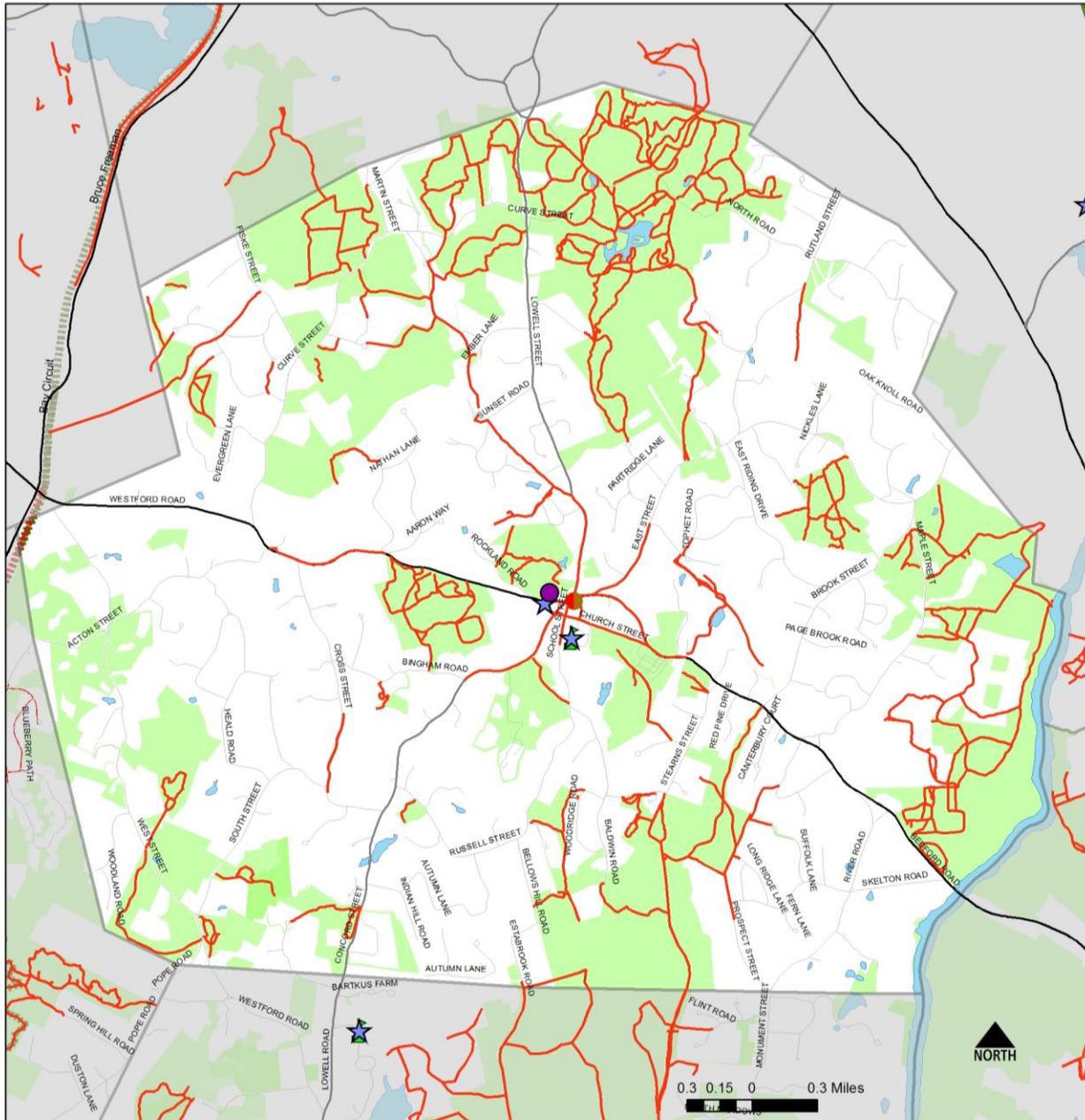
A short Pathway along Bingham Road would connect Carlisle Center to the Towle Land and avoid the need for a boardwalk along Westford Road. It would then be possible to connect through the Towle Land to the existing Pathway along Westford Road. If that pathway were extended a little over a mile it would then connect to the Bruce Freeman Rail Trail in Westford.

OPPORTUNITIES FOR MAKING CONNECTIONS BETWEEN TOWNS

As mentioned in the section on Concord extending the Concord Street Pathway 1.5 miles would reach the Concord town line and potentially connect to an extended sidewalk along Lowell Road in Concord.

Also mentioned in the section on Acton, there appears to be an opportunity to connect trails in Carlisle's Benfield Conservation Land and Spencer Brook Reservation to trails in the northeast corner of Acton either along Pope Rode or through recently acquired conservation land in Acton. See page 37.

There is a potential connection between Carlisle and Concord that passes through Harvard's Estabrook Woods. Two Rod Road is the best connection and it could connect along Stearns Street to the Banta Davis Land and Spalding Field near Carlisle Center. On the Concord side Two Rod Road connect to the Punkatasset Conservation Land and Monument Street, less than $\frac{3}{4}$ mile from the Minute Man National Historical Park.



CARLISLE TRAILS

ZONING AND OTHER REGULATION OPPORTUNITIES

Zoning; September 30, 2011

Carlisle has only a few mentions of pedestrian facilities and walkways in its zoning bylaw. None of the provisions focus on such facilities. They are mentioned in passing along with other features regulated by zoning. The Subdivision Rules and Regulations deal with pedestrian facilities and walkways in a more depth. In the zoning bylaw pedestrian facilities and walkways are mentioned in the following sections.

5.1.4 Special Permit Procedure

5.1.4.2 Preliminary Plan

A Preliminary Development Plan shall be prepared for consideration by the Planning Board at least sixty (60) days before filing the application as set forth below. The plan shall show in a general manner, but to scale, the boundaries and topography of the tract; access and vehicular and pedestrian circulation; type and mass of buildings; wetland and watercourses; proposed grading, drainage and open space. In addition, the Planning Board may require such further data as proposed dwelling unit density, total floor area, dwelling size and parking areas to be shown on the plan.

5.1 Residence District M - Multi-Dwelling Housing for the Elderly

5.1.4.6 Conditions

The Planning Board may attach to special permits such conditions as, in its judgment, are designed to further the purposes set forth in Section # 5.1.1, and shall attach a condition limiting the occupancy of the housing to families at least one member of which is 62 years of age or older.

5.2.4 Permitted and Prohibited Uses In the Wetland/Flood Hazard District

The following uses are permitted as of right, provided that any and all permits, orders, or approvals required by state or federal law shall have been obtained.

5.2.4.3.4 Foot, bicycle and horse paths and bridges; duck walks, duck blinds; piers and docks.”

Section 5.1.4.6 (Conditions) could attach a requirement to create or enhance a pedestrian facility or walkway within a multi-dwelling housing for the elderly project, and/or require a pedestrian walkway connection to an adjacent walkway or trail or other similar feature.

SUBDIVISION REGULATIONS; LAST REVISED MARCH 8, 2010

Subdivision regulations in Carlisle are much more specific about pedestrian facilities and walkways than the zoning bylaw. Carlisle uses the general term footpath for pedestrian facilities and walkways. The term sidewalk is only used in Section D dealing with dead-end streets and cul-de-sacs. The following provisions govern the creation of footpaths in Carlisle.

SECTION 2. Streets/Roads/Footpaths

A. General

(7) All streets in the subdivision shall be designed so that, in the opinion of the Board, they will provide safe vehicular and pedestrian travel and natural drainage, with no drainage pockets, and so that they are adjusted to the topography and provide the minimum number of intersections with existing streets. Due consideration shall also be given by the applicant to the attractiveness of the street and footpath layout in order to obtain the maximum livability and amenity of the subdivision. Footpaths shall be designed to be easily integrated with existing footpaths along

adjacent roadways. The layout of such footpaths shall be designed to fit as naturally as possible with the landscape along the right of way. Offsetting the roadway from the centerline of the right of way in order to provide this aesthetic benefit is acceptable but must be specifically approved by the Board.

(8) Provision shall be made for proper projection of streets and ways, trails and footpaths to ensure adequate future access to any adjoining property which is not yet subdivided. If suitable easements or other connections from existing streets are already established providing potential access to the proposed subdivision, the streets and ways shall be constructed to connect the proposed subdivision streets via said easements and connections.

(9) The proposed streets and footpaths shall compose a system that ensures safe and adequate circulation of vehicular and pedestrian traffic within the proposed subdivision and coordination with adjacent streets and roads. In order to ensure vehicular and pedestrian safety, the Board will consider the adequacy of streets adjacent to or providing access to a proposed subdivision. When, in the opinion of the Board, a subdivision is deemed to have a detrimental effect on safety and vehicular and pedestrian traffic flow or where a subdivision borders on an existing but inadequately constructed street, the Board may require appropriate and reasonable improvements in streets and ways bordering or providing access to the subdivision, including the construction of footpaths, to minimize congestion and to ensure safe and adequate vehicular and pedestrian travel.

(10) Article X, Section 10.3.8 from Carlisle's General Bylaws governs the width of rights-of-way and pavements.

(12) Where a Footpath Master Plan shows a proposed footpath adjacent to the subdivision, the footpath system of the proposed subdivision shall extend to the proposed footpath.

(13) Reserve strips prohibiting access to streets, footpaths, or adjoining property shall not be permitted, except where, in the opinion of the Board, such strips shall be in the public interest.

(14) Streets and footpaths shall not be located in such a manner as to terminate within less than 100 feet of any boundary of the Town of Carlisle or to project or extend across such boundary unless specifically approved by the Board as being in the public interest, having regard to safety of travel, congestion of adjacent public ways, and coordination with other ways.

D. Dead-end Streets

(2) Dead-end streets shall be provided at the closed end with a cul-de-sac turnaround having an outside street line diameter of one hundred and sixty (160) feet, with an outside diameter of the paved surface of one hundred and forty (140) feet. A landscaped island having a diameter of one hundred (100) feet shall be provided in the center of the turn-around and the natural vegetation shall be retained where possible; in areas that cannot retain the natural vegetation, a landscaping plan shall be provided for the cul-de-sac island.

(5) At the request of the Board, dead-end streets shall have sidewalks or bikeways designated on the plans. If a subdivision includes extending a dead-end street that has previously had such a sidewalk or bike path designated, but not built, the proponent may be required to construct such sidewalk as part of its work.

SECTION 3. Easements

C. Easements for footpaths and woods paths and trails will be required by the Board to provide for passage as part of an existing or proposed town footpath and trail system. Such easements shall generally be at least twenty (20) feet wide or less, in locations and at the specific width as required by the Board in consultation with the Town's Trail Committee.

D. Any easement under this section shall be assigned to the corporate entity as required by Article II, Section 9(A)(3) or to the Town, as determined by the Board.

E. All easements, except an easement specifically serving the individual dwelling, shall not intersect within the ellipse required by Section 4.1.3.3 of the Carlisle Zoning Bylaws.

F. The boundaries of all easements shown on the subdivision plan shall be satisfactorily marked on the ground to enable owners of the lots and the Board and its engineers, to be able to identify the location of such easements.

SECTION 5. Improvements

C. Footpaths

(1) Footpaths shall be required by the Board to improve circulation and connections within existing, proposed and potential future subdivisions, streets and ways unless the Board determines that safe pedestrian travel is otherwise provided. The footpath shall be on at least one side of the street, and the design and construction shall be based upon the nature of the subdivision and the natural environment with the goal of maintaining a natural appearance and blending into the natural land features and terrain. In addition, the Board may require the installation of pedestrian ways, trails, bridle paths, bicycle paths and/or footpaths where deemed necessary to provide adequate circulation or access to schools, playgrounds, parks, shops, transportation, open spaces, recreation and conservation areas, other community facilities, and to and between existing, proposed and future developments and neighborhoods. Generally, the footpath will be five (5) feet wide, shall follow the existing terrain and any existing or proposed stone walls, and shall meander around large trees and rock outcropping, with the objective of minimizing any adverse impact on the natural environment. The applicant shall consult with the Carlisle Pedestrian and Bike Safety Advisory Committee as early as possible in the application process to discuss the location and type of footpath for and in connection with the subdivision.

(2) The Board may, in appropriate circumstances, request that footpaths be constructed along existing roadways.

(3) Footpath construction shall begin upon a firm and stable subgrade free of loam, roots or other organic materials. A gravel base having a minimum thickness after thorough compaction of six (6) inches shall be required. Gravel shall be free of all stone over three (3) inches in greatest dimension, free from loam, clay, excessive fines or other foreign matter, and shall be of such a gradation to allow adequate compaction. At the Board's discretion, the Footpath's surface shall consist of (a) Class 1, Type 1 bituminous concrete with a wearing surface of 2.5 inches applied in two courses, (b) bituminous concrete similarly applied with an additional course of gravel not greater than .5 inches at its greatest dimension, or (c) an aggregate surface with organic stabilizer.

(4) The area between the footpath and the road pavement is to be finished as directed by the Board, which will consider the desirability of maintaining the natural barriers such as trees, rocks, and fences in said area.

(5) Handicap ramps shall be installed at all crosswalks and driveways in accordance with the requirements of the Massachusetts Architectural Access Board and in accordance with the Americans with Disabilities Act ("ADA") and all footpaths shall comply with the ADA.

(6) If the Board concludes that a footpath is not currently required within the subdivision, the Board may, nevertheless, require the applicant to grant the Town easements within the subdivision which will enable possible future construction and use of a footpath.

(7) At the Board's option the maintenance of the footpaths within the subdivision shall be the responsibility of a single corporate entity controlled by the owners of the lots within the subdivision pursuant to an agreement acceptable to the Board.

(8) If approved by the Board, the applicant may, in lieu of the installation of all or some of the footpaths in the subdivision, contribute funds to the Town to mitigate the adverse impact of the subdivision on pedestrian safety and vehicular traffic at a rate of \$15 per linear foot based on the length of the footpath that otherwise would have been required by the Board. The contributed monies shall be deposited in the Carlisle "Pathways-Gift Account" for the use of constructing and maintaining footpaths and trails in Carlisle.

Attachment A: Development Standards

I. General Development Standards

B. Developments shall:

2. Maximize, to the extent possible, the following:

- (e) Connections via publicly accessed trails to and between protected open space and other trails;

EXHIBIT D: Development Impact Report (DIR); to be filed with the Definitive Subdivision Plan

The DIR shall include the following:

Physical Environment

- Describe the general physical conditions of the site, including amounts and varieties of vegetation, general topography, significant geologic, scenic and historic features, trails and open space links, and indigenous wildlife.
- Describe how the subdivision will affect these features.
- Provide a complete physical description of the subdivision, and its relationship to the surrounding area.

SITE PLAN REVIEW GUIDELINES; AS AMENDED APRIL 27, 2010

Carlisle's Site Plan Review Guidelines, titled RULES AND REGULATIONS GOVERNING SITE PLAN REVIEW, dated June 2001, as amended on April 27, 2010, do not add anything new to the rather extensive mention of pedestrian facilities and walkways (referred to mainly as footpaths) in the Subdivision Regulations. Mentions of pedestrian facilities and walkways in the Site Plan Rules and Regulations are as follows.

ARTICLE II PRELIMINARY SITE PLAN REVIEW PROCEDURES

SECTION 2. Conceptual Plan

- (c) an informal plan showing in a general way the location and footprint of the existing and proposed building(s), parking, driveways, footpaths, topography, tree line, wetlands, wetlands buffer, flood plain, extent of wooded areas, historic features, stone walls, existing roads and significant trees, well and septic system;

ARTICLE III. SITE PLAN REVIEW PROCEDURES

SECTION 1. Site Plan Submission Requirements

- (f) Landscape plan showing planting areas, signs, fences, walls, walks and lighting, both existing and proposed. Location, type and screening details for all abutting properties and waste disposal containers.

ARTICLE IV. DESIGN STANDARDS

SECTION 10. Pedestrian and Traffic Improvements.

Footpaths shall be provided along the site's road frontage unless the Selectmen determine that safe pedestrian travel is otherwise provided. The applicant shall consult with the Pedestrian and Bicycle Safety Advisory Committee as early as possible in the application process to discuss the location and type of footpath for and in connection with the site. Footpaths shall conform to the design standards set forth in the Subdivision Rules. The intent of this requirement is to provide pedestrian and bicyclist safety in the immediate area of the site and to integrate the site plan with other proposed plans for Town footpaths. Alternatives to footpath construction on the site may be considered, consistent with the Subdivision Rules.

SITE PLAN REVIEW APPLICATION

8. The application must include a plan of the site and proposed developments as specified in the Rules and Regulations.

The plan will be reviewed for the following features (please provide):

Adequate walkways and pedestrian access. (Among 21 items.)"

Rules and Regulations for Conservation Cluster Special Permits

Carlisle has issued a set of rules and regulations for conservation cluster development which require a special permit. These rules and regulations pull together material from Carlisle's Zoning Bylaw and Subdivision Rules and Regulations. They do not provide any additional guidance for pedestrian facilities and walkways, beyond those found in the Zoning Bylaws and Subdivision Rules and Regulations, and repeated to some extent in Carlisle's Rules and Regulations for Site Plan Review.

CARLISLE MASTER PLAN

Carlisle has no master plan. Its substitute, a study plan was prepared in 1995 and is very much out-of-date.

CARLISLE HEALTH OPPORTUNITIES

The following is a brief discussion of some of Carlisle's existing facilities and ways the Town supports the health and wellness of its residents, followed by a discussion of what residents have said about how they view the needs and priorities of the Town in terms of health and wellness. Finally, there is a discussion of some ideas to consider for increasing those efforts.

EXISTING RESOURCES

Carlisle is characterized by much open space, conservation land, and natural features enjoyed by many of its residents. The Recreation Department operates a number of programs for all ages, all year around. The Council on Aging organizes programs for the Town's Senior population.

Conservation land makes up about a quarter of the town's area. Besides town-owned land overseen by the town's conservation committee, Carlisle is home to Great Brook Farm State Park and a portion of the Great Meadows National Wildlife Refuge neighboring the Concord River. Additional recreational opportunities are listed below.

Banta Davis Recreation Area is located on Bedford Road between Green Cemetery and Kimball Farm Ice Cream stand. It has a Little League baseball field, a softball field, a soccer field (or lacrosse, or field hockey), the Rory Bentley Fitness Course, an asphalt $\frac{1}{4}$ mile running track around the soccer field

Spalding Field is located on Church Street (a one-way street) between the Carlisle Public School and Green Cemetery. It is a five acre multi-purpose field that can be lined for a soccer field (or lacrosse, or field hockey), a softball field, a 90-foot baseball field, a Little League baseball field

Tennis Courts are located on Church Street next to the Carlisle Public School parking lot. There are plans to build four new tennis courts on the Banta Davis Recreation Area and convert the two old tennis courts to two outdoor basketball courts.

Diment Park is located on the slope on Church Street between Spalding Field and the tennis courts. It consists of a toddler playground for children age 5 and younger.

An Ice Skating Rink is located in the Kimball Farm Ice Cream stand parking lot during the winter months. Shovels are available for clearing off the ice.

Carlisle Public School Gym and Exercise Room are located next to the school parking lot on Church Street in the large brick portion of the Corey building. It is used for many winter recreational activities.

Zoning has influenced the character of Carlisle in a number of ways. The two-acre minimum lot size has resulted in preserving the town's leafy visual quality, but also, at least for some residents, in social isolation. There are sidewalks (pathways and footpaths) in some locations, especially near the center, but there are many parts of the town that are completely disconnected for pedestrians. The lack of commercial development also means that there are few opportunities for spontaneous casual interactions.

The only store in town, Ferns, has become quite a hub of activity in recent years, providing outdoor seating and organizing events ranging from Halloween to lectures. The Library is probably the main gathering space with many activities programmed year around. Additional existing opportunities for gathering include:

- Summer camp program organized by the schools each year ask for volunteer homeowners for the use of their private swimming pools because there are no such facilities available in town.
- State park with trails and cross country skiing
- Kimbal's Ice Cream
- Community Gardens
- Diment Park Tot Lot (located on Church Street) where the Town's fitness trail starts
- Transfer Station: many in town see one another at the Transfer Station (have a swap)

The number of bicyclists have been increasing significantly over the last few years. Many, especially those training for racing, have a preferred route that starts in Concord (at Barretts Mill Road), through Bedford and then Carlisle; it is preferred because it has no stop signs and thus good for conducting time trials. It used to be that bicyclists would primarily take to the street in the summer months, now it is a year around activity.

Trails. Carlisle has 62 miles of trails.

Footpaths. Pathways that radiate out from the center follow major roads. These were created over the last 5 years and there are plans to extend several of them.

RESIDENT OPINION

The following is a brief overview of some of the thoughts of Carlisle residents regarding what they see as health and wellness priorities in the town.

A Town Needs Survey³¹ pertaining to social networks and community found that more than one-quarter of Carlisle residents seldom socialize with others. In fact in 2003 a resident of Carlisle nicknamed Carlisle “Lonelyville, a state in which the distance between houses makes strangers of Carlisle neighbors.”

6th grader wrote a letter to Planning Director asking why the sidewalk from Concord couldn’t extend into Carlisle.

RECOMMENDATIONS FOR CARLISLE

The following is a listing of some specific ways Carlisle can support the health and wellness of its residents. See Section 2 of the report where many more options are described.

INCREASE AWARENESS REGARDING HEALTH AND WELLNESS, COMMUNITY-WIDE

- Consider embarking on a Healthy Town Initiative and involving residents in assessing how “activity-friendly” the town is by developing a healthy community measurement tool.
- Involve residents in collecting ideas regarding ways of creating opportunities for socializing and community gathering.

See Section 2 for a more complete discussion.

PROVIDE INFORMATION ON EXISTING RESOURCES

- Providing information on existing resources is a critical first step. Often existing resources are underutilized because people are unaware of all that is offered. A centralized location, both physical (e.g. at Town Hall) and on the web, where resources can be listed, described and updated, can go a long way in promoting health and wellness, by providing information and encouraging their use.

³¹ “Town survey finds few in Lonelyville” by Cecile Sandwen, Carlisle Mosquito, August 28, 2009.

<http://carlislemosquito.org/2009/2009-08-28/pages/new12.html>

- Resources can also be sorted by those places and activities as they appeal to different age groups (e.g. pre-school, school-aged children, teens, adults, seniors, etc.) and/or by interest.

See Section 2 for a more complete discussion.

INCREASE WALKABILITY/BIKEABILITY

- Carlisle has many available tools for influencing pedestrian accessibility and promoting healthy lifestyles. The existing town regulations offer many opportunities for improving connections to open spaces, trails, and sidewalks. The town should continue to pursue both private and public investments in such facilities.
- Consider cross-referencing zoning with the sub-division regulations to increase the visibility of pedestrian concerns and to make walkability a more prominent issue.
- Work with the Carlisle Pedestrian and Bike Safety Advisory Committee to continue to expand the system of pathways. Specific recommendations for extensions that would make connections within Carlisle and between Carlisle and the other two towns are found on page 68.
- Carlisle has adopted the first policy allowing OPDMDs on some of its trails in the state (see Appendix). The policy is largely based on trail width. Users of such devices may also want information on the maximum slope of trails. GPS files could provide this information. The Appendix lists sites in Carlisle with slopes over 15% that could be used to limit use of trails on those sites.
- Develop regulations regarding accessibility issues for town-owned land and public trails on private land (current regulations only exist for conservation lands).
- Include provision in subdivision regulations to require developers to provide trails or footpaths. Currently some of Carlisle’s restrictions allow public access, but not all. Going forward regulations regarding conservation restrictions should recognize trail access, etc.
- There is an existing provision in the regulations that allows the developer to set aside money for pathways (\$15 per linear foot) in lieu of providing them (“Pathways-Gift-Account”). This amount should be increased and the provision, implemented.
- Prioritize the creation of footpaths and trails that connect existing fragments to develop a system of interconnected paths/trails.

RECREATION

- Update the Open Space and Recreation Plan that identifies existing resources and outlines the priorities for the future. The plan was most recently updated in 2006.
- Explore providing less expensive recreational activities. Currently they are exclusive, limited, structured and fee-based. Children that may not be very competitive and do not “make it” on a team, may be excluded from participating in the sport altogether.

POSSIBLE PROVISIONS FOR SENIORS

- In the next five years, 31% of the population of Carlisle will be seniors. The number of seniors living at or below the poverty level has increased to over 8%.
- Carlisle does not have a senior center. The Council on Aging is located in the Town Hall and they organize activities wherever they can find space. The COA works with the Recreation Department, Health Department and the Library to provide a wide range of programs (including inter-generational) to the senior population that ranges in ages from 55 – 105. Since the senior

population will be increasing significantly, the town should review options regarding ways of providing more opportunities for them to be physically active as well as for socializing; some ideas are listed in Section 2 of the report.

- Support for seniors walking on trails:
 - Information regarding level of difficulty
 - Public rest room access
 - Emergency vehicle access
 - Explore providing assistance equipment/devices for loan for going out (e.g. large wheel wheelchairs for traveling on trails)

POSSIBLE PROVISIONS FOR CHILDREN

- Schools need to be included in the conversation. Consider the idea of developing a peer-to-peer program at recess, so that like the peer-to-peer reading programs, children would lead other children in games, sports, etc.

METHODS FOR INCREASING SOCIAL CAPITAL

As mentioned previously social capital, when people feel a vested interest in their neighbors and community, results from social interaction. Carlisle has large open spaces and many trails, however, opportunities for spontaneously running into neighbors are limited. Ways in which Carlisle can increase opportunities for residents to meet and socialize include:

- Increasing the number of establishments in the center so that there are more restaurants/coffee shops, even a store or two where residents can gather.
- Supporting and organizing more town-wide events.
- Encouraging use of cul-de-sacs by requiring new ones to provide infrastructure for gathering, that could include:
 - Weather protection
 - Benches
 - Basketball hoop
 - In larger developments, the developer can pay for the “infrastructure” and make maintenance part of the overall maintenance contract
 - Currently developers are regulated to provide drainage at the cul-de-sac island
- Support block parties by making it easy to obtain the permit from the town
- Provide information on how to organize “Safari Suppers” or “Progressive Dinners” where each course is eaten at a different house within a neighborhood

Opportunities for property reuse in ways that contribute to wellness and social capital:

- Explore opportunities for senior housing, commercial development, or another use with benefits to the community for town owned land near the center.
- Highland Building- currently vacant with opportunity to reuse, located on school property, may be an opportunity for afterschool programs, recreation, or other reuse.

POTENTIAL RESOURCES

Carlisle Pedestrian and Bike Safety Advisory Committee
Carlisle Trails Committee

Carlisle Conservation Foundation
Other??

APPENDIX

CARLISLE RULES AND REGULATION ON USE OF OTHER POWER DRIVEN MOBILITY DEVICES

Rules And Regulations of Town of Carlisle Conservation Commission On Use of Other Power-Driven Mobility Devices On Town of Carlisle Conservation Lands Per the Americans with Disabilities Act (ADA)

1. Introduction and Authority: These Rules and Regulations (“Rules”) describe and regulate use of other power-driven mobility devices (OPDMDs) on Town of Carlisle conservation lands pursuant to the U. S. Department of Justice regulations amending the Americans with Disabilities Act (“ADA”), Title II, 28 C.F.R., Part 35, effective March 15, 2011.

In addition to these Rules, all conservation land users should be familiar with the Rules & Regulations for Use of Carlisle Conservation Land and the Trail Etiquette Guidelines for the use of conservation lands in Carlisle.

These Rules are promulgated by the Conservation Commission pursuant to the authority granted under M.G.L. c. 40, Section 8C and Article III, Section 3.14 of the Town of Carlisle General Bylaws.

2. Definitions: For the purposes of these Rules, the following terms shall have the following meanings unless a different meaning is clearly stated:

“Commission” or “Conservation Commission”: the Town of Carlisle Conservation Commission.

“Narrow Single Track Trail”: Unpaved, narrow gauge trail. This type of trail is for natural areas or steep terrain where environmental or topographic constraints require no user impact to natural resources or for trails that do not provide adequate space to OPDMDs for safe passage of trail-users traveling in opposing directions. All trails not listed in either Appendix A or Appendix B are Narrow Single Track Trails.

“Other Power-Driven Mobility Device” or “OPDMD”: Any mobility device powered by batteries, fuel, or other engines, whether or not designed primarily for use by individuals with mobility disabilities, that is used by individuals with mobility disabilities for the purpose of locomotion, including golf carts, electronic personal assistance mobility devices (EPAMDs), such as the Segway® PT, or any mobility device designed to operate in areas without defined pedestrian routes, but that is not a wheelchair within the meaning of Part 35 of the Title II Regulations.

“Service Trail”: Unpaved, unimproved service trail, typically greater than 8 feet in width, capable of accommodating service vehicle traffic. See Appendix A for list of Service Trails.

“Town”: the Town of Carlisle, Massachusetts.

“Wide Single Track Trail”: Unpaved, wider gauge trail. These are trails where two-way traffic would require pedestrians to step off the trail and harm natural resources when allowing passage of OPDMD devices larger than 26” wide. See Appendix B for list of Wide Single Track Trails.

3. Trail Use: The Town of Carlisle’s conservation lands and trails are available for use to individuals with a mobility disability subject to these Rules. The purposes of these Rules are the physical safety of OPDMD users and other trail users, the protection of sensitive natural resources, noise mitigation and fire prevention.

- a. The use of OPDMDs powered by internal combustion engines is prohibited. The exclusion of gas-powered OPDMDs, as compared to electric-powered OPDMDs, is due to the substantial risk of serious harm to the immediate environment from the fire danger created by the heat of the gas-fired engine and from noise impacts to animal habitats.
- b. Noise emitted by OPDMDs may not exceed 65 decibels.
- c. No person shall operate an OPDMD at a speed in excess of 3 miles per hour (which equals normal walking speed).
- d. OPDMDs must stay on designated trails at all times. Many trails pass near or cross wetlands and are vulnerable to erosion, particularly during wet periods.
- e. No OPDMDs are permitted in historical structures.
- f. Additional limitations are based on the type of trail:
 - i. **Service Trail:** All OPDMDs are allowed on service trails provided that the OPDMDs do not exceed 36” inch maximum width in order to allow safe passage of OPDMDs, pedestrians, equestrian riders, and service vehicles;
 - ii. **Wide Single Track Trail:** OPDMDs not to exceed 26” inch maximum width and a maximum wheel width of 6” are allowed on Wide Single Track Trails;
 - iii. **Narrow Single Track Trail:** No OPDMD devices are permitted on Narrow Single Track Trails. All trails not assessed as Service Trails or Wide Single Track Trails (Appendices A and B) are defined as Narrow Single Track Trails.

4. Limitations:

- a. The adoption of these Rules does not represent an endorsement that the Town’s trails or conservation properties are safe for any trail user. Users must exercise reasonable caution and care while on Town conservation lands and operate OPDMDs at their own risk.

- b. These Rules may be amended from time to time as new information is available regarding the extent of physical constraints, resource protection criteria, specific trail conditions, and safety concerns for all trail users.
- c. Nothing in these Rules shall contradict Federal or Commonwealth of Massachusetts statutes or regulations. In the case of conflict, Federal or Commonwealth statutes or regulations shall prevail.
- d. Use of other vehicles may be allowed on conservation lands with the specific approval and issuance of a permit by the Conservation Commission. This includes farm vehicles.

5. Enforcement:

- a. Whoever violates any provision of these Rules may be penalized by indictment or on complaint brought in the District Court. The maximum penalty for each violation shall be fifty dollars (\$50.00).
- b. Whoever violates any provision of the Rules may be penalized by non-criminal disposition as provided in General Laws, Chapter 40, Section 21D, in which case the penalty for each violation shall be fifty dollars (\$50.00) and the enforcing persons shall be the Conservation Commission, its Agent or any Police Officer of the Town.

6. Additional Information:

Complete trail maps and Trail Etiquette guidelines are available on the Trails Committee website at CarlisleTrails.pbworks.com and in the 'Trails in Carlisle' booklet, prepared by the Carlisle Trails Committee. The booklet is available at the Carlisle Town Hall and local retail outlets. For information on trail use and trail conditions, contact the Town of Carlisle Conservation Administrator, at 66 Westford Street Carlisle, MA, or (978) 369-0336.

Appendices

Trail users are advised to refer to 4A and 4B. Users must exercise reasonable caution and care while on Town conservation lands and operate OPDMDs at their own risk.

Appendix A: Service Trails

Parcel	Trail
Benfield Conservation Land	Larsen Trail (to Benfield Platform)
Cranberry Bog	East Bog Loop
	West Bog Loop
Davis Corridor	Blood Farm Trail
Foss Farm	Foss Farm Loop
	Trails at garden plots

Appendix B: Wide Single Track Trails

Parcel	Trail
Bisbee Land	Bisbee Loop
Davis Corridor	Two Rod Road
Foss Farm	Pony Ring East
	South Field Loop
	Woods Loop
Fox Hill	Fox Hill Trail
Greenough Land	Wood Duck Trail
Mannis Land/Chestnut Hill	Rangeway North
Towle Land	Towle Field Trail
Town Forest	Crossover Trail
	Double Loop
	Hurricane Alley

APPENDIX

CARLISLE OPEN SPACE SITES WITH STEEP SLOPES (OVER 15%)

Benfield
Bisbee Land
Carlisle state Forest
Conant Land
Ember Land Cluster
Foss Farm (no impact on trails)
Great Brook Farm State Park
Poole Swamp
South Street (Keystone Link Trail)
Towle Field
Robbins Field/Swanson Lot
Rockstrom Land (Rockstrom Trail)

ACTON TRAILS AND MAXIMUM SLOPES

Area/Trail	Distance	Maximum Slope
Nagog Hills		
NH-Yellow Trail	1.75	19%
NH-Yellow Trail 2	0.02	0%
NH Upper Access	0.18	15.6%
NH Pine Grove Blue 3	0.01	0%
NH Pine Grove Blue 4	0.01	0%
NH Pine Grove Blue 5	0.09	11%
NH BlueConn1 1	0.21	20%
NH BlueConn1 2	0.01	0%
NH BlueConn2	0.17	22%
NH BlueConn2 2	0.02	0%
Total	2.47	
Town Forest		
WHTF Fire Road Red	0.03	19%
WHTF Yellow Trail	1.31	16%
WHTF Yellow Trail 2	0.01	0%
WHTF Boardwalk Red	0.05	0%
WHTF Boardwalk Red2	0.01	0%
WHTF Connector Blue	0.29	25%
WHTF Connector Blue2	0.02	0%
WHTF Connector Blue3	0.07	0%
WHTF Connector Blue4	0.01	0%
WHTF NARA Access Red	0.02	0%
WHTF Kiosk Access Red	0.02	0%
WHTF Capt. Handley Access Red	0.28	27%
WHTF Harris St. Access Red	0.02	0%
WHTF Harris St. Access Red2	0.01	0%
Total	2.15	
Bulette		
Bulette Red Trail	0.25	28%
Bulette Yellow Trail	0.66	24%
Bulette Blue Trail	0.09	48%
Bulette Gas Line Esker Trail	0.24	20%
Bulette Gas Line Esker Trail2	0.01	0%
Bulette Gas Line Esker Trail3	0.01	0%
Bulette Gas Line Esker Trail5	0.28	31%

ACTON TRAILS (CONTINUED)

Bulette Gas Line Esker Trail6	0.01	0%
Total	1.55	
Wetherbee Land Trust		
WB Red Trail	0.3	20%
WB Yellow Trail	0.88	13%
WB Blue Trail1	0.32	17%
WB Blue Trail2	0.01	0%
Total	1.51	
Stoneymeade		
Stoneymeade	0.3	16%
Stoneymeade 2	0.05	0%
Total	0.35	
Springhill		
SH Yellow Trail	0.09	9%
SH Yellow Trail3	0.12	7%
SH Yellow Trail5	0.21	4%
SH Yellow Trail6	0.23	4%
SH Yellow Trail7	0.01	0%
SH Yello;w Trail8	0.08	9%
SH Yellow Trail10	0.32	6%
SH Yellow Trail11	0.75	12%
SH Yellow Trail12	0.01	0%
SH Yellow Trail13	0.43	6%
SH Yellow Trail14	0.17	8%
SH SpringHill Rd Access Red	0.17	12%
SH JayLane Access Red	0.15	7%
SH JayLane Access Red2	0.01	0%
SH JayLane Access Red3	0.62	33%
SH Access2 Red	0.09	32%
SH Connector1 Blue	0.2	4%
SH Connector2 Blue	0.19	5%
SH Briar Cliff Access	0.01	0%
NB Red SH Conn1	0.08	21%
NB Red SH Conn2	0.01	0%
SpringHill Access Trail1	0.09	8%
SpringHill Access Trail2	0.08	0%
Total	4.12	

ACTON TRAILS (CONTINUED)

Pacy

Pacy Yellow Trail	0.41	13%
Pacy Yellow Trail2	0.01	0%
Pacy Central St Access Trail	0.07	0%
Total	0.49	

Nashoba Brook

NB Yellow Trail	0.15	26%
NB Yellow Trail2	0.1	24%
NB Yellow Trail3	0.11	23%
NB Yellow Trail6	0.03	35%
NB Yellow Trail7	0.01	0%
NB Yellow Trail8	0.01	0%
NB Yellow Trail11	0.38	12%
NB Yellow Trail12	0.24	16%
NB Yellow Trail13	0.01	0%
NB Yellow Trail14	0.49	12%
NB Yellow Trail15	0.3	11%
NB Yellow Trail16	0.04	0%
NB PenFacDam Trail	0.02	0%
NB Side Trail	0.03	0%
NB RedSH Conn1	0.08	21%
NB Milldam Access1	0.04	0%
NB Milldam Access2	0.17	0%
NB Blue Trail1	0.01	21%
NB Blue Trail1 2	0.01	0%
NB Blue Trail2	0.08	21%
Total	2.31	

Jenks Land

JL Yellow Trail	0.31	11%
JL Yellow Trail2	0.05	0%
JL Yellow Trail3	0.07	0%
JL Yellow Trail4	0.05	0%
JL Yellow Trail 6	0.01	0%
JL Central St Access	0.08	18%
JL Central St Access2	0.04	0%
JL Blue Connector	0.05	0%
JL Blue Connector2	0.01	0%

ACTON TRAILS (CONTINUED)

Jenks Guggins Brook Connector	0.27	9%
Jenks Guggins Brook Connector2	0.01	0%
Jenks Guggins Brook Connector3	0.01	0%
Jenks Boxborough Access	0.07	0%
Jenks Boxborough Access2	0.02	0%
Jenks BlueN1	0.06	0%
Jenks BlueS1	0.03	0%
Jenks BlueS1 2	0.05	0%
Jenks BlueS1 3	0.01	0%
Jenks BlueS1 4	0.02	0%
Jenks BlueS2	0.03	0%
Jenks BlueS2 2	0.01	0%
Jenks BlueS3	0.02	0%
Total	1.28	
Heath Hen Meadow		
HHM Yellow Trail	0.5	4%
HHM Robbins St Access	0.02	0%
HHM Robbins St Access 2	0.01	0%
HHM Blue2	0.11	3%
HHM Blue2 2	0.01	0%
HHM Blue2 3	0.01	0%
HHM Upper Field Conn	0.03	0%
HHM Blue1	0.22	29%
HHM Blue1 2	0.01	0%
HHM Winter Trail	0.48	5%
HHM Prescott Rd Access1	0.2	14%
HHM Prescott Rd Access1 2	0.01	0%
HHM Prescott Rd Access2	0.08	0%
Total	1.69	
Guggins Brook		
GB Central St Access	0.24	11%
GB Central St Access 2	0.01	0%
GB Yellow Trail	0.4	22%
GB Yellow Trail 2	0.17	3%
GB Yellow Trail 3	0.03	0%
GB Yellow Trail 4	0.01	0%
GB Yellow Trail 5	0.01	0%
GB Rt 111 AccessL	0.07	21%
GB Rt 111 AccessL 3	0.01	0%

ACTON TRAILS (CONTINUED)

GB Rt 111 AccessR	0.27	5%
GB Idyyl Loop Blue	0.15	3%
GB Idyyl Loop Blue 2	0.34	3%
GB Inner Conn Blue	0.07	0%
GB Inner Conn Blue 2	0.01	0%
GB Inner Loop Blue	0.26	6%
	Total	2.05
Great Hill		
GH Yellow Trail	0.99	23%
GH Yellow Trail 2	0.8	27%
GH School St AccessL	0.17	13%
GH School St AccessR	0.16	23%
GH Grind Stone Red	0.47	11%
GH Piper Rd Access2	0.13	20%
GH Little Soc Field Bot	0.07	42%
GH Little Soc Field Top	0.14	16%
GH Piper Rd Access1	0.02	6%
GH Rt 111 Access	0.06	0%
GH Kelly Rd Access	0.04	0%
GH Main St Access	0.07	23%
GH DiscMu Blue	0.08	19%
GH DiscMu Blue 2	0.08	38%
GH DiscMu Access	0.08	38%
GH Blue1	0.26	27%
GH Blue1 2	0.01	0%
GH Blue2	0.04	0%
GH Blue2 2	0.03	0%
GH Blue3	0.02	0%
GH Summit	0.35	25%
GH WT Connector Blue	0.13	35%
GH Kissk Conn Blue	0.04	0%
	Total	4.24
Grassy Pond		
Newtown Rd Access	0.39	29%
Yellow Trail	0.5	8%
Yellow Trail 3	0.61	11%
View Deck Trail	0.07	0%
Willis Holden Blue Trail	0.17	9%
Nagog Hill Rd Access	0.04	0%

ACTON TRAILS (CONTINUED)

	Total	1.78	
Camp Acton			
CA Yellow Trail		0.81	8%
CA Yellow Trail 3		0.45	11%
CA SH Access Trail 1		0.09	8%
CA SH Access Trail 2		0.06	0%
CA Access Road		0.19	17%
CA Camp Site 1 Access		0.01	0%
CA Camp Site 2 Access		0.01	0%
CA Camp Site 3 Access		0.04	0%
CA Camp Site 4 Access		0.03	0%
CA Camp Site 5 Access		0.05	0%
CA Camp Site 6 Access		0.02	0%
CA Camp Site 7 Access		0.04	0%
	Total	1.8	
Total		27.79	

CONCORD SITES WITH STEEP SLOPES (OVER 15%)

Adams Woods
Annursnac Hill Conservation Area
Ayshire Conservation Area
Batemans Ridge
Camp Thoreau Day Camp
Concord/Pinney Land
Emerson CR
Estabrook Woods
Fairhaven Hill
Hapgood Wright Forest
Hosner Land
Musketaquid Sportsmans Club
Old Rifle Range
Peabody School Recreation Land
Pippin Tree Farm
Punkatasset
Robinson Well Site
Sleepy Hollow Cemetery
Thoreau Hills
Walden Pond State Reservation
Walden Woods
White Pond Park
Willard School Playground
Wright Woods

TRAIL RATING SYSTEMS

Many organizations have attempted to develop trail difficulty rating systems. Most use the Easy – Moderate – Difficult system. Mountain bike organizations and Cross Country Ski Centers often use this type of system. The difficulty with all of these systems is that they are subjective. What is Moderate for one individual is either Easy or Difficult for other trail users.

Providing more objective information, like maximum slope, width, length, and roughness of trail is more helpful for making a decision about whether a particular trail will be pleasurable or miserable for a particular individual.