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Engineers + Planners

Complete Street Prioritization Plan

Stow, Massachusetts



Prepared for
Town of Stow, Massachusetts

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Introduction

The Town of Stow is committed to encouraging walking and biking; when residents can replace short driving trips with other modes of transport, it helps lower traffic congestion and improves public health and the livability of the Town. The Town has also made a commitment through a Complete Streets Policy to approach each new transportation project with an aim to provide safe and accessible options to users of all ages and abilities. This Prioritization Plan enables the Town to access resources from the Commonwealth's Complete Streets Funding Program to build sidewalks, bike paths, safer crossings, and many other opportunities to holistically improve the transportation options available to the public.



The Stow Town Hall is located on Great Road and in the heart of Town Center.

A Complete Street is one that provides safe and accessible travel alternatives for all modes—walking, biking, transit, and motorized vehicles. Complete Streets designs encourage safety, health, and economic vitality that can be enjoyed by people of all ages and abilities. Having multi-modal options to travel between home, work, schools, recreation, and retail destinations are essential in promoting more livable communities.

Complete Streets improvements may be large-scale – such as a corridor-wide project that improves conditions for multiple users – or focused on the needs of a single mode – such as a bus shelter for a highly-used bus stop. A commonality for all projects is that each improvement must meet current Americans with Disabilities Act (ADA) and Massachusetts Architectural Access Board (AAB) guidelines.

The Massachusetts Department of Transportation (MassDOT) recognizes the importance of projects that provide thorough, context-sensitive, multi-modal transportation options. To promote these priorities, MassDOT issued the Healthy Transportation Policy Directive in 2013. This directive, while focused on state and federally funded roadways, can be applied to local roads at the municipal



level. It was through the creation of the Complete Streets Funding Program that this goal was realized.

MassDOT Complete Streets Funding Program

The MassDOT Complete Streets Funding Program was created by legislative authorization through the 2014 Transportation Bond Bill. The intent of this program is to reward municipalities that demonstrate a commitment to Complete Streets both in policy and in practice. This is also a great opportunity to continue to build on the relationship between the Baker-Polito administration and municipalities which had started earlier through the Community Compact Cabinet. The reward to municipalities that choose to participate includes funding for technical assistance in the development of a Prioritization Plan and funding for construction of Complete Streets projects selected from the Prioritization Plan. The eligibility requirements are designed to demonstrate a municipality's commitment to embedding Complete Streets in policy (Complete Streets Policy) and plan (Complete Streets Prioritization Plan).

The Complete Streets Funding Program is structured with three Tiers:

- Tier 1 – Complete Streets Training and Policy Development;
- Tier 2 – Complete Streets Prioritization Plan; and
- Tier 3 – Project Construction Funding.

The Town of Stow completed Tier 1 by passing its Complete Streets Policy on March 28, 2016.

This document serves as the Town's Tier 2 – Complete Streets Prioritization Plan.



The Town of Stow

The Town of Stow is a predominantly rural town with a population of 6,590¹ and many conservation lands, farms, golf courses, and orchards that contribute to the Town's character and economy. Historically an active farming and textile mill center, Stow has transitioned into a residential suburb while sustaining its agricultural heritage². The Town of Stow is nestled along the western bank of the Assabet River, bordered by Bolton and Harvard to the west, Maynard and Sudbury to the east, Hudson to the south, and Boxboro and Acton to the north. While



A typical landscape adjacent to roadways in Stow.

West Acton Road and Gleasondale Road (Route 62) bisect the Town from north to south, Great Road (Route 117/62) traverses east/west, altogether splitting the Town into four quadrants.

The Great Road (Route 117/62) corridor contains most of Stow's commercial development, yet also contains the historic Town Center and Lower Village neighborhood. Several of the Town's municipal buildings, including the Randall Library, Town Hall, United States Postal Service, Pompositticut Community Center, and Center (elementary) School are located along Great Road (Route 117/62).

Stow's Town Center and the Lower Village neighborhood contain a significant number of public service destinations, including the Lower Village Cemetery, Stow Shopping Center, Highrock Stow Chapel, Apple Country Animal Hospital, and several restaurants. At the southern end of Gleasondale Road (Route 62) lies Gleasondale Village (also known as Rock Bottom), another historic village that has a long history as a major milling center in New England. Key destinations within Gleasondale Village include historic sites such as the Randall-Hale Homestead³, Gleason Homestead⁴, Gleasondale Mill, Gleasondale Mill Boarding House⁵, and the Gleasondale Dam and

¹ United States Census, 2010

² *Stow in Brief*, Town of Stow website

³ The home of Abraham Randall, a man who was born in Stow in 1741 and built the first mill called "Randall's Mill".

⁴ A federal house built around 1836 and was renovated by Benjamin Whitney Gleason. The house was once used in advertising for Pepperidge Farm bread.

⁵ A building that was built around 1871. This was where mill workers lived during their mill employment.



Canal⁶. Gleasondale Village is primarily a rural residential area abundant with multi-family, medium-density, and low-density housing types. The mill buildings are still home to light industrial uses.

The remainder of the Town contains more residential uses and open space for passive and recreation purposes. There are five orchards open to the public during apple-picking season and four golf courses that provide approximately 500 acres of open recreational space. Related tourism during the late summer and fall months bring thousands of visitors to Stow, creating seasonal traffic patterns and congestion. Stow has an abundant amount of forest and wetlands that offer residents access to hiking, rail trails, paddling, and bird watching within a portion of the 2,230-acre Assabet River National Wildlife Refuge⁷. Stow is also home to the Pine Bluff Recreation Area on Lake Boon, Gardner Hill Town Forest, and the Minute Man Air Field (a private general aviation airport for public use)⁸.

EXISTING ROADWAY NETWORK

There are no major limited access highways that pass through Stow. Routes 117, 62, and 27 provide access to Stow by connecting with major interstate highways, such as Interstate 495 (I-495) and Route 2. Routes 117 and 62 are heavily used by commuters and commercial traffic. These two roads, in addition to West Acton Road, shape the Town into four quadrants and form the primary regional road network. The street network in Stow is dominated by local roads connected directly or indirectly with Routes 117 and 62.

EXISTING PEDESTRIAN AND BICYCLE NETWORK

There are few sidewalks in Stow, and of these, many need repairs. The areas of the Town that have sidewalks include Great Road, portions of Crescent Street, and several residential developments located throughout the Town.

Although there are no on-street bicycle facilities that accommodate cyclists, Stow has a significant bicycling community, made up of both residents and those who ride through Stow, which would benefit from bicycle-related amenities. Commuter and recreational cyclists use West Acton Road, South Acton Road, Boxboro Road, Gleasondale Road, and Great Road (Route 117/62).

⁶ The Gleasondale Dam and Canal were built by mill owners to divert water from the Assabet River to provide the power to process wool.

⁷ One hundred and thirteen acres of the Assabet River National Wildlife Refuge is located in Stow.

⁸ *Inventory*, Gleasondale Village Revitalization Plan, University of Massachusetts- Amherst, 2013-2015



EXISTING TRANSIT NETWORK

There are no public transportation systems in Stow, although the MBTA commuter rail is accessible at South Acton Station, which is approximately 1 mile from the Stow town line and can be reached by both South Acton Road and Red Acre Road.

EXISTING PROJECTS

Gleasondale Road Bridge Replacement Project

The bridge over Gleasondale Road (Route 62) will be rehabilitated through the Massachusetts Transportation Improvement Program with the tentative construction date set to 2021. Because the bridge was deemed structurally deficient by MassDOT, a new bridge is currently in the preliminary design phase. The planning and design process will take two to three years, and construction may be staged to replace one lane at a time. This replacement project, including design, contracting, and construction, is expected to last five to six years⁹.

Lower Village Traffic Safety Improvement Project

To strengthen Lower Village's identity and improve safety for all road users, a traffic safety improvement project is currently underway. The improvements will fix unsafe pedestrian and cycling conditions, improve traffic flow at peak hours, and expand accessibility within the area.

Temporary pedestrian refuge islands were installed along Great Road and in front of the Stow Shopping Center under the recommendation of the Lower Village Committee as a cost-effective method for calming traffic to reduce speeds and increase safety. The islands, according to the Town Police, have been successful at reducing crashes. A part of Lower Village's traffic safety improvement project will include upgrading the temporary pedestrian refuge islands with permanent raised medians. A refuge island will also be installed near the western entrance to the Stow Shopping Center, which will serve to shorten the crossing distance for pedestrians and improve sightlines during peak hours.

Existing crosswalks in Lower Village lead pedestrians into curb cuts or through landscaped medians. Through the safety improvement project, these crosswalks will be removed, and new crosswalks will be installed in locations that connect pedestrians to sidewalks and walkways and which utilize the pedestrian refuge islands to ensure an uninterrupted path. Finally, the project will shorten and realign wide curb cuts along Great Road to better define the specific entrances to sites off Great Road, decreasing pedestrian crossing distances. The location of the curb cuts will be shifted to make turning safer and easier during peak hours.

⁹ *Gleasondale Road Bridge Replacement Project Fact Sheet*, MassDOT



Methodology

At Howard Stein Hudson (HSH), we believe that the Complete Streets Prioritization process is an opportunity for a comprehensive and holistic look at the unique needs of each community. We utilize several innovative tools to better understand existing conditions and the effect proposed projects will have. Together, these tools allow us to answer three key planning questions: Where are existing conditions deficient? What are the community's priorities? And finally, where is the demand?

With a focus on pedestrians, bicyclists, and transit users, our data collection and analysis develop a complex understanding of where conditions are unsafe, uncomfortable, or inaccessible, as well as where safe and comfortable routes can be best utilized to expand the pedestrian and bicycle networks. Community and municipal input contributes local expertise to the project identification and selection processes and informs an understanding of the community's values. Equity assessments hone in on the neighborhoods most in need of transportation network and facility improvements. Finally, measures of network latent demand provide an understanding of project opportunities and are another important factor for consideration within the prioritization process.

Each set of analysis used to select and prioritize the project list is data driven, transparent, and easily communicated through visual tools. These tools are designed to be living documents that can assist in the Complete Streets Prioritization process today and other planning initiatives moving forward. In the next section, we describe each tool and the existing conditions found in Stow.

Tools to Determine Deficient Conditions

To determine the locations where Complete Streets improvements are desirable and necessary, HSH uses a series of data. The following tools show where there may be gaps in connectivity that deter people from walking and bicycling.

SAFETY

The safety of all modal users is a top concern for the Complete Street Prioritization process. Bicycle and pedestrian crashes are typically taken from MassDOT Crash Reports from the three most recent complete years of data; at the time of this report, the most recent data available is from 2013-2015. Three years of data are used for a larger set of data points and to get a better sense of patterns in crashes. The location of crashes can indicate where intersection or corridor projects could best improve safety conditions. Identified projects that address crash locations hold a high level of priority within our project rankings. Providing dedicated bicycle facilities, such as consistent shoulders or dedicated bicycle lanes, as well as clearly marked wayfinding signage to direct cyclists



to safer, residential streets can help reduce crashes involving bicyclists. We investigated vehicular crashes provided by the Town as an additional factor to determine the influence of road design in the safety and comfort of Stow's road networks for all users. In total, there were four bicycle crashes, two pedestrian crashes, and 347 vehicular crashes that occurred within Stow between 2013 – 2015.

EXISTING CONDITIONS – BICYCLE CRASHES

The bicyclist crash map (**Figure 1**) reflects locations of crashes involving bicyclists between 2013 – 2015. Within the span of three years, four bicycle crashes were reported. Three out of the four bicycle crashes were located along Great Road, specifically on the intersections of Great Road and Hudson, Great Road and Wheeler, and Great Road and Gleasondale Road. The fourth crash was in the southeast portion of the town, specifically on State Road and Sudbury Road. All four crashes all occurred during the day and were non-fatal, including one that was “property damage only” with no injuries reported. The nature of the four crashes involved either an angle collision or a sideswipe between a cyclist and a vehicle.

EXISTING CONDITIONS – PEDESTRIAN CRASHES

The pedestrian crash map (**Figure 1**) reflects locations of crashes involving pedestrians between 2013 – 2015. Within the span of three years, two pedestrian crashes occurred in 2015. There were no crashes involving pedestrians in 2013 and 2014 that were reported. The two crashes were located on Old Bolton Road and Elm Ridge Road. Both crashes occurred during the day and were non-fatal.

EXISTING CONDITIONS – VEHICULAR CRASHES

The vehicular crash map (**Figure 2**) reflects all vehicular accidents that occurred in Stow between 2013 – 2015. The majority of traffic crashes occurred along Great Road, with clusters located at the intersections of Great Road/Gleasondale Road, Great Road/Hudson Road, and the Lower Village area. Among the three years, 2014 had the highest number of crashes (124) with 2013 and 2015 having 108 and 115 crashes, respectively. When looking at each year individually, the location of crashes shared a similar pattern: traffic crashes per year were mostly located along Great Road. Great Road is a principal arterial that provides direct connections to the Town of Bolton and Town of Maynard. The corridor also has the largest number of destinations, and residents who need to go to Town Hall or the schools in Town Center must use Great Road. Intersection improvements that focus on improving pedestrian and bicycle safety along the high crash cluster areas can help improve safety along this corridor.



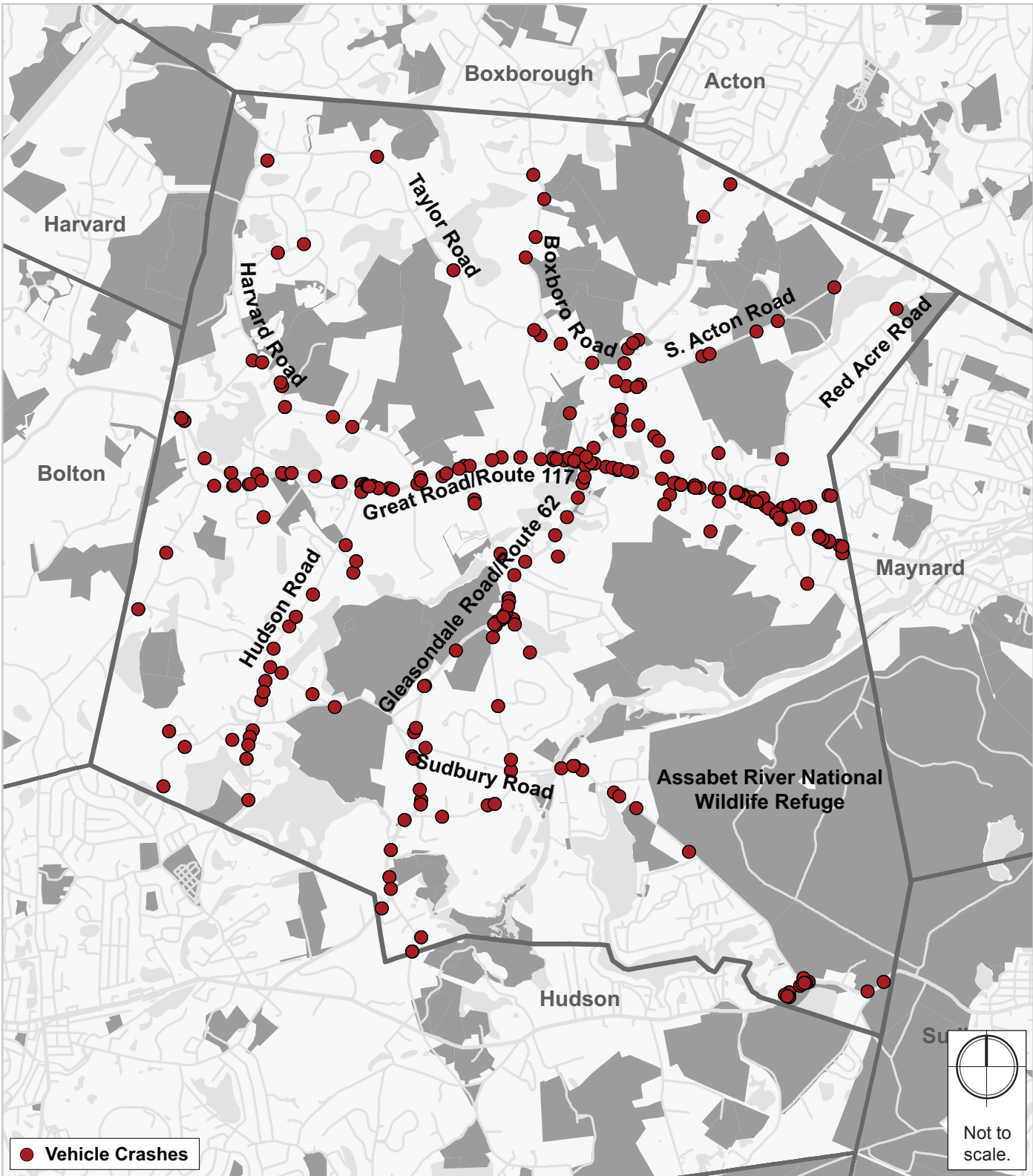
Figure 1. *Bicycle and Pedestrian Crashes, 2013-2015*



Data Source: HSH, MassGIS



Figure 2. *Vehicle Crashes, 2013-2015*



Data Source: HSH, MassGIS, Town of Stow



LEVEL OF COMFORT

To create and/or improve excellent active transportation environments, we assess both bicycle and pedestrian level of comfort. Level of comfort addresses not only whether a sidewalk or bicycle accommodation is provided, but also other factors, such as the speed of traffic, proximity to green space and separation from the roadway. These factors contribute not only to the physical safety of vulnerable road users, but also to the overall comfort of the roadway, which is a major factor of whether pedestrians and bicyclists will use it.

Areas with low comfort are targeted for project selection. During the prioritization process, projects with low bicycle or pedestrian comfort receive greater priority as well as projects that would increase the level of comfort most. Fixing a short, low-comfort segment can often bridge two neighborhoods' high-comfort streets, substantially expanding the bicycling network in both neighborhoods.

For both bicycle and pedestrian analyses, we use the road edge as the basis for geographic information systems (GIS) analysis rather than the centerline. This allows us to have directionality for each segment and add subtleties such as one-way routes or intersection crossings for each direction.

MassGIS roadway data is used to assign road speed, average daily traffic (ADT), number of adjacent lanes, the presence and width of a median, and roadway surface width values to each segment, as well as the roadway characteristics for intersection crossings. Manual data entry for each segment recorded the type and width of sidewalks or bicycle facilities, the presence of a centerline, and right-turn lane characteristics at signalized intersections. In certain cases, adjustments were made to reflect local knowledge of conditions not captured by the analysis, such as the impact of sharp curves on level of comfort.

BICYCLE LEVEL OF COMFORT

The Bicycle Level of Comfort (BLOC) methodology is based on analysis originally carried out by Professor Peter Furth of Northeastern University. His team developed a set of criteria to determine the level of traffic stress for road segments, which correspond to the type or ability of bicyclist who would be willing to ride on that segment. The types of riders relate to categorizations first presented by Roger Geller, Bicycle Coordinator at the Portland Bureau of Transportation in Oregon, which classified cyclists into four categories: “No Way No How,” encompassing around 30% of the population of Portland, OR, who are not interested in bicycling at all; the “Interested but Concerned” group, which makes up 60% of the population; “Enthusied and Confident” riders who make up about 7% of the population; and “Strong and Fearless” riders who make up less than 1% of the population. **Figure 3** shows an illustration of these categories.



We have based our analysis for the Town of Stow on the same methodology with minor adjustments to produce a town-wide map of Bicycle Level of Comfort (BLOC), ranging from high to low. In general, those in the 60% population range who are Interested but Concerned would likely be willing to ride on the most comfortable routes, thus falling into the “High” and “Medium-High Comfort” categories in our analysis. These routes typically include low-speed residential roads that are often without centerlines, physically separated bicycle facilities, and off-street trails. Confident and Enthused riders would likely be willing to ride on road segments that fall into the “Medium-Low” Comfort category, and Strong and Fearless bicyclists would accept the “Low” Comfort category. A low-stress cycling network is one where much of the population would feel comfortable riding; as such, we consider high and medium-high comfort routes to dictate the usable cycling network.



Wide travel lanes and intersection that lack bicycle facilities and shoulders at the intersection of South Acton Road, West Acton Road, and Boxboro Road.

Existing Conditions – Bicycle Level of Comfort (BLOC)

The BLOC map (**Figure 4**) shows locations where people would and would not feel safe riding; it helps identify project locations that would most benefit from a modal shift towards cycling. Great Road, South Acton Road, Hudson Road, and portions of Gleasondale Road and Red Acre Road have low levels of bicycle comfort. Great Road and Gleasondale Road are classified as principal arterials and serves as the Town’s primary connection between Maynard, Bolton, and Hudson. Great Road and Gleasondale Road have posted speed limits that range between 35 – 45 mph and average daily traffic (2012) values of 11,071 and 5,334, respectively. Great Road and Gleasondale Road contain most of the Town’s commercial/business uses. South Acton Road, a collector roadway, has posted vehicular speed limits that range from 40 – 45 mph with very narrow shoulders. There are also many cyclists within and from outside of Stow who use South Acton Road; providing bicycle improvements that would make this roadway safer would have a positive impact to its existing conditions. Hudson Road branches off from Great Road and continues south towards Hudson. This roadway has posted speed limits of 40 – 45 mph and narrow shoulders. The average daily traffic (2012) value for Hudson Road is 1,131. Land uses that surround Hudson Road vary; industrial



businesses such as Hudson Road Automotive, CPI Radant Technologies Division, Hydro-Test Products, as well as residential developments and eating establishments like Dunkin Donuts are all located along this corridor. Red Acre Road is a local road that branches off from Great Road and continues north towards South Acton. This roadway has posted speed limits that range from 20 – 35 mph with narrow shoulders and consists primarily of residential developments. Similar characteristics shared by these roadways, such as high posted speed limits, lack of usable shoulders, and limited sightlines, make these corridors unsafe and uncomfortable to use.

Most of the remaining segments in the Town provide medium to high comfort conditions for cyclists. Segments that have resulted in low comfort are prioritized for improvement so that these corridors can form a safe cycling network of medium to high comfort road segments.

PEDESTRIAN NETWORK ANALYSIS

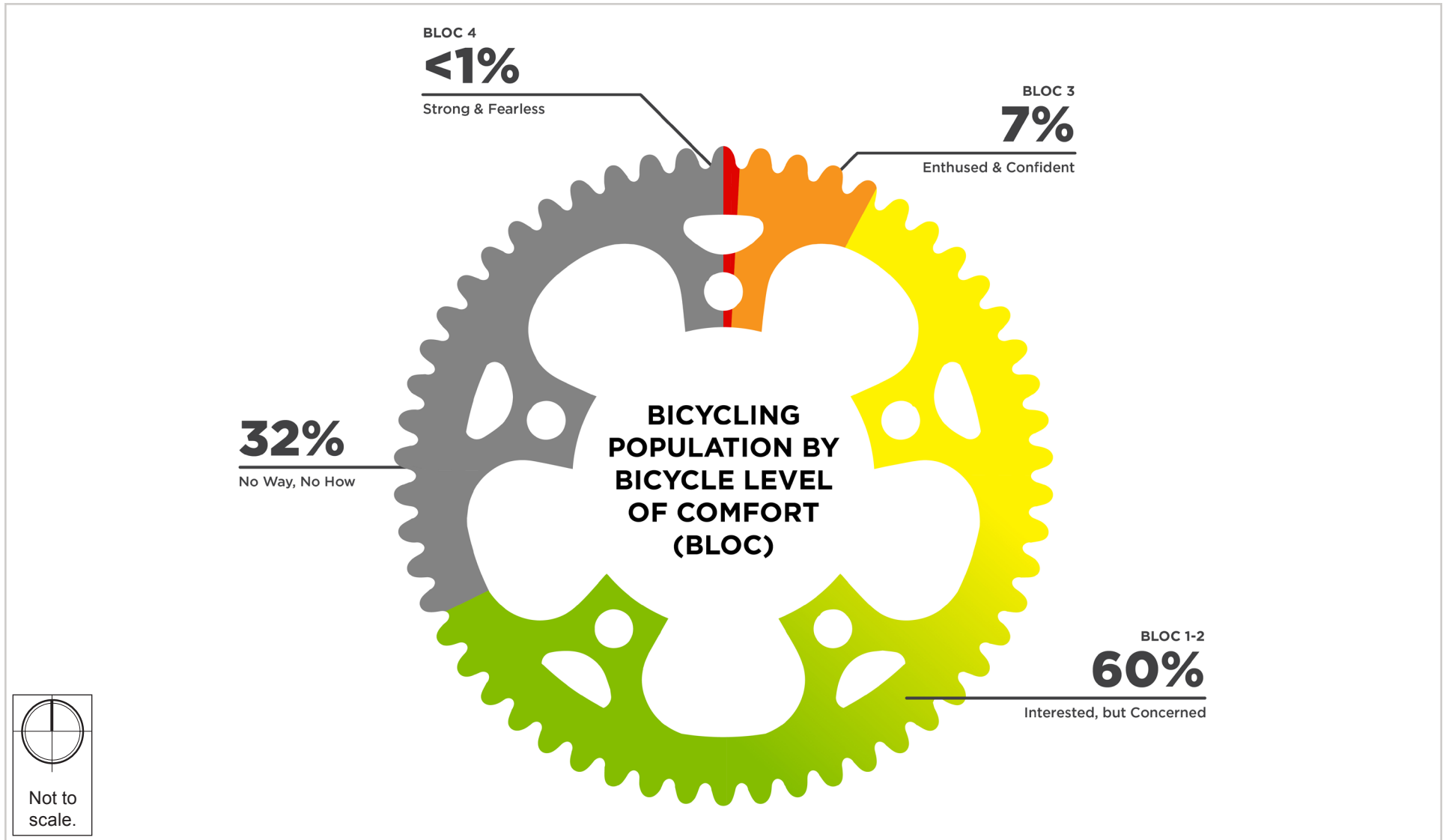
HSH developed a similar measure of Pedestrian Level of Comfort (PLOC) to complement the Bicycle Level of Comfort analysis. Following discussions with the Complete Streets Committee, a Pedestrian Network Analysis was completed as our methodology to evaluate the sidewalk network in Stow. We completed a sidewalk assessment by identifying corridors that have sidewalks and then determining the condition of the identified sidewalks as excellent (pavement is smooth/new and there are no obstructions), good (pavement is smooth with few bumps and depressions and there are very little to no obstructions), fair (pavement is comfortable with intermittent bumps and depressions and there are several to many obstructions), and poor (pavement is uncomfortable with frequent bumps and depressions and there are many obstructions).

Existing Conditions – Pedestrian Network

The Pedestrian Network map (**Figure 5**) shows locations where sidewalks are present and the extent to which they are in excellent, good, fair, or poor condition. Sidewalks found to have poor conditions are located along many residential corridors and cul-de-sacs, as well as portions of Great Road and Crescent Street. Factors that may explain the low score are existing barriers, such as utility poles, that would prevent pedestrians from walking through the corridor in a safe and comfortable manner. Sidewalks with pavement that are in dire conditions would also receive a low score. The conditions of the sidewalk segments along Great Road (Route 117), as well as the rest of the existing sidewalk network in the Town range from “excellent” to “poor.”



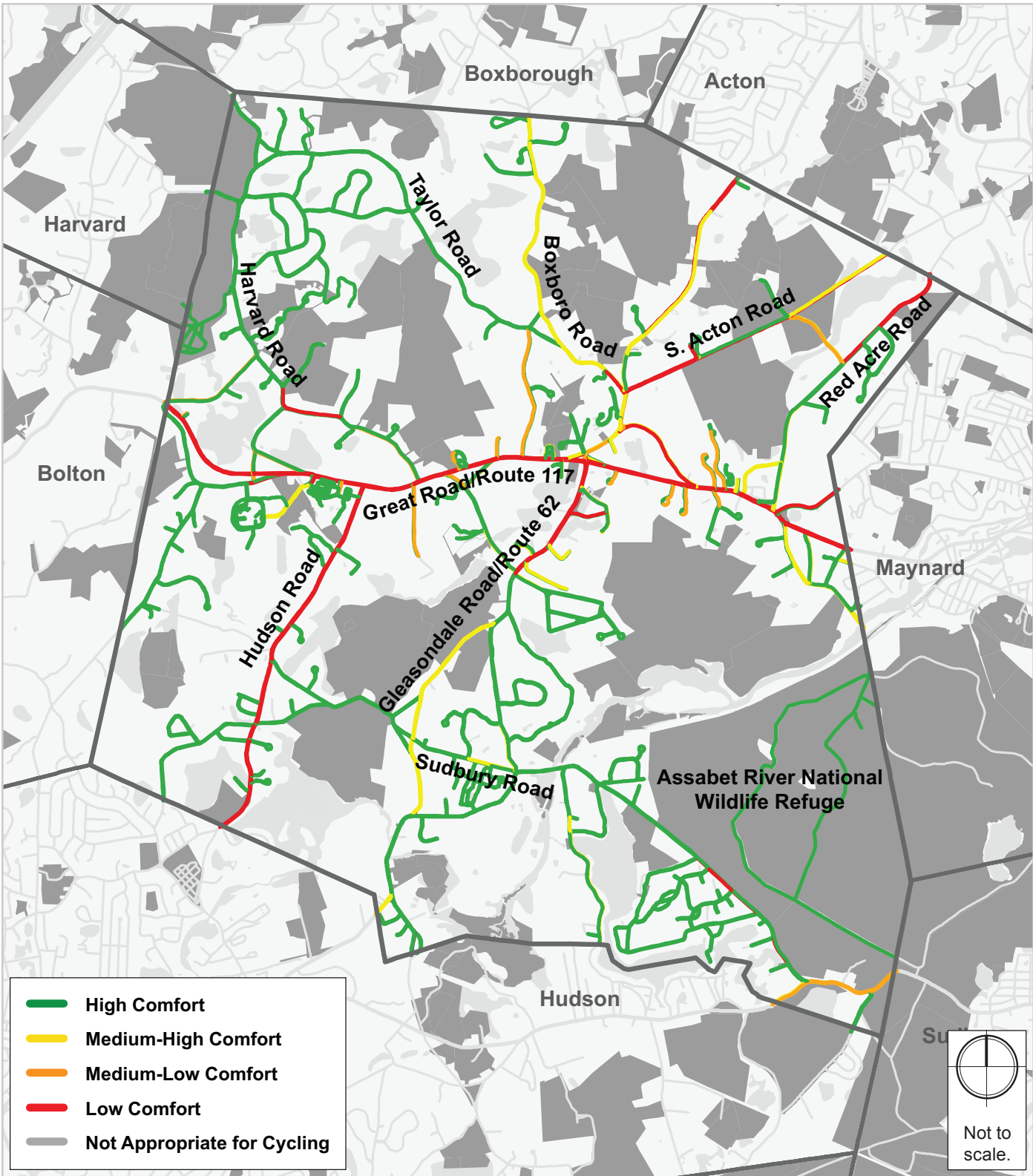
Figure 3. *Four Types of Transportation Cyclists in Portland by Proportion of Population*



Data Source: Portland Office of Transportation



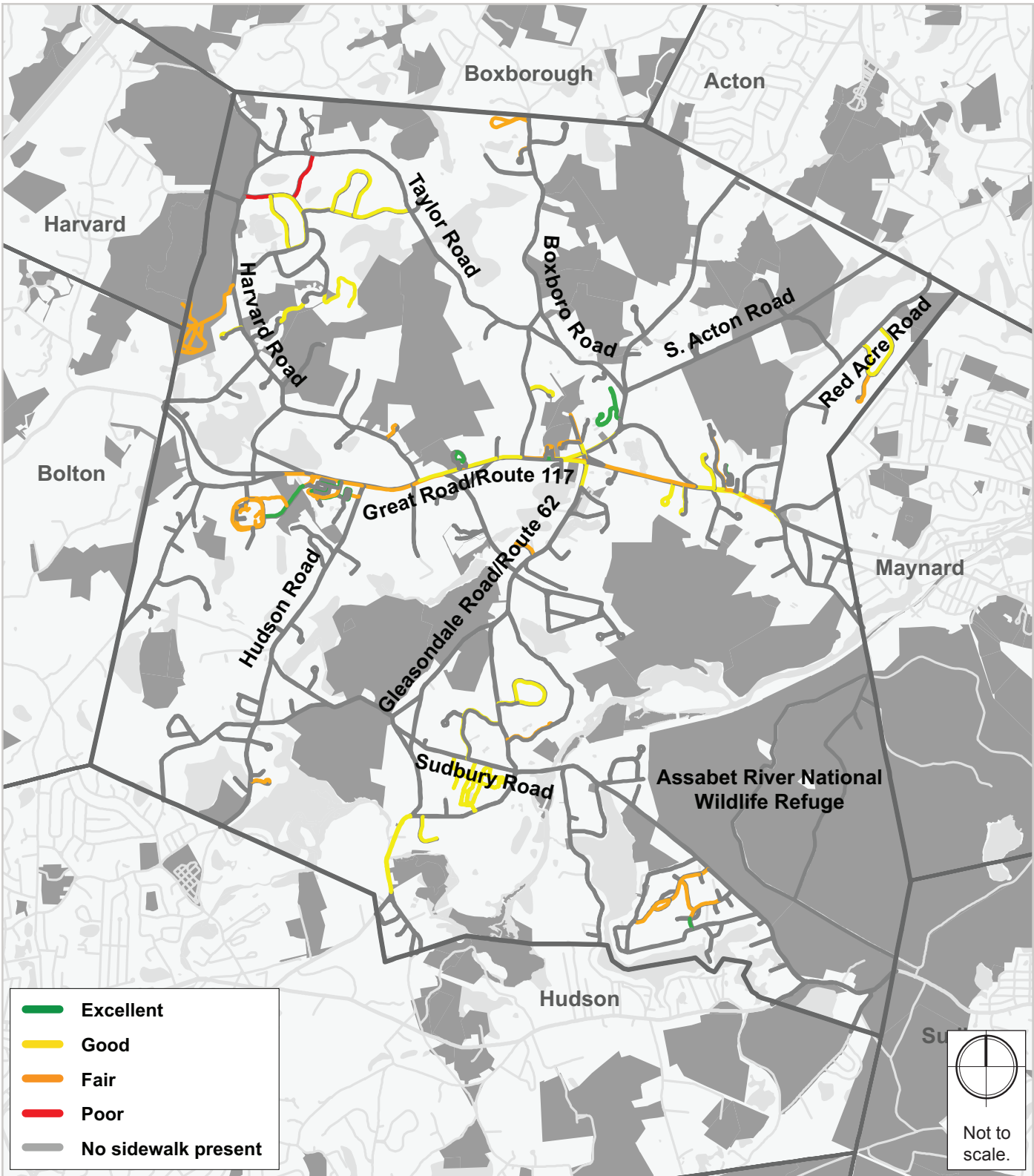
Figure 4. *Bicycle Level of Comfort*



Data Source: HSH, MassGIS, Peter Furth



Figure 5. *Pedestrian Network - Existing Sidewalk Condition*



Data Source: HSH, MassGIS



Tools to Assess Demand

POINTS OF INTEREST

HSH considers the proximity of points of interest such as health care services, schools, including public schools and pre-schools, as well as public services, such as a town hall, library, or police station (**Figure 6**). Stow's Town center, shown in **Figure 7** and **Figure 8**, hosts many destinations, attracting pedestrians and cyclists. The proximity to points of interest analysis demonstrates which areas of the roadway network could best serve pedestrians and cyclists trying to reach these important destinations.

EXISTING CONDITIONS – BICYCLE LATENT DEMAND

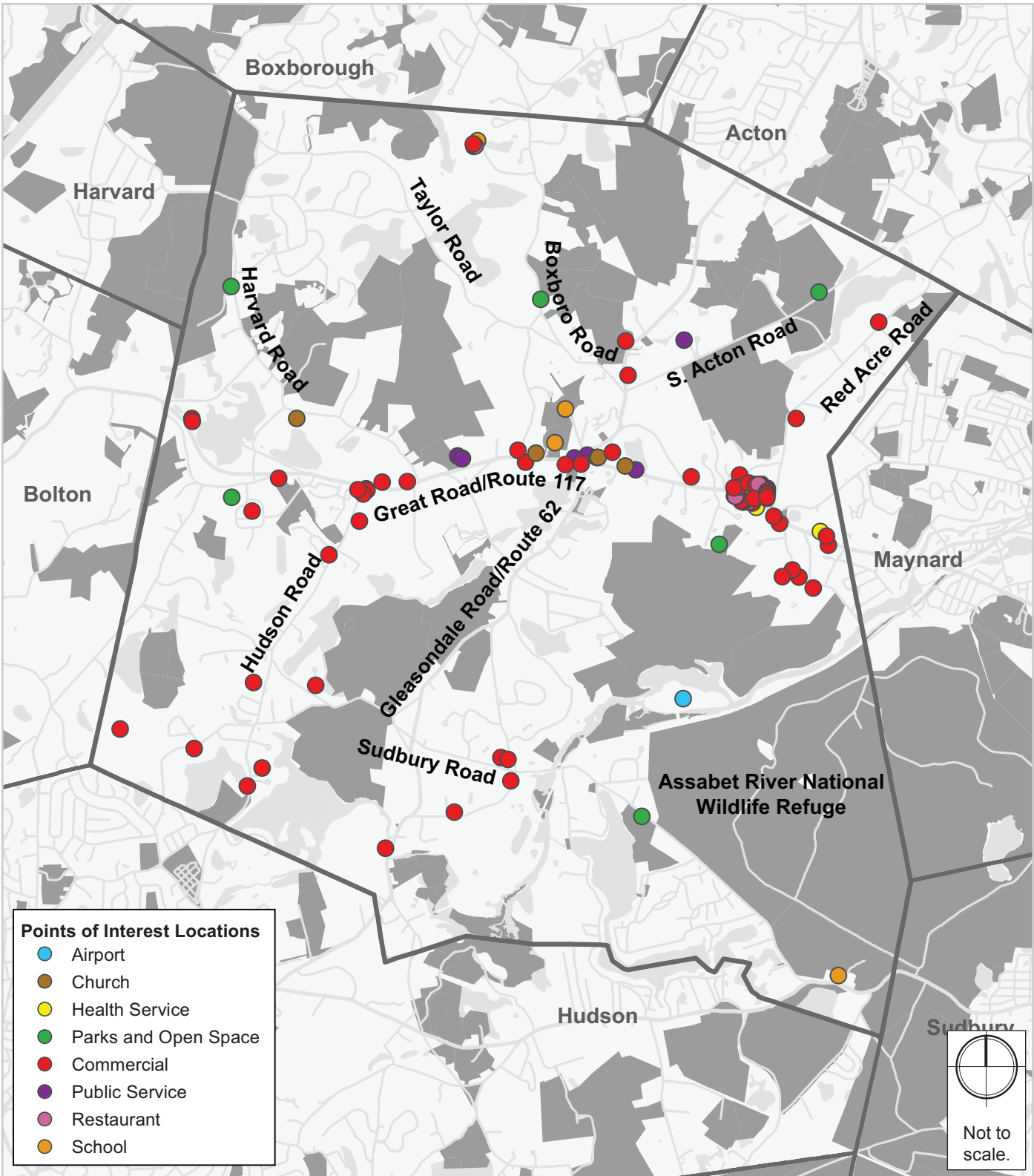
A convenient cycling distance of one mile is used as a buffer for the bicycle latent demand analysis. The Bicycle Latent Demand Map (**Figure 7**) shows most destinations located along the eastern portion of Great Road. Creating a safe cycling network to and from Town Center and the Lower Village is evident considering the potential bicycle demand that is concentrated in these two critical areas. Creating appropriate bicycle infrastructure along Gleasondale Road, South Acton Road, and Red Acre Road would also improve multimodal connections to Hudson and Acton – two towns that include active commercial centers and the South Acton Commuter Rail Station.

EXISTING CONDITIONS – PEDESTRIAN LATENT DEMAND

A walking distance of one-half mile is used as a buffer for the pedestrian latent demand analysis. Like the Bicycle Latent Demand map, the Pedestrian Latent Demand Map (**Figure 8**) also shows that there is potential pedestrian demand in Stow's Lower Village given the high concentration of destinations that are accessible by foot.



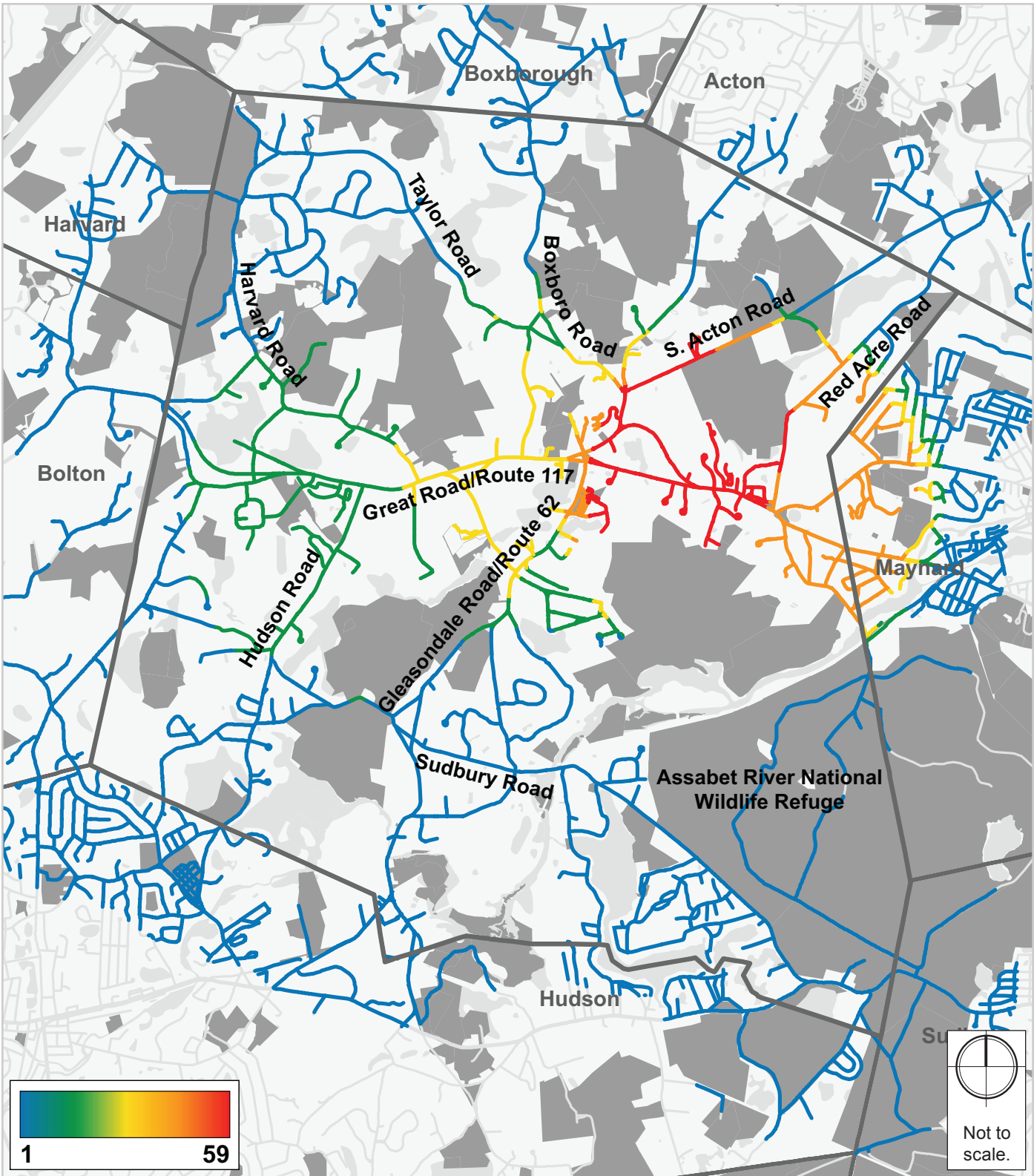
Figure 6. *Points of Interest Locations*



Data Source: ACS 5-Year Estimates, HSH, MassGIS



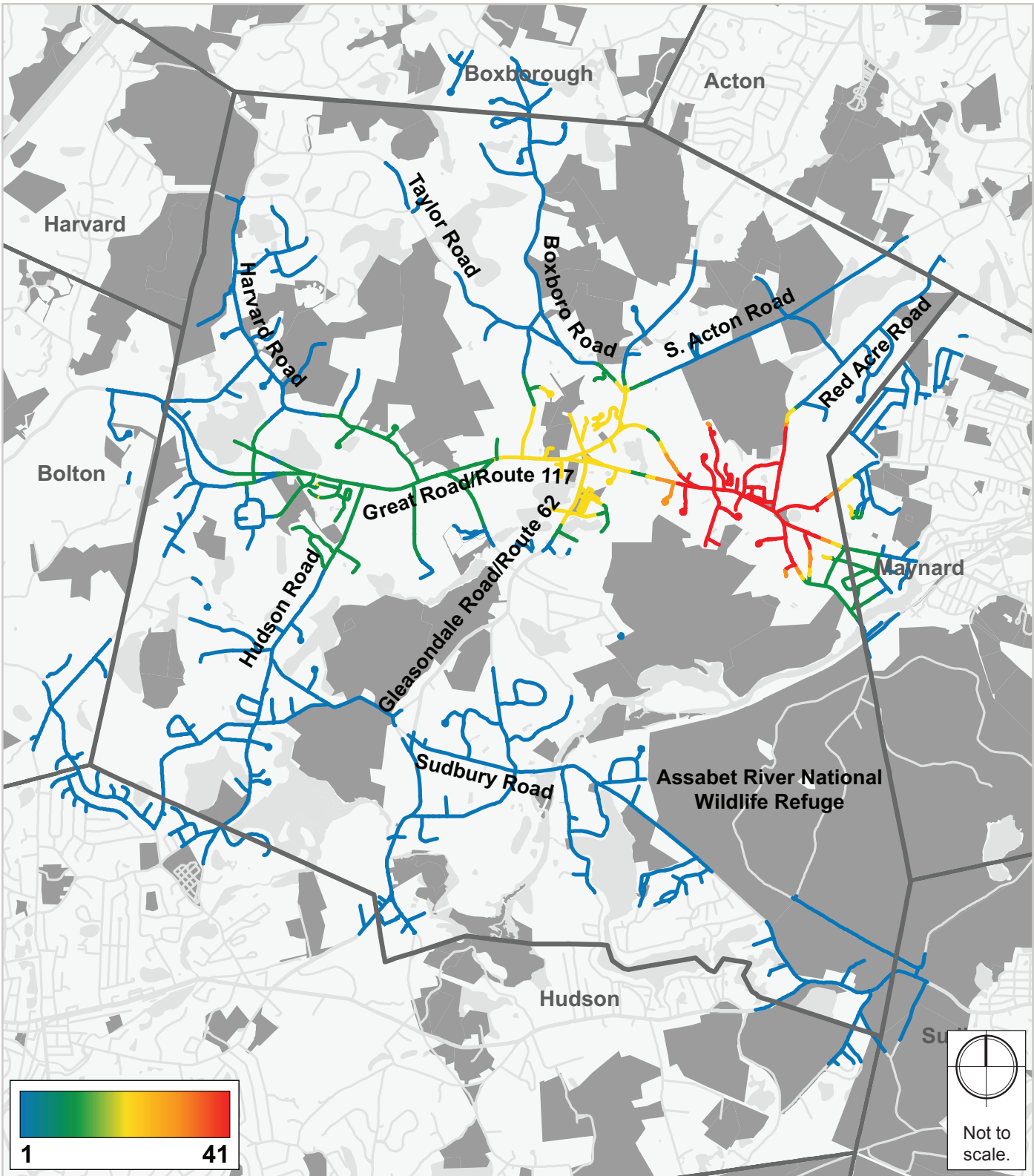
Figure 7. *Bicycle Latent Demand*



Data Source: HSH, MassGIS



Figure 8. *Pedestrian Latent Demand*



Data Source: HSH, MassGIS



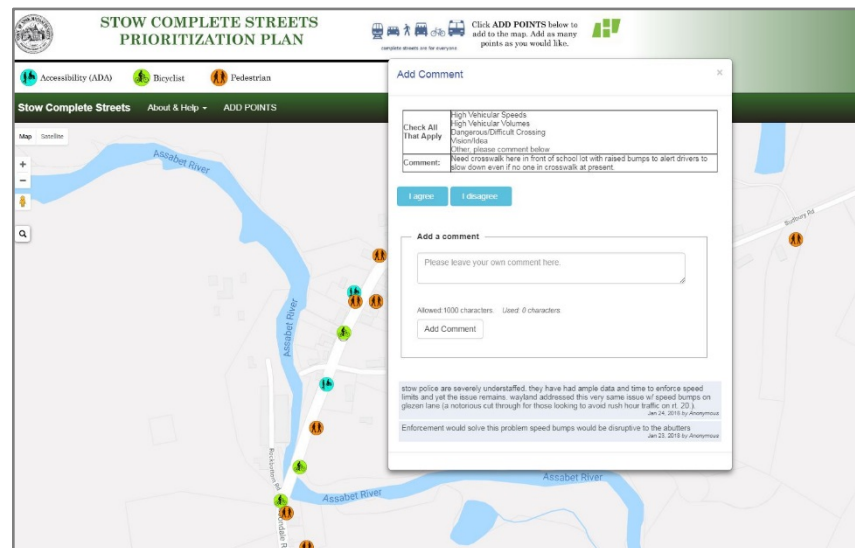
STAKEHOLDER INPUT

The prioritization plan seeks to incorporate the many ideas and visions of community members. In the beginning of the project process, HSH staff met with the Town of Stow Complete Streets Committee members¹⁰ to initiate the project and discuss potential projects to be included in the Prioritization Project list. After the kick-off meeting, a community public meeting was held to inform residents of the Complete Streets funding program and to solicit comments on problematic areas for pedestrians, cyclists, transit users, and those with disabilities, as well as ideas and project suggestions. To accommodate community members who were unable to attend the meetings in person or who preferred to leave comments following the meetings, an online WikiMap was created to allow community members to contribute to the process online. The WikiMap was posted on Stow's public website with the purpose of gathering input from a broad range of stakeholders.

EXISTING CONDITIONS – WIKIMAPPING

The online WikiMap was created to allow community members to contribute their comments, concerns, and project ideas. The WikiMap tool proved to be successful in capturing comments from residents. HSH collected 830 comments via the WikiMap; 101 residents participated. The website allowed users to provide comments by user type (e.g., Accessibility (ADA), Bicyclists, and Pedestrian). From the three user types of comments,

residents provided the most feedback regarding the Town's pedestrian infrastructure (565 comments). There were 191 and 74 comments regarding ADA and Bicyclists, respectively. **Figure 9** shows most of the comments clustered near Lower Village, Gleasondale Village, and along the Great Road corridor. The four most popular comments that were identified among all user types (**Figure 10**) were: high vehicular speeds (110 comments), high vehicular volumes (103 comments), missing/obstructed sidewalks (91 comments), and dangerous/difficult crossings (81 comments).

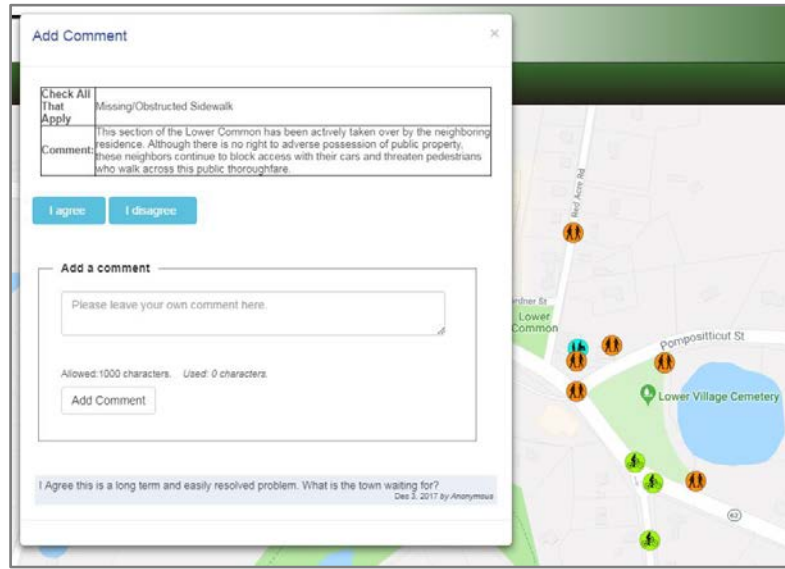


Stow's WikiMap with an example of a comment that has been agreed by another resident.

¹⁰ The Complete Streets Committee included representation from the Board of Selectmen, the Highway and Planning Departments, the Conservation Commission, Public Safety, and one at-large member.



Comments made regarding Lower Village included a sidewalk connection towards Maynard to connect to destinations within Maynard proper, such as Erikson’s Ice Cream. Residents were also interested in a parcel located on Great Road, between Pompositticut Street and Red Acre Road. Residents noted that this parcel is town owned, but often obstructed by the adjacent residential use. Other comments included difficulty crossing Great Road to get to the Stow Shopping Center and the identification of Red Acre Road as a dangerous corridor to use for cyclists and pedestrians.



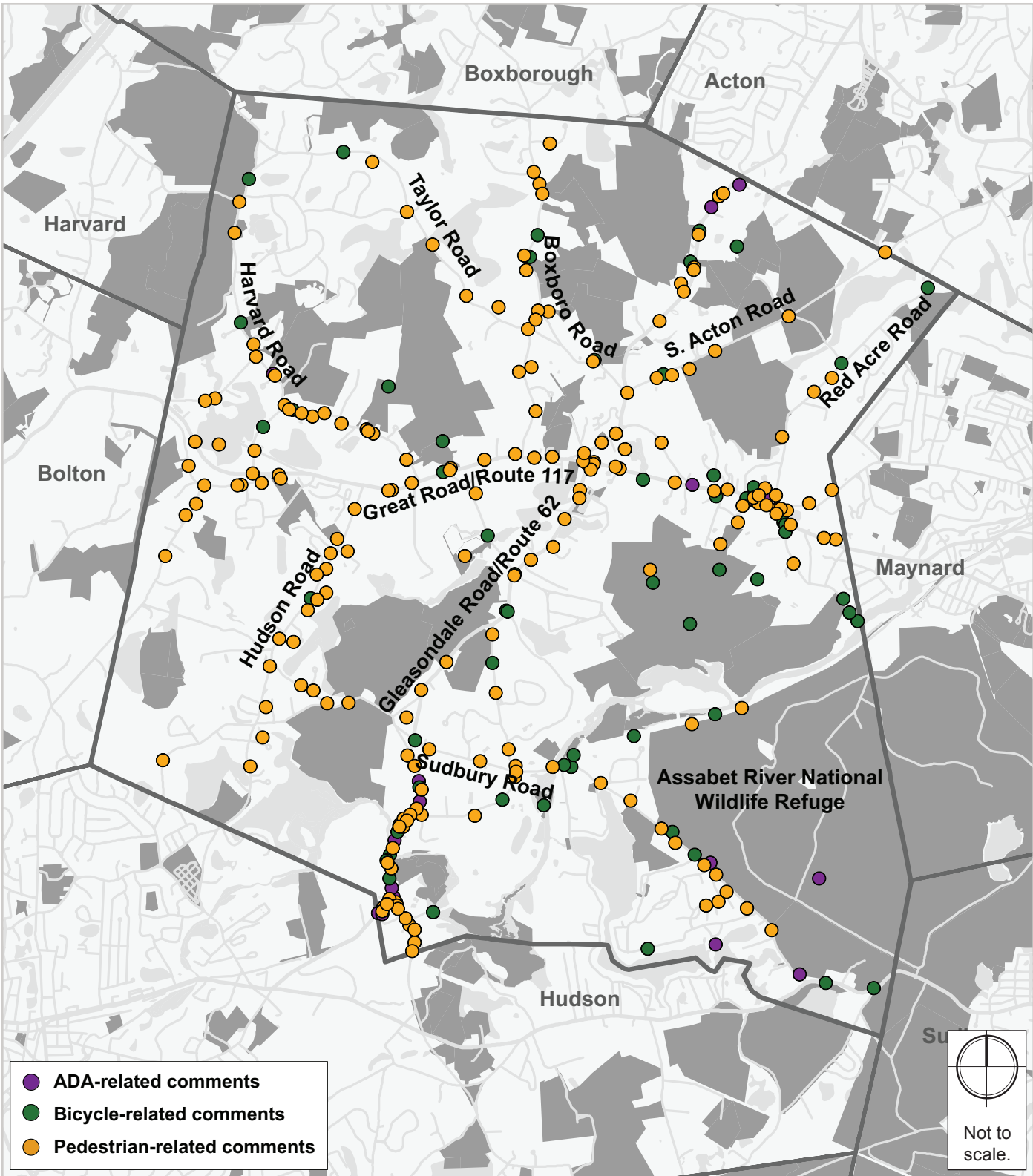
A WikiMap comment addressing the informal pathway in Lower Village.

Comments regarding the Great Road corridor were mixed. Many residents were concerned with the lack of access to existing sidewalks on one side of the street, while dangerous crossings and poor sightlines created unsafe conditions for cyclists. Residents suggested providing crosswalks on Great Road adjacent to Ministers Way, Johnston Way, and Bradley Lane, among others.

Gleasondale Village was another area of concern, with many residents being expressing concern about the lack of bicycle facilities and sidewalks for residents accessing the relatively dense neighborhood along Marlboro Road and High Street and those attempting to access the Assabet River Rail Trail segments in Maynard and Hudson. High vehicular speeds and volumes were also a major issue for many.



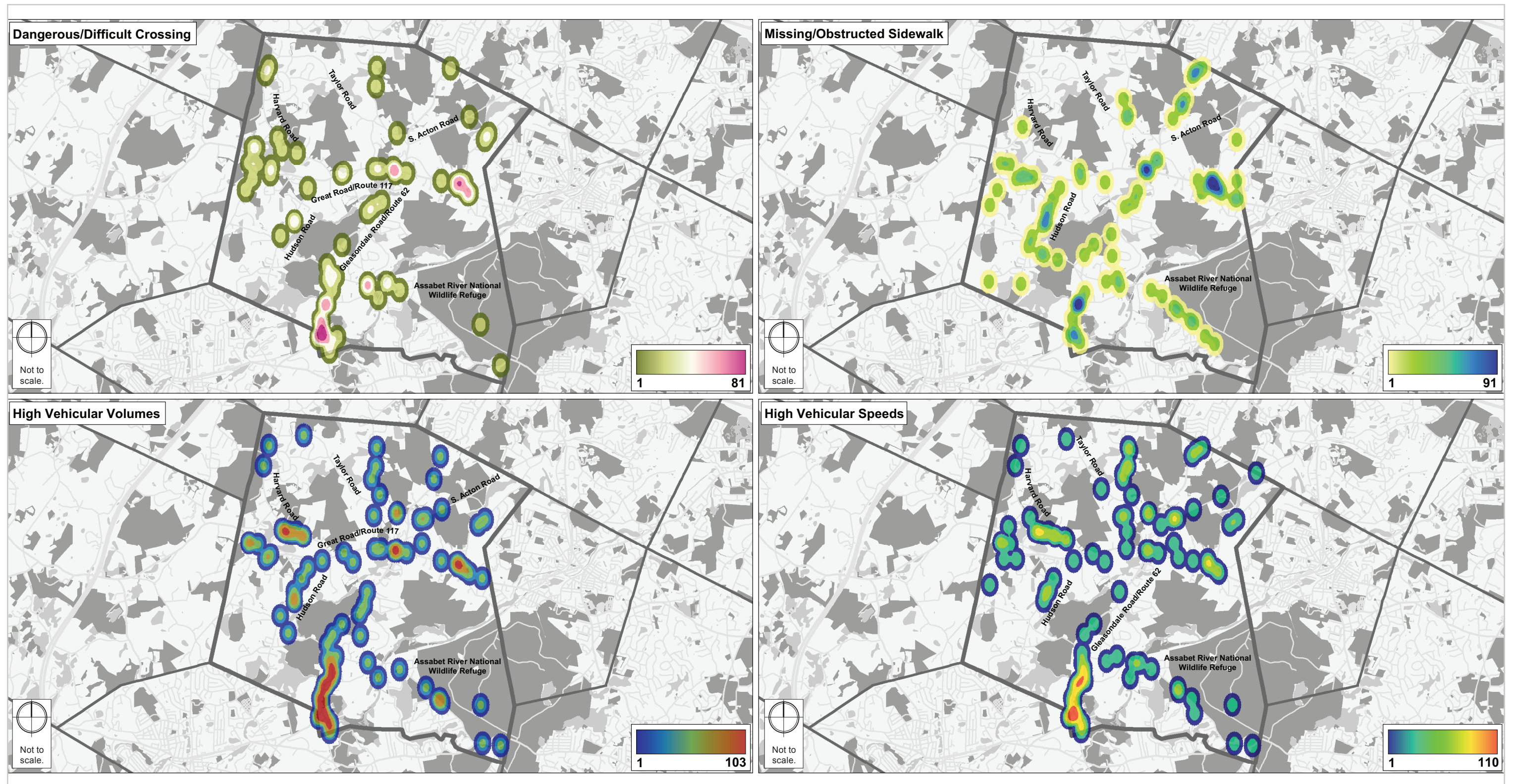
Figure 9. All Wikimap Comments by User Type



Data Source: HSH, MassGIS, WikiMapping



Figure 10. Top 4 WikiMap Comments



Data Source: HSH, MassGIS, WikiMapping



EXISTING CONDITIONS – COMMUNITY PUBLIC MEETING

Incorporating input through a comprehensive public process is an important component of developing the Prioritization Plan. A public meeting to gauge community input and experience was held in January 2018, in which HSH staff met with Town staff, members of the Complete Streets Committee, and residents, to inform the community of the Complete Streets Funding Program, as well as to collect project suggestions and comments on problematic areas for pedestrians, cyclists, and those with disabilities.

The outcome of the public meeting was successful, with over 20 participants expressing their concerns and vision regarding traffic conditions in Stow. The group discussion portion of the evening consisted of different groups separated by the four quadrants of the Town, in addition to Gleasondale Village and Lower Village. The four quadrants were divided primarily along the major routes through the community. North to south, the Town is neatly divided by Route 117. East to west, the Town can be split by Gleasondale Road (Route 62), to West Acton Road.

The northwest quadrant includes the western portion of the Town enclosed by Boxboro Road, Great Road, and Bolton/Boxborough town lines. Many residents who spoke on behalf of this portion of the Town were concerned with the blind curves on local roads that create safety issues for all road users. The intersection of South Acton Road, West Acton Road, and Boxboro Road was also perceived as a dangerous intersection, especially approaching West Acton Road from Boxboro Road. Residents were concerned with the lack of sidewalks along West Acton Road and South Acton

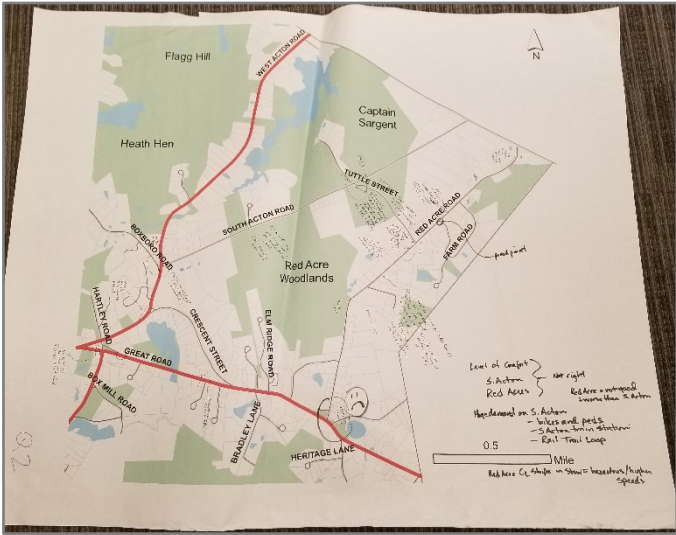


Public meeting comments left by residents regarding transportation issues and opportunities in the northwest quadrant.

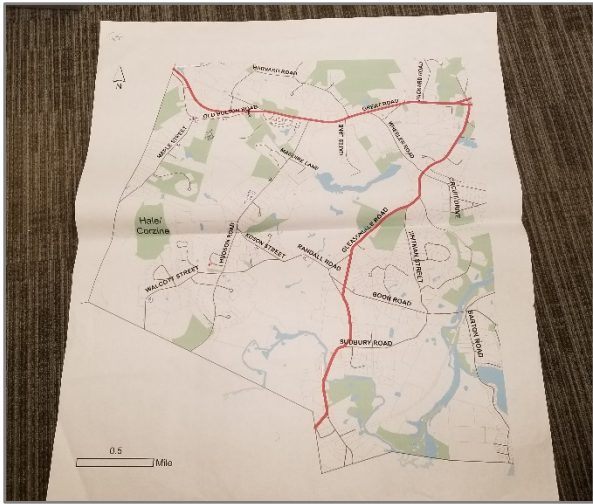
Road. There were positive reactions regarding installation of speed radar signs along corridors such as Taylor Road, Packard Road, and Great Road, to address heavy traffic along those corridors.



The northeast quadrant includes the eastern portion of the Town also enclosed by Boxboro Road, Great Road and Acton/Maynard town lines. Like the northwestern portion of the Town, many residents were concerned with safety from dangerous intersections and cars traveling at high speeds. Red Acre Road at Great Road was an intersection that the group highlighted as an unsafe intersection that required some reconfiguration. Some residents pointed out the need for crosswalks on Great Road. The group did not express the desire to have sidewalks on any roads of this section of the Town.



Public meeting comments left by residents regarding transportation issues and opportunities in the northeast quadrant.

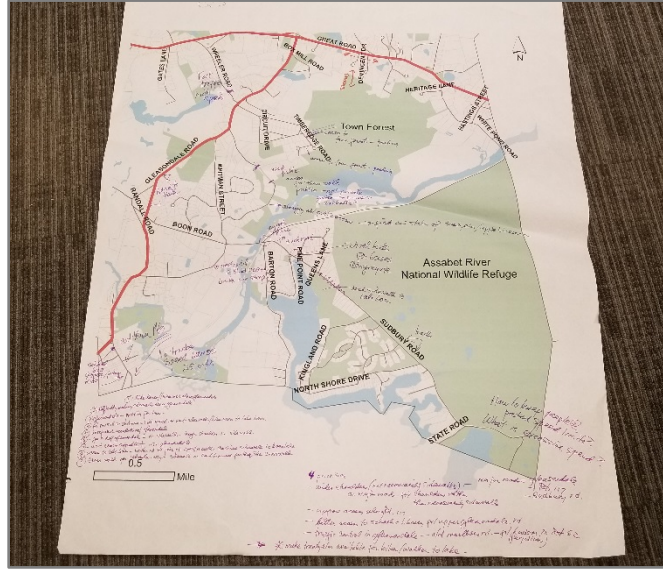


Public meeting comments left by residents regarding transportation issues and opportunities in the southwest quadrant.

The southwest quadrant includes the western portion of the Town enclosed by Great Road, Gleasondale Road, and Bolton/Hudson town lines. Residents were concerned about intersection safety and high vehicular speeds. Old Bolton Road at Maple Street was an intersection that was highlighted since it is an area where children are dropped off by bus, and it lacks a Yield sign, sidewalks, crosswalks, and ADA-compliant curb ramps. Residents suggested reducing the speed as vehicles approach the Old Bolton Road/Maple Street intersection, as well as more traffic calming tactics. Lastly, residents showed interest in connecting existing sidewalks to get to and from Stow Community Park.



The southeast quadrant includes the eastern portion of the Town also enclosed by Gleasondale Road, Great Road, and Maynard/Hudson town lines. Residents were in favor of more pedestrian and bicycle access along Gleasondale Road since this would allow better access to schools and Randall Library on Upper Gleasondale Road. Many residents indicated Wheeler Road as a high-demand pedestrian corridor; however, many feel unsafe due to high vehicular speeds. Intersection realignment is a proposed project idea for Boon Road at Sudbury Road since this intersection was perceived as dangerous due to poor sightlines.



Public meeting comments left by residents regarding transportation issues and opportunities in the southeast quadrant.

Residents also provided feedback on the Lower Village Neighborhood, which is the Town's business center located east of Town Center adjacent to Great Road. Many residents identified areas in the neighborhood that are missing key crosswalks and sidewalk connections that would allow access to key corridors such as Pompositticut Road that would provide access to White Pond, Deerfield Lane, and Great Road. Residents expressed the need for better signage to different destinations, such as Bradley Field. The intersection of Elm Ridge Road and Great Road was also identified as a problem area, specifically for drivers, because the current configuration makes left-turns difficult.

Tools to Assess Equity Concerns

To ensure an equitable distribution of resources for those who may greatly benefit from improved street conditions, we consider environmental justice neighborhoods and the population reported as having a disability. U.S. Census 2010 data is used to determine census blocks that exceed environmental justice thresholds for limited English households, low income households, and/or high minority populations. Using the American Community Survey (ACS) 5-Year estimates, the percentage of persons with disabilities was calculated for each census block group. ACS is a continuous data collection effort led by the U.S. Census Bureau to measure the dynamic social and economic characteristics of the U.S. population. Since ACS replaced the decennial Census long-form, there is no disability data in the 2010 Census. Unlike the U.S. Census, ACS only provides self-reported information and so represents a sample of the total population. The locations of assisted living facilities are also considered, as residents may have limited mobility.



ENVIRONMENTAL JUSTICE COMMUNITIES

According to the U.S. Census 2010 data, Stow has no census blocks that exceed environmental justice thresholds for high minority populations, low-income households, or limited English households. Looking at U.S. Census 2010 data, Stow's population is 6,218 and its primary residents identify themselves as white/Caucasian. Approximately 3% of the population identify themselves as Asian, while 1.9% and 0.7% of the population comprises of residents identify themselves as Hispanic and African-American (respectively). To exceed the environmental justice threshold, the total population must include 25% minority. Additionally, 2014 ACS estimates indicate that the Town's median income is approximately \$131,500. This is approximately 44% higher than the median household income in Middlesex County of \$83,488 and approximately 64% higher than median household income in Massachusetts of \$67,846¹¹, thus not meeting Massachusetts environmental justice threshold of the "low-income" variable.

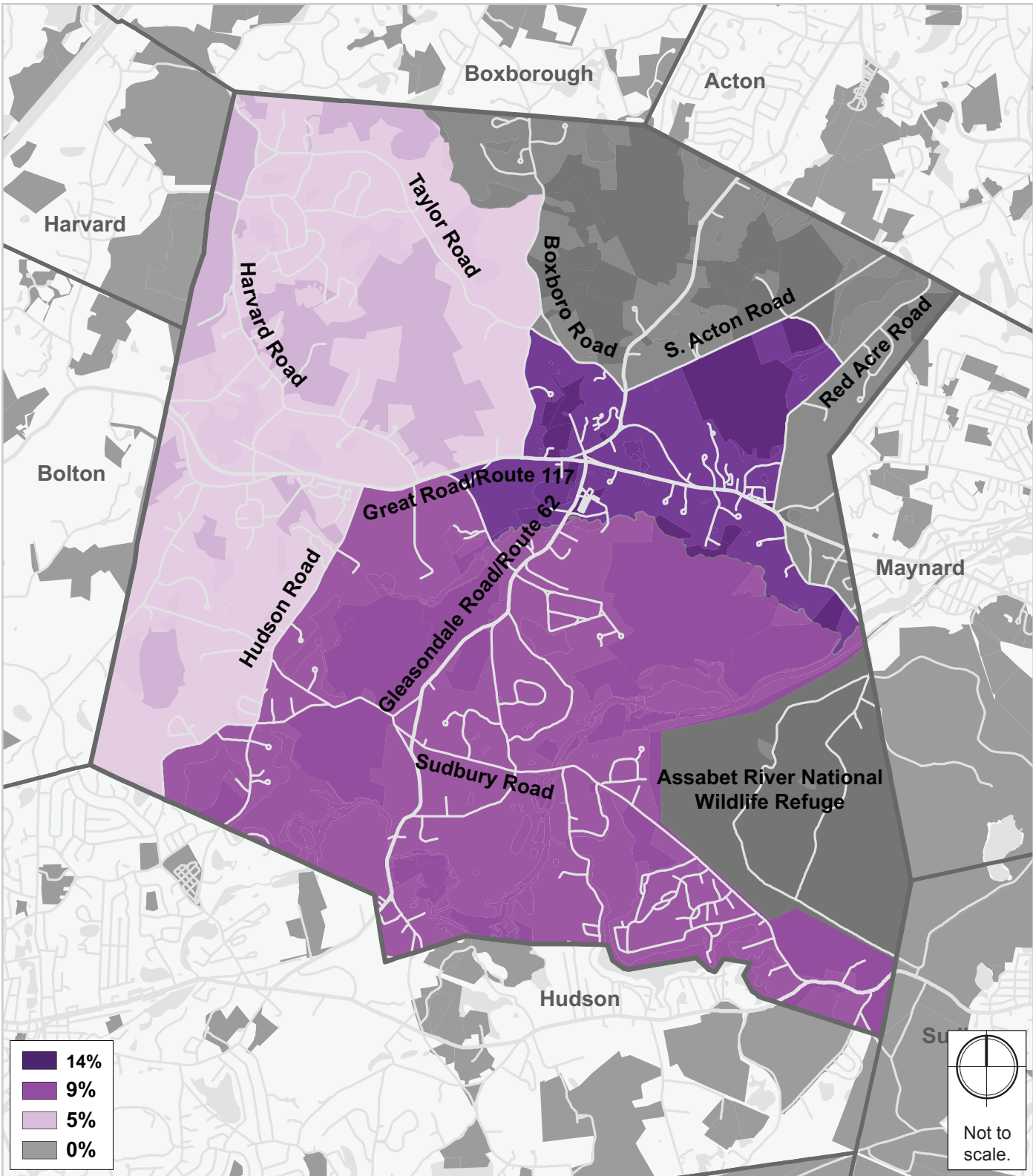
PERSONS WITH DISABILITIES

Figure 11 shows that the highest rate of residents who reported having a disability is in the Lower Village area. The Lower Village area is the Town's easternmost entrance to Stow, the site of the Town's historic Lower Common, as well as the main business district serving local and regional residents. Lower Village is also home to residential developments restricted to occupants of 62 years old. The census block located south of Great Road (Route 117) has a disability percentage of approximately 8%. This southern section includes a portion of Gleasondale Village.

¹¹ Source: Town of Stow's 2016 Housing Production Plan



Figure 11. *Persons with Disabilities*



Data Source: ACS 5-Year Estimates, HSH, MassGIS



Project Selection

Although trends and patterns show higher demand for improvement projects in some sections of the Town compared to others, we looked at Stow comprehensively and proposed projects that reflect the needs and priorities of the Town, as well as the results of our tools. Each tool for measuring existing conditions and pedestrian and bicycle demand contributes to an understanding of the existing conditions in Stow. Using these tools to determine potential project locations, we use aerial imagery, field observations, and discussions with Town officials to create a list of potential projects for consideration. Projects range from low-cost, low-design projects like restriping crosswalks with high visibility paint and the installation of tactile strips on curb ramps, to projects which may require more design, such as construction of new sidewalks, tightening and realigning intersections, as well as development or extension of existing shared-use paths. These preliminary projects were discussed with the Complete Streets Committee and further refined.

Project Prioritization

The prioritization process was completed by assessing each project based on the extent to which it addresses a range of concerns to help with the ranking of projects found in Stow's Prioritization Plan. HSH's analysis mirrors MassDOT's prioritization requirements while adding an additional layer of nuance to the prioritization of projects. The remainder of the projects will remain as options for future Complete Streets funding cycles.

For each proposed project site, values reflecting existing and, where appropriate, proposed conditions are recorded to generate a ranked list of projects. To normalize the values, each variable is scaled between zero and ten such that a higher scaled score relates to higher priority. Weights are used to reflect the desired influence of each variable in the prioritization process. Notes explaining the methodology for assigning values to each category are listed below.

HIGHEST USED ROADS

Based on the Strava Labs Global Heatmap provided by the Town, bicycle improvement projects were categorized as either high, medium, or low, where high indicates proposed projects located along corridors identified as the highest priority. Medium indicates proposed bicycle improvement projects located along corridors that were identified as medium priority. Low indicates proposed bicycle improvement projects located along corridors that were identified as lower priority. Roads that were classified with the highest priority included Great Road, Gleasondale Road, South Acton Road, West Acton Road, Boxboro Road, Taylor Road, Harvard Road, Sudbury Road, Whitman Street, and Boon Road. Roads with medium priority included Delaney Street, Lantern Lane, Old Bolton Road, Kirkland Drive, Adams Drive, Packard Road, Crescent Street, Tuttle Lane, Red Acre Road,



Pompositticut Street, White Pond Road, Wheeler Road, Circuit Drive, Track Road, Barton Road, Cross Street, Randall Road, Marlboro Road, Treaty Elm Lane, and Walcott Street. The remaining streets that were not classified as either high or medium priority were classified as low priority.

NETWORK CONNECTION

Each project is assessed on whether it creates a new connection within the existing pedestrian or bicycle networks, categorized as “Full,” “Partial,” or “None.” A full connection either connects existing acceptable pedestrian or bicycle conditions or extends to usable network. A partial network connection is one that does not connect to existing acceptable pedestrian or bicycle conditions or only closes a network gap in conjunction with other proposed projects. Projects that require phasing over multiple years are considered to provide partial network connections. A categorization of “None” would be used for a project that does not create a new facility, such as sidewalk reconstruction, or one that creates a new link unconnected to the existing sidewalk or low-stress bicycle networks.

POINTS OF INTEREST

Points of interest including healthcare services, schools, libraries and public services within a convenient walking distance (one-half mile) and bicycling distance (one mile) were considered and weighted for each project. For example, projects around Town Center and Lower Village that proposed to increase safety through sidewalk construction or high visibility crosswalks were weighted higher than bicycle accommodations along Maple Street since Town Center and Lower Village are two areas of Stow that have the largest number of destinations relative to other areas of the Town.

PROXIMITY TO CRITICAL AREAS

Critical areas including Lower Village, Gleasondale Village, and Town Center, within a convenient walking distance (one-half mile) and bicycle distance (one mile) were considered and weighted for each project.

NUMBER OF PEDESTRIAN, BICYCLE, AND VEHICULAR CRASHES ADJACENT TO PROJECT

High crash locations were considered and analyzed with an utmost priority in influencing recommendations for projects to increase safety at key crash locations around Stow. Improvements for Great Road, a highly used corridor for all road users and a high bicycle crash location, included constructing bicycle lanes and widening shoulders to increase bicycle safety from Deerfield Lane to Hudson Road. Providing sidewalk accommodations along Old Bolton Road – a corridor where a pedestrian accident occurred in 2015 – was also weighted as a priority in increasing pedestrian safety along with recommendations to increase pedestrian visibility through crossing improvements.



Due to right-of-way constraints at many other locations where crashes occurred, an overarching recommendation of wayfinding and warning signage to improve awareness of dangerous intersections, as well as cyclists and pedestrians using the road, was made.

EXISTING BICYCLE LEVEL OF COMFORT AND EXISTING PEDESTRIAN NETWORK

Using HSH's Bicycle Level of Comfort and Pedestrian Network Analysis maps, the different projects were assigned either a typical bicycle and pedestrian level of comfort value for corridors to account for corridor length, or, in the case of projects at intersections, the worst condition present is chosen. In the Existing Pedestrian Network map prioritization, segments were evaluated based on sidewalk condition (e.g. pavement quality and existing pinch points), vehicle speeds, and roadway width.

PROPOSED CHANGE IN BICYCLE LEVEL OF COMFORT AND PROPOSED CHANGE IN PEDESTRIAN NETWORK

Projects are assigned a proposed level of change in level of comfort, ranging from no improvement to high. If the project improvements are minor or the existing level of comfort is already high, the project is considered to have a "low" impact. If project improvements for bicycle and pedestrian comfort are anticipated to be significant, they are considered to have "medium" or "high" impact. For example, a sidewalk construction project where none existed before would generally have a high impact on pedestrian comfort than a sidewalk reconstruction project.

CROSSING IMPROVEMENT

Projects that improved the safety or accessibility of a crossing for pedestrians or cyclists were weighted higher than projects that did not.

PERCENT OF PERSONS WITH A DISABILITY

Using ACS's 5-Year Estimates, the percentages of persons with a disability within a one-quarter mile distance from a project site were calculated and used to prioritize projects. Areas of the Town that had high proportions of disabled residents were weighted higher than areas of the Town that had fewer disabled residents.

NUMBER OF ACTIVE ADULT NEIGHBORHOODS OR ASSISTED LIVING FACILITIES

The number of active adult neighborhoods or assisted living facilities within one-half mile of each project corridor or intersection were counted in the prioritization of each project in the Prioritization Plan.



SCHOOL WALK ZONE

The number of schools within one-half mile of a project was considered in the prioritization process. A one-half mile buffer was used to capture areas where residents could potentially walk to school if appropriate facilities were available.

STAKEHOLDER INPUT

Input from the public meeting, WikiMap, and any email communications with community members were incorporated into the list of proposed projects. To prioritize projects with the most support, projects that received the most attention from the Town (i.e. residents and Town government) and that were located within WikiMap pinpoint clusters were weighted higher compared to areas with less attention or WikiMap activity.



The Prioritization Plan

The prioritization process resulted in a list of project proposals that aim to both improve the Town's existing infrastructure and further the Town's goal of achieving a comprehensive active transportation network that would fully support Complete Streets principles in the future.

Trends and Patterns

Our analysis of the Town's existing conditions is based on field observations, conversations with the Town and residents, and the visual analysis tools presented previously. Together, these resources help us consider where conditions are deficient, where there is demand for different active transportation modes, and where equity can be addressed. With these inputs, we looked carefully at areas with overlapping issues (for instance, roads with high utilization, high numbers of pedestrian and/or bicyclist crashes, and low levels of comfort), and explored potential interventions that would mitigate these negative effects. Some of the areas are described below.

Stow's Town Center and Lower Village, both located along Great Road, have sidewalks that are either in good or fair condition. Town Center is where most of the Town's public service buildings are located, such as Center School, Hale Middle School, Randall Library, Town Building and Town Hall. Unfortunately, due to right-of-way constraints, the pedestrian network in Town Center is incomplete and only provides partial sidewalk connections to these destinations.

An area of primary interest for the Town and residents is Gleasondale Village. Gleasondale Village is the area of the Town between Sudbury Road and the Stow/Hudson town line. The corridor is primarily a semi-rural residential corridor that consists of many uses found in an older mill village. In addition to multifamily housing, the area is home to historical mill buildings that are currently being used for light industrial uses. Gleasondale Road is a 24-foot wide (with a right-of-way width of 45 feet), two-lane corridor.¹² The most recent average daily traffic study completed for the corridor was in 2008, in which ADT was 5,000, with truck traffic accounting for 2% of that total.¹³ Resident concerns regarding Gleasondale Village were related to roadway conditions that compromise the safety of pedestrians and cyclists using the corridor. For instance, obstructed sightlines adjacent to the Sudbury Road and Gleasondale Road intersection prevent pedestrians from using the road since vehicles are approaching this obstructed area at high speeds. Due to weak connections to adjacent destinations, the area would benefit from historically appropriate signage to let people know that

¹² Gleasondale Revitalization Plan

¹³ Gleasondale Revitalization Plan



they are in the Gleasondale Village proper, as well as wayfinding signage to direct people to the Assabet River Rail Trail, golf courses, and orchards located nearby.

Community comments indicated that the roadways located in the northern section of the Town (e.g. Red Acre Road, South Acton Road, West Acton Road, Boxboro Road, and Taylor Road) are in need of bicycle accommodation and pedestrian accommodations that provide connections to Town Center and Lower Village. Boxboro Road, West Acton Road, and South Acton Road are three roadways that are heavily used by cyclists. These are also roadways that connect to destinations such as the South Acton Commuter Rail Station, Flagg Hill Conservation area, Minute Man Air Field, and the towns of Boxborough and Acton. These roadways could be made safer through minor interventions such as shoulder widening, “Share the Road” signage, and warning signage for curved roadway sections and dangerous intersections. A more significant intervention is the potential for a shared use path along South Acton Road, which could further separate vulnerable road users from the road’s relatively high traffic speeds.

Prioritization Plan

The final prioritization plan is outlined in the MassDOT Tier 2 document, which will be used by the Town to schedule the construction of Complete Streets for the coming years (**Table 1**). Project types are defined in **Table 2**, the Eligible Project Worksheet, provided by MassDOT. HSH’s analysis mirrors MassDOT’s prioritization criteria of Environmental Justice, Safety, ADA Accessibility, Pedestrian Mobility, Bicycle Mobility, Transit Operations and Access, Vehicular Operations, and Freight Operations, while adding an additional layer of nuance to the prioritization of projects, as outlined in **Table 3**.



Complete Streets Funding Program Project Prioritization Plan

Municipality: Stow
MassDOT District: 3

Date: 5/4/2018
Name/Title: Jesse Steadman, Town Planner

Project Details			EJ	Complete Streets Location		Project Origin and Type		Complete Streets Needs						Complete Streets Funding Request			Construction Schedule			
Rank	Project Name	Project Description ¹	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	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)
11	Bike Improvements along Great Road I	Install 5-ft bike lanes from Deerfield Lane to Crescent Street. Existing ROW constraints. Current conditions: 40 MPH speed limit, 24 ft roadway width, 50 ft ROW.	No	Deerfield Lane to Crescent Street	200739, 909317	199425, 909578	CS Needs Assessment	B2, S1	x		x					\$ 51,000.00	\$ 51,000.00	\$0.00	3	Aug-18
21	Pedestrian Improvements along Crescent Street I	Supplement with ADA compliant curb ramps on all crosswalk landings on the Hartley Road/Crescent Street intersection. Install Children Crossing/School Zone signage in Town Center.	No	23 Crescent Street to 43 Crescent Street	199419, 909583	199812, 909763	CS Needs Assessment	P1, P2, P9, S7, P3	x	x	x					\$ 56,000.00	\$ 56,000.00	\$0.00	6	Aug-18
27	Traffic Calming Improvements along Boxboro Road	Increase drivers' awareness of the dangerous curve on Boxboro Road and low visibility of pedestrians and cyclists using the road by installing "Slow (Road Curves Ahead) Caution" and speed feedback signage before approaching curve at the following locations: 143 Boxboro Road (adjacent to Heath Hen Meadow Brook Woodland Hiking Trail) and adjacent to Ridgewood Drive. Install "Bikes May Use Full Lane" signage (R4-11).	No	Two locations: Adjacent to Heath Hen Meadow Brook Woodland Hiking Trail, Adjacent to Ridgewood Drive	199182, 910990; 199161, 911725		CS Needs Assessment	S1, S5, B7	x				x			\$ 32,000.00	\$ 32,000.00	\$0.00	3	Aug-18
46	Intersection Improvements on Great Road and Old Bolton Road	Install T-style intersection at Old Bolton Road into Great Road, filling area currently used as slip lane. Relocate stop sign. Install a crosswalk and ADA curb ramps across Old Bolton Road.	No	Old Bolton Road and Great Road	196841, 909449		CS Needs Assessment	S13, P1, P2, P9, P3	x	x	x		x			\$ 184,000.00	\$ 184,000.00	\$0.00	9	Aug-18
52	Bike Improvements along West Acton Road	Install "Bikes May Use Full Lane" signage (R4-11) to advise drivers to share the road with cyclists.	No	Acton town line to Crescent Street	200979, 912124	199902, 909902	CS Needs Assessment	S7	x		x		x			\$ 2,000.00	\$ 2,000.00	\$0.00	1	Aug-18
68	Traffic Calming Improvements on South Acton Road	Add "Dangerous Intersection" signage ahead of the South Acton Road/Tuttle Lane intersection.	No	South Acton Road and Tuttle Lane	201428, 910864		CS Needs Assessment	S1	x				x			\$ 400.00	\$ 400.00	\$0.00	1	Aug-18
69	Pedestrian Improvements on Great Road	Repaint the existing high visibility crosswalk on Great Road (adjacent to Harvard Road). Supplement with Pedestrian Actuated Warning Device (PAWD).	No	Great Road and Harvard Road	198090, 909381		CS Needs Assessment	P2, P9, P12, P3	x	x	x					\$ 32,000.00	\$ 32,000.00	\$0.00	1	Aug-18
73	Traffic Calming on Taylor Road	Install "Slow (Road Curves Ahead) Caution" before approaching curves throughout this corridor to increase drivers' awareness of the dangerous curve and low visibility of pedestrians and cyclists using the road. Install speed feedback signages at key locations. Supplement with "Bikes May Use Full Lane" signage (R4-11).	No	Taylor Road corridor	199379, 910600	196427, 912821	CS Needs Assessment	S1, S5, B7	x				x			\$ 18,000.00	\$ 18,000.00	\$0.00	3	Aug-18
80	Traffic Calming on Harvard Road	"Slow (Road Curves Ahead) Caution" sign before approaching dangerous curves to increase drivers' awareness of the dangerous curve and low visibility of pedestrians and cyclists using the road, at Wedgewood Road and Hiley Brook Road. Install "Bikes May Use Full Lane" signage (R4-11).	No	Two locations: Wedgewood Road, Hiley Brook Road	196880, 910054; 197384, 909954		CS Needs Assessment	S1, S1, B7	x		x		x			\$ 3,000.00	\$ 3,000.00	\$0.00	1	Aug-18
86	Traffic Calming on Gleasondale Road	Install a "Side Road" intersection warning sign (W2-2) approximately 300 ft from the Boon Road/Gleasondale Road intersection in both directions of Gleasondale Road. Supplement with speed radar signs.	No	Boon Road and Gleasondale Road	198036, 907071		CS Needs Assessment	S1, S5	x				x			\$ 15,000.00	\$ 15,000.00	\$0.00	3	Aug-18
89	Traffic Calming along Gleasondale Road I	Install "Thickly Settled District" signage at the NB entrance to Gleasondale Village	No	Gleasondale Road and Sudbury Road	197847, 906097		CS Needs Assessment	S0	x				x			\$ 200.00	\$ 200.00	\$0.00	1	Aug-18
7	Pedestrian Improvements along Crescent Street II	5-ft wide sidewalk reconstruction (SB side) from 23 Crescent Street to 43 Crescent Street (~850 ft). 5-ft wide sidewalk construction (SB side) from 43 Crescent Street to Warren Road (~690 ft). Install a high visibility crosswalk and ADA-compliant curb ramps to connect to proposed sidewalks (refer to Pedestrian Improvements on West Acton Road).	No	43 Crescent Street to Warren Road	199812, 909763	199890, 909846	CS Needs Assessment	P2, P5, P9, P3	x	x	x					\$ 341,000.00	\$ 99,800.00	\$241200 from Chp 90 and Planning Board Sidewalk Fund	6	Aug-19

23	Bike Improvements along Great Road II	Install 5-ft bike lanes in the following locations: Crescent Street to Gates Lane. Existing ROW constraints. Current conditions: 35-40 MPH speed limit, 24 ft roadway width, 46-50 ft ROW.	No	Crescent Street to Gates Lane	199425, 909578	198047, 909357	CS Needs Assessment	B2, S1	x									\$ 53,000.00	\$ 53,000.00	\$0.00	3	Aug-19
49	Traffic Calming Improvements on Gleasondale Road from Treaty Elm Lane to Hudson town line	Install "Bikes May Use Full Lane" signage (R4-11) distributed at quarter mile intervals (2 miles). Install "Slow (Road Curves Ahead) Caution" sign before approaching the Gleasondale/Marlborough Road intersection.	No	Treaty Elm Lane to Hudson town line	198895, 908205	197722, 905508	CS Needs Assessment	S1, B7	x			x	x					\$ 4,000.00	\$ 4,000.00	\$0.00	1	Aug-19
59	Wayfinding Signage (along Gleasondale Road)	Install wayfinding signage to direct people to certain destinations within Gleasondale Village, including a "Welcome" signage at the beginning of Gleasondale Road.	No	Gleasondale Road corridor	199588, 909566	197721, 905512	CS Needs Assessment	B7, P4				x	x					\$ 2,100.00	\$ 2,100.00	\$0.00	1	Aug-19
72	Intersection Improvements on the Marlboro Road (adjacent to Gleasondale Road)	On the NE side, close off the median opening (follows along frontage of 4 Marlboro Road) and divert traffic to the SW opening. Install a crosswalk and ADA-compliant curb ramps at the SW opening of Marlboro Road. Reclaim the paved space as an expansion of the existing landscape island with a pedestrian pathway that connects to the proposed Kane Land access point (refer to Create a recreational trail on the Kane Land Property project). Realign driveways of 4 Marlboro Road and 2 Marlboro Road.	No	Marlboro Road and Gleasondale Road	197829, 905623		CS Needs Assessment	S13, P2, P9, P7, P3	x	x	x			x				\$ 240,000.00	\$ 240,000.00	\$0.00	9	Aug-19
88	Wayfinding Signage on White Pond Road	Use wayfinding signage with walking or biking distances to direct road users of all modes to adjacent destinations such as the Lower Village, Assabet River Trail, and Assabet Wildlife Refuge.	No	White Pond Road corridor	202075, 908082	201378, 908989	CS Needs Assessment	B7, P4				x	x					\$ 1,100.00	\$ 1,100.00	\$0.00	1	Aug-19
29	Bike Improvements along Great Road III	Restripe roadway to narrow roadway lanes and provide wider shoulders for cyclists, in the following location: from Gates Lane to Hudson Road. Existing ROW constraints. Current conditions: 35-40 MPH speed limit, 22-24 ft roadway width, 46 ft ROW.	No	Gates Lane to Hudson Road	198047, 909357	197597, 909347	CS Needs Assessment	S15	x			x						\$ 6,000.00	\$ 6,000.00	\$0.00	3	Aug-20
34	Bicycle Improvements on Packard Road	Install advisory shoulders from Great Road to Boxboro Road. To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes). Current conditions: 18-ft roadway width, 30-ft ROW width. ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	Packard Road corridor	199016, 909596	199189, 910909	CS Needs Assessment	S1, B2, B7, P0	x			x	x					\$ 222,000.00	\$ 222,000.00	\$0.00	6	Aug-20
45	Pedestrian Improvements on Old Bolton Road II	5-ft sidewalk construction (EB side) along Old Bolton Road from Stow Community Park to Maple Street (~730 ft). The removal of trees over 14" may require additional permitting.	No	Stow Community Park to Maple Street	196168, 909344	196349, 909329	CS Needs Assessment	P5	x	x	x							\$ 210,000.00	\$ 210,000.00	\$0.00	9	Aug-21
47	Intersection Improvements on Boxboro Road	Install "SLOW" pavement markings on Packard Road approaching Boxboro Road to indicate the driver to reduce vehicular speed. Install a crosswalk and ADA-compliant curb ramps on Packard Road (adjacent to Boxboro Road).	No	Packard Road and Boxboro Road	199189, 910909		CS Needs Assessment	P2, P3, P9	x	x	x			x				\$ 10,000.00	\$ 10,000.00	\$0.00	3	Aug-21
60	Truck Restriction on Packard Road	"No Thru Traffic (No Trucks Except Delivery)" signage to limit large trucks (e.g. semitrucks) from using Packard Street as a cut-through street. This will reduce heavy traffic on Packard Street where advisory shoulders are also proposed. This project requires a study prior to implementation, which is not eligible for CSPP funding, and DOT approval.	No	Packard Road corridor	199016, 909596	199189, 910909	CS Needs Assessment	S7	x					x				\$ 400.00	\$ 400.00	\$0.00	1	Aug-21
62	Intersection Improvements along Gleasondale Road at Sudbury Road	Realign intersection to become a T-type intersection at the Sudbury Road/Gleasondale Road intersection. Remove vehicular throughway that is in between 437 Gleasondale Road and open space island. To slow turning traffic speeds and improve pedestrian sight distances, tighten curb radii at the Sudbury Road/Gleasondale Road intersection. Install ADA curb ramps and crosswalk.	No	Gleasondale Road and Sudbury Road	198025, 906377		CS Needs Assessment	S6, S13, P2, P3, P9	x	x	x			x				\$ 97,000.00	\$ 97,000.00	\$0.00	9	Aug-21
66	Pedestrian Improvements on Sudbury Road	Install crosswalks and ADA-compliant curb ramps at the intersection of Sudbury Road and Track Road (a portion of ARRT). Install "Slow Watch For Pedestrians" sign on Sudbury Road (adjacent to Track Road).	No	Sudbury Road and Track Road (informal entrance of ARRT)	199373, 906806		CS Needs Assessment	P2, P9, S1, P4, P3	x	x	x							\$ 9,000.00	\$ 9,000.00	\$0.00	3	Aug-21
85	Truck restriction on Wheeler Road	"No Thru Traffic (No Trucks Except Delivery)" signage to discourage large trucks (e.g. semitrucks) from using Wheeler Road as a cut-through street. This project requires a study prior to implementation, which is not eligible for CSPP funding, and DOT approval.	No	Wheeler Road corridor	198973, 908572	198311, 909449	CS Needs Assessment	S7	x					x				\$ 400.00	\$ 400.00	\$0.00	1	Aug-21
91	Traffic Calming Improvements along Red Acre Road	Install "Slow (Road Curves Ahead) Caution" and speed feedback signage at the Town's northeastern entrance from the Town of Acton to increase drivers' awareness of the dangerous curve and low visibility of pedestrians and cyclists using the road.	No	Acton/Stow town line	202683, 911234		CS Needs Assessment	S1, S5	x					x				\$ 8,000.00	\$ 8,000.00	\$0.00	1	Aug-21

6	Great Road/Gleasondale Road Intersection Pedestrian Improvements	Install pedestrian signals at the intersection of Great Road/Gleasondale Road. Upgrade (3) existing crosswalks to be high visibility. Install missing crosswalk across Great Road. ADA-compliant curb ramp needed at southeast corner of intersection. ADA-compliant curb ramps and sidewalk needed at southwest corner of intersection to connect to existing sidewalks at 375 Great Road (~130 ft). Extend pedestrian refuge island on Gleasondale Road and set crosswalks back.	No	Great Road and Gleasondale Road	199594, 909556		CS Needs Assessment	S3, P2,P5, P7, P9, P3	x	x	x	x						\$ 136,000.00	\$ 136,000.00	\$0.00	6	Aug-22
44	Intersection realignment of Tuttle Lane adjacent to South Acton Road	Tighten the turning radii to reduce speeding and improve sightline visibility at the intersection of Tuttle Lane and South Acton Road. Install a crosswalk and ADA-compliant curb ramps.	No	Tuttle Lane and South Acton Road	201428, 910864		CS Needs Assessment	S6, P2, P9, P3	x	x	x		x					\$ 11,000.00	\$ 11,000.00	\$0.00	6	Aug-22
5	Pedestrian Improvements along Crescent Street III	Option 1: For this portion of Crescent Street: 5-ft' wide sidewalk construction (NB side) along Crescent Street from end of proposed sidewalks (refer to <i>Pedestrian Improvements on West Acton Road</i>) to Crescent Street/Great Road intersection (~2,950 ft). Install ADA-compliant curb ramps for existing crosswalk landings. ²	No	West Acton Road to Great Road	199749, 909528	199600, 909566	CS Needs Assessment	P2, P5, P9, P3	x	x	x							\$ 975,000.00	\$ 400,000.00	\$575,000.00 (TBD)	9	Phase: 2023&2024
15	Pedestrian Improvements along West Acton Road	5-ft sidewalk construction along one side (potentially SB side) of West Acton Road from Acton town line to South Acton Road AND South Acton Road to Crescent Street. Coordinate with proposed crosswalk and ADA-compliant curb ramps construction across West Acton Road (refer to <i>South Acton/West Acton/Boxboro Road Intersection Improvements</i>). Consider phasing. The removal of trees over 14" may require additional permitting.	No	Acton town line to Crescent Street	200979, 912124	199902, 909902	CS Needs Assessment	P2, P5, P9, P3	x	x	x							\$ 1,064,100.00	\$ 400,000.00	\$664,100.00 (TBD)	12	Phase: 2025&2026
3	Pedestrian Improvements along Great Road	Install 5-ft wide sidewalks (WB side) from Gleasondale Road to Common Road (~500 ft). Supplement sidewalk with a grass buffer strip. Install crosswalks and ADA-compliant curb ramps on Common Road (adjacent to Great Road) to connect to 323 Great Road.	No	Gleasondale Road to Common Road	199749, 909528	199600, 909566	CS Needs Assessment	P2, P5, P9, P3	x	x	x							\$ 55,000.00	\$ 55,000.00	\$0.00	3	Aug-27
9	South Acton/West Acton/Boxboro Road Intersection Improvements	Option 1: Realign intersection of South Acton Road/West Acton Road/Boxboro Road. Install T-style intersection on Boxboro road into West Acton Road and, to extent possible, align with South Acton Road. Tighten all corner radii and reduce paved area. Install (3) crosswalks and ADA-compliant curb ramps: across Boxboro Street, across South Acton Street, and across West Acton Street. Coordinate with proposed sidewalk construction on West Acton Road (refer to <i>Pedestrian Improvements along West Acton Road</i>).	No	South Acton Road, West Acton Road, and Boxboro Road	199962, 910196		CS Needs Assessment	S6, S13, P2, P9, P3	x	x	x	x	x					\$ 175,000.00	\$ 175,000.00	\$0.00	12	Aug-27
9	South Acton/West Acton/Boxboro Road Intersection Improvements	Option 2: Install a mini roundabout where South Acton Road, West Acton Road, and Boxboro Road meet. Install (3) crosswalks and ADA-compliant curb ramps: across Boxboro Street, across South Acton Street, and across West Acton Street. Include shared lane markings ("sharrows") to guide bicyclists through the intersection. Include Circular Intersection (W2-6, W16-12p) and Yield (R1-2) warning signs.	No	South Acton Road, West Acton Road, and Boxboro Road	199962, 910196		CS Needs Assessment	S6, S13, B8, P2, P3 P9	x	x	x	x	x					\$ 200,000.00	\$180,000	\$20,000 (TBD)	12	Aug-27
16	Pedestrian Improvements on Great Road	Extend sidewalks along Great Road from the end of the Lower Village sidewalk project at White Pond Road to the Maynard town line (~2000 ft).	No	White Pond Road to Maynard town line	201362, 909028	201941, 908778	CS Needs Assessment	P5	x	x	x							\$165,000	\$ 165,000.00	\$0.00	6	Aug-27
4	Gleasondale Road Shared Use Path	Install a shared use path (supplemented with a landscape buffer strip) along NB side of Gleasondale Road, from Gleasondale Bridge (North) to Sudbury Road (~8500'). Coordinate with proposed bike and pedestrian improvement projects on Gleasondale Road from Great Road to Brookside Avenue (refer to <i>Bike Improvements along Gleasondale Road and Pedestrian Improvements along Gleasondale Road</i>). Existing ROW constraints. Current conditions: 24-ft roadway width, 40-45 ft ROW width, 25-30 mph posted speed. Shared use path width will be determined during design but should be at least 10 feet.	No	Gleasondale Bridge (North) to Sudbury Road	197831, 906050	198022, 906374	CS Needs Assessment	B10, B7, P4	x	x	x	x						\$2,500,000	\$ 400,000.00	\$2,100,000 (TBD)	12	Phase: 2028-2033; logical termini will be determined for each phase
28	Pedestrian Improvements on Old Bolton Road I	5-ft sidewalk construction (EB side) along Old Bolton Road from Great Road to Stow Community Park (~1530 ft). Construct ADA curb ramps and crosswalk across Bose Road and at parking lot entrance/exit. The removal of trees over 14" may require additional permitting.	No	Great Road to Stow Community Park	196349, 909329	196864, 909450	CS Needs Assessment	P5, P2, P3, P9	x	x	x							\$ 529,000.00	\$400,000	\$129,000 (Chp 90 and Planning Board Sidewalk Fund)	9	Aug-34
24	Bike Improvements on White Pond Road	Option 1: Install advisory shoulders from Great Road to the Maynard town line. To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes) (~4600 ft). To improve the quality of this bicycle and pedestrian facility, coordination with the Town of Maynard should be considered to expand advisory shoulders to the AART entrance located within Maynard. ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	Great Road to the Maynard town line	202075, 908082	202072, 908089	CS Needs Assessment	S1, B2, B7, P0	x	x	x							\$ 325,000.00	\$ 325,000.00	\$0.00	6	Aug-35

35	Pedestrian Improvements in Town Center III	Install 5-ft sidewalk (EB side) on Crescent Street, from Great Road to Hartley Road (~320 ft). Coordinate with proposed crosswalk and curb ramp construction on Hartley Road and Crescent Street (<i>Pedestrian Improvements in Town Center I</i>).	No	Great Road to Hartley Road	199454, 909588	199570, 909628	CS Needs Assessment	P2, P5, P9, P3	x	x	x							\$ 32,000.00	\$ 32,000.00	\$0.00	3	Aug-35
40	Intersection Improvements at Common Road (adjacent to Library Hill Road)	On the WB side, extend the curb at the end of Common Road (adjacent to Library Hill Road). This will reduce crossing distances on Common Road (road that Randall Library is on). Supplement with ADA-compliant curb ramps on all crosswalk landings. On the EB side of Common Road, widen shoulders to accommodate on-street parallel parking.	No	Common Road and Library Hill Road	199593, 909599		CS Needs Assessment	P8, P2, P9, S15, P3	x	x	x		x					\$ 38,000.00	\$ 38,000.00	\$0.00	3	Aug-35
31	Hudson Road Pedestrian Improvements Phase 1	If a SUP along Hudson Road is not feasible, pursue phase 1 of 5-ft sidewalk construction along one side of Hudson Road from Great Road to Arbor Glen Drive (~2675 ft). Install ADA curb ramps and crosswalks at all side street crossings.	No	Hudson Road from Great Road to Arbor Glen Drive	197592, 909345	197258, 908607	CS Needs Assessment	P2, P5, P9, P3	x	x	x							\$ 260,000.00	\$ 260,000.00	\$0.00	6	Aug-36
39	Intersection Improvements on Hudson Road (adjacent to Great Road)	Reconstruct substandard traffic median on Hudson Road as a pedestrian safety island by raising the island 6 inches high, creating a footpath in the middle of the island that is at least 5 ft wide, with 2 ft wide detectable warning strips on each end. The approach edge of the island should be outlined in reflective white or yellow material.	No	Hudson Road and Great Road	197602, 909327		CS Needs Assessment	P7		x		x		x				\$ 45,000.00	\$ 45,000.00	\$0.00	3	Aug-36
42	Create a recreational trail on the Kane Land Property	Construct access points at and along the Kane Land property in Gleasondale Village. Supplement the access points with a crosswalk and ADA-compliant curb ramps across Gleasondale, Marlborough/Gleasondale sidewalk as needed. A potential access point that is being considered is at the southern most frontage of the Kane Land. The Kane Land is currently under the control of the Board of Selectmen.	No	Kane Land Property	198146, 905831		CS Needs Assessment	B0, P0		x	x	x	x					\$ 32,000.00	\$ 32,000.00	\$0.00	3	Aug-36
87	Traffic Calming along Gleasondale Road III	Install a median to slow traffic along Gleasondale Road, from Marlboro Road to Sudbury Road (~2500 ft).	No	Marlboro Road to Sudbury Road	197857, 905669	198026, 906374	CS Needs Assessment	P16, S17		x				x				\$ 20,000.00	\$ 20,000.00	\$0.00	3	Aug-36
57	Track Road Advisory Shoulder- Option 2	If a shared use path along Track Road is not feasible, pave and install advisory shoulders along Track Road to provide designated space for cyclists and pedestrians continuing down to Sudbury Road and linking to the future Central Mass Rail Trail extension (~1.85 miles). Provide wayfinding signage for pedestrians and cyclists. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	Track Road corridor	199382, 906809	202093, 907940	CS Needs Assessment	B2, B7, P4		x		x	x					\$ 650,000.00	\$ 400,000.00	\$250,000 (TBD)	12	Phase: 2037-2038; Logical termini will be determined for each phase or an additional funding source.
56	Track Road Shared Use Path- Option 1	Pave and install a shared use path along Track Road to provide a safe experience for pedestrians and cyclists continuing down to Sudbury Road and linking to the future Central Mass Rail Trail extension (~1.85 miles). Provide wayfinding signage for pedestrians and cyclists. Shared use path width will be determined during design but should be at least 10 feet.	No	Track Road corridor	199382, 906809	202093, 907940	CS Needs Assessment	B10, B7, P4		x	x	x	x					\$ 1,200,000.00	\$ 400,000.00	\$800,000 (TBD)	12	Phase: 2037-2039; Logical termini will be determined for each phase or an additional funding source.
1	Pedestrian Improvements along Crescent Street III/Shared Use Path along Crescent Street II	Option 2: Phase 2 for this portion of Shared Use Path along Crescent Street: Install a shared use path along the NB side of Crescent Street from end of proposed sidewalks (<i>refer to Pedestrian Improvements on West Acton Road</i>) to Crescent Street/Great Road intersection (~2950 ft). Shared use path width will be determined during design but should be at least 10 feet .	No	West Acton Road to Great Road	199902, 909902	200586, 909331	CS Needs Assessment	B10, B7, P4		x	x	x	x									
2	Pedestrian Improvements along Crescent Street III/Shared Use Path along Crescent Street I	Option 2: This portion of Crescent Street/Phase 1 for this portion of Shared Use Path along Crescent Street: Restripe to widen shoulders along the NB side of Crescent Street from end of proposed sidewalks (<i>refer to Pedestrian Improvements on West Acton Road</i>) to Crescent Street/Great Road intersection (~2950 ft). Supplement with a "Share the Road" (W16-1, W11-1) sign. Shared use path width will be determined during design but should be at least 10 feet .	No	West Acton Road to Great Road	199902, 909902	200586, 909331	CS Needs Assessment	S15, B7, P4		x				x								
8	South Acton Road Shared Use Path II	Install a shared use path along the southern (EB) side of South Acton Road from West Acton Road to Acton town line to provide a high quality pedestrian and cyclist connection to Acton and the South Acton Commuter Rail Station (~8700 ft). Shared use path width will be determined during design but should be at least 10 feet.	No	West Acton Road to Acton town line	199962, 910192	202305, 911433	CS Needs Assessment	B10, B7, P4		x	x	x	x									
12	Pedestrian Improvements on Gleasondale Road	Install high visibility crosswalk across Gleasondale Road north of Box Mill Road . Supplement with Pedestrian Actuated Warning Device (PAWD).	No	Gleasondale Road and Box Mill Road	199555, 909345		CS Needs Assessment	P2, P9, P12, P3	x	x	x											

13	Bicycle Improvements along Red Acre Road	Install advisory shoulders from the Acton Town Line to Great Road. To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes). ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	Acton town line to Great Road	202679, 911239	201271, 909132	CS Needs Assessment	S1, B2, B7, P0				x	x							
14	Bike Improvements along Boxboro Road	Install advisory shoulders (NB side) from West Acton Road to the Boxboro town line (NB side). To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes). Current conditions: 19 ft roadway width, 36 ft ROW, 1130 (ADT). ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	West Acton Road to Acton town line	199081, 912671	199947, 910163	CS Needs Assessment	S1, B2, B7, P0	x		x	x								
17	South Acton Road Shared Use Path I	Restripe to widen shoulders along the southern (EB) side from West Acton Road to Acton town line (~8700 ft). Supplement with a "Share the Road" (W16-1, W11-1) sign.	No	West Acton Road to Acton town line	199962, 910192	202305, 911433	CS Needs Assessment	B10, B7, P4	x				x							
18	Pedestrian Improvements on Red Acre Road	5-ft sidewalk construction (SB side) from Lower Village to Tuttle Lane.	No	Tuttle Lane to Great Road	201899, 910440	201271, 909132	CS Needs Assessment	P5	x	x	x									
19	Pedestrian Improvements on Great Road	Install high visibility crosswalks and ADA compliant curb ramps on Great Road (adjacent to Johnston Way) with Pedestrian Actuated Warning Device (PAWD).	No	Great Road and Johnston Way	200383, 909370		CS Needs Assessment	P2, P9, P12, P3	x	x	x									
20	Pedestrian Improvements in Town Center I	Install high visibility crosswalks and ADA-compliant curb ramps at all (4) points at the intersection of Hartley Road, Library Hill, and Crescent Street.	No	Hartley Road, Library Hill Road, and Crescent Street	199577, 909635		CS Needs Assessment	P2, P9, P3	x	x	x									
22	Pedestrian Improvements in Town Center II	Install high visibility crosswalks and ADA-compliant curb ramps at the future parking lot behind the old fire station (across Hartley Road).	No	1 Hartley Road	199548, 909717		CS Needs Assessment	P2, P9, P3	x	x	x									
25	Bike Improvements along Gleasondale Road	Install 5-ft bike lanes from Great Road to Brookside Avenue. Existing ROW constraints. Current conditions: 24-ft roadway width, 40-ft ROW width, 35 mph posted speed.	No	Great Road to Brookside Avenue	199604, 909558	199456, 909093	CS Needs Assessment	B2, S1	x				x							
26	Pedestrian Improvements along Gleasondale Road	Reconstruct existing sidewalks from Great Road to 13 Gleasondale Road (~600 ft). Construct new 5-ft sidewalks from 13 Gleasondale Road to Brookside Avenue (~980 ft). Existing ROW constraints. Current conditions: 24-ft roadway width, 40-ft ROW width, 35 mph posted speed.	No	Great Road to Brookside Avenue	199604, 909559	199456, 909094	CS Needs Assessment	P1, P5	x	x	x									
30	Hudson Road Shared Use Path I	Phase 1: Install a shared use path along one side of Hudson Road from Great Road to Arbor Glen Drive to provide a high quality pedestrian and cyclist connection to/from Hudson (~2700 ft). Existing ROW constraints. Current conditions: 28-ft roadway width, 50-ft ROW width, 3126 (ADT) posted 40-45 mph speed limit. Shared use path width will be determined during design but should be at least 10 feet.	No	Great Road to Arbor Glen Drive	196575, 906588	197599, 909347	CS Needs Assessment	B10, B7, P4	x	x	x	x								
32	Hudson Road Pedestrian Improvements Phase 2	If a SUP along Hudson Road is not feasible, pursue phase 2 of 5-ft sidewalk construction along one side of Hudson Road from Arbor Glen Drive to Billadell Road. Install ADA curb ramps and crosswalks at all side street crossings.	No	Hudson Road from Arbor Glen Drive to Billadell Road	197258, 908607	197570, 906590	CS Needs Assessment	P2, P5, P9, P3	x	x	x									
33	Hudson Road Bicycle Improvements	If a SUP along Hudson Road is not feasible, repaint striping to narrow travel lanes and widen shoulders from Great Road to Hudson town line and install sharrrows.	No	Hudson Road from Great Road to Billadell Road	197592, 909345	196331, 906285	CS Needs Assessment	S17, B8	x				x							
36	Sudbury Road Shared Use Path	Install a shared use path along the EB side of Sudbury Road to provide a high quality pedestrian and cyclist connection to destinations such as the Assabet River Rail Trail (ARRT), from 147 Sudbury Road to Maynard town line. Shared use path width will be determined during design but should be at least 10 feet.	No	147 Sudbury Road to Maynard town line	202366, 904974	198954, 906778	CS Needs Assessment	B10, B7, P4	x	x	x	x								
37	Bike Improvements on White Pond Road	Option 2: Install shared lane markings ("sharrrows"). To indicate a shared lane environment for cyclists, install "Share the Road" (W16-1, W11-1) signage distributed at key points throughout the whole corridor.	No	Great Road to Assabet River Rail Trail	202075, 908082	201378, 908989	CS Needs Assessment	B8, B7, S1	x				x							

38	Intersection Improvements on Hudson Road (adjacent to Great Road)	Install a high visibility crosswalk with ADA-compliant curb ramps on Great Road (adjacent to Hudson Road) with Pedestrian Actuated Warning Device (PAWD). A potential location is in front of Stow Field.	No	Hudson Road and Great Road	197592, 909337		CS Needs Assessment	P2, P9, P12, P3	x	x	x									
41	Bike Improvements along Old Bolton Road	Install advisory shoulders along the corridor. To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes). ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	184 Old Bolton Road to Great Road	196862, 909456	195819, 909997	CS Needs Assessment	S1, B2, B7, P0	x		x	x								
43	Hudson Road Shared Use Path II	Phase 2: Install a shared use path along one side of Hudson Road from Arbor Glen Drive to Hudson town line to provide a high quality pedestrian and cyclist connection to/from Hudson (~1.5 miles). Existing ROW constraints. Current conditions: 28-ft roadway width, 50-ft ROW width, 3126 (ADT) posted 40-45 mph speed limit. Shared use path width will be determined during design but should be at least 10 feet.	No	Arbor Glen Drive to Hudson town line	196328, 906284	197255, 908606	CS Needs Assessment	B10, B7, P4	x	x	x	x								
48	Pedestrian Improvements on White Pond Road	5-ft sidewalk construction (NB side) from Great Road to Maynard town line (~4000 ft).	No	Great Road to Maynard town line	202075, 908082	201378, 908989	CS Needs Assessment	P5	x	x	x									
50	Intersection Improvements on Hudson Road (adjacent to Great Road)	Repair the sidewalk and wheelchair ramp at the southwest corner of the intersection.	No	Hudson Road and Great Road	197585, 909339		CS Needs Assessment	P1, P2, P3	x	x	x									
51	Intersection Improvements on Hudson Road (adjacent to Great Road)	Restripe the faded high visibility crosswalk on Hudson Road (adjacent to Great Road) and relocate the stop bar behind the crosswalk.	No	Hudson Road and Great Road	197592, 909337		CS Needs Assessment	P9, S0	x		x									
53	Intersection Improvements on Harvard Road II	Install stop signs in the following locations: Delaney Street, approaching Harvard Road; Hiley Brook Road, approaching Harvard Road.	No	Two locations: Delaney Street, Hiley Brook Road	196636, 910509; 196880, 910054		CS Needs Assessment	S7	x				x							
54	Intersection Improvements along Red Acre Road	To slow turning traffic speeds and improve pedestrian sight distances, tighten the turning radii to reduce speeding and improve sightline visibility at the intersections of Tuttle Lane/Red Acre Road. Install a crosswalk with ADA-compliant curb ramps.	No	Tuttle Lane and Red Acre Road	201899, 910440		CS Needs Assessment	S6, P2, P9, P3	x	x	x			x						
55	Intersection Improvements on Gleasondale Road	Tighten the turning radii to reduce speeding and improve sightline visibility at the intersection of Sudbury Road, Whitman Street, and Boon Road. Supplement intersection with crosswalks and ADA-compliant curb ramps.	No	Sudbury Road, Whitman Road, and Boon Road	198957, 906775		CS Needs Assessment	S6, P2, P9, P3	x	x	x			x						
58	Intersection Improvements along Taylor Road	Realign skewed intersection into a T-type intersection at Taylor Road (adjacent to Boxboro Road). Install a crosswalk and ADA-compliant curb ramps.	No	Taylor Road and Boxboro Road	199359, 910615		CS Needs Assessment	S13, P2, P9, P3	x	x	x			x						
61	Bicycle Improvements along Harvard Road	Install advisory shoulders from the Harvard town line to Great Road. To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes). ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	Great Road to Harvard town line	198090, 909380	196246, 911983	CS Needs Assessment	S1, B2, B7, P0	x		x	x								
63	Bike Improvements on Sudbury Road	Install advisory shoulders along Sudbury Road, from Gleasondale Road to 147 Sudbury Road. To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes). ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	Gleasondale Road to 147 Sudbury Road	198954, 906778	198028, 906378	CS Needs Assessment	S1, B2, B7, P0	x		x	x								
64	Pedestrian Improvements on Taylor Road	OPTION 1: 5-ft sidewalk construction from Adams Drive to Packard Road	No	Adams Drive to Packard Road	199076, 910761	198013, 911818	CS Needs Assessment	P5	x	x	x									

65	Wayfinding Signage on Boxboro Road	Install wayfinding signage to direct people to Flagg Hill Conservation Area trail entrance located on Trefry Lane, in the following locations: Boxboro Road/Trefry Lane intersection and the Trefry Lane trail entrance.	No	Two locations: Boxboro Road and Trefry Lane, Trefry Lane trail entrance	199090, 912428; 199270, 912418		CS Needs Assessment	B7, P4	x	x	x								
67	Traffic Calming on Sudbury Road	Install posted speed/speed feedback signage at key points along the corridor.	No	Sudbury Road corridor	202366, 904974	198028, 906378	CS Needs Assessment	S5	x				x						
70	Pedestrian Improvements on Taylor Road	OPTION 2: Widen paved shoulders from Adams Drive to Packard Road.	No	Adams Drive to Packard Road	199076, 910761	198013, 911818	CS Needs Assessment	S15	x		x	x							
71	Traffic Calming Improvements along Gleasondale Road	Reduce current varied speed limits along Gleasondale Road (currently 25-35 MPH) to have it be consistent to 25 MPH, from Boon Road to Hudson town line.	No	Boon Road to Hudson town line	198036, 907071	197722, 905508	CS Needs Assessment	S17, S0	x					x					
74	Pedestrian Improvements on Harvard Road	5-ft sidewalk construction (NB side) from Marble Hill Conservation Area to Great Road.	No	Marble Hill Conservation Area to Great Road	198090, 909380	197621, 909837	CS Needs Assessment	P5	x	x	x								
75	Intersection Improvements in Town Center	Realign the Fire Station parking entrance. Tighten the curb cuts to slow turning traffic speeds and improve pedestrian sight distances. Improve the crosswalk to connect to the sidewalks and include ADA-compliant curb ramps for all crosswalk landings.	No	511 Great Road	198530, 909513		CS Needs Assessment	S6, P2, P9, P3	x	x	x				x				
76	Intersection Improvements on Hudson Road	Realign the intersection of Walcott Street, Randall Road, and Hudson Road. Supplement with crosswalks and ADA-compliant curb ramps.	No	Walcott Street, Randall Road, and Hudson Road	196620, 907198		CS Needs Assessment	S13, P2, P9, P3	x	x	x				x				
77	Intersection Improvements on Hudson Road (adjacent to Great Road)	Install "Deer Crossing" warning signs (W11-3) at key points adjacent to the Hudson Road/Great Road intersection.	No	Hudson Road and Great Road	197592, 909337		CS Needs Assessment	S0	x						x				
78	Intersection Improvements on Hudson Road (adjacent to Great Road)	Install "Side Road" intersection warning signs (W2-2) approximately 300 ft from the intersection in both directions of Great Road.	No	Hudson Road and Great Road	197592, 909337		CS Needs Assessment	S1	x						x				
79	Intersection Improvements along Gleasondale Road at Randall Road	Realign skewed "T" into a T-type intersection at the intersection of Randall Road/Gleasondale Road.	No	Randall Road and Gleasondale Road	198025, 906944		CS Needs Assessment	S13	x		x				x				
81	Intersection Improvements on Sudbury Road	To slow turning traffic speeds and improve pedestrian sight distances, tighten curb radii of Pine Point Road and Lakewood Road (adjacent to Sudbury Road). Install crosswalks and ADA-compliant curb ramps.	No	Lakewood Road, Pine Point Road, and Sudbury Road	199718, 906659		CS Needs Assessment	S6, P2, P9, P3	x	x	x				x				
82	Intersection Improvements on Sudbury Road	To slow turning traffic speeds and improve pedestrian sight distances, tighten curb radii on State Road/Massachusetts State Fire Marshall property (adjacent to Sudbury Road). Install crosswalks and ADA-compliant curb ramps.	No	Sudbury Road and State Road	201751, 904881		CS Needs Assessment	S6, P2, P9, P3	x	x	x				x				
83	Traffic Calming along Gleasondale Road II	Replace the faded "Slow (Curve Ahead)" ahead signage at the NB entrance to Gleasondale Village.	No	Gleasondale Road and Sudbury Road	197908, 906255		CS Needs Assessment	S0, S1	x						x				
84	Traffic Calming Improvements on Marlboro Road	Widen shoulders (narrowing travel lanes) from High Street to Gleasondale Road. Supplement with a "Share the Road" (W16-1, W11-1) sign.	No	High Street to Gleasondale Road	197937, 905490	197824, 905621	CS Needs Assessment	S17, S15, S1, B7	x						x				
90	Bicycle Improvements along Hiley Brook Road	Install advisory shoulders from Old Bolton Road to Harvard Road. To indicate a shared lane environment for cyclists, install appropriate signage distributed at key points throughout the whole corridor (as a required supplement to advisory lanes). ADT and speed studies should be completed to verify feasibility. Advisory shoulder widths will be determined in design, but will be greater than or equal to 4 feet with a travel way of greater than or equal to 10 feet. FHWA Request to Experiment will be required before implementation.	No	Old Bolton Road to Harvard Road	196611, 909376	196885, 910055	CS Needs Assessment	S1, B2, B7, P0	x		x	x							
92	Intersection Improvements on Old Bolton Road	Install stop sign at the Old Bolton Road/Maple Street intersection, specifically on the NB side of Maple Street, headed towards Old Bolton Road.	No	Old Bolton Road and Maple Street	196146, 909344		CS Needs Assessment	S7	x						x				
93	Wayfinding Signage on Old Bolton Road	Improve wayfinding signage to direct people to several key destinations in the area such as the Annie Moore Conservation Land, Stow Community Park and the Town of Bolton. Signage should be located at key points along the corridor as well as at the entrances of the Annie Moore Conservation Land and Stow Community Park.	No	Old Boon Road corridor	196862, 909456	195819, 909997	CS Needs Assessment	B7, P4, S1	x		x	x							

94	Intersection Improvements on Harvard Road I	To slow turning traffic speeds and improve pedestrian sight distances, tighten curb radii of EB Harvard Road approach and add stop sign at the Harvard Road/Garner Road intersection.	No	Harvard Road and Garner Road	196478, 911881		CS Needs Assessment	S6	x	x								
95	Bicycle Improvements along Maple Street	Install wide shoulders from Bolton town line to Old Bolton Road. Supplement with a "Share the Road" (W16-1, W11-1) sign and speed radar signs.	No	Old Bolton Road to Bolton town line	195399, 908041	196138, 909326	CS Needs Assessment	S13, S5, S1, B7	x		x							
96	Intersection Improvements along Lantern Lane (adjacent to Hiley Brook Road)	Install stop signs at the following location: Lantern Lane (adjacent to Hiley Brook Road).	No	Lantern Lane and Hiley Brook Road	196618, 909658		CS Needs Assessment	S7	x									
97	Townwide Speed Signage Improvements	Install Speed and/or Speed Limit Radar Speed Signs along key corridors that have high vehicular speeds. Some key locations include: Red Acre Road, Boxboro Road, Taylor Road, Harvard Road, South Acton Road, West Acton Road.	No	Townwide			CS Needs Assessment	S1, S5	x									

¹ Please see information below for requirements that will be met for all projects that contain the specified treatments.

-Pushbuttons/Pedestrian Beacons/RRFBs/HAWKS should be accessible from a level landing. Refer to AAB 521 CMR 21.10.4 for reach and clearance guidance.

-Sidewalk construction will meet existing sidewalk network or terminate with compliant curb ramps. Reciprocal curb ramps and crosswalks will be provided at intersection termini.

-At marked crossings, the bottom of the ramp run (4'-0" by width of ramp opening), exclusive of flared sides, shall be wholly contained within the marked crossing. Refer to AAB 521 CMR: 21.2.1.

-This project will require design. When applying for Tier 3 funding, the scope of work will be defined and the results provided in Exhibit A.

² This project will require design; when applying for Tier 3 funding, the scope of work will be defined and results provided in Exhibit A.



Table 2. *Complete Streets Eligible Project Worksheet*

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
<p>S1. Pavement markings or signage that provides a new separate accommodation for bicycle, pedestrian or transit modes</p> <p>S2. Removal of protruding objects (pedestrian path of travel, bicycle, vehicular or transit facility)</p> <p>S3. Pedestrian signal & timing (minor updates)</p> <p>S4. Changing pedestrian signal timing (i.e., lead pedestrian interval)</p> <p>S5. Radar speed feedback (“Your Speed”) signs</p> <p>S6. Reducing corner radii to lower vehicle speeds and/or decrease pedestrian crossing distances</p> <p>S7. Additional regulatory signing (for existing regulations)</p> <p>S8. Speed humps/speed tables</p> <p>S9. Street lighting</p> <p>S10. Road diets</p> <p>S11. Speed attenuation devices</p> <p>S12. Roadway resurfacing or micro surfacing if restriping for new bicycle lanes</p> <p>S13. Intersection reconstruction – reducing complexity and crossing distance</p> <p>S14. New curbing or edging on uncurbed streets.</p> <p>S15. Addition of or widening of shoulders</p> <p>S16. Intersection signalization (major updates/upgrades & new Installation)</p> <p>S17. Traffic calming measures</p> <p>S18. Roundabouts</p> <p>S0. Traffic & Safety - Other</p>	<p>B1. Improvement of shared use paths (non-safety related)</p> <p>B2. Designated bicycle lanes</p> <p>B3. Bicycle parking fixtures and/or shelters at transit and other locations</p> <p>B4. On-street bicycle parking</p> <p>B5. Provide bicycle-safe drain grates and other hardware</p> <p>B6. Bicycle boulevards</p> <p>B7. Bicycle wayfinding signs</p> <p>B8. Shared lane markings (sharrows)</p> <p>B9. Bike route signs</p> <p>B10. New shared use paths</p> <p>B11. Designated Separated Bicycle Lane</p> <p>B12. Elimination of hazardous conditions on shared use paths</p> <p>B13. Intersection treatments (bicycle signals, bicycle detection, bike lane extensions, turn boxes)</p> <p>B0. Bicycle Facilities - Other</p>	<p>P1. Sidewalk repairs (tree roots, uplifted panels, etc.)</p> <p>P2. Providing ADA/AAB compliant curb ramps</p> <p>P3. Detectable warning surfaces</p> <p>P4. Pedestrian wayfinding signs</p> <p>P5. Providing new sidewalks</p> <p>P6. Providing pedestrian buffer zones</p> <p>P7. Pedestrian Refuge Islands</p> <p>P8. Curb extensions at pedestrian crossings</p> <p>P9. Crosswalks</p> <p>P10. Widening existing sidewalks</p> <p>P11. Accessible pedestrian signals</p> <p>P12. New or improved crossing treatments at intersections, midblock, etc. including RRFB’s and HAWK signals</p> <p>P13. New pedestrian accommodations at existing traffic signals</p> <p>P14. Interim public plazas</p> <p>P15. Traffic re-routing to create pedestrian zones</p> <p>P16. Providing medians with ADA/AAB-compliant design</p> <p>P0. Pedestrian Facilities - Other</p>	<p>T1. Improving transit connections for pedestrians, including: ramps, providing and/or moving crosswalks, signing</p> <p>T2. Improving transit connections for bicyclists, including: providing secure bicycle parking, signing</p> <p>T3. Transit shelter</p> <p>T4. Transit signal prioritization</p> <p>T5. Bus pull-out areas</p> <p>T6. Railroad grade crossings improvements (signs, flange way fill, etc.)</p> <p>T7. Transit contra-flow lanes</p> <p>T8. Park-n-ride facilities</p> <p>T9. Transit-only lanes</p> <p>T0. Transit Facilities - Other</p>

Source: Accommodating Bicycle and Pedestrian Travel: A Recommended Approach; United States Department of Transportation Federal Highway Administration, May 7, 2012.



Table 3. Complete Streets Needs Comparison Table: MassDOT vs HSH

MassDOT	Howard Stein Hudson
Environmental Justice Populations	Environmental Justice Factors
	Persons with Disabilities
Safety	Pedestrian and Bicycle Crashes
ADA Accessibility	ADA Accessibility
Pedestrian Mobility	Pedestrian Latent Demand
	Pedestrian Network
	Proposed Change in Pedestrian Network
Bicycle Mobility	Bicycle Latent Demand
	Bicycle Level of Comfort
	Proposed Change in Bicycle Level of Comfort

The prioritization criteria outlined by MassDOT are expanded upon by HSH to provide a more nuanced analysis of proposed projects. Table 3 outlines the criteria assessed by HSH as compared to MassDOT.



Project Descriptions

The following describes the major project types that are included in the Prioritization Plan, including details on specific projects that are scheduled for the earlier years of the plan, including year one.

SIDEWALK/ADA CURB RAMP CONSTRUCTION

Sidewalk construction projects are proposed throughout the Town, although most notably in sections of pedestrian networks where sidewalks are absent creating gaps. Constructing safe and accessible sidewalk facilities will increase pedestrian safety town-wide while increasing routing options to points of interest. ADA-compliant curb ramps and high visibility crosswalks are also important elements of an accessible and continuous pedestrian network.

CRESCENT STREET (PHASES II AND III)

Crescent Street is a roadway adjacent to Great Road which resembles an irregular semicircle with both ends of the corridor approaching Great Road. It is located within Stow's census tract that contains the highest percentage of disabled persons (approximately 14%) and lands in one of the hottest clusters of the Town that received a large number of concerns regarding missing/obstructed sidewalks and high vehicular speeds/volumes (*refer to Figure 9. Top 4 WikiMap Concerns*).



A portion of Crescent Street that is included in the sidewalk construction proposal.

Additionally, Crescent Street serves as a critical connection between areas of relatively dense rental housing at Pilot Grove Apartments and both Hale Middle School and Center Elementary School. In 2018, plans will also advance for a community park at 323 Great Road, which can also be accessed via Crescent Street.

Crescent Street's roadway is approximately 24-feet in width, with a posted speed limit of 35 mph. The street has approximately 1,300 feet of sidewalk that ends near 43 Crescent Street. Broken into two phases, Stow's Prioritization Plan proposes to construct a new sidewalk from 43 Crescent Street to the remaining portions of the corridor that do not currently have sidewalks to enhance pedestrian connectivity in one of the Town's critical areas (*refer to Pedestrian Improvements Along Crescent Street II and III* in the Prioritization Plan).



Crescent Street is in the heart of Town Center and provides access to the Randall Library via Library Hill Road and Center School and Hale Middle School via Hartley Road. ADA-compliant curb ramps for existing and proposed crosswalk landings, as well as a new crosswalk adjacent to West Acton Road are included. Phase I of Crescent Street’s pedestrian improvements includes installing Children Crossing and School Zone signage. Pedestrian improvements planned for this roadway will improve access to adjacent destinations and enhance the sense of community through better connections to local businesses, services, and neighbors. Phase I of this sidewalk construction project will apply for Tier 3 funding in 2018 and is estimated to cost \$56,000. Phase II, with an estimated cost of \$341,000, may apply for Tier 3 funding in 2019. Any additional funding needed in 2019 could access Planning Board Sidewalk or Chapter 90 funds. Phase III will apply for Tier 3 funding in 2022 and is estimated to cost \$975,000.

OLD BOLTON ROAD (PHASES I AND II)

Old Bolton Road is a minor arterial corridor that provides connections to the Stow Community Park, Town of Bolton, Great Road, and Maple Street. The corridor consists of single-family residential buildings and a 96 unit single and multi-family development within a quarter mile of the Old Bolton Road/Great Road intersection.

One non-fatal accident involving a pedestrian and vehicle occurred near the Stow Community Park. The pedestrian was rear-ended while the vehicle was heading northbound on Old Bolton Road.

Although the crash was reported “non-fatal”, sidewalks that are grade separated would have helped to prevent the crash. It is important for the Town to provide a well-designed sidewalk to help prevent pedestrians from tripping and falling into oncoming traffic. A sidewalk construction project is proposed for Old Bolton Road, from Maple Street to Great Road, which would provide space for residents to access Stow Community Park safely. This sidewalk project is in two phases: I. Maple Street to Stow Community Park and II. Stow Community Park to Great Road. Sidewalk construction from Stow Community Park to Great Road is included in the Prioritization Plan but is currently not in the list of projects projected to occur in the next five years. Phase I of Old Bolton Road’s sidewalk construction project will apply for Tier 3 funding in 2021 and is estimated to cost \$210,000.



A portion of Old Bolton Road that will include sidewalk construction on the NB side.



CROSSING IMPROVEMENTS ON GREAT ROAD

Hudson Road at Great Road is located at the western portion of the Town in which several vehicular crashes have taken place between 2013 – 2015. There is an existing high visibility crosswalk with ADA-compliant curb ramps at the location. However, considering the posted speed limit on the adjacent portion of Great Road is 40 mph, the chance of a severe pedestrian crash is high due to a lack of other pedestrian facility enhancements. Cyclists frequenting Hudson Road must also navigate the high traffic intersection, which can be especially difficult during peak hours. Stow's Prioritization Plan includes enhancing this intersection by repainting the existing high visibility crosswalk and supplementing it with pedestrian-activated warning devices (PAWDs). PAWDs would provide higher driver awareness when a pedestrian is present and allow vehicles to yield to a pedestrian crossing the street within a reasonable distance. This crossing improvement project will apply for Tier 3 funding in 2018 and is estimated to cost \$32,000.

PEDESTRIAN IMPROVEMENTS ON SUDBURY ROAD

This project will install a crosswalk and ADA-compliant curb ramps across Sudbury Road at Track Road to provide safer access to the Assabet River Rail Trail. Track Road, which follows the Assabet River between Sudbury Road and White Pond Road, is a potential leg of the Assabet River Rail Trail and a popular destination for community members. "Slow Watch For Pedestrians" signage will be installed on Sudbury Road adjacent to Track Road to warn vehicles of the potential for crossing pedestrians as well as the presence of the trail entrance. Scheduled for implementation through Tier 3 in 2021, this project is estimated at \$9,000.

WEST ACTON ROAD

West Acton Road, which becomes Willow Street in Acton, connects the Town Center of Stow to the Town Center of Acton. Currently, no pedestrian accommodations are provided. This project proposes the construction of sidewalk along one side of West Acton Road. This project has not been designed yet; considering existing restrictions and available right-of-way, it is likely that the sidewalk would be constructed on the southbound side of the road. Sidewalk is desired from the Acton Town line to Crescent Street. This project would need to be coordinated with the proposed crosswalk and ADA-compliant



Double yellow centerlines with narrow roadway width along West Acton Road.



curb ramp construction proposed across *West Acton Road in the South Acton/West Acton/Boxboro Road Intersection Improvements* project listed in the Prioritization Plan. The removal of trees of 14 inches in diameter may require additional permitting.

Due to the considerable length of this project, phasing among multiple years would be required, likely between two – three years, each of which will be planned to have logical termini, such as starting from Town Center at Crescent Street and working north towards Acton. Currently, the project is scheduled to take place during the years 2024 – 2025 and is estimated to cost 1,064,100.

SIDEWALK RECONSTRUCTION

Many of the existing sidewalks in Stow are in poor condition and often obstructed by utility poles and other constraints. They also do not comply with ADA standards due to an absence of curb ramps. Reconstructing the Town’s existing sidewalk network to provide better access for everyone is a priority of the Town and one that aligns with the Town’s adopted Complete Streets Policy.

CRESCENT STREET (PHASE II)

As a part of the Town’s proposal to improve pedestrian conditions along Crescent Street through sidewalk construction, they are also proposing to improve the existing sidewalk located from 23 Crescent Street to 43 Crescent Street. The existing sidewalks are in fair to poor condition due to several obstructions and unevenness. Sidewalk reconstruction from 23 Crescent Street to 43 Crescent Street is proposed and incorporated into Phase II of Crescent Street’s pedestrian improvement project.

Including this sidewalk construction project is essential to improving pedestrian



A portion of Crescent Street that includes sidewalks in fair condition

safety and comfort in the area, as well as helping prevent potentially hazardous conditions.

TRAFFIC CALMING

Traffic calming is intended to slow vehicle traffic to make roadway conditions safer for pedestrians and cyclists. Although many traffic calming interventions include high-design projects such as roundabouts, neighborhood traffic circles, and chicanes, strategies can also encompass relatively minor projects such as speed radar and warning signage. Due to right-of-way constraints along



many of Stow’s roads, minor improvements, such as “Share the Road” signs, speed radar, and truck restriction signage were prioritized.

BOXBORO ROAD

Boxboro Road is in the northwest quadrant of Stow and provides access to the Town of Boxborough to the north and Great Road to the south. Boxboro Road was one of several roads that were identified as an area with dangerous curves and high vehicular speeds and volumes. WikiMap comments revealed that there are many residents that use this roadway to bike. However, many of those users feel unsafe due to the lack of bicycle facilities and dangerous roadway conditions. Boxboro Road has a posted speed limit of 30 mph and a width that is approximately 20 feet.



A posted speed limit of 30 mph and pavement signage to warn drivers to slow down on Boxboro Road.

The roadway width of 20 feet is too narrow to add sidewalks or bicycle lanes. The Prioritization Plan includes traffic calming improvements along Boxboro Road that will increase drivers’ awareness of the dangerous curves that would prevent them from seeing pedestrians and cyclists using the road. This will be accomplished by installing “Slow (Road Curves Ahead) Caution” and speed feedback signage before approaching curves at the following locations: 143 Boxboro Road (adjacent to the Heath Hen Meadow Brook Woodland Hiking Trail) and Ridgewood Drive. “Share the Road” signs will also be installed throughout the corridor to make drivers aware that they need to slow down for cyclists on the road. This project will apply for Tier 3 funding in 2018 and is estimated to cost \$32,000.

SOUTH ACTON ROAD

South Acton Road is a highly utilized cycling and pedestrian corridor located in the northeast section of the Town. South Acton Road provides connections to the South Acton Commuter Rail Station, Town Center and Lower Village. Like Boxboro Road, South Acton Road was identified as a corridor with high vehicular speeds and volumes. It has a posted speed limit of 45 mph and a width that is approximately 20 feet.

Due to the high vehicular speeds and volume, a long-term strategy for this corridor is to install a shared use path that is physically separated from vehicles. A shared use path is a multi-modal, off-street facility, providing pedestrians and cyclists with a high-comfort, designated space. Shared use



paths are a useful tool when roadway right-of-way is not wide enough to accommodate both sidewalks and bicycle lanes; instead, a shared facility can be installed one side of the street to give pedestrians and cyclists a high comfort network connection. Special consideration should be given to intersections as cyclists may be to shift between the off-street shared use path and riding in an off-street facility or in traffic.



A shared use path can be designed as a path away from a roadway, such as the Assabet River Rail Trail, or can be designed as a side path adjacent to the roadway. In the case of South Acton Road, a side path configuration is proposed. Other long-term shared use path projects proposed on the prioritization plan are on Hudson Road, Sudbury Road, and Track Road, and portions of Crescent Street and Gleasondale Road.

The Assabet River Rail Trail is an example of a shared use path.

The immediate strategy to address dangerous roadway conditions along this corridor is to install a “Dangerous Intersection” sign before approaching the South Acton Road/Tuttle Lane intersection at which there is a slight hill and poor sight lines for westbound Tuttle Lane traffic. This short-term intervention would warn drivers to slow down and watch out for pedestrians and cyclists on the road. This project will apply for Tier 3 funding in 2018 and is estimated to cost \$400. Installation of “Share the Road” signage is another simple and cost-effective way to alert drivers to the presence of cyclists and pedestrians.

TAYLOR ROAD

Taylor Road is another corridor located in the northwest section of Stow that provides access to the Town of Harvard and Marble Hill Conservation Area. Although the posted speed limit of this corridor is 30 mph, many residents are concerned for their safety when using Taylor Road due to narrow and curvy



HOWARD STEIN HUDSON

Taylor Road has no centerlines.



sections of the road that create obstructed sightlines. Traffic calming improvements proposed for Taylor Road include installing “Slow (Road Curves Ahead) Caution” signage before approaching curves throughout this corridor, as well as installing speed feedback signage at key locations. The corridor will also have “Share the Road” signage throughout the corridor to make drivers aware that they need to slow down for cyclists on the road. This project will apply for Tier 3 funding in 2018 and is estimated to cost \$18,000.

HARVARD ROAD

Harvard Road shares similar roadway conditions as Taylor Road: it has a posted speed limit of 30 mph and is considered unsafe by pedestrians and cyclists due to obstructed sightlines that prevent drivers from seeing what is ahead of them. Vehicle crashes that occurred between 2013 – 2015 show that most of the crashes were located on the curved sections of the road (*refer to Figure 2. Vehicular Crashes, 2013-2015*). Proposed improvements that would help calm traffic speeds along this road include “Slow (Road Curves Ahead) Caution” signs before approaching dangerous curves to increase driver awareness of low pedestrian and cyclist visibility. The corridor will also have “Share the Road” signage throughout the corridor to advise drivers to share the road with cyclists. This project will apply for Tier 3 funding in 2018 and is estimated to cost \$3,000.

GLEASONDALE ROAD

Gleasondale Road is a 24-foot wide (with a right-of-way width of 45 feet), two-lane corridor with an average daily traffic volume of 5,000.¹⁴ In 2016, the Stow Planning Board commissioned a survey of the corridor to complement corridor wide traffic improvement plans, which are currently listed on the Planning Board’s 2019 Capital Plan.

Many public comments regarding Gleasondale Road were related to roadway conditions that compromised the safety of pedestrians and cyclists using the corridor. Comments provided on the WikiMap expressed issues with intersection alignments that obstruct sightlines. Three projects that aim to improve driver awareness of roadway conditions along



Gleasondale Road, approaching Boon Road

¹⁴ Gleasondale Revitalization Plan



Gleasondale Road are described below.

“Side Road” warning sign at Boon Road/Gleasondale Road

Public comments expressed safety concerns at the intersection of Boon Road and Gleasondale Road due to poor sightlines and high vehicle speeds. Traffic calming improvements suggested for this intersection include a “Side Road” warning sign that is in both directions and approximately 300 feet from the intersection. This warning sign will be supplemented with a speed radar sign that will make drivers aware of their speeds. This project is will apply for Tier 3 funding in 2018 and is estimated to cost \$15,000.

“Thickly Settled District” sign at the entrance of Gleasondale Village

To encourage drivers to keep at a 30-mph speed limit, a “Thickly Settled District” sign will be installed at the start of Gleasondale Village. This project will apply for Tier 3 funding in 2018 and is estimated to cost \$200.

Warning signs from Treaty Elm Lane to Hudson Town line

The roadway segment of Gleasondale Road, from Treaty Elm Lane to the Hudson Town line, is within Stow’s census tract that contains 9% of disabled people. It also lands in one of the hottest clusters of the Town that received many concerns regarding missing/obstructed sidewalks, high vehicular speeds/volumes, and dangerous/difficult crossing (*refer to Figure 9. Top 4 WikiMap Concerns*).

Due to limited roadway width and the need to address unsafe roadway conditions along this portion of Gleasondale, “Share the Road” and “Slow (Road Curves Ahead) Caution” signs will be installed throughout the corridor.

The “Share the Road” sign will be distributed at quarter mile intervals and the “Slow (Road Curves Ahead) Caution” sign will be installed before approaching the Gleasondale/Marlboro Road intersection. This project will apply for Tier 3 funding in 2019 and is estimated to cost \$4,000. Several design options are listed on the Prioritization Plan for later years, including the reconfiguration of the Route 62 Marlboro Road intersection and options to create sidewalks or walking paths along the Route 62 corridor depending on the availability of right of way from neighboring property owners.



Gleasondale Road, adjacent to Brookside Cemetery



RED ACRE ROAD

Red Acre Road has two major curves with a straightaway in between, encouraging speeding. This project proposes to install "Slow (Road Curves Ahead) Caution" and speed feedback signage at the Town's northeastern entrance from the Town of Acton to increase drivers' awareness of the dangerous curve and low visibility of pedestrians and cyclists using the road. This project is scheduled for installation in 2021 and is estimated at \$8,000.

TRUCK RESTRICTION ALONG WHEELER ROAD

Wheeler Road is used as a cut-through route between Great Road (Route 117) and Gleasondale Road (Route 62). This route is used frequently by pedestrians and was identified at the public information meeting as being unsafe for pedestrians due to vehicle traffic. Heavy truck traffic was identified by the Town as an issue; this project would install "No Thru Traffic (No Trucks Except Delivery)" signage to discourage large trucks (e.g. semi-trucks) from using Wheeler Road as a cut-through street. This project requires a study prior to implementation, which is not eligible for CSPP funding, and DOT approval. Complete Streets funding would cover the cost of the signs and their installation, which are estimated at \$400. The project is scheduled to apply for Tier 3 funding in 2021.

INTERSECTION IMPROVEMENTS

Many intersections within Stow are designed in a way that allow vehicles to speed, rather than slow down, when turning. Most bicycle and vehicle crashes that occurred between 2013 – 2015 were located near intersections such as Hudson Road/Great Road, Old Bolton Road/Great Road, Gleasondale Road/Great Road, Gleasondale Road/Marlboro Road, South Acton Road/West Acton Road/Boxboro Road, and Pompositticut Street/Great Road. Improvements such as creating T-style intersections, tightening curb radii, and curb extensions could help improve safety conditions at intersections.

OLD BOLTON ROAD AT GREAT ROAD

Old Bolton Road (adjacent to Great Road) currently has a wide configuration that allows drivers to make fast right turns. By removing the slip lane and installing a T-style intersection, pedestrian visibility and safety would improve. In addition to the proposed intersection realignment, the stop sign located on Old Bolton Road would need to be relocated and a crosswalk and ADA-compliant curb ramps would be included. This project will apply for Tier 3 funding in 2018 and is estimated to cost \$184,000.

MARLBORO ROAD AT GLEASONDALE ROAD

The intersection of Marlboro Road/Gleasondale Road is within Gleasondale Village and adjacent to residential homes and the Kane Land, a parcel of Town owned land that was recently approved for



trail construction. Residents have expressed issues with high vehicular volumes and speeds at this intersection, in part due to the intersection alignment. To improve the safety around this intersection, an intersection improvement project is proposed that includes closing off the median opening (follows along the frontage of 4 Marlboro Road) and diverting traffic to the southwest opening. The portion of Marlboro Road that is closed off should be reclaimed as an expansion of the existing landscape island with a pedestrian pathway that would connect to the proposed Kane Land property. ADA-compliant curb ramps and a crosswalk are included. This project will apply for Tier 3 funding in 2019 and is estimated to cost \$240,000.

PACKARD ROAD AT BOXBORO ROAD

Packard Road is a cut-through corridor that is highly used by semi-trucks and vehicles traveling at high speeds. To encourage vehicles driving along Packard Road to slow down, a traffic calming project that requires little-to-no design will be implemented on Packard Road, adjacent to Boxboro Road. This project will consist of installing "SLOW" pavement markings approaching Boxboro Road to indicate to the driver to reduce vehicular speed. ADA-compliant curb ramps and a crosswalk on Packard Road will be included. This project will apply for Tier 3 funding in 2021 and is estimated to cost \$10,000.



Packard Road in poor condition, facing Boxboro Road.

A truck restriction treatment, similar to Wheeler Road, was also discussed for Packard Road, to provide a deterrent for trucks using the road as a shortcut to Great Road. Similar to Wheeler Road, this project would first require a study prior to implementation, which is not eligible for CSPP funding. A truck restriction would also require DOT approval.

GREAT ROAD AT GLEASONDALE ROAD

The intersection of Great Road (Route 117) and Gleasondale Road (Route 62) is located in the Town Center, near the Town Hall and the Public Library, and is the intersection of two major routes through Town. In the eastbound direction, the Great Road approach to the intersection has a through lane and a right turn lane. In the westbound direction, Great Road has a through lane and a left turn lane. Gleasondale Road northbound has a through lane and a right turn lane, as well as a small median island. The crosswalk across Gleasondale Road is in excess of 80 feet and passes in



front of the median island, which is not wide enough to provide ADA-compliant pedestrian protection.

This project proposes to install pedestrian signals at the intersection of Great Road and Gleasondale Road. The three existing crosswalks will be upgraded for high visibility. A fourth crosswalk will be installed across Great Road on the eastern side of the intersection. ADA-compliant curb ramps are needed at the southeast corner of the intersection, northeast corner of the intersection to receive the new crosswalk, and the southwest corner of the intersection. Sidewalk is needed in the southwest corner of the intersection to connect the existing sidewalk at 375 Great Road (approximately 130 feet). Finally, this project proposes to expand the existing median island into an ADA-compliant pedestrian refuge island to both shorten pedestrian exposure and provide a safe space while crossing. This project is scheduled to be constructed in 2022 and is estimated at \$136,000.

TUTTLE LANE AT SOUTH ACTON ROAD

The southern side of the Tuttle Lane and South Acton Road intersection is configured such that Tuttle Lane comes in at an angle to South Acton Road. In addition, the intersection is flared to provide right turning vehicles from Tuttle Road onto South Acton Road with a wide angle. The wide angle allows vehicles turning from South Acton Road onto Tuttle Lane to maintain more of the vehicle's driving speed, which poses a safety risk to other users. The wide right-turn also creates a long crossing distance in excess of 100 feet. This project proposes to reduce the turning radii of the intersection through an intersection realignment and restriping. A crosswalk will be installed across Tuttle Lane with ADA-compliant curb ramps. This project is scheduled to apply for Tier 3 funding in 2022 and is estimated to cost \$22,000.

GLEASONDALE ROAD AT SUDBURY ROAD

Sudbury Road intersects with Gleasondale Road at a wide angle and utilizes a slip lane. This configuration allows vehicles turning right from Gleasondale Road onto Sudbury Road and vehicles turning from right from Sudbury Road onto Gleasondale Road to continue through the intersection at higher speeds. In addition, the curve of the road and an adjacent residential fence limit driver sightlines at the intersection. These issues are exacerbated during the autumn months, when tens of thousands of visitors access the area to reach the nearby Honey Pot Hill Orchard.

The project proposes to re-align the intersection to a perpendicular T, removing the slip lane that is between 437 Gleasondale Road and the open space island. The reconfiguration will improve sightlines and slow turning vehicle speeds, while also decreasing pedestrian crossing distances. ADA-compliant curb ramps and a crosswalk across Sudbury Road will be included in the project, which is scheduled to apply for Tier 3 funding in 2021 and is estimated to cost \$97,000.



BICYCLE FACILITIES

The Town of Stow not only has the potential to increase the number of its cycling residents through improved bicycle facilities, but it also sees a large influx of seasonal cyclists utilizing Stow as part of a multi-community ride. Additionally, the Assabet River Rail Trail now officially terminates at White Pond Road in Stow, providing further opportunities for the Town to enhance facilities to improve safety and allow cyclists to better navigate to Stow's many attractions. The Complete Streets Committee specifically discussed potential alternative routes for the Assabet River Rail Trail, which is increasingly relevant as the trails usage is expected to increase. Various projects within the Prioritization Plan reflect improvements to potential future rail trail connections. Increasing the amount of appropriate bicycle facilities where appropriate is a step towards achieving a town-wide, low-stress bicycle network.

BICYCLE SIGNAGE ALONG WEST ACTON ROAD

While dedicated bicycle lanes along West Acton Road would be ideal. Due to right-of-way constraints along West Acton Road, bicycle improvements along this corridor are limited to a "Share the Road" signage to advise drivers to be aware of cyclists and to share space on the road. This project will apply for Tier 3 funding in 2018 and is estimated to cost \$2,000.

BICYCLE LANES ALONG GREAT ROAD (PHASES I, II, III)

Great Road is a highly utilized corridor that provide directs connections to Maynard and Bolton, as well as to all major roads throughout the Town. The Town realizes the potential Great Road has in providing safe connections to local, safer roads that cyclists can use as an alternative to the major roads that have high vehicular speeds. The Town will be starting construction along Great Road – from Deerfield Lane to White Pond Road – that will involve dedicated bicycle lanes on both sides of the road. Stow's Prioritization Plan includes bicycle improvement projects that connect to these dedicated bicycle lanes.

Phase I and II

The portion of Great Road that runs from Deerfield Lane to Gates Lane has a sidewalk on one side with narrow shoulders. The cycling conditions along this section of Great Road are unsafe for cycling due to the lack of facility and the variable speed limits. A five-foot bicycle lane is proposed along this section of the road, connecting to the dedicated bicycle lanes planned for the Lower Village. Phase I will apply for Tier 3 funding in 2018 and is estimated to cost \$51,000. Phase II will apply for Tier 3 funding in 2019 and is estimated to cost \$53,000.

Phase III

To connect to the proposed bicycle lanes from Deerfield Lane to Gates Lane, Great Road will be restriped to narrow the roadway lanes and provide wider shoulders from Gates Lane to Hudson



Road. This will connect to the newly widen shoulders that run along Great Road, from Hudson Road to the Bolton town line. This project will apply for Tier 3 funding in 2020 and is estimated to cost \$6,000.

ADVISORY SHOULDERS

Advisory shoulders are a relatively new street configuration used to improve bicycle and pedestrian conditions on roadways which are too narrow for traditional on- or off-street bicycle facilities, shared use paths, or sidewalks. An advisory shoulder can accommodate low to moderate volumes of two-way vehicle traffic via a single vehicle lane and provides a prioritized bicycle/pedestrian space through wide shoulders. The shoulders are delineated by pavement markings and optional pavement color. Motorists may only enter the shoulder when no cyclists are present and must overtake these users with caution due to potential oncoming traffic¹⁵.

As this type of roadway configuration is relatively new, an approved Request to Experiment is required in the FHWA experimentation process. The review process can take four to six weeks; it should be expected that the facility be monitored for up to a year. The following steps are required to submit a request for experimentation:

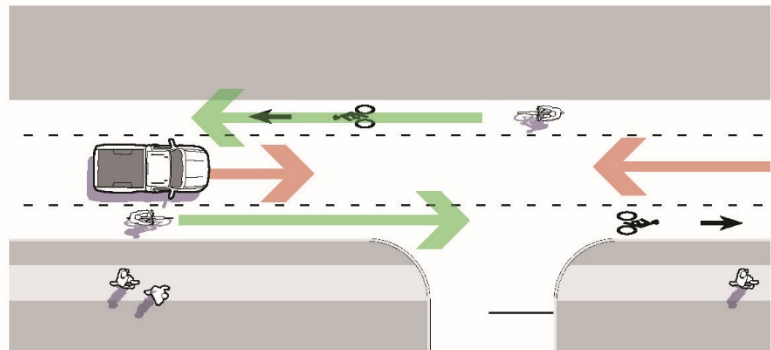


Exhibit 3: On a street with Advisory Bike Lanes during regular operations, motorists travel within the two-way travel lane and do not need to change lanes when approaching or passing bicyclists.

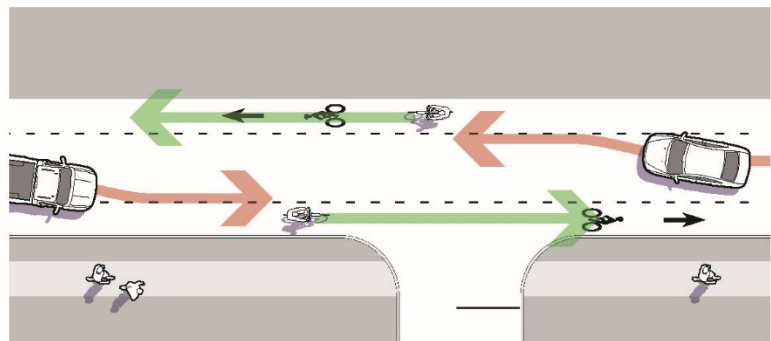


Exhibit 4: When approaching oncoming motor vehicles, motorists must merge into the Advisory Bike Lane. If a bicyclist is present, motorists must slow and yield to bicyclist traffic prior to entering the Advisory Bike Lane.

*Exhibits 3 and 4 from **Lessons Learned: Advisory Bike Lanes in North America** show how cyclists and vehicles interact.*

¹⁵ Alta Planning + Design, 2017. *Lessons Learned: Advisory Bike Lanes in North America*.



- A statement of the nature of the problem, including data that justifies the need for a new device or application.
- A description of the proposed change, how it was developed, and how it deviates from the current MUTCD.
- Any illustration(s) that enhances understanding of the device or its use.
- Supporting data that explains how the experimental device was developed, if it has been tried, the adequacy of its performance, and the process by which the device was chosen or applied.
- A legally binding statement certifying that the concept of the traffic control device is not protected by a patent or copyright (see [MUTCD Section 1A.10](#) for additional details.)
- The proposed time period and location(s) of the experiment.
- A detailed research or evaluation plan providing for close monitoring of the experimentation, especially in the early stages of field implementation. The evaluation plan should include before and after studies as well as quantitative data enabling a scientifically sound evaluation of the performance of the device.
- An agreement to restore the experimental site to a condition that complies with the provisions of the MUTCD within 3 months following completion of the experiment. The agreement must also provide that the sponsoring agency will terminate the experiment at any time if it determines that the experiment directly or indirectly causes significant safety hazards. If the experiment demonstrates an improvement, the device or application may remain in place until an official rulemaking action occurs.
- An agreement to provide semi-annual progress reports for the duration of the experimentation and a copy of the final results to the FHWA's Office of Transportation Operations within three months of the conclusion of the experiment.¹⁶

This type of intervention has been proposed on projects throughout the Prioritization Plan: Track Road; White Pond Road; Sudbury Road; Hiley Brook Road; Old Bolton Road; Red Acre Road; Boxboro Road; and Harvard Road.

ADVISORY SHOULDER ON PACKARD ROAD

Advisory shoulders are proposed as a 2020 project along Packard Road, which is a local road that provides direct connections to Great Road and Boxboro Road. The area around this straight, narrow corridor is mostly residential with commercial uses accessible via Great Road. Although it is a local road with a posted speed limit of 25 mph, many residents have said this corridor is unsafe for cycling and walking because of semi-trucks that use it as a cut-through road and cars traveling at high speeds due to its straight alignment.

¹⁶ Details on FHWA experimentations can be found at <https://mutcd.fhwa.dot.gov/condexper.htm>.



Advisory shoulders will require more information regarding existing ADT along Packard Road, as well as an approved Request to Experiment – Section 1A.10 of the MUTCD. Packard Road is an ideal location to implement an advisory shoulder – the corridor is narrow (approximately 18 feet) with a posted speed limit of 25 mph; it is located near key town destinations such as Town Hall, Center School, and Hale Middle School; and it connects to major roadways that would provide access to a variety of destinations within Stow and adjacent towns.

Resurfacing is included in this project’s cost estimate; there is potential for the cost to go down if resurfacing is not required. Packard Road’s advisory shoulder project will apply for Tier 3 funding in 2020 and is expected to cost \$220,000.

This project is supplemented with “No Thru Traffic (No Trucks Except Delivery)” signage to discourage large trucks (e.g. semi-trucks) from using Packard Road as a cut-through street. Installing this signage will require MassDOT approval, as well as a study prior to implementation, which is not eligible for CSPP funding. The “No Thru Traffic (No Trucks Except Delivery)” signage is a separate project and will apply for Tier 3 funding in 2021 and is estimated to cost \$400.

WAYFINDING

Wayfinding is a useful option to clearly demarcate key destinations for pedestrian and cyclists and guide cyclists to high comfort routes. Signage can also identify the best routes to Stow’s trail network. It is important to note that while wayfinding would help guide cyclists, they do not improve bicyclist comfort and safety on these roadways unless a consistent shoulder or bicycle lane is provided.

GLEASONDALE ROAD

To address Gleasondale Village’s lack of presence and connection to adjacent destinations, a “Welcome” and wayfinding signage to adjacent destinations were recommended. The “Welcome” signage would welcome drivers, pedestrians, and cyclists at the beginning of Gleasondale Village. The wayfinding signage would be distributed throughout Gleasondale Road to direct people to the Assabet River Rail Trail, Town Center, golf courses, and orchards located along or near Gleasondale Road. This project will apply for Tier 3 funding in 2019 and is estimated to cost \$2,100.

WHITE POND ROAD

Similar to Gleasondale Road, White Pond Road is a corridor that provides access to several important destinations within Stow and Maynard. Residents can access the Gardner Hill Conservation Area, Lower Village, and the Assabet River Rail Trail in Maynard. Stow’s Prioritization Plan includes installing wayfinding signage throughout White Pond Road to direct road users to key destinations around town and the section of the Assabet River Rail Trail that is



within the Town of Maynard proper. This project will apply for Tier 3 funding in 2019 and is estimated to cost \$1,100.



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