COMPLETE STREETS NEEDS ASSESSMENT AND PRIORITIZATION PLAN

TOWN OF LENOX, MA

September 2017

PREPARED BY:
Berkshire Regional Planning Commission (BRPC)
& the Town of Lenox

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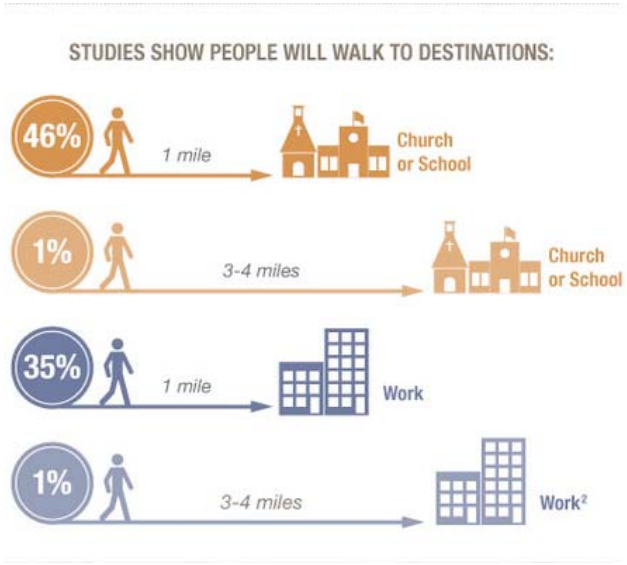
1. INTRODUCTION

The Town of Lenox continues to work toward a community that is attractive, welcoming and safe for residents 8 to 80 in age, with a vision of enabling residents and visitors to reach local destinations and attractions by walking, bicycling or riding public transit to them. There is tremendous potential in increase non-motorized travel if given the opportunity. According to the National Household Travel Survey of 2009, 50% of all household trips are less than three miles in length, and 28% are less than one mile, yet the majority of these trips were completed by driving a vehicle. A study by the Centers for Disease Control and Prevention in 2012 revealed that almost half of people will walk to destinations of one mile or less (Fig. 1.1). Non-motorized travel can provide a range of benefits including improved public health, promotion of tourism and economic development, and increased connectivity and livability – particularly for children, seniors and people with disabilities. With this vision in mind, the Town has begun to study in more detail the opportunities to incorporate pedestrian and bicycle-friendly design into future transportation investments.

Figure 1.1 Distance and Destinations



Source: Centers for Disease and Prevention, 2010, www.newpublichealth.org

While our current transportation system was designed primarily with cars in mind, Complete Streets is the effort to provide safer and more accessible means of travel between home, school, work, recreation and retail destinations helps promote more livable, attractive and healthier communities. Complete Streets are roadways designed to safely and comfortably accommodate all users, regardless of age, ability or mode of transportation. In addition to providing safety and access for all users, Complete Street design treatments take into account accommodations for disabled persons as required by the Americans with Disabilities Act (ADA). Design considerations for connectivity and access management are also taken into account with regards to nonmotorized users of the facility.

Enhancements to the multimodal network must be done in a balanced and context-sensitive approach that looks at a wide range of factors from safety to livability and economic development to connectivity. All of these criteria must be considered when thinking about Complete Streets improvements that accommodate all users and all abilities. Complete Streets components include typical roadway design features such as traffic calming, bicycle lanes, sharrows, wayfinding, safe crossings, landscaping, sidewalks, and/or wide shoulders to accommodate nonmotorized travelers in more rural areas. However, not all streets need to include every Complete Streets element. Certain criteria generally dictate which design features are appropriate. In other words, the appropriate level of roadway completeness depends upon its context and function. Complete Streets can be planned as a retrofit to existing streets or incorporated into the design of new streets.

This report has three key expected outcomes. The first is to support Lenox's Complete Streets Policy, adopted by the Board of Selectmen on July 15, 2016. The second is to evaluate existing conditions for nonmotorized users of the transportation system. The third is to recommend an implementation strategy for Complete Streets projects that follows a template designed by MassDOT to fulfill the requirements for a Complete Street Project Prioritization Plan.

The newest federal transportation legislation, the Fixing American's Surface Transportation (FAST) Act, supports the multimodal approach to transportation planning and programming, and encourages communities to consider all users of the system in designing a safe, and well-connected system. MassDOT's Complete Streets Funding Program has provided Lenox with the opportunity to look at existing conditions, potential improvements, and implementation strategies that support Complete Streets in Lenox.

MassDOT Complete Streets Funding Program

Technical assistance to the Town of Lenox by BRPC was made possible through funding from MassDOT's Complete Streets program. The Complete Streets program was "authorized by the 2014 Transportation Bond Bill, [and] offers Massachusetts municipalities incentives to adopt policies and practices that provide safe and accessible options for all travel modes." Technical assistance funding of up to $50,000 was available to communities to "conduct a needs assessment, network gap analysis, and/or safety audit to determine a targeted investment strategy for Complete Streets infrastructure."[1]

To participate and maintain eligibility in the funding program, communities were required to proceed through three tiers of the program. At Tier 1, a Town employee was required to attend a Complete Streets 101 training session and the Town had to adopt a policy affirming the community's commitment to Complete Streets in all aspects of transportation design and construction. At Tier 2, communities were required to draft a prioritization plan that outlined at least 15 eligible projects programmed over a 5-year period. This needs assessment and prioritization plan prepared by BRPC and the Town of Lenox Complete Streets Working group meets the requirements for the town's Tier 2 eligibility. At Tier 3, communities were required to submit projects to MassDOT for potential construction funding. Up to $400,000 is available in construction funding yearly through the Complete Streets program. However, this funding is distributed as in a grant program, with no guarantee of funding from year to year. For the town's Tier 2 list that was submitted to MassDOT, see **Table 6.2**.

Eligible Roadways and Project Types

The MassDOT Complete Streets funding program provides potential funding for projects of four main project types including: traffic and safety; bicycle facilities; transit facilities; and pedestrian facilities (**Table 1.2**). For a complete list of eligible project types, refer to MassDOT Complete Streets Program Guidance.[2] Additionally, only locally maintained roadways are eligible for potential funding, state highways and roads maintained by other entities are not. However, this assessment examines complete streets needs on all roadways within the Town of Lenox, regardless of jurisdiction, in an effort to ensure maximum connectivity throughout the transportation network. While some projects identified may not be eligible for funding, this needs assessment will become a tool to advocate for future changes to state roadways.

[1] Mass. Dept. of Transportation (MassDOT). 2016. Complete Streets Flyer. Available from: http://www.massdot.state.ma.us/Portals/8/docs/CompleteStreets/flyer.pdf

[2] Available from: http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/LocalAidPrograms/CompleteStreets/FundingProgram.aspx

Table 1.2 Eligible Complete Streets Infrastructure

If a project or element does not appear in this list it may still be eligible for funding. The applicant should provide justification for the decision based upon the classification of comparable projects.

S - Traffic & Safety	B - Bicycle Facilities	P - Pedestrian Facilities	T - Transit Facilities
S1. Pavement markings or signage that provides a new separate accommodation for bicycle, pedestrian, or transit modes	**B1**. Improvement of shared use paths (non-safety related)	**P1**. Sidewalk repairs (tree roots, uplifted panels, etc.)	**T1**. Improving transit connections for pedestrians, including: ramps, providing and/or moving crosswalks, signing
S2. Removal of protruding objects (pedestrian path of travel, bicycle, vehicular or transit facility)	**B2**. Designated bicycle lanes	**P2**. Providing ADA/AAB compliant curb ramps	**T2**. Improving transit connections for bicyclists, including: providing secure bicycle parking, signing
S3. Pedestrian signal & timing (minor updates)	**B3**. Bicycle parking fixtures and/or shelters at transit and other locations	**P3**. Detectable warning surfaces	**T3**. Transit shelter
S4. Changing pedestrian signal timing (i.e., lead pedestrian interval)	**B4**. On-street bicycle parking	**P4**. Pedestrian wayfinding signs	**T4**. Transit signal prioritization
S5. Radar speed feedback ("Your Speed") signs	**B5**. Provide bicycle-safe drain grates and other hardware	**P5**. Providing new sidewalks	**T5**. Bus pull-out areas
S6. Reducing corner radii to lower vehicle speeds and/or decrease pedestrian crossing distances	**B6**. Bicycle boulevards	**P6**. Providing pedestrian buffer zones	**T6**. Railroad grade crossings improvements (signs, flange way fill, etc.)
S7. Additional regulatory signing (for existing regulations)	**B7**. Bicycle wayfinding signs	**P7**. Pedestrian Refuge Islands	**T7**. Transit contra-flow lanes
S8. Speed humps/speed tables	**B8**. Shared lane markings (sharrows)	**P8**. Curb extensions at pedestrian crossings	**T8**. Park-n-ride facilities
S9. Street lighting	**B9**. Bike route signs	**P9**. Crosswalks	**T9**. Transit-only lanes
S10. Road diets	**B10**. New shared use paths	**P10**. Widening existing sidewalks	**TO**. Transit Facilities - Other
S11. Speed attenuation devices	**B11**. Designated Separated Bicycle Lane	**P11**. Accessible pedestrian signals	
S12. Roadway resurfacing or micro surfacing if restriping for new bicycle lanes	**B12**. Elimination of hazardous conditions on shared use paths	**P12**. New or improved crossing treatments at intersections, midblock, etc. including RRFB's and HAWK signals	
S13. Intersection reconstruction – reducing complexity and crossing distance	**B13**. Intersection treatments (bicycle signals, bicycle detection, bike lane extensions, turn boxes)	**P13**. New pedestrian accommodations at existing traffic signals	
S14. New curbing or edging on uncurbed streets.	**BO**. Bicycle Facilities - Other	**P14**. Interim public plazas	
S15. Addition of or widening of shoulders		**P15**. Traffic re-routing to create pedestrian zones	
S16. Intersection signalization (major updates/upgrades & new Installation)		**P16**. Providing medians with ADA/AAB-compliant design	
S17. Traffic calming measures		**PO**. Pedestrian Facilities - Other	

Economic Benefits of Complete Streets

Complete streets improvements and aspects of nonmotorized transportation have shown some impressive economic benefits to communities and regions. A 2012 report from Vermont estimated that biking and pedestrian related activities were associated with over $53 million in direct economic impact and helped support over 1000 jobs[3]. Implementing Complete Streets policies can stimulate private investment, especially in retail districts.[4] Other communities have seen direct increases in retail sales following complete streets investments.[5] Studies have shown increases in property values following the addition of bike lanes along streets, as well as higher values in walkable neighborhoods in general[6]. Other research has found that every dollar spent on bike infrastructure returns between four and five dollars in benefits. New York City found that construction of bicycle infrastructure resulted in fewer vacancies along those streets. Finally, investments in nonmotorized transportation simply put more money into residents' pockets. When residents are able to use cheaper transportation options, like biking and walking, they are free to use money that would otherwise go to fuel or vehicle maintenance, in other ways.

Equity Benefits of Complete Streets

Complete streets improvements can be an important component of equitable transportation systems and communities. Not all residents can afford an automobile, and in aging communities, older residents may not be able or wish to drive. Complete Streets enable and create affordable transportation that can be used by anyone.

Public Health and Safety Benefits

Complete Streets are intended to provide safe access for all roadway users, including motor vehicles, bicyclists, and pedestrians; creating infrastructure that respects all users, improves access and safety for all. An evaluation of Complete Streets in Victoria, British Columbia, reported that reversing the planning priorities from a primary focus on automobile traffic to a focus on pedestrian and bicycle users, resulted in improved public fitness and health. [7] The interventions implemented to improve pedestrian safety included road diets that reduced the number of lanes, increased bicycle and pedestrian facilities, reduced speeds, and compact development types that improved pedestrian access.

In 2015, Smart Growth America (SGA) surveyed 37 different states, regions, and counties in the U. S. that have participated in Complete Street projects. Among those surveyed, 70% of the projects reported a reduction in collisions, and approximately 56% of these projects also reported a reduction in injuries resulting from collisions. These projects also reported an increase in pedestrian and bicycle traffic, with no change in motor vehicle traffic. Rates of collision and injury decreased despite the increase in pedestrian use, suggesting that the projects improved pedestrian safety. [8]

It is well established that physical activity promotes longevity, decreases risk of chronic conditions, and improves mental health and well-being, while relieving stress.[9,10] Access to an active living system can improve

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[3] https://headwaterseconomics.org/trail/84-bicycling-walking-vermont/
[4] https://smartgrowthamerica.org/resources/economic-revitalization-benefits-of-complete-streets

[5] https://smartgrowthamerica.org/complete-streets-pay-off/
[6] http://vibrantneo.org/wp-content/uploads/2014/03/VibrantNEO_EconomicBenefitsofCompleteStreets.pdf
[7] Litman, T. (2010). *Evaluating public transportation health benefits*. Retrieved from http://www.vtpi.org/tran_health.pdf
[8] Anderson, G., Searfoss, L., Cox, A., Schilling, E., Seskin, S., & Zimmerman, C. (2015). Safer streets, stronger economies: Complete streets project outcomes from across the United States. *Institute of Transportation Engineers, 85* (6), 29-36.
[9] Centers for Disease Control and Prevention. (2015b) *Physical activity and health*. Retrieved from http://www.cdc.gov/physicalactivity/basics/pa-health/index.htm
[10] American Heart Association. (2015). *Physical activity improves quality of life*. Retrieved February 11, 2016, from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/%20StartWalking/Physi

a community's health through promoting physical activity and recreational activity while reducing poor health outcomes. An active living system that is used for commuting can help to reduce cardiovascular risk by 11%, increase daily steps, and increase time spent walking.[11] Researchers have correlated communities that report higher rates of walking and cycling to work with more daily physical activity and lower rates of obesity and diabetes.[12] Cycling and walking have been recognized as an important means to promote health since they are the most common forms physical activity as well as active transport. An increase of one-hundred minutes of cycling per week, reduces the mortality risk by 10% when compared to non-cyclists. An increase of one-hundred and sixty-eight minutes of walking per week reduces the risk of early mortality by approximately 11%.[13]

Background

The Town of Lenox developed this report with the support of their Complete Streets Working group, and technical assistance provided by the Berkshire Regional Planning Commission.

The Town of Lenox's Complete Streets working group was established in 2016, after the town adopted their Complete Streets Policy. Participants in the working group have included:

- Gwen Miller, Town Planner and Land Use Director
- William Gopp, Public Works Director
- Morgan Ovitsky, Mass. in Motion Coordinator
- Ed Lane, Selectman

Complete Streets have many benefits including safety, multimodal transportation options, economic development, environmental benefits, public health, and accessibility. The Complete Streets working group discussed these benefits and how completing the streets in Lenox can better the community as a whole, for residents and visitors alike. For a summary of public involvement in this planning process, please see **Appendix A**.

2. PLANNING FRAMEWORK

Implementing Lenox's Complete Streets Policy will have various benefits that are experienced by many different stakeholders. With full-scale implementation of Complete Streets elements, the community can see benefits in safety, increased transportation options, support for the Towns economic vitality, environmental benefits, public health impacts, and accessibility for persons with disabilities.

Vision and Intent

As it states in the Town of Lenox's Complete Streets Policy:

cal-activity-improves-quality-of-life_UCM_307977_Article.jsp#.WHZ9qf4zXVl

[11] American Public Health Association. (2010). *Active transportation: Benefitting health, safety and equity*. Retrieved February 8, 2016, from http://www.apha.org/~/media/files/pdf/topics/transport/apha_active_transportation_fact_sheet_2010.ashx

[12] Pucher, J., Buehler, R., Bassett, D. R., & Dannenberg, A. L. (2010). Walking and cycling to health: A comparative analysis of city, state, and international data. *American Journal of Public Health, 100*(10), 1986-1992.

[13] Schepers, P., Fishman, E., Beelen, R., Heinen, E., Wijnen, W., & Parking, J. (2015). The mortality impact of bicycle paths and lanes related to physical activity, air pollution exposure and road safety. *Journal of Transport & Health*, 2 (4), 460–473.

The purpose of the Town of Lenox's Complete Streets Policy…is to accommodate all road users by creating a roadway network that meets the needs of individuals utilizing a variety of transportation modes. It is the intent of the Town of Lenox to formalize the plan, design, operation, and maintenance of streets so that they are safe for users of all ages, all abilities and all income levels as a matter of routine. This Policy directs decision-makers to consistently plan, design, construct, and maintain streets to accommodate all anticipated users including, but not limited to pedestrians, bicyclists, motorists, emergency vehicles, and freight and commercial vehicles.

Goals and Objectives

The goals and objectives of this Complete Streets Project Prioritization plan, guided by the Lenox Complete Streets working group, were developed to provide safety, comfort, mobility, and accessibility for all users of the street network, including pedestrians, cyclists, other nonmotorists, transit riders, motorists, commercial vehicles, and emergency vehicles.

1. **Connectivity** | Provide transportation choices by improving system connectivity within and between modes.

2. **Safety** | Prioritize safety for all users of the transportation system.

3. **Travel & Tourism**| Prioritize projects that enhance the walkability and bikeability for visitors to Lenox by ensuring adequate connections to town destinations.

4. **Livability**| Increase the livability of Lenox by improving access to active mode facilities and/or transit service in Lenox.

5. **Context Sensitivity** | Develop a multimodal transportation system that is sensitive to the historic districts and rural/scenic character of Lenox.
6. **Equity** | Ensure complete streets projects are distributed equitably in Lenox.

7. **Aging in Place / Age-Friendly** | Ensure connectivity for residents of all ages to create a livable community for anyone aged "8 to 80"

8. **Context Sensitivity** | Develop a multimodal transportation system that is sensitive to the historic districts and rural/scenic character of Lenox.

Performance Measures

Mode Share

The Town of Lenox currently sees a commute mode-share dominated by automobile travel (98% of commuters). The mode-share is described in **Table 2.1** The Town would like to see modest increases in all modes other than automobile.

Table 2.1 Lenox Mode-Share for Commuters

Mode	Percent of Commuters
Car	97.8%
Transit	0.0%
Bicycle	0.0%
Walk	0.9%
Taxi, Other (motorcycle, etc.)	0.4%
Work from Home	0.9%

Source: 2006-2010 CTPP data

During the development of their planning framework, the Lenox Complete Streets Working group developed system-wide performance measures for each of their eight goals. The performance measures, listed by goal area, are shown in **Table 2.2**

Table 2.2 Annual System Performance Measures

Goal	Performance Measure	Data Source
Safety	Total crashes by severity and mode	MassDOT HSIP Crash Clusters[14]
Traffic Calming	Annual number of citations for speeding	Lenox Police Dept.
Cost Effectiveness	Maintenance and operations projects annually	Lenox Highway Dept.
Livability and Economic Vitality	Number of residents within ¼ mile of a dedicated active mode facility	MassGIS – Land Use (2005)[15]
	Annual number of improvements in the urban area	Town of Lenox Complete Streets Working group
Connectivity	Share of non-automobile commuters	U.S. American Community Survey (ACS)[16]
Project Readiness	Number of projects in design/engineering phase	Lenox Highway Dept.
Mobility	Number of new ADA-compliant curb ramps	Town of Lenox Complete Streets Working group
	Linear feet of ADA-compliant sidewalk or pathway	Town of Lenox Complete Streets Working group
Context Sensitivity	Annual number of projects in historic districts or adjacent to open space areas	Town of Lenox Complete Streets Working group

Related Plans and Initiatives

The Town of Lenox worked with the Berkshire Regional Planning Commission (BRPC) in 2016 to develop this Complete Streets Prioritization Plan, which examines needs for Complete Streets in the town and maps out potential projects for implementation. Ongoing public participation in the development of the Vision Plan was referenced for the development of this plan. Other existing plans were consulted as well, as referenced below.

Open Space and Recreation Plan (OSRP)

The Lenox Open Space and Recreation Plan was created through assistance from students of the Conway School of Landscape Design. The plan was finalized in 2013, but was not formally approved by the town until 2015. The plan outlines a broad series of recreation improvements and touches on many aspects of

[14] http://geo.massdot.opendata.arcgis.com/datasets/cc323741010d4b17b71ca664e2050457_1
[15] http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/lus2005.html
[16] http://factfinder.census.gov/

complete streets. The OSRP identified several priorities for the town including supporting compact development that provides a walkable built environment and the importance of increasing the ease of pedestrian access to open spaces. According to a public survey that was used to gather information for the OSRP, hiking, walking, and jogging were the most popular recreation activities by Lenox residents and residents supported the building of an improved sidewalk system. The Plan also identified several barriers and gaps to biking and walking in the town. Lenox has many parks and public recreation areas; however, the only that is accessible by sidewalk is Kennedy Park (the town's largest). Route 7/20, a major roadway that bisects the community, was also identified as a major barrier for nonmotorized traffic.

One of the ten goals of the plan is that "residents can access open spaces and neighborhoods on foot or by bicycle".

From this goal (G8), a series of objectives and specific actions describe the steps that the town will take to address complete streets projects, connectivity, and trails.

Objective 8.1 Connect neighborhoods, open spaces, and recreational areas

- Action 8.1.1 Require new developments to provide pedestrian connections
- Action 8.1.2 Install sidewalks on existing roads:
    - Gap between Lenox Dale on Walker Street
    - Continuation of Rt. 7/20 sidewalk along New Lenox Rd. and East St. north to King William Rd.
    - Connecting Tillotson Park in Lenox Dale to Crystal St., Housatonic St., and Mountainview Cemetery

Objective 8.2 Protect and improve existing trails

- Action 8.2.1 Improve trails at Kennedy Park
- Action 8.2.2 Develop parking areas and make trailheads more visible

Objective 8.3 Develop new local trails for walking, hiking, and biking and other types of passive recreation

- Action 8.3.1 Prioritize improvements and additions to trails and spaces
- Action 8.3.2 Connect local trails to trail systems in other municipalities
- Action 8.3.3 Continue working with Berkshire county on a regional trail that goes through Lenox.
- Action 8.3.4 Start new construction on the following paths:
    - Lenox Dale
    - Housatonic River walk along east side of the river (with potential for bike use along Roaring Brook Rd.)
    - Trail from Kennedy Park to Post Farm
- Action 8.3.5 Contact private landowners to develop trails on private lands using trail easements or use agreements

Objective 8.5 Ensure that all facilities are compliant with the Americans with Disabilities Act (ADA).

- Action 8.5.1 Revitalize ADA Commission
- Action 8.5.2 Identify and prioritize facilities that need upgrading.
- Action 8.5.3 Identify and apply to funding sources to make facilities accessible in priority order.
- Action 8.5.4 Assess condition of access for each trail.
- Action 8.5.2 Pursue easements, conservation restrictions, or other protective measures on properties which need improved access

Outside of this goal and its actions, several other specific actions address biking and walking in the community including:

- Action 4.1.2 Create historic walking tours including signs and displays about historic sites and activity in town
- Action 7.1.3 Develop a playground area in New Lenox, possibly on a 1.6-acre town-owned property on King William Rd. (and provide eventual safe connectivity to it in New Lenox neighborhood)

Downtown Transportation Management Study

The Lenox Downtown Transportation Management Study was prepared by Clough, Harbour and Assoc. in March 2003. The study was administered by BRPC as part of work on a Community Development Plan for the Town. The study was conducted to address issues relating to the community's transportation concerns within the downtown area, particularly relating to parking, traffic circulation, and pedestrian traffic. The roadways included in this study are Massachusetts State Route 7A (Main Street/Walker Street), Church Street, MA Route 183 (West Street), Sunset Avenue, Franklin Street, Stockbridge Street, Cliffwood Street, and Housatonic Street.

Field observations, data collection and analyses were conducted to document existing characteristics of the transportation system within the Town and included the following information.

- Roadway Features
- Traffic Volumes and Classification
- Speed Limits and Travel Speeds
- Operating Conditions
- Parking Conditions

After assessing existing conditions, the report recommended a number of specific projects of interest to Complete Streets. Other recommendations, primarily related to parking lots and parking management, were also made.

Route 7 A, Route 183 and Stockbridge Street Intersection: the report recommended construction of a roundabout to simplify traffic flow around this complicated intersection.

Church Street and Housatonic Street: the report recommended construction of pedestrian bulb-outs at this intersection. Construction was completed several years ago as part of a larger streetscape enhancement along Church St., one of Lenox's several commercial streets in the center of the village.

Main Street and Franklin Street: Traffic delays at this intersection are primarily associated with the left-tum movement of traffic exiting Franklin Street onto Main Street. Because right-tum traffic and left-tum traffic is executed from a shared lane, the right-tum traffic is also subject to this delay. Conditions at this intersection do not warrant the installation of a traffic signal. However, the operations could be improved by restricting on-street parking on the north side of Franklin Street to allow right-tum traffic to move independently or left-turn traffic.

Main Street/West Street/East Street/Yokun Ave. Speed Studies

In the Fall of 2016, BETA Engineering completed a speed study focused on Main St., West St., and East St., as well as a separate study focused on Yokun Ave. These studies were completed with respect to several speed related concerns brought forth by the Town.

These concerns included:

Main Street: Difficulty in transitioning from 35mph to 20mph when traveling southbound towards

the Town Center, due to the downhill trajectory of Main Street.

West Street: Excessive speeds nearby the Morris Elementary School zone.

East Street: Excessive speeds near the Lenox Memorial Middle and High School area and in the vicinity of Hubbard Street.

Yokun Avenue: Excessive speeds along the street, particularly along the roadway curvature near the Winthrop Estate.

The report validated speed concerns in each of the focal areas, as vehicle speeds were found to exceed posted limits at each studied location. Recommendations presented by BETA are as follows:

Main Street: Installation of a radar speed feedback at two locations along Main St to help slow traffic. The first location is in the southbound direction as the speed limit transitions from 35mph to 20mph. The second location is near the intersection of Main St. with Route 7. The report recommends several possible alterations to this section of roadway to reduce vehicle speeds, in addition to speed feedback signs. These include possibly narrowing travel lanes and shoulders or by striping to utilize the existing wide shoulders as bicycle lanes. As Main St. approaches Route 7 it falls under the jurisdiction of MassDOT. While the town can install speed feedback signs in the more southerly location at the 20 mph transition, it will need to advocate to MassDOT to potential changes near the Route 7 intersection.

West Street: The report recommended increased police enforcement to reduce vehicle speeds.

East Street: The report recommended installation of a speed feedback sign in advance of the intersection of East St. and Hubbard St. in addition to updated signage in these areas.

Yokun Avenue: The report recommended reexamining the speed limit along this roadway, with a possible change from its current 20 mph limit to 25 or 30 mph with advisory 20 mph plaques near sharp curve at the northern end of Yokun Ave.

Main Street/West Street/Walker St. Intersection Study

Early in 2017, BETA Engineering completed a traffic study focused on the intersection of Main St., West St., and Walker St. The study was conducted with respect to congestion and safety concerns due to the existing configuration of the intersection. BETA examined existing traffic conditions, crash history, and three potential new configurations of the intersection.

Traffic signal warrants were examined for the intersection. For a signal to be warranted, one or more of nine warrant criteria must be met. If one or more of the criteria is met and it is felt the installation of a signal would improve the overall safety and operation of the intersection, then installation or continued operation of a signal operation is justified. For the intersection, only the criteria for peak hour traffic was met. The study noted that "based on the traffic volumes discussed above…the intersection of Main Street at Walker Street was found to satisfy Warrant 3: Peak Hour, though given the location an installation of a signal for just this intersection is not recommended. Likewise, the installation of a traffic signal that is only warranted for one hour in an average day is not desirable."

The report prepared several conceptual designs for the intersection.

Concept 1: Remove Main St. / Walker St. Bypass

This concept removes the Walker Street / Main Street roadway and requires all vehicles to travel through the four-legged intersection of West Street and Old Stockbridge Road.

Concept 2: Convert the Walker St. Bypass to One-way Northbound

This concept removes southbound traffic from the Main Street / Walker Street bypass, requiring southbound traffic to utilize the four-legged intersection and turn left towards Walker Street. Northbound traffic would continue similar to existing conditions.

Concept 3: Roundabout
This concept recommends converting the Monument Intersection into a modern roundabout. The concept uses a roundabout with the existing monument in the center of the island. A roundabout reduces the number of conflict points for the intersection while also serving as a gateway/centerpiece to the downtown area.

Alternative Design: Two T-shaped Intersections
BETA also examined traffic impacts as a result of converting the intersection into two T-Type STOP controlled intersections as noted in the *Lenox Village Center Improvement Plan*. This design funnels all vehicles from West Street and Old Stockbridge Road into a STOP sign at an intersection with Main Street and Walker Street. The traffic volumes were found to cause this intersection to operate over capacity during the evening peak hour.

Lenox Village Center Improvement Plan

The Lenox Village Center Improvement Plan was completed in 2008 by a project team that included Walter Cudnohufsky Associates, Inc., Foresight Land Services, and Greylock Design Associates. The Plan provides a conceptual look at many possible streetscape improvements along the streets that comprise Lenox Village, including Walker, Church, Main, Franklin and Housatonic Streets. The plan was guided by four principles and objectives:

- Protect the pedestrian
- Establish safe, efficient car movement
- Enhance green gathering places and connections
- Increase private collaboration

The Village Center Improvement Plan outlines a strong program of streetscape enhancements in Lenox including pedestrian scale lighting, new street trees, raised pedestrian crosswalks, special paving, and sidewalks. Moreover, it proposes an alternative to the roundabout advocated by the 2003 Downtown Transportation Management Study by suggesting a "T" shaped configuration at the Route 7 A, Route 183 and Stockbridge Street Intersection and relocation of the existing Paterson - Egleston Revolutionary War monument there. Other proposed intersection improvements include realignment of the Cliffwood/Franklin/Main St. intersection to a 90° configuration and closure of the extension of Franklin St. along the northern edge of Triangle Park. In addition to this, the plan proposes an internal "Village Walk" that would connect alleys and parking lots between Franklin and Walker St. Construction of the Village Walk would include new paving and courtyard spaces that would meander along existing pedestrian desire lines.

Many elements of the Village Center Improvement Plan have already been constructed. New concrete unit paver sidewalk, lighting, and other features were constructed along Walker, Church, Franklin, and Housatonic Streets. However, proposed intersection improvements and the Village Walk were never completed and will require investment in design and engineering. The plan notes that:

"Although the village walk has considerable and enthusiastic support among citizens at large as well, it has a longer time frame than…streetscape improvements currently underway. The required degree of cooperation among multiple property owners, legal agreements, technical plans, and cost to implement, mean it will take some time before funds can be allocated and the plan can be implemented."

Lenox Shared-use Path Planning

Beginning in 2004 the Town worked with the Berkshire Bike Path Council to identify potential routes for a north-south, county-wide, bicycle route. In Lenox an off-road route was envisioned to travel from the Housatonic Street/Crystal Street intersection in Lenox Dale northward to Pittsfield. During 2006-2008 the Town actively investigated the possibility of developing the off-road route as shared-use path, utilizing an old trolley line rail bed running parallel and west of the Housatonic Railroad tracks and the Housatonic River. Despite decades of abandonment, the trolley line bed was still largely intact, including a solid base and several culverts. A few key landowners raised concerns about the path being too close to their homes and would not support the route as laid out, so the Town considered alternate routes.

In 2008 the Town considered alternate routes, moving it eastward and farther away from residential homes. Once route would utilize sewer easements that the Town had on some undeveloped private lands. Another route involved crossing the Housatonic Railroad and traveling on state-owned lands managed by the Division of Fisheries and Wildlife (DFW). Drawing walkers, bikers and hunters together in such close proximity was a major concern, particularly as the Darey WMA is a popular site for deer and bird hunters (pheasants are stocked in two or three sites along the route). Additionally, this revised route would involve a crossing of the Housatonic Railroad tracks, which would require permission from the railroad owner, a feat that would be extremely difficult to achieve. Further planning of this route was put on hold.

In 2009 the Town of Lenox pursued a second shared-use path route that traveled along sections of East and Housatonic Streets. The path would create a direct connection between the Lenox Memorial Middle and High School and Lenox Dale. The path would be located on the eastern side of East Street and on the northern side of Housatonic Street and would be approximately one mile in length. The shared-use path would serve as both sidewalk and bike path, a great improvement for the Housatonic Street section which currently has no sidewalk or shoulder. The connection would create a bike/pedestrian link between greater Lenox and a host of recreational properties, including the proposed trolley line shared-use path (to Pittsfield), the Darey Wildlife Management Area, October Mountain State forest (via the pedestrian bridge over the Housatonic River). The Town proceeded with engineering of the East Street / Housatonic Street path, reaching 25% design level and proceeding through the Massachusetts MEPA review process. Despite Town Meeting approval to use Town funds to reach 100% design, the full design and construction of this path was cancelled after landowners on East Street voiced strong concerns about loss of privacy and other impacts. A more in-depth discussion of shared-use path planning can be found in **Appendix D**.

Lenox Town Center Walk Audit

WalkBoston conducted a walkability workshop on July 28, 2016, funded by the Massachusetts Department of Public Health Mass in Motion program. The workshop discussed the principles of walkable communities and summarized pedestrian infrastructure improvements that increase safety and improve the quality of the walking environment. After discussing walkability, WalkBoston staff led a group of town staff and residents on a walk assessment of the Lenox town center. The report is a summary of the group's observations and preliminary recommendations for improvements to the town center's pedestrian infrastructure.

The assessment had several goals:

- Evaluate walking conditions in the Lenox village center.
- Identify a walking route that connects senior housing to the town center.
- Consider opportunities for wayfinding signs that highlight walking times to local destinations.

The report identifies several key issues and proposes both short term and long-term improvements to address these issues.

Key Issue: There is no crosswalk across Old Stockbridge Road at the intersection of Rt. 183/7A.

Short term recommendations

- Explore the following short-term options for installing a marked crosswalk across Old Stockbridge Road
    - Mark a crosswalk and install accessible ramps and sidewalk connections between the municipal parking lots on the east side of Old Stockbridge connecting to the sidewalk on the west side just south of the residential driveway
    - Relocate and/or close the municipal and private residence driveways on Old Stockbridge Road just south of the West Street intersection to make room for a marked crosswalk and accessible ramp
    - Install roadside crosswalk signs to make the crossing more visible
- Review location of stop sign and stop line where Old Stockbridge meets West Street
- Move existing crosswalk sign closer to edge of the road; consider installing advance crosswalk signs

Long term recommendations:

- Tighten curb radius where Walker Street meets Old Stockbridge Road on the west side of town hall
    - Install curb ramps and a crosswalk at the Walker St/Old Stockbridge Rd intersection
    - Install roadside crosswalk signs to make crossing more visible
- Rethink location of angled parking in front of the Curtis House
    - Redesign to accommodate marked crosswalk between Adams Community Bank and the Curtis House – could include curb bump-out or complete curb realignment to mirror curve and convert to parallel parking
    - Remove parking entirely to maximize pedestrian visibility

Key Issue: Parking spaces limit the visibility of walkers as they cross at several marked crosswalks in the town center.

Short term recommendations:

- Remove parking space striping from the following Lenox town center locations:
    - Two mid-block crosswalks on Walker Street between Church Street and Main Street intersection
    - Three mid-block crosswalks on Main Street between West Street and Cliffwood Street
- Evaluate crosswalks on 7A north of the town center for parking encroachment issues that block visibility
- Install no parking signs near crosswalks and at intersections
- Paint diagonal white lines in no parking zones adjacent to crosswalks and intersections
- Work with the Lenox Police Department to enforce no parking ordinances

Long term recommendations:

- Install curb bump-outs at locations where painted lines do not deter parking.

Key Issue: New streetscape paving patterns on Franklin Street and Church Street are confusing to walkers and drivers.

Short term recommendations:

- Continue to use paint to clarify pedestrian zones and vehicular travel ways
- Continue ongoing maintenance of concrete pavers on travel ways, sidewalks and crosswalks to limit tripping hazards
- Establish Town crosswalk design standards that include guidelines for raised crossings, raised intersections, mid-block crossings, and crossings at intersections

Long term recommendations:

- Consider establishing a safety zone throughout the designated historic district in the town center, including Main Street between Sunset Avenue and Walker Street. Safety zones limit traffic speeds to 20 mph much like a school zone

Key Issue: Flush curbs create potential conflict areas between people walking and people driving.

Short term recommendations:

- Install temporary curbing along eastern edge of Church Street flush curb to differentiate sidewalk from travel way in front of children's clothing and toy store
- Consider temporary curbing at the Franklin Street/Main Street intersection to delineate sidewalk

Long term recommendations:

- Establish town-wide guidance on use of flush curbs to provide developers, designers and transportation engineers with information on where flush curbs are appropriate
- Redesign and replace flush curbs with straight curbs in conflict locations – may not occur until roads are reconstructed, or at a minimum resurfaced

Key Issue: Crossing distances at some marked crosswalks are long.

Short term recommendations:

- Paint a ladder crosswalk across Main Street at the Main St/Franklin St intersection

Long term recommendations:

- Install curb bump-outs at the Main St/Franklin St intersection
- Explore other options for slowing fast-moving traffic on Route 7A including narrowing lanes

Key Issue: Asphalt sidewalks leading into the town center are uneven and disconnected in some locations.

Short term recommendations:

- Identify priority sidewalks leading to the town center in need of repair/replacement. Priority sidewalks include those connecting schools, senior housing, transit stops, parks, and local landmarks to the town center; Old Stockbridge Road is a priority sidewalk
- Coordinate with the Department of Public Works resurfacing/reconstruction programs

Long term recommendations:

- Establish sidewalk prioritization plan and annual sidewalk replacement/repair budget to systematically replace aging sidewalks leading to town center
- Identify locations where sidewalks do not currently exist where there is demand (or desire) for sidewalks to be built. A town-wide pedestrian plan could identify corridors leading from the town

center to trail heads, schools, parks, and other local destinations, such as Tanglewood, that need safe walking connections; these connections could be sidewalks, roadside paths or other walkable connection that respects the small-town, rural character of Lenox

Key Issue: Walking connection between Ore Bed Park and the Community Center is challenging.

Short term recommendations:

- Evaluate feasibility and safety implications of installing a crosswalk between Ore Bed Park and Old Center Street
- Monitor and/or enforce traffic speed limits on Housatonic Street to encourage slower driving
- Consider installing a sidewalk, pedestrian warning signs, and/or pavement markings to bring awareness that people may be walking

Long term recommendations:

- Study the possibility of reconstructing the intersection of Housatonic Street, Ore Bed Road, and Old Center Street with the goal of improving safety

Key Issue: Accessibility for those with physical challenges or in wheelchairs is not uniform throughout the town center. Some crossings and parking spaces are not compliant with Americans with Disabilities Act (ADA) standards.

Short term recommendations:

- Advise the dental office to move their sign so that it does not encroach upon the sidewalk
- Determine if high priority locations are already on the Department of Public Works schedule
- for road reconstruction/repaving and ensure that ADA improvements are included in the
- projects

Long term recommendations:

- Develop an ADA compliance plan for the Town of Lenox that prioritizes areas with the highest volumes of pedestrians (if one does not already exist)
- Secure funding for ADA compliance projects in the Town of Lenox. Two potential sources are the MassDOT Complete Streets funding program and the Safe Routes to School Infrastructure Program (if the location is near a school or on a primary student walking route)

Key Issue: Pedestrian wayfinding signs that provide the short time it takes to walk to local destinations may encourage people to walk rather than to drive.

Short term recommendations:

- Consider looking for resources to conduct a pilot wayfinding program, including walkyourcity.org or WalkBoston
- Identify destinations to include in the program
  - For example, at 183/Old Stockbridge intersections, "X minutes to Tanglewood"
  - Or, at 7A and Housatonic Street, "X minutes to Kennedy Park"

Lenox Dale Walk Audit

WalkBoston conducted a walk audit of the Village of Lenox Dale on June 1, 2017 as part of this planning process. One "easy win" that resulted from the audit was the identification of the need for an accessible curb ramp near the existing bus stop along Crystal St. As key town staff members including the DPW director, Town Planner, and a Selectboard member were present at the audit, the town was able to quickly determine that a change order to the town's repaving project could be issued and the accessible curb ramp was constructed the following week. Key recommendations of the audit are as follows:

Key Issue: Consider traffic calming strategies to preserve the "shared street" culture on residential streets and to slow traffic down on the major collector streets.

Short term recommendations:

- Consider adding sidewalks or pedestrian lane pavement markings on residential streets with high volumes of pedestrians and relatively high volumes of vehicles driving quickly. Potential roads: Patterson Road to the Montessori School entrance drive, Catherine Street, or Golden Hill Road north of Lasher Lane
- Be deliberate about designating roadways that will remain shared with no pavement markings. Potential roads: Lawton Street, Henry Avenue, School Street, and Old Town Way
- Consider narrowing travel lanes (no wider than 11') by repainting fog lines on Crystal Street.
- Work with Lenox police department to evaluate reported speeding issues on Walker Street and Crystal Street. Initiate speed enforcement patrols periodically if driver behavior warrants the.

Long-term recommendations:

- Prioritize residential roadways in the Dale in need of additional pedestrian infrastructure - sidewalks or pavement markings

Key Issue: Prioritize sidewalk construction along roads where either dangerous pedestrian conditions exist, or where pedestrian volumes justify the need. Build sidewalks that are accessible, unobstructed and smooth.

Short-term recommendations

- Include sidewalk extension along Golden Hill Road to Henry Avenue as part of the Walker Street reconstruction project Evaluate whether sidewalks are needed or feasible along or at the Catherine Street/ Golden Hill Road intersection
- Evaluate whether any of the residential streets need sidewalks based on dangerous walking conditions or high pedestrian and vehicular traffic volumes

Long-term recommendations:

- Replace Elm Street sidewalk to meet accessibility standards – width, curb ramps and detectable warning panels.
- Add accessible curb ramps along Crystal Street at all intersections, driveways, and marked crosswalks

Key Issue: Increase the number and the safety of marked crosswalks in the Dale.

Short-term recommendations:

- Include construction of accessible curb ramps and a crosswalk on Crystal Street at the bus stop in the current Crystal Street resurfacing project
- Install advance crosswalk signs and pedestrian crossing signs at existing crosswalks
- Place in-street pedestrian signs in the crosswalks at the Post Office, Church and in the proposed bus stop crosswalk.
- Consider additional crosswalks on Crystal Street north of the Post Office, if needed near other entrance roads along the east side of Crystal Street
- Study need for additional crosswalks at the Walker Street/Mill Street/Crystal Street intersection. One may be needed if a walking route is established along Crystal Street reaching into town-owned land along an easement on the west side of the Housatonic River beyond the intersection with Walker Street

Long-term recommendations:

- Upgrade existing crosswalks to meet current accessibility standards – curb ramps and detectable warning strips

Key Issue: Consider Crystal Street as potential link in walking route/shared-use trail planning efforts to connect open space and historic resources.

Short-term recommendations:

- Study the feasibility of expanding the sidewalk on the west side of Crystal Street
- Study the feasibility of bike lanes or one bike lane on the northbound side of Crystal Street

Long-term recommendations:

- Initiate formal feasibility study of a walking route/shared-use path to connect open space and historic assets along the Housatonic River with other neighboring communities

Community Development Plan

The Town of Lenox's Community Development Plan of 2004 further defines importance of pedestrian and bicycle connections in the downtown and to remote areas, summarizing the community need as follows:

> *The need for non-motorized connections is two-fold. First, pedestrian and bicycle-friendly pathways throughout Lenox and especially in the downtown area are needed in order to foster greater community interaction. Second, trails that connect the downtown to more remote areas would provide a means for hikers or mountain bike riders to access existing recreational areas and provide a linkage between them.*

Lenox Master Plan

The Lenox Master Plan was adopted in 1999. The plan includes a broad overview of the town and makes recommendations for transportation – including to "promote walking, bicycling, and transit."

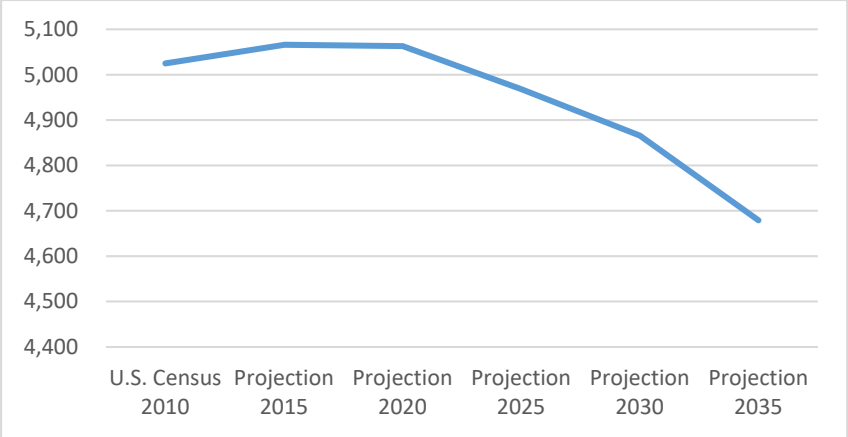
3. EXISTING CONDITIONS

Sociodemographic Profile

The Town of Lenox is a mid-size town of 5,025 residents, which has seen minor population loss since 2000. From the US. Census estimate of population in 2010 (5,025), the UMass Donahue Institute[17] predicts that the population of the town will continue to be reduced to approximately 4,679 residents by the year 2035, a decrease of 6.9% (see **Figure 3.1**). This is common in Berkshire County, which as a whole has been declining in population since the 1970s, and all but a few municipalities, are predicted to decline in population over the next few decades.

[17] http://www.donahue.umassp.edu/business-groups/economic-public-policy-research/expertise-services/economic-demographic-research

Figure 3.1 Population Projection



According to recent data, over 51% of the population is over the age of 55, and by 2025 it is expected that around 58% of the population will be over the age of 55. As aging in place becomes more popular among seniors, the composition of the population is important to consider when addressing things like wayfinding, walkability, and roadway safety. Additionally, as a semi-rural community, Complete Streets improvements could be seen as a form of public health infrastructure, enabling active transportation for older residents and creating a connected network of town parks and recreation areas.

Climate

There are about 189 sunny days per year and about 139 precipitation days per year,[18] the latter of which may make travelling by bicycle or foot difficult at times throughout the year. Berkshire County receives snowfall throughout the winter months, and is at a higher elevation than most of Massachusetts. Lenox That said, the summer months aren't as hot on average as the rest of the state, and many are great days to travel using active modes.

Topography

Lenox owes much of its character to the natural landscape it inhabits. The hills to its west and the Housatonic River and associated wetlands on the east protect the town from the world outside its borders. Settlement is mostly clustered in the valley and along the Housatonic River.

The primary slopes of Lenox occur in north-south patterns corresponding to the mountain ranges which border the town. Slopes of 15 percent and greater account for over 27 percent of the land area. The descent from mountain peaks to the river is as much as 1200 feet and mostly occurs over a horizontal distance of around 3 miles. The rate of descent begins fast but decreases towards the valley bottom - as is reflected by steeper slopes concentrated around the higher elevations on the western portion of the town. Since mountain ranges border the town, many scenic hillsides extend outside the periphery of the town.

Land Use Characteristics

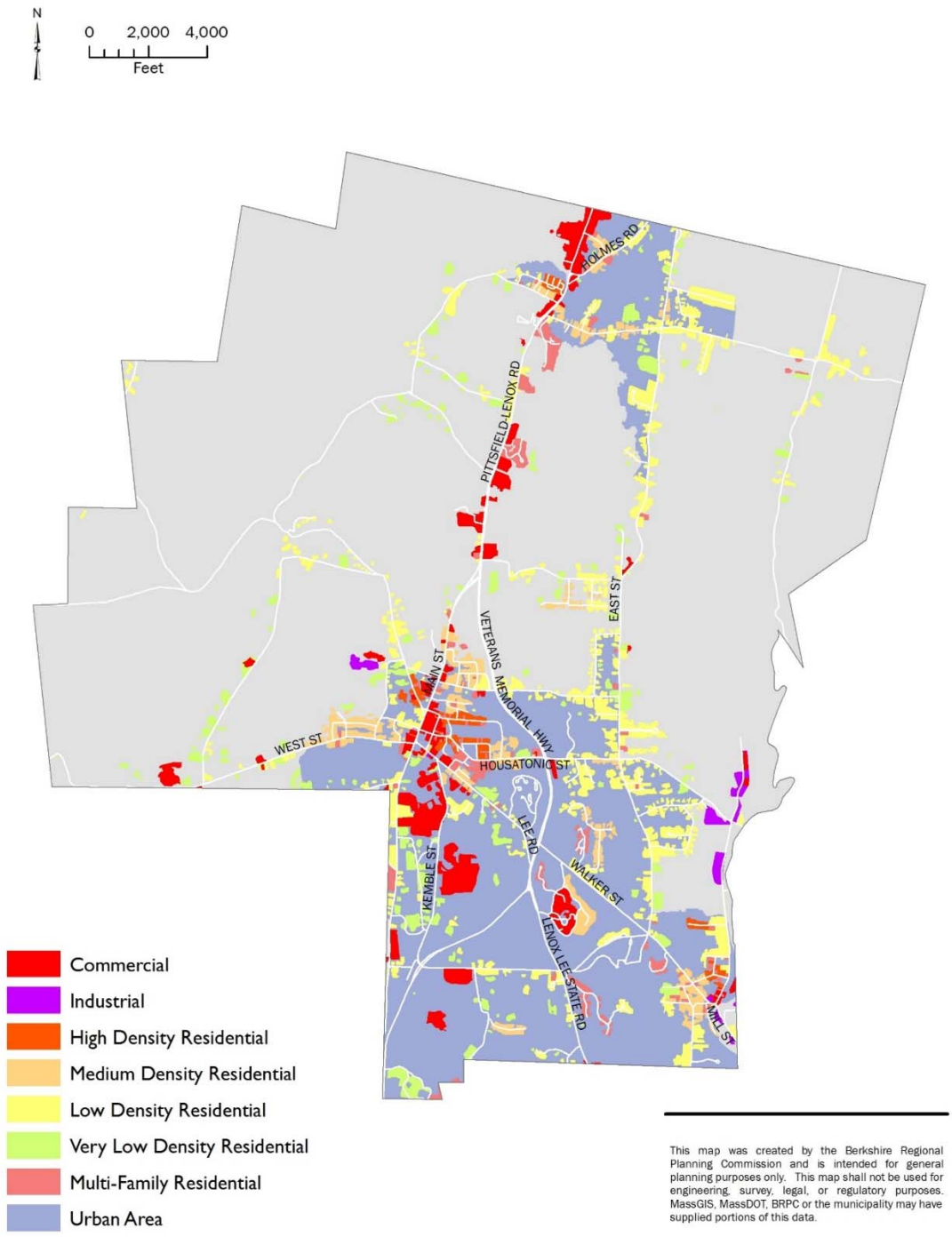
The Town of Lenox is a semi-urban community by Berkshire County standard, with an average population density of approximately 230 residents per square mile, based on the 2015 US Census Population Estimate, the population for the town (4,988) and the town's total land area (21.7 square miles).

[18] http://www.bestplaces.net/climate/city/massachusetts/Lenox

Neighborhood Density

Neighborhood density, using MassGIS categories, can be seen in **Figure 3.2**. The densest neighborhoods in Lenox include those in the center of town, which includes some multi-family residential structures as well as the area of Lenox Dale in the southeast corner of town. Additional pockets of population exist in the north along Pittsfield Lenox Road as well as around the Cranwell Resort. Aside from a few instances of multi-family residential housing, the outer streets have low or very low residential density.

Figure 3.2 Neighborhood Density



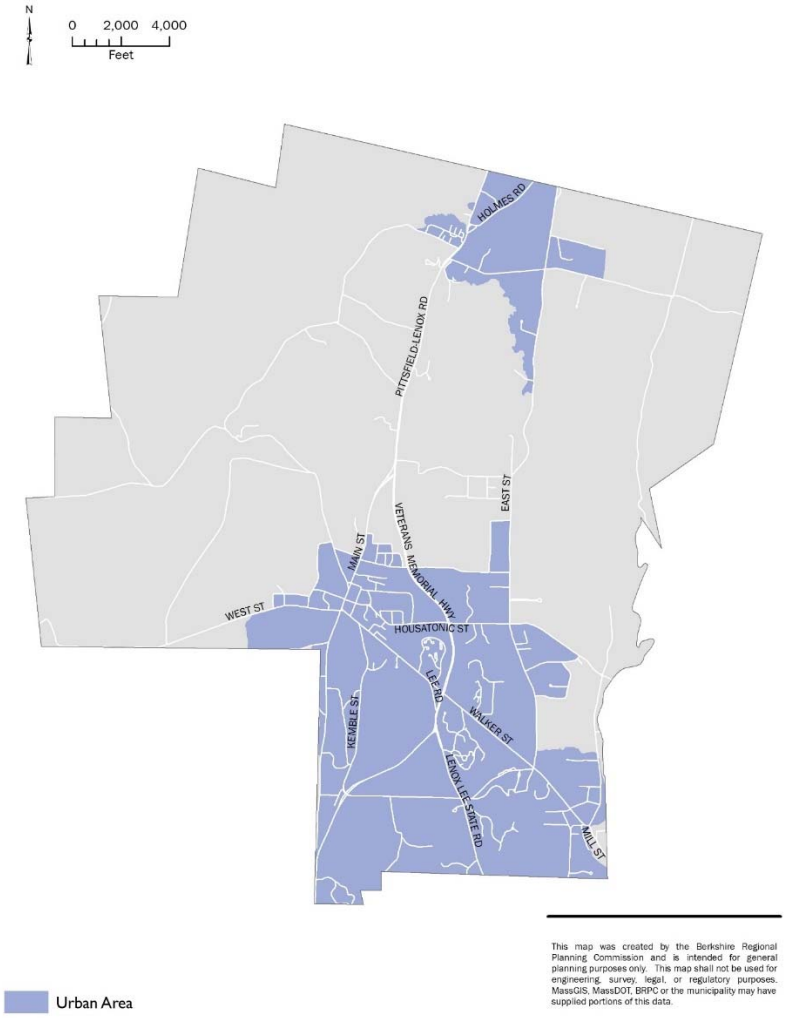
Urban Area, Residential Villages, and Town Features

The Town of Lenox has two main village centers, downtown and Lenox Dale, both of which are in the Lee, MA Urban Cluster. The northern part of town along the Pittsfield Lenox Road is part of the Pittsfield Urban Area as defined by the U.S. Census Bureau (see **Figure 3.3**). Most major shopping/retail is conducted either in downtown or in in the northern part of town along the Pittsfield Lenox Road.

Lenox is primarily semi-urban, and has a moderate population density as compared to other Berkshire County communities. The Lenox School District covers students from Pre-Kindergarten through Grade 12 at the Morris Elementary School and the Lenox Memorial Middle and High School. Morris is in the center of town, while Lenox Memorial is between the downtown and Lenox Dale.

The town offers many recreational opportunities including the Housatonic River and Laurel Lake, Kennedy Park, Mass Audubon's Pleasant Valley Sanctuary, hiking trails on land owned by Berkshire Natural Resources Council, October Mountain State Forest, as well as playing fields at Lenox Memorial, playground at Morris Elementary, playing fields on High Street, the Lenox Community Center, Ore Bed Park, Lilac Park, and Tillotson Park which has playing fields and a playground. Both Lenox Village and Lenox Dale have post offices and the town library is in the center of Lenox Village.

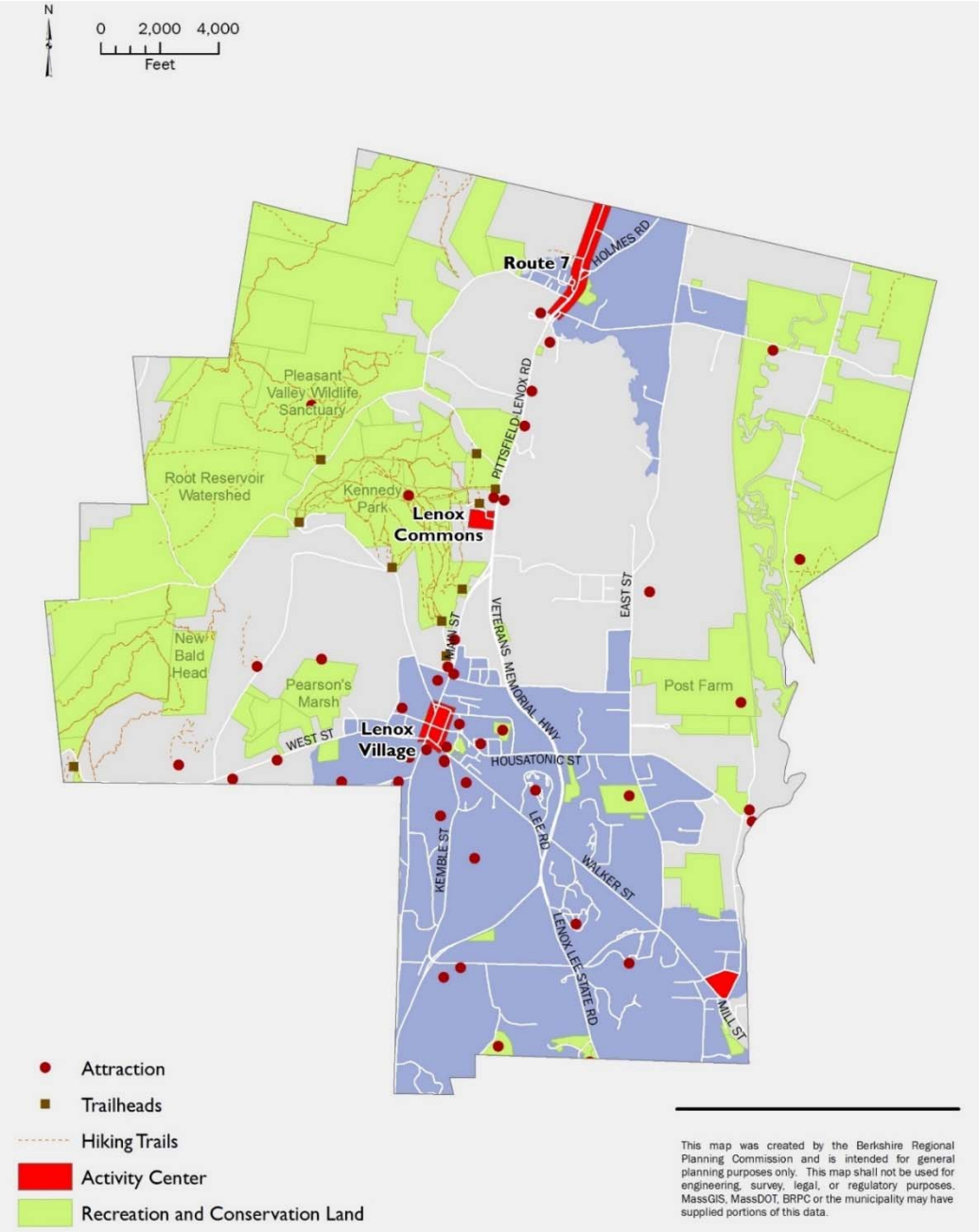
Figure 3.3 Lenox Urban Area



Local Destinations and Attractions

The Town of Lenox is working to make the town more pedestrian- and bicyclist-friendly, with the goal of encouraging residents and visitors to walk or bike to their destination, whether it be to conduct errands, visit a local business to shop or eat, or visit one of the many cultural or natural attractions that the Town has to offer. Providing safe routes and wayfinding to these destinations is key to getting more people out of their cars and creating a pedestrian/biking environment. One important step in creating this environment is to identify where key destinations are located throughout the town and evaluate the condition of the routes between them. Destinations and attractions are businesses, institutions, cultural sites, and outdoor recreational areas to which people, tourists and local residents alike, are drawn to. These include Tanglewood, shops, restaurants, hotels, theaters, great estate cottages, resorts, and outdoor recreational areas. Areas with many destinations in close proximity to eachother were grouped together as "activity centers." These represent areas like Lenox Village, Lenox Dale, Lenox Commons and the Route 7/20 commercial corridor. **Figure 3.4**. illustrates the areas or sites that were considered as key destinations/attractions.

Figure 3.4 Town Destinations and Attractions

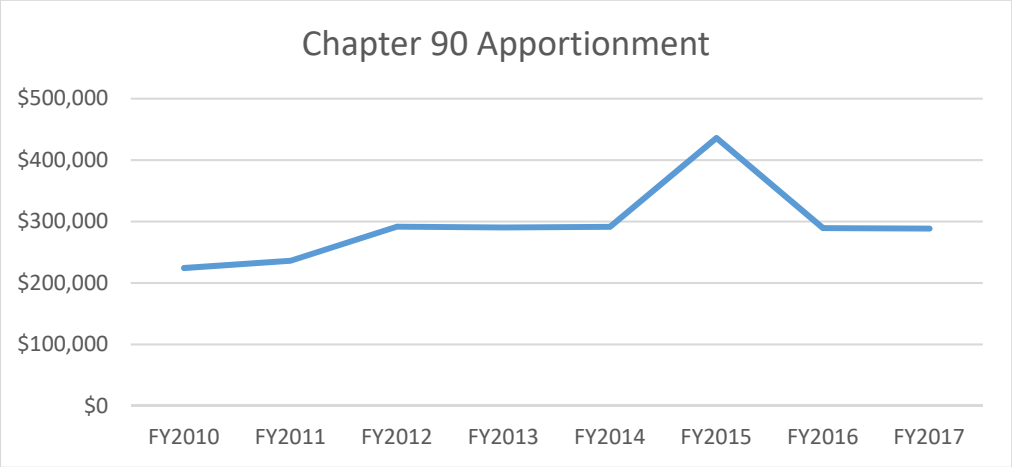


Fiscal Conditions

In Massachusetts, the Chapter 90 highway funding program was enacted in 1973 to entitle municipalities to reimbursement of documented expenditures on approved highway projects. Funds are provided through state Transportation Bond Issues, and can be used for a variety of project types and municipal uses including preservation and improvement projects that create or extend the life of capital facilities, garages, salt sheds, buildings for storage of equipment, and road building machinery, equipment and tools.

Chapter 90 apportionments fluctuate from year to year and are distributed based on a formula that factors in road miles (58.33%), population (20.83%) and employment (20.83%). In Lenox, Chapter 90 funding is generally around $300,000 each fiscal year (FY), with a significant increase in 2015 to over $436,000 due to additional statewide funding that fiscal year that was allocated by the Governor Baker administration (see **Figure 3.5**).

Figure 3.5 Chapter 90 Apportionment FY2010-FY2017



Transportation Conditions

Road Network

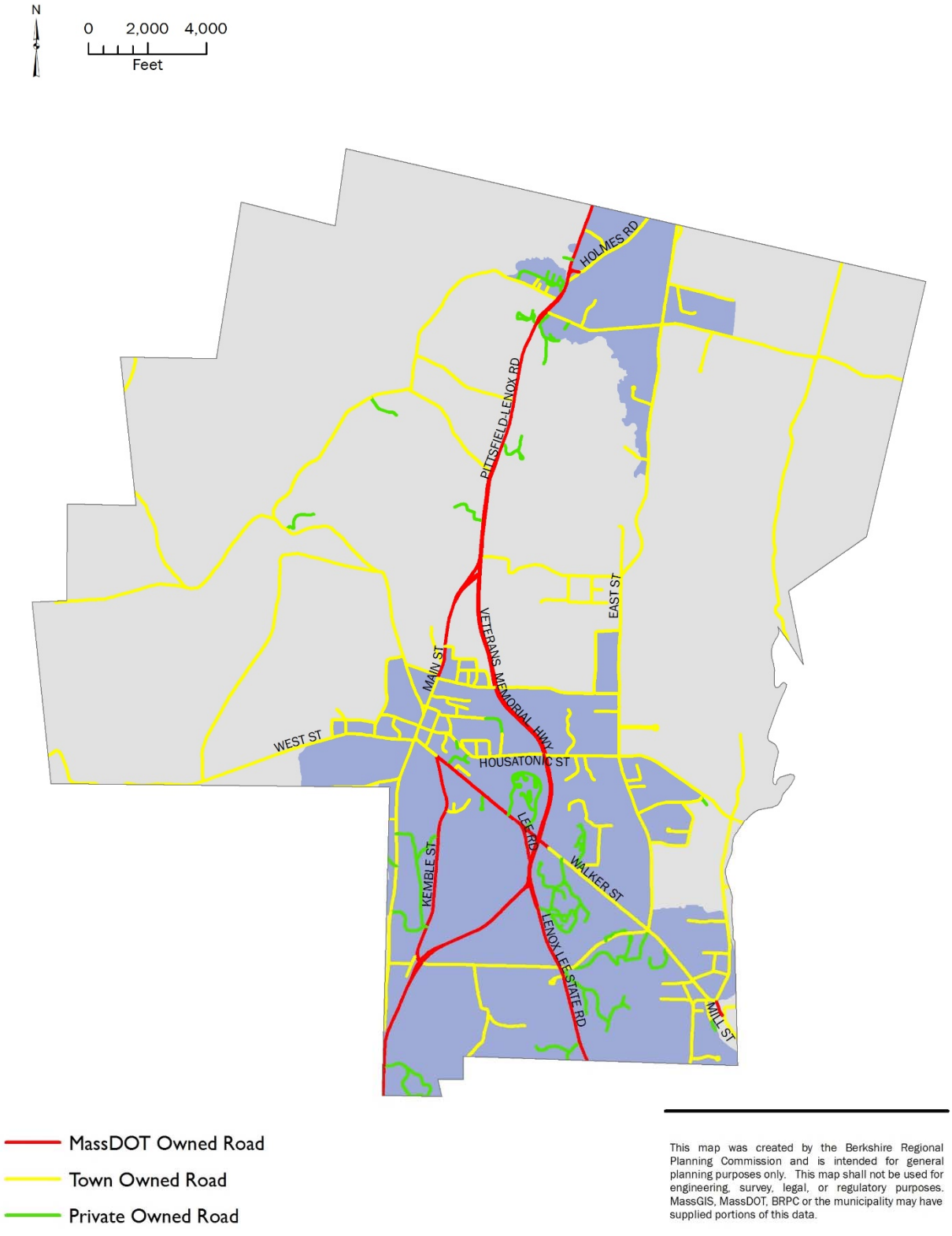
There are 81.28 miles of road in Lenox, of which 15.83 miles are under MassDOT's jurisdiction, 12.42 miles are privately owned, and the remaining 53.03 miles are town accepted roads (see **Table 3.1**). The 15.8 miles of MassDOT road consists of Route 7, Route 20, Kemble Street, part of Walker Street and part of Main Street. The private roads are largely grouped around Kemble Street, Walker Street and Blantyre Road, but are also scattered throughout town (See **Figure 3.6**).

Users of the roads include private motor vehicles, freight/commercial vehicles, emergency vehicles, bicyclists, pedestrians, and school bus riders.

Table 3.1 Lenox Road Jurisdiction

Jurisdiction	Mileage	Percent of Roads
MassDOT	15.83	19.5%
Town	53.03	65.2%
Private	12.42	15.3%
Total	**81.28**	**100.0%**

Figure 3.6 Roads by Jurisdiction



Functional Classification

Functional classification is a way of grouping roadways into classes or systems based on character and type of traffic service they are intended to provide. All roadways are grouped into one of three classes (arterial, collector or local), and provide for transportation based on a spectrum between overall mobility and land access. Arterials provide for travel over long distances, but offer a lesser degree of land access than local or collector roads. Conversely, local roadways provide a high degree of land access, but traverse shorter distances and provide less overall mobility (see **Table 3.2**).

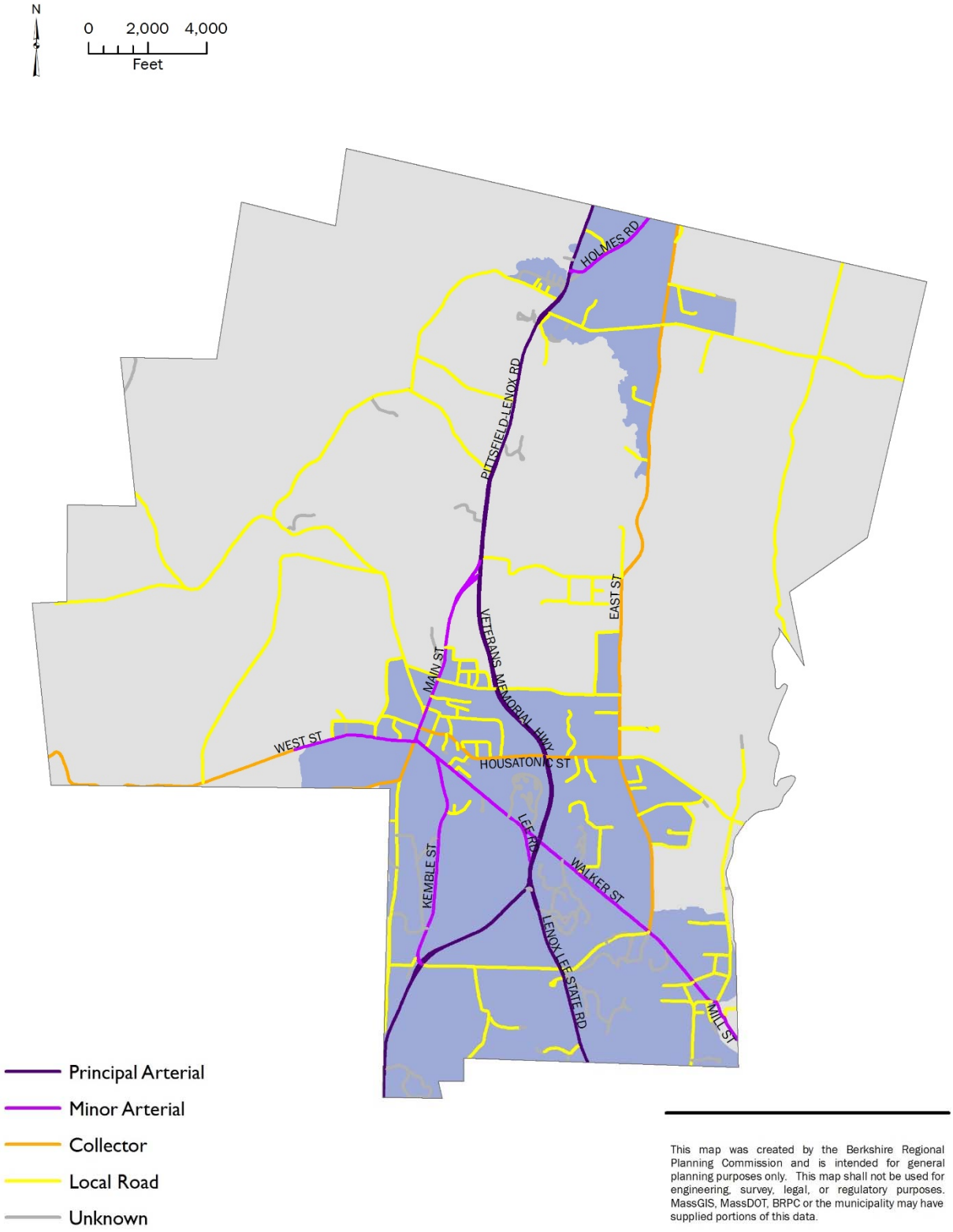
Table 3.2 Functional Classification Descriptions[19]

Functional System	Services Provided
Arterial	Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.
Collector	Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.
Local	Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.

Within Lenox, Route 7 and Route 20 are considered principal arterials. Holmes Road, Main Street, Walker Street, Kemble Street and the eastern half of West Street are considered minor arterials. The remaining portion of West Street, East Street, Housatonic Street, Richmond Mountain Road, Hawthorne Road and the northern portion of Old Stockbridge Road are considered Collectors. The remaining roads are considered local roads (see **Figure 3.7**).

[19] Table adapted from Federal Highway Administration, Flexibility in Highway Design. Available from: http://www.fhwa.dot.gov/environment/publications/flexibility/ch03.cfm

Figure 3.7 Roads by Functional Classification

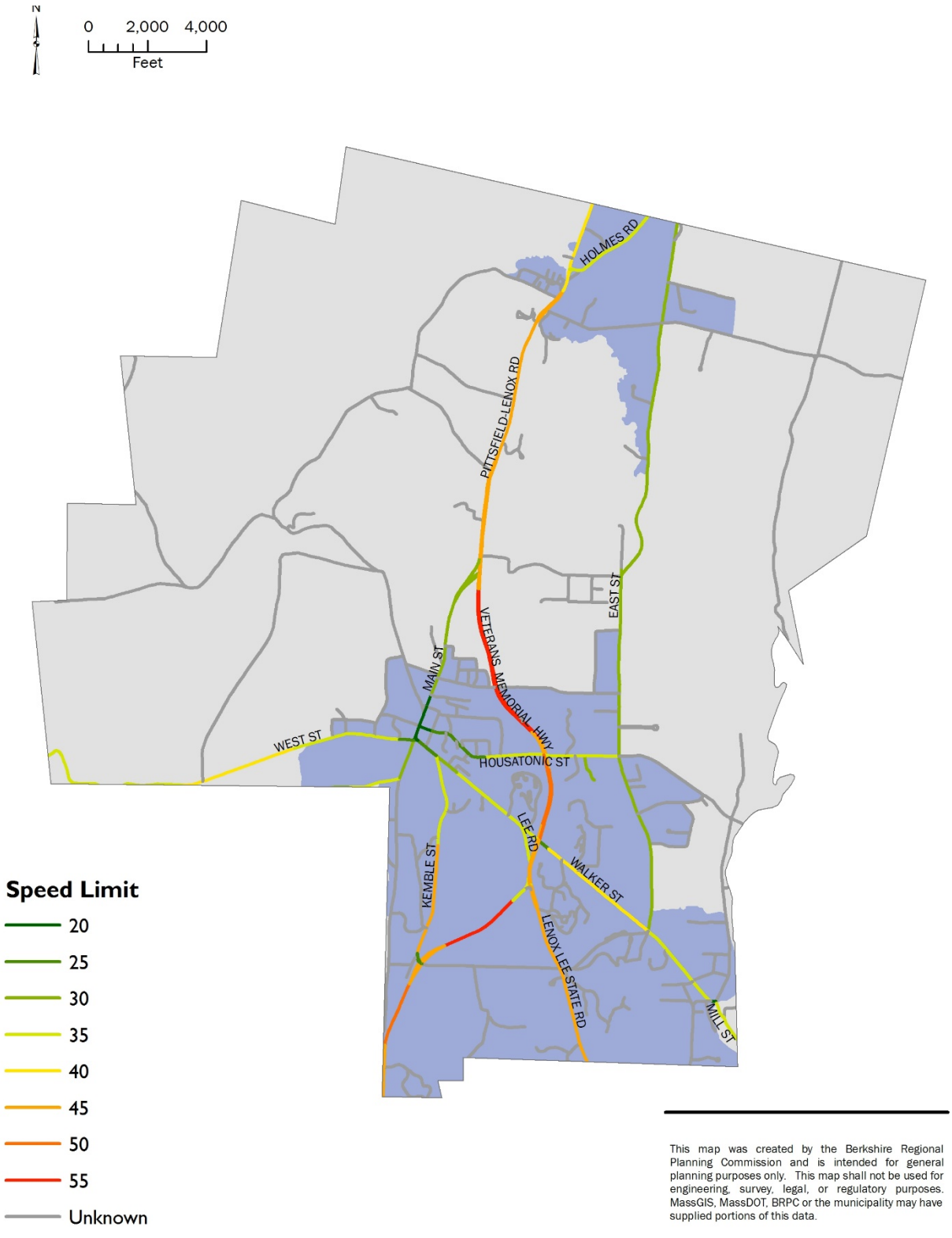


Speed Limits

Speed limits, in conjunction with other factors like traffic volume, shoulder width, sight distance, have an impact on both the actual and perceived safety of nonmotorized travelers when they travel along a roadway without a dedicated facility. When speeds are higher, the severity of accidents involving nonmotorists is drastically increased, and separation from fast moving vehicle traffic is preferred. On low-volume roadways with high speed limits, ensuring safety for nonmotorized travelers within the corridor is critical for safety (actual and perceived). When speeds are high and there is little room to accommodate nonmotorists, looking at parallel routes, or separate facilities is important.

Route 7 and Route 20 have speed limits ranging from 40 to 55. Other arterials and collectors tend to be in the 30-40 mph range. Downtown has speed limits in the 20-25 mph range. Most of the local roads in town do not have a posted speed limit. A map of speed limits is shown below in **Figure 3.8.**

Figure 3.8 Speed Limits



This map was created by the Berkshire Regional Planning Commission and is intended for general planning purposes only. This map shall not be used for engineering, survey, legal, or regulatory purposes. MassGIS, MassDOT, BRPC or the municipality may have supplied portions of this data.

Road Surface Type

Road surface type has potential implications for Complete Streets improvements, specifically for pedestrian and bicycling facilities. Generally, unpaved (dirt or gravel) roadways are considered exempt from many potential improvements. Unpaved roadways cannot be striped, and thus rely solely on warning signage to convey information, which means that elements such as bike lanes or shared lane markings cannot be added to these roadways. Moreover, pedestrian facilities, such as sidewalks are generally not included along unpaved roadways, unless they are in the form of an informal path alongside the roadway.

In general, vehicle speeds on unpaved roadways are lower due to road width and the surface type. Traffic volumes are generally lower as well. Low traffic speeds and volumes can make these roadways ideal for pedestrians, particularly recreational walkers. However, the surface type may create issues with accessibility as required by the Americans with Disabilities Act (ADA). ADA regulations requires that all accessible floor and ground surfaces be "firm, stable and slip resistant" and other ADA guidance notes that "most loose materials, including gravel will not meet these requirements unless properly treated to provide sufficient surface integrity and resilience[20]." Additionally, unpaved roads are sometimes used by cyclists, particularly those who ride mountain bikes with wider tires, and may be preferred due to relatively low traffic volumes. The narrow tires of many road bikes limit their use on unpaved roadways.

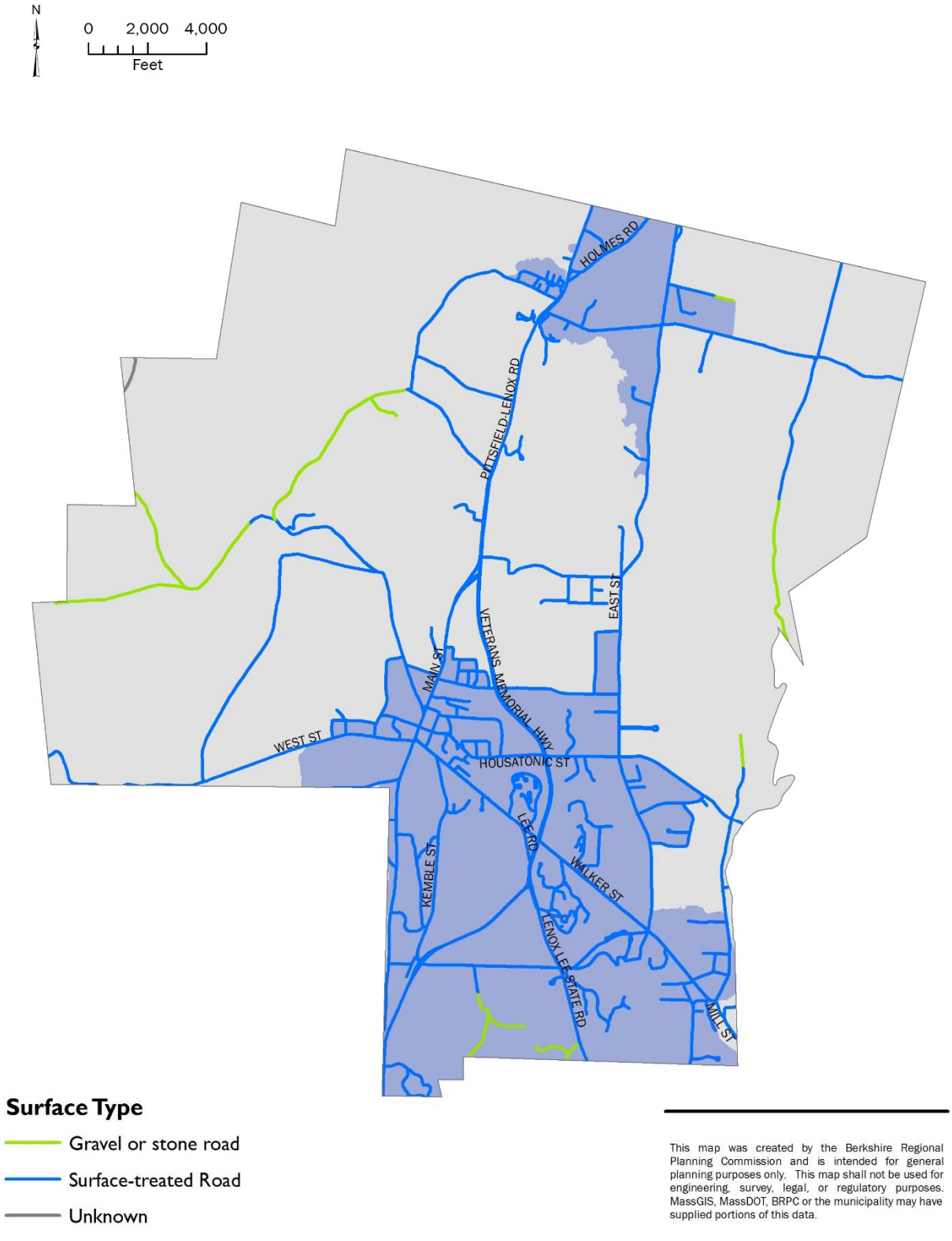
The majority (91.8%) of roads in Lenox are paved, while about a small percentage of the roads (7.9%) are gravel or stone, mostly in the watershed land, October Mountain State Park and around Laurel Lake. One road's surface is unknown (See **Table 3.3** and **Figure 3.9**).

Table 3.3 Lenox Road Surface

Surface Type	Mileage	% of Roads
Paved	71.52	91.8%
Gravel/Stone	6.18	7.9%
Unknown	0.23	0.3%
Total	**77.93**	**100.0%**

[20] https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/guide-to-the-ada-standards/chapter-3-floor-and-ground-surfaces#3021

Figure 3.9 Roads by Surface Type



Pedestrian Conditions

Sidewalk Network

Studies are showing that the millennial and baby boomer generations prefer walkable neighborhoods, with walkability playing a factor in housing and neighborhood choices. In the recent Lenox Housing Production Plan survey, more than half of the respondents stated that it was important for them to stay in Lenox as they age, and important factors to helping them age in place were the availability of condos in walkable neighborhoods and more transit options.

Overall, Lenox has good pedestrian connectivity, particularly in the village center (see **Figure 3.10**). The village center is a hub from which several longer sections of sidewalk radiate outward towards surrounding neighborhoods. Lenox's overall walkability was noted in a 2013 WalkBoston report titled *Rural Walking in Massachusetts: A Toolkit for Municipalities*[21]. The report gave special attention to the wide roadside path (a sidewalk with generous separation from the roadway) that provides connectivity between the village center, elementary school and Tanglewood along West St. (Rte. 183).

When entering the town from the north, there are sidewalks through the commercial district until New Lenox Road. South of this there are a scattering of sidewalks until the Lenox Commons, where the sidewalks picks up and continues into downtown on Main Street. Franklin Street, Church Street, Housatonic Street, Walker Street in the downtown area all have sidewalks in addition to all of West Street, the northern portion of Old Stockbridge Road from Hawthorne Street north, approximately 2,800 of Cliffwood Street, the first block of Hubbard Street, Fairview Avenue and 1,300 feet of Tucker Street.

In addition, Kemble Street has a sidewalk extending all the way to Route 7, while Walker Street's sidewalk extends almost to Route 7/20. Housatonic Street's sidewalk extends to East Street, which has a sidewalk heading north to Hubbard Street and south for 4,500 feet.

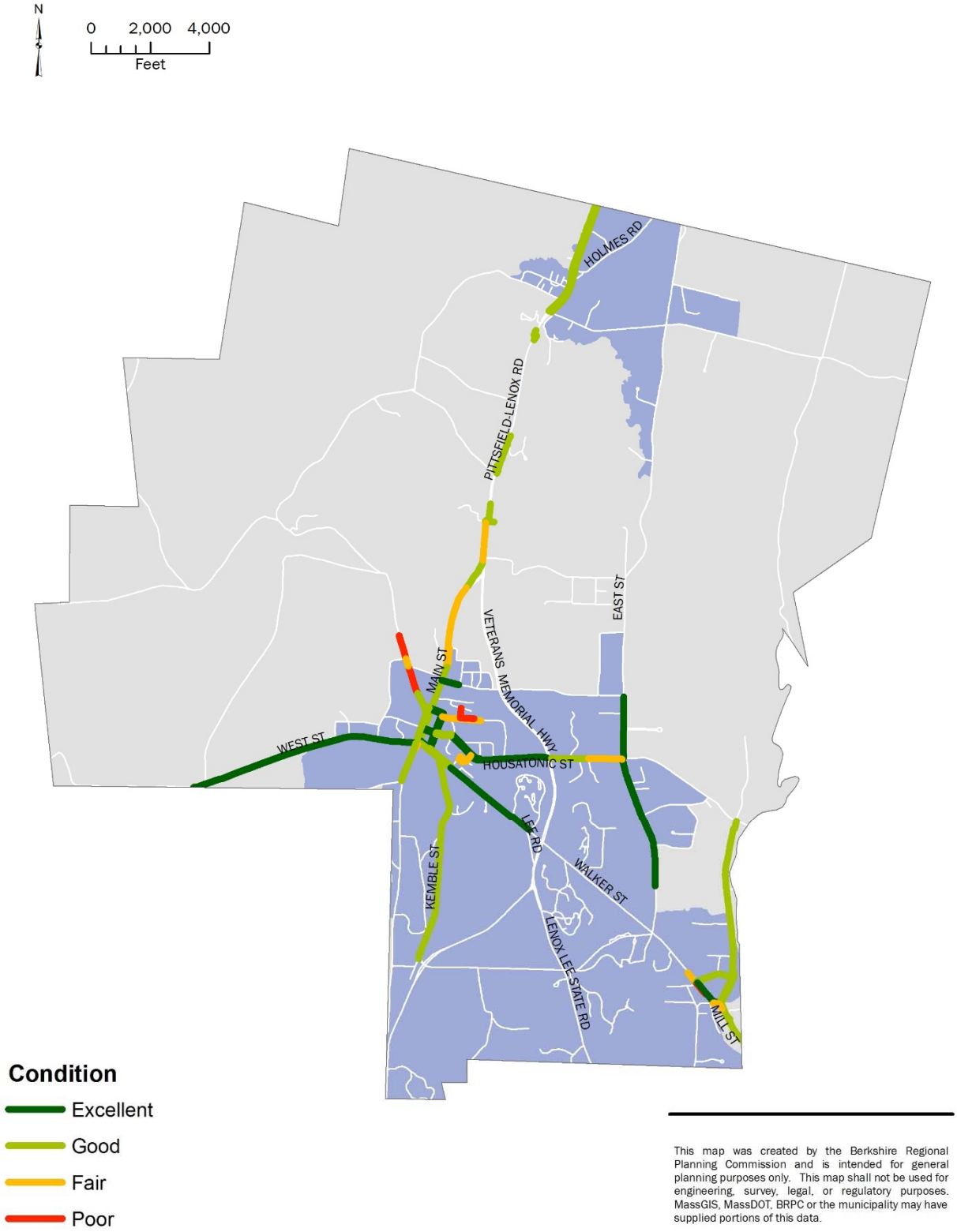
Within Lenox Dale, there is a sidewalk extending about 1,500 feet along Walker Street from the intersection with Crystal Street. Crystal Street also has a sidewalk extending from Walker Street north to Housatonic Street. Elm Street has a sidewalk as well as Mill Street.

There are no sidewalks on the section of Rt 7/20 (locally known as the Lenox Bypass and shown on Fig. 3.10 as Veterans Memorial Highway), as this is a limited access highway.

The Lenox DPWs department removes snow on town sidewalk using special equipment and a dedication to providing staff time. This is unusual in the region. Most municipalities remove snow on major sidewalk networks such as business centers and around schools and other municipal buildings, and require individual property owners to shovel and keep clear the other sidewalk sections in front of their properties. Despite the New England climate, Lenox residents and visitors are therefore offered pedestrian connectivity throughout the year.

[21] WalkBoston. 2013. Rural Walking in Massachusetts: A Toolkit for Municipalities. Prepared for the Mass. Dept. of Public Health. Available from: http://www.walkboston.org/ruralwalking

Figure 3.10 Existing Sidewalk Network



Crossings

Few intersections in Lenox are signalized, and as such, most crossings consist of unsignalized crosswalks. Most signalized intersections are found on crossings of Route 7, and of these, only one has pedestrian countdown timers (Housatonic St.).

Notable mid-block crossings include those on Main St. which include in-street pedestrian yield signs. The usage of mid-block crossings enhances the walkability and convenience of the Main St. area. Curb extensions are limited to crossings on Church St. There are no RRFBs (Rapid Rectangular Flashing Beacons) to enhance existing crossings.

Off-Road Pedestrian Network and Trails

Kennedy Park and Pleasant Valley have a substantial trail network in the northwestern quadrant of town. Access to these trails is on Aspinwall Road, Pittsfield Lenox Road, West Dugway Road and West Mountain Road. In addition, Berkshire Natural Resources Council has a network of trails accessible from Richmond Mountain Road.

Bicycle Conditions

On-Road Bicycle Conditions

As of summer 2017, the only road with designated bike lanes is West St. / Route 183. However, bike lanes are planned in the redesign and reconstruction of Walker Street, from the Route 20/7 intersection to the Mill Street bridge in Lenox Dale. There are no other formal bike accommodations, such as sharrows. Uneven pavement and unmaintained gravel roads make on-road bicycling difficult. Additionally, roads with better pavement condition tend to experience higher speeds, which can result in safety issues for cyclists. There are several popular routes through town that utilize West Street, Under Mountain Road, Main Street, Old Stockbridge Road, Kemble Street, Plunkett Street, Blantyre Road, Walker Street, Housatonic Street, East Street and Crystal Street. It should be noted that a section of Rt. 7/20, also known as the Lenox Bypass, is a limited highway where bicycling is not encouraged.

Western New England Greenway

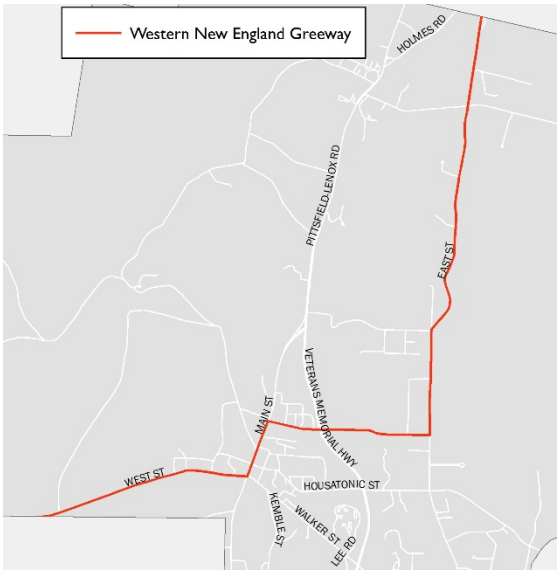
The Western New England Greenway, or U.S. Bicycle Route 7, is a multi-segment, multi-state bike route that links New York City and Montreal, passing through Berkshire County inbetween.[22] The route largely follows Route 7 through the western portions of Connecticut, Massachusetts, and Vermont. The route links with East Coast Greenway at the Merritt Parkway near Norwalk, CT at its Southern terminus, and with Quebec's Route Verte at its northern terminus at the Canadian Border. Most of the route is located along existing roadways, which in Berkshire County are generally running along or parallel to Routes 7, 8, and 2. However, the Greenway does take advantage of the Ashuwillticook Rail Trail, the region's existing shared-use path, which passes through Lanesborough, Cheshire, and Adams.

The Greenway travels through the heart of Lenox, traveling northward from Stockbridge along West Street (Rt. 183), Main Street, Hubbard Street and East Street (**Figure 3.11**). Once in Pittsfield it winds its way toward the Ashuwillticook Rail Trail. The formal acceptance of this U.S. Bicycle Route by the Town of Lenox indicates a support for bicycle use for transportation and recreation. While West Street has bike accommodations, the other local streets have little or no accommodations and often little or no shoulder. In addition, there are several accident clusters along the route, particularly on Main Street and at the West Dugway/East Street intersections.

[22] http://wnegreenway.org/

There are plans to add wayfinding and signage to the multi-state route in the coming years. The effort will be coordinated across state lines to ensure a consistent look and feel to the route. This effort is not yet underway as of 2017, but is a short- to mid- term plan of the Western New England Greenway's Executive Committee.

Figure 3.11 Western New England Greenway Route in Lenox



Bicycle Competency Mapping

Competency mapping is method of classifying roadways that indicates the level of experience that is generally required for cycling on the roadway and accounts for various roadway characteristics including shoulder width, traffic speed and volume, or the presence of existing facilities, such as bike lanes. BRPC evaluated all roadways in the town as part of this planning process. A flow-chart explaining the categorization process is described in **Figure 3.12** and a description of the five competency levels can be found in **Table 3.4**. Final mapped competency levels are found in **Figure 3.13**

The levels rank competency needed to safely cycle on a road, and describe both the easiest and the most difficult areas to ride. The levels enable a quick reading of how useable the existing roadway network is for residents of and visitors to the Lenox area. For example, most cyclists will be able to use Level 1 categorized routes, but far fewer will feel comfortable using level 4 or 5 roadways. The resulting map shows the roads that are most difficult to navigate, and is useful for identifying gaps and barriers to nonmotorized travel as well as the planning of alternative routes on easier to travel routes to bypass higher competency level roadways.

Table 3.4. Bicycle Competency Levels[23]

Competency Level	Route Ease/Safety	Usability
Level 1	Easiest routes	Learning to bike, beginner, casual, experienced, expert - **everyone**
Level 2	Easy routes	Beginner, casual, experienced, expert – **most people**
Level 3	Moderately difficult routes	Casual, experienced, expert – **confident, but cautious riders**
Level 4	Difficult routes	Experienced, expert – **experienced riders**
Level 5	Most difficult	Expert (rider with a lot of experience riding on-road) – **expert riders, with caution**

There are no physically separated bike facilities within the Town of Lenox. However, many residential, low volume roads have been determined to be Level 2 roads, allowing most riders to feel comfortable riding them. There are many Level 2 facilities in Lenox and these are usually low-volume neighborhood streets where cyclists have room to ride and aren't exposed to higher speed motorized vehicles. These streets present few barriers to cyclists, except when there is a complicated intersection without adequate crossing time/space. Attention to how and where these Level 2 facilities connect to, and/or cross other facilities is paramount, especially in areas where Level 2 facilities are in proximity but do not connect to major destinations, and/or retail/commercial areas. Many of the local roads in the downtown center are a Level 2, which offers residents a good network to bicycle to town for work, errands or entertainment. All roads but Walker Street in Lenox Dale are Level 2, and bike lanes are added as part of the Walker Street reconstruction, all roads there will be Level 2.

Most of the minor arterial and collector roads in the town have been rated as Level 4 bike competency roads. The majority of the Lenox sections of the Western New England Greenway are rated as Level 4, with the exception of Plunket Street, which despite having to cross the Rout 7/20 highway is rated as a Level 2 road. These facilities are generally difficult to ride on, and for non-experienced riders, a deterrent. Level 4 facilities suggest major barriers for cyclists, whether in the form of high speeds and volumes or lack of separation from motorized traffic. Safety improvements and dedicated facilities should be considered on these roadways so that riders are separated from the higher volumes/speeds.

Routes 7 and 20, which are principal arterials, have been rated at Level 5, and in fact bicycles are not encouraged on the Lenox Bypass, the section of Rt 7/20 between Walker Street and Main Street intersections.

While not included in the classification, topography plays a role in examining bicycle competency. Most of the connector roads in Lenox involve steep hills, including West Street (Tanglewood, Morris Elementary School), Walker and Housatonic Streets from the Dale, upper Main Street (Kennedy Park) and section of East Street. The topography can deter residents from bicycling for transportation, particularly those with health problems or physical disabilities.

[23] Adapted from Pikes Peak Area Council of Governments. 2015. Regional Nonmotorized Transportation System Plan.

Figure 3.12 Bicycle Competency Classification Methodology

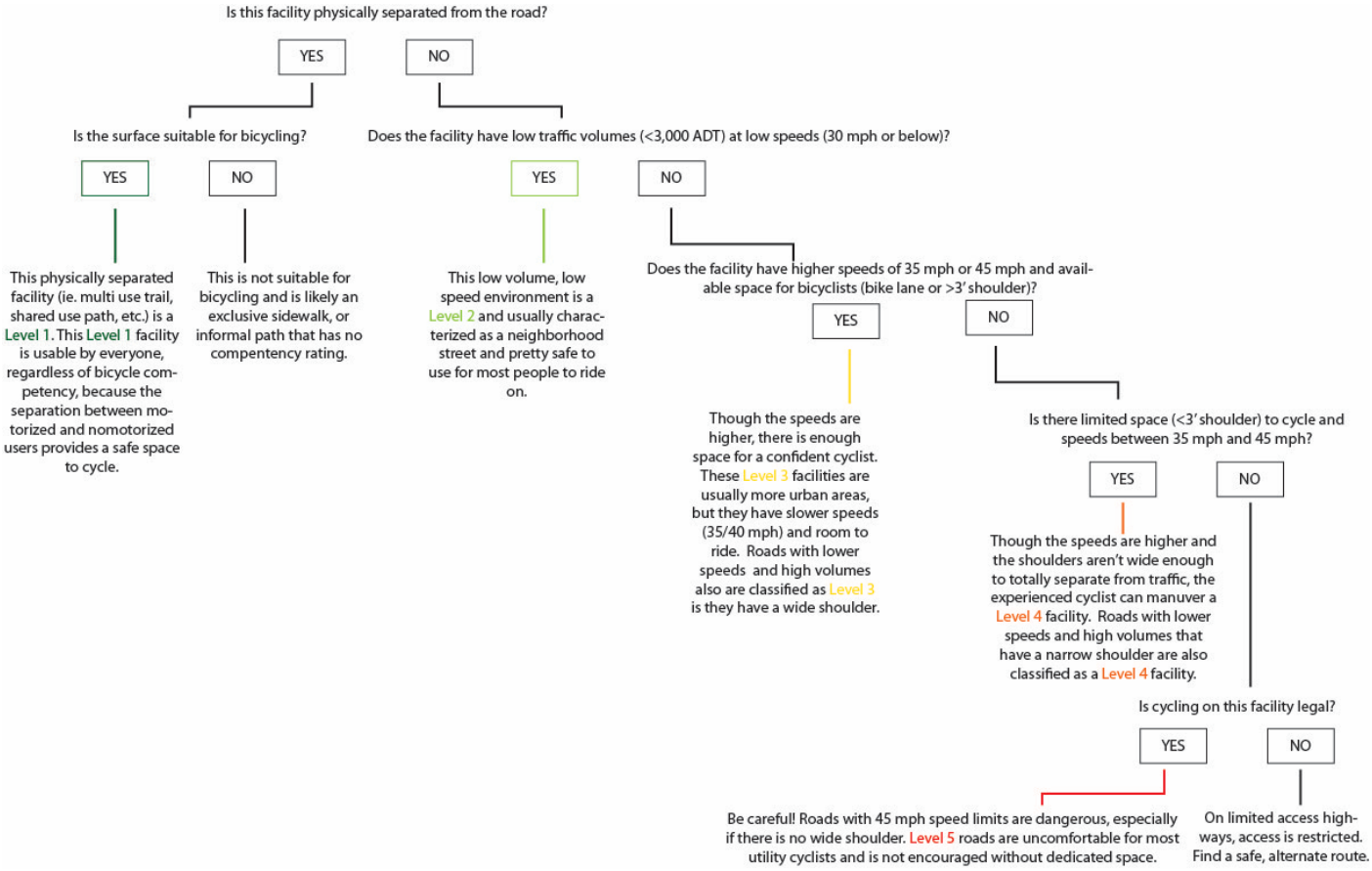
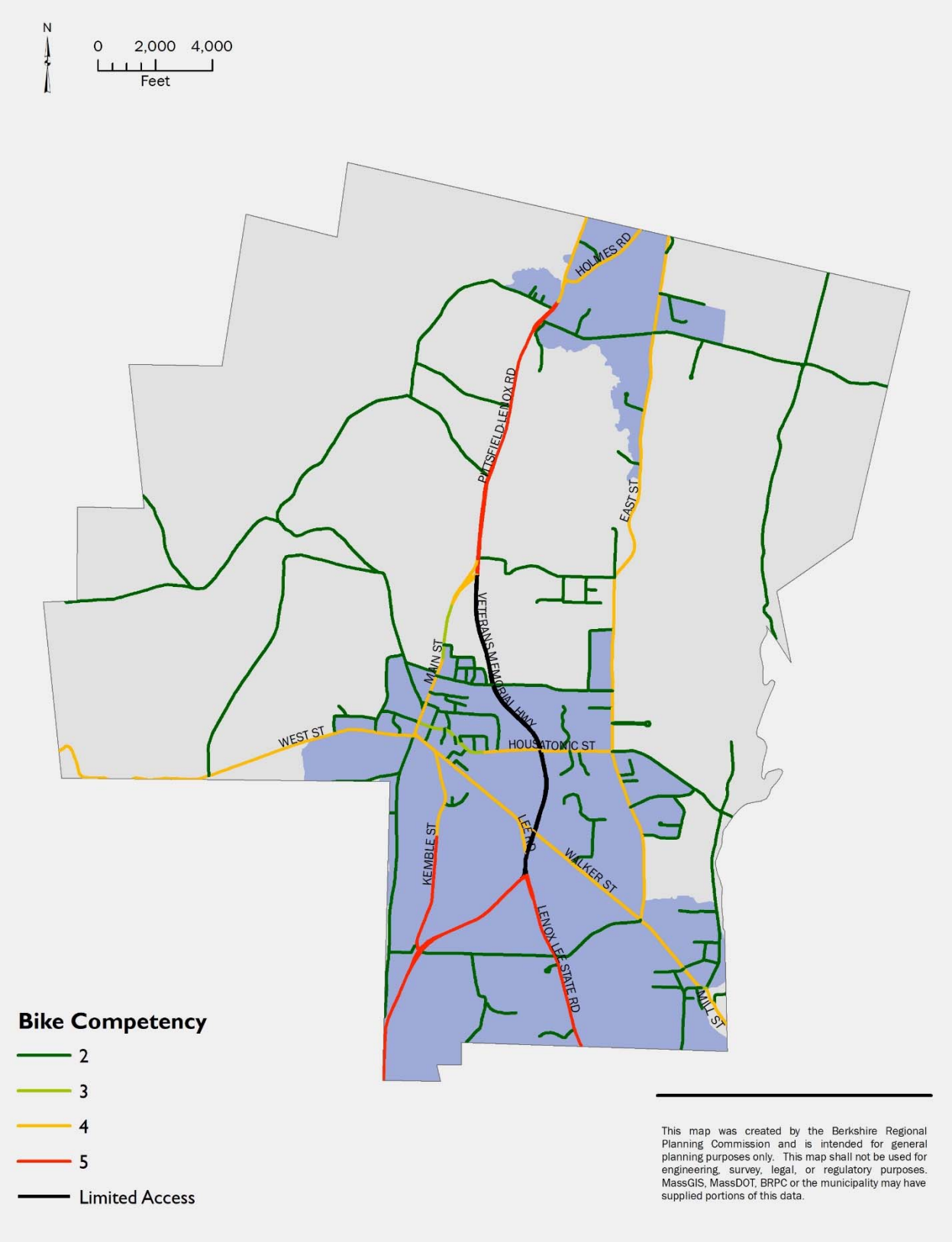


Figure 3.13 Bicycle Competency Map



Road Shoulder

The road shoulder is an important way to accommodate cyclists (and pedestrians in certain situations), As part of this planning effort, BRPC conducted a shoulder width study to determine if existing roadways have available width to accommodate future bike facilities. Existing width of pavement was taken using ArcGIS. From the pavement width, two 11' vehicle lanes were assumed and the remaining width assumed to be that available for shoulder on each side of the roadway. Measurements were taken on all roadways with the functional class of collector or greater, as well as key local roads (**Table 3.5**).

This study indicates that bike lanes may be feasible in some areas. Most state controlled roads have wide shoulders which could accommodate bike lanes or other separated facilities, such as a cycle track. On town-maintained roadways a few key findings from the study are:

- A one-way bicycle lane may be feasible along Crystal St.
- Bike lanes may be feasible along lower Walker St. and Housatonic St. (the town is exploring TIP funded reconstructions of these roadways which will address bicycle facilities as well.)
- While bike lanes may be feasible (given existing width and ROW) along Main St. and upper Walker St., on-street parking will limit the addition of facilities in these locations.

Table 3.5 Road Shoulder Study

Road	Owner	Type	Shoulder Width			On-street parking?	Bike Lane one way?	Bike Lane two way?	Separated Facility?
			Min.	Max.	Average				
Pittsfield - Lenox Road (PTS to Holmes Road)	MassDOT	PA	2.5	5	3.3		X		
Pittsfield - Lenox Road (Holmes Road to Main St)	MassDOT	PA	7.5	2.5	7.5			X	X
Veterans Memorial Highway (Main St to Housatonic Street)	MassDOT	PA	3	16.5	11.08			X	X
Veterans Memorial Highway (Housatonic Street to Walker Street)	MassDOT	PA	10.5	13.5	11.8			X	X
Veterans Memorial Highway (Walker Street to 7/20 split)	MassDOT	PA	10.0	10.5	10.3			X	X
Veterans Memorial Highway (7/20 split to Plunkett St)	MassDOT	PA	7.5	19.0	10.7			X	X
Veterans Memorial Highway (Plunkett St to STK)	MassDOT	PA	2.5	23.0	11.3			X	X
Holmes Road	Town	L	1.0	3.0	1.6				
East Dugway Road	Town	L	-1.0	1.5	0.9				
East Street (PTS to East Dugway)	Town	C	0.5	1.5	1.1				
East Street (East Dugway to Housatonic)	Town	C	2.0	4.0	2.9		X		
East street (Housatonic Street to Walker Street)	Town	C	0.5	4.0	1.3				

Main Street (Pittsfield-Lenox Road to Cliffwood)	MassDOT/Town	MA	4.0	12.5	9.4	X		X	X
Main Street (Cliffwood to Walker)	Town	MA	8.5	10.5	9.5	X		X	X
Cliffwood	Town	L	1.0	2.0	1.4				
Undermountain Road	Town	L	-2.0	2.0	-0.5				
Richmond Mountain Road	Town	C	-1.0	0.0	-0.3				
West Street	Town	MA/C	2.0	4.0	3.4		X		
Housatonic Street (Main to Veterans)	Town	C	1.0	6.5	3.2		X		
Housatonic Street (Veterans to East)	Town	C	1.5	4.0	2.8		X		
Housatonic (East to Crystal)	Town	C	0.5	1.5	1.0				
Crystal Street	Town	L	2.0	4.0	3.1	X	X		
Hawthorne Street	Town	C	0.0	2.0	1.0				
Old Stockbridge Road	Town	C/L	0.0	4.5	0.8				
Frothingham Crossing	Town	L	0.0	1.5	0.8				
Walker Street (Main to Kemble)	Town	MA	11.0	14.0	12.5	X		X	X
Walker Street (Kemble to Veterans)	MassDOT	MA	1.5	4.0	2.8		X		
Walker Street (Veterans to East)	Town	MA	0	4.5	1.3				
Walker (East to Crystal)	Town	MA	0.5	7	2.5		X		
Mill Street	Town	MA	0.5	9.0	4.8			X	
Blantyre Road	Town	L	0.0	2.0	1.0				
Plunkett Street	Town	L	0.0	2.5	1.1				
Kemble Street	MassDOT	MA	3	10	4.64			X	
Lenox Lee State Road (Veterans to Blantyre)	MassDOT	PA	5	12.5	7.5			X	X
Lenox Lee State Road (Blantyre to Lee)	MassDOT	PA	3.5	4.5	4			X	

Notes: If on-street parking is present, overall available road width for bike facilities may reduced. Addition of bike facilities along roadways with on-street parking would require elimination, reduction, or consolidation of on-street parking
If average available shoulder is > 2' but < 4' then a bike lane on one side of the road *may* be feasible.
If average available shoulder is 4' or greater then bike lanes on both sides of the roadway *may* be feasible.
If average available shoulder is 5.5' or greater separated bike lanes on both sides of the road *may* be feasible.
All measurements taken using ArcGIS. Detailed field measurements and further engineering study are needed to confirm these widths and feasibility of bike facilities. Presence of curb or guardrail may impact bike facility feasibility. More detailed study is needed to confirm.

Off-Road Bicycle Conditions

Off-road bicyclists often use Roaring Brook Road, West Mountain Road, Lime Kiln Road, West Dugway Road, Reservoir Road and Dunbar Road in Lenox. The trails in Kennedy Park are highly rated by the New England Mountain Bike Association.

Bicycle Parking

Bicycle racks are found at Lenox's public schools. The town should work to include bicycle parking at major town destinations.

Figure 3.14 Walk Your City

Signage/Wayfinding

There are no existing wayfinding systems in town, but once the gaps in the sidewalk system are closed and the system is expanded, there will be an opportunity to create walking loops and promote the new level of walkability through context-sensitive wayfinding signage. During the Complete Streets planning process, the Town installed temporary wayfinding signs that directed people to destinations within walking distance of Lenox Village center. Signs were created using the Walk Your City initiative, directing people to places such as Tanglewood and Ventfort Hall, and giving them the mileage to that destination (see Fig. 3.13). The town is collecting feedback from people about the signs, with the intention of installing professionally designed signs if feedback is positive enough.

Safety

Safety is a major reason many communities look at Complete Streets improvements, and though safer infrastructure is one component in improving the safety of users, there is also a behavioral component that must be supported through encouragement and education. Recent accident data was collected and reviewed to determine what types and under what conditions accidents are occurring.

Accident Data and Crash Clusters

Crash data is available for a three-year period from 2011 to 2013. Crashes are grouped into four types based on damage including, fatality, non-fatal injury, property damage only (PDO) and when information is unavailable the crash type is listed as "not reported." Accident statistics can be seen in **Table 3.6**.

MassDOT uses crash data collected over a three-year period to identify areas that have multiple crashes, these locations are called Crash Clusters. Each cluster is given a rating that measures the "equivalent property damage only" crashes. "Equivalent property damage only" is a method of combining the number of crashes with the severity of crashes based on a weighted scale where a fatal crash is worth 10, an injury crash is worth 5 and a property damage only crash is worth 1. The Massachusetts Department of Transportation identifies "crash clusters" using crash reports provided by its Registry of Motor Vehicles Division. They determine the locations of clusters by grouping crashes that occur within a certain distance of each other (25 meters for vehicle crashes and 100 meters for bike and pedestrian crashes). The clusters are ranked based on the sum of the Equivalent Property Damage Only (EPDO) values of the crashes within the clusters.

As seen in **Figure 3.15**, the Route 7/20 segment of road north of New Lenox Road intersection has the most crash clusters, partly due to the high volume and speed of vehicle traffic and the many turning and stopping movements to and from businesses. Although clusters around downtown are less severe due to the lower speeds, there are several clusters within a small, dense area. As expected, the crash rates increase during the busy summer tourist season, when there are more drivers on the roads and many are unfamiliar with their surroundings. As noted in **Table 3.6** the majority of accidents result in property damage only (75%) and seventy-three percent of accidents occurred on dry roads.

Crashes related to Bicycles and Pedestrians - Injury versus Property Damage Only (PDO)

During the years 2011-2013 there was one pedestrian accident and three cyclist accidents. The pedestrian accident occurred on Crystal Street in Lenox Dale and was on a clear, dry afternoon. The three cyclist

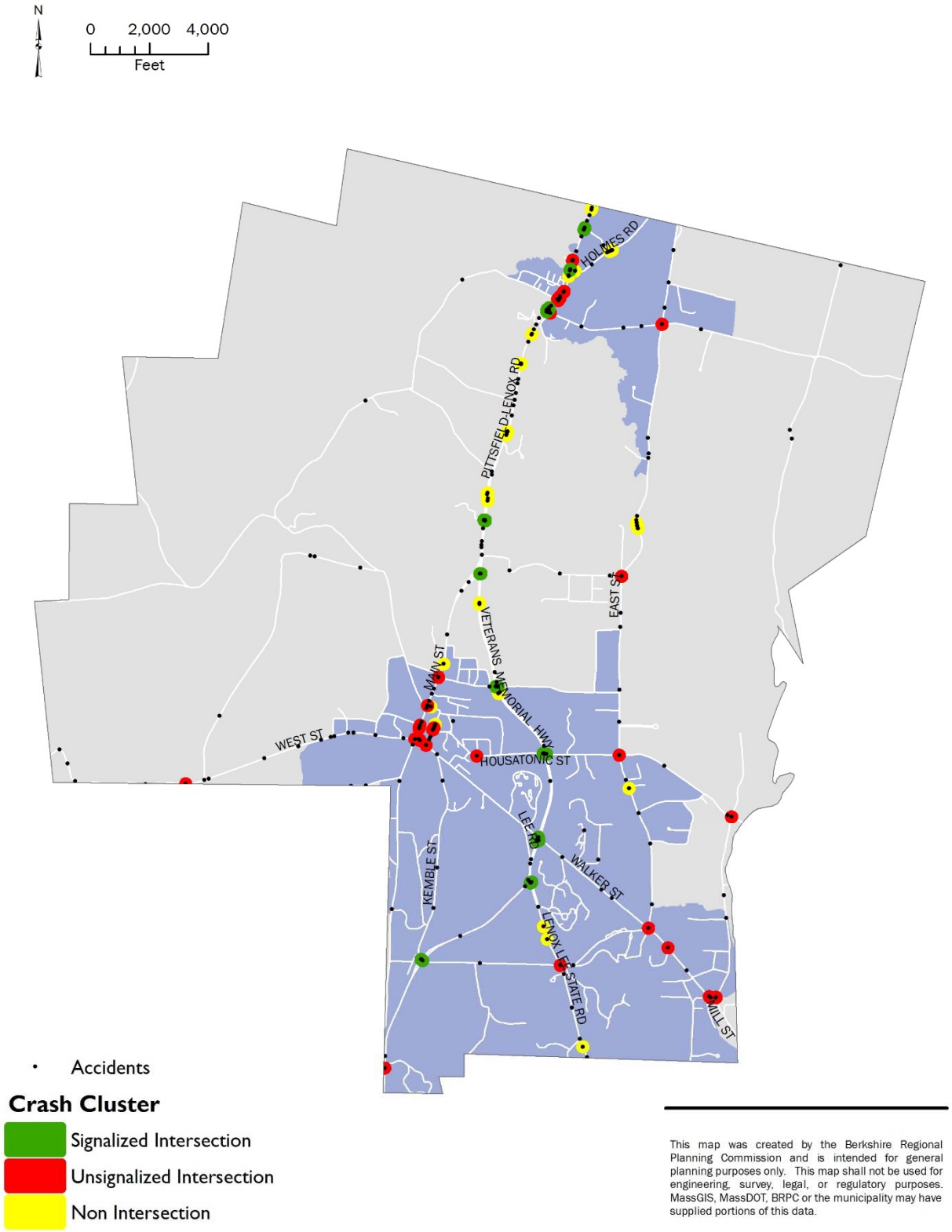
accidents all occurred in clear and dry conditions as well. One occurred in Lenox Dale, one on East Street close to Hubbard Avenue and one at the Route 7/20 and Main Street intersection. There are no discernable or repetitive patterns that emerge from the data due to the low number of accidents and the variety of the places at which they occur and the types of vehicle actions under which the accidents occurred.

Table 3.6 Lenox Accident Statistics, 2011-2013

LENOX ACCIDENT STATISTICS 2011 - 2013				
CRASHES BY TYPE	**2012**	**2013**	**2014**	**NOTES**
Total Crashes	106	144	139	
Fatality	-	-	-	
Non-fatal Injury	26	34	31	
Property Damage Only	78	108	106	
Not reported	2	2	2	
COLLISION TYPE	**2012**	**2013**	**2014**	**NOTES**
Angle	22	33	38	Higher single vehicle crashes
Head-on	5	-	7	
Not Reported	-	1	-	
Rear-end	31	43	30	
Read-to-rear	-	1	-	
Sideswipe	13	19	20	
Single Vehicle Crash	35	47	44	
DAY OF WEEK	**2012**	**2013**	**2014**	**NOTES**
Sunday	20	13	15	
Monday	14	14	24	
Tuesday	17	32	15	
Wednesday	17	19	27	
Thursday	23	22	15	
Friday	4	22	25	
Saturday	11	22	18	
TIME OF DAY	**2012**	**2013**	**2014**	**NOTES**
4 AM - 10 AM	19	30	17	Increased overnight crashes; increased daytime
10 AM -4 PM	43	46	62	
4 PM - 10 PM	34	50	37	
10 PM - 4 AM	10	18	23	
MONTH	**2012**	**2013**	**2014**	**NOTES**
January	7	9	8	Low winter months; high peak summer
February	10	9	12	
March	4	15	6	
April	12	10	7	
May	6	7	16	
June	8	9	11	
July	11	18	15	
August	10	15	20	
September	7	12	12	
October	12	12	8	
November	10	11	13	
December	9	17	11	
WEATHER	**2012**	**2013**	**2014**	**NOTES**

Clear	68	83	82		57% Clear
Clear/Cloudy	2	1	1		
Clear/Other	-	2	3		
Cloudy	17	16	26		
Cloudy/Other	-	1	1		
Cloudy/Rain	1	2	2		
Cloudy/Snow	2	4	3		
Rain	5	9	5		
Snow/Ice	10	26	15		
Other	1	-	1		
ROAD SURFACE	**2012**	**2013**	**2014**		**NOTES**
Dry	82	94	108		73% dry
Wet	11	18	12		
Ice	1	6	2		
Snow/Slush	12	26	17		
Data Source: MassDOT 2011-2013 Crash Data					

Figure 3.15 Accident Locations



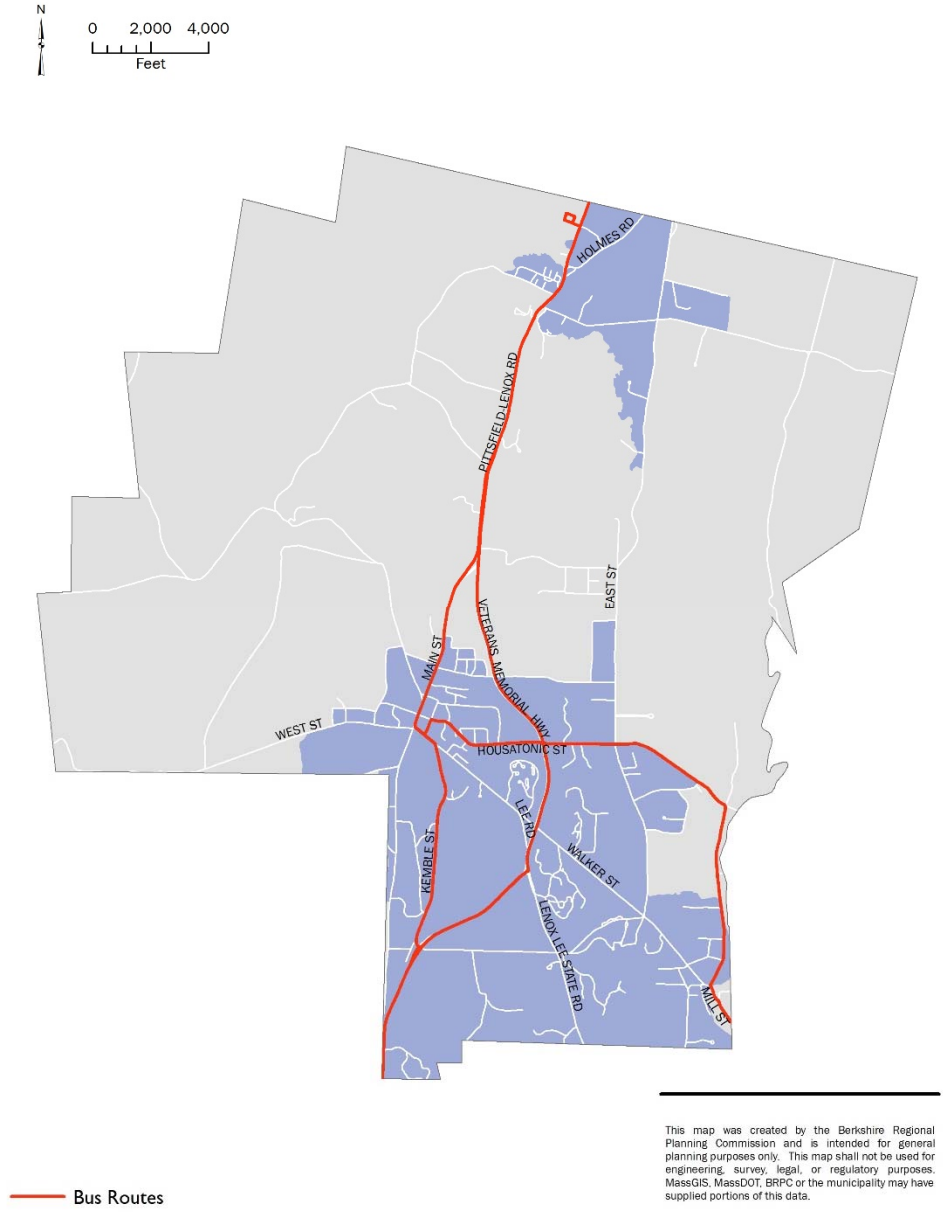
Public Transportation (BRTA Bus Route)

Berkshire Regional Transit Authority (BRTA) operates a bus route (see **Figure 3.16**) that connects the center of Lenox and Lenox Dale to Pittsfield, Lee and Stockbridge, including shopping areas and the regional intermodal transportation center in Pittsfield. Bus Route 2 travels from Pittsfield south on Route 7/20 and then onto Main Street to Lenox Village. It then travels along Housatonic Street, south on Crystal Street into Lenox Dale, from where it heads into Lee. Additionally, Bus Route 21 travels south on Route 7 through Lenox and into Stockbridge. Bus Route 21 also turns off of Route 7 and travels Main Street and Kemble Street. Anyone wishing to ride can hail the bus, which will stop and let passengers board so long as it is safe to do so. Bus service is Monday through Saturday, with the last bus leaving Lenox Village toward Pittsfield at 5:55 pm and leaving the Village toward Lee at 6:00 pm. There is no bus service any evening past six, and none on Sundays or holidays. This is a serious transportation gap, particularly as many local jobs are in the service and/or hospitality sector where wages are relatively low and evening, weekend and holiday shifts are common.

Transit shelters are located in several areas of town, including:

- Two shelters on either side of Route 7, near the Lenox Commons mixed-use development.
- Two shelters on either side of Main St., near the intersection of Franklin St.
- One shelter on Crystal St., near the intersection with Mill St.

Figure 3.16 Lenox BRTA Bus Route



4. NEEDS

The needs section is a qualitative system gap analysis based on field observations, existing planning documents and GIS data, and aerial imagery. The analysis looks at on- and off-road networks and has identified gaps in the network and intersections that are barriers to nonmotorized travel. This is a baseline to be used for the identification of potential Complete Streets Improvements in Lenox.

Major Challenges

Lack of Cycling Infrastructure

While many of the roads that radiate out of Lenox Village are served by existing sidewalk, bicycle facilities are very limited. Currently only West St. (Route 183) has dedicated bike lanes, and these were incorporated when the roadway was last reconstructed. Incorporating bike lanes during the reconstruction of Walker Street and

Housatonic St. is a good continued step forward, and these can serve as models when the Town considers future rehabilitation/reconstruction projects. Bicycles are not encouraged on the limited access section of Rt. 7/20.

Lack of Planned North-South Bike Facility

Currently, existing and proposed bike facilities are located on major east-west routes, such as West St., the west half of Housatonic St, and Walker St. The town should plan for and invest in a major north-south bike facility, particularlya section of Rt 7/20, which is a main north-south artery, is a limited access highway. Plans for a shared-use path between Pittsfield and Lee could help meet this need, as well as future facilities along a reconstructed East St. Additionally, advocacy for future bike lanes along Kemble St. could help create a north-south bike facility, or shoulder widening along Old Stockbridge Rd.

Narrow and Constrained Roadways

Most roadways in Lenox are narrow and constrained by existing development, topography, wetlands, vegetation and other conditions. This limits the ease with which nonmotorized facilities could be added to existing roadways, and greatly increases the cost that would be required to do so. Despite this, some of the Town's popular road cycling routes are along its winding and scenic drives. It is also a key factor in why cycling and pedestrian infrastructure is not currently found on more town roadways.

Speeding Vehicles

High vehicle speeds can deter pedestrians and cyclists from using the roadway, particularly where no nonmotorized facilities are present. Several engineering studies throughout town found that, in each area studied, most vehicles exceeded the speed limit, including East Street and in the Village. The Town recently (summer 2017) installed a speed limit feedback sign on the southbound lane of Main Street at the bottom of the hill. If the sign is accepted by residents the town should invest in additional feedback or other traffic calming measures that slow vehicle speeds and increase safety for all users.

Travel and Tourism

Lenox is known regionally as a health and wellness, historic, cultural, and commercial destination. Vehicular traffic increases significantly an many local roads during the summer months, increasing the need for safe routes for pedestrians and bicyclists. The town features several large gilded era great estates, many of which have been converted, or are in the process of being converted into hotels and lodging. The town should ensure that lodging and destinations are connected via an nonmotorized transportation network that will allow for healthy transportation choices by residents, as well as connect visitors with town destinations.

Linear Gaps

Linear gaps are considered "missing links" where greater than ½-mile of bike/pedestrian facilities are desired but do not currently exist or are not currently adequate if they do exist based on existing/future demand. Generally, these are areas that are main travel corridors or desirable in connecting residential areas to key activity centers.

Major linear gaps identified by the Complete Streets Working Group include:

1. Gap in sidewalk along Hubbard St. west of Rt. 7/20 and nonexistent east of Rt. 7/20
2. Gap in sidewalk along Route 7/20 south of Holmes Road intersection
3. Over half a mile of fair condition sidewalk along Main St.
4. Current gap in nonmotorized facilities between village centers of Lenox Village and Lenox Dale. However, major proposed reconstruction along Walker St. is expected to reduce this gap.
5. East Street, a major commuter route between Lenox and Pittsfield, has almost no sidewalk north of the Housatonic Street intersection.

Location-specific Gaps and Barriers

Location specific gaps and barriers are either point-specific locations such as a lack of a crosswalk or ADA ramps, or an entire intersection that presents a barrier to nonmotorized travel and is unsafe for vulnerable users. This might be due to inadequate crossing treatments, confusing geometry, long crossing distances, lack of crosswalks or traffic control devices. Generally, these are areas that provide access to or within major destinations or are desirable in connecting residential areas to primary activity centers.

Route 7

Route 7/20 travels north/south, bisects the entire town, and is a daunting roadway for nonmotorized users to cross. There are only three crosswalks with pedestrian signals available along the approximately 5.5 miles of this road: at the Housatonic Street intersection, Lenox Shops and at the Lenox Center Shops. Intersections that already are signalized such as Plunkett, Walker, New Lenox and Holmes Road would be good sites for pedestrian-activated signals. All of these intersections are on sections of the road that are owned and maintained by MassDOT. Pedestrian crossings at other road intersections would require traffic and safety studies, particularly where the existing speed limits are 45 or 55 mph.

Sidewalk Condition

For a map of existing sidewalk and sidewalk condition, please refer to **Figure 3.9** in the **Existing Conditions Section**. Of the 15.13 miles of sidewalk network, most are in good or excellent condition. However, around a sixth of all sidewalk miles are in fair or poor condition. (see **Table 4.1**).

Table 4.1 Lenox Sidewalk Condition by Mile

Condition	Mileage	% of Sidewalk
Excellent	5.43	35.9%
Good	7.39	48.8%
Fair	1.74	11.5%
Poor	0.57	3.8%
Total	**15.13**	**100.0%**
Note: Lengths are length of street, not actual sidewalk. Sidewalk lengths may be twice the calculated length if located on both sides of roadway		

Sidewalks that are in fair or poor condition, representing sidewalks most in need of repair or replacement in Lenox include sidewalks along Cliffwood St., upper Main St., Housatonic St., Tucker St., and lower Walker St. The street through Morgan Manor is in fair condition, but it is not a town-owned street (see **Table 4.2**).

Table 4.2 Sidewalk in Fair and Poor Condition

Sidewalk Segment	Mileage	Length
Cliffwood Street	Fair	263.60
Cliffwood Street	Poor	1,743.10
Fairview Avenue	Poor	322.75
Housatonic Street	Fair	1,152.88
Main Street	Fair	3,409.33
Mill Street	Fair	210.79
Morgan Manor	Fair	684.81
Old Stockbridge Road	Fair	178.43
Pittsfield Lenox Road / Route 7	Fair	1,284.88
Tucker Street	Fair	1,317.06
Tucker Street	Poor	475.76

Sidewalk Segment	Mileage	Length
Walker Street	Fair	670.20
Walker Street	Poor	492.34
Note: Lengths are length of street, not actual sidewalk. Sidewalk lengths may be twice the calculated length if located on both sides of roadway		

Sidewalk Gap Analysis

BRPC mapped locations of existing sidewalk and identified gaps within the network (**Figure 4.1**). Gaps were identified by connecting two segments of existing sidewalk through the shortest possible route. This method does not examine existing conditions, such as Right-of-Way width, existing topography or wetlands that will affect potential construction. Moreover, gaps were only assessed from street to street or along streets containing a large sidewalk gap along both sides. Smaller sidewalk gaps, such as a gap in sidewalk along one side of a street, where sidewalk on the opposite side is continuous, were not identified.

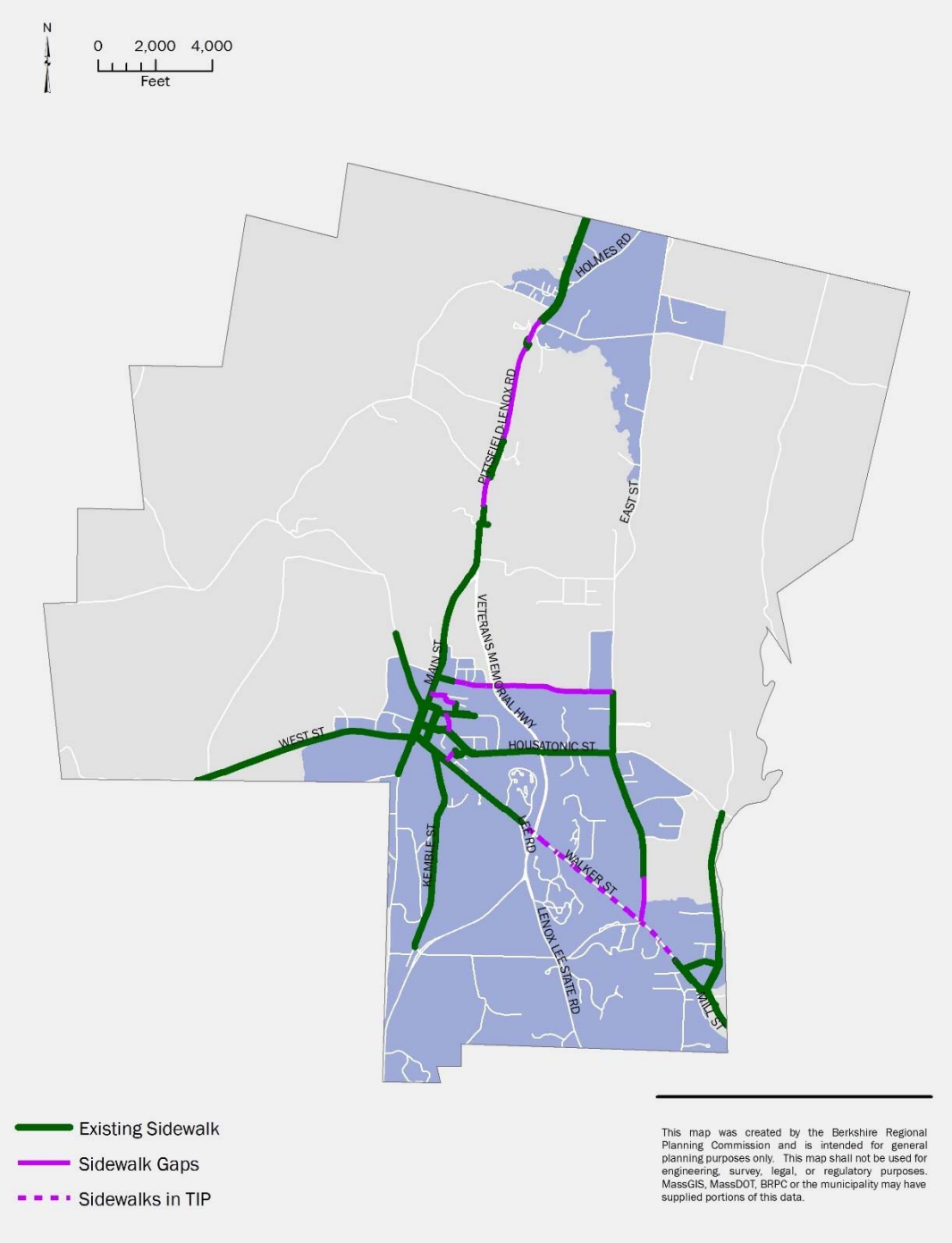
Currently, sidewalk along Walker St. is proposed as part of the FY 2018 Transportation Improvement Program (TIP). Once constructed, this section of sidewalk will help create a major pedestrian connection between Lenox's two village centers. Other notable gaps include Hubbard St., along much of Route 7/20 and southern East St. For other identified gaps see **Table 4.3**.

Table 4.3 Sidewalk Gaps

Sidewalk Gaps	Feet
Pittsfield Lenox Road (Route 7)	5,190.96
Hubbard Street	5,512.76
Saint Ann's Avenue	599.75
Hillside Drive	504.37
Ore Bed Road	674.74
Morgan Manor	368.68
East Street	1,592.01
Walker Street*	7,159.75
*currently a gap, however sidewalk is proposed for this location	

Although not identified as a gap, the lack of sidewalk along the southern section of Old Stockbridge Road has been noted by Town officials. If Elm Court is developed into a resort, a sidewalk extension from Hawthorne Street to the new resort is being planned. Extending the sidewalk further south along Old Stockbridge Road and Frothingham to connect to the existing sidewalk on Kemble Street would create a walking loop that would connect and provide alternate transportation between several tourist destinations and Lenox Village Center.

Figure 4.1 Sidewalk Gaps



Sidewalk Barriers

The 2017 Lenox Dale Walk Audit noted barriers in the sidewalk along Elm St. in Lenox Dale caused by utility poles being located directly in the middle of a narrow sidewalk.

Intersections

Several intersections in Lenox were identified by the Complete Streets Working group as being unsafe for both drivers and pedestrians and in need of possible redesign and reconfiguration. Many of these intersections are currently in a "Y" configuration, where two roadways meet at an acute angle. Reconfiguring and redesigning these intersections to make the roadways meet at a 90º (right) angle could help to improve safety for drivers as well as reduce the distance needed to cross the intersection for pedestrians. The Federal Highway Administration (FHWA) states that:

> *"there is broad agreement that right-angle intersections are the preferred design. Decreasing the angle of the intersection makes detection of and judgments about potential conflicting vehicles on crossing roadways much more difficult. In addition, the amount of time required to maneuver through the intersection increases, for both vehicles and pedestrians, due to the increased pavement area"*[24]

Right angle intersections can also provide a measure of traffic calming by preventing drivers from treating Y-intersections as a "yield" or "merge lane" by requiring them to complete a full stop before proceeding through the intersection. Some intersections in Lenox that could benefit from reconfiguration or general safety improvements include:

Main St. (Rte. 7a) / West St. (Rte. 183) / Walker St.

The intersection of Main St., West St., and Walker St. is a complex intersection that surrounds the Paterson-Egleton Revolutionary War Monument[25]. Navigating the intersection has been reported to be confusing for both pedestrians and drivers. Possible intersection reconfiguration has been noted in several plans and studies including the 2017 Beta Engineering Downtown Monument Intersection Study, 2016 Village Center Walk Audit, 2008 Village Center Improvement Plan and 2003 Downtown Transportation Management Study. See **Figure 4.2**.

Figure 4.2 Intersection of Main St. (Rte. 7a) / West St. (Rte. 183) / Walker St.

[24] https://www.fhwa.dot.gov/publications/research/safety/humanfac/01103/ch1.cfm
[25] http://www.waymarking.com/waymarks/WMH8W0_Paterson_Egleston_Monument_Lenox_MA

Main St. and Cliffwood St.

Main St. and Cliffwood St. is a Y-shaped intersection in Lenox's village center. The 2003 Village Center Improvement Plan recommended realigning this intersection to make Cliffwood align with Main St. at a right angle and close off the extension of Franklin St. immediately north of this intersection. Doing so would likely have some benefits, including reducing pedestrian crossing distance and increasing the area of Triangle Park. See **Figure 4.3**

Figure 4.3 Intersection of Main Street and Cliffwood St.

Lee Rd. and Walker St. (Route 183)

The intersection of Lee Rd. and Route 183 includes a short section of one-way lane for vehicles turning onto Lee Rd. from Route 183 that meets two-directional travel along Lee Rd. Lee Rd. also intersects Route 183 immediately southeast of the one-way vehicle lane at approximately a right angle. Elimination of the short section of one-way lane would reduce pedestrian crossing distances while likely slowing traffic from Route 183 turning on Lee Rd. See **Figure 4.4.**

Figure 4.4 Intersection of Lee Rd. and Walker St. (Route 183)

Ore Bed Rd. and Housatonic St.

The intersection of Ore Bed Rd. and Housatonic St. is a Y-shaped intersection near the village center (see **Figure 4.5**). Reconfiguration of this intersection into "T" would reduce pedestrian crossing distance and complexity. As Ore Bed Rd. is a low volume local roadway, reconfiguration might not be a high priority for the town.

Figure 4.5 Intersection of Ore Bed Rd. and Housatonic St.

Old Stockbridge Rd. and Hawthorne St.

The intersection of Old Stockbridge Rd. and Hawthorne St. is another Y-shaped intersection in town. Reconfiguring this intersection into a "T" would reduce pedestrian crossing distance and complexity.

Figure 4.5 Intersection of Old Stockbridge Rd. and Hawthorne St.

Cliffwood and Greenwood St.

Another Y-shaped intersection is the intersection of Cliffwood and Greenwood St. Reconfiguring this intersection would reduce pedestrian crossing distance and complexity. See **Figure 4.6**

Figure 4.6 Intersection of Cliffwood and Greenwood St.

Walker St. / Crystal St. / Mill St.

The intersection of Walker St. / Crystal St. / Mill St. is controlled via an existing stop sign for northbound traffic on Mill St. Generous turning radii and a lack of crosswalks and curb ramps at this intersection make it difficult for pedestrians to navigate and create long crossing distances. During planning work, Crystal St. was repaved by the town and a crosswalk was added near the existing bus stop on Crystal St. See **Figure 4.7**

Figure 4.7 Intersection of Walker St. / Crystal St. / Mill St.

Catherine St. and Golden Hill Rd.

The intersection of Catherine St. and Golden Hill Rd. was identified in the summer 2017 Lenox Dale Walk Audit as having limited sight distances and steep grades which can make pedestrian navigation a challenge. Addition of sidewalks near this intersection might help to separate pedestrian and vehicle travel and reduce potential conflicts. See **Figure 4.8**

Figure 4.8 Intersection of Catherine St. and Golden Hill Rd.

5. GENERAL RECOMMENDATIONS AND POTENTIAL IMPROVEMENTS

This section outlines some general recommendations that are not site-specific and may occur at a higher level than the project level. These recommendations are intended to outline opportunities to support Complete Streets in Lenox and are known as the "5 E's."

Engineering + Design

This element broadly covers some of the design and engineering recommendations that will enhance multimodal accommodations, and encourage people to utilize active modes.

Complete Streets improvements can come in many forms, whether signage or entire sidewalks, the different elements are based on their context and needs. Improvements are for a variety of modes, whether motorists, cyclists, or pedestrians, Complete Streets are for everyone.

Below are recommendations for general and specific improvements to the transportation network that support Complete Streets principles and goals. Recommended projects that were also included on the town's Tier 2 list have been noted throughout this section. Any improvements will likely need design and/or engineering and it is encouraged that the town reference the following detailed best practices, as applicable, which include but are not limited to:

- MassDOT Project Development and Design Guide
- FHWA Manual of Uniform Traffic Control Devices (MUTCD)
- AASHTO A Policy on the Geometric Design of Highways and Streets
- NACTO Urban Street Design Guide
- NACTO Urban Bikeway Design Guide
- NACTO Transit Street Design Guide
- ITE Designing Walkable Urban Thoroughfares: A Context Sensitive Approach
- US Access Board Streets and Sidewalks Guidelines
- AASHTO Guide for Planning, Designing, and Operating Pedestrian Facilities
- National Complete Streets Coalition Resources

These improvements may be paid for by a variety of funding sources, which include but are not limited to:

- MassDOT Complete Streets Funding Program
- Chapter 90 Funds
- MassWorks Grants
- Federal TIP Funds (STBGP, CMAQ, TA Set-Aside, etc.)

General Multimodal and Nonmotorized Recommendations

Continue Participation in the Regional TIP

Lenox has successfully funded several major projects through the regional TIP in recent years. The TIP requires that communities fund design and engineering work; however, when the project can be scheduled and programmed, construction is fully funded. While projects can sometimes take years to make it into the TIP program, it is a way to fund expensive and complicated transportation projects. The Town should continue investments in design and engineering for its federal aid-eligible roadways to ensure they are competitive on the regional TIP.

Further Activate the Village Center

The Town would like to ensure that Lenox Village is a vibrant, exciting place to be in all four seasons, not just the peak tourist season between Memorial Day and Columbus Day. At the same time the Town needs to improve walkability and pedestrian safety during the extremely busy July-August season, when vehicular and pedestrian traffic are especially busy and congested.

Continue to Pilot Temporary Complete Streets Interventions in the Village Center

As part of work for this project, and in conjunction with the public forum, Lenox organized and implemented two Complete Streets pilot projects in the summer of 2017. The first utilized Walkyourcity.org[26] to install 19 temporary wayfinding signs throughout the village center. The signs primarily direct pedestrians from the village center to surrounding destinations such as Tanglewood, Shakespeare & Co., and Ventfort Hall. The town also wished to guide residents and visitors to Ore Bed Park and playground on Ore Bed Rd., which is only a short distance from Church St.

The second pilot project installed temporary curb extensions or "bump-outs" at two crossings along Main St. The bump-outs were installed using traffic cones, and were intended to provide a safe area for pedestrians to see around parked cars so that they could safely cross Main St. as well as slow vehicle traffic along Main St. and reduce pedestrian crossing distances.

Overall, the response to the curb extensions and temporary wayfinding was fairly positive. The town organized a online survey using Surveymonkey.com to gather feedback about the installations. Of 19 individuals who responded to the survey question regarding the curb extensions, 14 or 73% chose the response *"I believe that curb extensions or "bump outs" would be good at key crosswalks on Main and Walker Streets."* Of 20 responses to the question about the temporary wayfinding, 11 or 55% of respondents chose the response *"I have seen them and like the idea."*

Figure 5.1 Temporary Wayfinding Signs 2017

[26] https://walkyourcity.org/

Figure 5.2 One of Two Temporary Curb Extensions Installed on Main Street 2017

Build a Temporary Parklet in an Existing Parking Space

The town could collaborate with local schools, designers, and other organizations to construct a temporary parklet or other public space that would transform an existing parking spot for a temporary period. While the town would lose one available parking space for a time, the temporary space could be used to expand outdoor dining, promote other local business, or simply create an attraction to generate interest in the village center area, particularly during summer months. Municipalities around the globe participate in similar activities as part of Park(ing) Day[27], held yearly on the third Friday of September.

The Town of Lexington Ma. Creates a temporary parklet from several parking spaces during summer months. The parklet creates space for bike parking and outdoor dining adjacent to a bike shop and café. Pedestrians are buffered from traffic by tall steel planters (see **Figure 3.28**). The parklet is removed during winter months.

Figure 5.3 Temporary Parklet in Lexington, Ma

[27] http://parkingday.org/

Consider Low Cost Traffic Calming at the Intersection of Housatonic and Church St.

The WalkBoston Audit of the village center noted that issues with pedestrians failing to use crosswalks near the intersection of Church and Housatonic St. Both the paving pattern through the intersection, as well as flush curbs in this location can make it confusing for pedestrians to know where to cross. In the summer months, Church St. is well used by pedestrians, much to the dismay of some drivers. The town should continue to stripe existing crosswalks so that they are visible. The town might also consider installing large flower pots along sidewalks near this intersection or place in-street pedestrian yield signs (**Figure 5.4**) at intersection crosswalks to provide traffic calming for vehicles.

Figure 5.4 In-street Pedestrian Yield Sign (MUTCD R1-6)

Wayfinding

Wayfinding is an important element that supports all modes. Ensuring all users of the transportation system can easily navigate the network is critical to the use of nonmotorized and motorized travelers. In the Town of Lenox, the recommendation is to include wayfinding signage for popular walking loops as well as to help nonmotorized users navigate between town amenities, public facilities, major destinations and other attractions in Lenox. Wayfinding can also educate residents and visitors about aspects of town including cultural, historic, and environmental features. A wayfinding system could encourage residents to walk for exercise, or to walk instead of drive to businesses and services in the town center.

Moreover, developing a town wayfinding system is a unique opportunity to "brand" the town as part of economic development activities and creates a coordinated system for navigating the area. Wayfinding can create a consistent and distinct system that conveys the town's "story" and "personality" to visitors.

Typically, wayfinding systems include simple directional signage as well as detailed "nodes" that convey more in-depth information, such as through interpretive signage or kiosks. These signage systems and locations are unified through design elements such as fonts and typography, imagery, and color scheme. The town should consult a designer who will assist the town in developing a wayfinding system and in planning sign locations and content. Additionally, wayfinding content, such as maps, should be integrated into the town's website to ensure that visitors can use mobile phones to navigate the town and explore destinations online before visiting the community.

A conceptual town-wide wayfinding system has been included in the Tier 2 plan as *Project 7*.

View Every Repaving Project as an Opportunity to "Complete the Street"

During every repaving project, the town should assess the condition of the existing sidewalk, the width of the existing lanes and shoulder, streetscape amenities (trash receptacles, trees and shrubs, bike racks, lighting, wayfinding signs, etc.) and determine if low cost improvements could be added to each project. Additionally, shoulder widening and lane narrowing are crucial ways to improve cycling and walking on roadways that do not have dedicated nonmotorized facilities like sidewalks or bike lanes.

Paved shoulders have benefits for vehicle drivers, cyclists and pedestrians. Shoulders are often an option to accommodate nonmotorized travelers in low density areas where dedicated facilities aren't feasible. Wide shoulders are shown to increase the safety for nonmotorized travelers by separating them from the vehicle lane, although there is the potential that with wider shoulders, speeds can increase. Cyclists report feeling more comfortable having extra space that is outside the vehicle lane, and an extra 4-6 feet can provide them with precious separation from moving vehicles.

The Town of Lenox should evaluate the usage of wider shoulders to accommodate bicycle and pedestrian travelers where dedicated facilities are infeasible. Providing paved shoulders as part of routine resurfacing, restoration, rehabilitation, and/or reconstruction work on roadways is a way to implement the Lenox Complete Streets Policy given due consideration. Based on guidance from MassDOT, shoulder widths to accommodate pedestrians and cyclists should be at least 4' wide for a Case 4 Shared Bicycle/Pedestrian Accommodation.

Many paved roadways in Lenox are not striped to delineate vehicle lanes and road shoulders. The town should stripe its paved roadways to delineate lanes and shoulders more clearly. Pavement striping is one of the cheapest ways to reduce vehicle speeds and in areas without dedicated pedestrian and cycling facilities, can help to define the road shoulder for these users. Consider also lane widths throughout town. For collector type roads, the FHWA and MassDOT note that vehicle lane widths can range from 10-12' in width[28,29]. For local roadways, guidance from these agencies notes that lane widths can be 9-12' in width.

Jeff Speck is one designer who has been working to make "10 not 12" the new mantra for lane width in urban areas. Mr. Speck visited North Adams and Williamstown in 2015 as part of an MCLA lecture series and to promote his work on urban walkability.[30] Writing in a recent article for Atlantic Magazine's online publication CityLab,[31] Speck urges municipalities to move toward a 10' lane width standard that will reduce pedestrian crossing distances and make it easier to fit bike lanes on existing roadways. Speck cites the American Association of State Highway and Transportation Officials (AASHTO) Green Book (A Policy on Geometric Design of Highways and Streets) which states that:

> *For rural and urban arterials, lane widths may vary from 10 to 12 feet. 12-foot lanes should be used where practical on higher-speed, free-flowing, principal arterials. However, under interrupted-flow (signalized) conditions operating at lower speeds (35mph or less), narrower lane widths are normally quite adequate and have some advantages[32].*

As most speed limits in the village center are relatively low (35 mph or below), lane widths can likely be reduced significantly, providing additional room for dedicated bicycle facilities or, at a minimum, wider

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[28] https://www.massdot.state.ma.us/Portals/8/docs/designGuide/CH_5_a.pdf (See Exhibit 5-14)
[29] http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter3/3_lanewidth.cfm (See Table 3)
[30] http://www.mcla.edu/About_MCLA/news_events/pressrelease/2015September/jeff-speck-to-give-presentations
[31] http://www.citylab.com/design/2014/10/why-12-foot-traffic-lanes-are-disastrous-for-safety-and-must-be-replaced-now/381117/
[32] AASHTO. A Policy on Geometric Design of Highways and Streets, pg. 473, AASHTO, Washington, D.C., 2004.

shoulders for both cyclists and pedestrians. The city should contact an engineer to verify appropriate lane widths before future repaving or restriping projects.

Potential shoulder widening projects identified by the Working Group include:

- Shoulder widening from the end of existing sidewalk to the entrance of Kennedy Park along Cliffwood St. (*Project 6*)
- Housatonic St., to support new bike lanes (federal-aid ineligible portion of this roadway is listed as *Project 11*)
- Old Stockbridge Rd. and Frothingham Crossing, to support new bikes lanes (*Projects 12 & 16*)
- Along East St., as part of future reconstruction (*Project 13*)
- East New Lenox Rd., as a possible way to connect future shared-use paths in Lenox and Pittsfield (*Project 15*)
- Along portions of Plunkett St., to provide a nonmotorized connection to The Mount (*Project 24*)

Potential restriping projects include:

- Striping of Undermountain. to calm traffic and delineate shoulder for nonmotorized users (*Project 17*)
- Restriping of Kemble St. to provide bike lanes (by MassDOT) (*Project 33*)
- Restriping and narrowing of lanes on upper Main St. to calm traffic (*Project 38*)
- Restriping of Crystal St. to provide a one-way bike lane (*Project 40*)

Use the 2016 Municipal Modernization Act to Reduce Speed Limits in Key Areas and Prioritize Nonmotorized Users

The Town should consider lowering speed limits in specific areas where pedestrian safety may be at risk. Studies have correlated increased risk of injury or death with rising vehicle speeds. Risk of death from a collision at 23 mph is only 10%. However, as vehicle speed increases to 32 mph, the risk of death during a collision increases to 25%, and at 42 mph rises to 50%.[33] Moreover, high vehicle speeds can act as a deterrent to potential pedestrians and cyclists.

The 2016 Municipal Modernization Act[34] gives municipalities greater flexibility and control over reducing speed limits and establishing 20 mph "safety zones" on local roadways. Municipalities can now opt-in to the statutory 25 mph limits on local roadways within a "thickly settled" area or business district without conducting a traffic study. MGL Chapter 90, Section 1 defines a thickly settled or business district as, "the territory contiguous to any way which is built up with structures devoted to business, or the territory contiguous to any way where dwelling houses are situated at such distances as will average less than two hundred feet between them for a distance of a quarter of a mile or over.[35]" Additionally, safety zones of 20 mph can be established near adjacent to land uses where "where vulnerable road users are likely to be present" – such as parks and playgrounds, senior housing and centers, hospitals and medical facilities, high schools and higher education centers, and daycare facilities.[36] Pursuing a 25 mph statutory speed limit in areas of the city would not alter the speed limit on roads with "special speed regulations" – essentially those roads with existing posted speed limits. The City of Pittsfield recently utilized the new legislation to reduce

[33] https://www.aaafoundation.org/sites/default/files/2011PedestrianRiskVsSpeed.pdf
[34] http://www.mass.gov/dor/docs/dls/city-town/2016/16ctown-aug18.pdf
[35] http://www.massdot.state.ma.us/highway/Departments/TrafficandSafetyEngineering/SpeedLimits/FrequentlyAskedQuestions.aspx
[36] http://www.massdot.state.ma.us/highway/Departments/TrafficandSafetyEngineering/SpeedLimits/FrequentlyAskedQuestions.aspx

speed limits along North St.[37]. Refer to **Figure 3.8** for mapped speed limits throughout town. Most "unknown" speed limits are likely statutory speed zones where the town could pursue a reduced 25 mph speed limit.

Reconfigure Key Intersections to Reduce Complexity and Pedestrian Crossing Distance

As discussed in the **Needs** section, intersections can be reconstructed to improve safety and visibility as well as reduce pedestrian crossing distance and the overall complexity of the intersection. In Lenox several intersections could benefit from reconstruction, with the end goal of changing these "Y"- or other-shaped intersections into safer 90º (right) angle, or "T"-shaped intersections. Priority intersections identified by the Lenox Complete Streets Working group for reconstruction or other safety improvement include:

- Intersection of Main St. (Rte. 7a) / West St. (Rte. 183) / Walker St. (*Projects 1 & 2*)
- Intersection of Main Street and Cliffwood St.
- Intersection of Lee Rd. and Walker St. (Route 183)
- Intersection of Ore Bed Rd. and Housatonic St.
- Intersection of Old Stockbridge Rd. and Hawthorne St.
- Intersection of Cliffwood and Greenwood St.
- Intersection of Walker St. / Crystal St. / Mill St.
- Intersection of Catherine St. and Golden Hill Rd. (*Project 35*)

Advocate for Complete Streets Improvements on State Roadways

Several projects on state owned roadways were scored and ranked during the planning process to see how these projects compared to others in the community. The town should advocate to MassDOT to advance and construct these projects. The Town of Lenox should submit these projects, in writing, to the District 1 Highway Director.

- Installing crosswalks and pedestrian activated signals at the intersection of Route 7 with Hubbard St., Kemble St., and Walker St. (*Project 3*)
- Constructing new sidewalk along Route 7 at the northern end of town to eliminate existing gaps (nearly 1 mile in total). (*Project 28*)
- Lane narrowing and installation of speed feedback signs near the intersection of upper Main St. with Route 7. As well as restriping Kemble St. with bike lanes. (*Projects 33 &38*)

Cycling Recommendations

Consider Shared-Lane Markings or "Sharrows" and Advisory Bike Lanes as a way to Accommodate Cyclists on Narrow Roads

Sharrows are a relatively new pavement marking intended to increase safety for cyclists, however while they function as an accommodation, they should not be seen as bicycle facility. According to FHWA, they "help convey to motorists and bicyclists that they must share the roads on which they are operating"[38]. Sharrows are typically spaced every 250' along a roadway and are not recommended along roads where the speed limit is 35 mph or higher. Along roads with on-street parking, sharrows are typically located 11' from the face of curb to prevent conflicts between cyclists and vehicle doors and 4' from the face of curb on roads with no on-street parking.

[37] http://www.berkshireeagle.com/stories/pittsfield-trims-speed-limit-on-north-street-from-30-to-25-mph,498393
[38] https://www.fhwa.dot.gov/publications/research/safety/pedbike/10041/10041.pdf

Sharrows have several uses. They can help improve bicycle positioning relative to parked cars and indicate the preferred path of travel. Sharrows also help to close gaps between other bicycle infrastructure, such as two sections of bike lane that cannot be connected due to lack of available space. Another common use for sharrows is along on the downhill lane of a roadway that that has one uphill bicycle lane. Finally, sharrows are often used on roadways were vehicle speeds are relatively low, and help facilitate the "shared" roadway condition that gives them their name.

Sharrow installations and the research surrounding them have seen mixed benefits. Evaluation of sharrow use by the FHWA found that cyclists using streets installed with sharrows stayed further from the curb and further from parked vehicles, reducing the potential for injury and conflicts. Vehicles traveling along roadways with sharrows also tended to stay further away from the curb.

However, a recent study of cycling infrastructure in Chicago revealed few if any safety benefits for cyclists resulting from sharrow installation. In fact, the researchers found that "injuries in blocks with sharrows only declined about 20 percent—less of a decrease than occurred in Chicago blocks where no bike infrastructure was created at all, nearly 37 percent."[39] This research indicates that sharrows should not be used indiscriminately, and are not a substitute for actual cycling infrastructure such as bike lanes or shared-use paths. As one resources notes "the sharrow is a great new tool, but it should be used intelligently. We should be prudent about using this new option so that it continues to be a sharp tool in our bikeway toolbox.[40]

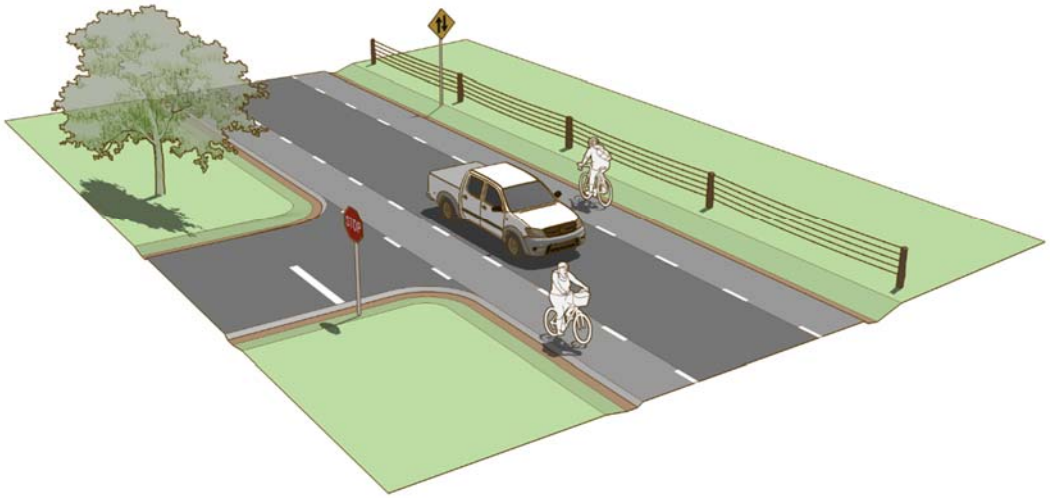
Advisory Bike Lanes are an emerging road treatment in North America. This treatment consists of a two-way vehicle lane with dashed bike lanes. The two-way vehicle lane lacks a center line or stripe dividing it into two traffic lanes. Generally, the vehicle lane is much narrower than on conventional roadways. On either side of the roadway is a bike lane, delineated from the vehicle lane by dashed lines. When approaching oncoming motor vehicles, motorists must merge into the Advisory Bike Lane. If a bicyclist is present, motorists must slow and yield to bicyclist traffic prior to entering the Advisory Bike Lane.[41] See **Figure 5.4a** for a diagram of Advisory Bike Lanes.

Advisory Bike Lanes are currently allowed as an experimental traffic control device by FHWA. To install them, municipalities must seek approval prior to construction. While installing Advisory Bike Lanes is cheap, consisting only of paint and signage, there are limits to their application. Design guidance states that "Advisory Bike Lanes may operate best on streets that are straight with few bends, inclines, or sightline obstructions. Motorists must have a clear sight distance of oncoming vehicles.[42]" Moreover, they are best applied to low-volume (< 5000 ADT), low-speed roadways (35 mph or slower).

Along with sharrows, Advisory Bike Lanes could make up components of a robust bicycle network within Lenox, given the existing constraints imposed by topography, limited resources, and other existing conditions.

[39] https://www.citylab.com/solutions/2016/02/sharrow-safety-bike-infrastructure-lane-chicago/460095/
[40] http://www.bikede.org/2011/03/14/four-solid-uses-for-sharrows/
[41] http://altaplanning.com/wp-content/uploads/Advisory-Bike-Lanes-In-North-America_Alta-Planning-Design-White-Paper.pdf
[42] http://altaplanning.com/wp-content/uploads/Advisory-Bike-Lanes-In-North-America_Alta-Planning-Design-White-Paper.pdf

Figure 5.4a Advisory Bike Lanes



Consider Shoulder Widening as part of future TIP Projects or other Major Reconstruction to add Bicycle Facilities to Existing Roads

Lenox has many narrow roadways where existing lane widths cannot be reconfigured to accommodate bicycle lanes or other facilities without significantly widening the roadway. Shoulder widening can be an expensive construction task, particularly when grades and topography around roads are steep and constrained. The town has widened roads as part of major reconstruction work, generally funded through federal TIP allocations, and has added, and is planning on adding bicycle lanes as part of planned TIP projects. Currently Walker St. is programmed in the regional TIP, and the town is investing in design that will have Housatonic St. listed as well. This means that only Main St. and East St. will remain as major federal-aid eligible roadways in town that are under local control that have not been reconstructed or are being considered for future reconstruction.

Reactivate Plans for a Shared-Use Path in Lenox

Lenox had plans for a shared-use path between Housatonic St. and New Lenox Rd, running roughly parallel to and between East St. and the Housatonic River. The path was also planned to run along Housatonic St. (east of its intersection with East St.). The town received grant funding for the construction of the path. However, due to concerns from residents living along Housatonic St., the path was never constructed.

The neighboring communities of Lee and Pittsfield are advancing projects for shared-use paths. Pittsfield plans to extend the existing Ashuwillticook Rail Trail south from its existing terminus to Crane Ave. This project is currently scheduled for FY2019 in the most recent TIP. Additionally, Lee plans to construct a new section of path from the Stockbridge town line northeast to West Park St. Construction of this section of path is currently scheduled for FY2020 in the TIP. Planning and design are currently underway to advance another section of an off-road the path West Park St. West Center Street, with hope of eventually find a route to the Lenox town line in Lenox Dale. While an off-road route is years away, bicyclists may begin to bicycle from downtown Lee towards Lenox Dale on local roads. The Lee Bikeway Committee are considering on-road routes that travel up Mill Street to the center of Lenox Dale, or veer off Mill Street and travel past October Mountain State Forest campground along Woodland Road to Woods Pond. These advancing plans and pathway sections mean that Lenox could become a gap in a regional shared-use path network in the next few years. The town should reactivate plans for a shared-use path and explore whether

existing plans could be modified to create bicycle/walking connections to Lee and Pittsfield. Outreach to residents and landowners along potential routes should be conducted early in the planning process to alleviate concerns. If a route could be found that is agreeable to residents, the Town should consider identifying funding for engineering design. Construction funding could be advanced through the regional TIP process.

Placeholder projects to support a future shared-use path are listed in the Tier 2 plan as *Projects 8, 9, and 15*.

Ensure Bike Parking and Amenities at Town Facilities and Open Space Areas

Bicycle parking is a key street furnishings element to the usability of bicycles for transportation. If there is nowhere to safely park a bicycle, people will be less likely to rely on it for transportation. Bicycle parking is good to have in in village center areas for visitors to shops and restaurants. There are many options for bicycle parking, and for reference see the Association of Pedestrian and Bicycle Professionals' *Essentials of Bike Parking.*[43] Bicycle repair stations are another component of cycling infrastructure that include tools and an air pump for repairing or maintaining bicycles. Repair stations can help cyclists "in a pinch" who may not have a set of tools on hand, and show that the town is bike friendly and encourages cycling.

In Lenox, the recommendation is to provide bike parking at town facilities, and at access points to open space areas, such as major trailheads. The town should also consider installing a bike repair station somewhere in town, perhaps along the route of the New England Greenway. Bike parking has been included as part of *Projects 4 & 41*.

Pedestrian Recommendations

Calm Traffic and Enhance Crossings in the Village Center

Traffic calming takes elements of design and landscaping together to slow down cars and increase awareness of pedestrians and cyclists. This can improve nonmotorized safety, enhanced walkability, improved stormwater management, and contribute to the beautification of the natural character in rural areas. Traffic calming comes in many different forms and may include vertical deflections (speed humps or raised intersections), horizontal shifts (traffic circle or chicane), and/or roadway narrowing (choker or center island). These treatments are often accompanied by visual enhancements like trees, plantings, wayfinding, and/or street furniture. In Lenox, the recommendation is to explore use of speed feedback signs as a traffic calming tool in key areas where speeding has been an issue. Additionally, the town should consider permanent physical traffic calming measures, such as curb extensions and raised crosswalks in the village center.

[43] http://www.apbp.org/?page=publications

Speed Feedback Signs

Speed feedback signs, particularly newer or enhanced models can also collect data about roadways, such as total number of vehicles and the number of speeding and non-speeding vehicles that pass the sign. The new feedback sign on Main St. is a perfect example of what could be installed in other areas. Feedback signs can

Figure 5.5 Speed Feedback Sign

be powered via solar panel, AC power connection, or battery. In Lenox, the use of solar powered speed feedback signs will reduce maintenance needs and installation costs associated with use of either battery powered or AC powered signs respectively.

In the Town of Lenox, the recommendation is to include speed feedback signs at key locations, including:

- East St. near the high school and in advance of the intersection of Hubbard St. (*Projects 31 & 37*)
- Walker St. (likely to be installed after reconstruction) (*Project 32*)
- Main St. (southbound lane entering village center) (*Project 25*)
- Near the intersection of Main St. with Route 7 (will require MassDOT approval) (*Project 38*)

Curb Extensions and Raised Crosswalks

Curb extensions are sometimes referred to as "bulb-outs" or "bump-outs". These are areas where curb and sidewalk extend out into the roadway, usually the width of an on-street parking space. Curb extensions reduce the pedestrian crossing distance and also make pedestrians more visible to traffic by allowing them to move closer to vehicle lanes without actually stepping out into traffic. Curb extensions have also been found to slow and calm passing traffic. Often times they include streetscape features such as bollards and plantings which can help make them more aesthetically pleasing. Curb extensions are currently found along Church St. in Lenox, as well as in surrounding communities like Lee and Great Barrington (see **Figure 5.6)**.

Figure 5.6 Curb Extension

Raised crosswalks are another traffic calming feature that also enhance pedestrian crossings. Raised crosswalks are usually located mid-block and raise the entire wheelbase of a vehicle to reduce its traffic speed. The are often combined with curb extensions as a way to enhance pedestrian crossings while simultaneously reducing traffic speeds.

Figure 5.7 Raised Crosswalk in Cambridge, MA

Rapid Rectangular Flashing Beacons (RRFB)

RRFB are placed at unsignalized mid-block crossings. These beacons generally provide a button or motion activated flashing light that alerts drivers that pedestrians are using the crosswalk. They serve only as warning signs, and do not force driver compliance. However, they have been shown to effectively increase the rate of drivers yielding to pedestrians.

Figure 5.8 Rapid Rectangular Flashing Beacon

In the Town of Lenox, the recommendation is to include curb extensions, raised crosswalks and RRFB at key pedestrian crossing locations, including:

- Main St. (*Project 4*)
- Walker St. (*Project 5*)

Improve Pedestrian Lighting in Village Centers

As part of planning work, BRPC accompanied town staff on an evening walk through the village center to identify dark and poorly lit areas where lighting could be added. Pedestrian lighting can increase the perception of safety, with a recent study finding that white LED lighting made pedestrians feel safer than traditional yellow sodium lights.[44] Aside from safety concerns, enhanced pedestrian lighting allows for a greater range of evening activities for pedestrians, allowing them to use benches, sidewalks, and other amenities for an extended time. Lighting can also make simple navigation easier in the evening hours. Finally, lighting can improve actual safety for both pedestrians and motorists, such as at intersections and crossings. During the evening walk and lighting assessment, staff noted several areas where lighting could be improved. These areas include:

- Lilac Park: Near benches along west side of Main St. and near the cannon (*Project 26*)
- Roche Reading Park: Benches in front along east side of Main St. and along the pathway leading to the parking lot behind the library (*Project 26*)
- Parking lot behind Olde Heritage Tavern / Library: in the back corner (*Project 26*)
- Near Furnace Park in Lenox Dale (*Project 27*)
- Walker Street: At benches southeast of the Curtis (*Project 30*)
- Ore Bed Road: Along the road near Ore Bed Park. (*Project 29*)

Figure 5.9 Solar Powered Bollard Lights

The town should consider installing new light fixtures in these locations. The town should ensure new lighting is LED to keep energy costs down. Lighting should include photosensors so that they activate automatically during evening hours. Additionally, the town should ensure new lighting comes with timer controls so that lights dim or turn off after evening pedestrian activities generally cease (i.e. after most restaurants or other attractions close). New overhead lighting should provide full cut-off to avoid light pollution to neighboring properties. Installing lights that are consistent with the design of the historic lights along the Walker St/Church St/Housatonic St blocks would maintain the look and feel of the Town. Installing pedestrian bollard lights near benches would provide light for safe walking without excessively lighting the surrounding area.

[44] https://www.citylab.com/equity/2016/02/white-street-light-safe-study-granada/459702/

Maintain and Extend the Sidewalk Network

Sidewalks are a critical component of village areas and as such, ensuring pedestrian movement and access improves connectivity, improves public health and safety, and promotes increased economic development. Sidewalks should be vertically and horizontally separated from the roadway. It is desirable for a sidewalk through zone to be a minimum of 6 feet, although 5 feet is acceptable if right-of-way does not allow it. The minimum of 5 feet is due to ADA requirements, to ensure all ages and abilities can use the facility. In non-village centers it may be more advantageous to look at combining pedestrians and cyclists on a shared use path.

In the Town of Lenox, the recommendation is to install or repair/replace sidewalks in the following locations. Moreover, the town should review sidewalks in fair or poor condition listed in **Table 4.2** and replace these as funds become available.

- Cliffwood St. (rated as worst sidewalk in Lenox) (*Project 6*)
- East St., as part of any future reconstruction, and to fill a gap between existing sidewalk and Walker St. (*Project 10*)
- Repair sections of sidewalk (uplifted or cracked panels, etc.) in the village center, along Main, Walker, Church, Franklin, and Housatonic St. (*Projects 19-23*)
- Install sidewalk along Old Stockbridge Rd and Frothingham Crossing. If sidewalk is installed along Old Stockbridge Rd. and Frothingham Crossing, a nearly 3-mile walking loop would be created. Sidewalks along Old Stockbridge will also increase connectivity between the proposed Elm Court development and the village center. A short sidewalk spur along Plunkett Ave. would also provide pedestrian connectivity to The Mount. (*Projects 12, 16, 18, & 24*)
- Along Golden Hill Rd. from Walker St. to the intersection of Catherine St. (*Project 34*)
- Along Catherine St. from the intersection of Patterson Rd. to the intersection with Golden Hill Rd., to increase safety near this intersection. (*Project 35*)
- Along Elm St. in Lenox Dale (*Project 36*)
- Replacement of curb ramps and crosswalks along Crystal St. (*Project 39*)

General Maintenance

Once replaced or installed, it is important that sidewalks are cyclically maintained, including the maintenance and removal; of vegetation adjacent to the sidewalk to ensure it does not encroach or overhang the sidewalk.

Education

Education is an important component of implementing any new traffic pattern, nonmotorized infrastructure, or trail. Safety increases as more people become aware of the rules of the road (see Enforcement section below), and as options become safer people are more likely to use facilities. Educating residents and visitors is an important part of encouragement too (see below), as visitors may not be aware of new facilities, sidewalks, or trails connecting them to key destinations.

Encouragement

With new multimodal options, users must be encouraged to utilize multimodal infrastructure. Whether it is Bike to School day or a weekend walk to the library, the opportunities should be encouraged and highlighted so residents and visitors are aware of the multimodal options. Encouragement may mean designated a Bike to Work day, or distributing walking maps to residents that show where safe sidewalks, paths, or trails exist and connect to their key destinations.

Enforcement

Ensuring the rules of the road are enforced across all modes of transportation is an important component of ensuring safe travel for all. There are key violations that occur by vehicle drivers and cyclists which impact the safety of the road for everyone. Massachusetts General Law addresses some of the key rules of the road for motorists and cyclists across the Commonwealth, and enforcing these laws is important for vehicle drivers and cyclists alike. Cyclists must adhere to the rules of the road (ex. obeying traffic signals) and there are special regulations outlined in the Massachusetts General Law[45] that guide cyclist behavior:

- Cyclists may keep right when passing a motor vehicle moving in the travel lane.
- Cyclists must signal by either hand the intention to stop or turn, except when the use of both hands is necessary for the safe operation of the bicycle.
- Cyclists may ride on sidewalks outside of business districts when necessary in the interest of safety (unless expressly prohibited). When cyclists ride on sidewalks, they must yield the right of way to pedestrians and give an audible signal before passing any pedestrians.
- Cyclists riding together may not ride more than 2 abreast, but on a road with more than one lane in the direction of travel, must ride within a single lane.
- Cyclists must only ride on or astride a permanent seat attached to the bicycle, although passengers may ride on a permanent seat attached to the bicycle or in a trailer towed by the bicycle.
- Cyclists may not transport anyone between the ages of one to four (or weighing 40 pounds or less), on a bicycle except in a "baby seat." Cyclists may not transport any person under the age of one year.
- Cyclists and passengers 16 and younger must wear a helmet.
- Cyclists must give an audible warning whenever needed to insure safe operation of the bicycle, however the use of a siren or whistle is prohibited.
- Cyclists must park the bicycle in a manner as not to obstruct vehicular or pedestrian traffic.
- Cyclists cannot be drawn by another moving vehicle, nor can they town any other vehicle or person except when a bicycle trailer is property attached to the bicycle that allows for firm control and braking.
- Cyclists cannot carry a package/bundle except in or on a basket, rack, trailer, or other device designed for such purposes. The operator shall keep at least one hand upon the handlebars at all times.
- Bicycles must be equipped with a braking system that enables the operator to bring the bicycle traveling at a speed of 15 mph to a smooth, safe stop within 30 feet on a dry, clean, hard, level surface.
- Cyclists riding between one-half hour after sunset to one-half hour before sunrise, must display to the front of the bicycle a white light from a distance of at least 500 feet, and to the rear a red light or reflector visible for no less than 600 feet when directly in front of lawful lower beans of motor vehicle headlights.
- Cyclists riding between one-half hour after sunset to one-half hour before sunrise, must display a reflector on each pedal of the bicycle or, around each angle a reflective material visible from the front and rear for a distance of 600 feet.
- Cyclists riding between one-half hour after sunset to one-half hour before sunrise, must display a reflector on each pedal of the bicycle or, around each angle a reflective material visible from the side for a distance of 600 feet.

[45] [45] https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter85/Section11b

- Cyclists many not operate a bicycle in the public way with handlebars raised so that the operator's hands are above their shoulders while gripping them.
- Cyclists must report any accident involving either personal injury or property damage in excess of $100, or both, to the police department in the community in which the accident occurred.

Because bicycles are more commonly used as a mode of transportation for many people, it is important the rules of the road are understood and enforced. Additionally, there are laws[46] outlining motorist's responsibility as they relate to bicycle travel:

- Drivers of motor vehicles must slow down and pass cyclists at a safe distance and at a reasonable and proper speed.
- Drivers of motor vehicles that overtake and pass a cyclist proceeding in the same direction shall make a right turn at an intersection or driveway unless the turn can be made at a safe distance from the cyclist at a speed that is reasonable and proper.
- Drivers of motor vehicles approaching for a left turn on a two-way street must do so yielding the right of way to any vehicle approaching from the opposite direction, including a bicycle on the right of other approaching vehicles, which is within the intersection or so close thereto as to constitute an immediate hazard.
- Drivers and passengers of motor vehicles shall not open a door of the motor vehicle unless it is reasonable safe to do so without interfering with the movement of other traffic, including cyclists and pedestrians.

Evaluation

Per the Town of Lenox's Complete Streets Policy, it is important to integrate Complete Streets elements into the daily operations, planning, design, and implementation of transportation projects. To make this easier, the Complete Streets Working group developed a checklist for the Highway Department to refer to during the project development process

Context

- What is the adjacent land use? Are there any activity centers that might attract cyclists or pedestrians?
- What is the available right-of-way? How is it allocated by mode?
- What are the challenges for the project to address bicycle and pedestrian travel?

Function

- What is the functional classification of the roadway?
- What connections does the roadway provide?
- Are there options for nonmotorized users on/near the facility (ex. path, shared-use trail, sidewalk)?

Safety

- What is the crash history at or along the project area?
- Is there a high percentage of crashes involving nonmotorized travelers?
- Is there a difficult crossing or intersection for nonmotorized travelers?

[46] https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section14

Formalize a Complete Streets Review and Implementation Process

The Town of Lenox should formalize a review process that ensures its Complete Streets policy is implemented thoughtfully and carefully. During discussions of the Working Group, an outline of this capital planning process was developed. The Public Works Director should begin project proposals yearly by formulating a budget and identifying roadway needs. This initial project list should be reviewed by key staff members including the Town Manager, Town Planner, and others, such as the Selectboard. After this initial review, staff should organize a site visit to discuss potential complete streets improvements and evaluate other means to enhance the overall project value. Moreover, key staff members, such as the DPW director and Town Planner, should draft a yearly memorandum that evaluates implementation progress based on the performance measures listed in **Table 2.2** and describing each Complete Streets project.

Invest in Pedestrian and Cycling Counters to Drive Data-Based Transportation Decisions

A variety of pedestrian and cyclist counting products[47,48] exist today which free municipalities from total reliance on volunteer based counting methods. The town could purchase and install these counters at key locations such as the village center or Kennedy Park. Counters would allow the town to obtain continuous data about the number of individuals using sidewalks or traveling by bicycle. Additionally, it could supplement these counters using traditional hand counts organized with volunteers at regular intervals during the year.

6. PRIORITIZATION PLAN AND IMPLEMENTATION

Methodology

In an effort to develop a data-driven process to guide the prioritization of Complete Streets projects in Lenox, the Complete Streets Working group developed a planning framework that outlined: goals, performance measures, evaluation criteria/scoring, and weighting. This framework ensured the goals were measurable, and that scoring of the projects directly related to the plan's goals. The Working group was asked to weight and rank each goal, and that was integrated into the multi-criteria analysis used to prioritize the Town's improvements. Based on combined weighting and ranking scores from each working group member, projects related to the safety and connectivity goal areas received the greatest weight. Projects related to the goal area of context sensitivity were weighted the lowest. The planning framework matrix can be seen in **Table 6.1**

[47] http://www.eco-compteur.com/en/products/pyro-range/pyro-sensor
[48] https://www.trafx.net/products.htm

Table 6.1 Planning Framework Matrix

SYSTEM			PROJECT-SPECIFIC	
Goal Area/Theme	Goal	System Performance Measure	Project Scoring	Weight
Connectivity	Provide transportation choices by improving system connectivity within and between modes.	share of non-automobile commuters (ACS)	0 - does not address connectivity within or between modes 1 - addresses existing gap, barrier, and/or connectivity between modes 2 - addresses more than one existing gap, barrier, and/or connectivity between modes 3 - addresses more than two existing gaps, barriers, and/or connectivity between modes	1.93
Safety	Prioritize safety for all users of the transportation system.	total crashes by severity and mode	0 - project reduces or does not impact safety for users of the transportation system 1 - project addresses safety concern for vulnerable user (cyclist, pedestrian, etc.) 2 - project addresses safety concern for all users (drivers, vulnerable users, etc.) 3 - project addresses safety concern for all users and is in a Crash Cluster	3
Travel / Tourism	Prioritize projects that enhance the walkability and bikeability for visitors to Lenox by ensuring adequate connections to town destinations	annual number of projects adjacent to town destinations (parks, open space, great estates, hotels, etc)	0 - project does not address wayfinding, and is not adjacent or connect to a town destination 1 - project addresses wayfinding or is adjacent / connects to ONE town destination 2 - project is adjacent / connects to TWO town destinations 3 - project is adjacent / connects to THREE or more destinations	0.95
Livability	Increase the livability of Lenox by improving access to active mode facilities and/or transit service in Lenox	number of residents within 1/4 mile of a dedicated active mode facility	0 - not in a residential area 1 - in/adjacent to a low-density residential area 2 - in/adjacent to a medium-density residential area 3 - in/adjacent to a high-density residential area	1.46
Context Sensitivity	Develop a multimodal transportation system that is sensitive to the historic districts and rural/scenic character of Lenox	annual number of projects in historic districts, and/or adjacent to open space areas	0 - project has a negative impact on the existing character of the project area 1 - project has no impact on the existing character of the project area 2 - project protects the existing character of the project area 3 - project enhances the character of the project area	0.77
Equity	Ensure complete streets projects are distributed equitably in Lenox	annual number of projects outside of the village center (Lenox Dale, New Lenox, North Lenox, or in the EJ neighborhood)	0 - project is located in village center 1 - project is located in neighborhood other than village center 3 - project provides a connection between any two neighborhoods or is located in the Lenox environmental justice neighborhood	0.95
Aging in Place / Age Friendly	Ensure connectivity for residents of all ages to ensure the community is livable for anyone aged "8 to 80"	annual number of projects adjacent or connecting to senior housing , COA, schools.	0 - project is not adjacent or connect to senior housing, a school or the community center 1 - project is adjacent / connects to at least ONE of the following: senior housing, school, or community center 3 - project is adjacent / connects to at least TWO of the following: senior housing, school, or community center	0.93

Project Selection and Final List

Using the final scores (weighted and unweighted), the Working Group developed its final list of projects to submit to MassDOT. Project readiness was a key factor in decision making, as well as overall budgeting based on an anticipated $400,000 per year for construction funding. It should be noted that as several recommended projects are located on MassDOT owned roads, cooperation with MassDOT District 1 will be necessary to move these projects forward. The Town of Lenox will submit these projects, in writing, to the District 1 Highway Director. For the complete list of potential improvements, see **Table 6.2** below; for the Tier 2 list submitted to MassDOT (town projects only), see **Appendix C**.

Table 6.2 Final Complete Streets Project Prioritization (Tier 2) List

Project #	Project Type	Project Location
PROJECT 1	Intersection Reconstruction Option 1 (possible rotary)	Main St/West St/Walker St intersection @ Monument
PROJECT 2	General safety and crossing improvements - Option 2 - not full reconstruction	Main St/West St/Walker St intersection @ Monument
PROJECT 3	Pedestrian activated signals	Int. of Rte 7/20 and Hubbard St., Kemble St., and Walker St.
PROJECT 4	Crosswalk bumpouts + Raised Crosswalks, RRFB, other traffic calming, bike racks (2)	Main St. (8 locations)
PROJECT 5	Crosswalk bumpouts + Raised Crosswalks, potential RRFB, other traffic calming	Walker St (2-3 locations)
PROJECT 6	Sidewalk replacement, Shoulder widening	Cliffwood St. - Replace all ex. Sidewalk, widen shoulder to Kennedy park entrance
PROJECT 7	Wayfinding System	Town-wide - specific locations TBD
PROJECT 8	Shared use Path - Option 1 - 10' asphalt path	Crystal St / Roaring Brook Rd.
PROJECT 9	Shared use Path - Option 2 - 10' Aggregate path	Crystal St / Roaring Brook Rd.
PROJECT 10	New Sidewalk + Share the Road Signage	East St between Walker St and sidewalk end
PROJECT 11	New Sidewalk + Bike Lane	Housatonic St. between East St. and Crystal St.
PROJECT 12	New sidewalk + Bike Lane	Old Stockbridge Rd. from Elm Court to Frothingham
PROJECT 13	Sidewalk extension/replacement, shoulder widening to provide new bike lanes	East St. reconstruction
PROJECT 14	Pedestrian improvements	"Village Walk" between Franklin and Walker St
PROJECT 15	Shoulder widening	East New Lenox Rd.
PROJECT 16	New sidewalk + Bike Lane	Frothingham between Old Stockbridge and Kemble St.
PROJECT 17	Road striping to delineate shoulder and provide traffic calming, share the road signage	Undermountain Rd.
PROJECT 18	Sidewalk Extension	Extension of sidewalk along Old Stockbridge Rd. from Hawthorne St. south to Elm Court entrance.
PROJECT 19	Village Sidewalk Repairs	Main St./Route 7a

Project #	Project Type	Project Location
PROJECT 20	Village Sidewalk Repairs	Walker St/Route 7a/Route 183
PROJECT 21	Village Sidewalk Repairs	Church St.
PROJECT 22	Village Sidewalk Repairs	Franklin St.
PROJECT 23	Village Sidewalk Repairs	Housatonic St.
PROJECT 24	New sidewalk + Bike Lane	Plunkett St between Rt. 7 and Seven Hills Inn
PROJECT 25	Stationary speed feedback sign (single)	Main St. southbound @ 35 to 20mph transition
PROJECT 26	Pedestrian Lighting	Lilac Park / Triangle Park / Roche Reading Park / Main St.
PROJECT 27	Pedestrian Lighting	Furnace Park Crystal St. Lenox Dale
PROJECT 28	New Sidewalk	Route 7 (at existing gaps along MassDOT sections)
PROJECT 29	Pedestrian lighting	Ore Bed Road
PROJECT 30	Pedestrian lighting	Walker St. from Church St east to community center
PROJECT 31	Stationary speed feedback signs (2)	East St. between Walker and Housatonic St. by School
PROJECT 32	Stationary speed feedback signs (2)	Walker St.
PROJECT 33	Lane Narrowing & Restripe Kemble St. for bike lanes	Kemble St.
PROJECT 34	Sidewalk extension	Golden Hill Rd. to Henry Ave. (or further)
PROJECT 35	Sidewalks and crossings	Intersection of Golden Hill Rd./Catherine St.
PROJECT 36	Sidewalk and crossing replacement	Elm St. - Lenox Dale
PROJECT 37	Stationary speed feedback signs (2)	East St. in advance of Hubbard Ave. intersection (speed study)
PROJECT 38	Lane narrowing	Upper Main St near Route 7 Intersection
PROJECT 39	Curb ramp replacement & Crossings	Crystal St.
PROJECT 40	Lane narrowing and restriping	Crystal St.
PROJECT 41	Bike Racks	Lenox Dale - Pedestrian Bridge
Red text denotes potential projects on state roadways that are ineligible for Complete Streets funding.		

Implementation

In an effort to ensure the Town of Lenox is able to successfully implement their Complete Streets Policy, the Complete Streets Working group and BRPC staff developed several tables that detail short-term next steps, and annual steps that ensure timely implementation of Complete Streets projects in the Town of Lenox. Annual implementation steps can be seen in **Table 7.3**

Table 7.3 Annual Implementation Tasks and Project Cycle

Action	Responsible Party	Timeline (Yearly)	Others Interested
Project Identification	Complete Streets Working group	Spring	Selectboard, Public Works, Residents
Score and rank new projects, Revise Tier 2 List	Complete Streets Working group	Late Spring	Board of Selectmen, Public Works, Residents
Project Budgeting	Complete Streets Working group, Community Members	Summer or Fall	Selectboard, Finance Committee, Public Works
Prepare RFP for design needs on identified projects requiring engineering or design	Highway Dept.	Fall	Selectboard, Finance Committee, Complete Streets Working group
Construction	Highway Dept.	Following Spring	Board of Selectmen, Complete Streets Working group
Evaluate and Document Performance (See Performance Measures section)	Complete Streets Working group	Following Summer or Fall	Board of Selectmen, Public Works

APPENDIX A: PUBLIC OUTREACH AND ENGAGEMENT

Wikimapping Engagement Tool

Wikimapping is an online public engagement tool that allows the crowdsourcing of data around transportation projects. The Wikimapping tool allows users to tag and comment on sections of roadway to identify potential issues with the transportation system in two main types of categories – lines and points. Line categories allowed users to identify routes they like to bike or walk, areas they avoid biking and walking, and areas where they would like to bike and walk. Point categories allowed users to identify gaps in sidewalk, transit issues, barriers and obstacles, dangerous crossings and maintenance needs. One unique feature of the tool is that it allows users to see all other comments and add to those comments as well as agree and disagree with data provided by other users.

The Wikimapping tool was distributed by town staff using existing email lists. Issues identified through the Wikimapping tool can be found in **Table A1**.

Table A1 Wikimapping Comments

Category	Location	Initial Comment
Dangerous Crossing	Intersection of Hubbard and East St.	This is actually the route for the US Bicycle Route 7, and residents like to use it as well for running, walking & cycling. While there is a light, SB & NB traffic can get going quite fast on a green signal, and the incline on Hubbard makes visibility in either direction difficult. I suggest seeing it for yourself.
Dangerous Crossing	Intersection of Hubbard and East St.	There is no traffic light at this intersection, only a flashing light. It is a dangerous intersection I avoid using. The southbound turn lane adds to the confusion of those crossing routes 7/20. An overpass would be a good solution. Otherwise either block it off or put in a traffic light.
Dangerous Crossing	Intersection of Hubbard and East St.	Use Housatonic St where there is a traffic light and a walk signal not Hubbard
Gap (needs sidewalk/bike lane)	Cliffwood St (sidewalk gap to kennedy park entrance near reservoir rd)	Needs sidewalk from where sidewalk presently ends to Kennedy Park entrance
Gap (needs sidewalk/bike lane)	Cliffwood St (sidewalk gap to kennedy park entrance near reservoir rd)	In an ideal world yes but realistically we need sidewalks more in other sections of town
Other	East St	This part of East Street and for that matter most of East Street has no sidewalks and in essence no shoulder. People do walk, run and cycle the street. A bike/walking/running path would be a major improvement.
Other	Route 7	Making a right turn on Dugway can be a challenge with Northbound traffic riding your tail. A short turn out lane would solve the problem.
Dangerous Crossing	Intersection of Main / Walker / West / Stockbridge Rd	Cars accelerating around this corner are a hazard to pedestrians crossing in front of the library and to cars backing out of parking places in front of the Curtis.

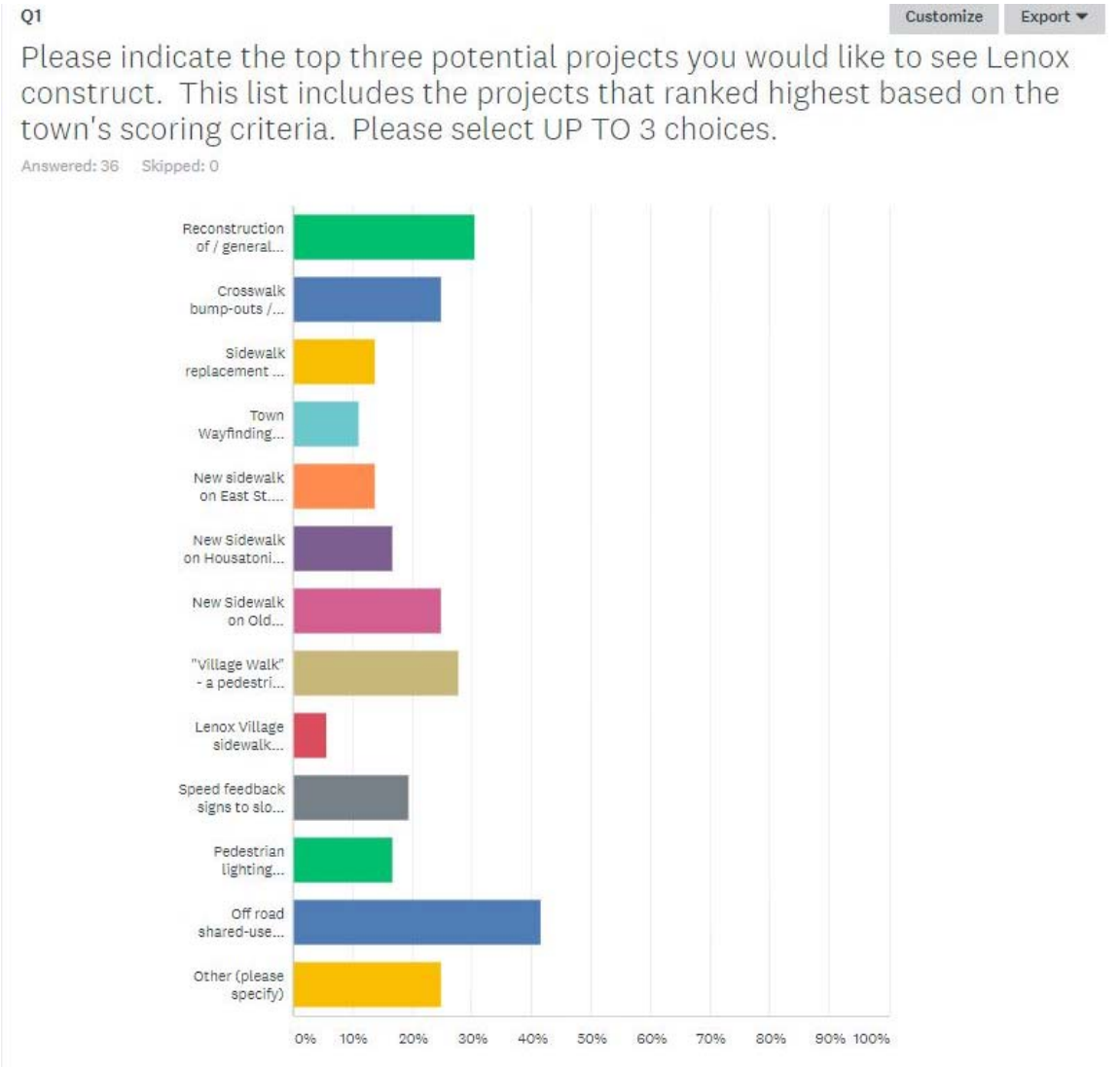
Dangerous Crossing	Intersection of Main / Walker / West / Stockbridge Rd	Cars accelerating around this corner are a hazard to pedestrians crossing in front of the library and to cars backing out of parking places in front of the Curtis.
	Intersection of Main / Walker / West / Stockbridge Rd	Remember this August, and that terrible crash at this very intersection. Roll-over and a car that went airborne. Cars need to go more slowly around this intersection, at all times of the year.
	Intersection of Main / Walker / West / Stockbridge Rd	Crossing here is difficult - especially crossing across to old stockbridge rd.
	Intersection of Main / Walker / West / Stockbridge Rd	This intersection is an accident waiting to happen. Cars do not stop at the crosswalks. Also cars cannot see well to make a left turn onto Walker St.
Dangerous Crossing	Intersection of Walker and Crystal	Poor visibility as Walker Street and Crystal Street meet at an acute angle.
	Intersection of Walker and Crystal	Add Crystal Street, Lenox Dale to the Bike Path with places to sit and watch the Eagles flying over the Housatonic River.
Gap (needs sidewalk/bike lane)	Housatonic St	Housatonic needs a bike lane.
Dangerous Crossing	Intersection of Maple / Hubbard	Please add a crosswalk here, or at least a caution sign for cars coming up the hill. There are lots of kids that cross here every day, and cars come up the hill very fast with little visibility.
Needs Maintenance	Hubbard St.	This sidewalk is a mess! The bumps on this sidewalk have almost catapulted my kids out of the stroller many times. Please repair the sidewalk here!
Dangerous Crossing	Intersection of East St / New Lenox Rd	New Lenox has a stop sign on both sides. East St. has a 20mph limit both up and down the hill, but it is rarely observed. I've seen cars on their sides at this intersection.
Needs Maintenance	Cliffwood St	Cliffwood St. Sidewalk needs replacement
Dangerous Crossing	Main St. near Church on the Hill	crossing here is difficult for pedestrians trying to get to Kennedy Park entrance
Other	Route 7 near Dugway Rd.	Wayfinding signage needed - direction to kennedy park
Other	Intersection of Main/Walker/West/Stockbridge Rd	Wayfinding signage needed - directions from town center to Tanglewood
Other	Intersection of Union / Canal	Coming out of Canal onto Union there is room for two lanes, a left turn and a right turn which would help those drivers turning right/west.
Walking Route	Loop - Interlaken/interlaken cross/mahkeenac/Hawthorne	Route I like to Walk
Walking Route	Loop - Old Stockbridge/Frothingham/Kemble	Route I like to Walk
Route I avoid walking	Loop - Interlaken/interlaken cross/mahkeenac/Hawthorne / Prospect/Larrywaug	This route is very dangerous to walk/run. Even facing the cars, drivers are distracted. Every time I run this, at least one driver is not paying attention.

		The speed limit is routinely violated.
Walking Route	Hubbard St.	Need a better sidewalk on Hubbard Street! There are so many rough patches that have nearly catapulted my kids out of their stroller many times. Please repair the Hubbard St sidewalk! Crossing Hubbard St at Maple St is also dangerous. Would be great to see a crosswalk or at least a caution sign coming up the hill on Hubbard from the highway.
Route I'd like to walk	Route 7 (between walker and hubbard)	Would be great to see a sidewalk along the highway between Walker and Hubbard. There's a good shoulder for much of that stretch, but it just isn't safe enough for walking/running. Making this stretch safe would allow for some great running loops through town!
Route I avoid walking	Old Stockbridge Rd	Old Stockbridge Rd is difficult for pedestrians to navigate
Route I'd like to walk	Loop - Route 7 / Kemble / Walker	Route I'd like to walk
Walking Route	Loop - Hawthorne / West / Old Stockbridge	Route I like to Walk
Walking Route	Main St / Route 7 to Lenox Commons	

Public Survey Results

In conjunction with the public forum held on May 16, 2017, BRPC and the town organized a short survey through the website Surveymonkey.com to gauge public opinion on potential projects and the two temporary pilot projects installed in the village center. Unfortunately, the survey only had 34 total respondents. Respondents were most in favor of an *Off-road shared-use path* (41%), *Reconstruction or safety improvements at the intersection of Main St. / Walker St. / West St.* (30%), *Village Walk* (27%), and *Bump-outs along Main St. / Walker St.* (25%).

Figure A1 Public Survey Results



com

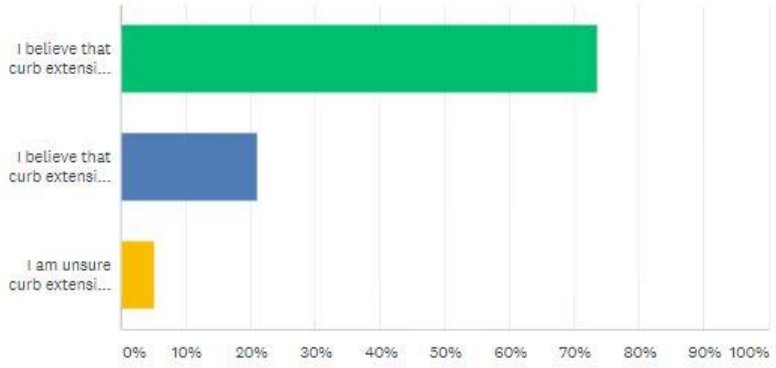
ANSWER CHOICES		RESPONSES	
Reconstruction of / general safety improvements to the intersection of Main St. / West. St / Walker St. (intersection at monument)		30.56%	11
Crosswalk bump-outs / curb extensions along Main St. / Walker St.		25.00%	9
Sidewalk replacement and extension along Cliffwood St.		13.89%	5
Town Wayfinding System		11.11%	4
New sidewalk on East St. between end of sidewalk south of Delafield Dr. to Walker St.		13.89%	5
New Sidewalk on Housatonic St. between East St. and Crystal St.		16.67%	6
New Sidewalk on Old Stockbridge Rd. from Elm Court to Frothingham to Kemble St. (create walking loop)		25.00%	9
"Village Walk" - a pedestrian path between Walker St. and Franklin St. and parallel to Church St.		27.78%	10
Lenox Village sidewalk repairs where needed (Main St., Walker St., Housatonic St.)		5.56%	2
Speed feedback signs to slow traffic on Main St. and East St.		19.44%	7
Pedestrian lighting improvements at Lilac Park/Main St. and Ore Bed Rd.		16.67%	6
Off road shared-use (bicycle and pedestrian path) in town (Route TBD)		41.67%	15
Other (please specify)	Responses	25.00%	9
Total Respondents: 36			

Q2

Customize Export

CURB EXTENSION TRIAL RUN MAY 16TH! We have heard that it is hard for drivers to see people standing at the cross walks on Main Street or Walker Street because of parked cars. The Town is considering installing curb extensions or "bump outs" at key crosswalks to make pedestrians more visible. By extending or bumping out the curb line at a crosswalk, pedestrians are more visible to oncoming traffic. They also help to direct people to these crossing locations which helps channel them to the safer crossing locations. Curb extensions could be designed similar to those located on Main Street in Lee in front of town hall and near Salmon Run. We will be outlining curb extensions at a crossing on Main Street on May 16th to help people envision how big they might be and how they might work. What are your thoughts? Feel free to write comments in the box.

Answered: 19 Skipped: 17



ANSWER CHOICES	RESPONSES	
I believe that curb extensions or "bump outs" would be good at key crosswalks on Main and Walker Streets	73.68%	14
I believe that curb extensions or "bump outs" would not be good at key crosswalks on Main and Walker Streets	21.05%	4
I am unsure curb extensions or "bump outs" would be good at key crosswalks on Main and Walker Streets because I feel I need more information	5.26%	1
Total		19

Comments (3)

Showing 3 responses

Need to do more to make drivers more aware of pedestrians

5/18/2017 11:43 AM View respondent's answers Categorize as...

I think they are dangerous, distracting, and ugly

5/17/2017 1:46 PM View respondent's answers Categorize as...

Bad Idea, can't see pedestrains because of parked cars. Lee is worse than Lenox.

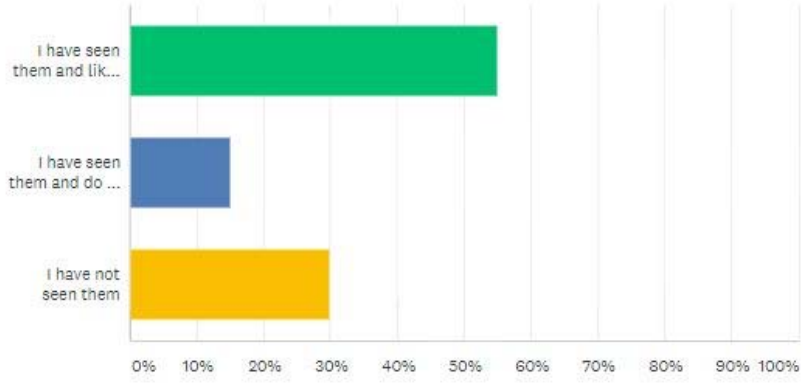
5/17/2017 1:25 PM View respondent's answers Categorize as...

Q3

Customize Export

The Town is installing temporary wayfinding signs in Lenox Village to direct people to attractions that are within walking distance from where they are standing. The idea is to make Lenox Village a friendly, walkable place, helping direct people from their car to shops and restaurants, or from the village center to attractions such as Ventfort Hall and Shakespeare & Co. If residents and businesses like the temporary signs, the Town could pursue a more permanent wayfinding sign program using professionally crafted signs. If you've seen our temporary signs, what do you think? Feel free to give us more comments on Lenox Village wayfinding in the box below.

Answered: 20 Skipped: 16



ANSWER CHOICES	RESPONSES	
I have seen them and like the idea	55.00%	11
I have seen them and do not like the idea	15.00%	3
I have not seen them	30.00%	6
Total		20

Comments (3)

Showing 3 responses

These signs make us look like Disneyworld or Sea World.	5/17/2017 2:45 PM	View respondent's answers	Categorize as...
Too many signs already	5/17/2017 1:46 PM	View respondent's answers	Categorize as...
Bad idea, creates sign pollution. The village is tiny.	5/17/2017 1:25 PM	View respondent's answers	Categorize as...

Public Forum Comments

Lenox officials received several written comments after the Public Forum, which are outlined in **Table A2**.

Table A2 Public Comments

LOCATION	COMMENT
General	I'll say it again. 2-lane roads filled with blind curves and blind hill brows should be off-limits to cyclists unless and until they are re-engineered to provide generous bike lanes on both sides so motorists can do overtakes without leaving their lane
Main St. / Route 7a	As to that crosswalk across 7A to Kennedy Park, where can it be located so as to be visible to motorists from both directions? Place it a little south of the brow of the hill it indeed would be visible to northbound motorists but not to southbounds coming around the curve on the approach to the brow.
General	The lawn mover guys are once again out in force, driving around just like the snow plow guys in Winter, at excessive speeds because time is $$$ and we let them. But they also park in a traffic lane, with or without setting cones, using the lane as their defacto "on-site office"
Housatonic St.	The "sidewalk cafe" Shots sets up, trying to pretend, so it seems, Houstonic Street is Lenox's Champs Elysee, I think is too much. Not only are the tables/chairs taking up much of the sidewalk but there is a large planting between them and the street.
Main St. / Route 7a	a cross walk into Kennedy Park if possible.
General	add signs and bylaws that say you must pass a cyclist with 3 feet to spare- many states are adopting this and it does help
Route 7 and Housatonic St.	At the intersection with the bypass and Caligari its impossible for a cyclist to trip the light- this should be fixed- the other side of the intersection.. ie coming from Town down Housatonic Street there is a push button pedestrian light- we need one on the other side coming into town
Main / West / Walker / Old Stockbridge	YES a crosswalk across Old Stockbridge Road at what I will refer to herein as Monument Intersection
Main / West / Walker / Old Stockbridge	yes some re-configuration is needed at Monument Intersection that makes it safer. One day, if speeds are not tamed through downtown there. Every time I left turn from westbound Walker to Route 183 I worry a vehicle southbound on Main Street headed for eastbound Walker will come screaming around the blind curve the Curtis makes right after I've committed myself into the left turn.
Old Stockbridge Rd.	I want a sidewalk parallel to but physically separate from Old Stockbridge Road north of Frothingham X-ing
General	I had to deal with bike riders twice this afternoon, one northbound on Holmes Road and one westbound on Housatonic Street between Route7/20 Intersection and the Morgan Manor driveway where I turned off. Bike riders have no business on these 2-lane roads with restricted sight lines due to curvature and hill brows unless and until those roads are re-engineered to provide vehicles safe movement by them WITHOUT having to cross the centerline.
Main / West / Walker /	Install a crosswalk on the south side of 183 where it crosses Old Stockbridge Road. (*Note: at monument intersection)*

Old Stockbridge	
Temporary Wayfinding	You have made a good start on this, but take care on sign verbiage. For example, on the sign saying it is only a 29 minute walk to Tanglewood, it talks of walking down West Street. People from out of town don't know West Street. However, there is a large sign saying "183 west" readily apparent where your directional sign is. Change the sign to say "walk 183 west.
Main St. - Wayfinding	At the intersection of 7A and Housatonic, we need a walkers' directional sign pointing up 7A saying "Kennedy Park." You have one there. Good. Possibly the same sign at 7A and Franklin.
Main St.	Coming into town from north on 7A: People drive in too quickly, in part because of the steepness of the hill.
Main St.	It is extremely dangerous to cross 7A at the top of the hill. How to deal with this problem? If you narrow the driving lanes on 7A, there will be room on the west side of 7A for a walk way/bike lane. People should be encouraged to cross 7A in town and use the expanded walkway to go to the Church on the Hill and to enter Kennedy Park.
Main St.	Crosswalks on 7A: There are several dangerous ones. What makes them dangerous? Parked vehicles that makes it hard for pedestrians to see oncoming cars and drivers to see pedestrians. The visibility is blocked by cars parked to close to the intersections.
Cliffwood St.	Redo and Extend the Cliffwood Sidewalk: The Town has great sidewalks and the efforts to clear them immediately in the winter is commendable. However, the sidewalk on Cliffwood needs to be replaced. It is so cut up by tree roots, etc. that most walkers choose to walk on the road. Not good. I strongly recommend that the Cliffwood sidewalk be extended to Reservoir Road.
Old Stockbridge Rd.	There has been talk of putting a sidewalk down Old Stockbridge Road to Frothingham so one could have a "walking loop" with Kemble. Not a good idea: Old Stockbridge Road, with its narrowness and hills, is one of the most dangerous roads in Lenox and we do not want to encourage using it for recreational purposes. An alternate loop that I use regularly: east on Walker, right on 7, right on Kemble back into Town. The shoulders on that part of 7 are huge.
General	Bikes: A good part of our meeting involved efforts to make Lenox more "bike friendly." We need to keep in mind that we are not The Netherlands. And this "bike movement" is being imposed on a country where the auto has been king for a long time. Drivers are not accustomed to dealing with bikers and some bikers are not all that skilled. We can't push this movement too hard or we can expect more fatalities.

APPENDIX B: COMPLETE LIST OF POTENTIAL IMPROVEMENTS

Table B1 outlines the complete list or "universe" of all potential complete streets improvements identified by the Lenox Complete Streets Working group. Projects in this list were further refined into a final list for submittal to MassDOT. Project locations have also been mapped in **Figure B1.**

Red text in the table denotes projects that are located along state highways, and which are not eligible for funding through the MassDOT Complete Streets Program. The town should work closely with MassDOT to advocate for and include these improvements in future state roadway work.

Below the table are project descriptions for each of the potential improvements, in order of weighted score.

Table B1 Complete List of Potential Improvements

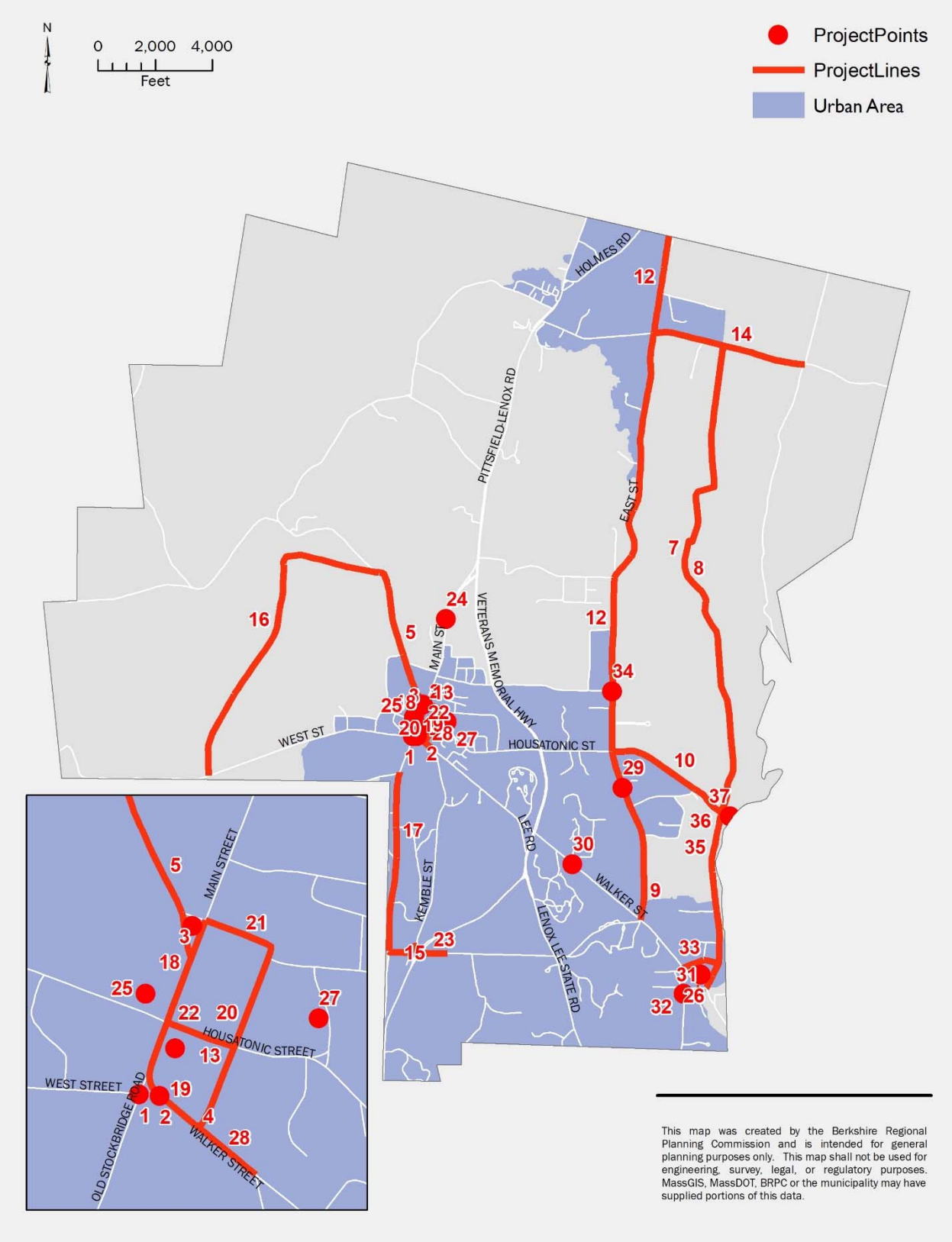
			Livability	Safety	Connectivity	Context Sensitivity	Equity	Travel / Tourism	Aging in Place	Score Unweighted	Score Weighted
PROJECT #	PROJECT TYPE	PROJECT LOCATION WEIGHT	1.46	3	1.93	0.77	0.95	0.95	0.93	-	-
PROJECT 1	Intersection Reconstruction (possible rotary)	Option 1 - Main St/West St/Walker St intersection @ Monument	3	3	2	1	0	3	0	12	20.86
PROJECT 2	General safety and crossing improvements - not full reconstruction	Option 2 - Main St/West St/Walker St intersection @ Monument	3	3	2	1	0	3	0	12	20.86
PROJECT 3	Pedestrian activated signals	Int. of Rte 7/20 and Hubbard St. and Kemble St.	2	3	2	1	1	3	0	12	20.35
PROJECT 4	Crosswalk bumpouts + Raised Crosswalks, RRFB, other traffic calming, bike racks (2)	Main St. (8 locations)	3	3	1	1	0	3	1	12	19.86
PROJECT 5	Crosswalk bumpouts + Raised Crosswalks, potential RRFB, other traffic calming	Walker St (2-3 locations)	3	3	1	1	0	3	1	12	19.86
PROJECT 6	Sidewalk replacement, Shoulder widening	Cliffwood St. - Replace all ex. Sidewalk, widen shoulder to Kennedy park entrance	2	2	2	1	3	1	1	12	18.28
PROJECT 7	Wayfinding System	Town-wide - specific locations TBD	3	0	3	1	3	3	1	14	17.57
PROJECT 8	Shared use Path - Option 1 - 10' asphalt path	Crystal St / Roaring Brook Rd.	1	2	1	3	3	2	0	12	16.45

			Livability	Safety	Connectivity	Context Sensitivity	Equity	Travel / Tourism	Aging in Place	Score Unweighted	Score Weighted
PROJECT 9	Shared use Path - Option 2 - 10' Aggregate path	Crystal St / Roaring Brook Rd.	1	2	1	3	3	2	0	12	16.45
PROJECT 10	New Sidewalk + Share the Road Signage	East St between Walker St and sidewalk end	1	3	2	0	1	0	1	8	16.2
PROJECT 11	New Sidewalk + Bike Lane	Housatonic St. between East St. and Crystal St.	1	3	2	0	1	0	1	8	16.2
PROJECT 12	New sidewalk + Bike Lane	Old Stockbridge Rd. from Elm Court to Frothingham	1	2	2	0	3	1	1	10	16.05
PROJECT 13	Sidewalk extension/replacement, shoulder widening to provide new bike lanes	East St. reconstruction	1	2	2	2	1	1	0	9	14.76
PROJECT 14	Pedestrian improvements	"Village Walk" between Franklin and Walker St	3	1	1	3	3	0	0	11	14.47
PROJECT 15	Shoulder widening	East New Lenox Rd.	2	2	1	2	1	1	0	9	14.29
PROJECT 16	New sidewalk + Bike Lane	Frothingham between Old Stockbridge and Kemble St.	1	2	2	0	1	1	0	7	13.22
PROJECT 17	Road striping to delineate shoulder and provide traffic calming, share the road signage	Undermountain Rd.	0.5	2	1	1	1	2	1	8.5	13.21
PROJECT 18	Sidewalk Extension	Extension of sidewalk along Old Stockbridge Rd. from Hawthorne St. south to Elm Court entrance.	1	1	2	0	3	1	1	9	13.05
PROJECT 19	Village Sidewalk Repairs	Main St./Route 7a	3	1	1	1	0	3	0	9	12.93
PROJECT 20	Village Sidewalk Repairs	Walker St/Route 7a/Route 183	3	1	1	1	0	3	0	9	12.93

			Livability	Safety	Connectivity	Context Sensitivity	Equity	Travel / Tourism	Aging in Place	Score Unweighted	Score Weighted
PROJECT 21	Village Sidewalk Repairs	Church St.	3	1	1	1	0	3	0	9	12.93
PROJECT 22	Village Sidewalk Repairs	Franklin St.	3	1	1	1	0	3	0	9	12.93
PROJECT 23	Village Sidewalk Repairs	Housatonic St.	3	1	1	1	0	3	0	9	12.93
PROJECT 24	New sidewalk + Bike Lane	Plunkett St between Rt. 7 and Seven Hills Inn	0	2	2	0	1	2	0	7	12.71
PROJECT 25	Stationary speed feedback sign (single)	Main St. southbound @ 35 to 20mph transition	2	3	0	1	0	0	0	6	12.69
PROJECT 26	Pedestrian Lighting	Lilac Park / Triangle Park / Roche Reading Park / Main St.	2	2	0	2	0	1	1	8	12.34
PROJECT 27	Pedestrian Lighting	Furnace Park Crystal St. Lenox Dale	2	2	0	2	0	1	1	8	12.34
PROJECT 28	New Sidewalk	Route 7 (at existing gaps along MassDOT sections)	2	1	1	3	1	1	0	9	12.06
PROJECT 29	Pedestrian lighting	Ore Bed Road	3	1	1	1	1	0	0	7	11.03
PROJECT 30	Pedestrian lighting	Walker St. from Church St east to community center	3	1	1	1	1	0	0	7	11.03
PROJECT 31	Stationary speed feedback signs 2x	East St. between Walker and Housatonic St. by School	1	2	0	0	1	1	1	6	10.29
PROJECT 32	Stationary speed feedback signs 2x	Walker St.	1	2	0	0	1	1	1	6	10.29
PROJECT 33	Lane Narrowing & Restripe Kemble St. for bike lanes	Kemble St.	1	1	1	1	1	2	0	7	10.01
PROJECT 34	Sidewalk extension	Golden Hill Rd. to Henry ave. (or further)	2	1	1	1	1	0	0	6	9.57
PROJECT 35	Sidewalks and crossings	Intersection of Golden Hill Rd./Catherine St.	2	1	1	1	1	0	0	6	9.57
PROJECT 36	Sidewalk and crossing replacement	Elm St. - Lenox Dale	2	1	1	1	1	0	0	6	9.57

			Livability	Safety	Connectivity	Context Sensitivity	Equity	Travel / Tourism	Aging in Place	Score Unweighted	Score Weighted
PROJECT 37	Stationary speed feedback signs 2x	East St. in advance of Hubbard Ave. intersection (speed study)	1	2	0	1	1	0	0	5	9.18
PROJECT 38	Lane narrowing	Upper Main St near Route 7 Intersection	0.5	2	0	1	1	0	0	4.5	8.45
PROJECT 39	Curb ramp replacement & Crossings	Crystal St.	1	1	1	1	1	0	0	5	8.11
PROJECT 40	Lane narrowing and restriping	Crystal St.	1	1	1	1	1	0	0	5	8.11
PROJECT 41	Bike Racks	Lenox Dale - Pedestrian Bridge	1	0	1	1	1	0	0	4	5.11

Figure B1. Potential Improvements



Project Descriptions (in order of weighted score) and Cost Estimates

Cost Estimates

Cost estimates were prepared by BRPC for the Town of Lenox. Cost estimates are for conceptual purposes only and are not based on construction drawings or other engineering design. Only by town investment in design and engineering and full evaluation by an engineer or designer will more accurate project costs be developed. Project area sizes and sidewalk lengths were estimated using Google Earth Pro and conditions were evaluated through field work by BRPC and town staff. Estimated costs were prepared using data from the MassDOT Weighted Bid Averages.[49] All project costs were estimated with a 15% contingency added to the total. Potential design and engineering expenses to the town were estimated as 10% of construction costs with added contingency). Estimates for smaller projects such as bike racks or speed feedback sign installation and installation of speed feedback signs may or may not include contingency and design/engineering estimates.

Estimates for some projects were completed by BETA engineering. Detailed estimates for these projects were not provided by BETA, however, estimate totals are listed in **Table C1** in **Appendix C**. Potential projects on state-maintained roadways are highlighted in Red.

Projects 1 and 2: Intersection Reconstruction – Main/West/Walker/Old Stockbridge

The intersection of Main/West/Walker/Old Stockbridge at the Paterson - Egleston Revolutionary War has been identified in several studies and reports as in need of reconstruction or other safety improvements. Project 1 proposes a full reconstruction of this intersection as an un-signalized roundabout. Project 2 is a second option for this intersection and would not include full reconstruction. This project proposes a new crosswalk and curb extension along the Old Stockbridge Rd. leg of the intersection.

Project 3: Route 7 Pedestrian Activated Signals

This project would install pedestrian activated signals and crosswalks at the intersection of Route 7 and Hubbard St., as well as at the Kemble St. Intersection. As this project is located along a state road, it is ineligible for complete streets funding. The town will have to advocate to MassDOT to advance this project.

Project 4: Main St. Pedestrian Improvements

This project would install curb extensions and raised crosswalks at 4 locations along Main St. along with an RRFB at a mid-block crossing. Construction would also include installation of 2 bike racks.

Project 5: Walker St. Pedestrian Improvements

This project would install curb extensions and raised crosswalks at 3 locations along Walker St. along with an RRFB at a mid-block crossing.

Project 6: Cliffwood St. Nonmotorized Improvements

This project would replace existing crosswalk along Cliffwood St. at the end of the existing sidewalk, the shoulder would be widened to the entrance of Kennedy Park to provide accommodation for pedestrians using this park access.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
Sidewalk Replacement						

[49] Available from: https://hwy.massdot.state.ma.us/CPE/WeightedAverageCriteria.aspx

120.1	530	CY	Excavation (5'x1' depth) (sidewalk)	43	$ 22,790	
129.3	150	CY	Old Pavement Excavation (assume 3")	50	$ 7,500.00	
151	270	CY	Gravel Borrow (for sidewalk) (assume 6" for entire length + additional for fill)	38	$ 10,260	
170	1,600	SY	Fine Grading and Compacting (sidewalk)	7	$ 11,200	
698.3	1,600	SY	Geotextile for separation (sidewalk)	$5.00	$ 8,000	
702	275	TON	Asphalt walk (5' width x 3" depth)	$160.00	$ 44,000	
Shoulder widening to Kennedy Park Entrance						
150	200	CY	Ordinary Borrow (Fill) (Assume 6" under all new shoulder	30	$ 6,000	
120.1	500	CY	Excavation (6'x1' depth) (shoulder)	43	$ 21,500	
151	170	CY	Gravel Borrow (for shoulder (assume 6" for entire length + additional for fill)	38	$ 6,460	
170	1,000	SY	Fine Grading and Compacting (shoulder)	7	$ 7,000	
702	230	Ton	Asphalt Shoulder	$160.00	$ 36,800	
698.3	1,000	SY	Geotextile for separation (shoulder)	$5.00	$ 5,000	
220	3	Each	Drainage structure adjusted	$400.00	$ 1,200	
701.2	2	Each	Curb Ramp	$850.00	$ 1,700	
715.1	10	Each	Mailbox removed and reset	215	$ 2,150.00	
	1.00	Allow	15% Contingency		$ 28,734	
	1.00	Allow	Design / Engineering (10% of total)		$ 22,029	
			TOTAL PROJECT COST		**$ 242,323**	

			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 220,294**	MassDOT

Project 7: Comprehensive Wayfinding System

This project would install a comprehensive wayfinding system in town. This system would include gateway signage, directional or "finger" posts and destination signage at municipal facilities and open space areas. The cost estimate provided here is only an outline of what an actual system might cost, the town will need to invest in design that will create a context sensitive sign system for the community.

ITEM #	*QTY.*	*UNIT*	*DESCRIPTION OF ITEM*	*UNIT PRICE*	*AMOUNT*	*PARTY*
719.1	5	Each	Gateway Sign	4000	20,000	MassDOT
719.2	12	Each	Decision / Directional Sign	3000	36,000	MassDOT
719.3	25	Each	Location Sign (Municipal facility, Open Space area or Business)	1000	25,000	MassDOT
	1.00	Allow	15% Contingency		12,150	MassDOT
	1.00	Allow	Design / Engineering (10% of total)		9,315	Lenox
			TOTAL PROJECT COST		**102,465**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 93,150**	MassDOT

Projects 8 and 9: Shared-Use Path Option 1 – 10' Asphalt Path - Shared-Use Path Option 2 – 10' Aggregate Path

These projects are listed as placeholders should the town reactivate its plans for a shared-use path. The cost estimate is based on a linear foot estimate for just over 5 miles of 10'-wide asphalt or aggregate path from the town line with Pittsfield and Lee. Costs are based on a VTrans report updated August 2014[50].

Bike path configurations	Total cost/ft (2014)	Total cost/ft Adjusted for Inflation (March 2017)	Estimate based on Assumed Length of Path (28000 LF) (5.3 miles)	Parking Area (2)	Design and Engineering (10%)	Total Cost	Request from MassDOT

[50] http://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/Cost_Report_2014.pdf

8-foot wide bituminous concrete path	$170	173.89	**$4,868,920**	$40,000	$490,892	$5,399,812	$4,908,920
10 foot bituminous concrete path	$197	201.51	**$5,642,280**	$40,000	$568,228	$6,250,508	$5,682,280
12-foot bituminous concrete path	$223	228.11	**$6,387,080**	$40,000	$642,708	$7,069,788	$6,427,080
8-foot wide aggregate surface path	$150	153.43	**$4,296,040**	$40,000	$433,604	$4,769,644	$4,336,040
10-foot wide aggregate surface path	$169	172.87	**$4,840,360**	$40,000	$488,036	$5,368,396	$4,880,360
12-foot wide aggregate surface path	$188	192.31	**$5,384,680**	$40,000	$542,468	$5,967,148	$5,424,680

Project 10: East St. Sidewalk Extension

Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along federal-aid ineligible portions of Housatonic St. from East St. to Crystal St. Improvements will coincide with reconstruction of the vehicle lanes.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
120.1	300	CY	Excavation (5'x1' depth)	43	$ 12,900	
151	160	CY	Gravel Borrow (for sidewalk) (assume 6" for entire length)	38	$ 6,080	
170	900	SY	Fine Grading and Compacting	7	$ 6,300	
698.3	900	SY	Geotextile for separation	$5.00	$ 4,500	
702	160	TON	Asphalt walk (5' width x 3" depth) (.095 tons / LF)	$160.00	$ 25,600	
701.2	2	Each	Curb Ramp	$850.00	$ 1,700	
670	75	Feet	Fence removed and reset	35	$ 2,625.00	
150	200	CY	Ordinary Borrow (Fill) (Assume 6" under all new shoulder	30	$ 6,000	
570.2	1600	Feet	HMA Curb	15	$ 24,000	

	1.00	Allow	15% Contingency		$ 13,456	
	1.00	Allow	Design / Engineering (10% of total)		$ 10,316	
			TOTAL PROJECT COST		**$ 113,477**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 103,161**	MassDOT

Project 11: Housatonic St. Reconstruction and Nonmotorized Improvements

Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along federal-aid ineligible portions of Housatonic St. from East St. to Crystal St. Improvements will coincide with reconstruction of the vehicle lanes.

Project 12: Old Stockbridge Rd. Nonmotorized Improvements

Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk from the proposed Elm Court development south to Frothingham Crossing Improvements are planned to coincide with reconstruction of the vehicle lanes.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
General						
104	5	Each	Tree removed - dia. 24" and over	2000	$ 10,000	
850.41	1	Allow	Flagger	20000	$ 20,000	
Repaving (Mill & Fill) -Hawthorne to Frothingham - 6300'						
130	14700	SY	Pavement Milling	2.25	$ 33,075	
464	1029	GAL	Tack Coat	5	$ 5,145	
460	2830	TON	HMA	160	$ 452,800	
860.106	25200	FT	Road Striping	0.5	$ 12,600	
180.6	1	Each	Bore Sample Testing	2500	$ 2,500	
Sidewalk - Elm Court to Frothingham - 1650'						
120.1	400	CY	Excavation (5'x1' depth) (sidewalk)	43	$ 17,200	
129.3		CY	Old Pavement Excavation (assume 3")	50	$ -	

151	150	CY	Gravel Borrow (for sidewalk) (assume 6" for entire length + additional for fill)	38	$ 5,700	
170	900	SY	Fine Grading and Compacting (sidewalk)	7	$ 6,300	
698.3	900	SY	Geotextile for separation (sidewalk)	$5.00	$ 4,500	
702	155	TON	Asphalt walk (5' width x 3" depth) (.095 ton/lf)	$160.00	$ 24,800	
570.2	1600	Feet	HMA Curb	15	$ 24,000	
701.2	2	Each	Curb Ramp	$850.00	$ 1,700	
Shoulder Widening - Hawthorne to Frothingham - 6300'						
150	1,500	CY	Ordinary Borrow (Fill) (Assume 9" under all new shoulder	30	$ 45,000	
120.1	2,400	CY	Excavation (10'x1' depth) (shoulder)	43	$ 103,200	
151	950	CY	Gravel Borrow (for shoulder (assume 6" for entire length + additional for fill)	38	$ 36,100	
170	5,600	SY	Fine Grading and Compacting (shoulder)	7	$ 39,200	
702	1,300	Ton	Asphalt Shoulder	$160.00	$ 208,000	
698.3	5,600	SY	Geotextile for separation (shoulder)	$5.00	$ 28,000	
220	3	Each	Drainage structure adjusted	$400.00	$ 1,200	
715.1	10	Each	Mailbox removed and reset	215	$ 2,150.00	
	1.00	Allow	15% Contingency		$ 162,476	
	1.00	Allow	Design / Engineering (10% of total)		$ 124,565	
			TOTAL PROJECT COST		**$ 1,370,210**	
			REQUESTED FROM MASSDOT (Total minus design and engineering and ineligible repaving costs)		**$ 739,525.50**	MassDOT

Project 13: East St. Reconstruction and Nonmotorized Improvements

Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along East St. Improvements will coincide with reconstruction of the vehicle lanes. This project is listed as a long-term placeholder.

Project 14: Lenox Village Walk

Construction of new ADA compliant sidewalk between Franklin and Walker St. Installation of pedestrian amenities such as benches, lighting, wayfinding, and other site furnishings in 3 pocket parks.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
	1.00	Each	Village Walk estimate ($500k in 2008) (adjusted for inflation)	$ 725,000.00	$ 725,000.00	MassDOT
	1.00	Allow	Contingency		$ 75,000	
	1.00	Allow	Design / Engineering		$ 10,000	
			TOTAL PROJECT COST		**$ 810,000**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 800,000**	MassDOT

Project 15: East New Lenox Rd. Shoulder Widening

Shoulder widening along East New Lenox Rd. to install new 4'-wide bicycle lanes. Bicycle accomodations may be needed to connect future shared-use path projects in Lenox and Pittsfield.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
General						
104	5	Each	Tree removed - dia. 24" and over	2000	$ 10,000	
850.41	1	Allow	Flagger	20000	$ 20,000	
Repaving (Mill & Fill) - 3400'						
130	8311	SY	Pavement Milling	2.25	$ 18,700	
464	581	GAL	Tack Coat	5	$ 2,905	
460	1600	TON	HMA	160	$ 256,000	

860.106	13600	FT	Road Striping	0.5	$ 6,800	
180.6	1	Each	Bore Sample Testing	2500	$ 2,500	
Shoulder Widening - 3400'						
150	503	CY	Ordinary Borrow (Fill) (Assume 6" under all new shoulder	30	$ 15,090	
120.1	1,300	CY	Excavation (10'x1' depth) (shoulder)	43	$ 55,900	
151	503	CY	Gravel Borrow (for shoulder (assume 6" for entire length + additional for fill)	38	$ 19,114	
170	3,050	SY	Fine Grading and Compacting (shoulder)	7	$ 21,350	
702	700	Ton	Asphalt Shoulder	$160.00	$ 112,000	
698.3	3,050	SY	Geotextile for separation (shoulder)	$5.00	$ 15,250	
220		Each	Drainage structure adjusted	$400.00	$ -	
715.1	5	Each	Mailbox removed and reset	215	$ 1,075.00	
	1.00	Allow	15% Contingency		$ 83,503	
	1.00	Allow	Design / Engineering (10% of total)		$ 64,019	
			TOTAL PROJECT COST		**$ 704,205**	
			REQUESTED FROM MASSDOT (Total minus design and engineering and ineligible repaving costs)		**$ 353,281.56**	MassDOT

Project 16: Frothingham Nonmotorized Improvements

Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along Frothingham Crossing.

ITEM #	*QTY.*	*UNIT*	*DESCRIPTION OF ITEM*	*UNIT PRICE*	*AMOUNT*	*PARTY*
General						
104		Each	Tree removed - dia. 24" and over	2000	$ -	

850.41	1	Allow	Flagger	5000	$ 5,000	
Repaving (Mill & Fill) -Frothingham - 1100'						
130	2444	SY	Pavement Milling	2.25	$ 5,499	
464	171	GAL	Tack Coat	5	$ 855	
460	470	TON	HMA	160	$ 75,200	
860.106	4400	FT	Road Striping	0.5	$ 2,200	
180.6	1	Each	Bore Sample Testing	2500	$ 2,500	
Sidewalk - Frothingham - 1100'						
120.1	205	CY	Excavation (5'x1' depth) (sidewalk)	43	$ 8,815	
129.3		CY	Old Pavement Excavation (assume 3")	50	$ -	
151	105	CY	Gravel Borrow (for sidewalk) (assume 6" for entire length + additional for fill)	38	$ 3,990	
170	620	SY	Fine Grading and Compacting (sidewalk)	7	$ 4,340	
698.3	620	SY	Geotextile for separation (sidewalk)	$5.00	$ 3,100	
702	110	TON	Asphalt walk (5' width x 3" depth) (.095 ton/lf)	$160.00	$ 17,600	
570.2	1100	Feet	HMA Curb	15	$ 16,500	
701.2	2	Each	Curb Ramp	$850.00	$ 1,700	
Shoulder Widening - Frothingham - 1100'						
150	250	CY	Ordinary Borrow (Fill) (Assume 9" under all new shoulder	30	$ 7,500	
120.1	410	CY	Excavation (10'x1' depth) (shoulder)	43	$ 17,630	
151	165	CY	Gravel Borrow (for shoulder (assume 6" for entire length + additional for fill)	38	$ 6,270	
170	1,000	SY	Fine Grading and Compacting (shoulder)	7	$ 7,000	
702	220	Ton	Asphalt Shoulder	$160.00	$ 35,200	
698.3	1,000	SY	Geotextile for separation (shoulder)	$5.00	$ 5,000	
220	2	Each	Drainage structure adjusted	$400.00	$ 800	

715.1	0	Each	Mailbox removed and reset	215	$ -	
	1.00	Allow	15% Contingency		$ 34,005	
	1.00	Allow	Design / Engineering (10% of total)		$ 26,070	
			TOTAL PROJECT COST		**$ 286,774**	
			REQUESTED FROM MASSDOT (Total minus design and engineering and ineligible repaving costs)		**$ 174,449.85**	MassDOT

Project 16: Undermountain Rd. Striping

Vehicle lane and shoulder striping along Undermountain Rd. to provide pedestrian and bicycle accommodation as well as traffic calming.

ITEM #	*QTY.*	*UNIT*	*DESCRIPTION OF ITEM*	*UNIT PRICE*	*AMOUNT*	*PARTY*
860.106	48,000	FEET	Allowance for striping	$0.50	$ 24,000.00	MassDOT
	1.00	Allow	15% Contingency		$ 3,600	MassDOT
	1.00	Allow	Design / Engineering (10% of total)		$ 2,760	
			TOTAL PROJECT COST		**$ 30,360**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 27,600**	MassDOT

Project 17: Old Stockbridge Rd. Sidewalk Extension

Extension of sidewalk along Old Stockbridge Rd. from Hawthorne south to the proposed Elm Court Development. This project is listed on the Tier 2 plan; however, it was also written as a condition for the Elm Court special permit application which was approved by the town in 2015. It is anticipated to be funded and completed by the Elm Court developer.

Projects 19-23: Village Sidewalk Repairs – Main/Church/Walker/Franklin/Housatonic

These projects include minor repair work for sidewalk along the streets that make up the village center.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT	AMOUNT	PARTY
706	50	SY	Brick Walk	$300.00	$ 15,000.00	MassDOT
	1.00	Allow	15% Contingency		$ 2,250	MassDOT
	1.00	Allow	Design / Engineering (10% of total)		$ 1,725	
			TOTAL PROJECT COST		**$ 18,975**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 17,250**	MassDOT

Project 24: Plunkett St. nonmotorized Improvements

Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along Plunkett St. from the Intersection of Route 7 to the Seven Hills Inn.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
General						
104	5	Each	Tree removed - dia. 24" and over	2000	$ 10,000	
850.41	1	Allow	Flagger	8000	$ 8,000	
Repaving (Mill & Fill) -Frothingham - 1100'						
130	2028	SY	Pavement Milling	2.25	$ 4,563	
464	142	GAL	Tack Coat	5	$ 710	
460	391	TON	HMA	75	$ 29,325	
860.106	3320	FT	Road Striping	0.5	$ 1,660	
180.6	1	Each	Bore Sample Testing	2500	$ 2,500	
Sidewalk to Seven Hills Inn - 830'						
120.1	160	CY	Excavation (5'x1' depth) (sidewalk)	43	$ 6,880	
129.3		CY	Old Pavement Excavation (assume 3")	50	$ -	
151	80	CY	Gravel Borrow (for sidewalk) (assume 6" for entire length + additional for fill)	38	$ 3,040	

170	500	SY	Fine Grading and Compacting (sidewalk)	7	$ 3,500	
698.3	500	SY	Geotextile for separation (sidewalk)	$5.00	$ 2,500	
702	80	TON	Asphalt walk (5' width x 3" depth)	$150.00	$ 12,000	
701.2	2	Each	Curb Ramp	$850.00	$ 1,700	
Shoulder widening to Seven Hills Inn - 830'						
150	300	CY	Ordinary Borrow (Fill) (Assume 1' under all new shoulder	30	$ 9,000	
120.1	250	CY	Excavation (8'x1' depth) (shoulder)	43	$ 10,750	
151	130	CY	Gravel Borrow (for shoulder (assume 6" for entire length + additional for fill)	38	$ 4,940	
170	800	SY	Fine Grading and Compacting (shoulder)	7	$ 5,600	
702	180	Ton	Asphalt Shoulder	$160.00	$ 28,800	
698.3	800	SY	Geotextile for separation (shoulder)	$5.00	$ 4,000	
220		Each	Drainage structure adjusted	$400.00	$ -	
701.2		Each	Curb Ramp	$850.00	$ -	
715.1	2	Each	Mailbox removed and reset	215	$ 430.00	
	1.00	Allow	15% Contingency		$ 22,485	
	1.00	Allow	Design / Engineering (10% of total)		$ 17,238	
			TOTAL PROJECT COST		**$ 189,621**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 172,383**	MassDOT

Project 25,31,32,37: Speed Feedback Signs – East St. (2 locations) / Main St. / Walker St.

These projects include installation of speed feedback (your speed) signs at locations along East St., Main St., and Walker St.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
832.1	2	Each	Speed feedback sign w/ solar panel	$6,000.00	$ 12,000.00	MassDOT

877.3	2	Each	Mounting Pole	$800.00	$ 1,600.00	MassDOT
901.3	2	Each	Concrete Footing	$ 300.00	$ 600.00	MassDOT
102.1	100	LF	Tree Trimming	$ 15.00	$ 1,500.00	MassDOT
	1.00	Allow	Design / Engineering (10% of total)		$ 1,570	
			TOTAL PROJECT COST		**$ 17,270**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 15,700**	MassDOT

ITEM #	*QTY.*	*UNIT*	*DESCRIPTION OF ITEM*	*UNIT PRICE*	*AMOUNT*	*PARTY*
				$	**$**	
832.1	1	Each	Speed feedback sign w/ solar panel	$6,000.00	$ 6,000.00	MassDOT
877.3	1	Each	Mounting Pole	$800.00	$ 800.00	MassDOT
901.3	1	Each	Concrete Footing	$ 300.00	$ 300.00	MassDOT
102.1	100	LF	Tree Trimming	$ 15.00	$ 1,500.00	MassDOT
	1.00	Allow	Design / Engineering (10% of total)		$ 860	
			TOTAL PROJECT COST		**$ 9,460**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 8,600**	MassDOT

Project 26,27,29,30: Pedestrian Lighting – Main St. / Lenox Dale / Ore Bed Rd. / Walker St.

These projects include installation of pedestrian lighting at locations along Main St., at Furnace Park in Lenox Dale, along Ore Bed Rd., and along Walker St.

Project 28: Route 7 Sidewalk Gaps

This project would install new sidewalk to fill existing gaps along Route 7. The town will have to advocate to MassDOT to advance this project.

Project 33: Kemble St. Bike Lanes

This project would narrow lanes and restripe for new bike lanes along Kemble St.. The town will have to advocate to MassDOT to advance this project.

Project 34: Golden Hill Sidewalk Extension

Extension of sidewalk approximately 600' along Golden Hill Rd. from the intersection of Walker St. to the intersection with Catherine St. Installation of a new crosswalk and ADA compliant curb ramp.

Project 35: Catherine St. Pedestrian Improvements

Installation of approx. 300' of new sidewalk from the intersection of Patterson St. to the intersection of Golden Hill Rd. Installation of a new crosswalk and ADA compliant curb ramp.

Project 36: Elm St. Sidewalk Replacement

Replacement of existing sidewalk and ADA accessible crossings along Elm St. in Lenox Dale (approx. 1250'). Replacement will eliminate barriers caused by existing utility poles.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
127	80	CY	Concrete excavation	80	$ 6,400	
120.1	250	CY	Excavation (5'x1' depth)	43	$ 10,750	
151	120	CY	Gravel Borrow (for sidewalk) (assume 6" for entire length)	38	$ 4,560	
170	700	SY	Fine Grading and Compacting	7	$ 4,900	
698.3	700	SY	Geotextile for separation	$5.00	$ 3,500	
701	565	SY	Cement Concrete walk	$55.00	$ 31,075	
701.2	6	Each	Curb Ramp	$1,000.00	$ 6,000	
701.1	130	SY	Cement concrete sidewalk at driveways	$60.00	$ 7,800	
503	1000	Feet	Granite Curb	45	$ 45,000	
451	100	Ton	HMA for patching	160	$ 16,000	
	1.00	Allow	15% Contingency		$ 20,398	
	1.00	Allow	Design / Engineering (10% of total)		$ 15,638	
			TOTAL PROJECT COST		**$ 165,621**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 149,983**	MassDOT

Project 38: Lane Narrowing – Upper Main St.

This project would narrow lanes to provide traffic calming along the MassDOT controlled portion of upper Main St. near its intersection with Route 7. The town will have to advocate to MassDOT to advance this project.

Project 39: Crystal St. Pedestrian Improvements

Replacement of existing curb ramps along Crystal St. with new ADA compliant ramps.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY
127	50	CY	Concrete excavation (estimate 2.5cy/ramp)	65	$ 3,250	
120.1	50	CY	Excavation (ramps)	43	$ 2,150	
120.1	100	CY	Excavation (crossings) (10cy/crossings)	43	$ 4,300	
151	25	CY	Gravel Borrow	35	$ 875	
170	140	SY	Fine Grading and Compacting	7	$ 980	
698.3	140	SY	Geotextile for separation	$5	$ 700	
701	200	SY	Cement Concrete walk	$55	$ 11,000	
701.2	140	SY	Curb Ramp (7sy/ramp)	$75	$ 10,500	
503	300	Feet	Granite Curb (15'/ramp)	45	$ 13,500	
451	50	Ton	HMA for patching	160	$ 8,000	
861.112	1800	Feet	Crosswalk painting	0.5	$ 900	
	1.00	Allow	15% Contingency		$ 8,423	
	1.00	Allow	Design / Engineering (10% of total)		$ 6,458	
			TOTAL PROJECT COST		**$ 67,786**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 61,328**	MassDOT

Project 40: Crystal St. Bicycle Improvements

Restriping of Crystal St. to provide a one-way northbound bike lane with 4' width.

ITEM #	QTY.	UNIT	DESCRIPTION OF ITEM	UNIT PRICE	AMOUNT	PARTY

860.106	25,600	FEET	Allowance for striping	$0.50	$ 12,800.00	MassDOT
	1.00	Allow	15% Contingency		$ 1,920	MassDOT
	1.00	Allow	Design / Engineering (10% of total)		$ 1,472	
			TOTAL PROJECT COST		**$ 16,192**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 14,720**	MassDOT

Project 41: Lenox Dale Bike Parking

Installation of a bike rack at the October Mtn. State Forest pedestrian bridge in Lenox Dale.

ITEM #	*QTY.*	*UNIT*	*DESCRIPTION OF ITEM*	*UNIT PRICE*	*AMOUNT*	*PARTY*
901	1.00	Each	Concrete Pad (for bike rack and repair station)	$ 1,200.00	$ 1,200.00	MassDOT
707.9	1	Each	Bike Rack (on pad)	$1,500.00	$ 1,500.00	MassDOT
			TOTAL PROJECT COST		**$ 2,700**	
			REQUESTED FROM MASSDOT (Total minus design and engineering)		**$ 2,700**	MassDOT

APPENDIX C: MASSDOT COMPLETE STREETS PROJECT PRIORITIZATION PLAN

The following Appendix section (**Table C1**) is a copy of the Tier 2 Prioritization Plan that was submitted to MassDOT. Projects are identical to those found in **Table 6.2** but includes additional information such as estimated start and end locations, anticipated construction duration and other information.

Table C1 MassDOT Complete Streets Tier 2 Prioritization Plan

Project Details			EJ	Complete Streets Location			Project Origin and Type		Complete Streets Needs								Complete Streets Funding Request			Construction Schedule	
Rank	Project Name	Project Description	Environmental Justice Population	Project Limits	Project Start Location: X,Y Coordinates (MA State Plane meter)	Project End Location: X,Y Coordinates (MA State Plane meter)	Complete Streets Project Origin (planning documentation or supporting analysis)	Complete Streets Project Type (refer to the Eligible Projects Worksheet)	Safety	ADA Accessibility	Pedestrian Mobility	Bicycle Mobility	Transit Operations and Access	Vehicular Operations	Freight Operations	Will this project be in Coordination with other Communities? (list, if applicable)	Total Estimated Project Cost	Complete Streets Funding Requested	Other Funding Source(s) and Amount (if applicable)	Anticipated Construction Duration (number of months)	Desired Construction Start Date (month/year)
1	Main St. Intersection Reconstruction	Reconstruction of the intersection of Main St. / Walker St. / West St. into a roundabout.	Yes	Intersection of Main St. / Walker St. / West St.	52938, 902235		CS Needs Assessment	S13, S18, P2, P5	X	X	X	X		X		NO	$2,300,000	$400,000	1900000 (Town, Chap. 90, TIP)	8	04/01/22
2	Main St. Intersection Reconstruction - Option 2	Installation of a curb extension, new crosswalk, and two new ADA compliant crossings at the intersection of Main St. / Walker St. / West St.	Yes	Intersection of Main St. / Walker St. / West St.	52938, 902235		CS Needs Assessment	S13, P2, P5, P8, P9	X	X	X			X		NO	$55,800	$48,500	7300 (Town, Chap. 90)	2	05/01/18
3	Main St. Pedestrian Improvements	Construction of curb extensions, raised crosswalks, and solar powered RRFB at three mid-block crossings along Main St.	No	Main St. from Franklin St. south to Walker St.	52952, 902268	53072, 902589	CS Needs Assessment	S8, S17, SO, B4, P2, P9, P12	X	X	X	X		X		NO	$327,700	$290,000	37700 (Town, Chap. 90)	5	06/01/18
4	Walker St. Pedestrian Improvements	Construction of curb extensions and raised crosswalks at three crossings along Main St. Installation of an RRFB at a mid-block crossing.	No	Walker St. from Main St. east to Morgan Manor.	52964, 902245	53113, 902122	CS Needs Assessment	S8, S17, SO, P2, P9, P12	X	X	X			X		NO	$262,000	$232,000	30000 (Town, Chap. 90)	4	05/01/19

Project Details			EJ	Complete Streets Location			Project Origin and Type		Complete Streets Needs								Complete Streets Funding Request			Construction Schedule	
5	Cliffwood St. Nonmotorized Improvements	Replacement of existing sidewalk and ADA accessible crossings along Cliffwood St. Shoulder widening (4') from end of existing sidewalk to entrance of Kennedy Park along Cliffwood St.	Yes	Cliffwood St. from Main St. north to Kennedy Park entrance near intersection with Reservoir Rd.	52567, 903989	53038, 902513	CS Needs Assessment	S15, P1, P2, P9	X	X	X	X				NO	$242,323.00	$220,294.00	22029 (Town, Chap. 90)	3	04/01/19
6	Wayfinding System	Installation of a town-wide wayfinding system. System to include gateway signage at major entrances to community, directional "finger posts" signage and location signs at open space destinations and public facilities.	Yes	Town-Wide	Multiple Locations throughout town		CS Needs Assessment	B7, P4			X	X		X		NO	$102,465.00	$93,150.00	9315 (Town, Chap. 90)	3	04/01/19
7	Housatonic Shared-Use Path - Option 1	Construction of over 5 miles of 10'-wide asphalt shared-use path from Lenox Dale to Pittsfield.	No	Lenox town line north to Pittsfield town line	56240, 906394	56234, 901419	CS Needs Assessment	B1		X	X	X				NO	$6,250,508.00	$400,000.00	5850508 (Town, Chap 90, TIP)	6	04/01/23
8	Housatonic Shared-Use Path - Option 2	Construction of over 5 miles of 10'-wide aggregate shared-use path from Lenox Dale to Pittsfield.	No	Lenox town line north to Pittsfield town line	56240, 906394	56234, 901419	CS Needs Assessment	B1		X	X	X				NO	$5,369,396.00	$400,000.00	4969396 (Town, Chap 90, TIP)	6	04/01/23
9	East St. Sidewalk Extension	Extension of sidewalk along East St. from existing sidewalk end south approx. 1500' to the intersection of Walker St.	No	East St. from existing sidewalk end south to Walker St.	55403, 900744	55369, 900262	CS Needs Assessment	P2, P5, P9	X	X	X					NO	$113,477.00	$103,161.00	10316 (Town, Chap. 90)	2	04/01/20
10	Housatonic St. Reconstruction and Nonmotorized Improvements	Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along federal-aid ineligible portions of Housatonic St. from East St. to Crystal St. Improvements will coincide with reconstruction of the vehicle lanes.	No	Housatonic St. from East St. to Crystal St.	55066, 902066	56230, 901427	CS Needs Assessment	S15, P2, P5, P9	X	X	X	X		X		NO	$1,500,000.00	$400,000.00	$1,100,000.00	4	06/01/18
11	Old Stockbridge Rd. Nonmotorized Improvements	Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk from the proposed Elm Court development south to Frothingham Crossing Improvements will coincide with reconstruction of the vehicle lanes	Yes	Old Stockbridge Rd. from Hawthorne to Frothingham Crossing	52697, 900447	52674, 899929	CS Needs Assessment	S15, P2, P5, P9	X	X	X	X		X		NO	$1,370,210.00	$400,000.00	970210 (Town, Chap. 90)	4	08/01/21
12	East St. Reconstruction and Nonmotorized Improvments	Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along East St. Improvements will coincide with reconstruction of the vehicle lanes.	No	East St. from Pittsfield town line south to Walker St.	55660, 907607	55356, 900238	CS Needs Assessment	S15, P2, P5, P9	X	X	X	X		X		NO	$5,000,000.00	$400,000.00	4400000 (Town, Chap. 90, TIP)	5	08/01/25
13	Lenox Village Walk	Construction of new ADA compliant sidewalk between Franklin and Walker St. Installation of pedestrian amenities such as benches,	No	Franklin St. to Walker St.	53054, 902170	53069, 902538	CS Needs Assessment	P2, P5, P9, P4, P0		X	X					NO	$810,000.00	$400,000.00	4100000 (Town, Chap. 90,	5	04/01/24

Project Details			EJ	Complete Streets Location			Project Origin and Type		Complete Streets Needs								Complete Streets Funding Request			Construction Schedule	
		lighting, wayfinding, and other site furnishings in 3 pocket parks.																	MassWorks)		
14	East New Lenox Rd. Shoulder Widening	Shoulder widening along East New Lenox Rd. to install new 4'-wide bicycle lanes. Bicycle accomodations may be needed to connect future shared-use path projects in Lenox and Pittsfield.	No	East New Lenox Rd. from Pittsfield town line south to Roaring Brook Rd.	55513, 906544	57122, 906209	CS Needs Assessment	S15				X				NO	$704,205.00	$353,281.56	350923.44 (Town, Chap. 90)	4	04/01/23
15	Frothingham Nonmotorized Improvements	Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along Frothingham Crossing.	No	Frothingham Crossing from Old Stockbridge Rd. east to Kemble St.	52674, 899930	52971, 899984	CS Needs Assessment	S15, P2, P5, P9		X	X	X				NO	$286,774.00	$174,449.85	112324.15 (Town, Chap. 90)	4	08/01/21
16	Undermountain Rd. Striping	Vehicle lane and shoulder striping along Undermountain Rd. to provide pedestrian and bicycle accomodation as well as traffic calming.	Yes	Undermountain Rd. from West St. to Cliffwood St.	50749, 901814	52570, 903987	CS Needs Assessment	S1	X		X	X				NO	$30,360.00	$27,600.00	2760 (Town, Chap. 90)	1	09/01/19
17	Old Stockbridge Rd. Sidewalk Extension	Extension of sidewalk along Old Stockbridge Rd. from Hawthorne south to the proposed Elm Court Development.	Yes	Old Stockbridge Rd. from Hawthorne to Elm Court driveway	52793, 901853	52696, 900452	Private Development Review	P2, P5, P9	X	X	X					NO	$1,370,210.00	$400,000.00	970210 (Town, Chap. 90)	4	08/01/21
18	Main St. Sidewalk Repairs	Repair of sections of sidewalk along Main St.	Yes	Main St. from Franklin St. south to Walker St.	53070, 902583	52959, 902284	CS Needs Assessment	P1		X	X					NO	$18,975.00	$17,250.00	1725 (Town, Chap. 90)	1	04/01/20
19	Walker St. Sidewalk Repairs	Repair of sections of sidewalk along Walker St.	No	Walker St. from Main St. east to Morgan Manor.	52959, 902286	53113, 902121	CS Needs Assessment	P1		X	X					NO	$18,975.00	$17,250.00	1725 (Town, Chap. 90)	1	04/01/20
20	Church St. Sidewalk Repairs	Repair of sections of sidewalk along Church St.	No	Church St. from Franklin to Walker	53195, 902507	53053, 902170	CS Needs Assessment	P1		X	X					NO	$18,975.00	$17,250.00	1725 (Town, Chap. 90)	1	04/01/20
21	Franklin St. Sidewalk Repairs	Repair of sections of sidewalk along Franklin St.	No	Franklin St. from Main St. to Church St.	53069, 902583	53195, 902507	CS Needs Assessment	P1		X	X					NO	$18,975.00	$17,250.00	1725 (Town, Chap. 90)	1	04/01/20
22	Housatonic St. Sidewalk Repairs	Repair of sections of sidewalk along Housatonic St.	Yes	Housatonic St. from Main St. to Ore Bed Rd.	52993, 902378	53128, 902330	CS Needs Assessment	P1		X	X					NO	$18,975.00	$17,250.00	1725 (Town, Chap. 90)	1	04/01/20
23	Plunkett St. nonmotorized Improvements	Shoulder widening to accommodate new 4'-wide bike lanes on both sides of the road as well as new ADA compliant sidewalk along Plunkett St. from the Intersection of Route 7 to the Seven Hills Inn.	No	Plunkett St. from Route 7 to Seven Hills in Driveway	53019, 899922	53298, 899903	CS Needs Assessment	S15, P2, P5, P9	X	X	X	X	X			NO	$189,621.00	$172,383.00	17238 (Town, Chap. 90)	3	04/01/22
24	Main St. Traffic Calming	Installation of a speed feedback sign along the southbound lane of Main St. at the 20mph transition.	No	Main St.	53291, 903485		CS Needs Assessment	S5	X		X	X	X			NO	$9,460.00	$8,600.00	860 (Town, Chap. 90)	1	04/01/18
25	Main St. Pedestrian Lighting	Installation of new light bollards, pedestrian lights and ground mounted lights at several locations along Main St.	Yes	Main St. from Franklin St. south to Walker St.	52930, 902328	53064, 902577	CS Needs Assessment	S9, PO	X		X					NO	$ 242,000	$ 214,000	28000 (Town, Chap. 90)	4	04/01/18

Project Details			EJ	Complete Streets Location			Project Origin and Type		Complete Streets Needs								Complete Streets Funding Request			Construction Schedule	
26	Lenox Dale Pedestrian Lighting	Installation of pedestrian lighting near sidewalk along Furnace Park in Lenox Dale.	No	Furnace Park, Lenox Dale	56017, 899679		CS Needs Assessment	S9, PO	X		X					NO	$57,500.00	$48,000.00	9500 (Town, Chap. 90)	2	04/01/18
27	Ore Bed Rd. Pedestrian Lighting	Installation of Pedestrian lighting along Ore Bed Rd.	No	Ore Bed Rd. from Tucker to Housatonic	53298, 902387		CS Needs Assessment	S9, PO	X		X					NO	$57,800.00	$48,200.00	9600 (Town, Chap. 90)	2	04/01/18
28	Walker St. Pedestrian Lighting	Installation of new light bollards, pedestrian lights and ground mounted lights at several locations along Main St.	No	Walker St. from Main St. east to Morgan Manor	53053, 902171	53170, 902075	CS Needs Assessment	S9, PO	X		X					NO	$46,800.00	$39,000.00	7800 (Town, Chap. 90)	2	04/01/18
29	East St. Traffic Calming Phase 1	Installation of two speed feedback signs near the High School along East St.	No	East St. near High School	55178, 901682		CS Needs Assessment	S5	X		X	X	X			NO	$17,270.00	$15,700.00	1570 (Town, Chap. 90)	1	04/01/18
30	Walker St. Traffic Calming	Installation of two speed feedback signs along Walker St. Installation is expected to occur after major reconstruction is completed.	No	Walker St.	54644, 900857		CS Needs Assessment	S5	X		X	X	X			NO	$17,270.00	$15,700.00	1570 (Town, Chap. 90)	1	04/01/18
31	Golden Hill Rd. Sidewalk Extension	Extension of sidewalk approx. 600' along Golden Hill Rd. from the intersection of Walker St. to the intersection with Catherine St. Installation of a new crosswalk and ADA compliant curb ramp.	No	Golden Hill Rd. From Walker St. to Intersection of Catherine St.	55969, 899535	55994, 899536	Bicycle/Pedestrian Audit	P2, P5, P9	X	X	X					NO	$198,000.00	$175,000.00	23000 (Town, Chap. 90)	2	04/01/20
32	Catherine St. Pedestrian Improvements	Installation of approx. 300' of new sidewalk from the intersection of Patterson St. to the intersection of Golden Hill Rd. Installation of a new crosswalk and ADA compliant curb ramp.	No	Catherine St. from Patterson to Golden Hill Rd.	55834, 899474	55804, 899540	Bicycle/Pedestrian Audit	P2, P5, P9	X	X	X					NO	$66,700.00	$58,000.00	8700 (Town, Chap. 90)	2	04/01/20
33	Elm St. Sidewalk Replacement	Replacement of existing sidewalk and ADA accessible crossings along Elm St. in Lenox Dale. Replacement will eliminate barriers caused by existing utility poles.	No	Elm St. from Walker to Crystal	55830, 899741	56199, 899797	Bicycle/Pedestrian Audit	P1, P5, P9. S2	X	X	X					NO	$165,621.00	$149,983.00	15638 (Town, Chap. 90)	2	04/01/21
34	East St. Traffic Calming Phase 2	Installation of two speed feedback signs along East St. in advance of the intersection with Hubbard St.	No	East St. near intersection with Hubbard St.	55067, 902716		Bicycle/Pedestrian Audit	S5	X		X	X	X			NO	$17,270.00	$15,700.00	1570 (Town, Chap. 90)	1	04/01/18
35	Crystal St. Pedestrian Improvements	Replacement of existing curb ramps along Crystal St. with new ADA compliant ramps. Project will include associated sidewalk repair work.	No	Crystal St. from Mill St. to Housatonic St.	56066, 899534	56228, 901429	Bicycle/Pedestrian Audit	P1, P2, P9	X	X	X					NO	$67,786.00	$61,328.00	6458 (town, Chap. 90)	2	04/01/21
36	Crystal St. Bicycle Improvements	Restriping of Crystal St. to provide a one-way northbound bike lane with 4' width.	No	Crystal St. from Mill St. to Housatonic St.	56066, 899534	56228, 901429	Bicycle/Pedestrian Audit	S1	X		X					NO	$16,192.00	$14,720.00	1472 (Town, Chap. 90)	1	04/01/23
37	Lenox Dale Bike Parking	Installation of a bike rack at the October Mtn. State Forest pedestrian bridge in Lenox Dale.	No	Pedestrian bridge near intersection of Crystal and Housatonic St.	56328, 901384		CS Needs Assessment	B3				X				NO	$2,700.00	$2,700.00		1	04/01/18

APPENDIX D: SHARED-USE PATH PLANNING EFFORTS

Lenox Shared-Use Path Planning

Beginning in 2004 the Town worked with the Berkshire Bike Path Council to identify potential routes for a north-south, county-wide, bicycle route. In Lenox, an off-road route was envisioned to travel from the Housatonic Street/Crystal Street intersection in Lenox Dale northward to Pittsfield. During 2006-2008 the Town actively investigated the possibility of developing the off-road route as shared-use path, utilizing an old trolley line rail bed running parallel and west of the Housatonic Railroad tracks and the Housatonic River. Despite decades of abandonment, the trolley line bed was still largely, including a solid base and culverts that were largely intact. Field work was conducted, property information was collected and a draft route was identified. During this time it was determined that ownership of the trolley line right of way had reverted to the residential property owners whose lands the trolley line bisected. Most of the owners lived in homes that fronted East Street.

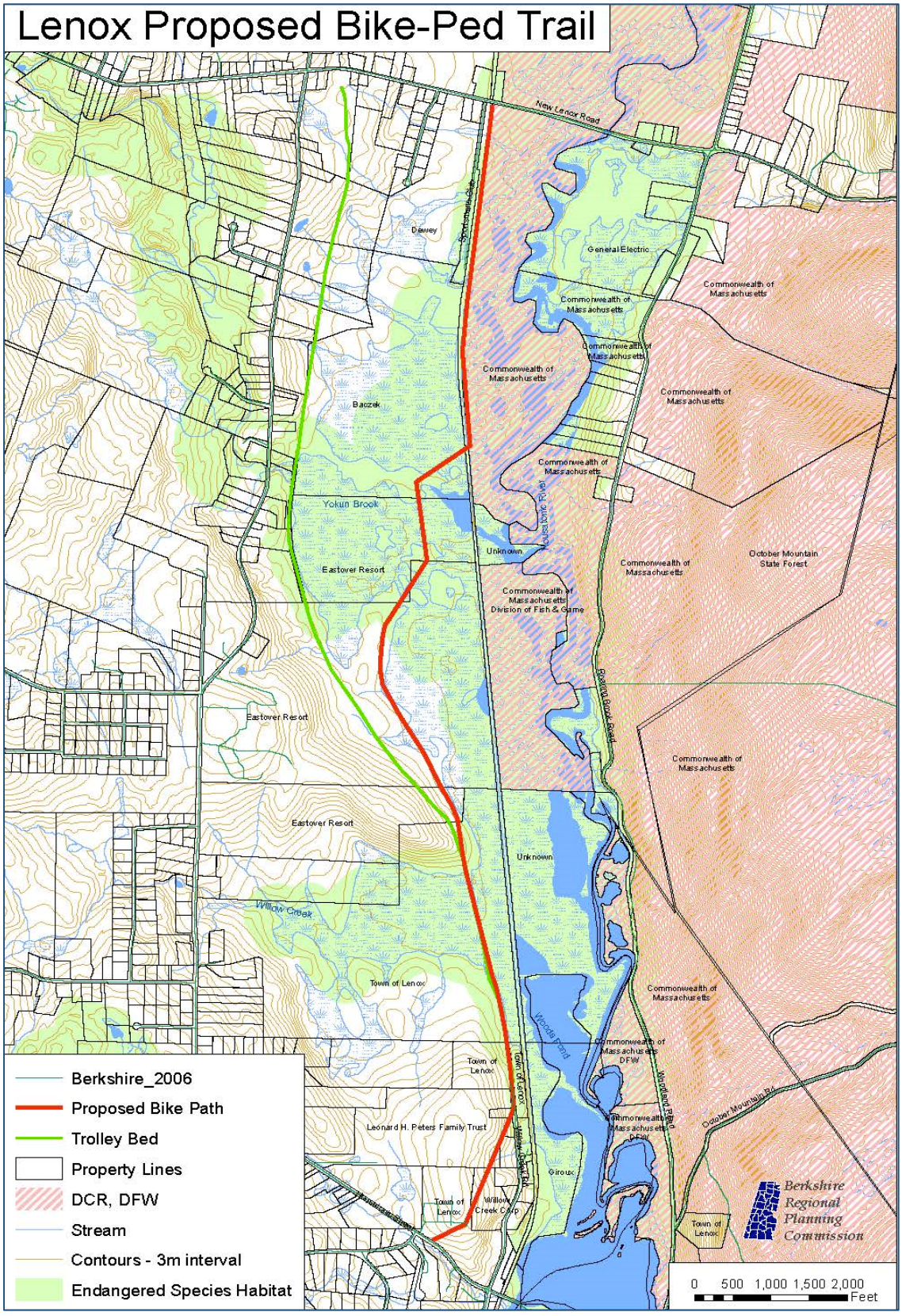
BRPC evaluated the potential impacts to residentials homes, creating an informational packet for each individual property owner along the route. The Town approached several property owners to discuss the possibility of locating a shared-use path along the old trolley bed. A few key landowners raised concerns about the path being too close to their homes and would not support the route as laid out, so the Town considered alternate routes.

In 2008 the Town considered alternate routes, moving it eastward and farther away from residential homes. Once route would utilize sewer easements that the Town had on some undeveloped private lands. Another route involved crossing the Housatonic Railroad and traveling on state-owned lands managed by the Division of Fisheries and Wildlife (DFW). Field investigations and discussions with DFW revealed that the revised route through the Gige Darey Wildlife Management Area (WMA) might not meet DFW standards. Drawing walkers, bikers and hunters together in such close proximity was a major concern, particularly as the Darey WMA is a popular site for deer and bird hunters (pheasants are stocked in two or three sites along the route). Additionally, this revised route would involve a crossing of the Housatonic Railroad tracks, which would require permission from the railroad owner, a feat that would be extremely difficult to achieve. Refer to **Figure D1** for the routes considered.

In 2009 the Town of Lenox pursued a second shared-use path route that traveled along sections of East and Housatonic Streets. The path would create a direct connection between the Lenox Memorial Middle and High School and Lenox Dale. The path would be located on the eastern side of East Street and on the northern side of Housatonic Street and would be approximately one mile in length. The shared-use path would serve as both sidewalk and bike path, a great improvement for the Housatonic Street section which currently has no sidewalk or shoulder. The connection would create a bike/pedestrian link between greater Lenox and a host of recreational properties, including the proposed trolley line shared-use path (to Pittsfield), the Darey Wildlife Management Area, October Mountain State forest (via the pedestrian bridge over the Housatonic River).

The Town proceeded with engineering of the East Street / Housatonic Street path, reaching 25% design level and proceeding through the Massachusetts MEPA review process. Despite Town Meeting approval to use Town funds to reach 100% design, the full design and construction of this path was abandoned after landowners on East Street voiced strong concerns about loss of privacy and other impacts.

Figure D1 Shared-use Path Alternatives 2008



Lee Shared-use Path Planning

Lenox has a desire to create walking and biking links to neighboring communities. The Lee Bikeway Committee has investigated several biking routes through the town, having completed a preliminary feasibility study in 2010. As a result of this study, the Committee has been able to secure National Scenic Byway Grant funds for design of the first one-mile section of off-road shared-use path that travels from Pleasant Street (Rt. 102) northward along the Housatonic River to West Park Street. As of August 2017 this section of path is approaching 25% design level. Construction funding for this mile of path is scheduled into the TIP for 2020. In 2017 MassDOT agreed to designate the shoulders of Pleasant Street as bike lanes during a repaving of the road, painting bike symbols in the shoulder and adding new signage to the roadway. The Pleasant Street bike lanes and the off-road river path is considered Phase I of a town-wide bicycling network. Phase I, which will connect the town centers of Lee and Stockbridge, will provide approximately five miles of bicycling infrastructure.

While design of the first mile of off-road shared-use path is well underway, the route northward to Lenox from West Park Street is far less certain. Several routes are being considered, with the favored routes all being off-road. However, due to land use and steep topography constraints, the final route northward to Lenox Dale may need to be a mix of off-road and on-road segments. **Figure D2** shows the routes that are under consideration by the Lee Bikeway Committee.

Figure D2 Lee Routes Under Consideration (2017)