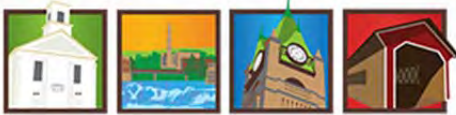
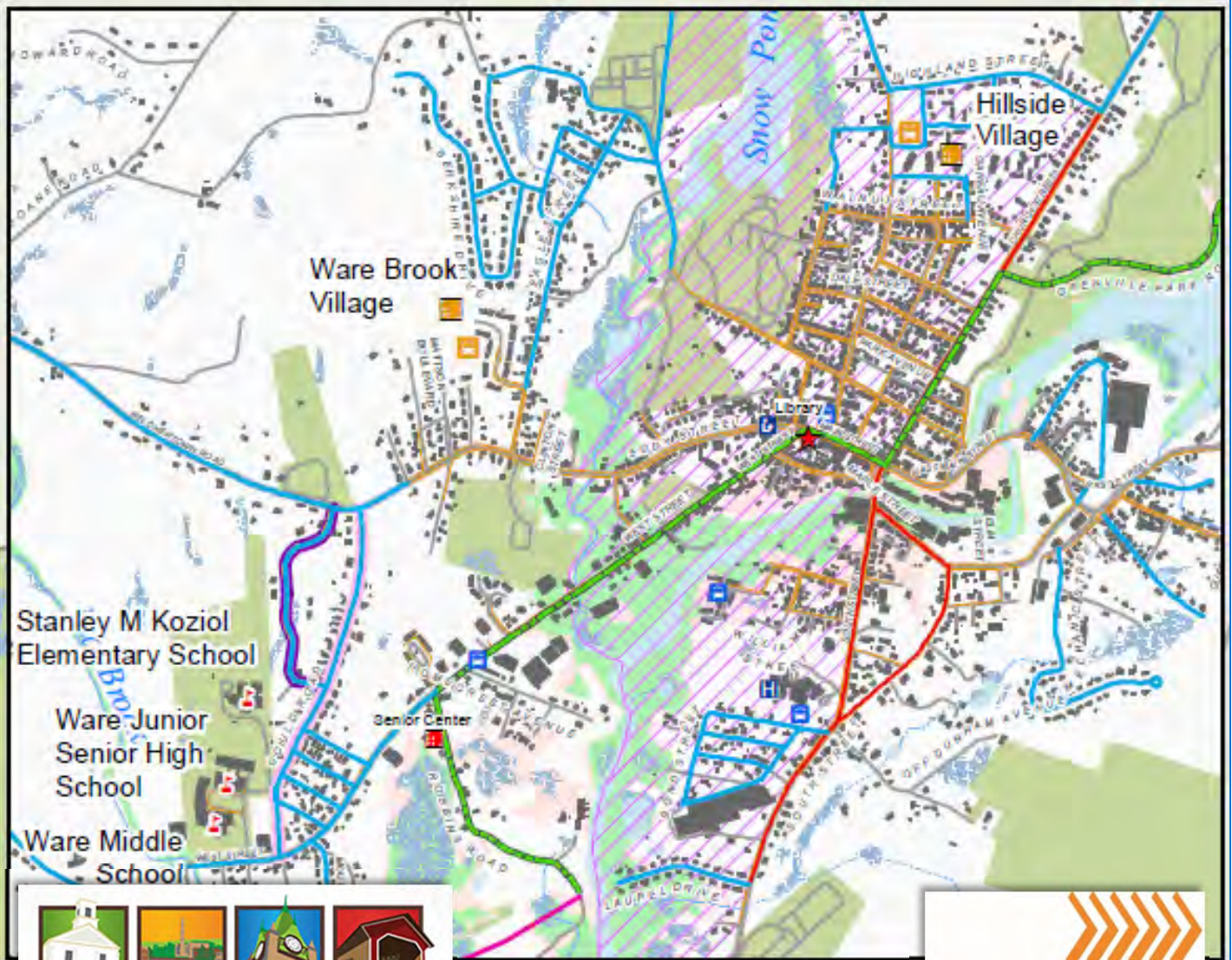


Ware Bike & Pedestrian Network Plan

January 17, 2020

Prepared by the Pioneer Valley Planning Commission, and the Town of Ware with support from the Massachusetts District Local Technical Assistance Fund



Ware, MA
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Ware Bike & Pedestrian Network Plan

This analysis for the Town of Ware is made possible thanks to support from the state legislature's District Local Technical Assistance Fund, under a contract between the Massachusetts Department of Housing and Community Development and the Pioneer Valley Planning Commission.

January 17, 2020



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Introduction

The Ware Bike and Pedestrian Network Plan is intended to guide the Town of Ware as it plans and implements a Complete Streets network, with a focus on bicycle and pedestrian facilities. This document:

- Evaluates how well the Town's street (including sidewalks, crosswalks and other pedestrian infrastructure) network is serving people on bikes and people walking
- Identifies gaps in pedestrian infrastructure, as determined by key destinations, areas of denser housing development and street sections with high "utility" scores
- Identifies streets for potential bicycle routes (and related bicycle infrastructure such as signs, striped lanes, on-street sharrows, etc) based on regional studies, online heat maps, and public input
- Provides suggestions for routes to connect the southern and northern sections of the Ware River Trail

This Bike and Pedestrian Network Plan sketches out proposed networks for people walking and people on bikes that, if implemented, would continue to support the Town's efforts to enhance livability by expanding the existing network for bicyclists and pedestrians of diverse levels of ability, assuring a convenient, safe, and comfortable non-motorized trip. The Plan was developed in conjunction with the Town adopting a Complete Streets Policy and beginning work on a Complete Streets Prioritization Plan.

The majority of the maps in the Network Plan were developed by the Pioneer Valley Planning Commission (PVPC), while Howard Stein Hudson (HSH), the consultant hired to prepare a Complete Streets Prioritization Plan, developed an online map for public input on potential routes, and a Bicycle Level of Comfort Map. These maps have been included in this report and will also be used (along with the Network Plan maps) for the development of a prioritized list of projects in the Complete Streets Prioritization Plan for the town. The added efficiency of a shared mapping effort allowed HSH, an engineering firm, to put more time into developing a list of projects and associated cost estimates.

This Plan was developed using a GIS (map-based) analysis, supplemented with direct resident engagement and content gleaned from a review of relevant Town plans including the 2016 Master Plan and Open Space and Recreation Plan. GIS is an effective tool for capturing an overview of general conditions for walking and bicycling in the Town, and reveals locations where safety concerns, such as high crash locations, suggest a more urgent need for improvements. .

Executive Summary

This Bike and Pedestrian Network Plan sketches out proposed networks for people walking and people on bikes that, if implemented, would continue to support the Town's efforts to enhance livability by expanding the existing network for bicyclists and pedestrians of diverse levels of ability, assuring a convenient, safe, and comfortable non-motorized trip. The Plan was developed in conjunction with the Town adopting a Complete Streets Policy and beginning work on a Complete Streets Prioritization Plan.

Development of the Bike and Pedestrian Network Plan was completed through review of existing plans and reports, community engagement process, a walk audit with WalkBoston, and a GIS analysis of existing conditions for walking and biking in Ware.

A review of the Ware Master Plan and the Ware Open Space and Recreation Plan highlights areas of higher density housing, the commercial center of town, parks and trails as important destinations for walking and biking in Ware. In addition, the Ware River Trail is mentioned in multiple sections of both plans. Completing the trail is a priority both for its recreational value and as a safe route for people to walk, ride, or roll to the shopping center on Route 32.

The community engagement process that went into the development of the Bike and Pedestrian Plan involved a public forum; online map comments; email comments; and comments posted on maps that were left for public view and comment at the Town Hall, Senior Center, Valley View and Hillside Apartments, and at the library.

Goals for completing a network for biking and walking in Ware include the following:

1. **Improve Conditions for Pedestrian Safety**
2. **Improve Sidewalk Access and Design**
3. **Complete the Ware River Trail**
4. **Improve Conditions for Bicyclist Safety and Comfort**

Review of Existing Plans, Policies and Reports

Reference to walking and biking in Ware is found in several planning documents adopted by the Town in previous years. For this Bike and Pedestrian Network Plan, the Ware Master Plan (2016) and associated appendices and the Ware Open Space and Recreation Plan (2016) were reviewed to provide context for developing a network of biking and walking routes in Ware.

Ware Master Plan (2016)

The Ware Master Plan articulates the vision for future development in Ware. This document provides demographic information as well as a history of planning and implementation of projects throughout the town. Key information included in this plan has been added here to provide context for this Bike and Pedestrian Network Plan.

Demographics

Demographic information included in the Master Plan provides a snapshot of the population of Ware according to the 2010 Census. Demographics important to consider in planning biking and walking facilities include age, income, and place of employment. According to data included in the Master Plan, 27% of households in Ware included someone 65 or older, and over 1/3 of households are single adults. The average income of residents in the downtown decreased substantially between 1999 and 2010, creating a large gap between the downtown Census tract (average household income of \$28,004) and the more rural parts of town (average household income of \$66,035). The Master Plan noted that the perception of crime in Ware was worse than the actual level of crime. A perception of crime could lead to fewer people walking, particularly during evening hours.

Implementation History

The History of Implementation lists projects that had been recommended in previous plans and were implemented or are in the process of being implemented. Projects of interest to this Bike and Pedestrian Network Plan are as follow:

- Elderly housing – 2007 HAP renovation of historic 1893 Church Street School into 29 units of elderly affordable housing (possible location from which residents will want to walk to key destinations).
- Main Street Redesign project – 1987 recommendation to prepare a study on traffic lights and pedestrian crosswalks. After many studies and a safety audit, the Town began work on re-design of Main Street in 2015. This project will include replacement of traffic lights, adjustment of traffic patterns, reconstruction of sidewalks and addition of a bike lane on Main Street in downtown Ware.
- Ware River Greenways Trail – 1987 and 2002 recommendations to continue working on the Ware River Valley Greenways Trail. Two bridges were installed on the southern section of the trail in 2015, and stone dust was applied where needed. The trail is open between Robbins Road and the Gibbs Crossing Shopping Center.

Update: Funding to construct a section of trail north of town was received in 2018. The sections of the trail that have been constructed or are planned for construction are included on the maps in this Network Plan, and connection through downtown is a key consideration for roadway improvements or off-road right of way acquisition in the future.

- Local Historic Districts – After a 1987 recommendation, three historic districts were established. These include the Church Street Historic District (Church Street between Park Avenue and Highland Street), Ware Center Historic District (Route 9 east and west of Greenwich Plains Road), and the Ware Mill Yard Historic District (roughly the area bounded by South Street, Ware Street, Ware River, Upper Dam Complex, Park Street, Otis Avenue and Church Street)
- Grenville Park Upgrade – The roadways through Grenville Park were improved in 2016, the bandstand was renovated to improve accessibility, and the playground was upgraded.

Key Destinations and Points of Interest

Included in the Ware Master Plan are discussions about housing, trails and recreational resources, historic districts, and commercial areas that should be considered as key destinations for walking and biking. The following destinations are discussed in the Master Plan:

- Parks and Open Space – Primary recreation facilities in town include Grenville Park, Memorial Field, Kubinski Field, Reed Pool, Beauregard Playground, and the fields at the Ware school campus. Other town-owned recreation facilities include Old Pennybrook, the Church Street water tank field, Ware River Greenway trail, and Veterans Memorial Park. The Master Plan notes the need for options for passive recreation including walking, hiking, fishing, and kayaking, and particularly facilities that would allow access for people of all ages. Development of the Ware River Greenway trail is highlighted as it would allow safe travel along the southern corridor of Route 32 and nearby neighborhoods, and would provide access to the Gibbs Crossing shopping center.
- Housing– the Appendix of the Master Plan includes a map showing the number of housing units per Census Block. The highest number of housing units are in or adjacent to the downtown area (see Figure 1).
- Downtown – The Master Plan Appendix also includes the results of a study of downtown Ware that was completed in 2013 by a UMass Master's student. This study included a survey of residents and visitors, and one question

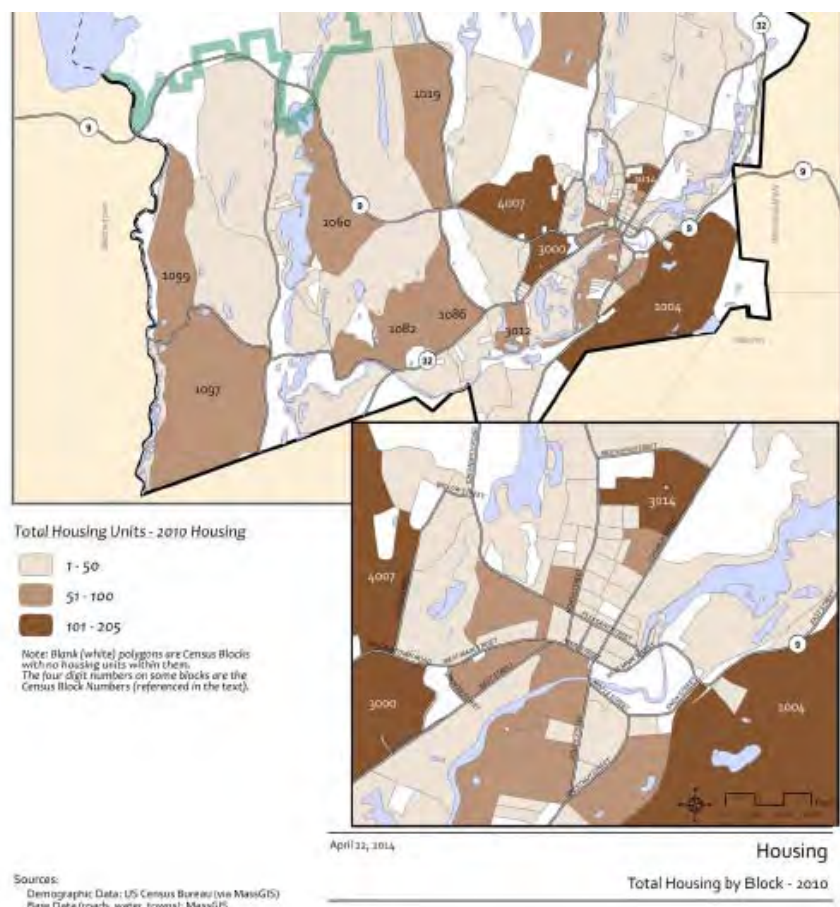


Figure 1 - Total Housing Units per Census Block (2010 Census - Ware Master Plan)

asked how people access the downtown. Of survey respondents, 4% reported riding a bike into downtown and 13% reported walking. When asked why they go to the downtown, most residents said that banking, dining, and shopping were the primary reasons for visiting the downtown.

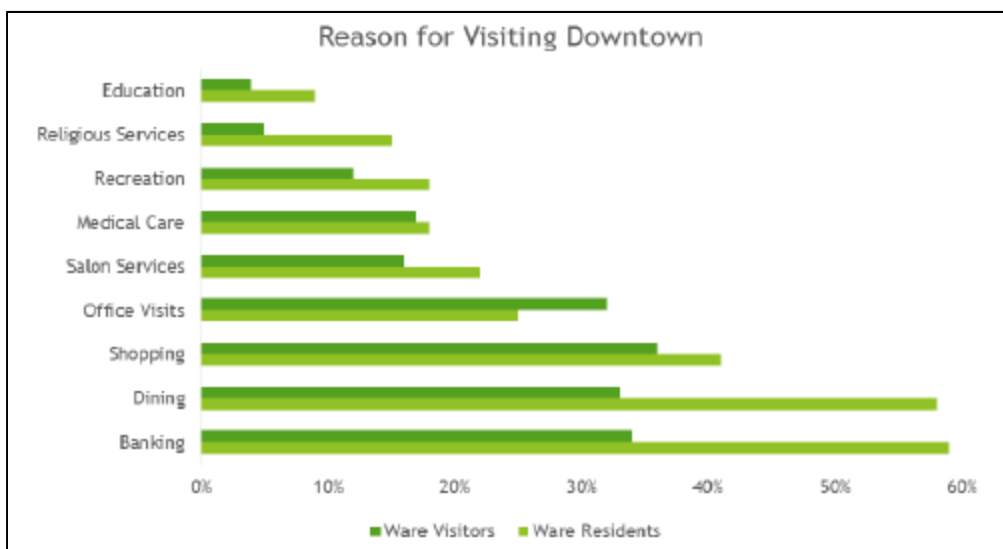


Figure 2 - Downtown Survey (from Ware Master Plan Appendix - 2013 Masters study)

Transportation

The Master Plan notes that while the Town was once a booming mill town where people could fulfill all of their needs locally, now more than half of the town's employed residents commute to another town to work. Of the employed work force, 95% commute using a private vehicle, and just over 3% commute to work by walking or by bike, and less than .5% commute using public transit. Since the Master Plan was adopted, the Quaboag Connector has seen a large increase in use so the numbers that use public transportation may have shifted since the Master Plan was published.

In a survey of business owners in the downtown, 27% of respondents said that there were too many cars and not enough pedestrians. And, although a parking study of the downtown revealed that the average occupancy rate of parking spaces in the downtown was only 37%, many business owners said that they thought that parking was an issue.

Vision & Aspirations

The Master Plan provides a Vision and Aspirations section that includes language regarding the walkability of the town. The following relate to walkability:

Downtown:

Walkable – Downtown is more pedestrian friendly, with improved crosswalks, a rail trail, and an attractive streetscape.

Prosperity

Infrastructure – Infrastructure improvements are made to our water and sewer lines, transit, streets, and sidewalks.

Adventure

Greenway – The rail trail grows to connect Hardwick to Palmer; Ware and its downtown become the hub of an active trail network.

Quabbin – Ware solidifies itself as the place where the Quabbin outdoor experience begins.

Activity – Ware becomes the destination for outdoor recreation, with many activities and outdoor-based businesses.

Engaged

Awareness – People are aware of our improving local assets such as safe streets, active bikeways, and connection to the environment.

Recommendations

The Ware Master Plan includes the following recommendations that relate to biking and walking:

Recommended Action	Responsible party	Cost	Priority	Status (2019)
Implement a recently designed wayfinding system to help people navigate to and within the downtown, including parking areas and various places of interest, and to learn about upcoming events and activities	DPW, PCDD	Moderate	High	Completed
Coordinate with the WB&CA and downtown businesses to create a pleasant environment with a clean, attractive, and well-lit streetscape.	DPW, PCCD	Moderate	High	In progress
Improve the pedestrian experience with improved crosswalks, an attractive and functional streetscape, and the completion of the rail trail.	DPW, PCDD, OSC	Moderate to High	High	In progress
Encourage businesses selling goods or services related to outdoor sports and activities to locate in Ware.	TM, PCDD, WB&CA	Low	Medium	
Create and implement a tourism plan which identifies recreational, natural, cultural, and historic resources of the town and includes marketing materials and techniques to increase tourism.	PCDD, HC, PRD	Low	High	
Improve both passive and active recreational opportunities as recommended in the Open Space & Recreation Plan, develop and implement an outreach and signage program to inform the public of such opportunities, and include non-sports youth activities in the overall recreation/activity program.	PRD, PCDD	Low to Moderate	Medium	
Complete the rail trail to connect Hardwick to Palmer, with Ware's downtown becoming the hub of an active trail network.	OSC	High	High	In progress
Market Ware as the primary location where visitors to the Quabbin should begin their outdoor experience.	WB&CA	Low	High	
Improve facilities to increase passive outdoor recreation including but not limited to hiking, bicycling, fishing, canoeing, and kayaking.	PRD	Low	Medium	

Recommended Action	Responsible party	Cost	Priority	Status (2019)
Repair or reconstruct streets and sidewalks.	DPW	High	High	
Provide new gathering places and spaces (indoor and outdoor) to accommodate activities and opportunities for people to socialize.	PRD	Low to Moderate	Low	
Improve public outreach to ensure Ware residents are aware of our improving local assets such as safe streets, active bikeways, and a stronger connection to the natural environment.	TM, SD	Low	High	

Source: 2016 Ware Master Plan

Responsible Party:

DPW = Department of Public Works; HC = Historic Commission; OSC = Open Space Committee
PCDD = Planning & Community Development Dept. ; PRD = Parks & Recreation Dept.; SD = School Dept.;
TM = Town Manager; WB&CA = Ware Business & Civic Association

Open Space and Recreation Plan (2016)

The Ware Open Space and Recreation Plan (OSRP) includes the results of a community survey and public workshop, and analyses demographics, growth and development patterns in order to understand community needs relative to open space and recreation. Maps of natural and recreational resources and graphs showing demographic shifts offer a context for recommendations. The Plan also provides a list of recent improvements to Town-owned recreation resources.

Each of the maps in the OSRP shows the outline of the Environmental Justice (EJ) area of town which in Ware's case is determined by income. In Ware, the census block that includes much of the downtown is the area with the highest population density and also the highest poverty levels. As noted above, the average household income for the area of Ware outside of the downtown Census block is approximately \$66,000 compared to \$28,000 in the downtown. In 2010, 13.7% of families in Ware had incomes below poverty, and there were 581 children living in poverty. People living in poverty may not be able to afford the cost of gas or maintaining a car, so it is important to provide alternate forms of transportation (including walking and biking) to increase people's ability to access food and/or jobs at local businesses. While two thirds of the work force commutes to jobs outside of Ware, the other third of the workforce is employed in town and has shorter commutes that could be accomplished by bike or by foot.

The Transportation section of the OSRP discusses the existing sidewalk network, noting that sidewalks are primarily concentrated in the more densely developed areas of the downtown and south on Route 32 to the school campus. The OSRP also notes that ADA compliant ramps are being added to downtown sidewalks through CDBG funding, but that upgrading ramps at all intersections will be a long, slow process.

According to responses to the Community Survey that was distributed for the OSRP bike paths were one of the top five opportunities in Ware in need of expansion, in addition to nature trails, parks, arts and cultural events, and picnic areas. The survey also found that many residents were not aware of the

location of many of the Town-owned recreation areas, signifying a need for broader outreach and signage to promote greater use of these areas.

The Goals and Objectives in the OSRP that support bicycle and pedestrian facilities include the following:

Goal #3: Preserve the town's rural characteristics

3a. Develop the Ware River Greenway

3b. Work towards establishing a town-wide greenway system

The Action Plan map included in the OSRP shows the northern and southern sections of the Ware River Trail being connected along Route 32, up Church Street and through Grenville Park (see Figure 3, below).

WalkBoston Walk Audit (November 2019)

On Friday, November 15th, 2019, staff from WalkBoston conducted an Age Friendly Walk Audit on a loop in downtown Ware and on Route 32 from the Big Y shopping plaza to the Ware Senior Center on Robbins Road. This walk audit was conducted as part of WalkBoston's Age Friendly Walking Initiative, a 3-year statewide initiative to improve walking conditions for people of all ages in rural and gateway communities. The Walk Audit report is included in **Appendix B** of this report. Recommendations from the Walk Audit have been included in the Existing Conditions Conclusions section of this report.

Complete Streets Policy (January 2020)

In order to become eligible for funding for project implementation, the Town submitted a Letter of Intent to adopt a Complete Streets Policy in September of 2019. This letter allowed the Town to access funding to develop a Complete Streets Prioritization Plan. In order to be access funding for implementation of projects included in the Prioritization Plan, the Town must submit a final policy approved by the Board of Selectmen to the MA DOT Complete Street Program for approval. The Planning Board approved the Complete Streets Policy in October of 2019, and the policy was approved by the Board of Selectmen in January of 2020.



Figure 3 - Section of Action Plan map from 2016 Ware OSRP notes Ware River Trail connections through downtown

Community Engagement

Bike and Pedestrian Network Plan Steering Committee

The Steering Committee for the Bike and Pedestrian Network Plan included the Ware Town Manager, the Director of Planning and Community Development, the Director of the Ware Council on Aging, the Executive Director of the Quaboag Hills Community Development Corporation. Representatives from the Parks and Recreation Department, Public Works Department, Ware Public Schools, and the Building Department were also included on updates regarding the development of the Ware Complete Streets Policy and Bike and Pedestrian Network Plan. Shortly after the Bike and Pedestrian Network Planning process started, the Town contracted with Howard Stein Hudson to develop a Complete Streets Prioritization Plan. Representatives from HSH also attended Steering Committee meetings and the WalkBoston Walk Audit.

Large Map Comments

Prior to the Public Forum, large Pedestrian Base Maps were placed in locations around town with instructions for people to write comments on post-its and mark on the maps where they like to bike and walk, and areas that are in need of improvement. Maps were left at the Ware Town Hall, Ware Senior Center, Valley View Apartments, Hillside Apartments, and at the Young Men's Library Association (Ware Public Library). No comments were placed on the maps left at the apartment complexes or at the library, but several comments were posted on maps at the Town Hall and Senior Center. Comments that were posted are as follow:

Town Hall

Biking:

- New Rail trail is great, but please finish it
- South Street has no room for walking or biking to West Warren

Walking:

Good places to walk:

- Aspen Grove Cemetery, Grenville Park, New Rail Trail

Difficult places to walk:

- Church Street – from Main St. to Highland – needs new and longer sidewalks
- Church Street – needs sidewalk upgrades on both sides
- Church Street in front of the United Church is terrible for walking
- East Main Street circled
- Gould Road needs sidewalk
- South Street has no room for walking or biking
- South Street circled south of Maple Street to Hospital
- West Street needs sidewalks over bridge in front of McDonalds
- Extend Sidewalks along West Street
- Walking problems on West Street

Other comments:

- Upper North Street – drain is sinking
- Fix the pot holes on Gilbertville Road
- Storrs St, odd side – needs brush cut at vacant house

Senior Center

Walking:

Sidewalk repairs needed on- Church Street, Cottage Street, Elm Street, Smith Street, Grout Road

- Shoreline Drive and Babcock Tavern Road – road is too narrow, no sidewalks.
- Cummings Road – No sidewalks and lots of pot holes. Very narrow, and children walk to bus stop at the end of the road to Osborne Road to catch bus
- Church Street circled north of Grenville Park

General:

- Paint on crosswalks is very slippery when wet

WikiMap (online) Comments

Staff from Howard Stein Hudson developed an online map where people could post comments about walking and biking routes, and areas of concern for walking and biking. The map as it appeared online is shown below, with comments added.

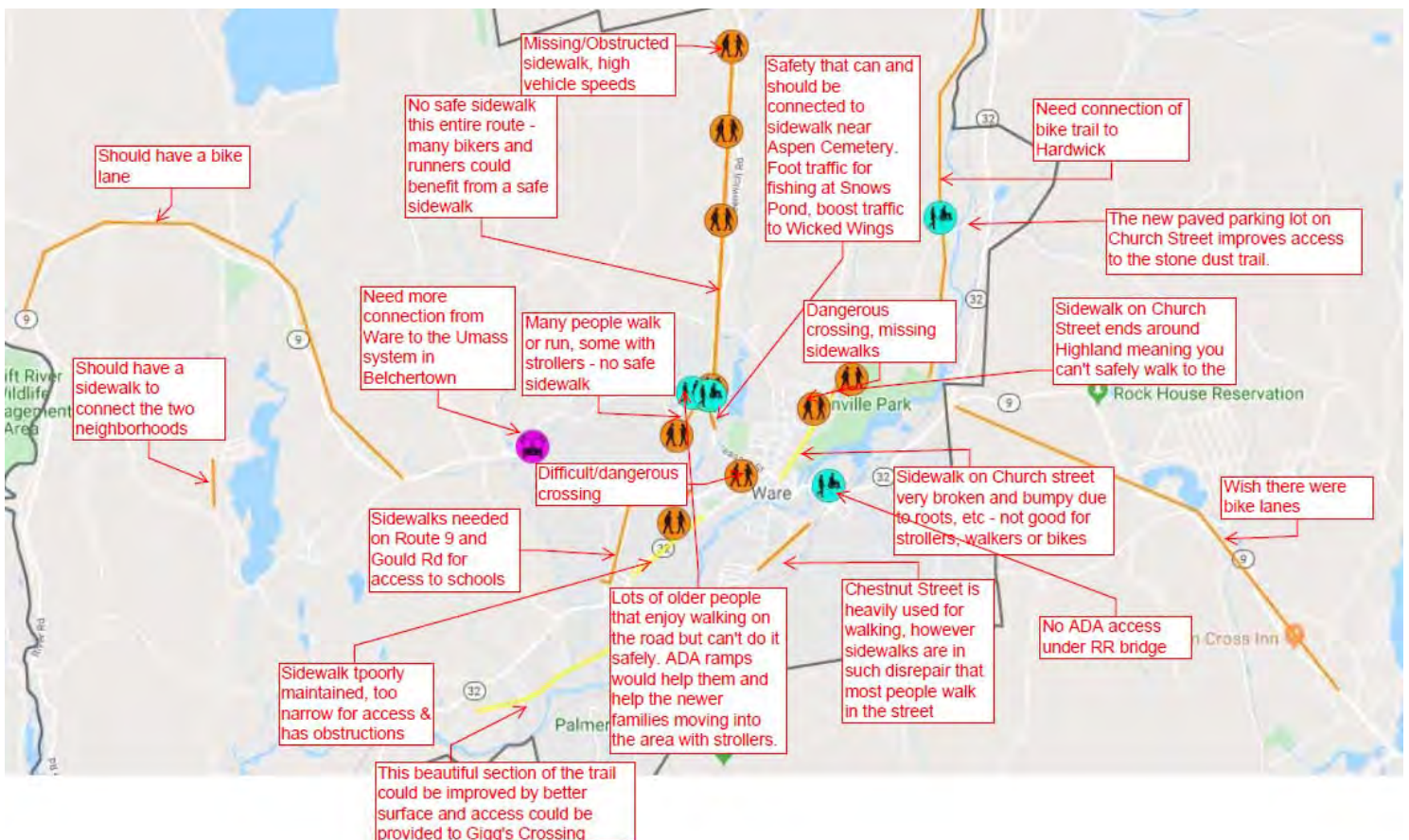


Figure 4 - Comments submitted via WikiMap (developed by HSH staff)

Public Forum – October 7, 2019

One public forum was included in the scope of work for the Ware Bike and Pedestrian Network Plan and was designed to collect comments from the public on preferred routes for biking and walking, and to identify areas in need of improvement. Unfortunately we had bad weather on the day of the event and only one member of the public was in attendance. However, the evening evolved into a discussion with representatives from PVPC, HSH, and Town Departments of Public Works and Planning and Community Development. The DPW representatives cautioned about building new bicycle facilities and sidewalks as the Town receives approximately \$1.05 per foot of roadway to keep the road network maintained, and has very little funding to maintain sidewalks. Consultants presented the opportunities for implementation funding through the Mass DOT Complete Streets program and the benefits that more opportunities for biking and walking could bring to the town.

At the forum, routes for walking and running were the main topic of discussion. The resident who was in attendance is a runner and had run most of the roads in town. Her main concern was for people walking on West Street, where sidewalks are not level due to a large number of driveways. She commented that the sidewalks were not good for people in wheelchairs and were not comfortable for walking or running. On many of the roads, she said that she preferred to run in the street rather than to risk tripping on sidewalks.

The following comments were submitted by email to the Director of Planning and Community Development through email by residents who were not able to attend the public forum:

- Dangerous crosswalk near 36 West Street businesses. Cars rarely stop or even see pedestrians there. Adding blinking crossing lights with signs are needed. Brighter lighting could be added.
- ADA compliant buttons for vision impaired are missing throughout town. Need the hand signal and the audible sound.
- Improve crosswalks with bright colored paint, not just white, so they are more visible.
- Last ten years in particular the sidewalks have gone into disrepair. This is especially bad in the evenings when the lighting is poor.
- Intersections and crosswalks on Main Street need improvement.
- Signalization changes for better synchronization for pedestrian travelling on Main Street
- Clutter on sidewalks, such as overhanging trees, vegetation and debris make it harder to travel on some sidewalks
- Recommend a review for relocating crosswalks downtown to improve pedestrian travel
- Gould Street is lacking sidewalks
- Drainage issues at crosswalks on Main Street lead to puddles and snow accumulation in dangerous stops
- Pulaski Street, South Street, Maple Street all have problems such as stated above.
- Addition of parking signs and signage directing to public parking to assist in circulation and proper use of parking on public ways

Existing Conditions Analysis – Pedestrian Network

The maps used to examine existing conditions for pedestrians in Ware are included in **Appendix A**. These maps include the Pedestrian Base Map, a Sidewalk Gap Analysis Map, a Crash Data Analysis Map, and STRAVA data. The comments provided on the Wiki Maps and on the maps located in the Town Hall and Senior Center were also used to develop a Pedestrian Network Map. During the development of this Network Plan, representatives from Walk Boston conducted a walk audit in the downtown area (from the Town Hall east on Main Street to North Street, north on North Street to Pleasant Street, and south back to Main Street on Church Street) and on West Street/Route 32 from the Big Y Plaza west to the Senior Center.

Pedestrian Base Map

The Pedestrian Base Map shows the existing sidewalk network as well as key destinations in and around the Town Center to which residents may want to walk if the infrastructure is available to support pedestrian travel. These destinations include the Ware Town Hall, the Ware Senior Center, public library, schools, hospital, high density housing developments, and Town-owned parks and cemeteries. Commercial and residential structures are included on the map as well. This map also shows the Ware River Trail as this is a shared use path that will be used by people walking, biking or in wheelchairs.

Both the Pedestrian and Bicycle base maps show the Environmental Justice area in the center of town that is designated due to the high number of people living below the poverty level in this area. As transportation costs are a large portion of a family's household expenses, this area should be considered as a high priority for a robust network of infrastructure for people to walk, bike, or take public transportation to access food, employment, and opportunities for learning and civic engagement. Likewise, the Senior Center serves members of the community who are over the age of 60 or who have disabilities and need to access services such as transportation or low cost meals. Many adults over the age of 60 are on fixed incomes and are therefore considered vulnerable due to funding or physical limitations that may inhibit their access to transportation and basic services.

Sidewalk Gap Analysis Map

The Sidewalk Gap Analysis Map uses data that is generated from a model developed by the Metropolitan Area Planning Commission (MAPC). The model generates utility or "Local Access" scores for walking and biking. This measure indicates how useful each street segment is for connecting residents with schools, shops, restaurants, parks, and transit stops. This tool is most useful for streets in the Town Center as this tool was developed for a more urban environment, so scores that show higher values for streets outside of the Town Center may not be useful for planning pedestrian infrastructure as houses are placed far apart and people are unlikely (in most cases) to walk more than a mile to get to their desired location. The Sidewalk Gap Analysis Map presents utility scores for streets that have sidewalks in green, and also shows streets with high access scores that do not have sidewalks in yellows and reds. For the purposes of this Network Plan, the streets that have high utility scores and no sidewalks in the Town Center include the following:

- North Street and Greenwich Road, north of the Town Center and on the northern side of Snow Pond

- West Main Street (Route 9) between Boiwin Ave and Wildflower Drive
- Eagle Street

Also, roads near the schools which show high utility scores and no sidewalks include the following:

- 1st Ave and 4th Ave (near the school)
- Route 32 from Malboeuf Road to Westbrook Ave
- Malboeuf Road

STRAVA Heat Map

Data that is compiled from users of the STRAVA application, which tracks routes for different forms of exercise including running, walking and biking, is available online at www.strava.com/heatmap. Although the data compiled by this application generally reflects use by more avid athletes who own smart phones, it is useful to see routes that are more heavily used. The heat map shown below (Figure 5) is a screen capture of the online heat map for walking and running, and is only reflective of the time at which the screen capture was taken (October 2019) as the map is continually updated as user data feeds into the application. This map shows heavy pedestrian use in a number of loops – including North Street and Greenwich Road (mentioned above in the sidewalk gap analysis).

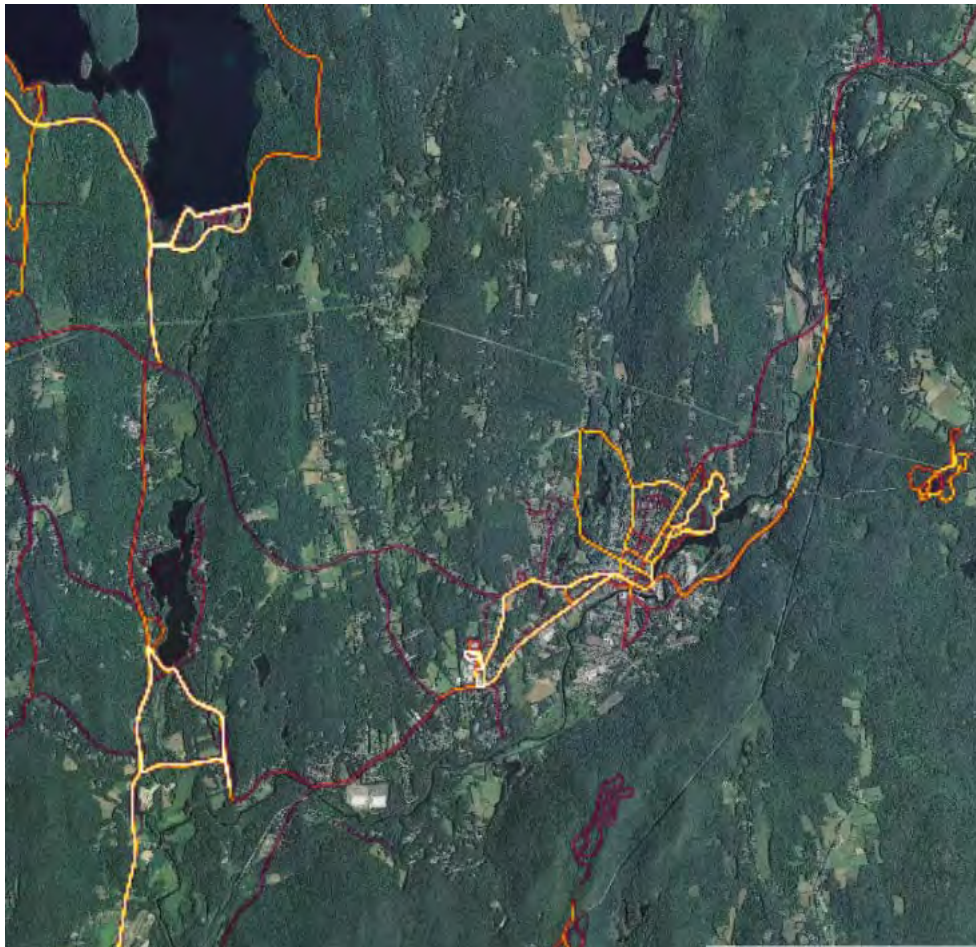


Figure 5 – STRAVA Heat Map for pedestrian activity in Ware (Source: www.strava.com/heatmap)

Crash Data Analysis Map

The Crash Data Analysis Map shows crash clusters of automobiles and locations of crashes involving bicycles and pedestrians between 2011 and 2017. Crash locations involving pedestrians can indicate the need for the addition of crosswalks, Rapid Flashing Pedestrian Crossing signs, or traffic calming to slow traffic. Locations of concern based on the data on this map include the following:

- Route 32/West Street in front of the school, and west of the Senior Center, several locations just east of Homecrest Avenue, and in the Town center in locations close to the intersection with Route 9/West Main Street.
- The Town Center area as a whole is very dangerous in terms of crashes by both automobiles and pedestrians on West Street, Main Street, and North Street (area of red for automobile crashes, and several crashes involving bikes and pedestrians in this area).
- Church Street and Route 32 east of the intersection with Main Street are also locations of a couple of crashes involving bicycles and pedestrians.

Pedestrian Crossings

In addition to the section of Main Street which has experienced numerous crashes involving both automobiles and pedestrians, several areas that are dangerous for pedestrians to cross were noted in the public comment process. The walk audit conducted by WalkBoston with members of the Bike and Pedestrian Network Plan Steering Committee noted locations that would benefit from improved pedestrian crossings. Visible “zebra striped” crosswalks, lighting, Rapid Flashing Beacons, pedestrian islands, and better signal timing make pedestrian crossings safer and more visible to automobiles. Additionally, adding bike lanes or otherwise narrowing roadway widths using paint or curb extensions can slow traffic, making walking safer and more comfortable.

Sidewalk Design and Accessibility

It was noted in the Public Forum and on the Wiki Map that there are several locations that are difficult or impossible to navigate for people in wheelchairs. Improvements to existing sidewalks and road crossings becomes increasingly important as people age, as these barriers that are small for people without disabilities become insurmountable for people in wheelchairs or who use walkers or canes. When building new sidewalks or upgrading existing sidewalks, the sidewalk should be at one level where it crosses driveways rather than ramping down to the driveway level and back up to the sidewalk on the other side. At intersections, where a curb ramp is necessary, the ramp should lead directly to the crosswalk and crosswalks should be perpendicular to the sidewalk wherever possible to aid people with vision impairments who expect to walk directly into a crosswalk off of the sidewalk.

Existing Conditions Analysis – Bicycling Network

The majority of comments made on the maps posted at the Town Hall and Senior Center and on the WikiMap posted by HSH concerned pedestrian facilities. However, several people commented on the Ware River Trail and their desire to see it completed. Heat maps showing usage of roadways for bicycling is available online through STRAVA. This information was reviewed to determine which roads are currently being used by cyclists, at least those who use the STRAVA App.

Although Census Data for Ware shows that 0% of people in Ware commute by bicycle, there is the potential for more people to bike to work or to do errands if provided with better conditions for biking. Surveys of bicyclists suggest that most people (approximately 60%) identify as “interested but concerned” about biking and will only ride a bike on a separated bike lane, a shared use path or a quiet street; 7% of riders are “somewhat confident” and will ride on roads with bike lanes, while only 1% are “highly confident” and will ride with

vehicles in traffic. Therefore, if the Town wishes to encourage more people to bike, facilities that would make biking comfortable for all riders would be the recommended improvements on busier roads.

For the Bicycle Network analysis, PVPC developed a Bicycle Base Map and maps of Average Daily Traffic and Surface Width, and a Slope Map. Howard Stein Hudson developed a Bicycling Level of Comfort map for the analysis of the bicycle network as well as to inform the Complete Streets Prioritization Plan.

Bicycle Base Map

The Bicycle Base Map includes the same key destinations that were shown on the Pedestrian Base Map including the Ware Town Hall, the Ware Senior Center, public library, schools, hospital, and Town-owned parks and cemeteries. Bicycle routes that were identified during the development of the Pioneer Valley Regional Bicycle and Pedestrian Transportation Plan (2000) are included on this map as they link to a network of regional bicycling routes. This map also includes the Ware River Trail in its different stages of development, including sections that have been completed (with a stone dust surface), are under construction, or are funded but still in the permitting process.

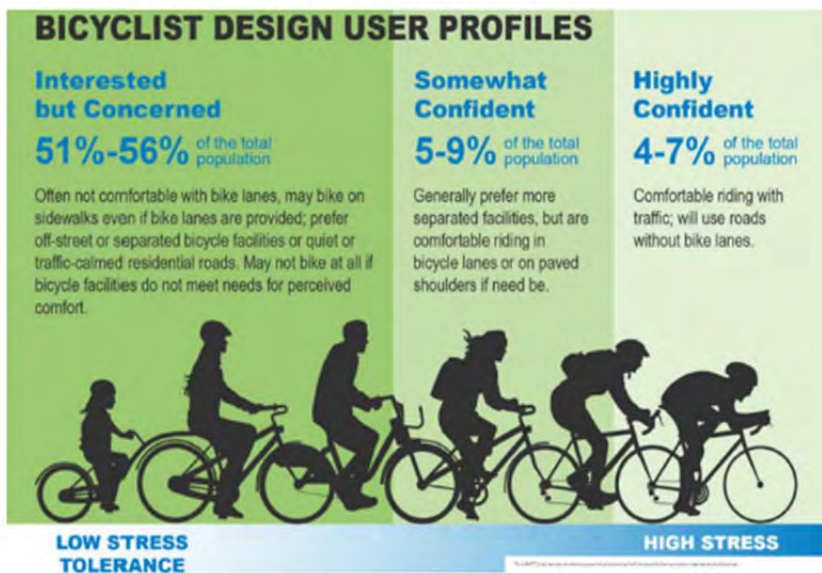


Figure 6 - Bicycle User Profiles (source: Mass DOT)

Bicycle Level of Comfort Map

As noted above, most people are not comfortable riding in traffic and will only bike if roads have low traffic volume or a shared use path or bike lane that is separated from traffic by width or a physical buffer. Staff from Howard Stein Hudson developed a Bicycle Level of Comfort map that provides rankings on roadways in Ware primarily based on traffic speed, road and lane width, and traffic volume. Roads with higher traffic speeds and volumes are high stress/low bicycle comfort roads, and those with lower speed and traffic volume are low stress and higher level of bicycle comfort. These rankings were used to develop recommendations for bicycle facilities on the proposed Bicycle Network Plan, as roads that are less comfortable for people on bikes would require greater separation from traffic to make them good routes for all types of bicyclists.

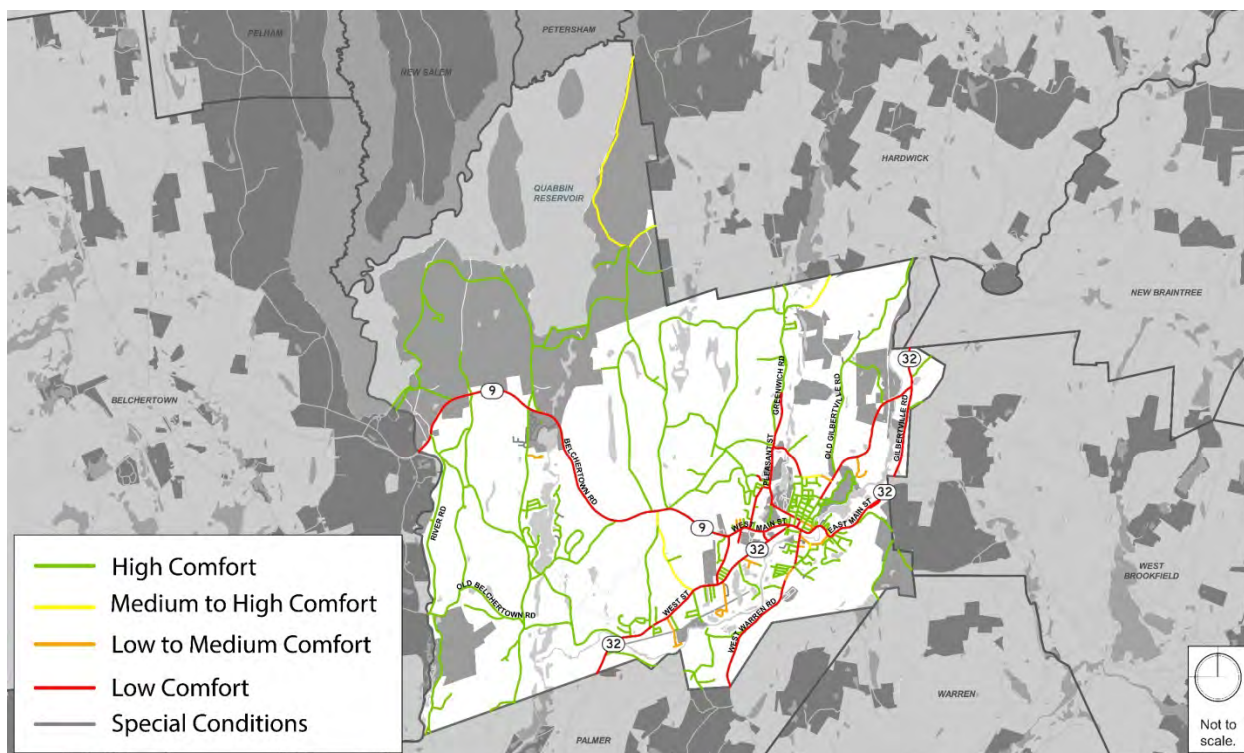


Figure 7 - Bicycle Level of Comfort Map - Prepared by HSH Staff (note - the final version of this map and an explanation of the model used will be included in the Complete Streets Prioritization Plan)

Average Daily Traffic and Surface Width Map

A map showing average daily traffic (ADT) volumes and roadway widths was developed to show the existing pavement widths and traffic volumes (where available) to determine if existing pavement widths would allow for narrower travel lanes for automobiles and wider shoulders for bicyclists on roads that have been identified as part of a proposed bicycle network. Figure 8 shows the recommended bicycle facilities for town or urban centers based on traffic volume and speed. Rural roads with high traffic speed or volumes would benefit from wider bike lanes and narrower vehicle travel lanes.

ADT data was only available on Routes 9 and 32, both of which show traffic volumes greater than 5000 vehicles per day. Traffic volumes are higher on Route 32, averaging greater than 13,000 vehicles per day from the Walmart plaza to downtown.

Routes 9 and 32 have pavement widths that would accommodate wide or separated bicycle lanes, although further design of Route 32 would be needed as much of the pavement widths includes turning lanes to allow traffic to continue moving while cars are turning into the numerous retail, commercial and public facilities along the stretch of road from the Gibbs Plaza into downtown.

Slope Map

The map of slope measurements is useful in determining whether roadways would be used by the less avid bicyclist or by people in wheelchairs. In general, slopes less than 8% are more comfortable for most riders, while the more avid bicycle enthusiasts will ride on roads of any slope. Route 32/West Street is fairly flat whereas many of the roads in downtown Ware have moderate to steep slopes.

STRAVA Data

As noted in the Pedestrian section of this plan, data is available online through the STRAVA application which is used by many recreational riders, runners and walkers to track distance and routes while exercising. While this data only represents people who use the STRAVA app, it is useful in identifying roads that are already being well used by bicyclists in spite of there not being any bicycle lanes or other markings in place.

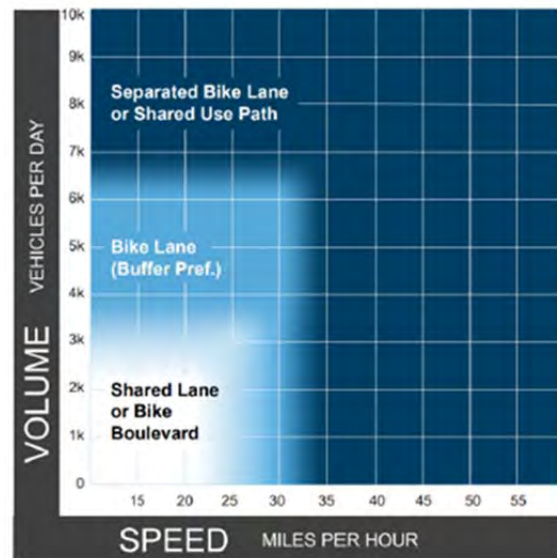


Figure 8 - Recommended bicycle facilities based on traffic volume and speed (Source: 2019 MA Bicycle Transportation Plan)

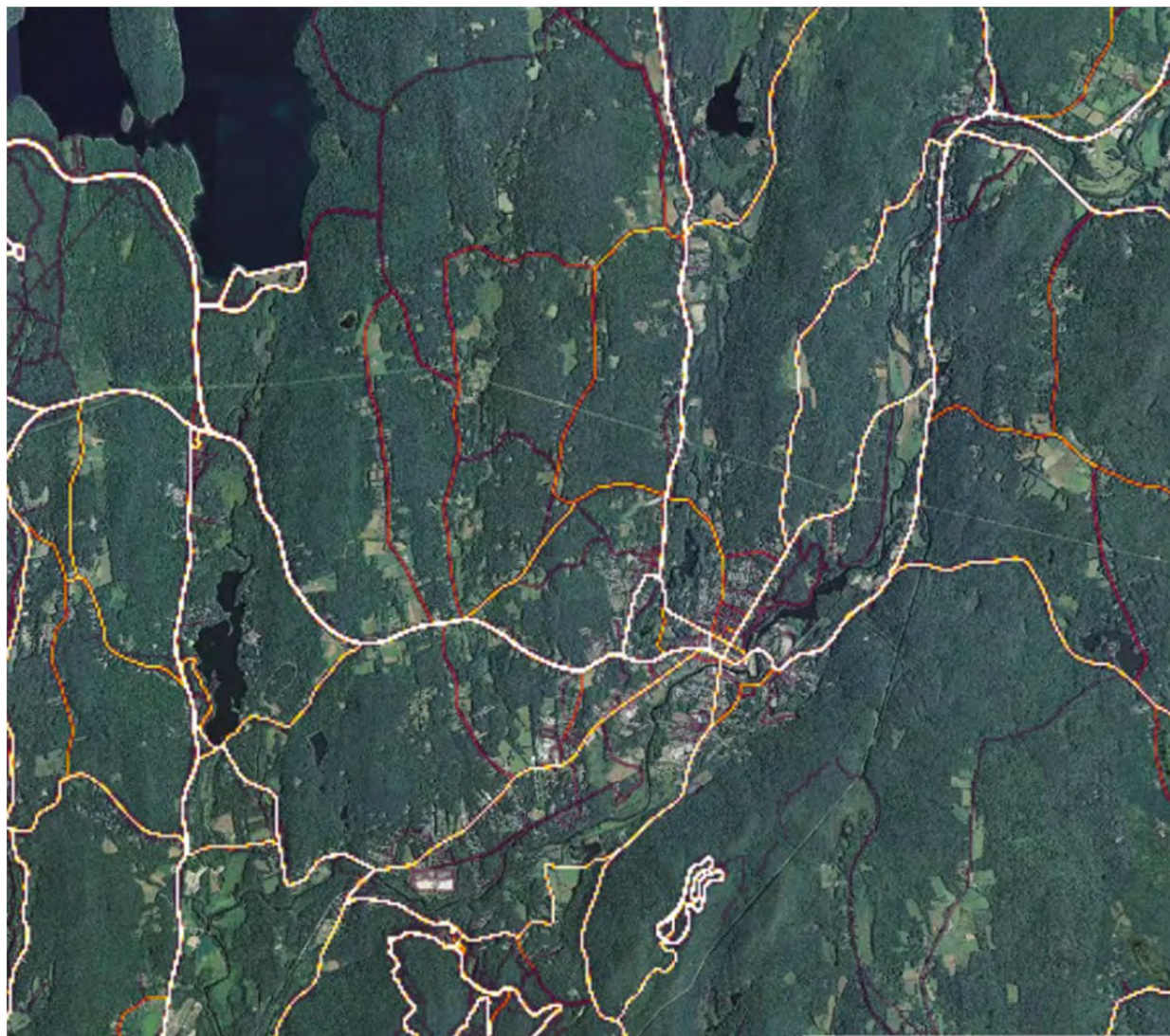


Figure 9 - STRAVA data Heat Map for bicycle use - www.strava.com/heatmap

Existing Conditions Goals & Recommendations

Opportunities exist for Ware to develop a connected network of infrastructure for people to safely walk and bike in around the town. The Town is challenged by numerous competing priorities that have resulted in many sidewalks in need of maintenance and reconstruction. However, improved sidewalks, safer road crossings, and a completed shared use trail could benefit the town through improved health, attractive streetscapes, and better access to services for people who do not have access to cars.

The following recommendations are based on review of past plans, community engagement, and discussions with community staff and boards through the process of developing this Bike and Pedestrian Network Plan. Several of the recommendations regarding pedestrian improvements are based on the findings of the WalkBoston (WB) Age Friendly Walk Audit report included in **Appendix B**. These recommendations are noted with a WB. For more details on specific WB recommendations, please refer to the WalkBoston Report.

Goals & Recommendations

Goal #1 - Improve Conditions for Pedestrian Safety

Recommendations:

- a. Improve the visibility of midblock crossings (WB) – Main Street, Church Street, Route 32
- b. Upgrade pedestrian signals at signalized intersections (WB)
- c. Improve the safety of the east-west crosswalk at the intersection of Main Street and SR-32 (WB)
- d. Add stop sign on Robbins Road and walkway across Robbins Road with paint or stamped concrete (WB)
- e. Improve sidewalk conditions in high priority locations such as on Church Street and North Street (WB)
- f. Improve intersection safety and slow vehicle speeds on North Street and Pleasant Street (WB)
- g. Mitigate traffic speed on Route 32/West Street (WB) – Evaluate narrowing lane widths on Route 32 to slow speeds with features such as fog lines and/or bike lanes (or separated shared use path on one side of road to connect north and south sections of Ware River Trail – see below).
- h. Narrow shopping plaza driveways on Route 32 and add painted walkways (with paint or stamped concrete). Continue the sidewalk next to the Gibbs Plaza so that people walking and in wheelchairs are not stranded in the parking lot where the sidewalk ends. (WB)
- i. Repair, replace and install sidewalks on the north and south sides of Route 32 (WB) or, add a separated shared use path along the section between Robbins Road and Main Street to connect the north and south sections of the Ware River Trail (see below)
- j. Add sidewalks or shared road signs and wider shoulders along routes noted on Pedestrian Network Plan where feasible

Goal #2 - Improve Sidewalk Access and Design

Recommendations:

- a. Enhance the sidewalk verge (WB) – Plant street trees to create a uniform separation between people walking and moving vehicles.
- b. Add curb ramps at all crosswalks where needed to meet ADA standards
- c. Age-Friendly Walking Features (WB) – Install benches on Main Street and on other routes used by older adults (such as on Route 32 from the Senior Center). Consider adding wayfinding signage additions that show in-town walking trips in number of minutes that it will take to walk to the destination (rather than distance). Improve nighttime safety on Main Street with increased pedestrian-scape lighting

Goal #3 - Complete the Ware River Trail

Recommendations:

- a. Evaluate the cost and feasibility of routes to connect the north and south sections of the Ware River Trail.

The Ware River Trail is a highly valued resource both for recreation, active transportation (as a way for people to safely walk or ride to the Gibbs Plaza from the school or Senior Center), and as an economic asset for the town. Finding a route to connect the northern and southern sections of this trail will present challenges, whether the connection is on the road or along and across the river. Further design analysis is warranted to determine whether a separated shared use path would be feasible along a section of Route 32/West Street. Such a facility could be used by people on bicycles, people walking and people in wheelchairs. However, additional study would be needed to determine if turning lanes could be eliminated and/or access to commercial areas consolidated to reduce the number of potential conflicts between bicycles and cars turning off of Route 32.

Goal #5 – Improve Conditions for Bicyclist Safety and Comfort

Recommendations:

- a. Add bike lanes on major bike routes where needed based on proposed Bicycle Network Map and where feasible based on existing pavement widths.

As noted in this plan, in order to encourage riders of all ages and abilities, some separation from automobile traffic is needed on many of the roads in Ware. Better facilities for bicyclists would attract more riders to Ware businesses and attractions and would improve connectivity to recreational, community and commercial resources.

Proposed Bicycle and Pedestrian Networks

The Pedestrian and Bicycle Network maps on the following pages sketch out a comprehensive, interconnected network of routes for bicycling and walking in Ware. This section has two parts: maps showing key streets that make up the bicycle and pedestrian networks, and a set of drawings showing potential cross sections for possible treatments of streets adding bicycle and/or pedestrian facilities in these networks.

The bicycle and pedestrian networks were compiled using information from the Public Engagement activities (Public Forum, Wiki Maps, public maps posted in locations throughout town, email and Steering Committee comments) as well as from the analysis of existing conditions as presented in the preceding section.

Pedestrian Network Map

The Pedestrian Network Map presents a comprehensive network of pedestrian routes, primarily close to the Town Center, with some additional routes in higher density areas around Beaver Lake and north of the Town Center.

The primary purpose of a strong network of sidewalks and safe roadway crossings is to allow people to walk safely and comfortably to work, school, shopping, and to parks. Existing sidewalks are shown on the map and should be considered part of the pedestrian network. Additional areas that are highlighted as part of this proposed network are as follows:

- **Primary Pedestrian Routes** – Although not all of the roads are highlighted, we assumed that all roads in the Town Center with existing sidewalks are included in the Pedestrian Network as primary pedestrian routes.
 - Streets with existing sidewalks that were highlighted as in need of repair and/or reconstruction through public comments are indicated on the Pedestrian Network Map in **red**;
 - Streets which do not currently have sidewalks but which are high utility for pedestrian use, and/or fill gaps in existing sidewalk networks are shown in **blue**. Sidewalks are recommended for at least one side of the road on these streets.
- **Separated Shared Use Path** - Potential routes to connect the northern and southern sections of the Ware River Trail are shown in **green** on both the Bicycle and Pedestrian Network Maps. This path is for shared use with people on bicycles, people in wheelchairs, and people walking (some with strollers).
- **Shared Use Rural Roads** - Roads that were highlighted through public comment or showed high use on the STRAVA maps but may not warrant sidewalks are shown in **turquoise**. These routes would benefit from wider shared use (with bicycle traffic) shoulders and/or signs indicating that bicycles and pedestrians may also be using the road.

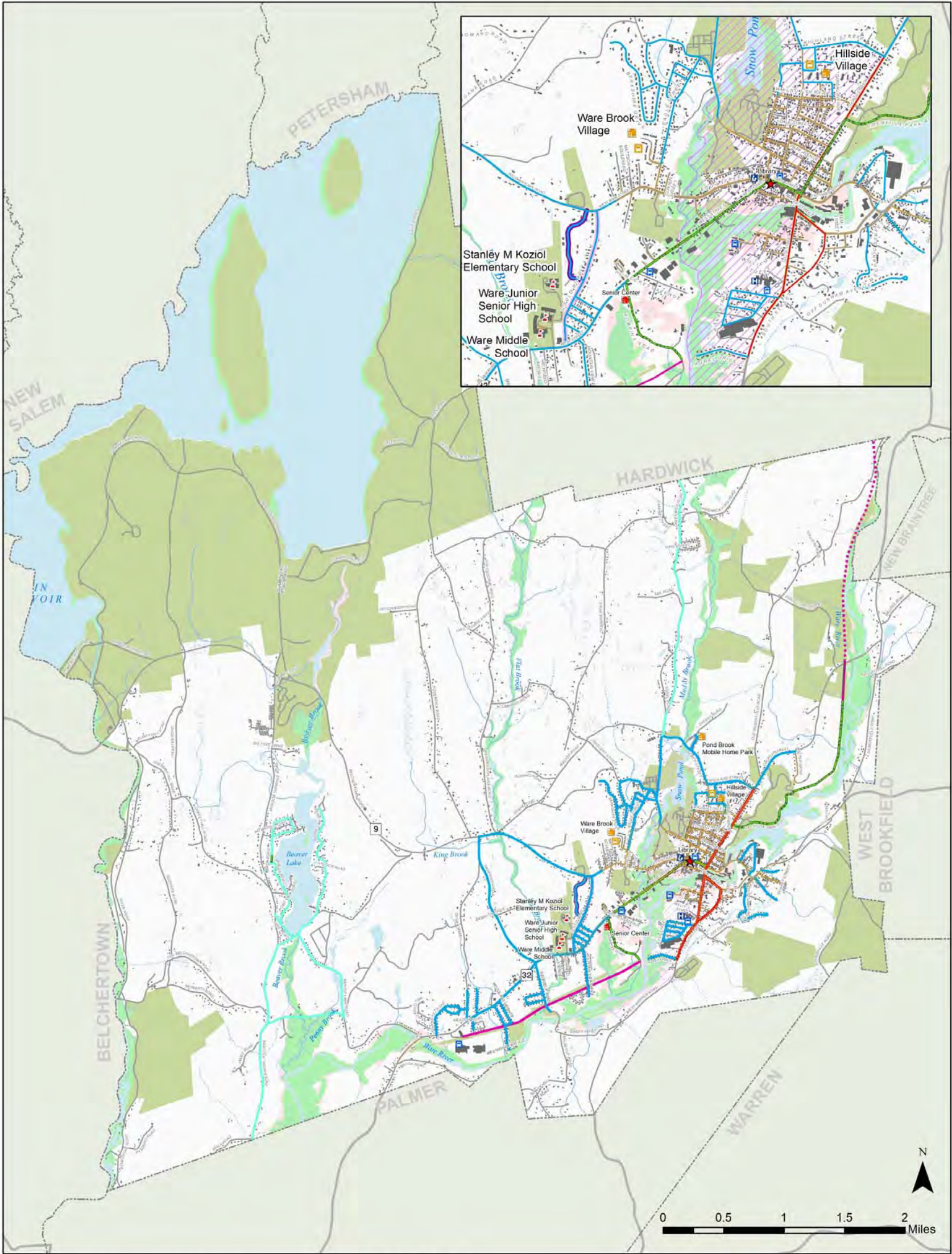
Bicycle Network Map

The Bicycle Network Map provides suggested routes for bicycles. As most of the roads in the proposed network are fairly rural, they have been noted on the map as potential bicycle routes (designated because of north-south connection, or because they appear to be used by bicyclists using STRAVA app) but not needing any upgrade as they were identified as “high comfort” routes on the Bicycle Level of Comfort Map (see **Figure 7**)

The main routes for bicyclists are those designated in the Regional Bicycle and Pedestrian Network Plan (Cyclist Preferred Routes on the map) and connections with the Ware River Trail. Other routes that will require bicycle lanes due to low levels of comfort on the road (based on the Bicycle Level of Comfort Map) were selected to create connections to destinations such as schools, shopping, and parks. The proposed treatment types are as follow:

- **Separated Shared Use Path** – These routes are primarily designated as connecting routes for the Ware River Trail. As this trail is designated for use by people of all ages and abilities, the connecting routes should also be designed for the highest level of comfort, which will likely mean separation from traffic in the form of a shared use path. The Ware River Trail is shown on the map in shades of pink for sections that have been built to proposed routes, potential routes and sections under construction.
- **Bicycle Routes with Bike Lanes** – These routes are on roads that were identified as having low levels of comfort based on traffic volume and speed, or (on downtown roads) are designated as primary routes through neighborhoods that have on-road parking.
- **Bicycle Routes on Rural Roads** – These routes are located on roads that have lower traffic volumes and, because of their distance from the Town Center will likely be used mainly for exercise rather than to access employment or shopping other than for the people living on the route. For roads that have higher traffic volumes or are more heavily used, “Share the Road” signs or “sharrows” may be added to warn drivers that cyclists may be on the road.

Proposed Pedestrian Network Map



Pedestrian Network
Bicycle & Pedestrian
Plan 2019

WARE, MA

Data Sources:
Pioneer Valley Planning Commission, MassGIS.

The information depicted on this map is the planning product of the
Pioneer Valley Planning Commission and is not intended to be used for
any other purpose. No warranty is made by the Commission for the accuracy
or completeness of the information. The Commission is not responsible for
any errors or omissions. The Commission is not responsible for any
damages or losses resulting from the use of this map.

- Pedestrian Route -
Share the road signs
or shoulder needed

Sidewalk Maintenance
Needed

Sidewalk Installation
Recommended
- Shared Use Paths**

Proposed W/Issues

Existing

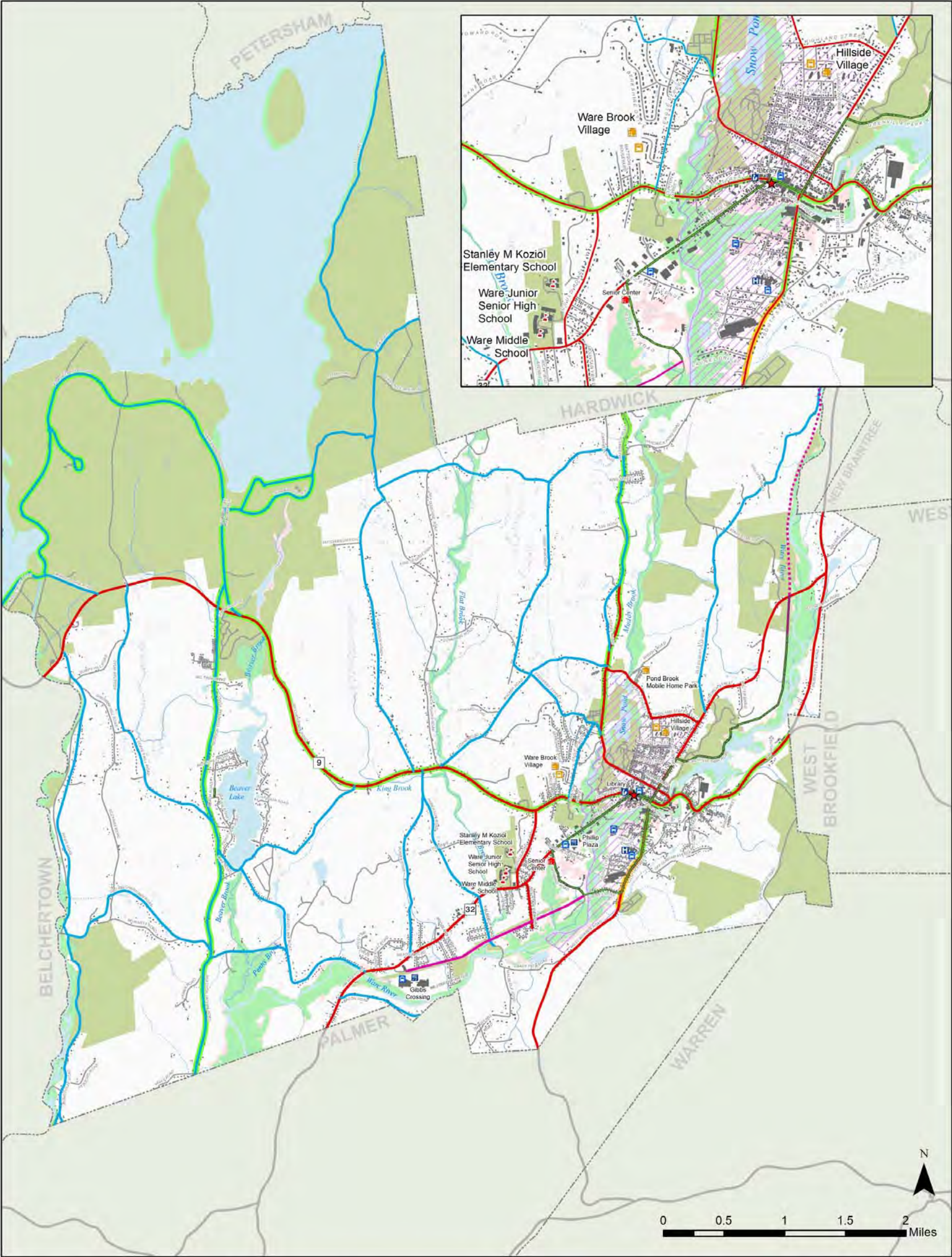
Potential Route

Under Construction

- Sidewalks
- Sidewalk Improvements
Underway
- Sidewalk Improvements
Proposed
- PVTA Bus Stop
- PVTA Bus On Demand
- Multi-unit Housing
- Senior Center
- Town Hall
- Hospital
- Shopping Plaza

- Library
- Schools
- Waterbodies
- Stream
- Intermittent Stream
- Wetlands
- 100 Year Flood Zone
- 500 Year Flood Zone
- Protected & Recreational
Open Space
- Low Income EJ Area

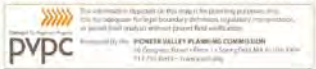
Proposed Bicycle Network Map



Bicycling Network
Bicycle & Pedestrian
Plan 2019

WARE, MA

Data Sources:
Pioneer Valley Planning Commission, MassGIS.



- Bike Route - Share The Road
- Bike Route Bike Lane
- Shared Use Paths**
- Proposed W/Issues
- Existing
- Potential Route
- Under Construction
- Cyclist Preferred Routes**
- Bicycle Route
- Alternate Route

- PVTA Bus Stop
- PVTA Bus On Demand
- Multi-unit Housing
- Senior Center
- Town Hall
- Hospital
- Library
- Schools
- Shopping Plaza

- Waterbodies
- Stream
- Intermittent Stream
- Wetlands
- 100 Year Flood Zone
- 500 Year Flood Zone
- Protected & Recreational Open Space
- Low Income EJ Area

Key Routes and Street Cross Sections

The drawings that follow show a variety of potential bicycle and pedestrian facility treatments for each of the bicycle and pedestrian network street types.

Commercial Street with Separated Shared Use Path

(West Street/Route 32 - Potential on-street connection for center section of the Ware River Trail)

The width of Route 32 at Robbins Road, including sidewalks, is 44 feet; the width in front of the Gibbs Plaza/Big Y is 44 to 46 feet; 60 feet in front of CVS (including the turning lane), and approximately 50 feet next to the Town Hall (including parking). Below are some examples of 44-foot right of way with a separated shared use path, sidewalk and tree belt.



Figure 10 - West Street at Big Y Plaza (Google Maps)

Commercial Street - 44' ROW & Shared...



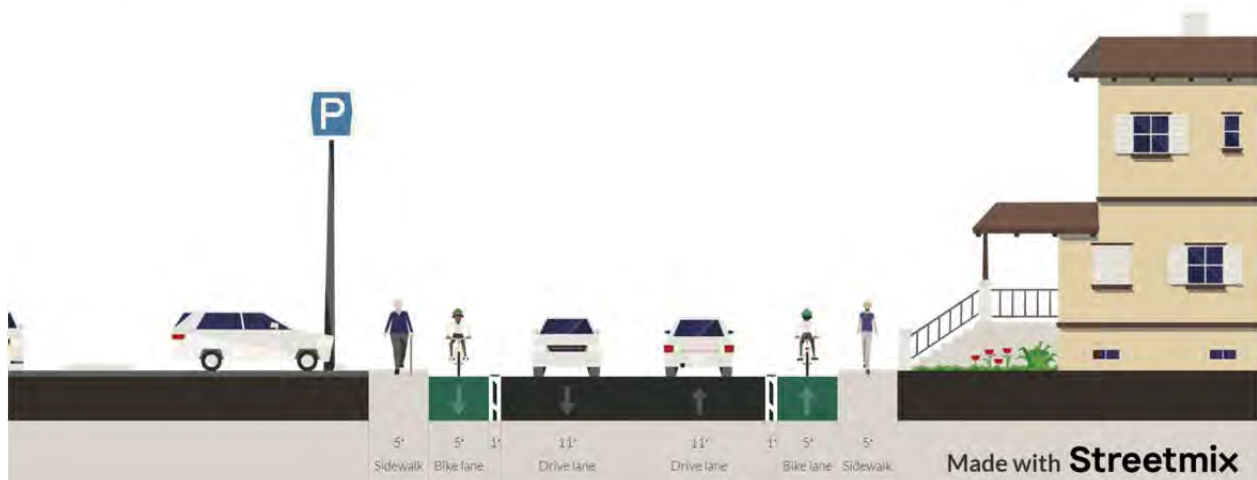
Commercial Street - 44' ROW & separa...



Commercial Street with Bike Lanes & Sidewalks (West Street and Route 32)

Below is another option for bike lanes and sidewalks on Route 32/West Street to create a bicycle network connection between the north and south sections of the Ware River Trail. Route 32 also shows up as a bike route frequented by bicyclists who use the STRAVA app.

Commercial Street - 44' ROW & Bike La...



Residential Street with Sidewalks

(Pleasant Street)

Streets in town that are bicycle routes with a higher level of comfort according to the HSH Bicycle Level of Comfort map or that do not have enough width to paint bike lanes or fog lines, painting on the road showing shared use of the road would be recommended to alert drivers of possible bicycle traffic.



State Route with Bike Lanes & Sidewalks

(Route 9/West Main Street to Gould Road)

Route 9 was identified as in need of a bike lane in online comments, and is shown as a preferred route on regional transportation maps. There is enough width to add a bike lane and sidewalks which could be added closer to the downtown and on the section north of the school.

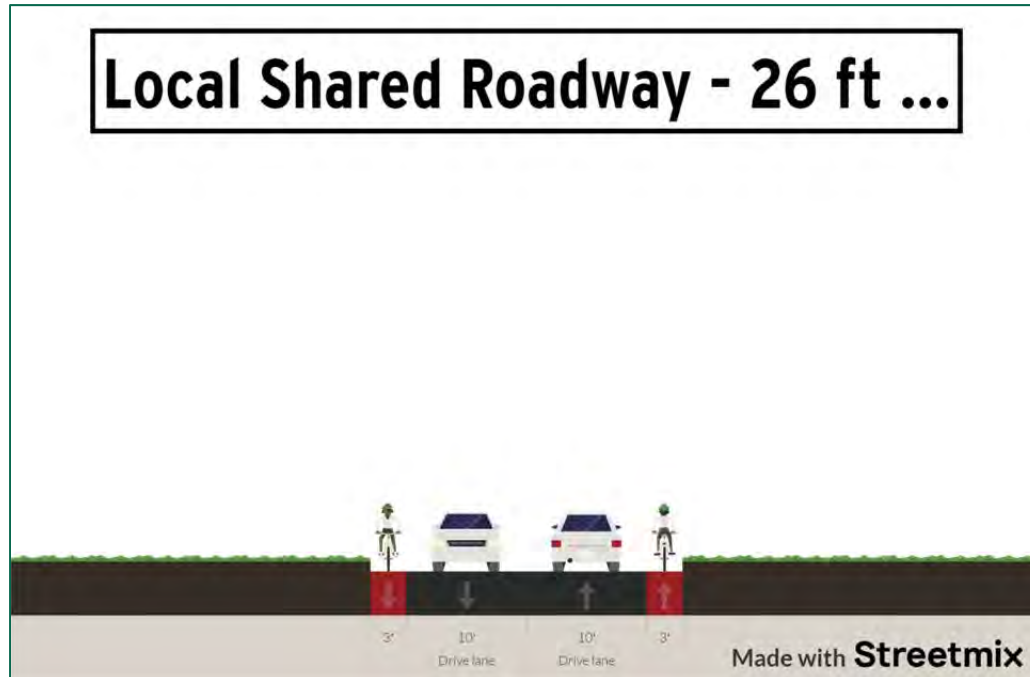
State Route - 44' ROW



Local Shared Roadways

(Greenwich Road)

Several roads were identified as walking or running routes through the public comment process and through STRAVA data, but may not have the traffic or enough width to warrant building sidewalks. For these roads, shoulder that can be shared by bicycles and pedestrians could improve safety and comfort.

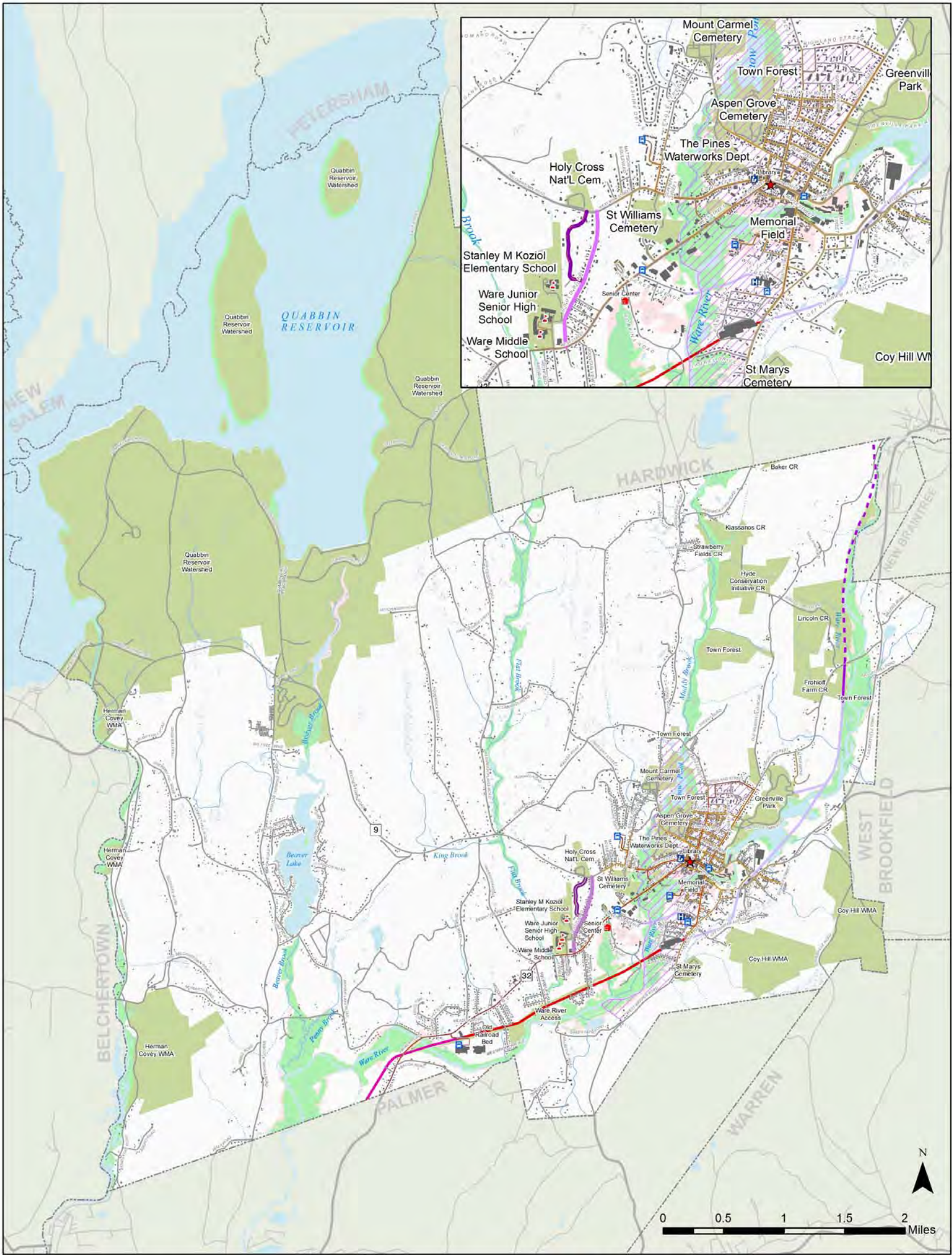


Local Shared Roadway



Source: Alta Design, Urban, Rural and Suburban Complete Streets Design Manual for Northampton and Communities in Hampshire County (Jan 2017)

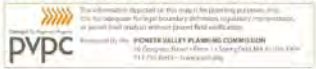
Appendix A – Existing Conditions Maps



Pedestrian Base Map
Bicycle & Pedestrian
Plan 2019

WARE, MA

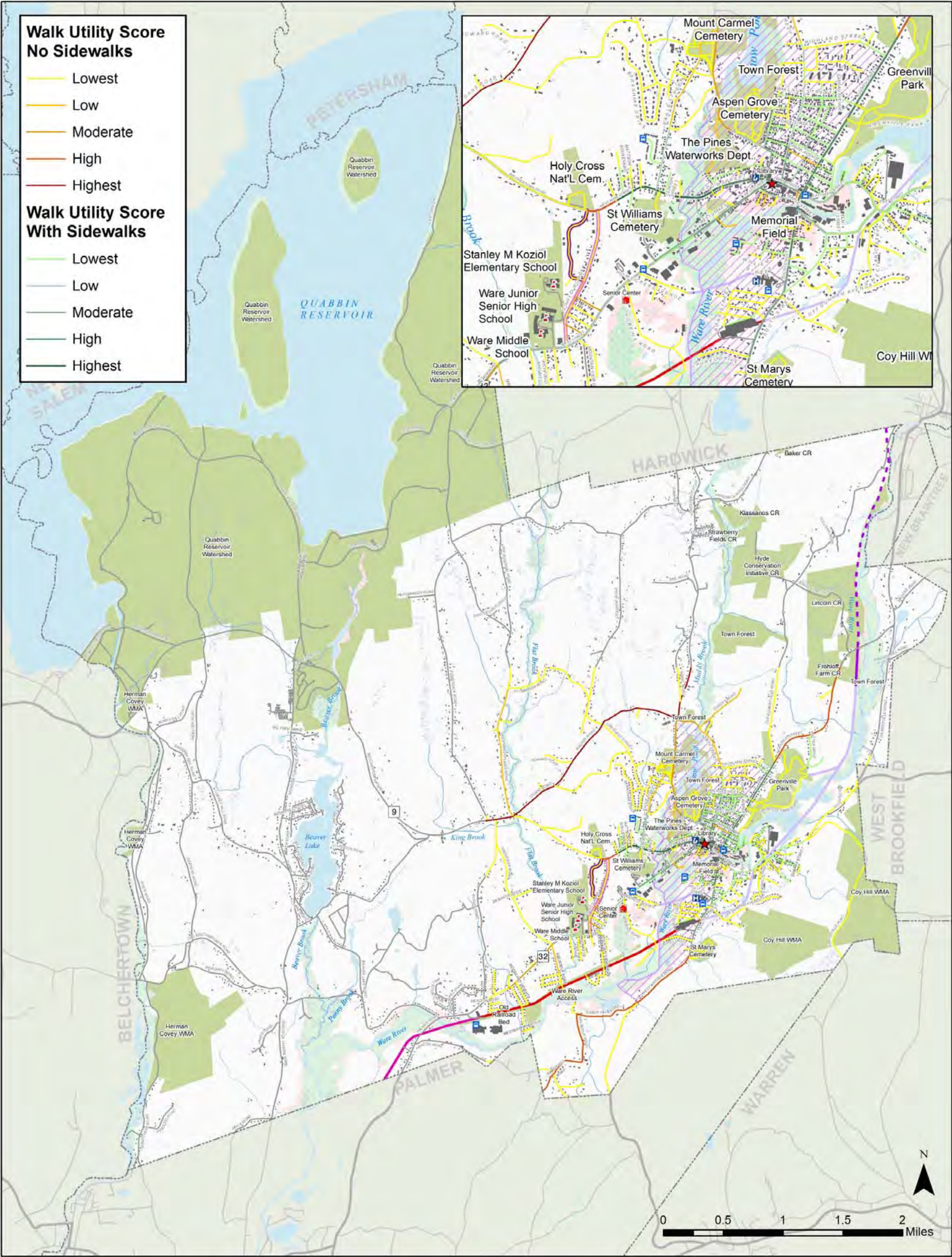
Data Sources:
Pioneer Valley Planning Commission, MassGIS.



- Sidewalks
- Sidewalk Improvements Underway
- Sidewalk Improvements Proposed
- Ware River Trail**
 - Existing
 - Under Construction
 - Funded/Pre-construction
 - Proposed/Not Funded
 - Potential Route

- PVTA Bus Stop
- PVTA Bus Route
- Town Hall
- Hospital
- Senior Center
- Library
- Schools
- Low Income Environmental Justice Area

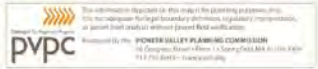
- Waterbodies
- Stream
- Intermittent Stream
- Wetlands
- 100 Year Flood Zone
- 500 Year Flood Zone
- Protected & Recreational Open Space



Sidewalk Gap Analysis
Bicycle & Pedestrian
Plan 2019

WARE, MA

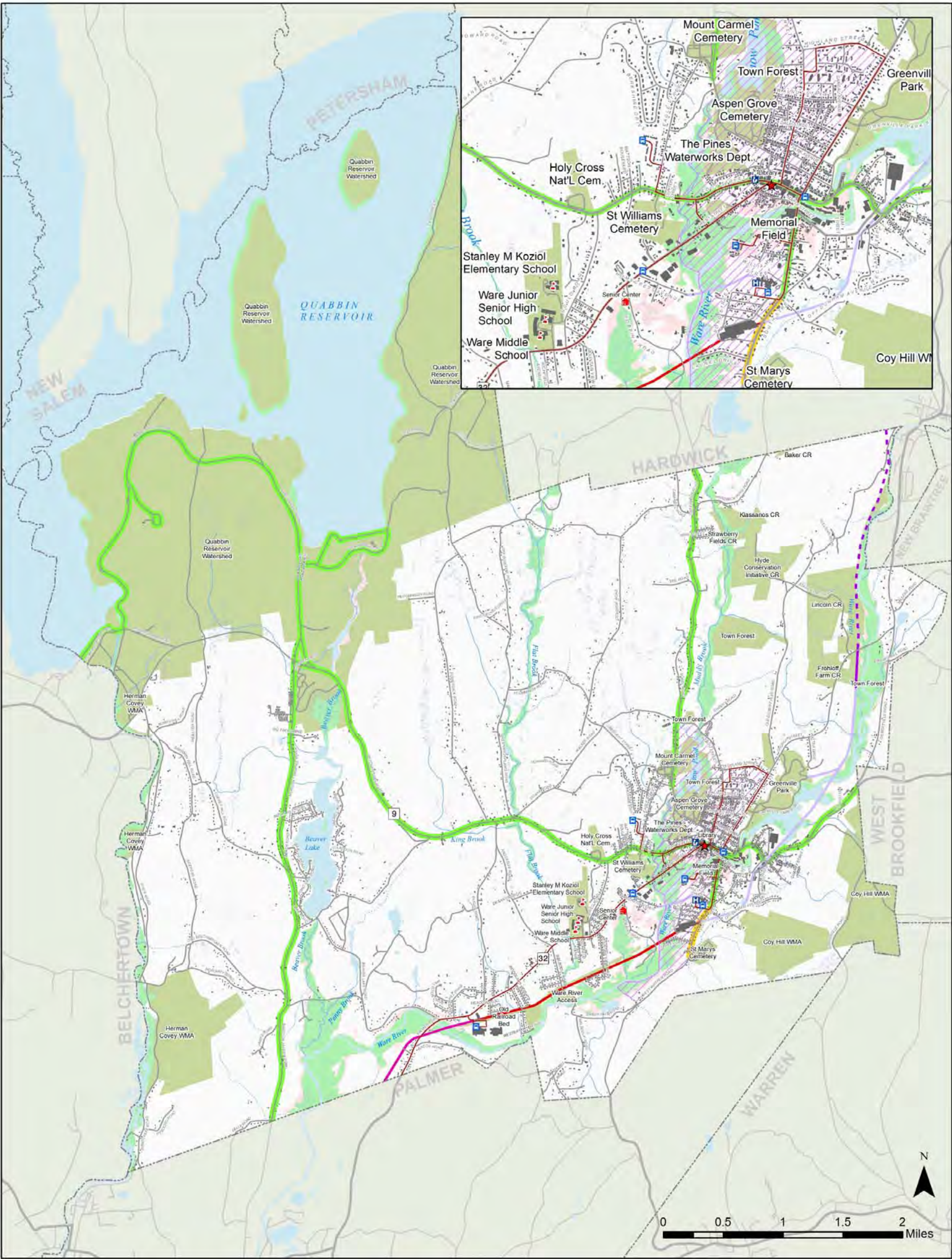
Data Sources:
Pioneer Valley Planning Commission, MassGIS.



- Sidewalks
- Sidewalk Improvements Underway
- Sidewalk Improvements Proposed
- Ware River Trail**
 - Existing
 - Under Construction
 - Funded/Pre-construction
 - Proposed/Not Funded
 - Potential Route

- PVTA Bus Stop
- PVTA Bus Route
- Town Hall
- Hospital
- Senior Center
- Library
- Schools
- Low Income Environmental Justice Area

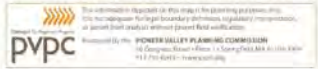
- Waterbodies
- Stream
- Intermittent Stream
- Wetlands
- 100 Year Flood Zone
- 500 Year Flood Zone
- Protected & Recreational Open Space



Bicycling Base Map Bicycle & Pedestrian Plan 2019

WARE, MA

Data Sources:
Pioneer Valley Planning Commission, MassGIS.



Ware River Trail

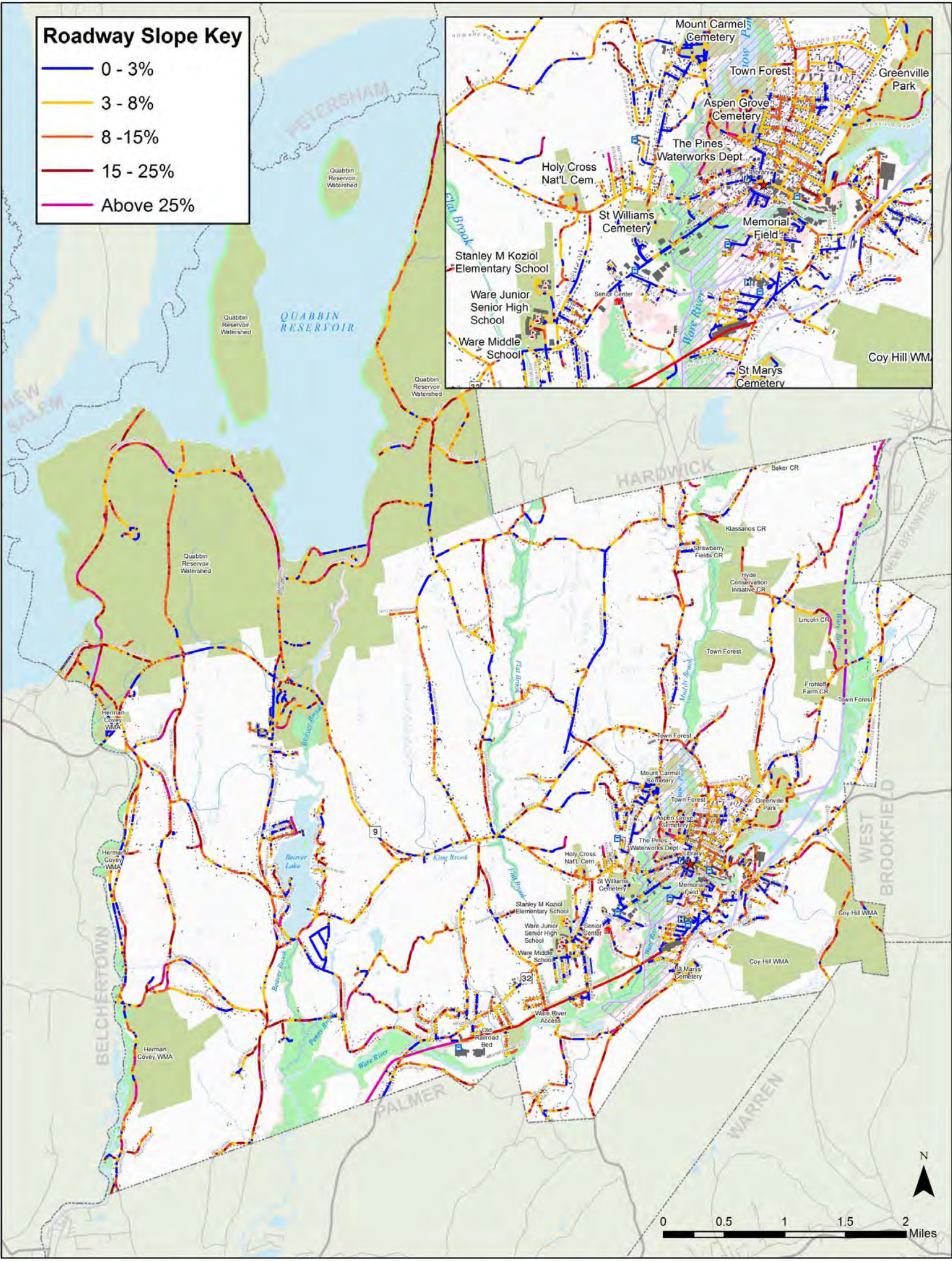
- Existing
- Under Construction
- Funded/Pre-construction
- Proposed/Not Funded
- Potential Route

Cycling Routes

- Bicycle Route
- Alternate Route

- PVTA Bus Stop
- PVTA Bus Route
- Town Hall
- Hospital
- Senior Center
- Library
- Schools
- Low Income Environmental Justice Area

- Waterbodies
- Stream
- Intermittent Stream
- Wetlands
- 100 Year Flood Zone
- 500 Year Flood Zone
- Protected & Recreational Open Space



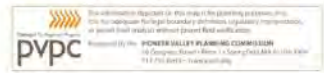
Roadway Slope Key

- 0 - 3%
- 3 - 8%
- 8 - 15%
- 15 - 25%
- Above 25%

Roadway Slope Analysis
Bicycle & Pedestrian
Plan 2019

WARE, MA

Data Sources:
Pioneer Valley Planning Commission, MassGIS.



Ware River Trail

- Existing
- Under Construction
- Funded/Pre-construction
- Proposed/Not Funded
- Potential Route

- PVTA Bus Stop
- PVTA Bus Route
- Town Hall
- Hospital
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- Library
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- Waterbodies
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- 100 Year Flood Zone
- 500 Year Flood Zone
- Protected & Recreational Open Space

Appendix B – WalkBoston Walk Audit Report



Age-Friendly Walk Audit - Ware Ware, MA

November 15, 2019

With funding from the Tufts Health Plan Foundation and the Massachusetts Council on Aging

MAKING MASSACHUSETTS MORE WALKABLE

Old City Hall | 45 School Street | Boston MA 02108 | T: 617.367.9255 | F: 617.367.9285 | info@walkboston.org | www.walkboston.org

Background

On Friday, November 15th, WalkBoston conducted a walk audit in Ware, MA. The town of Ware is currently in the process of developing a Bike and Pedestrian plan and a Complete Streets Prioritization plan. The town requested this walk audit to help inform these processes. The audit focused on the walkability of the residential neighborhood north of Ware's town center and its connectivity to areas of town with a high density of goods and services and senior housing complexes.

This walk audit was completed as part of WalkBoston's Age-Friendly Walking initiative, which is a three year, statewide initiative to improve walking conditions for people of all ages in rural and gateway communities of Massachusetts through policy implementation and built environment change.

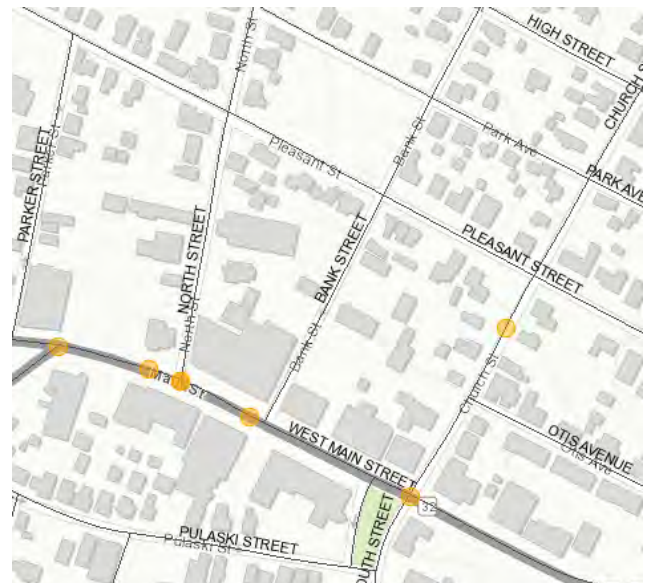
MassDOT's crash data indicates 10 pedestrian-involved crashes in the walk audit study area since 2009. One of these crashes resulted in a fatality and nine resulted in non-fatal injuries of the involved pedestrian.

Figure 1: Pedestrian Crash Map – Town Center



Source: MassDOT IMPACT crash portal

Figure 2: Pedestrian Crash Map – SR 32 Shopping Plaza

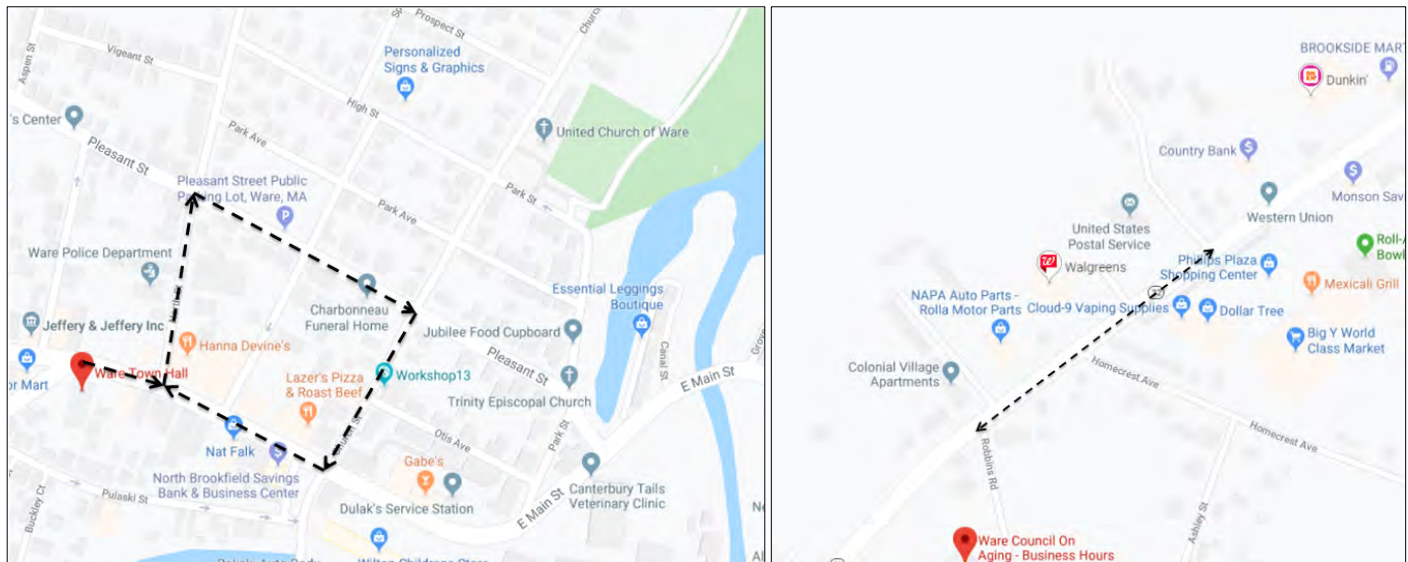


Walk Audit Participants

<u>Name</u>	<u>Organization</u>
Becky Basch	Pioneer Valley Planning Commission
Stuart Beckley	Town of Ware
Rebekah DeCoursey	Town of Ware
Steven Tyler	Howard Stein Hudson
John Zienowicz	Ware Council on Aging
Stacey Beuttell	WalkBoston
Liz Rickley	WalkBoston
LeighAnne Taylor	WalkBoston

Walk Audit Route

The walk audit began at Ware Town Hall on Main Street. Participants walked east on Main Street to North Street and traveled north on North Street to Pleasant Street. The group then walked east on Pleasant Street to Church Street. Participants followed Church Street south back to Main Street and returned to Town Hall. Walk audit participants then drove to Phillip's Plaza Shopping Center on State Route 32 (SR-32) and walked from the shopping center west on SR-32 to Robbins Road.



Neighborhood Characteristics

The two focus areas of this walk audit included a section of one of Ware's residential neighborhoods and the area near the town's main shopping plaza on SR-32. The residential streets assessed for this audit included segments of North Street, Pleasant Street, and Church Street (as shown in the map above). These streets are within a part of Ware's environmental justice neighborhood, which includes low-income and senior housing. Residents of this neighborhood walk to Ware's Main Street downtown district and to the shopping plaza on SR-32 to access goods and services. There is a desire to improve the safety and comfort of the walking environment in this residential district and along SR-32 to ensure that walking is safe for Ware residents of all ages and abilities.

Key Observations and Recommendations

Main Street

Main Street in downtown Ware is a two-way arterial with one travel lane in each direction. The Main Street corridor included in the walk audit study area has three signalized intersections. Main Street's Church Street and North Street intersections are fully signalized, and the SR-32 intersection has a flashing red-yellow signal. Main Street is currently on MassDOT's Transportation Improvement Plan (TIP)

for a resurfacing project in 2020 and signal upgrades in 2024, including the traffic signals along the corridor studied in this walk audit.

With the focus of this walk audit being primarily in the residential district and on the shopping plaza, the recommendations aren't focused on Main Street. The group did, however, make a few observations and recommendations regarding Main Street, which are included in this report.

Observations:

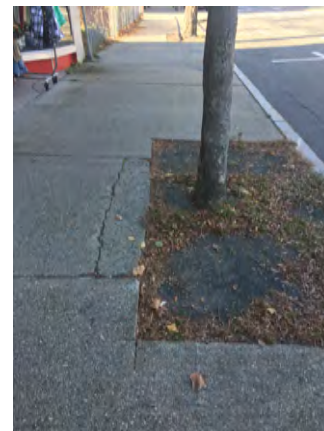
- **Sidewalks in good condition:** The sidewalks are wide, level, and smooth for most of the Main Street corridor. There are some accessibility concerns with steps on the sidewalk near the southside business at the east end of Main Street near South Street.
- **Inconsistency of the sidewalk verge:** The separation of people walking on the sidewalk from moving vehicles is missing in some areas and could be improved in others.
- **Poor visibility of midblock crossings:** The midblock crossings lacked elements to enhance pedestrian visibility and safety.
- **Confusing lane markings:** The painted turn lane markers on Main Street were confusing in places in their configuration, placement, and distance from the signalized intersections.
- **Need for signal upgrades:** The pedestrian signals at the signalized intersections were not up to current MUTCD standards. The signal timing did not provide enough WALK time for safe clearance of the crosswalk.
- **Dangerous configuration of the intersection of Route 32 and Main Street:** The skewed alignment of this intersection, vehicular turning movements, and long crosswalk distance across Route 32 in the east-west direction contribute to an unsafe street crossing condition at this intersection.



The pedestrian signals on Main St need to be replaced with updated Accessible Pedestrian Signals with countdown WALK signals



The sidewalks are in good condition on Main Street but lack a verge in some places



Exposed street tree pits may pose a tripping hazard to older adult pedestrians

Recommendations:

- **Enhance the sidewalk verge:** Plant street trees in areas with gaps to create a uniform separation of people walking from moving vehicles. Evaluate the installation of tree pit treatments that are

contiguous with the level of the sidewalk to prevent tripping hazards.

- **Improve the visibility of midblock crossings:**

Increase the visibility of the three existing midblock crosswalks on Main Street with features such as in-crosswalk signage or rectangular rapid flashing beacons (RRFBs). Evaluate adding bump outs (like the ones currently in place at Bank Street) at the crosswalks that do not currently have them to decrease crossing distances and increase pedestrian visibility. Consider parking regulations, such as a no parking zone within 20 feet of a marked crosswalk, to improve visibility.



Bumpouts at the Bank Street midblock crossing enhance the visibility of pedestrians and shorten the crossing distance. Adding this feature to other crosswalks on Main Street could further enhance pedestrian safety.

- **Upgrade pedestrian signals at signalized intersections:**

Include Accessible Pedestrian Signals (APS) with tactile and audible crossing warnings and countdown WALK signals to the 2024 planned update of the signals on Main Street. Ensure that the signal phasing allows 3.5 feet per second crossing time, or 2.5-3 feet/second walking speed if vulnerable road users (older adults, children, or people with disabilities) frequent the crosswalk.

- **Improve the safety of the east-west crosswalk at the intersection of Main Street and SR-32:** Evaluate the vehicle turning patterns at this intersection and signal phasing to protect pedestrians from high speed turning vehicles. Evaluate re-configuring the alignment of this intersection to tighten the left turn radius from Main Street onto SR-32 to slow speeds and protect people walking in the east-west crosswalk.

- **Age-Friendly walking features:** Evaluate the installation of benches on Main Street to encourage older adult walking. Consider adding wayfinding signage additions that show in-town walking trips in number of minutes it will take to walk to the destination (instead of distance). Improve night time walking safety on Main Street with increased pedestrian-scale lighting.



Poor sight lanes, vehicle turning patterns, and a long crossing distance at the Main Street and SR-32 intersection contribute to an unsafe walking environment in this location

Residential Streets: North Street, Pleasant Street, and Church Street

The study area included portions of three residential streets that fall within Ware's environmental justice neighborhood. The majority of the homes in this residential district are within a 5 to 20-minute walk of Ware's downtown district. There is a diversity of home types in this district including single family homes, multi-family homes, and low-income and senior apartment buildings. Many neighborhood residents walk or use the local bus service (Pioneer Valley RTA) to access goods and services on Main Street and in the retail district on SR-32. Construction is underway to build a new dog park in this neighborhood on Pleasant Street, and the town's only funeral home is also on Pleasant Street. The town's public library and an art facility that hosts community events are both located on Church Street.

These neighborhood amenities generate a high volume of walking on North Street, Pleasant Street, and Church Street.

Observations:

- **Poor sidewalk conditions:** the sidewalks on North Street, Pleasant Street, and Church Street are in varying states of disrepair with cracks and unlevel surfaces creating tripping hazards, broken or nonexistent curb ramps, interruption by utility poles, and overgrown vegetation in places. The Church Street sidewalk conditions are of particular concern, as they provide connectivity to and from senior housing and to the town's public park.
- **Unsafe intersections:** The intersection of North Street and Pleasant Street is a four-approach intersection that has stop signs at the Pleasant Street approaches. The intersection has crosswalks at all approaches. Without stop signs at the North Street approaches, vehicles travel at high speed through this intersection. Furthermore, there is no pedestrian crossing advance signage to signify that people might be crossing the intersection. The intersection of Pleasant and Church Street is a four-approach intersection with a blinking yellow traffic light at the Church Street approaches, and a blinking red light at the Pleasant Street approaches. There are crosswalks at all approaches, which also lack advance signage. High vehicle speeds on Church Street in the downhill, southbound direction is a concern at this intersection. Wide lane widths on Church Street may contribute to high speeds.
- **High volume crossing from the municipal parking lot to the funeral home:** There is no crosswalk on Pleasant Street to safely cross to the funeral home from the municipal-owned parking lot where people park for funeral services.
- **Wide travel lanes on Pleasant Street:** The wide travel lanes on Pleasant Street may contribute to high vehicle speeds.
- **ADA compliance of curb ramps:** Many of the curb ramps on North Street, Pleasant Street, and Church Street are broken, steeply sloped, and misaligned.
- **Poor visibility at midblock crossing on Church Street:** Church Street has a midblock crossing near the community art space, Workshop 13, that lacks features that would make it more visible to drivers.



The Church Street sidewalks are narrow and cracked in places



The midblock crosswalk to access the library on Church Street lacks features that make it visible to drivers

Recommendations:

- **Improve sidewalk conditions** in high-priority locations, such as those on Church Street and North Street, which are frequented by vulnerable pedestrians (seniors, children, people with disabilities). Evaluate full replacement of sections in disrepair (on all three streets), widening of Church Street sidewalks on the east side, and trimming of overgrown vegetation.
- **Improve intersection safety and slow vehicle speeds:** Evaluate bringing the North Street and Pleasant Street intersection to a four-way stop. Add advance pedestrian signage at this

intersection and at the intersection of Pleasant Street and Church Street. Consider placing a speed feedback sign on North Street and on Church Street to slow vehicle speeds and add speed limit signs. If not already adopted, consider adopting a 20 MPH prevailing speed limit on residential streets (“slow zone.”). Consider adding fog lines or other elements to reduce the lane widths on Church Street, North Street, and Pleasant Street to slow vehicle speeds.

- **Evaluate ADA compliance of curb ramps:** Ensure that curb ramps on North Street, Pleasant Street, and Church Street are ADA compliant and accessible by pedestrians of all abilities and ages.
- **Enhance the midblock crossing on Church Street:** Consider adding elements to enhance the visibility (in-street signage or an RRFBs) of pedestrians crossing Church Street at Workshop 13.



The intersection of North St and Pleasant St is traveled at high speeds and lacks advance pedestrian crossing signage



The sidewalks of the residential neighborhood north of town center are in need of repair and vegetation trimming in places



Updating all crosswalks with continental striped paint and advanced pedestrian crossing signage could improve walking safety for neighborhood residents

State Route 32 (SR-32):

- The study area included a stretch of SR-32 from Phillip’s Plaza Shopping Center to Robbins Road, which is the location of the Ware Council on Aging. This shopping plaza houses the town’s main grocery store -Big Y, The Dollar Store, and other retailers. Walgreens and the Ware Post Office are located across from this shopping center on the north side of SR-32. Residents who do not own personal vehicles walk or take the local bus to this part of town to access food and other goods. High School students also walk from the school to this commercial district on SR-32, as well as to the downtown commercial district on Main Street.

Observations:

- **High speeds:** Audit participants expressed concern that vehicles travel at high speeds along this corridor. On the day of the walk audit, participants used radar speed detection devices and recorded vehicle speeds in the range of 40-50 MPH, despite a 35 MPH posted speed limit on SR-32, which is reduced to 25 MPH near the SR-32 and Robbins Street intersection.

- Poor sidewalk conditions:** The sidewalk conditions are poor or nonexistent along the SR-32 corridor near the shopping plaza and between town center and the shopping plaza. The sidewalk is too narrow to be possible in a wheelchair in sections, interrupted by utility poles, and broken and uneven in many segments. The sidewalk is nonexistent for stretches of SR-32, and there are no safe crossings to get to the other side of the street to use the existing sidewalk when it ends.
- Wide shopping plaza driveways with no painted walkways:** Wide driveways with wide-angle turns contribute to high vehicle turning speeds into the shopping plaza, which contribute to an unsafe walking environment. The driveways do not have painted crosswalks or walkways to indicate that people will be walking in this location.
- Outdated signalized intersection features:** The pedestrian signals at the signalized intersection of the Walgreens entrance do not include accessible tactile and audible features and do not have countdown WALK signals. The WALK times at this intersection are extremely short (5 seconds) and do not allow safe clearance of the crosswalk. The accessibility panels at the curb ramps of this intersection are cracked and misaligned.
- No STOP sign or crosswalk at Robbins Street:** Robbins Street is the access point to the Council on Aging. Many residents walk or use motorized wheelchairs to access the Council on Aging. The intersection of Robbins Street and SR-32 lacks a STOP sign and STOP bar. Robbins Street also lacks a crosswalk across the entrance in the east-west direction to signalize that people will be walking at this location.
- Disconnected sidewalk configuration at the Crystal Springs Dairy Barn Driveway:** The sidewalk and curb ramp on the south side of SR-32 dead ends into the parking lot of Crystal Springs Dairy Barn parking lot at the signalized intersection. The sidewalk does not continue on the south side of SR-32 in front of the shopping plaza. There are some resident concerns about the signal pattern at the Dairy Barn driveway entrance onto SR-32, which serves as one of the entrances to the shopping plaza. May consider evaluation of the signal pattern and driveway configuration to improve vehicle traffic and pedestrian conflict at this intersection.
- Need for safety improvements at the midblock crossing on SR-32 near Colonial Village Apartments.** There are no elements to enhance the visibility of the unsignalized midblock crossing at Colonial Village Apartments on SR-32 and the curb ramps are inaccessible at this intersection. This crosswalk is heavily utilized by residents in this apartment complex, which includes many older adults. Given the curve south of the crosswalk on SR-32, visibility of people in the crosswalk for drivers traveling northbound on SR-32 may be compromised. The location of this crosswalk should be evaluated for sight distance.



There is no sidewalk along much of the south side of SR-32



The sidewalk dead ends into a parking lot on the south side of SR-32



The sidewalks of SR-32 are cracked and impassible in places



The safety of the midblock crossing at Colonial Village apartments could be enhanced with an RRFB

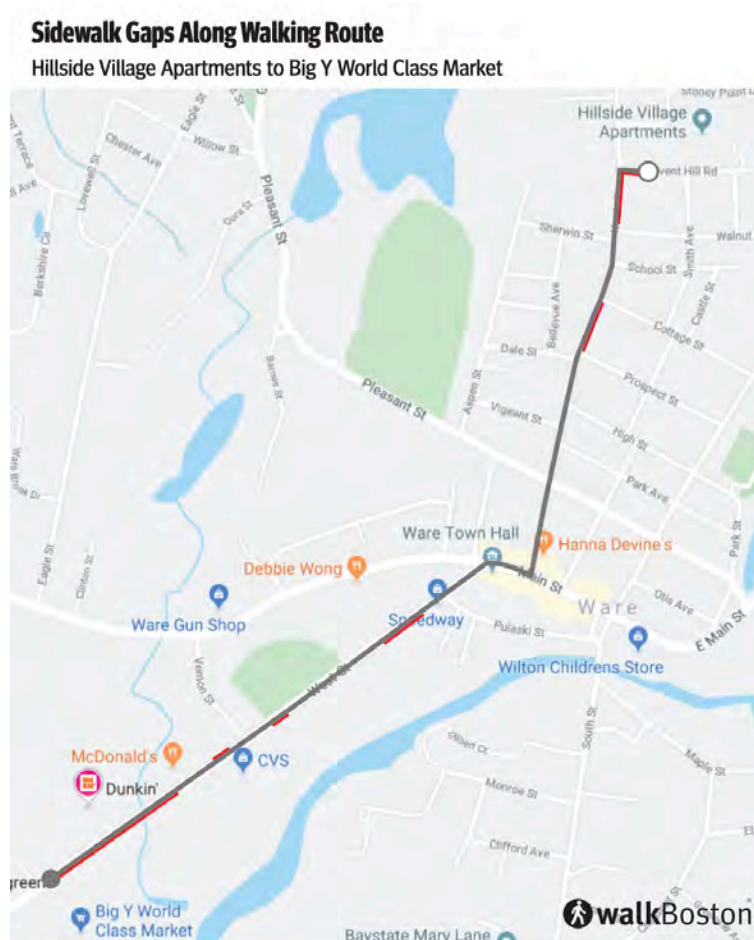


Utility poles narrow the width of the sidewalk, making it difficult to navigate for persons in wheelchairs

Recommendations:

- **Improve sidewalk conditions:** Ensure that the sidewalk network is accessible to pedestrians of all ages and abilities. Work towards establishing a complete sidewalk network that runs along both sides of SR-32 and provides connectivity to other town destinations (Main Street, residential streets, Council on Aging, churches, etc.).
- **Mitigate speed:** Evaluate narrowing lane widths on SR-32 to slow speeds with features such as fog lines and/or bike lanes. Consider intermittent placement of speed feedback signs on SR-32.
- **Narrow shopping plaza driveways and add painted walkways:** Consider paint or landscaping features to narrow and tighten the turn radii of the shopping plaza driveways. Evaluate the need for the current number of plaza entrances. Add walkways (with paint or stamped concrete) across plaza entrances.
- **Update signalized intersection features:** Update the pedestrian signal heads to APS standards with countdown WALK signals and longer WALK times. Evaluate the accessibility of the curb ramps.
- **Improve Robbins Street safety:** Add a STOP sign at Robbins Street and a walkway in the east-west direction across Robbins Street with paint or stamped concrete. Include a receiving ramp on the westerly corner of Robbins Street and provide a safe connection to the Council on Aging parking lot.

- **Repair, replace, and install sidewalks on the north and south sides of SR-32:** This is a key sidewalk for connecting the town's residents with goods and services. Improvements to this sidewalk would create a safer, more comfortable walking environment on this corridor and would provide a walking connection from nearby residential streets and the Council on Aging to downtown Ware. If a resident in Ware's environmental justice neighborhood were making a walking trip to Phillip's Shopping Plaza, there would be long stretches without a sidewalk and the trip would require several unmarked, unsafe crossings to access the fragments of sidewalk that are in place on the route. The reality of this fragmented sidewalk trip is highlighted in this map, which indicates sidewalk gaps in red.



- **Improve the visibility of the midblock crossing on SR-32 near Colonial Village Apartments:** Given that vulnerable road users utilize this crosswalk and that vehicles travel at high speeds on SR-32, evaluate adding an RRFB at this intersection that is motion-activated (not push-button activated alone). Add advance pedestrian crossing signage for this crossing. Given the road geometry at this location, may consider moving this crosswalk northward for better lines of sight to improve pedestrian visibility.
- **Ensure that the south-side sidewalk does not strand pedestrians and people in wheelchairs in the parking lot:** Continue the south-side sidewalk in front of the length of the shopping plaza to create safer accessibility for people walking.