



BRATTLEBORO, VT

WALK / BIKES

ACTION PLAN

MARCH 2023

SLR®

## SPONSOR

This project was funded by a Municipal Planning Grant administered by the Department of Housing and Community Development.

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## 1. INTRODUCTION AND VISION

The Town of Brattleboro’s Walk/Bike Action Plan identifies and plans the bicycle and pedestrian facilities that will improve the safety, convenience, and connections between destinations for those traveling by bike or on foot. The development of this plan involved extensive input from the public and a Steering Committee, to identify and respond to issues raised by a variety of stakeholders.

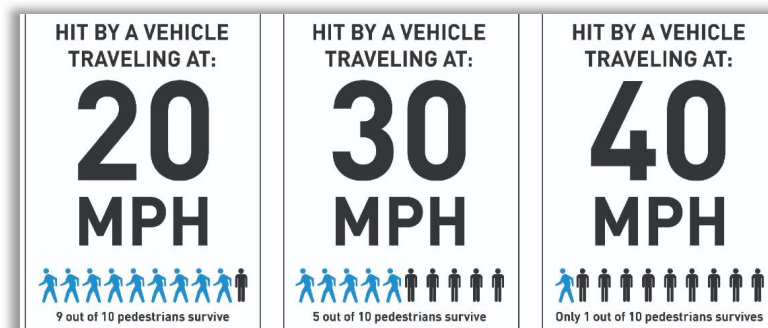
The goal of this plan is to provide Brattleboro with actionable, incremental projects that build a safer and more connected network. Improving the bicycle and pedestrian network should encourage more people to choose those modes as their regular transportation as well as to create better conditions for those who already bike or walk (or skateboard, scooter, or wheel) in Brattleboro.

### *Brattleboro Walk/Bike Action Plan*

#### **VISION**

*The Town of Brattleboro is committed to improving infrastructure to enable safe bicycling and walking for transportation, commuting, recreation, equity, and individual and environmental health.*

The tools recommended in this report’s Design Toolbox are intended to serve the dual purpose of providing better facilities for walking and bicycling, and reducing the speed of car and truck traffic – the necessity of which is well illustrated by the following graphic<sup>1</sup>:



The town would ultimately like to develop a network that increases safety and accommodates pedestrians and cyclists of all ages and abilities, from the 8-year-old to the 80-year-old – and this plan is a first step in that direction. The physical and financial constraints that could limit the Town of Brattleboro’s ability to implement the recommended improvements were met head-on.

The project team researched how the Town of Brattleboro allocates funds for bicycle and pedestrian improvement projects and determined that funds must be increased to allow the town to match funds available from the U.S. Department of Transportation (USDOT) and from the State of Vermont Agency of Transportation (VTrans). In

<sup>1</sup> “Speed Limits,” Seattle Department of Transportation, retrieved 3/9/23, <https://www.seattle.gov/transportation/projects-and-programs/safety-first/vision-zero/speedlimits>

the case of most grant funding, a 20 percent match is required. Some of the short-term improvements recommended in this plan will be implementable through new collaboration between the Planning Services and Public Works offices relative to Brattleboro's annual paving plan. Whenever a road is resurfaced, paint for lanes and other markings must be reapplied – providing an opportunity to also paint crosswalks, shared lane markings (sharrows), and/or bike lanes.

Recent studies in the field of bicycle planning have found that separated bike lanes provide the highest level of comfort for bicyclists, however physical right-of-way constraints of the town's existing street network will limit the ability to implement separated bike lanes in some locations. Cost is also a factor. One recent sidewalk repair project in Brattleboro, one quarter mile long, cost twice the amount budgeted for sidewalk repair town-wide in fiscal year 2024. Despite these limitations, the purpose of this plan is to develop bicycle and pedestrian facilities that will identify both what is ideal and what is acceptable in the design of a Walk/Bike network.

Beyond the safety and public health imperatives behind this Plan's recommendations, there is also an important argument to be made for improved walking and bicycling facilities relative to home values. According to an article written in 2020, homes in cities that are within walking distance of schools, shopping, parks, and other urban amenities sell for an average of 23.5%, or \$77,668, more than comparable properties that are car dependent. Walkability and its value were determined by comparing sale prices and Walk Score® rankings for nearly 1 million homes sold in 2019 across 16 major U.S. metropolitan areas and two Canadian cities.

**PROJECT CONTEXT - cost**

**Table 1 – 5 ft. Wide Sidewalk Unit Costs**

Curbs/Walk Configuration	Basic Cost/Foot	Total Cost/Foot
Concrete Walk w/No Curb	\$63	\$184
Concrete Walk w/Granite Curb	\$109	\$317
Concrete Walk w/Concrete Curb	\$95	\$277
Bituminous Walk w/No Curb	\$33	\$94
Bituminous Walk w/Granite Curb	\$78	\$227
Bituminous Walk w/Concrete Curb	\$64	\$187
Aggregate Walk w/No Curb	\$28	\$68
Aggregate Walk w/Granite Curb	\$74	\$214
Aggregate Walk w/Concrete Curb	\$60	\$175

**Table 3 – Typical Bike Lane Costs (no widening needed)**

Pavement Marking Material	Cost per Mile without 4" White line	Cost per Mile with 4" White line
Waterborne Paint	\$4200	\$14,600

Source: VTrans "Report on Shared Use Path and Sidewalk Costs"

### *Slide from the Second Public Meeting*

The types of facilities proposed reflect the desire to start making inexpensive and incremental improvements in the short term (1 to 5 years). Sharrows, for example, aren't an actual bicycle facility, but they are easy, inexpensive, and begin to build awareness that bicycles belong on our roads. Short-term projects are characterized as such because they may already have funds identified for them and/or can be added within the existing roadbed and right-of-way. The long-term (5 to 10 years) projects are characterized as such because they require additional study, pose significant permitting or design challenges, and/or are relatively expensive or complex.

## 2. EXISTING CONDITIONS

Today, Brattleboro has a limited bicycle network. **Figure 1** displays the existing bicycle facilities in Brattleboro. There are approximately 1.6 miles of on-road dedicated facilities, including bike lanes on portions of Western Avenue (Route 9) near West Brattleboro, a short section of bike lanes on Guilford Street, bike lanes on a section of Putney Road (Route 5), and shared lane markings (or sharrows) on Williams Street. However, as shown in the figure, none of the existing facilities connect to one another.

Compared to the existing bicycle network, the pedestrian network within Brattleboro is more extensive and provides a good foundation for walkability, but there is still a lot of room for improvement. **Figure 2** displays the existing sidewalks in Brattleboro.



*Existing Whetstone Pathway*

Many roadways in Brattleboro feel like vehicular throughfares, with high speeds, wide intersections, and an abundance of curb cuts. The roadway network lacks provisions for bicycles and pedestrians and creates a rather hostile environment for walking and biking. Without a well-connected bicycle and pedestrian network and limited transit options, most Brattleboro residents use their car to travel. Nearly 69 percent of workers 16 years and over in Brattleboro use a car to commute to work.<sup>2</sup>



*Brattleboro's Means of Transportation to Work*

<sup>2</sup> "ACS 5-Year Estimates Subject Tables," U.S. Census Bureau, retrieved 2/23/23, <https://data.census.gov/table?q=brattleboro+vt&tid=ACSST5Y2021.S0801>.

Figure 1 - Brattleboro's Existing Bicycle Facilities

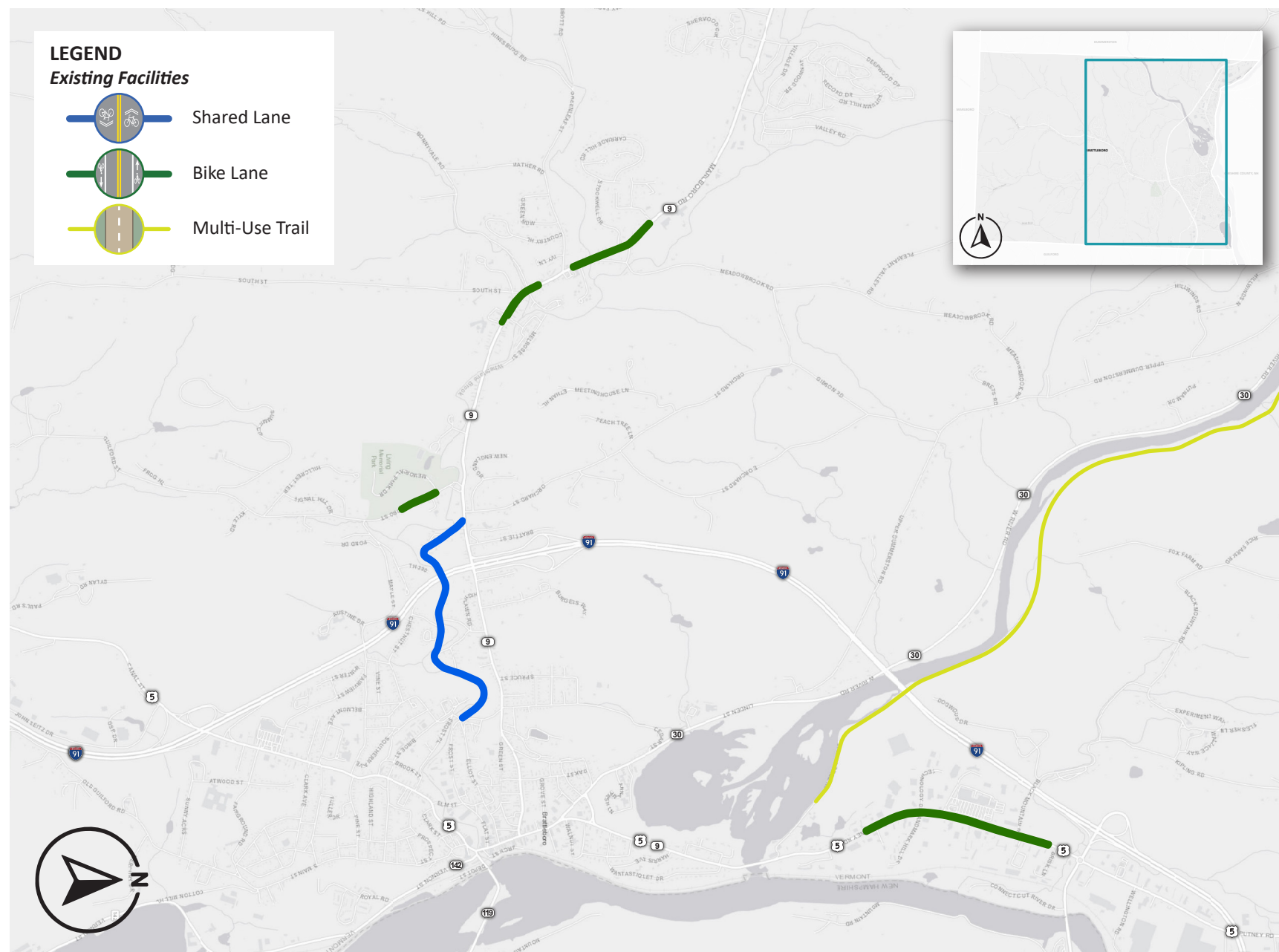
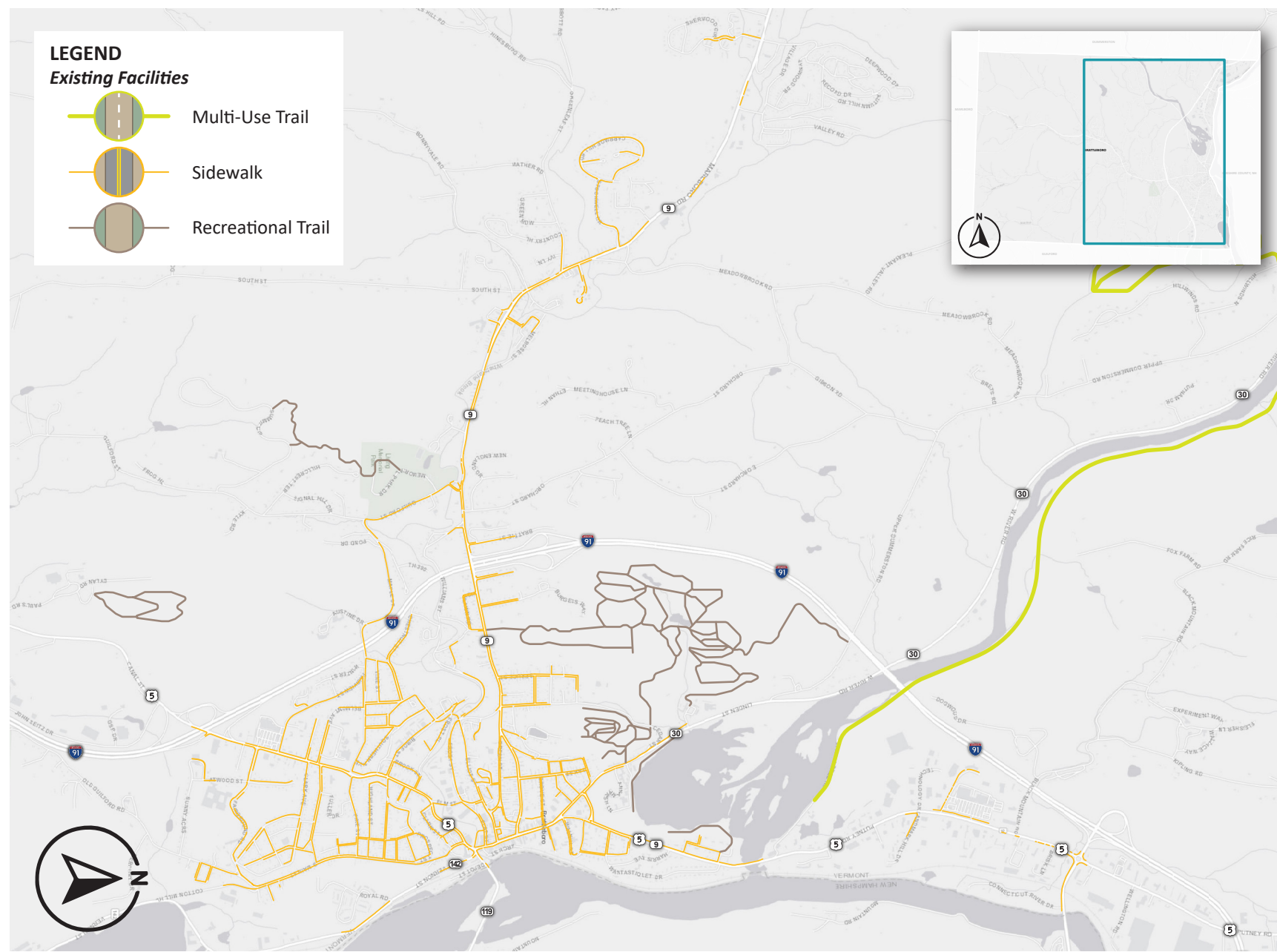
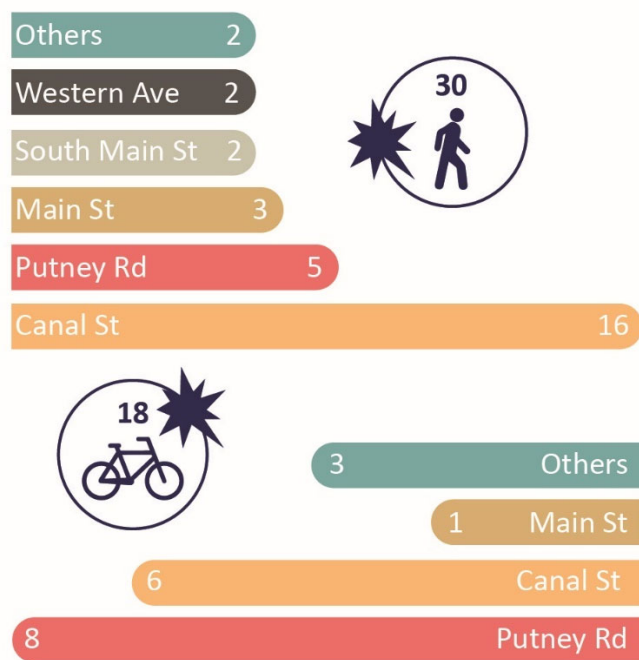




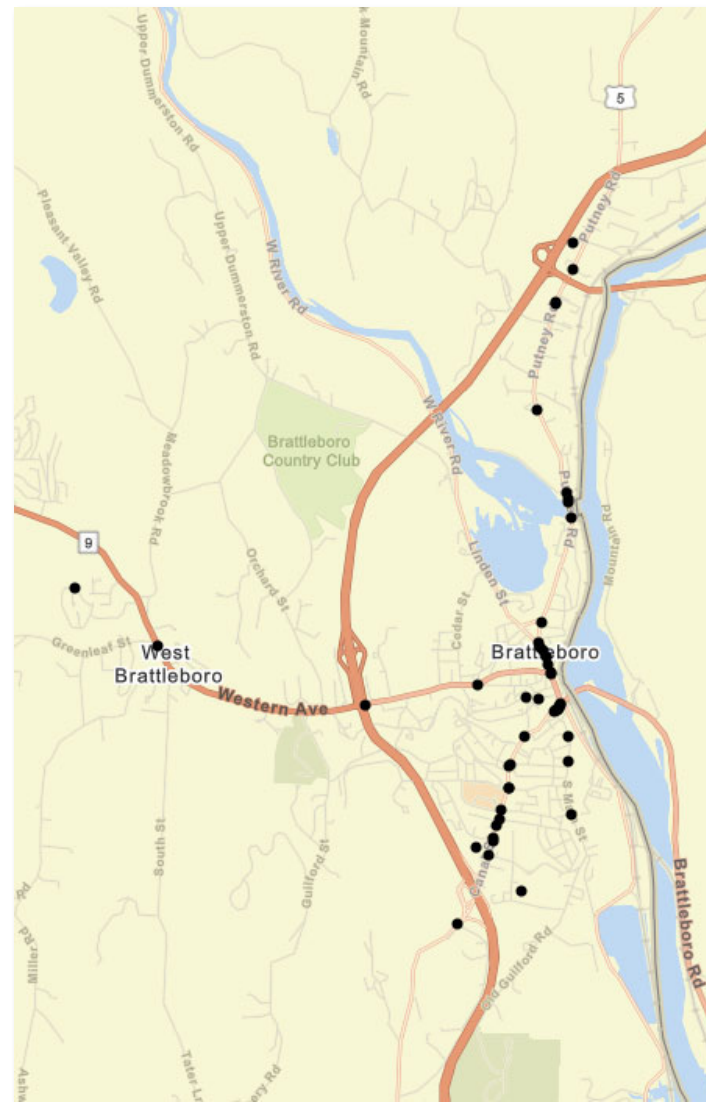
Figure 2 - Brattleboro's Existing Pedestrian Facilities



In the last five years, 18 crashes involving a bicycle and 30 crashes involving a pedestrian were reported. The majority of bicycle-involved crashes occurred on Putney Road and Canal Street. Comparatively, the highest concentration of pedestrian-involved crashes occurred on Canal Street.<sup>3</sup> Pedestrians and bicyclists are, however, vulnerable roadway users and are more likely to suffer serious injuries or die because of their lack of protection. The presence of safe streets and crossings is a key factor in people's decision to walk or bike, and in their survivability.



*Pedestrian and Bicycle-Involved Collisions in Brattleboro (2018-2022)*



<sup>3</sup> "VT Public Crash Data Query Tool," VT Agency of Transportation data from (1/1/18 - 12/31/22), retrieved 2/23/23, <http://apps.vtrans.vermont.gov/CrashPublicQueryTool/>

To understand Brattleboro's current conditions and needs, the Walk/Bike Action Plan's Core Team set out from the Municipal Center on e-bikes borrowed from Brooks Memorial Library and rode a six-mile loop through Brattleboro, using Main Street, Flat Street, Frost Street, Union Street, Western Avenue, Guilford Street, Maple Street, and Canal Street. With a baseline understanding of street conditions, grade, and safety, the team then mapped the existing sidewalk data, bicycle facilities, and locations of new bicycle and pedestrian facilities planned to determine where gaps in facilities may be filled.

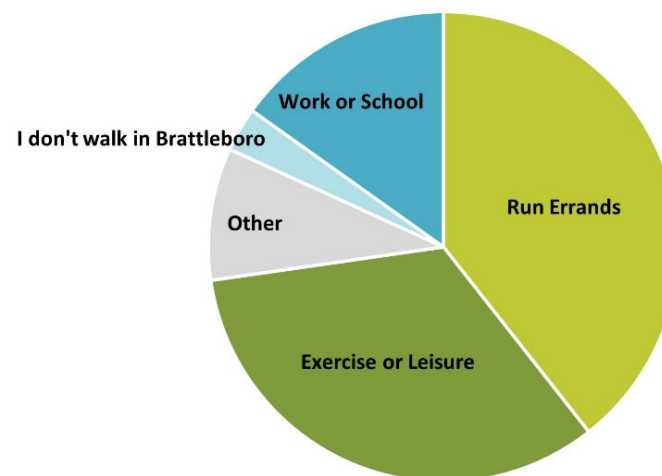


*The Walk/Bike Action Plan's Core Team assessing Brattleboro on e-bikes rented from Brooks Memorial Library to kick-off the project.*

## 2.1 GETTING AROUND BRATTLEBORO

At the first Walk/Bike Action Plan public meeting, participants were asked a series of polling questions to determine how they traveled to and through town. Many people who walk in Brattleboro do so to run errands or for exercise or leisure, but work or school are also important destinations Brattleboro residents reach on foot. People who bike in Brattleboro also do so for running errands – with “exercise or leisure” and traveling to work or school almost tied for second place. Fewer people who participated in the first public meeting bike in Brattleboro than walk. Fewer than half of the public meeting participants use the bus, with the majority using it to run errands. Of those who ride the bus, more bike to it than walk. The questions and their results follow:

*When you walk in Brattleboro, where are you going?*

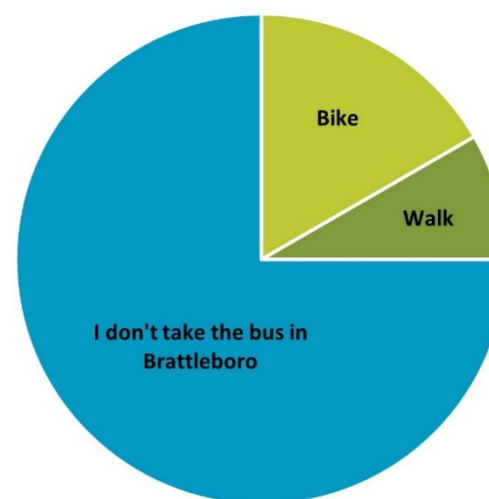




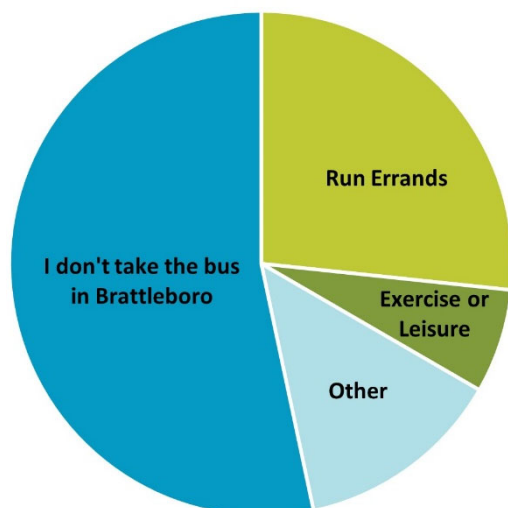
*When you bike in Brattleboro, where are you going?*



*How do you get to the bus?*



*When you take the bus in Brattleboro, where are you going?*



## 2.2 TRANSIT

Although transit was not a focus of this study, it must be mentioned as it supports walking and biking by enabling area residents to access destinations without a car – supporting walking and bicycling as viable transportation modes. In fact, the MOOVer, which provides local and regional transit in Brattleboro for Southeast Vermont Transit (SEVT) has bike racks on its buses – as some bus stops have racks as well. The MOOVer has not charged a fare for its service since April 2020 as a response to the COVID pandemic, and plans to remain fare free in Brattleboro. All SEVT's routes are rebounding after COVID. Fiscal Year (FY) ridership data for the MOOVer for 2022 (July 2021 to June 2022) and the first half of FY 2023 (July through December 2022) is shown on the next page.

Route	JULY 2022 - DEC 2022	JULY 2021 - JUNE 2022	DIFFERENCE	% CHANGE
<b>Brattleboro Fixed Routes</b>				
<b>White Line</b>	20,412	10,615	9,797	92%
<b>Red Line</b>	23,222	17,651	5,571	32%
<b>Blue Line</b>	7,297	4,244	3,053	72%
<b>Regional Routes</b>				
<b>Wilmington</b>	6,615	5,750	865	15%

Year to year comparisons of ridership data will reveal trends and anomalies in usage of the system. For example, from July 2021 to June 2022, there was an almost 100% increase in ridership on the White Line due to an increase in the number of unhoused people moving into hotels along the route. The Wilmington – Brattleboro Route is rebuilding after COVID and the closure of Marlboro College – which used to provide a good quantity of riders.

SEVT has made their system easier to use by providing bus route and schedule information within the *transit* smartphone app. Bus locations can now be seen in real-time, which helps riders decide whether they need to go outside and wait for the bus – or can stay indoors where it is more comfortable and/or safe because they can anticipate actual arrival time. Real-time transit information values a rider’s time and helps increase ridership by making transit a more viable option. It is also becoming easier to integrate bus travel with other modes of transportation, with the addition of bike lanes and Brattleboro’s downtown bike shop shown in the app as well.

If the Town of Brattleboro decides to establish reductions in single occupant vehicle (SOV) use as a performance measure, those changes can be tracked annually through a transportation survey – such as the one created and distributed by the Brattleboro Coalition

for Active Transportation (BCAT) in 2020 – included in the Appendix. Performance Measures are explained in more detail in Chapter 5.

## 2.3 WALKING AND BIKING NETWORK

Among the most frequently mentioned issues concerning safe walking and biking routes in Brattleboro was the speed of traffic.

Bicyclists are vulnerable road users and can be seriously injured in a minor collision. Most fatal and serious injury bicycle crashes occur outside of intersections because of the speed and size differential between cars and bicycles.

For many bicyclists, traveling in close proximity to fast moving traffic is uncomfortable. The quality of a bike facility generally increases as the space allocated to it expands, because this allows for more separation and provides increased maneuvering space. The level of comfort a cyclist feels while riding on roads is correlated to the posted speed limit, number of lanes, condition of the road, topography, existence of on-street parking, and type of facilities.

According to Federal Highway Administration’s Bikeway Selection Guide, between 4% and 7% of the total population are in the “highly confident” category and are willing to ride in traffic on roads without bike lanes. Another 5% - 9% are “somewhat confident.” The more than 50% who fall in the category of “interested but concerned” may use a sidewalk even if there is a bike lane, and prefer off-street or

separated facilities, or quiet residential roads.<sup>4</sup> The large group of people in the “interested but concerned” category is an opportunity to increase the cycling population by providing safer facilities.

Pedestrians are particularly vulnerable along roadways and at crossing locations. The severity of a pedestrian injury is directly related to the speed of the vehicle at the point of impact. Pedestrian safety can be more tenuous in winter when sidewalks aren’t cleared in a timely manner. The *Sidewalks Winter Plow Route* map in the Appendix shows which ones the Town of Brattleboro clears.

Pedestrians should have continuous, direct, and separated facilities that are safe and accessible for all users year round. Telephone poles obstruct sidewalks and/or the road’s shoulder in parts of Brattleboro, impeding safety and accessibility for both pedestrians and cyclists on Putney Road between the West River/Marina and downtown, and on the newly improved South Main Street sidewalks.

Even as new bike lanes, sidewalks, crosswalk enhancements, and other improvements are added to Brattleboro’s transportation network, it will be critical to also include measures that calm traffic.

Traffic calming is the combination of horizontal deflection, vertical deflection, and street width reduction measures that reduce motor vehicle speeds, alter driver behavior, and improve conditions for non-drivers. Traffic calming measures should be incorporated on local streets, particularly along the streets that shared lanes are proposed on, to calm traffic and increase comfort for pedestrians and bicyclists.

Traffic calming measures can be combined at intersections to provide gateways into Brattleboro’s neighborhoods – reducing speed and increasing comfort through physical and psychological means. The combination of traffic calming measures and surface alterations (like textured paving) can provide visual and tactile cues that they are entering an area where pedestrians and bicyclists are active.

VTrans and the town both have bicycle and pedestrian improvement projects pending. **Figure 3** displays upcoming bicycle improvement projects and **Figure 4** shows upcoming pedestrian improvement projects. All of the Town of Brattleboro’s (as opposed to VTrans’) sidewalk projects involve sidewalk replacement, widening where possible. Please see the sidewalk condition map in the Appendix.

**Bridge 54 Project:** This VTrans project will replace the Whetstone Brook bridge along Western Avenue (Route 9) located just west of Melrose Street. Because of the age of the structure and its current conditions, the project will include a full bridge replacement on the existing alignment with a new widened conventional bridge. The new bridge will have 11-foot travel lanes with 10-foot shoulders, resulting in a curb-to-curb width of 42 feet. Additionally, a 5-foot sidewalk will be constructed on both the upstream and downstream sides of the new bridge to connect to the existing corridor facilities.

This bridge is currently a critical pinch point along Western Avenue, limiting the expansion of pedestrian and bicycle facilities along the corridor. It will be widened by over 10 feet, providing enough space for improved pedestrian facilities and separate on-road bicycle facilities. Bridge construction is expected to begin in summer of 2025.

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<sup>4</sup> “Bikeway Selection Guide,” Federal Highway Administration, retrieved on 3/9/23, [https://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/docs/fhwas18077.pdf](https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwas18077.pdf).

Figure 3 - Upcoming Bicycle Improvement Projects

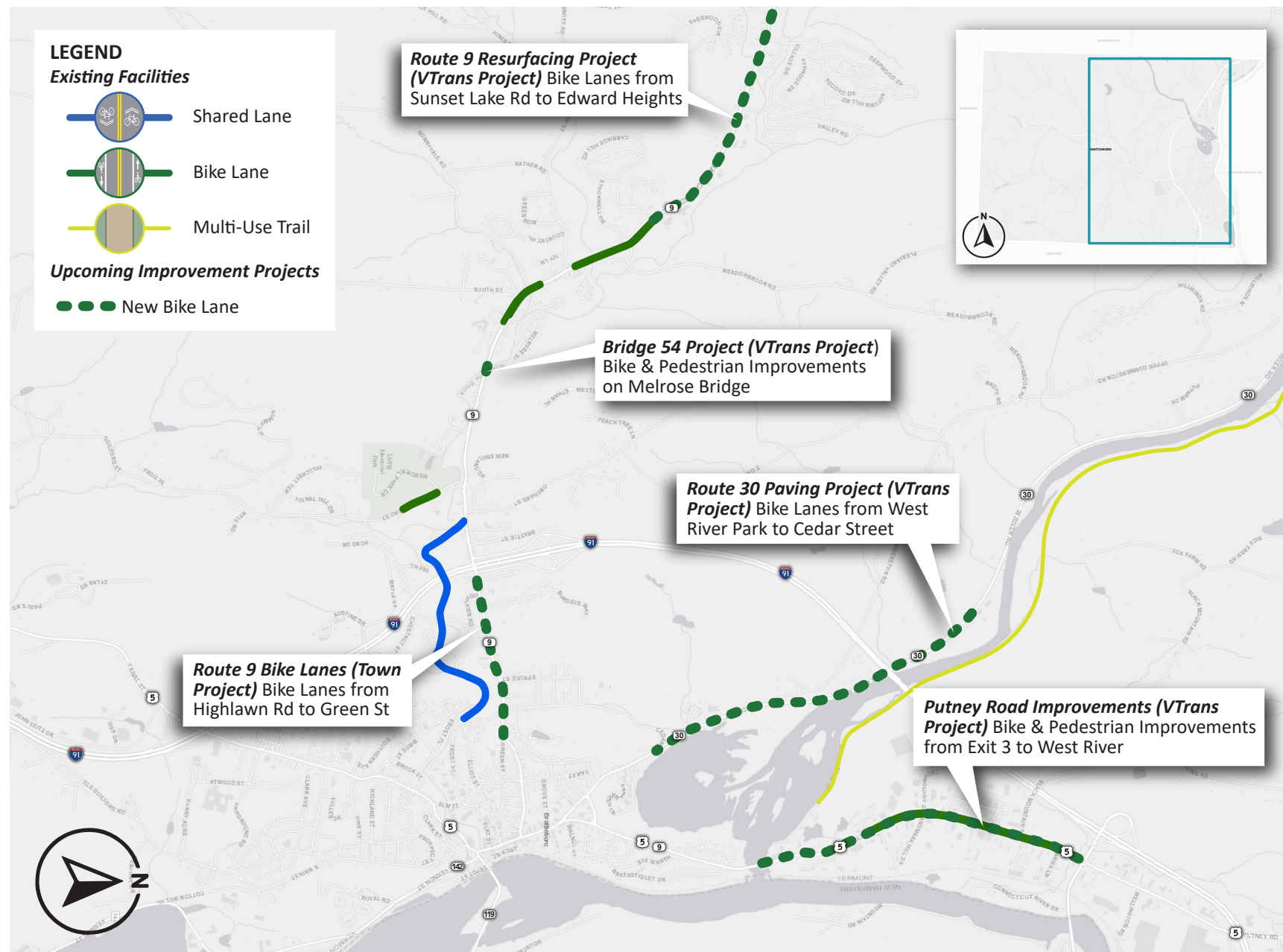
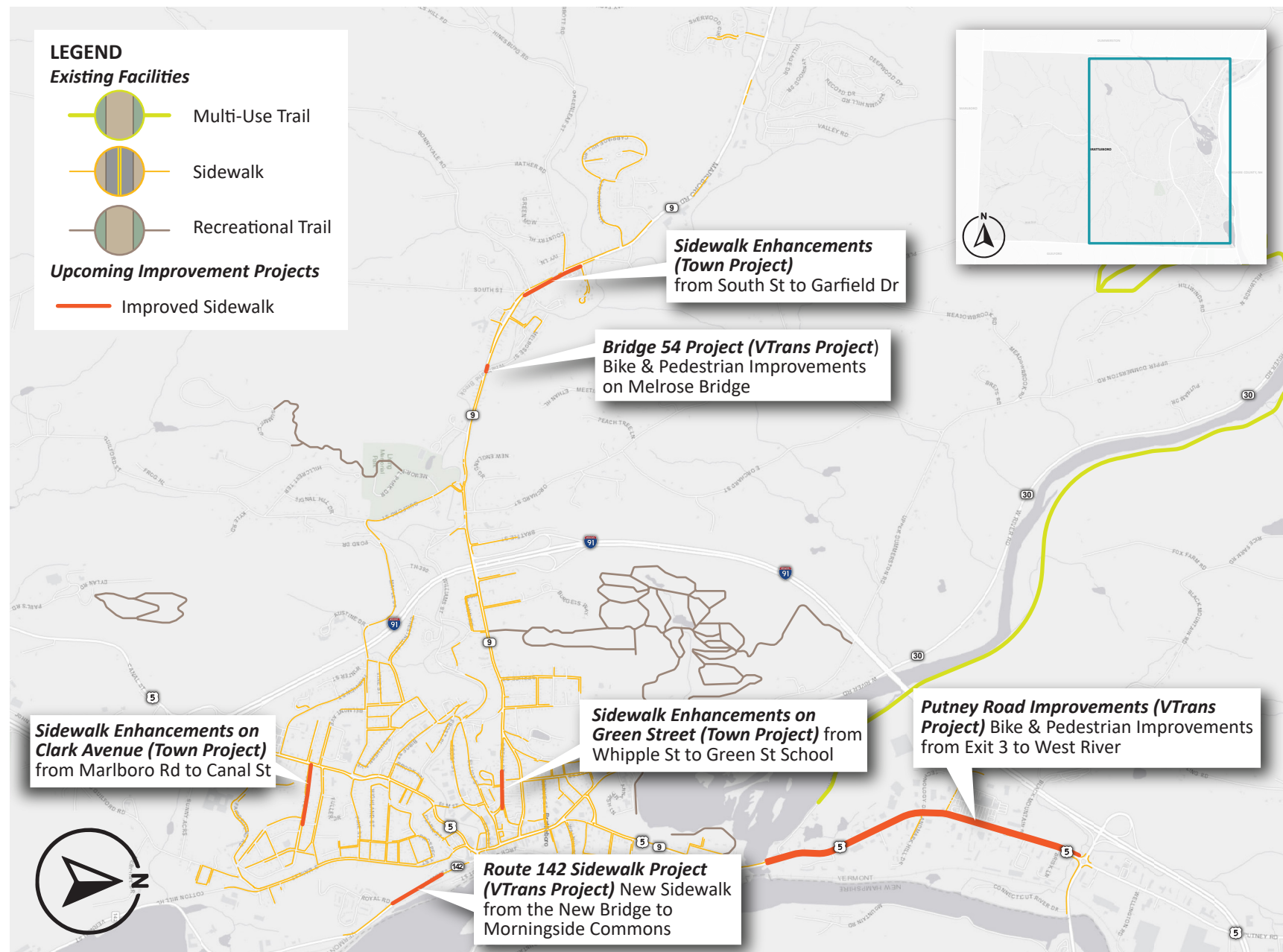


Figure 4 - Upcoming Pedestrian Improvement Projects





**Route 9 Resurfacing Project:** As part of a large VTrans resurfacing project along Route 9 from Wilmington to Brattleboro, Western Avenue will be repaved west of Edward Heights. The project will include the replacement and maintenance of existing guardrail runs, some culvert replacements, center line rumble strip installations, and signs along the corridor will be replaced and upgraded to meet current standards. Additionally, Western Avenue between Edward Heights and Sunset Lake Road will be restriped to include bike lanes. The bike lanes will connect to the existing bike lanes on Western Avenue east of Edward Heights and begin to create a continuous bicycle facility on Western Avenue (Route 9) in Brattleboro. Pedestrians are likely to use the bicycle lanes in this area – benefiting from a wider travel area that provides more separation from car and truck traffic. Construction is scheduled to start in 2025.

**Route 30 Paving Project:** As part of a large VTrans repaving project, Route 30 between West River Park and Cedar Street will be restriped and repaved. As part of the project, sidewalk ramps and pedestrian crossing infrastructure will be replaced and upgraded as necessary to meet current Americans with Disabilities Act (ADA) standards, signs will be replaced and upgraded as necessary to meet current specifications, and shoulder berms that have built up will be removed to facilitate better drainage. Additionally, when restriped, bike lanes will be added to Route 30 south of West River Park. The bike lanes will provide an improved bicycle connection between West River Park and Brattleboro Common. The paving of Route 30 and bike lanes to Cedar Street are expected to occur in summer of 2023.

**Brattleboro-Hinsdale Bridge and Route 142 Sidewalk Projects:** Under the Brattleboro-Hinsdale Bridge Project, the New Hampshire Department of Transportation and VTrans will replace the existing twin truss bridges on Route 142 over the Connecticut River with a

new structure south of the existing river crossing on Route 142 near Royal Road. The new bridge will change traffic circulation at the intersection of Main Street, Canal Street, Bridge Street, and Vernon Street. Bridge Street will become a low traffic dead end street, creating the opportunity for pedestrians and bicyclists to reclaim it. The project is mostly being managed and funded by NHDOT. Construction is anticipated to be completed in Fall 2024.

To accompany the Brattleboro-Hinsdale Bridge Project, VTrans will install approximately 1,200 feet of new sidewalk on Vernon Street (Route 142) from the new bridge to Morningside Commons. The project will also include pedestrian crossings and signal improvements at the intersection of Vernon Street (Route 142) and Royal Road. Preliminary plans have been completed, and construction is to be scheduled between Fall 2024 and Spring 2025.

**Putney Road Improvements:** This VTrans project will reconstruct Putney Road (U.S. Route 5) from the existing roundabout at Exit 3 to the West River. The project will include continuous bike lanes, sidewalks on both sides of the road, and four new roundabouts. Preliminary Plans have been completed but there is currently no funding assigned and no construction timeline.

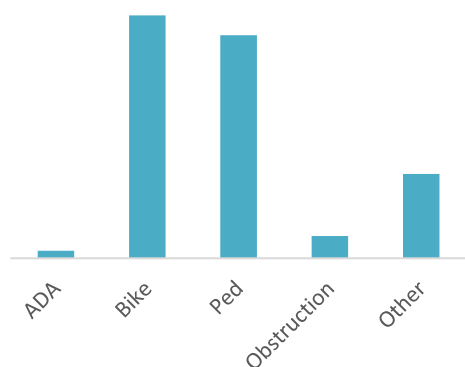
**Route 9 Bike Lanes:** This Town project will install the Phase 1A improvements from the Route 9 Scoping Study. The project will reconfigure Western Avenue to eliminate a parking lane and add 5-foot-wide bike lanes from Highlawn Road to Green Street. New crosswalks will be added at Green Hill Parkway, Speno Court, and Green Street. The existing Union Street crosswalk will be upgraded.

**New Sidewalks on Route 9, Green Street, and Clark Avenue:** These Town projects will improve sidewalk on Western Avenue between

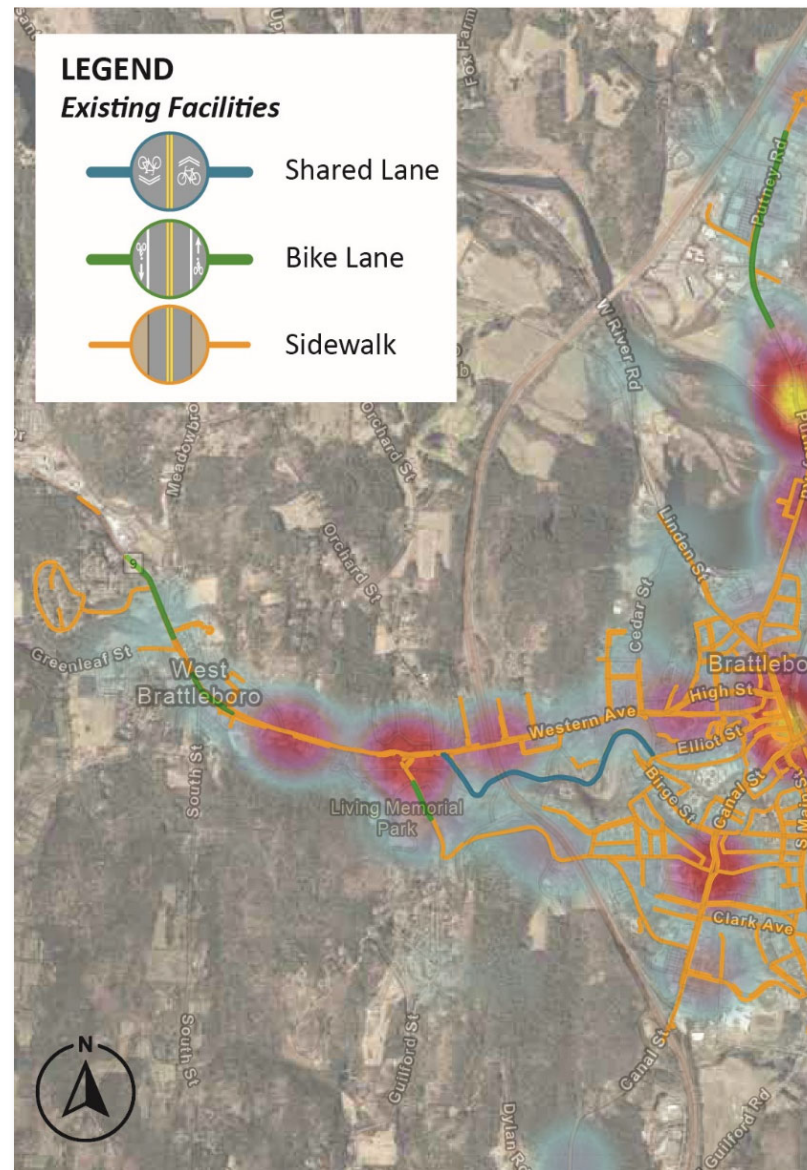
South Street and Garfield Drive, Green Street between Whipple Street and Church Street, and Clark Avenue between Marlboro Avenue and Canal Street.

## 2.4 COMMUNITY IDEAS AND COMMENTS

To gain an understanding of the community's ideas and concerns with Brattleboro's existing bicycle and pedestrian infrastructure and its condition, an interactive mapping tool was provided on a Story Map website. Participants were able to put points on an online map to show areas they wanted to see improved. A comment could be supported or "upvoted," and the bicycle- and pedestrian-related comments were mapped. All of the public comments and meeting notes are provided in the Appendix. In addition to these comments provided by the Brattleboro community using the online interactive mapping tool, comments that have been received through the [Town of Brattleboro's Safety Action Form](#) (linked from the Town website's home page) were also reviewed by the project team and taken into consideration as the recommendations were crafted.



*Public Input by Comment Type and Location*



*Heatmap Showing Concentration of Comments Received*



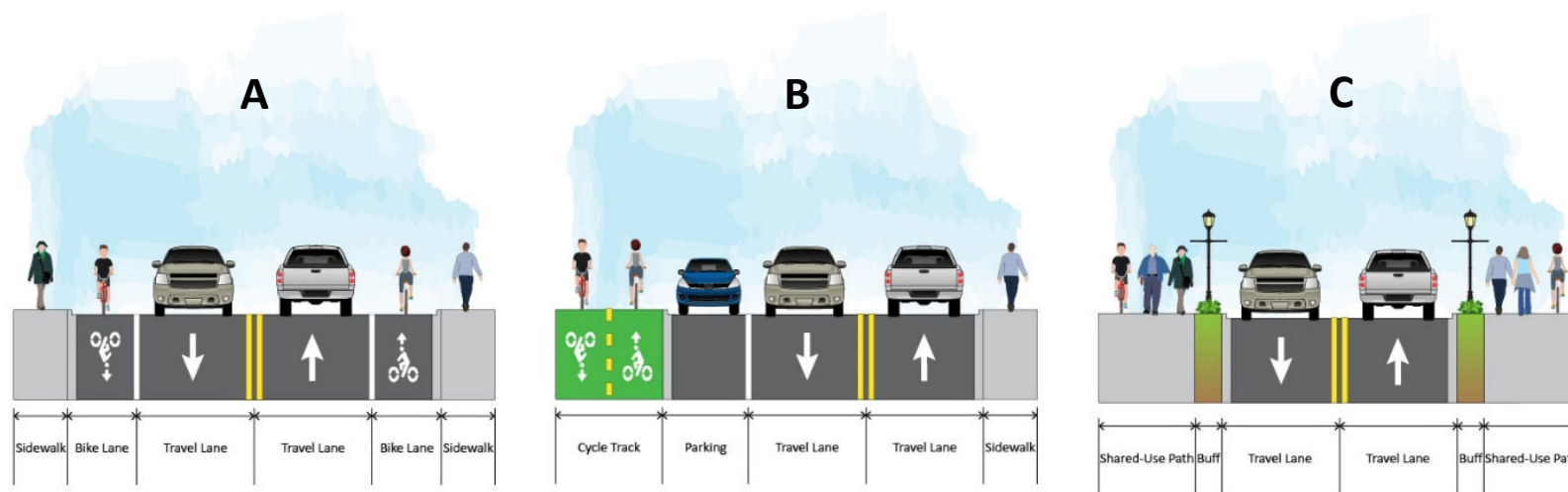
Among the most supported comments relating to biking in Brattleboro were:

VOTES	DESCRIPTION
20	The stretch of <b>Putney Road near the Marina is terrifying when biking or on foot</b> . Any kind of improvement would be great!
15	<b>Narrow Bridge on Western Avenue over the Whetstone Brook</b> - forces bikes to go in road, dealing with impatient cars, trucks
14	<b>Western Ave and Interstate-91</b> (I-91) entrances and exits
13	Heading <b>south on Putney Road after crossing the Veteran's Memorial Bridge</b> , road is <b>very narrow with storm drains and telephone poles</b> , also doesn't help that it is uphill. Very dangerous part of the road for bicycles. Many drivers are impatient. I haven't been hit....yet.
12	The <b>rotary near Exit 3 is a pretty scary place for bicycles</b> .
11	<b>VT Deli area is very dangerous</b> for riders and walkers. Solution southbound high priority for the plan
10	<b>Gravel collects on Town Crier Drive at Putney Road</b> and makes it very dangerous for bicycles about to enter the bicycle lane.
10	Malfunction Junction is super dangerous for bikers. As is Main St. in general. <b>I want to bike downtown, but it feels too risky</b> .
10	The stretch of <b>Western Avenue between the covered bridge and farmers market is treacherous for bikes</b> . Not safe or practical to cross/recross so it's against traffic. Can a bike path be installed from bridge to parking lot?

Among the most supported comments relating to walking in Brattleboro were:

VOTES	DESCRIPTION
13	<b>Crossing Canal St. between Pine and Maple</b> . Narrower St, center island, cars travel fast, and it is a very wide street. Currently no x-walk.
9	<b>Traffic often moves way too fast on Green Street</b> between High and Whipple. Speeding cars ignore crosswalks. Lots of children around.
8	The area near the <b>Marina on Putney Road needs to be made pedestrian and bike safe</b> .
8	<b>People fly down Green Street</b> , coming from Route 9 and/or I-91. It's dangerous for the many folks who walk/bike around here, especially all the kids. Speed bumps would really help.
7	<b>Missing sidewalk on Wilsons Wood Road at Fairground Road</b> , lots of kids walking in road shoulder going to school
7	<b>Make the Bridge Street/Vernon Street area more pedestrian oriented</b> when the new bridge opens
7	<b>Better lighting and safety on Western Ave!</b> It's extremely dark on the sidewalks and I do not feel safe being out after dark especially with all the drug traffic on foot between downtown and West B fire station.
7	Traffic <b>turning into Deli</b> is an invitation to <b>many drivers to pass on the right</b> , jeopardizing walkers and bikers
6	<b>Crosswalk at Brookside Drive on Western Avenue needs blinking warning light</b> same as covered bridge crossing. Very dangerous crossing - people seldom stop and sometimes when they do, a car behind will cross lanes and try to pass not realizing people/dogs are in crosswalk
6	<b>The Wantastiquet/Harris/Tyler Street area</b> is one of the most popular walking destinations in Brattleboro. <b>A crosswalk, ideally with a blinking light</b> , would make this crossing less dangerous. People cross here to walk the neighborhood and access West River

When shown possible options for bicycle facilities on Canal Street, participants at the first Walk/Bike Action Plan public meeting overwhelmingly chose Option A from the choices below:



Option A shows two vehicle travel lanes, and bike lanes and sidewalks on both sides of the street. Option B showed a 2-way bike lane on one side of the street, parking lane, two vehicle travel lanes, and sidewalk on the other side of the street. Option C showed shared-use paths (wide enough for bicyclists and pedestrians) on both sides of Canal Street - with a buffer between the path and the two vehicle travel lanes. Only Option B retained any on-street parking.

*Responses to the question "Which of the following 3 options do you prefer for Canal Street?"*

### 3. PUBLIC MEETINGS

Two public meetings were held on the Brattleboro Walk/Bike Action Plan: the first on September 22, 2022, and the second on November 29, 2022. Both meetings were conducted by Zoom – with the option to participate in person at the Selectboard Meeting Room at the Municipal Center.

Highlights of **the first public meeting** included the introduction of a draft vision statement, the polling questions (shown in Section 2), a presentation of the existing bicycle and pedestrian infrastructure and its condition, and the project’s interactive mapping tool that allowed participants to put points on an online map to show areas they wanted to see improved. Meeting attendees were shown how the public comments on bicycle and pedestrian infrastructure aligned with upcoming projects in Brattleboro - including the bicycle and pedestrian improvements planned for Putney Road from West River to the Exit 3 roundabout, as well as possible improvements on Western Avenue/Green Street from Edward Heights to High Street, and how to accommodate bicycles and pedestrians on Main Street.

Brandy Saxton of PlaceSense added more explanation of bicycle and pedestrian connection options through the Bridge Street/Main Street/Canal Street area, based on work conducted in 2019/20 for the Brattleboro Downtown Plan.

Canal Street was also discussed, and some new design options for Canal Street that would better accommodate bicyclists and pedestrians were presented – as shown in the previous section.

BRATTLEBORO

# WALK/BIKE ACTION PLAN

## PUBLIC MEETING

### SEPT. 22 • 6:30-8PM

We have received 200+ comments thus far, and we're looking for more input! Join us at a virtual public meeting on Sept. 22 from 6:30-8 pm for a discussion of locations in Brattleboro most in need of attention from a pedestrian or bicyclist's perspective – and some potential solutions. The meeting will take place on Zoom.

If you do not have access to a computer or phone to join the meeting, you may participate in person in the Selectboard Meeting Room at the Municipal Center.



**ZOOM LINK:**



MEETING ID: 829 2453 3273  
PASSWORD: 005853

CALL INTO THE MEETING: 1-877-853-5247 • MORE INFO: [HTTPS://ARC.GJS/10E04Q](https://arcg.js/10E04Q)







[WWW.BRATTLEBORO.ORG](http://WWW.BRATTLEBORO.ORG)

*Flyer For the First Public Meeting*

The meeting concluded after an explanation of the criteria for prioritizing projects: safety, connectivity, equity, feasibility, and cost; a discussion of connectivity in the context of Brattleboro's destinations; and discussion of the cost of bicycle and pedestrian projects relative to the Town's budget.

**The second public meeting** began with some context for the specific recommendations being made, the timeframe for making improvements (short-term vs long-term), and cost considerations.

The existing condition of Brattleboro's bicycle infrastructure, planned improvements, and recommended short- and long-term improvements were presented on maps, facilitating a good deal of discussion from participants. The grant and other funding options available to pay for these improvements were discussed at the end of the presentation component of the meeting. Both federal and state funds are available, and the American Rescue Plan Act of 2021 (ARPA) funds the Town received could potentially be used for improving bicycle and pedestrian safety, as could bonding.

Brandy Saxton, of PlaceSense, explained that most grants require a 20 percent match, so having a fund available for matching grants turns each dollar Brattleboro spends into five dollars' worth of bicycle and pedestrian improvements.

## SHORT-TERM IMPLEMENTATION

1. Design ALTA's proposed improvements for the High Street and Green Street intersection
2. Design intersection safety improvements at the intersection of Canal Street at South Main Street
3. Design the conversion of Flat Street to one-way westbound with two-way bike lanes
4. Design intersection safety and parking improvements at the intersection of Western Avenue and Williams Street
5. Design intersection safety improvements at the intersection of Williams Street, Elliot Street and Frost Street
6. Design intersection safety improvements at the intersection of Frost Street at Elm Street
7. Design intersection safety improvements at the intersection of Church Street at Elliot Street
8. Design and install trail signage and pavement markings on Spring Tree Road to extend the West River Trail to Putney Road
9. Restripe Western Avenue and Green Street with ALTA's short-term bicycle improvements, install the intersection improvements at High Street and Green Street and at Western Avenue at Williams Street, and install crosswalk enhancements at Brookside Drive, George F. Miller Drive, and at the Post Office
10. Restripe South Main Street to remove on-street parking and add bike lanes and install the intersection improvements at Canal Street and South Main Street
11. Design and install sharrows and bike boxes at the signalized intersections on Main Street from Green Street to Canal Street
12. Install sharrows on Frost Street, convert Flat Street to one-way westbound and install two-way bike lanes, install the intersection improvements at Williams Street, Elliot Street and Frost Street and at Frost Street and Elm Street
13. Install sharrows on Church Street, Elliot Street, and Elm Street and install intersection improvements at Church Street and Elliot Street
14. Install sidewalk where missing on Fairground Road and Atwood Street

SLR

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14. Install sidewalk where missing on Fairground Road and Atwood Street

Design plans are likely starting soon

Flat Street, Frost Street, and Elm Street are likely being repaved next season

SLR

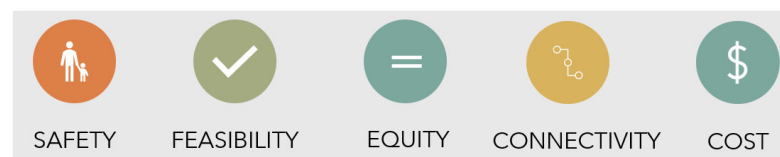
*Slides from the Second Public Meeting*

## 4. ACTION PLAN

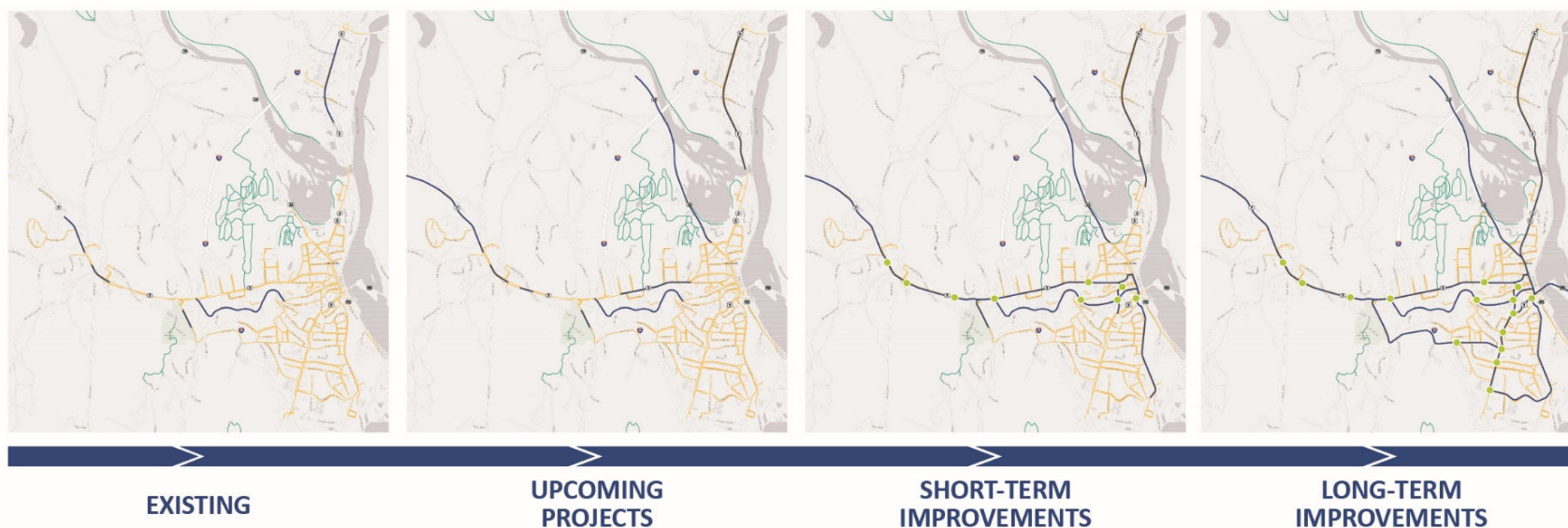
This Action Plan is a roadmap to help implement improved walking and biking infrastructure in Brattleboro. It is intended to help the Town of Brattleboro integrate walking and biking into their everyday decision-making process. Implemented over time, these recommendations will all work together to provide a safer, more comfortable, more connected, and more equitable transportation system for the people of Brattleboro.

The Action Plan recommends infrastructure projects, further studies, and policy changes that will assist in the creation of a multi-use transportation network that will respond to issues and concerns heard throughout the planning process. In general, the recommendations included seek to build upon what has already been implemented and studied to create continuous facilities, safe pedestrian crossings, and bicycle facilities of varying types. Proactive policy changes among the recommendations will help build and maintain the multi-use network.

Building a network of connected walking and biking infrastructure will take time. It is expected to be created over the next 10 years and be further improved incrementally, as opportunities arise. To help prioritize, the following criteria were considered:



Recommendations were then separated into short-term and long-term. In the short-term, the Action Plan's projects are easy to implement, critical to connect the existing and planned facilities, and important for safety. Long-term recommendations require additional planning and design before they can be implemented.





#### 4.1 FUNDING

The availability of town funds to unlock grants requiring a local match was carefully reviewed and discussed. The Town of Brattleboro uses the funds allocated in their annual budget to match grant funds, and/or pay for specific projects:

	FISCAL YEAR 2023	FISCAL YEAR 2024
Sidewalk Improvements	\$208,000	\$120,000
Bicycle Improvements	\$12,000	\$20,000

For reference, the recent quarter mile of sidewalk improvements on South Main Street cost \$239,869 (actual), and the cost of a quarter mile of bike lane striping, if no road widening is needed, is \$8,600 (average cost) according to the VTrans “Report on Shared-Use Path and Sidewalk Costs” (2020). Depending on the quality of paint used, bike lanes likely need to be re-striped every 3-5 years.

Potential funding sources for bicycle and pedestrian improvements in Brattleboro include:

FUNDING SOURCES	MAX. AVAILABLE	MATCH REQUIRED	DEADLINE
ARPA funds	\$3.4 million	N/A	N/A
Better Connections Grant	\$35,000 - \$67,500	10%	February 2023
RAISE Grant	\$1 million - \$45 million	20%	February 2023
Downtown Transportation Fund	\$100,000	50%	March 2023
VTrans Transportation Alternatives Program Grants	\$300,000	20%	November 2023
VTrans Bicycle and Pedestrian Program Federal Grants	\$25,000 - \$75,000	20%	July 2023
Mobility and Transportation Innovations (MTI)* - Small/Medium/Large Grants	\$10,000/\$50,000/\$100,000+	20%	August 2023
Vermont State Infrastructure Bank	N/A	10-20%	N/A
<i>Bonding – a 20-yr bond for \$100,000 requires annual repayment of \$7,000, \$500,000 requires annual repayment of \$35,000, \$1 million requires annual repayment of \$70,000 (bonding rate is based on interest rates in November 2022)</i>			

If the town bonded and put that money in a bike/walk improvement fund, those town dollars would be eligible for matching any sort of grant. Most state/federal grant programs match each dollar the Town of Brattleboro contributes with four dollars of state/federal money, thus turning each dollar Brattleboro spends into five dollars’ worth of bike/walk improvements.

#### 4.1.1 FUNDING SOURCE DESCRIPTIONS

**ARPA Funds** - The American Rescue Plan Act (ARPA) guaranteed direct relief to cities, towns, and villages in the United States in response to the COVID-19 Pandemic. Brattleboro received \$3.4 million in ARPA funds.

**Better Connections Grant** – This grant program is open to new applications biennially – and 2023 is an open application year. Municipalities compete for approximately \$200,000 in projects funds. The program funds physical master plans focusing on improved multimodal connectivity; active transportation and complete streets; access management; traffic calming; parking; wayfinding; rehabilitation of buildings; redevelopment of sites; housing; land use planning; stormwater management; and zoning bylaw and form-based code development. In addition to development of the master plan, the program can fund corresponding economic and marketing plans to ensure the market viability of the proposed improvements and inform the municipality's capital planning. Applicants can apply for additional funds to support projects that improve water quality. Contact: Jackie Cassino, (802) 272-2368, [jackie.cassino@vermont.gov](mailto:jackie.cassino@vermont.gov) or Richard Amore, [richard.amore@vermont.gov](mailto:richard.amore@vermont.gov)

Website: <http://vtrans.vermont.gov/planning/projects-programs/better-connections>

**RAISE Grant** - The Rebuilding American Infrastructure with Sustainability and Equity, or RAISE Discretionary Grant program, provides funding for projects that have a significant local or regional impact by building and repairing critical pieces of our freight and passenger transportation networks.

Eligible projects include multimodal, multi-jurisdictional projects that are more difficult to support through traditional DOT programs, and funding can be provided directly to any public entity, including municipalities, counties, port authorities, tribal governments, MPOs, or others in contrast to traditional Federal programs which provide funding to very specific groups of applicants (mostly State DOTs and transit agencies). This flexibility allows RAISE and traditional partners at the State and local levels to work directly with a host of entities that own, operate, and maintain much of our transportation infrastructure, but otherwise cannot turn to the Federal government for support.

Website: <https://www.transportation.gov/RAISEgrants>

**Downtown Transportation Fund** - State grants for municipalities to finance transportation-related capital improvements in support of economic development, within or serving a state designated downtown, including construction or alteration of roads and highways, parking facilities, pedestrian and streetscape improvement, rail or bus facilities or equipment, and underground relocation of electric utility, cable and telecommunications lines. The grant covers 50 percent of overall project costs up to a maximum of \$100,000 and municipalities with a designated downtown (which includes Brattleboro) are eligible. The application deadline occurs annually in March. Contact: Gary Holloway, (802) 522-2444, [gary.holloway@vermont.gov](mailto:gary.holloway@vermont.gov)

Website: <http://accd.vermont.gov/community-development/funding-incentives/downtown-transportation-fund>

**VTrans Transportation Alternatives Funds** - State matching grants for the construction, planning, and design of bike and pedestrian



facilities (on or off road), sidewalks, bicycle infrastructure, lighting, and others. The available funds range from \$50,000 to \$300,000. A local match of 20 percent is required for construction and scoping studies. Municipalities, transit agencies, school districts, and regional planning commissions are eligible. The deadline occurs annually in November. Contact: Scott Robertson, (802) 793-2395, [scott.robertson@vermont.gov](mailto:scott.robertson@vermont.gov)

Website: <http://vtrans.vermont.gov/highway/local-projects/transport-alt>

**VTrans Bicycle and Pedestrian Program Federal Grants** – between \$40,000 to \$60,000 is available for project scoping. The match requirement is 20 percent and cannot be matched with other federal funds. Eligible Activities include bicycle lanes, shoulders, sidewalks, pedestrian crossings, bike/ped intersection signals, ADA improvements, and shared-use paths. Funds are also available for Design/Construction projects – but they must first have a completed scoping/feasibility study.

**Mobility and Transportation Innovations (MTI)** grants – are managed by VTrans to support innovative strategies and projects that improve both mobility and access to services for transit-dependent Vermonters, reduce the use of single occupancy vehicles, and reduce greenhouse gas emissions. A 20 percent local match is required. Focal areas include: extension of existing Transportation Demand Management (TDM) programs; creation of new TDM programs and/or marketing of TDM Resources; expansion of first mile/last mile programs; support for employers and/or employees to adopt TDM measures (including incentives), in collaboration with an existing or new TDM program provider; and implementation of planned TDM programs (bike share, car share, micro-transit, etc.).

Funds can be used to match funds from other TDM grant awards; for TDM program delivery costs; or for micro-transit planning and implementation.

**Vermont State Infrastructure Bank** – A State low interest loan program for the construction or reconstruction of highways, roads and bridges, and pedestrian facilities, as well as certain capital facilities related to rail transit, public transit or electric vehicle charging stations. There is no minimum or maximum range of funds available. The loan term may not exceed 30 years and requires borrower equity of 10 to 20 percent. Municipalities, Regional Development Corporations, or political subdivisions of the state or private sector companies that have entered into a contract with a public authority are eligible. There is no deadline. Contact: Cassie Polhemus, (802) 828-5627, [cpolhemus@veda.org](mailto:cpolhemus@veda.org)

Website: <http://www.veda.org/financing-options/other-financing-option/state-infrastructure-bank-program>

## 4.2 POLICY AND PROGRAMMING DECISIONS

The recommendations for policies and programs are intended to build a culture of biking and walking in Brattleboro, advance economic development, and create safe and accessible streets. The new policies and initiatives that follow will assist in fully integrating walking, biking, and other more sustainable transportation options into routine municipal decision making and the travel choices of Brattleboro's residents and visitors.

#### 4.2.1 PLANNING SERVICES/DPW COLLABORATION

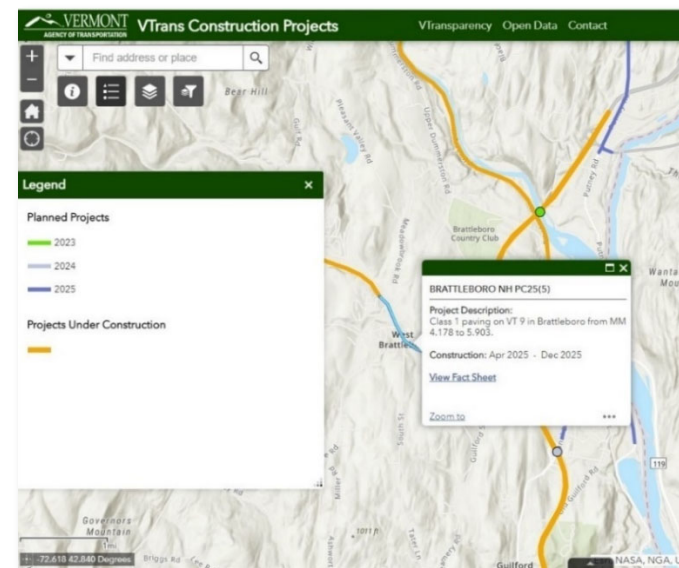
As mentioned in Chapter 1, some of the short-term improvements recommended in this plan will be implementable through a new collaboration between the Planning Services and Public Works offices relative to Brattleboro's annual paving plan. Whenever a road is resurfaced, pavement markings must be reapplied – providing an opportunity to also paint enhanced pedestrian and bicycle facilities and/or traffic calming measures.

Pavement resurfacing and overlays are an excellent opportunity to improve conditions for bicyclists and pedestrians. When an existing road is planned to be resurfaced, provisions for bicyclists and pedestrians should be included, where feasible. Before any construction, or reconstruction project, the Town of Brattleboro should review the cross-section of the roadway to determine if any modifications can be made to the pavement markings to install new or enhanced pedestrian and bicycle facilities and additional traffic calming measures. Possible restriping modifications include:

- Road Diet – Remove travel and/or parking lanes to install bike lanes, buffered bike lanes, or cycle tracks
- Lane Diet – Reduce the lane widths to install bike lanes or buffers adjacent to existing bike lanes
- Install intersection crossing markings at existing bike lanes
- Install sharrows
- Install crosswalk visibility pavement marking enhancements, including advance warning markings
- Install flush curb extensions or medians

#### 4.2.2 PLANNING SERVICES/DPW/VTRANS COLLABORATION

In the same vein as the Brattleboro Planning Services/Department of Public Works (DPW) collaboration, a relationship may be established with VTrans and the Regional Planning Commission (RPC) to ensure both agencies are aware of the Town's bicycle and pedestrian-related projects relative to the state road segments they intend to resurface in the near future. These projects are shown on VTrans' website, using their interactive construction project mapping tool. The accompanying project fact sheets state "sidewalk ramps and pedestrian crossing infrastructure will be replaced and upgraded to meet current ADA standards, as necessary. Some bicycle features may be added where applicable and feasible. Signs will also be replaced and upgraded as necessary to meet current specifications in the Manual on Uniform Traffic Control Devices (MUTCD)."



*Screenshot of VTrans' Interactive Construction Project Mapping Tool*

#### 4.2.3 BUILD A FUND WITHIN THE TOWN'S BUDGET USED TO MATCH GRANTS

Develop facilities survey that measures changes to the number of feet or miles of bicycle and pedestrian facilities on an annual basis and reports the numbers to the Selectboard – as a means of measuring progress.

#### 4.2.4 IDENTIFY PARTNERS FOR GRANT APPLICATIONS

In the same vein as a Planning Services/DPW collaboration, identifying partnership projects with additional other departments or agencies makes a grant application more competitive. Examples could include partnership with:

- Southeast Vermont Transit (SEVT) – For bus shelters
- Brattleboro Development Credit Corporation (BDCC) – For the multi-use pathway at Exit 1
- State of VT – Addressing the area north of Exit 3 and south of Exit 1 (also the Exit 2 and Black Mountain overpasses)

#### 4.2.5 PROGRAMMING

Infrastructure is only part of the equation when it comes to creating community walk- and bike-ability. Providing opportunities for people to either discover bicycle and walking paths on their own, or as part of a group activity, is an excellent way to change behaviors, habits, and minds. To enhance safety in areas of high concern, the Town may choose to continue efforts to make reflective gear available to bicyclists and pedestrians, as funding is available.

The **E-bike Lending Library at Brooks Memorial library** is a fun and free way for people who haven't tried biking in Brattleboro, because of its hills, to try it and likely get hooked. This is one of many small initiatives that when combined, stand to build a stronger constituency of cyclists and pedestrians. Other such initiatives include:

**Group bike rides or walking tours** – which could include something nationally recognized such as Critical Mass, or something that the Brattleboro Coalition for Active Transportation (BCAT) organizes, are a very good way to get people to “go a different way” and see their town from a different perspective.



*Example Of Bike/Walk Route Wayfinding in West Hartford, CT*

The **creation of one or more planned bike/walk routes** that connect important destinations in town and help people navigate around areas they don't feel safe is a relatively easy and inexpensive way to encourage people to walk and bike. West Hartford, Connecticut has a system of 4 such routes, coded by color, using a simple wayfinding system that is installed on existing signposts and supported by an online map. There has been discussion

throughout this planning process of a route that includes Wantastiquet Drive as part of the alternative way into downtown from the north – avoiding Putney Road. Other routes could be built around destinations such as Brattleboro Memorial Hospital, the High School, Living Memorial Park, the Farmers’ Market, etc.

The Town applied for **Bicycle Friendly Community (BFC) Status** in 2020 and received an Honorable Mention. BFC Bronze, Silver, Gold, and Platinum ratings are bestowed on a community that submits an application to the League of American Bicyclists (LAB) and can show that it meets the “5E Framework” of Equity & Accessibility, Engineering, Education, Encouragement, and Evaluation & Planning. Although the 2020 application was unsuccessful, the process of applying resulted in this valuable feedback for Brattleboro, suggesting what measures it could undertake to receive bronze status:

- » Develop a design manual for bike facilities that meets current national standards or adopt the FHWA’s Small Town and Rural Multimodal Network Guide. This will make it easier for town staff to propose and implement bicycle facility designs that have been shown to improve conditions for people who bike in other similar communities throughout the United States. Ensure that your community follows a bicycle facility selection criterion that increases separation and protection of bicyclists based on levels of motor vehicle speed and volume.
- » Increase the amount of high-quality bicycle parking throughout the community, and work to upgrade the quality of existing bike parking. Develop community-wide Bicycle Parking Standards to ensure that Association of Pedestrian & Bicycle Professionals (APBP)-compliant bicycle parking is available in areas near popular

destinations, transit stops, and urban activity centers. (See [www.apbp.org/bicycle-parking-solutions](http://www.apbp.org/bicycle-parking-solutions)).

- » Develop a program (e.g., publicly funded, public-private partnership, or development regulation) that provides or increases bike parking at key destinations and activity centers, such as schools, parks, and local businesses.
- » Bicycle safety education should be a routine part of education for students of all ages, and schools and the surrounding neighborhoods should be particularly safe and convenient for biking and walking.
- » Work with local bicycle groups and interested parents to create Safe Routes to School programming for all schools.
- » Increase the number of local League Cycling Instructors (LCIs) in your community, either by hosting an LCI seminar or sponsoring a Town staffer or local bike advocate to attend an existing seminar elsewhere. Having several active instructors in the area will enable you to expand cycling education for youth and adults, recruit more knowledgeable cycling ambassadors, deliver Bicycle Friendly Driver education to motorists, and have experts available to assist in encouragement programs. Visit [www.bikeleague.org/ridesmart](http://www.bikeleague.org/ridesmart) for more information.
- » Create a signature annual event, such as an open streets event or annual ride. A signature annual event can be a catalyst for the creation of a culture that supports bicycling. Signature events can be based around iconic infrastructure or architecture, locally important businesses or celebrities, or other existing cultural touchstones.

» Increase the amount of staff time spent on improving conditions for people who bike and walk, either by creating a new dedicated position or expanding the responsibilities of current staff.

» Your application indicated that your community is currently creating a bicycle master plan. This is a great step to improving conditions for bicycling and institutionalizing processes for continual improvement. Your Bicycle Master Plan should take advantage of best practices that are applicable to a community of your size, including the use of separated bike lanes, targeted education programming, and demonstration projects to help the community understand possible bicycle facilities.

» Establish a dedicated annual budget for implementation of your Bicycle Master Plan, in addition to funding for ongoing bicycle programming and infrastructure development/ maintenance.

» Adopt a target level of bicycle use (percent of trips) to be achieved within a specific timeframe and ensure data collection necessary to monitor progress.

The Fall 2023 BFC submission deadline is August 30, 2023, with BFC awards announced in December 2023.

Thus far, Burlington, South Burlington, Montpelier and Essex Junction are the Vermont communities that have attained Bicycle Friendly Community status.



*The League of American Bicyclists' VT Rankings*

**Promote go! VERMONT and its services**, especially its [“Greener Ways to Go”](#) page.<sup>5</sup> This could possibly be linked from a new page about transportation options on the Town’s website, and promoted on social media.

<sup>5</sup> “Greener Ways to Go,” Go! Vermont, retrieved 3/9/23, <https://www.connectingcommuters.org/greener-ways-to-go/>



## 4.3 IMPROVEMENT RECOMMENDATIONS

The following proposed recommendations are infrastructure improvements and associated studies that will provide the Town of Brattleboro with the initial and incremental key steps in building a safe, comfortable, and connected bicycle and pedestrian network. The FHWA Bikeway Selection Guide provides three principles important in the creation of an effective interconnected network:

**Safety:** Roadway designs should be selected to reduce the frequency and severity of crashes and minimize conflicts between users.

**Comfort:** Bike and pedestrian facilities should be selected to minimize stress, anxiety, and safety concerns for the design user.

**Connectivity:** Trips within a bicycle and pedestrian network should be direct and convenient and offer access to all destinations served by the roadway network. Transitions between roadways and bike and pedestrian facilities should be seamless and clear.

The recommendations seek to complete that network with emphasis on these three principals. However, it is important to note that these improvement recommendations are just the start to a multi-use transportation network that will serve the needs of people of all ages and abilities. They are intended to work within the financial constraints of the community to provide connected facilities that can actually be implemented completely.

**Figure 5** displays the complete network of recommendations. As shown in the Figure, the short-term and long-term bicycle and

pedestrian recommendations will build upon each other and work with each other to create an initial safe, comfortable, and connected bicycle and pedestrian network. The proceeding sections will review the short-term and long-term networks in further detail.

### 4.3.1 SHORT-TERM NETWORK

The envisioned short-term network includes mostly restriping improvements, intersection safety enhancements, and crosswalk upgrades that build on what has already been implemented and what is planned to be constructed soon. They were advanced to the short-term network because they either already had some identified



resources, are relatively inexpensive, are possible within the existing roadway, and/or don't require a long time to complete. As such, the short-term network is anticipated to be completed within the next five years.

**Figure 6** displays the short-term bicycle recommendations and **Figure 7** displays the short-term pedestrian recommendations.

Figure 5 - All Network Recommendations

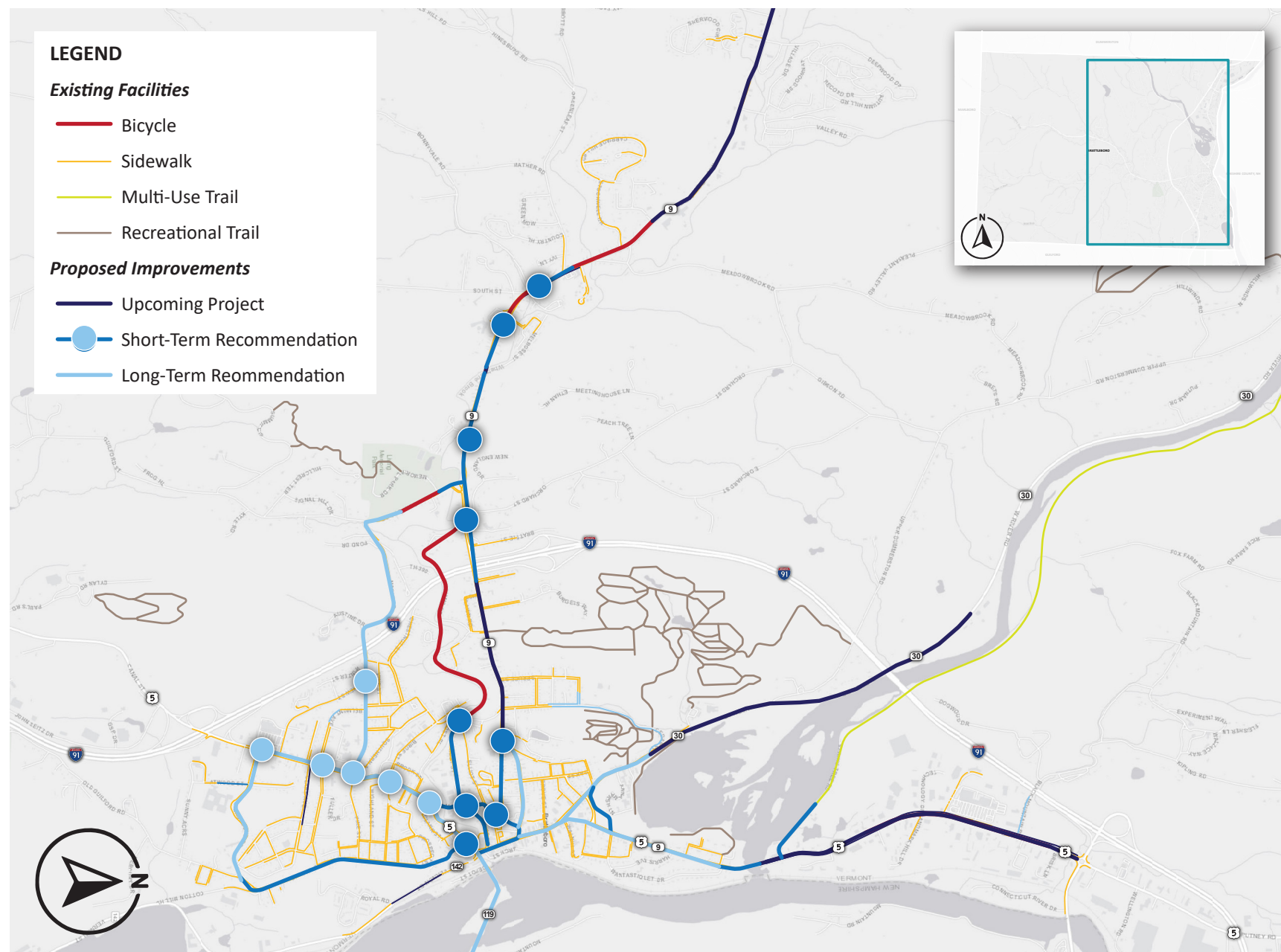


Figure 6 - Short-Term Bicycle Network

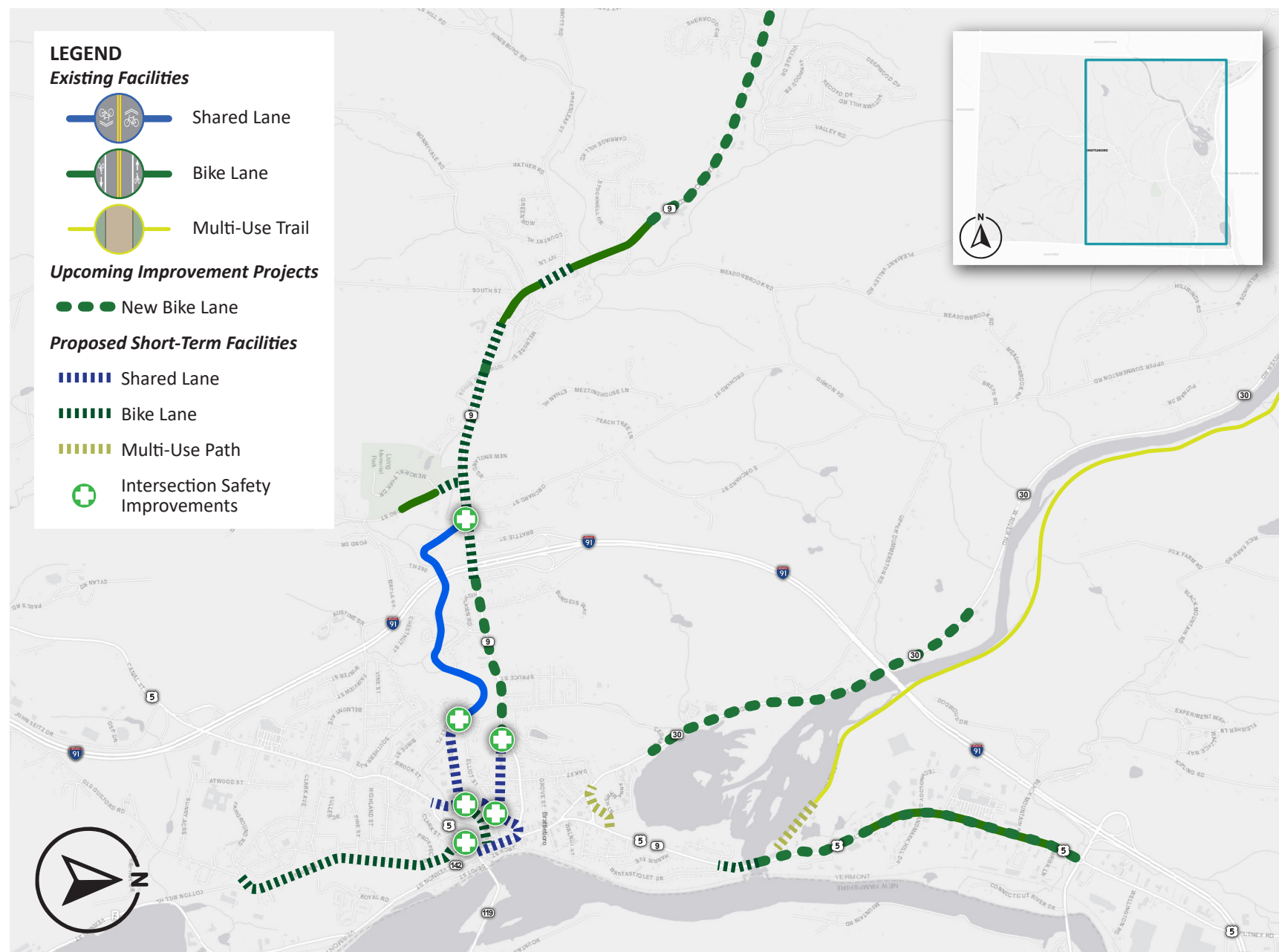
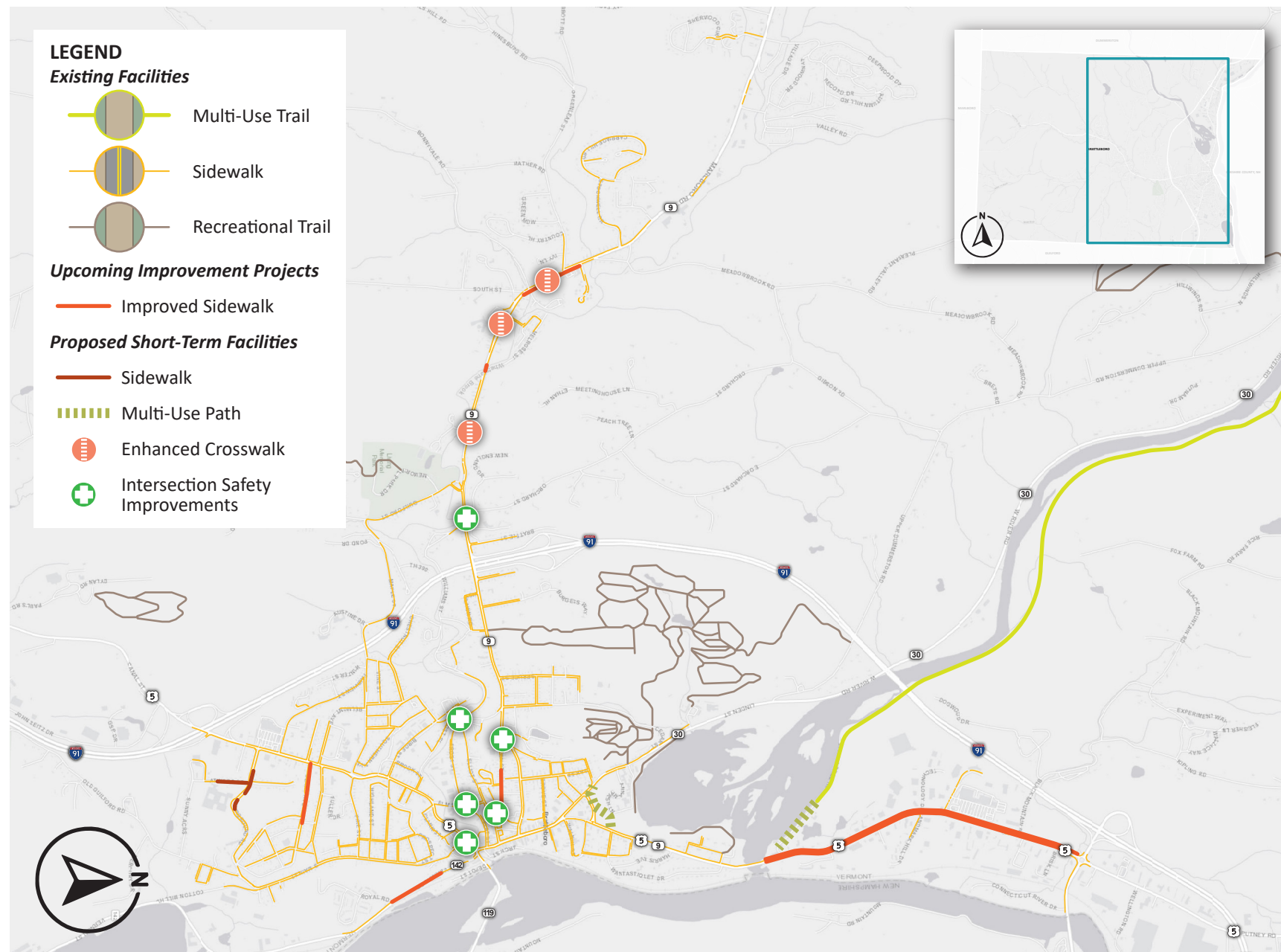


Figure 7 - Short-Term Pedestrian Network





## Short-Term Bicycle Recommendations

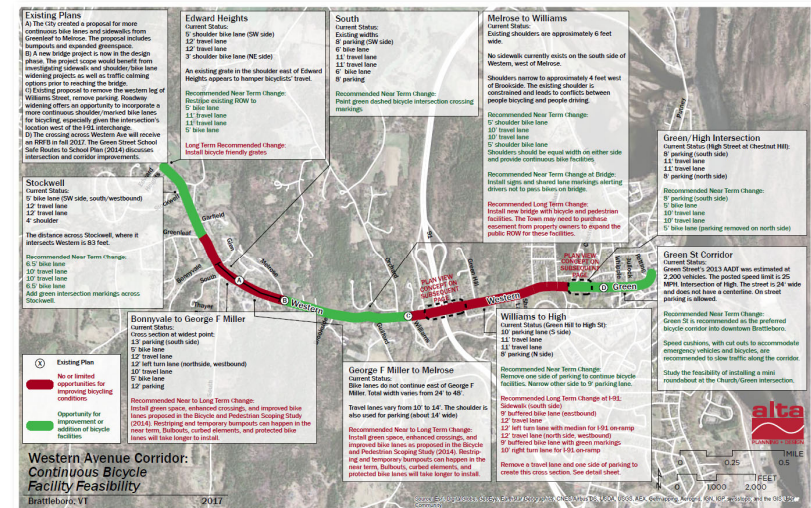
As stated previously, the envisioned short-term bicycle network includes mostly striping improvements for on-road bicycle facilities that can be accomplished within the existing curb-to-curb roadway width to create a quick, relatively low-cost, basic, bicycle network throughout town. The following bicycle facility projects are recommended in the short-term:

### PROPOSED SHORT-TERM BICYCLE FACILITIES

- 1 Restripe **Western Avenue** to provide bike lanes, where missing
- 2 Add sharrows and install traffic calming measures on **Green Street**
- Convert **Flat Street** to one-way eastbound between Elm Street and
- 3 Main Street and restripe the roadway to provide two-way bike lanes
- 4 Add sharrows and install traffic calming measures on **Frost Street**
- Add sharrows on **Main Street** between High Street and Canal Street
- 5 and install bike boxes at the intersections of Main Street at High Street, Elliot Street, and Flat Street
- 6 Convert the on-street parking and wide shoulders into bike lanes on **South Main Street** from Canal Street to Fairground Road
- 7 Add sharrows and install traffic calming measures on **Church Street**
- 8 Add sharrows and install traffic calming measures on **Elliot Street** between Church Street and Elm Street
- 9 Add sharrows and install traffic calming measures on **Elm Street**
- 10 Restripe **Putney Road** from the West River to Wantastiquet Drive to provide bike lanes
- 11 Install signage and pavement markings on **Spring Tree Road**
- 12 Install a multi-use trail across **Brattleboro Common** between Putney Road and Linden Street

## Western Avenue (Route 9)

As recommended in the Western Avenue Corridor Bicycle Facility Feasibility Study, restripe Western Avenue to provide bike lanes, where missing, along Western Avenue to create continuous bicycle facilities on both sides of Western Avenue from Sunset Lake Road to High Street.



### Western Avenue Corridor Bicycle Facility Feasibility Study (Alta Planning + Design, 2017)

## Green Street

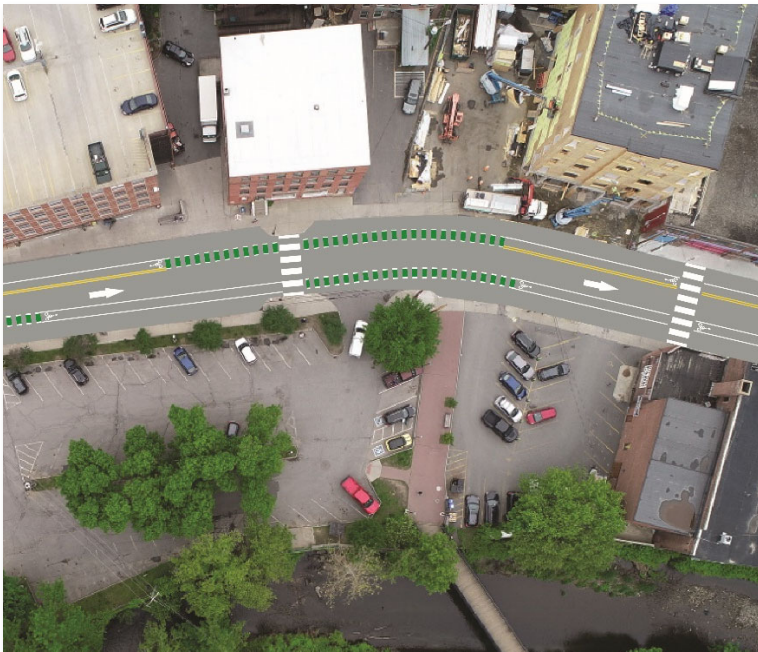
Add sharrows and install traffic calming measures on Green Street to connect to the existing bike lanes on Western Avenue with the shared lane markings (sharrows) on Main Street.



### *Frost Street and Flat Street*

As recommended in the Brattleboro Downtown Plan, convert Flat Street to one-way eastbound between Elm Street and Main Street, and restripe the roadway to provide two-way bike lanes. Additionally, add sharrows and install traffic calming measures on Frost Street to connect to the existing sharrows on Williams Street.

Traffic levels on Flat Street are extremely low, which offers the opportunity to dedicate more of the roadway to bicyclists. The conversion of Flat Street to one-way eastbound would also simplify movements at the intersection of Main Street and Flat Street, which could really improve circulation on Main Street as well.



*Illustration of Proposed Recommendations on Flat Street*

### *Main Street*

Add sharrows on Main Street between High Street and Canal Street and potentially install bike boxes at the intersections of Main Street at High Street, Elliot Street, and Flat Street.

It is important to note that Main Street is not a low-speed or low-volume roadway. However, based on feedback received at the public meetings, sharrows and bike boxes are proposed to help communicate to motorists that bicyclists will be using Main Street, and will reinforce that drivers should adjust their behavior to share the road. The sharrows and bike boxes will also indicate the lane position that bicyclists should assume when riding on the road.



*Illustration of Potential Options for Main Street*

### *South Main Street*

Convert the on-street parking and wide shoulders into bike lanes to create a continuous bicycle facility from Canal Street to Fairground Road.



*Illustration of Proposed Recommendations on South Main Street*

### *Church Street, Elliot Street, and Elm Street*

Add sharrows and install traffic calming measures on Church Street, Elliot Street between Church Street and Elm Street, and Elm Street to connect the shared lane markings on Green Street to Canal Street.

### *Putney Road*

Restripe Putney Road from the West River to Wantastiquet Drive to provide bike lanes to connect to those proposed as part of the VTrans Putney Road Improvements Project.

### *Spring Tree Road*

Install signage and pavement markings on Spring Tree Road to provide wayfinding the West River Trail from Putney Road.

### *Brattleboro Common*

Install a multi-use trail across Brattleboro Common, behind the gazebo to connect Putney Road and Linden Street.

### Short-Term Intersection Safety and Traffic Calming Recommendations

The envisioned short-term intersection safety enhancements and traffic calming recommendations include mostly striping improvements and possible vertical deflection that will help to reduce vehicle travel speeds, improve circulation, increase visibility, and increase safety for vehicles, pedestrians, and bicyclists. They are meant to complement the proposed short-term bicycle facilities and act as gateways to slow traffic and welcome pedestrians and bicyclists.

As shown in Figures 6 and 7, the following intersection safety and traffic calming projects are recommended in the short-term:

PROPOSED SHORT-TERM INTERSECTION SAFETY IMPROVEMENTS	
13	Elliot Street at Williams Street, Union Street and Frost Street
14	Elm Street at Frost Street and Flat Street
15	High Street at Green Street
16	Church Street at Elliot Street
17	South Main Street at Canal Street

#### *Elliot Street at Williams Street, Union Street, and Frost Street*

Install intersection safety enhancements and traffic calming measures at the all-way stop intersection. Intersection safety enhancements and traffic calming recommendations could include the following:

- Install a traffic circle.
- Install advance warning signage and high visibility markings.
- Restrict on-street parking near the intersection.
- Realign the crosswalks to shorten the crossing distance.
- Restripe the roadways to provide edge line striping to narrow the perceived roadway width.
- Install vertical deflection on Williams Street and Frost Street to increase the safety and comfort for bicyclists.

#### *Elm Street at Frost Street and Flat Street*

Install intersection safety enhancements and traffic calming measures at the side street stop-controlled intersection. Intersection safety enhancements and traffic calming recommendations could include the following:

- Conduct an all-way stop control warrant for the intersection.
- Install advance warning signage and high visibility markings.
- Restrict on-street parking near the intersection.
- Realign the crosswalks to place them in more visible areas, closer to the intersection.
- Restripe the roadways to provide edge line striping to narrow the perceived roadway width.
- Install vertical deflection on Frost Street to increase the safety and comfort for bicyclists.

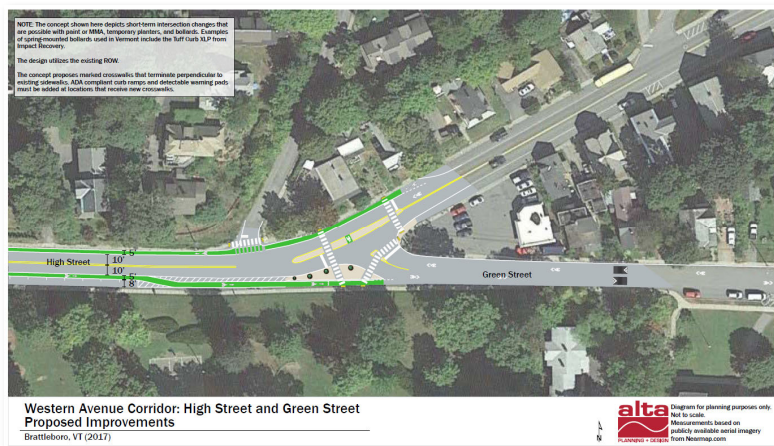


### High Street (Route 9) at Green Street

Install the intersection safety improvements at the intersection of Green Street and High Street recommended in the Western Avenue Corridor Bicycle Facility Feasibility Study.

The recommended improvements include the following:

- Corner curb extensions to slow traffic turning from High Street to Green Street, shorten pedestrian crossing distances, and increase the visibility of pedestrians at the intersection.
- Pedestrian refuge islands – which provide a place for pedestrians to stand, so they only have to focus on crossing one direction of traffic at a time.
- Restriping to narrow the perceived roadway width.
- Vertical deflection on Green Street to increase the safety and comfort for bicyclists.



*Western Avenue Corridor Bicycle Facility Feasibility Study  
(Alta Planning + Design, 2017)*

### Church Street at Elliot Street

Install intersection safety enhancements and traffic calming measures at the stop-controlled intersection. Intersection safety enhancements and traffic calming recommendations could include the following:

- Conduct an all-way stop control warrant for the intersection.
- Install a traffic circle.
- Install advance warning signage and high visibility markings.
- Install curb extensions with paint and flex posts.
- Restrict on-street parking near the intersection.
- Restripe the roadways to provide edge line striping to narrow the perceived roadway width and tighten the corner radii on Church Street.
- Install vertical deflection on Church Street and Elliot Street to increase the safety and comfort for bicyclists.

### South Main Street at Canal Street (U.S. Route 5)

Install intersection safety enhancements and traffic calming measures at the unconventional two-way stop-controlled intersection. Intersection safety enhancements and traffic calming recommendations could include the following:

- Conduct an all-way stop control warrant for the intersection.
- Install advance warning signage and high visibility markings.
- Install pedestrian refuge islands on Canal Street to provide a place for pedestrians to stand, so they only have to focus on crossing one direction of traffic at a time.

### Short-Term Pedestrian Recommendations

The envisioned short-term pedestrian facilities include mostly intersection and crosswalk enhancements. Pedestrians are among the most vulnerable road users, especially at uncontrolled locations. Using traffic calming devices and other safety countermeasures that aim at changing the behavior of both pedestrians and motorists, and increase visibility and accessibility at pedestrian crossings, will help encourage proper pedestrian use, lower vehicle speeds, and increase vehicle compliance.

As shown in Figure 7, along with recommended improvements described above, the following pedestrian facility projects are also recommended in the short-term:

PROPOSED SHORT-TERM PEDESTRIAN FACILITIES	
18	Install sidewalk where missing on <b>Fairground Road</b> and <b>Atwood Street</b>
19	Install crosswalk visibility enhancements at <b>Brookside Drive</b>
20	Install crosswalk visibility enhancements at <b>George F Miller Drive</b>
21	Install crosswalk visibility enhancements at <b>Greenleaf Street</b>

#### *Fairground Road and Atwood Street*

Today, there is no sidewalk on Atwood Street between Fairground Road and the high school, and sidewalk is missing along portions of Fairground Road. Installing sidewalk where it is missing on Fairground Road and Atwood Street will provide a continuous pedestrian route to Brattleboro Union High School.

#### *Western Avenue at Brookside Drive, George F Miller Drive, Greenleaf Street*

Install crosswalk visibility enhancements at Brookside Drive, George F Miller Drive, and Greenleaf Street. Crosswalk visibility enhancements include decorative/textured crosswalks, advance markings and signs, curb extensions, pedestrian refuge islands, Rectangular Rapid Flashing Beacons (RRFB), and lighting.

### 4.3.2 LONG-TERM NETWORK



The envisioned long-term network is the second step in the creation of a safe, comfortable, and connected bicycle and pedestrian network for Brattleboro. The long-term recommendations will require additional planning and design efforts before they can be

implemented. They were retreated to the long-term network because they either require additional study, pose significant permitting or design challenges, are relatively expensive or complex, and/or require a longer time to complete. As such, the long-term network is anticipated to be completed within the next ten years.

**Figure 8** displays the long-term bicycle recommendations and **Figure 9** displays the long-term pedestrian recommendations.



Figure 8 - Long-Term Bicycle Network

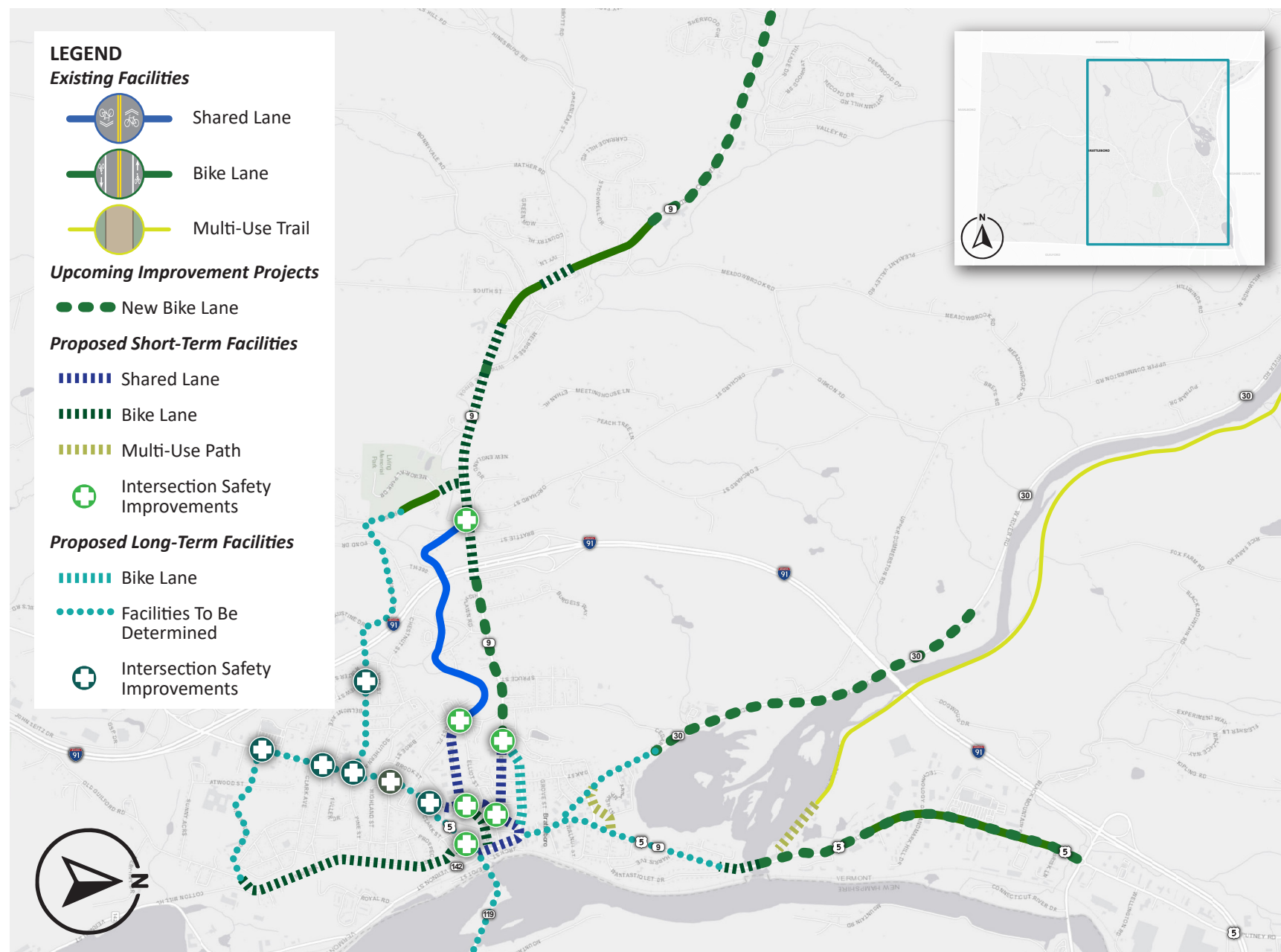
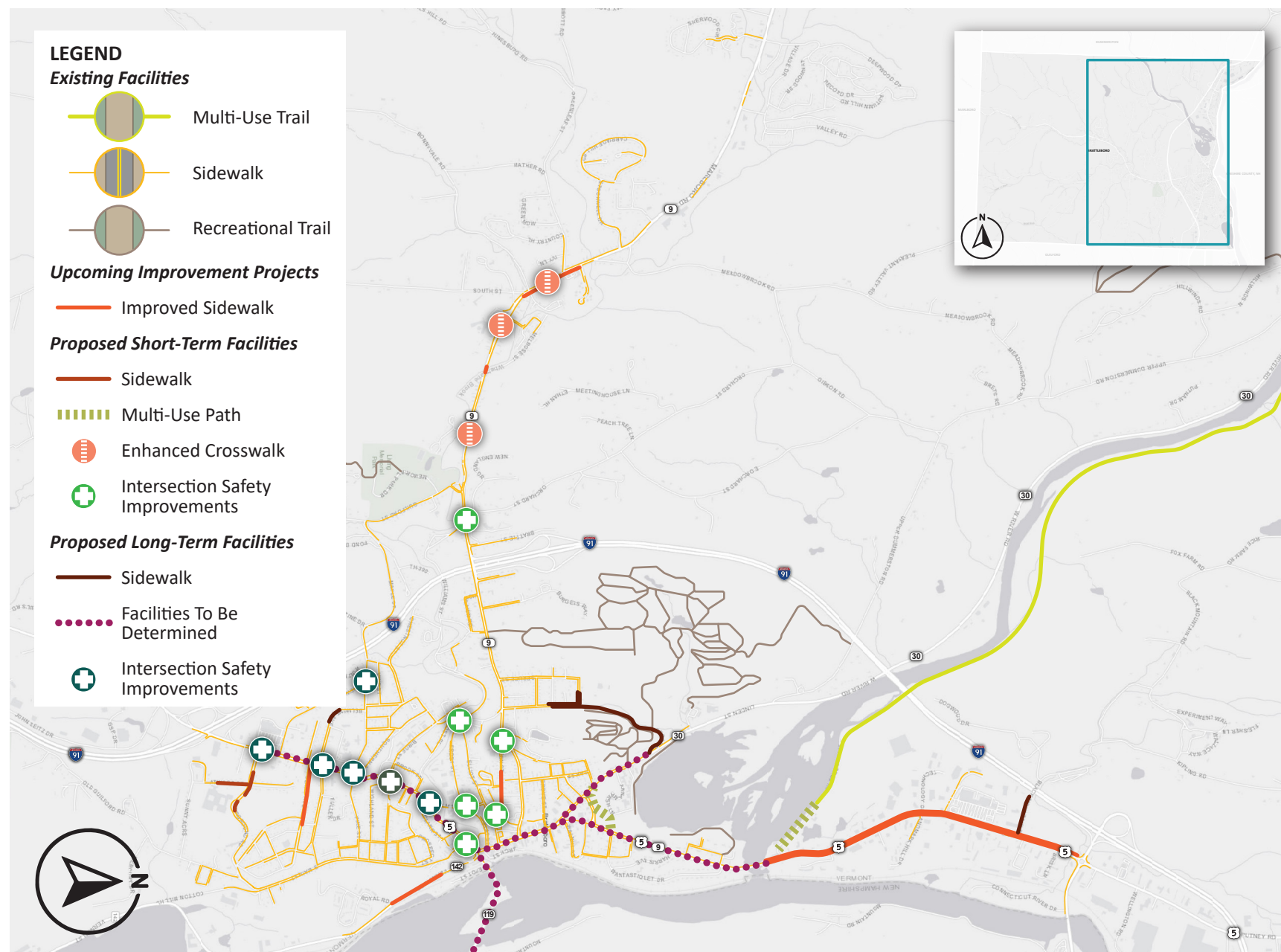


Figure 9 - Long-Term Pedestrian Network



## Long-Term Bicycle Recommendations

The proposed long-term bicycle facilities will require a lot more planning and design and therefore, have not been determined yet. Nevertheless, the envisioned long-term bicycle improvements, shown in Figure 8, include the following to link all the existing, upcoming, and proposed short-term facilities together to create a web of biking possibilities:

PROPOSED LONG-TERM BICYCLE FACILITIES	
22	Provide continuous bicycle facilities in both directions on <b>Canal Street</b> between Main Street and Fairground Road
23	Provide bicycle facilities in both directions on <b>Putney Road</b> between Wantastiquet Drive and High Street
24	Provide bicycle facilities in both directions on <b>Linden Street</b> between Cedar Street and High Street
25	Provide continuous bicycle facilities in both directions on <b>Guilford Street</b> between Living Memorial Park and Maple Street
26	Provide continuous bicycle facilities in both directions on <b>Maple Street</b> between Guilford Street and Canal Street
27	Provide continuous bicycle facilities in both directions on <b>Fairground Road</b>
28	Install the Phase 1B bicycle improvements from the Route 9 Scoping Study Report on <b>High Street</b>
29	Redesign Bridge Street as a woonerf

### Canal Street

Provide continuous bicycle and pedestrian facilities in both directions on Canal Street between Main Street and Fairground Road to connect to the proposed short-term bicycle facilities in downtown Brattleboro.

To determine what type of bicycle and pedestrian facilities are feasible, it is first recommended to conduct a Corridor Study of Canal Street. The Corridor Study should assess alternatives for providing continuous pedestrian and bicycle facilities on Canal Street and evaluate the following intersections:

- Canal Street at Birge Street and Washington Street
- Canal Street at Maple Street and Pine Street
- Canal Street at Oak Grove Avenue
- Canal Street at Fairground Road

### Putney Road (U.S. Route 5)

Provide bicycle and pedestrian facilities in both directions on Putney Road between Wantastiquet Drive and High Street to create continuous bicycle and pedestrian facilities on Putney Road from Chesterfield Road to downtown Brattleboro.

To determine what type of bicycle and pedestrian facilities are feasible, it is first recommended to conduct a Scoping Study to establish the preferred options for the southern stretch of Putney Road and develop preliminary concept plans.

### *Linden Street (Route 30)*

Provide bicycle and pedestrian facilities in both directions on Linden Street between Cedar Street and High Street to create continuous bicycle and pedestrian facilities on Linden Street from West River Park to downtown Brattleboro.

To determine what type of bicycle and pedestrian facilities are feasible, it is first recommended to conduct a Scoping Study to establish the preferred options for the end of Linden Street and develop preliminary concept plans.

### *Maple Street and Guilford Street*

Provide continuous bicycle facilities in both directions on Guilford Street between Living Memorial Park and Maple Street and on Maple Street between Guilford Street and Canal Street to create a continuous bicycle facility from Western Avenue to Canal Street.

To determine what type of bicycle facilities are feasible, it is first recommended to conduct a Scoping Study to establish the preferred option for Guilford Street and Maple Street and develop preliminary concept plans.

### *Fairground Road*

Provide continuous bicycle facilities in both directions on Fairground Road to connect the proposed bicycle facilities on Canal Street with the proposed short-term bicycle facilities on South Main Street.

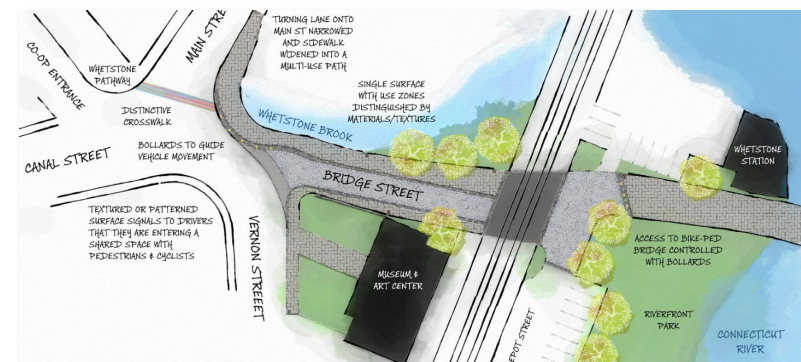
To determine what type of bicycle facilities are feasible, it is first recommended to conduct a Scoping Study to establish the preferred option for Fairground Road and develop preliminary concept plans.

### *High Street*

As recommended in the Route 9 Scoping Study Report, reconfigure High Street to eliminate a parking lane and add bike lanes from Green Street to Main Street to extend the continuous bicycle facilities on both sides of Western Avenue to Main Street.

### *Bridge Street*

As recommended in the Brattleboro Downtown Plan, redesign Bridge Street as a woonerf. As stated previously, with the new Brattleboro-Hinsdale bridge, Bridge Street will become a low traffic dead-end street, creating the opportunity for pedestrians and bicyclists to reclaim it.



*Brattleboro Downtown Plan*

<https://storymaps.arcgis.com/stories/68e5f8b5d6504c808db00854bbd8e2cb>

## Long-Term Intersection Safety and Traffic Calming Recommendations

The envisioned long-term intersection safety enhancements and traffic calming recommendations include more extensive improvements that will require further study. Like in the short term, they are meant to complement the proposed long-term bicycle and pedestrian facilities. The following intersection safety and traffic calming projects are recommended in the long-term:

PROPOSED LONG-TERM INTERSECTION SAFETY IMPROVEMENTS	
30	Canal Street at Birge Street and Washington Street
31	Canal Street at Maple Street and Pine Street
32	Canal Street at Oak Grove Avenue
33	Canal Street at Fairground Road
34	Maple Street at Fairview Street

### Canal Street

In conjunction with provision of continuous bicycle and pedestrian facilities in both directions on Canal Street between Main Street and Fairground Road, install intersection safety enhancements, capacity enhancements, and traffic calming measures at the following intersections:

- Canal Street at Birge Street and Washington Street
- Canal Street at Maple Street and Pine Street
- Canal Street at Oak Grove Avenue
- Canal Street at Fairground Road

### Maple Street at Fairview Street

Install intersection safety enhancements and traffic calming measures at the stop-controlled intersection. Intersection safety enhancements and traffic calming recommendations could include the following:

- Conduct an all-way stop control warrant for the intersection.
- Install a traffic circle.
- Realign the intersection to make it less skewed.
- Install advance warning signage and high visibility markings.
- Restripe the roadways to provide edge line striping.

## Long-Term Pedestrian Recommendations

The envisioned long-term pedestrian facilities will also require more planning, design, and funding. As shown in Figure 9, along with recommended improvements described above, the following pedestrian facility projects are also recommended in the long-term:

PROPOSED LONG-TERM PEDESTRIAN FACILITIES	
35	Provide continuous pedestrian facilities in both directions on <b>Canal Street</b> between Main Street and Fairground Road
36	Provide pedestrian facilities in both directions on <b>Putney Road</b> between Wantastiquet Drive and High Street
37	Provide pedestrian facilities in both directions on <b>Linden Street</b> between Cedar Street and High Street
38	Install sidewalk where missing on <b>Belmont Avenue</b>
39	Install sidewalk on <b>Cedar Street</b> from Laurel Street to Linden Street
40	Install sidewalk on <b>Black Mountain Road</b> from Putney Road to Buttonwood Hill Road



### *Canal Street*

As stated previously, provide continuous bicycle and pedestrian facilities in both directions on Canal Street between Main Street and Fairground Road to connect to the proposed short-term bicycle facilities in downtown Brattleboro.

### *Putney Road (U.S. Route 5)*

As stated previously, provide bicycle and pedestrian facilities in both directions on Putney Road between Wantastiquet Drive and High Street to create continuous bicycle and pedestrian facilities on Putney Road from Chesterfield Road to downtown Brattleboro.

### *Linden Street (Route 30)*

As stated previously, provide bicycle and pedestrian facilities in both directions on Linden Street between Cedar Street and High Street to create continuous bicycle and pedestrian facilities on Linden Street from West River Park to downtown Brattleboro.

### *Belmont Avenue*

On Belmont Avenue sidewalk is missing around the bend. Install sidewalk, where missing, to provide a continuous pedestrian route from the Belmont neighborhood to the Brattleboro Memorial Hospital.

### *Cedar Street*

On Cedar Street the sidewalk stops at Laurel Street. Install sidewalk on Cedar Street from Laurel Street to Linden Street to connect to the existing Retreat multi-use trails.

### *Black Mountain Road*

Today there is no sidewalk on Black Mountain Road. Install sidewalk on Black Mountain Road from Putney Road to Buttonwood Hill Road to provide pedestrian facilities to the Brattleboro Police Department and across I-91.

## **4.4 DESIGN TOOLBOX**

This toolbox is a summary of design solutions and proven safety countermeasures that can be used to help make Brattleboro's streets safer, more comfortable, more connected, and more equitable for people walking, biking, and using transit.

### **4.4.1 BICYCLE ACCOMMODATIONS**

Bicyclists are vulnerable road users, and they can be seriously injured in a minor collision. Most fatal and serious injury bicycle crashes occur at non-intersection locations. Most of these crashes involve overtaking motorists; the speed and size differential between vehicles and bicycles can lead to severe injury.

For many bicyclists, traveling in close proximity to fast moving traffic is uncomfortable. As such, the quality of a bike facility generally increases as the space allocated to it expands, because this allows for more separation and provides increased maneuvering space. The

following are bicycle accommodations that increase comfort, connectivity, and safety for bicyclists along roadways and at intersections:

### Along the Roadway

#### Shared Lanes (Sharrows)

Where it is not feasible or appropriate to provide separate bicycle facilities, shared lanes can be used. Shared Lane Markings (also known as “sharrows”) are pavement markings used to indicate a shared lane environment for bicyclists and motorists. They help to communicate to motorists that bicyclists will be using a street and reinforce that drivers should adjust their behavior to share the road. Sharrows also indicate the lane position that bicyclists should assume when riding on the road. They can also help with bicycle route wayfinding.



*Existing Sharrows on Williams Street (Google Maps)*

Although these markings do not provide a dedicated space for bicyclists, they can be a positive and affordable solution when designed correctly and used in the correct context (on low-speed, low-volume roads). Shared lanes should not be used on streets with speed limits higher than 35 mph or on streets where volumes are high.

#### Advisory Shoulders

Advisory shoulders, also known as dashed bicycle lanes or edge lane roads, create usable shoulders for bicyclists and pedestrians on a roadway that is otherwise too narrow to accommodate bike lanes or sidewalks. With advisory shoulders, the yellow centerline is removed and the pedestrian and bicycle space is delineated with dashed white lines and pavement markings. Motorists travel in both directions within the shared center lane and can encroach into the advisory shoulders as needed to facilitate passing movements. Advisory shoulders function well within a rural and small town traffic and land use context. They are most appropriate on streets with low to moderate volumes and moderate vehicular speeds. Signs should also be used to warn road users of the special characteristics of the street.



*Example of Advisory Shoulders in Danville, VT*

## Bike Lanes

Bike lanes are the most common bicycle facility used in the United States today. A bike lane is a portion of a roadway that has been designated by signs and pavement markings for the exclusive use of bicyclists. They are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking lane. Per VTrans guidance, bike lanes are especially important where there are multiple turning movements, on-street parking, and other potential instances of motor vehicle-bicycle conflict. Per VTrans guidance, they should be a minimum of 4 feet.

Bike lanes act as a visual reminder to motorists of bicyclists' right to use the roadway, and provide a marked lane to show bicyclists where to travel. While they do create separation between bicyclists and vehicles, there is no physical barrier between the bike lane and travel



*Existing Bike Lanes on  
Western Avenue  
(Google Maps)*

lane, which can feel uncomfortable to some riders, especially on busy high-speed roadways.

Bike Lanes are a Federal Highway Administration (FHWA) Proven Safety Countermeasure, effective in reducing roadway fatalities and serious injuries. Bicycle lane additions can reduce crashes up to 30 percent for total crashes on

urban 2-lane undivided collectors and local roads.<sup>6</sup>

## Buffered Bike Lanes

Buffered bike lanes are bike lanes with a painted, flush, buffer space that separates the bike lane from the adjacent vehicle travel lane. On lower speed streets with on-street parking, the buffer may be placed between the parking lane and the bike lane. On higher speed streets, or streets with no on-street parking, the buffer should be placed between the bike lane and travel lane. Per VTrans guidance, where space allows, buffers should be included between the travel lane and bicycle lane to help deter the use of bicycle lanes by motor vehicles. Buffers should be a minimum of 2 feet wide.



*Example of Buffered Bike Lane in Burlington, VT (City of Burlington)*

<sup>6</sup> "Proven Safety Countermeasures - Bicycle Lanes," FHWA, retrieved 3/9/23, <https://highways.dot.gov/safety/proven-safety-countermeasures/bicycle-lanes>.



### *Climbing Lanes*

Climbing lanes are a hybrid bicycle facility on roadways with steep grades where there is not enough space to install standard bike lanes on both sides of the street. With climbing lanes, a bike lane is provided on the uphill direction and sharrows are provided on the downhill direction. Bicyclists traveling uphill move significantly slower than the adjacent traffic, and therefore benefit from having designated space. When traveling downhill, bicyclists can travel at a similar speed as vehicles, and therefore don't necessarily need designated space.

### *Cycle Tracks*

Cycle tracks are different from buffered bike lanes because they are physically separated from vehicular traffic and distinct from the sidewalk. They are typically considered to be safer than bike lanes because they offer bicyclists additional separation and provide a low-stress experience. They can be one-way or two-way facilities. They can be at the same level as the sidewalk, separate from pedestrian travel, or at the same level as the roadway, separated through the use of a raised median or on-street parking.



*Example of a One-Way Cycle Track in Boston, MA*

With vertical separation, snow clearance and other

maintenance should be carefully considered during all seasons. Cycle tracks may require specialized intersection treatments and on-street parking restrictions to maintain sight lines.

### *At Intersections*

### *Intersection Conflict Markings*

At intersections and driveways, motorists are required to yield to bicyclists within the bike lane or cycle track before turning, entering, or crossing. This conflict area can be further enhanced with green colored crossing markings. Crossing markings indicate the intended path for bicyclists and guide them through an intersection. They increase the visibility of the facility, raise awareness for both bicyclists and motorists of the potential conflict area, and reinforce that through bicycles have priority over turning vehicles.

Per VTrans guidance, where bicycle lanes traverse across an intersection, bicycle lane markings shall continue through the intersection. If there is a buffer, the buffer pavement markings shall not be carried through the intersection.



*Existing Intersection Conflict Markings on Putney Road*

### *Bike Boxes*

A bike box is a designated area at the head of an approach between the crosswalk and motor vehicle stop line at a signalized intersection that provides bicyclists with dedicated space to wait during the red light. It provides a safe and visible way for bicyclists to get ahead of queuing traffic when the traffic signal is red. It also helps to position bicyclists to get a head start to get through the intersection and prevents 'right-hook' conflicts with turning vehicles by placing bicyclists in front of queuing vehicles. Pedestrians can also benefit from the installation of bike boxes because they typically move the vehicular stop bars further away from the crosswalks.



*Example of a Bike Box in Brookline, MA (Boston Globe)*

### *Two-Stage Turn Queue Boxes*

Two-stage turn queue boxes offer bicyclists a safe way to make left turns at busy intersections. They also provide a formal protected queueing space for bicyclists turning left. While they may increase bicycle comfort, they typically result in increased delay for bicyclists. At a signalized intersection with two-stage turn queue boxes, bicyclists need to receive two separate green signal indications to turn and at unsignalized intersections, bicyclists need to wait for appropriate gaps in crossing vehicular traffic.



*Example of a Turn Queue Box in Cambridge, MA (City of Cambridge)*



#### 4.4.2 PEDESTRIAN ACCOMMODATIONS

Pedestrians are among the most vulnerable road users. The following are pedestrian accommodations that increase safety and comfort for pedestrians along roadways and at crossing locations:

##### Along the Roadway

##### Sidewalks

Sidewalks are pathways parallel to roadways designed for people walking. They are typically vertically separated from the roadway by a curb. Pedestrians should have a direct and connected network of walking routes to desired destinations without gaps or abrupt changes.

Sidewalks are a FHWA Proven Safety Countermeasure, they provide between a 65 to 89 percent reduction in crashes involving pedestrians walking along roadways.<sup>7</sup>

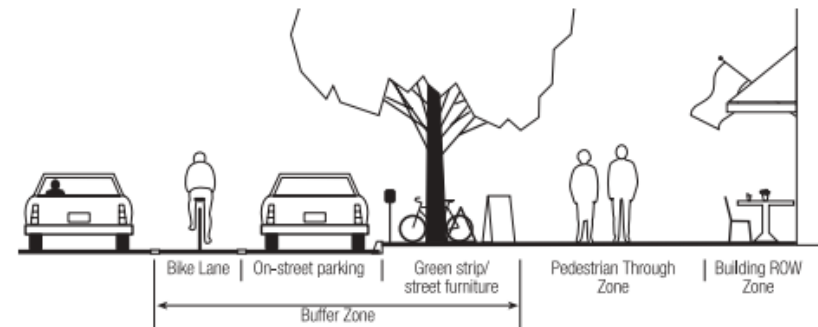
Sidewalks must be safe and accessible for all users, and they must provide access throughout the year. Sidewalks should be designed for all people in Brattleboro regardless of physical abilities and they should be designed to provide storage for snow in the colder months, eliminate stormwater in the rainy months, and provide comfort and shade in the warmer months. While simply providing a sidewalk is a major step towards making it easier and safer to walk, the management of sidewalk conditions helps determine how well sidewalks serve their intended purpose.

Per VTrans' Pedestrian and Bicycle Facility Planning and Design Manual, a well-designed sidewalk consists of three zones:

**Building/ROW Zone:** The area between the pedestrian through zone and either the front wall of an adjacent building or the edge of the right of way.

**Pedestrian Through Zone:** The area that is reserved for pedestrian travel. It must be free of physical obstructions to allow for free movement. Per ADA, the minimum width to provide an accessible path is 4 feet. The pedestrian through zone is the most critical element for pedestrian travel.

**Green Strip/Street Furniture Zone:** the area between the pedestrian through zone and the curb that is dedicated to street trees, signal poles, signs, street lights, bicycle parking, and snow storage. It is also the area that buffers pedestrians from the roadway.



*Defining Streetside Space, Vermont Pedestrian and Bicycle Facility Planning and Design Manual (VTrans)*

<sup>7</sup> "Proven Safety Countermeasures - Walkways," FHWA, retrieved 3/9/23, <https://highways.dot.gov/safety/proven-safety-countermeasures/walkways>.

### Multi-Use Paths

Multi-use paths (or shared use paths) provide a separate travel way (usually on exclusive right-of-way) designated for non-motorized users. They can serve a variety of purposes. They can provide users with a shortcut or located along rivers, ocean fronts, canals, abandoned or active railroad, and utility rights-of-way, limited access freeways, or between parks. Located in a park, they can provide an enjoyable recreational opportunity.

They are usually used to supplement on-road bicycle and pedestrian facilities to offer bicyclists additional separation and provide a low-stress experience for both pedestrians and bicyclists. It is important to note that experienced bicyclists often find multi-use paths less convenient to ride compared to roadways.



*Existing Whetstone Pathway*

### Woonerfs

A woonerf (or shared street) is a Dutch concept, known as a living street, where a street is shared by pedestrians, bicyclists, and motorists evenly. Pedestrians take priority and vehicles act as guests. There are no sidewalks, curbs or lane markings between cars, pedestrians, or bicyclists; forcing cars to drive slower and creating a more inviting public space.

Shared street environments should be considered in places where pedestrian activity is high and vehicle volumes are low or discouraged. They are different from pedestrian malls because they maintain access for vehicles. Textured or pervious pavements are usually used to reinforce the pedestrian-priority operation of the street. For Brattleboro, snowplow-compatible materials must be selected, and drainage channels should be provided either at the center of the street or along the flush curb.



*Example of a Shared Street in Cambridge, MA (NACTO)*

## At Crossing Locations

### Crosswalk Visibility Enhancements

Crosswalk visibility enhancements include decorative/textured crosswalks, advance markings and signs, curb extensions, and lighting. An enhanced high-visibility crosswalk is much easier for an approaching motorist to see than traditional parallel lines and better defines the proper pedestrian pathway.

Per VTrans guidance, the visibility and design of crosswalks may be improved by installing various pavement markings and signage. Lighting, signage, and pavement markings help make crosswalks and the pedestrians and bicyclists using them more visible to drivers. Advance yield signs and pavement markings are simple improvements that can be installed quickly to provide more awareness to motorists that a crossing is close and help reduce the risk of a multiple threat crash. Pedestrian-scale lighting near a crosswalk is also very important to make pedestrians more visible and avoid silhouette lighting. Use of crosswalk enhancements are generally based on traffic volumes, the posted speed, and lane configurations. Crosswalks Visibility Enhancements are a FHWA Proven Safety Countermeasure. High-visibility crosswalks can reduce pedestrian injury crashes up to 40 percent, intersection lighting can reduce pedestrian crashes up to 42 percent, and advance yield or stop markings and signs can reduce pedestrian crashes up to 25%.<sup>8</sup>

<sup>8</sup> "Proven Safety Countermeasures - Crosswalk Visibility Enhancements," FHWA, retrieved 3/9/23, <https://highways.dot.gov/safety/proven-safety-countermeasures/crosswalk-visibilityenhancements>.

### Curb Extensions

Curb extensions, also known as bulb-outs or bump-outs, are created by extending the sidewalk at corners or midblock. Curb extensions increase safety, calm traffic, and provide extra sidewalk space. Per VTrans guidance, curb extensions slow vehicle turning speeds, shorten pedestrian crossing distances, make pedestrians more visible to motorists, and discourage illegal parking near crosswalks.

Per VTrans guidance, curb extensions work particularly well on streets where there is limited turning traffic by large vehicles and on minor streets. One thing to consider is that curb extensions do result in slightly more complex snow removal. However, they can be quickly implemented (or removed) using temporary materials such as paint and flex posts and they also are a great opportunity to incorporate green infrastructure.



*Example of a Quick Build Curb Extension in Burlington, VT  
(Local Motion)*



### *Pedestrian Refuge Islands*

Pedestrian refuge islands are raised medians that are installed at a marked crosswalk on roadways with two-way traffic to provide a place for pedestrians to stand when crossing the street. Per VTrans guidance, they enhance pedestrian safety and accessibility by reducing crossing distances and providing refuge for pedestrians, so they only have to focus on crossing one direction of traffic at a time. They are particularly valuable when used at unsignalized crossings because they make it easier for pedestrians to find gaps in traffic. They also serve as a visual barrier to motorists, narrowing the perceived width of the roadway to help slow vehicle speeds. Pedestrian Refuge Islands are a FHWA Proven Safety Countermeasure, they provide a 56 percent reduction in pedestrian crashes.<sup>9</sup>



*Example of a Pedestrian Refuge Island  
in Cambridge, MA  
(Calm Streets Boston)*

Per VTrans guidance, in order to obtain appropriate median width, travel lanes can be narrowed to minimum widths, however, on state highways, an absolute minimum curb to curb distance of 14 feet must be maintained

to accommodate snow removal.

### *Raised Crosswalks*

Raised crosswalks act like speed humps or speed tables, raising the roadway to the same level as the sidewalk, and physically requiring vehicles to slow down. They function as an extension of the sidewalk and allow pedestrians to cross the street at a constant grade. They also help make pedestrians more prominent in the driver's field of vision and improve drivers' awareness by prioritizing pedestrian crossings. They are especially beneficial for people with mobility and visual impairments because there are no vertical transitions to navigate.

Per VTrans guidance, raised crossings are only suitable for low-speed, low volume local streets. Raised crossings need to be highly visible, either striped as a midblock crossing or constructed of a contrasting pavement design. They should be signed with advance warning signs and pedestrian crossing signs. They may affect snow removal operations and designs should be carefully thought out to ensure proper drainage.



*Example of a Raised Crosswalk in Somerville,  
MA (Streets Blog Mass)*

<sup>9</sup> Proven Safety Countermeasures - Medians and Pedestrian Refuge Islands in Urban and Suburban Areas," FHWA, retrieved 3/9/23, <https://highways.dot.gov/safety/proven-safety-countermeasures/medians-and-pedestrian-refuge-islands-urban-and-suburban-areas>.



### *Raised Intersections*

Similar to speed humps and raised crosswalks, raised intersections are essentially a speed table for an entire intersection. With raised intersections, all crosswalks are flush with the sidewalks, creating a safe and slow-speed intersection. Raised intersections reinforce slow speeds and encourage motorists to yield to pedestrians at the crosswalks.

They are effective at minor intersections with a high volume of pedestrians. Like raised crosswalks, raised intersections are not appropriate for high-speed, heavy truck traffic roadways. Raised intersections may also affect snow removal operations and designs should be carefully thought out to ensure proper drainage.

### *Rectangular Rapid Flashing Beacons (RRFBs)*

Rectangular Rapid Flashing Beacons (RRFBs) are pedestrian activated flashing lights used to alert drivers of a crossing pedestrian. They consist of two rectangular-shaped yellow indications with LED lights that flash when activated. The flashing pattern can be activated manually by a push button, or passively by a pedestrian detection system. They should be used in situations where increased emphasis is needed to alert drivers to pedestrian crossings. RRFBs are a FHWA Proven Safety Countermeasure, they can reduce pedestrian crashes by up to 47 percent. They can also increase motorist yielding rates up to 98 percent (varies by speed limit, number of lanes, crossing distance, and time of day).<sup>10</sup>

<sup>10</sup> Proven Safety Countermeasures - Rectangular Rapid Flashing Beacons (RRFB)," FHWA, retrieved 3/9/23, <https://highways.dot.gov/safety/proven-safety-countermeasures/rectangular-rapid-flashing-beacons-rrfb>

The VTrans' Guidelines for Pedestrian Crossing Treatments includes a list of factors that should be addressed where RRFBs are considered. The overuse of RRFBs in the roadway environment can decrease the effectiveness of RRFBs and those crossings without RRFBs. RRFBs should be limited to locations with the most critical safety concerns.



*Example of a RRFB in Canton, CT*

### *Leading Pedestrian Interval*

A leading pedestrian interval (LPI) is when pedestrians are given a walk indication a couple seconds before motor vehicles traveling in the same direction are given a green indication. Essentially, the interval gives pedestrians a head start to enter the intersection, to help pedestrians better establish their presence in the crosswalk and increase their visibility. LPI is a FHWA Proven Safety Countermeasure, it can reduce pedestrian-vehicle crashes at intersections by 13%.<sup>11</sup>

<sup>11</sup> Proven Safety Countermeasures - Leading Pedestrian Interval," FHWA, retrieved 3/9/23, <https://highways.dot.gov/safety/proven-safety-countermeasures/leading-pedestrian-interval>.

#### 4.4.3 ADDITIONAL TRAFFIC CALMING IMPROVEMENTS

Pedestrians and bicyclists are particularly vulnerable along a roadway. The severity of a pedestrian or bicycle injury is directly related to the speed of the vehicle at the point of impact. As such, Brattleboro streets should be designed to reduce speeds to create a comfortable environment for all roadway users.

Traffic calming is the combination of horizontal deflection, vertical deflection, and street width reduction measures that reduce motor vehicle speeds, alter driver behavior, and improve conditions for non-motorized street users. Implementation of traffic calming measures can reduce traffic speed, reduce motor-vehicle collisions, and improve safety for pedestrians and cyclists, which in turn can also increase pedestrian and bicycling activity.

Many of the bicycle and pedestrian accommodations described above can be considered traffic calming measures (like curb extensions, pedestrian refuge islands, raised crosswalks, raised intersections, woonerf, etc.). The following are a few additional traffic calming measures that can be incorporated on Brattleboro streets, particularly along the streets that shared lanes are proposed on, to calm traffic and increase comfort for pedestrians and bicyclists.

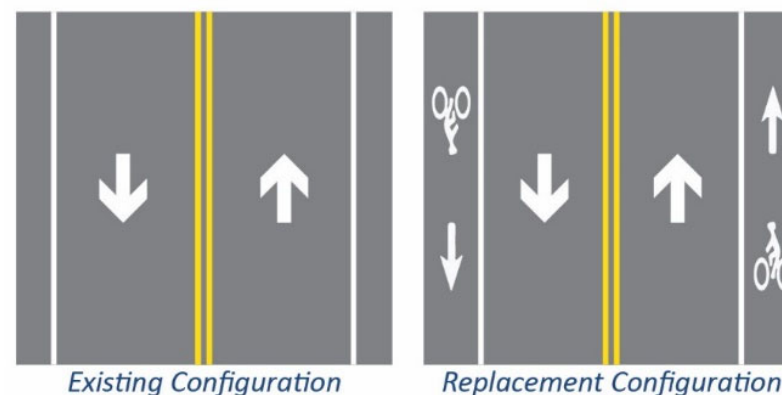
#### Street Width Reduction

Street width reduction measures narrow the width of the roadway designated exclusively for motor vehicles – influencing motorists to slow down to maintain an acceptable level of comfort and safety.

#### Road Diets

Per VTrans guidance, roadway reconfiguration involves modifying how a roadway is used to improve safety and mobility. If analysis determines that there is excess vehicular capacity along a roadway, travel and/or parking lanes can be removed, and space can be reallocated to other modes. During resurfacing and restriping projects, the Town of Brattleboro should assess if travel lanes or parking lanes can be removed to install bicycle lanes or cycle tracks within the existing curb to curb.

Road Diets are a FHWA Proven Safety Countermeasure. Conversion from a 4-lane roadway to 3 lanes can reduce crashes by 19 to 47%.<sup>12</sup>

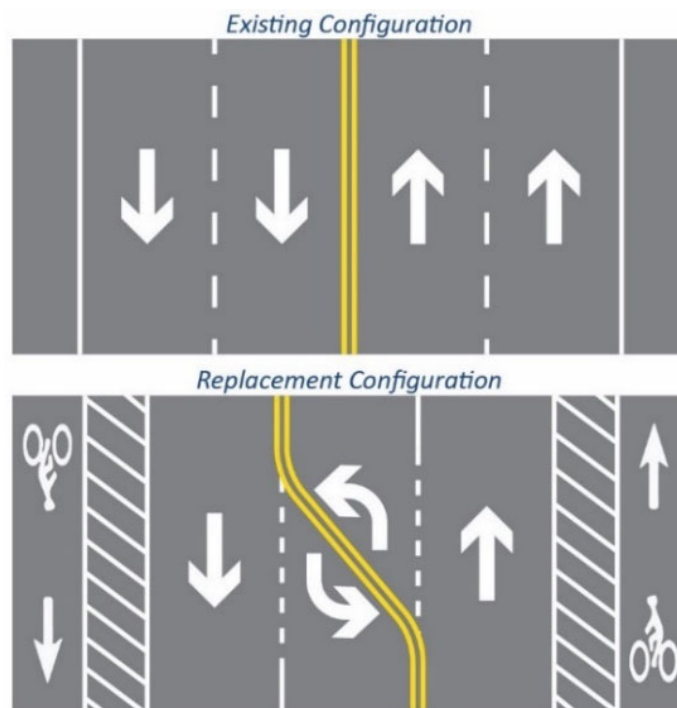


<sup>12</sup> Proven Safety Countermeasures - Road Diets (Roadway Configuration),” FHWA, retrieved 3/9/23, <https://highways.dot.gov/safety/proven-safety-countermeasures/road-diets-roadway-configuration>.

### Lane Diets

Reduced lane widths encourage slower vehicular speeds and can reduce crossing widths for pedestrians and bicyclists. Studies show that narrow lane widths have no measurable impact on capacity, however they can result in a reduction of average travel speeds.

Per VTrans guidance, Vermont state highways should have a maximum lane width of 11 feet for all directions of travel. During resurfacing and restriping projects, the town of Brattleboro should review the travel lane widths to see if they can reduce them to provide additional space to install bicycle, pedestrian, and transit accommodations.



### Tighten Corner Radii

In general, a smaller curb radius is better for pedestrians. Tight curb radii increase pedestrian safety by creating sharper turns, which requires motorists to slow down, increases the size of the pedestrian waiting area, and reduces pedestrian crossing distances. Small curb radii are more difficult for large vehicles to negotiate; however, on-street parking and bicycle lanes create larger effective radii, allowing for smaller actual curb radii. Per VTrans guidance, the designer must balance all factors, keeping in mind that the chosen radius should be the smallest possible for the circumstances.

### Horizontal Deflection

Horizontal deflection measures hinder the ability of a motorists to drive in a straight path, creating a shift in the roadway that reduces their ability to maintain a high speed.

### Traffic Circles

Traffic circles are circular, yield or stop-controlled intersections. With traffic circles, like with roundabouts, all traffic moves counterclockwise around a central traffic island. They are a safe and efficient alternative to residential stop-controlled intersections because they are designed to slow traffic but can also move vehicles and bicyclists more efficiently. They are appropriate at intersections of local streets. The islands may be painted or domed and can be mountable for large and emergency vehicles.

### Lateral Shift

A lateral shift is the realignment of a straight roadway that causes the travel lanes to shift, forcing motorists to steer around instead of traveling in a straight path. Shifts can be made with on-street parking, paint, flex posts, or curbing. Shifts are appropriate for local and collector roadways. They may require drainage and utility relocation. A series of alternating lane shifts is known as a chicane. Chicanes force motorists to steer back and forth instead of traveling in a straight path and are helpful in reducing speeds along an extended section of roadway.



*Example of a Painted Chicane in Brooklyn, NY (New York City DOT)*

### Vertical Deflection

Vertical deflection measures create a change in the height of the roadway that typically forces a motorist to slow down to maintain an acceptable level of comfort.

### Speed Hump

A speed hump is a rounded raised area of pavement across a roadway. They are often placed in a series to reduce speeds along an extended section of roadway. They are appropriate for residential local streets. They are not typically used on major roads, bus routes, or primary emergency response routes. They are also not recommended for roadways with grades greater than 8 percent. Adequate signing and marking of each speed hump is essential to warn roadway users and guide their movements. The Town of Brattleboro does currently have two temporary speed humps that they can install on local roadways.

### Speed Table

A speed table is flat-topped speed hump. If placed at a pedestrian cross, they are referred to as a raised crosswalk. Like speed humps, they are appropriate for residential local streets and are not typically used on major roads, bus routes, or primary emergency response routes. Adequate signing and marking is essential to warn roadway users.



### *Speed Cushion*

Speed cushions are two or more raised areas placed laterally across a roadway. They can be parabolic, circular, or sinusoidal shaped and be made of asphalt or rubber. They are very similar to speed humps and speed tables, except the gap between the cushions allows emergency vehicles to pass through at high speeds. Speed cushions are appropriate for residential local streets.



*Example of Speed Cushions in Burlington, VT (City of Burlington)*

It is important to note that traffic calming devices can be combined at an intersection to provide a gateway into a neighborhood, reducing speed through both physical and psychological means. The combination of traffic calming measures and surface alterations (like textured paving) can provide visual and tactile cues that let people know that they are entering an area where pedestrians and bicyclists are active.

## 5. PERFORMANCE MEASURES

To build support and momentum for more walking and bicycling infrastructure in Brattleboro, measuring changes in facilities – such as the number of feet or miles of bike lanes, sharrows, and sidewalk – and their use – is recommended.

To measure improvements in facilities, the town may decide to measure the number of miles or feet of existing bike lanes, shared bicycle facilities (sharrows), sidewalk, and number of crosswalks as a baseline. Each year, the town (or BCAT) could report to the Selectboard how many feet or miles (or number of crosswalks) have been added to the baseline number.

BICYCLE AND PEDESTRIAN FACILITY IMPROVEMENTS 2021 – 2030										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Type of facility</b>	<b>Approx. Distance (ft)</b>									
Bike lane	15,700									
Sharrows	10,880									
Sidewalk	191,790									
Multi-Use Path	15,680									

To measure shift in mode from driving to walking, bicycling, and transit use, it may be best to use American Community Survey (ACS) data to track the percentage of people driving alone relative to those using the bus, walking, biking, or carpooling over time. Although it only measures work (commute) trips, the ACS is repeated every year, and is therefore a low-effort way to track change in travel mode.

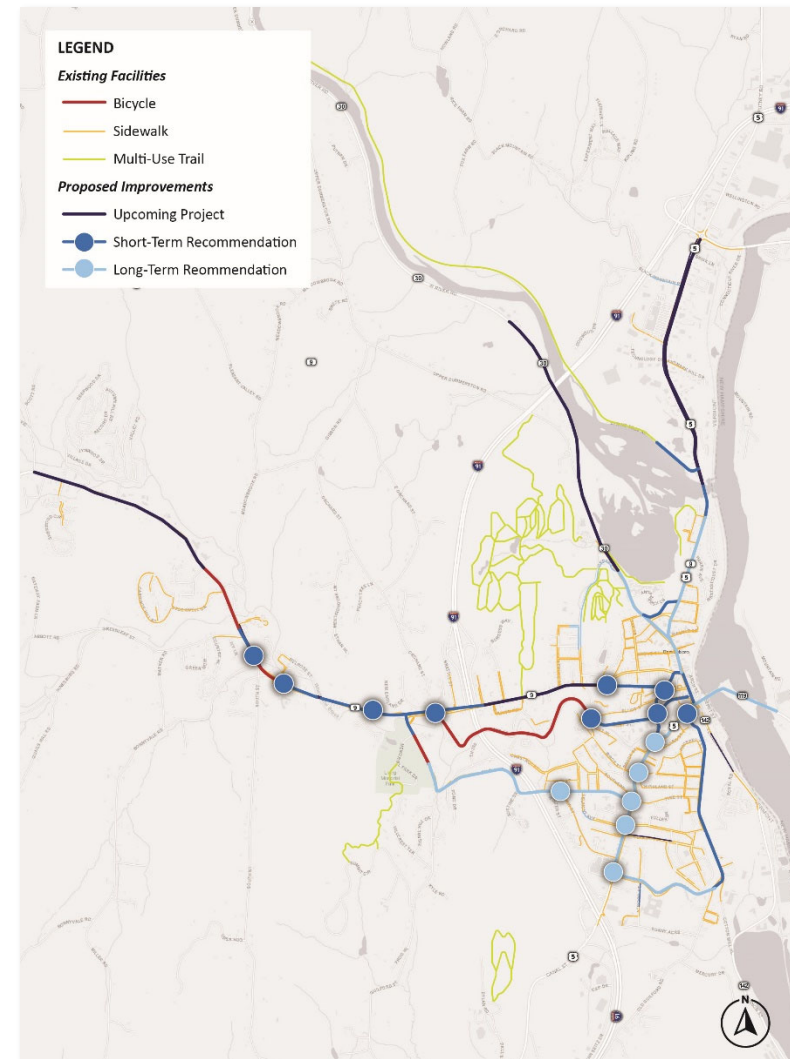
COMMUTE MODE SPLIT IMPROVEMENTS 2021-2030 <sup>13</sup>										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Car, Truck or Van	69%									
Work from home	15%									
Walk	14%									
Bicycle	2%									
Transit	0%									

<sup>13</sup> “ACS 5-Year Estimates Subject Tables,” U.S. Census Bureau, retrieved 2/23/23, <https://data.census.gov/table?q=brattleboro+vt&tid=ACSST5Y2021.S0801>.

## 6. CONCLUSIONS & NEXT STEPS

Throughout this study, the intention was to identify improvements that could be easily and quickly implemented at a relatively low cost. Such improvements were grouped as short-term improvements. Note that some higher-cost improvements were also identified for implementation in the short term to more quickly buildout the bicycle and pedestrian network and increase safety. The long-term improvements will be higher cost than most of the short-term improvements, would require some additional study and/or design and more time to implement, and would complete the inspirational active transportation vision for Brattleboro, and as such entail significant design elements, higher cost, and the potential need for further study of certain elements. With that context, the implementation plan was developed, which shows each of the projects grouped by timeframe:

Next steps will be for the Town of Brattleboro to identify funding from among the sources provided and move these potential improvements and studies from plan to implementation. For any individual improvement or group of improvements, a combination of factors will come into play, including ease of funding, extent to which engineering, and roadway/intersection improvements can be done ‘in-house’ by the Town or would need to be outsourced to outside consultants and contractors. Note that some improvements could be made as part of other capital upgrades and maintenance efforts such as, for example, installing pavement markings and new striping configurations as part of any scheduled roadway repaving. It may be possible that some improvements could be integrated into other landscaping, aesthetic, or streetscape-related projects.



*Summary of Action Plan Recommendations*

To keep the momentum and begin implementing the improvements in this Walk/Bike Action Plan, the Town of Brattleboro's immediate next steps should be to identify or create a pool of matching funds that enable grant funding opportunities, and as follows:

- Implement short-term pavement marking improvements that correlate with the Town's annual paving plan in the next year:

PROPOSED SHORT-TERM FACILITIES – PAVING PLAN	
4	Add sharrows and install traffic calming measures on <b>Frost Street</b>
7	Add sharrows and install traffic calming measures on <b>Church Street</b>
8	Add sharrows and install traffic calming measures on <b>Elliot Street</b> between Church Street and Elm Street
9	Add sharrows and install traffic calming measures on <b>Elm Street</b>
13	Install Intersection Safety Striping Improvements at <b>Elliot Street at Williams Street, Union Street and Frost Street</b>
14	Install Intersection Safety Striping Improvements at <b>Elm Street at Frost Street and Flat Street</b>

- Implement Short-term Bicycle, Pedestrian, and Intersection improvements over the next 5 years:

PROPOSED SHORT-TERM BICYCLE, PEDESTRIAN & INTERSECTION FACILITIES	
1	Restripe <b>Western Avenue</b> to provide bike lanes, where missing
2	Add sharrows and install traffic calming measures on <b>Green Street</b>
3	Convert <b>Flat Street</b> to one-way westbound between Elm Street and Main Street and restripe the roadway to provide two-way bike lanes

PROPOSED SHORT-TERM BICYCLE, PEDESTRIAN & INTERSECTION FACILITIES	
5	Add sharrows on <b>Main Street</b> between High Street and Canal Street and install bike boxes at the intersections of Main Street at High Street, Elliot Street, and Flat Street
6	Convert the on-street parking and wide shoulders into bike lanes on <b>South Main Street</b> from Canal Street to Fairground Road
10	Restripe <b>Putney Road</b> from the West River to Wantastiquet Drive to provide bike lanes
11	Install signage and pavement markings on <b>Spring Tree Road</b>
12	Install a multi-use trail across <b>Brattleboro Common</b> between Putney Road and Linden Street
13	Install Non-striping Intersection Safety Improvements at <b>Elliot Street at Williams Street, Union Street and Frost Street</b>
14	Install Non-striping Intersection Safety Improvements at <b>Elm Street at Frost Street and Flat Street</b>
15	Install Intersection Safety Improvements at <b>High Street at Green Street</b>
16	Install Intersection Safety Improvements at <b>Church Street at Elliot Street</b>
17	Install Intersection Safety Improvements at <b>South Main Street at Canal Street</b>
18	Install sidewalk where missing on <b>Fairground Road</b> and <b>Atwood Street</b>
19	Install crosswalk visibility enhancements at <b>Brookside Drive</b>
20	Install crosswalk visibility enhancements at <b>George F Miller Drive</b>
21	Install crosswalk visibility enhancements at <b>Greenleaf Street</b>



- Plan a course of action that matches long-term improvements with grant funding and scheduled VTrans projects.
- Address as many of the Programming suggestions – from Section 4.1 of this report as possible in the next 2 years:
  - ✓ **Promote the E-bike Lending Library at Brooks Memorial library;**
  - ✓ **Schedule and lead group bike rides and/or walking tours;**
  - ✓ **Create one or more planned bike/walk routes** that connect important destinations in town and help people navigate around areas they don't feel safe;
  - ✓ **Address as many of the comments on the application from the League of American Bicyclists as possible and reapply for Bicycle Friendly Community (BFC) Status** (deadline is August 30, 2023); and
  - ✓ **Promote go! VERMONT and its services on the Town's website and through social media.**

In Conclusion: This Walk/Bike Action Plan was developed for the Town of Brattleboro in response to growing demand for active transportation modes, heightened importance of health and sustainability goals, and the ever important need to promote traffic safety – particularly for people on foot, bike, scooter, or who are accessing transit or using a wheelchair. Developing this Action Plan was a process that involved two public input sessions and three Steering Committee meetings that were held over the course of six months. Potential Active Transportation improvements were iteratively developed and include physical infrastructure network improvements as well as policy recommendations. Physical infrastructure designs are preliminary and intended to elicit further discussion and planning. We trust that this Walk/Bike Action Plan provides a solid framework to increase the safety, convenience, comfort, and extent of multimodal travel within the Town of Brattleboro.

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## APPENDIX

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
20	This stretch of road is terrifying when biking or on foot. Any kind of improvement would be great!
15	Narrow Bridge - forces bikes to go in road, dealing with impatient cars, trucks
14	Western Ave and I91 entrances and exits
13	Crossing Canal St between Pine and Maple. Narrower St, center island, Cars travel fast and it is a very wide ST. Currently no x-walk
13	Very narrow with storm drains and telephone poles, also doesn't help that it is uphill. Very dangerous part of the road for bicycles. Many drivers are impatient. I haven't been hit....yet.
12	The rotary is a pretty scary place for bicycles.
11	VT Deli area very dangerous for riders and walkers. Solution s/b high priority for the plan
10	Gravel collects here and makes it very dangerous for bicycles about to enter the bicycle lane.
10	Malfunction Junction is super dangerous for bikers. As is Main St in general. I want to bike downtown, but it feels too risky.
10	This stretch between the covered bridge and farmers market is treacherous for bikes. Not safe or practical to cross/recross so it's against traffic. Can a bike path be installed from bridge to parking lot?
9	Light at the Brattleboro Co-op intersection. It's hard enough for cars, dangerous for bikes.
9	Traffic often moving way too fast. Speeding cars ignore crosswalk. Los of children around
9	Bicycle lane has ended but bicycles still exist. This part of the road is very cracked and dangerous for bicycles. I end up occupying the middle of the road which can cause road rage with drivers.
8	There is insufficient shoulder on Rte 5 heading to or from Canal St. Needs better cycling infrastructure!
8	This section of the road is very unsafe for bike travel. The speed, the condition of the road and lanes, and the close proximity to large and fast moving vehicles is prohibitive to safety.
8	Awkward uneven spot for bikes on this curve at the storm drain. Squeezed too close to the curb as a car comes up behind and I've toppled more than once. Should be assessed — can a wider shoulder be painted?
8	Dangerous crossing here for bikes crossing Canal! And yet we must. Help!
8	People fly down green street, coming from route 9and/or I91. It's dangerous for the many folks who walk/bike around here, especially all the kid. Speed bumps would really help
8	Needs to be made pedestrian and bike safe
8	Bike trail along river would be awesome
7	Missing sidewalk, lots of kids walking in road shoulder going to school
7	Make this more pedestrian oriented when the new bridge opens
7	Better lighting and safety on western ave! It's extremely dark on the sidewalks and I do not feel safe being out after dark especially with all the drug traffic on foot between downtown and west b fire station.
7	traffic turning into Deli is an invitation to many drivers to pass on the right, jeopardizing walkers and bikers

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
6	crosswalk need blinking warning light same as covered bridge crossing. very dangerous crossing people seldom stop and sometimes when they do a car behind will cross lanes and try to pass not realizing people/dogs are in crosswalk
6	Space for bikes on this whole stretch of Main St is just where the road surface is most uneven right between parked cars and lots of traffic
6	Coming out of coop on a bike, the traffic light often doesn't 'see' you if you are in the car lane
6	Multi use path needed for riding and walking through the North side of the Common from Putney Road to Linden St.
6	The Wantastiquet/Harris/Tyler Street area is one of the most popular walking destinations in Brattleboro. A crosswalk, ideally with a blinking light, would make this crossing less dangerous. People cross here to walk the neighborhood and access West River
5	Need for bike infrastructure
5	Walkers and bikers cross here regularly and it is very dangerous. It needs its own crosswalk and crossing light. It's the main path from S Main to Living Memorial and the farmers market. Nobody walks up to the Canal/Oak Grove crossing as it's off the path.
5	Need more crosswalks
5	Most of Rt. 9 in W. Brattleboro is a biking disaster. This particular area where traffic goes turns in and out of Guilford St. needs to be addressed by creating right-andleft turning lanes into Rt. 9
5	A protected, multi-use trail is sorely needed from exit2 all the way to Westgate. Having a bike lane that appears and disappears is insufficient and there are too many road hazards and obstructions.
4	The crossing light at the intersection at Canal Street and Fairground Road doesn't allow enough time for pedestrians to cross
4	Side walk is badly crumbled and treacherous at night.
4	There are no walking/jogging trails from lower Memorial Park to the upper areas. You must walk on the road and there is a blind curve which is particularly dangerous. There should be a graded gravel shoulder so people can walk/jog and not be on asphalt
4	along western avenue from the creamery bridge to west Brattleboro post office is overgrown with weeds on the sidewalks as well the sidewalks are in bad need of repair.
4	Green lights simultaneous for 119W and the coop mean cars in both directions must drive on the left - confusing and extremely dangerous for all including bikes
4	Need safer pedestrian crosswalk
4	A spectate bike path along rt 30 side of west river would be awesome. Some how make a loop with west river trail
4	Cars travel quickly here and frequently pass bikes around the curve and into the Union St intersection.



## UPVOTE

## PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL

- 4 It would be nice to be able to cross from this corner/park to the east side of Main St. This would streamline a lot of pedestrian travel connecting S. Main to the east side of Main St., which now requires at least 4 road crossings, down to just 1.
- 4 Bike lanes from exit 2 to Sunset lake Rd needed. Very hazardous biking area, especially from Greenleaf to Exit 2.
- 4 I realize this is "pie in the sky" but it would be amazing for long term planning to have a bike/walk trail along with river from West Brattleboro to downtown.
- 4 People walk here all the time and it would be safer to not have to walk on dirt, uneven ground, broken glass, or on narrow strips that feel unsafe with cars speeding past
- 4 I was hit here on my bike going southbound as a car turned right in front of me turning into the One Stop Pet Supply parking lot. This was right after the bike land ended. I fell off my bike and almost fell into the travel lane. Bike lanes should extend.
- 4 sidewalk ends here. Many people walk to the Retreat Trail entrance by the ski jump. Cedar St. is very busy with motor vehicles and it would be helpful to have a sidewalk continue the entire way.
- 4 between the vt deli and farmers market there is a minimal shoulder and lots of traffic. Difficult to make a left turn onto western ave
- 3 The overgrowth makes this sidewalk narrow and unpleasant to use
- 3 Wider sidewalk that can be winter maintained. Memorial Park to Maple St. Current sidewalk is narrow and not on Town winter plow Rt. Each end is.
- 3 Sidewalks downtown can be too narrow for the amount of people who use them at peak times.
- 3 Add wide sidewalks all the way from creamery bridge to maple street, on both sides!! This is such a dangerous high pedestrian area, especially in the winter when it isn't wide enough to plow.
- 3 There is no sidewalk and a curve on the hill.
- 3 On the west side of the street there are always lots of vehicles parked making it a one lane road right at a corner turn. The sidewalk is also often obstructed by trash or vehicle extra stuff.
- 3 Needs crosswalk
- 3 Someone else had a specific comment about this area, but this part of maple street feels very unsafe for biking in general. Cars go very fast, often pass unsafely
- 3 cemetery access road enabling safer access to hospital area and supermarket plaza from morningside should be kept open in winter
- 3 In the winter these sidewalks are blocked, and pedestrians walk in the street in icy conditions next to fast cars.
- 3 I frequently walk from Country Hill to Mather Rd. There are no sidewalks and almost no one obeys the 25mph speed listing. It's dangerous.

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
3	South Bound: Road shoulder narrows to nothing which limits cyclists abilities to safely continue traveling into town. It makes cars uneasy as well, especially if a cyclists doesn't predictably take the whole lane.
3	Bridge provides nowhere safe for pedestrians to be as they make their way from multiple points across the highway
3	There is NO shoulder on this road and it is very scary for both cyclists and walkers.
3	All of Putney Road should have both sidewalks and bike paths all the way into town!
3	Build up of debris in the shoulder/"bike lane" which then falls into the river. I've picked up numerous items: nails/screws/metal chunks that could even pierce a car tire.
3	Cars too fast, lack of crosswalks
3	This section of road is terrifying on foot (I've done it a few time) and on a bike (done it a lot). The lighting is terrible at night and the road is too busy and narrow for the cars to move over. And they don't slow down.
3	This stretch of road is dangerous on the west side. Busy, no shoulder, poles/signs/grates obstructing the little room there is. Cars and trucks reluctant/too impatient to share or slow down.
3	There's lots of room for bike lanes, on street parking, street trees
3	It's crazy that the speed limits jumps to 40 here from 25, especially with the Retreat Farm having so many events. It would be great to have a bike/multiuse trail that gets you from Linden street all the way to WestRiver Park
3	Riding between the interstate ramps and the Deli, especially heading west, is dangerous. A protected bike lane all along Western Ave would be most welcome, even if it had to change cross over the road (bridges* or appropriate signals) once or twice.
3	Bike lanes to Academy School in both directions on Route 9!!
3	very small shoulder through this section of putney road, traffic also tends to speed up through this area.
3	Keeping the shoulders swept, sidewalks plowed and weeds mowed along the entire Rte 9 corridor from West Brattleboro to Interstate is necessary for both pedestrian and bicycle safety.
2	I think the new bridge project will fix this, but should be a decent sidewalk between Royal Rd and Main St.
2	Sidewalks are unplowed in the winter, forcing foot traffic into the street. The city sidewalk plow does Maple and the section by the field, then exits the sidewalk and drives along the street (no plowing) until the music center.
2	Corner of Sunset Lake Road to after the exit three Interstate Bridge
2	There needs to be pedestrian & bike access between Royal Road and downtown along Vernon St. There is a lot of foot traffic & bicycle traffic on this street.
2	Tons of children and elders on foot and bike along Marlboro Ave, and no sidewalk near the path. Cars going WAY too fast for a residential neighborhood!
2	No sidewalk and no shoulder on this road, path to/from hilltop montessori with lots of kids
2	Sidewalk switches from side to side. Impractical to keep crossing the street to walk safely. Chose one side and build a continuous sidewalk from Prouty to Canal St.

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
2	dangerous entry point to canal street, cars and trucks come up hill too fast
2	from canal st. to high school, dangerous riding, traffic fast and unprepared to see a bicycle in the street--not enough shoulder
2	it's especially scary turning onto vernon road here as there is no shoulder and cars coming from intersection have no time to see you as they come around this curve
2	unsafe both ways due to hill and curve; yet this is a main shortcut across town
2	Adding to the previous note about this spot, people do it anyway because it's the shortest crossing in this intersection. I get that it means you're crossing TWO streets instead of one (119 and Vernon), but for those with mobility challenges, shortest wins
2	Cars often drive too fast down to Morningside Cemetery without regard for pedestrians. SLOW signs might help?
2	Ditto to the other comment about needing to occupy the whole lane while on a bike. I am comfortable riding in the lane, but many drivers get pissed, and it is prohibitive for many potential cyclists.
2	There is no walking path or sidewalk on the most dangerous stretch of road in Brattleboro. There is a rock cliff on one side of the road and a drop off on the other side. The steady stream of walkers between down town and the Putney Road Shopping Malls.
2	Dangerous shoulder/Bike Lane - cars are impatient when northbound traffic is delayed in turning left into Top of the Hill Grill. I was almost hit while bicycling. You can tell that this has been happening for a while due to no grass beyond the shoulder.
2	Very small shoulder with blind corner, no bike infrastructure.
2	Sidewalk crumbling
2	No pedestrian accommodation along Marlboro
2	This is THE natural place to cross Canal and it's unsafe.
2	When northbound cars turn left onto Black Mountain Road any waiting cars use the bike lane to go around the turning car which is extremely hazardous for bikers.
2	Something at this intersection needs to be added that tells motorists turning onto Green St. to give right of way to cyclists continuing East on High St.
2	Can a 5 way traffic light be put in here, so everyone, including cyclists, is clear as to when it is there turn. This intersection is a mess.
2	Turning left out of the co-op, in a vehicle or on bicycle is a disaster.
2	This section of Maple St is dangerous for bikes since people ignore the 25 mph speed limit, it has traffic and portions of the road have poor visibility. I'm surprised there hasn't been an accident there involving a bike. Can a speed camera be installed?

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
2	The Retreat Tower trails connect to the Retreat Trails at the entrance to the Ski Jump parking lot. This is a dangerous pedestrian crossing due to the curved road and fast cars. Would be safer to have a cross walk with pedestrian-activated signal.
1	The "sidewalk" is completely overgrown. This section needs redoing!
1	Sidewalks along North side of Oak Grove are in need of repair!
1	Cross walk is not appropriately placed. Too far from actual intersection and stop sign. Cars don't see you when you're trying to cross because you aren't at the corner
1	There should be a sidewalk on this road, or at least some kind of shoulder striping to designate a pedestrian area. It is an access road to the middle school from South Main neighborhoods.
1	People drive way to fast which makes trying to cross, walking along Putney rd, pulling out with a car
1	danger entry to canal st
1	library access difficult in front; access via town hall works, but takes significantly longer.
1	curb blocking access from BS&L parking lot makes barrier to north-south route avoiding main street
1	oncoming traffic cannot see you, or you them
1	from birge st intersection to bridge, very unsafe, no shoulder--but this is a major intersection for getting around town/avoiding main and canal sts
1	union st a popular shortcut for cars, absolutely unsafe for bicycles, do not attempt for any reason
1	very dangerous but very tempting shortcut between elliot and flat
1	no room for bicycles to ride across this important shortcut bridge
1	Agree about the sidewalk being narrow and crumpled along Maple. Could it also be guarded? A protected bike line would be wonderful too, but not sure there's width for it. Few follow the 25 mph speed limit here. Are normal roads allowed to have speedbumps?
1	Why is there no crosswalk across 119? Will this get fixed when the bridge turns pedestrian?
1	The new stop sign here is really good. Thank you.
1	Pedestrians use St. Mikes as a passage from White Birch to Oak Grove. The St. Mike's side is blocked by snow in winter and unsafe. Regular clearing needed on St. Mike's side!
1	Cars on Fairview usually think cars going straight on Maple are going to turn right onto Fairview and cut them off. Unsafe for drivers and pedestrians. Clearer signage about Maple having right of way needed.
1	Potential connector to Guilford using the old carriage roads
1	Walking access to town for Morningside Cmn - becomes very icy and dangerous in winter/spring which limits walking and biking mobility. Bicycle parking infrastructure is severely lacking. There's a small rack which is hard to effectively lock a bike to and it is fully exposed to all elements which is an additional barrier for use.
1	Street too wide, needs bump outs, traffic to fast. Also hard for drivers to cross Canal



UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
1	No sidewalk or crosswalk for mobile home park
1	No bike lane or markings
1	Missing sidewalk
1	Road is too wide, cycle too long
1	No marked bike lanes
1	No trailhead signage
1	This is insanely wide, choke it down to slow traffic
1	Lower speed limits on smaller non-through streets to de emphasize cars as compared to kids playing, pets, walkers, bikes
1	Canal Street blocks pedestrians, bikes, community use of strut. Too loud, not enough shade trees, hostile environment to anyone outside of a car. This should be the heart of a walkable neighborhood
1	Turning left towards the bridge from Estey is unsafe. Cars coming up the hill cannot see and if a cyclist has to come to a complete stop here, getting the speed to get through the intersection safely is hard.
1	Sidewalks are in terrible shape and are often extreamly damngerous in the winter as the snow melts and then refrezes on the sidewalk.
1	This is a difficult interesction to cross. If you are coming down from Chruct St to Elliot St it is difficult to gauge on coming auto traffic because of how big the intersection is. Needs a 3-way stop, more cross walks and dedicated bike lines.
1	Traffic coming out of the coop needs a dedicated left turn light so cars don't have to force their way into the intersection and then speed to get through the cycle. Dangerous for peds crossing.
1	Turning left here onto Black Mountain Road by bike is very dangerous.
1	Where semi and other large trucks park it impedes the bike lane and all kinds of debris ends up on the lane as well.
1	Drivers and cyclists are often unsure what to do here as there is no formal sign for bicycles being in the travel lane. This issue continues through downtown.
1	There's no good way for a bicycle to access to bridge here, but it's the obvious choice for bikes to avoid Disfunction Junction.
1	I love the Bike Parklette!! Thank you. What would make it more-better: a ramp to get up and down from the curb right there!
1	It would be amazing if there was a way to avoid the situation of going around this to get from main to 30. I often bike Oak to Chase and make an illegal left onto Linden because it's way less stressful.
1	To add to my comment 195, being able bike up Chase street here to avoid the Park Place interesection and much of Main Street would be awesome.
1	Adding a sign indicating that motor vehicles should treat bicylces like any other vehicle would be helpful. Many motorists do not let cyclists go when it is their turn at this 4-way intersection. Education here would be helpful

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
1	Once the Green/High St. intersection is changed, perhaps adding a crosswalk somewhere between the crosswalks at Union and Oak. This is a long stretch to walk in either direction to get to the nearest crosswalk
1	At ALL downtown Main St intersections sometimes the lights in all directions are blinking yellow or red and the pedestrian lights are disabled. I've experienced difficult situations here as a pedestrian in which drivers don't yield because of this.
1	the intersection needs those signs saying you can't make a turn while the pedestrian crossing signal is on. Cars from the coop often turn right on this signal, endangering pedestrians.
1	Upper Dummerston Rd gets a lot of bike and pedestrian use, including regular fun runs in the summer, but the road has no shoulder and cars regularly go much faster than the speed limit. Traffic calming / marked shoulders would be helpful
1	Treacherous blacktop condition from east of Whetstone Brook almost to I-91 entrances, especially at drains and manhole covers. Lack of safe width to avoid rough patches and the too-close cars here.
1	Wide/Oversize load trailers on Rte 5 are dangerous. Some of these trailers are so wide that they require both lanes of travel to safely pass a cyclist riding on the shoulder. Why are these trailers on Rte 5 instead of I-91?
1	Trying to make a left turn here (or nearly anywhere along the Rt 5 bike lanes) is very dangerous
1	Crossing in front of this whole parking lot/turn into Spring Tree Rd/150' length of cars pulling in and out at all angles can be super dangerous depending on the time of day.
1	The multiuse trails at the Retreat are wonderful, but adding professionally designed and built mountain bike trails would improve safety and could make Brattleboro a tourist destination like Cady Hill in Stowe or the Kingdom trails in Burke.
	General comment: granite curbs are nice and all, but the grassy median between road and sidewalk is much friendlier and feels like a buffer zone. The cost (caused by the granite) is a reason given for not upgrading sidewalks-accessibility is more important
	difficult crosswalk: traffic is accelerating going north or coming downhill going south. Weaving is common. End of crosswalk doesn't meet stairs or ramp, requires walking a few steps against traffic
	Is there a stop here for cars or not? Painted STOP has worn off entirely and there is no sign.
	Is there a stop for cars here or not? Painted STOP is worn off in both directions and there is no sign.
	From Maple you must go down to pool to access park. A path crossing from Guilford into park to playground across ski hill and another trail coming up through ski hill to dog park from playground. The grass is very tall and wet in morning
	It would be nice to have an easier way to cross S. Main to connect the sidewalk on the east side with the crosswalk across canal st. Getting from the co-op to the Pearl/Thomas neighborhood, for instance, requires a crazy number of street crossings.
	very dangerous intersection for bicycles, no visibility entering fast road on curve
	dangerous entry to canal st

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
	dangerous entry to canal st
	dangerous entry to canal st
	dangerous entry to canal st
	i only enter this intersection via pedestrian walk light when all car traffic is stopped; too risky otherwise
	blinking light seems to provide a good measure of safety here--visibility is good and traffic will see bicycle and stop; maybe could work in other intersections?
	There are several parking lots starting at Key Bank to walnut St. that could be made more pedestrian bike friendly
	Walking infrastructure is intermittent with its existence and does not service the amount of pedestrians that are present
	A safe bike path from town to the Cotton Mill would allow people who work at the Cotton Mill, gym goers, and customers to bike safely instead of drive.
	Cars passing stopped or turning vehicles making it dangerous for pedestrians crossing at the crosswalk.
	Crosswalks are plowed on North sidewalk first in the Winter, but the South sidewalk is used for early morning walking to Green Street School and Bus stops on Western Avenue.
	Speed Limit Sign - blocked by vegetation. I would like to see more emphasis around town to ensure all roadway signs have a clear sightline from the road.
	Sidewalks are in disrepair and not ADA accessible
	Blind turn for cars, makes it hard to cross safely
	Missing sidewalk along road
	No connection to West River Trail
	No through connection to police station, Black Mountain Road
	Sidewalk gaps along Maple
	No through connection, pathway
	No trailhead marking for path to Organ Street
	No trailhead marking for Elm St extension to Prospect
	Wide road, hard to cross
	I commute this route daily. This blind-turn in particular is scary. There are lots of distracted teen drivers going to school, and the road FEELS wide enough to pass a bike, but not at the speeds people are actually driving coming from the other direction.
	Slower speed shared street
	Missing crosswalks
	Extend sidewalk and add crosswalk here where sight lines are good
	Get rid of turn lanes along Canal, make road too wide, stopped turning trucks hide pedestrians from oncoming traffic

UPVOTE	PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL
	There's no sidewalk here to get to/from Fairground to S.Main. It's especially sketchy in the winter.
	Opportunity for bikes being able to travel during pedestrian crossings?
	This interesection is incredibly uncomfortable on a bicycle. It get's narrow, it's uneven, out-of-towners are confused, and everyone in a car is in a hurry.
	A nice mixed use trail through here to help folks avoid the Linden/Main/Park triangle comfortably would be nice.
	I love this other person's comment here! It would be AMAZING if a multi-use trail could go through here!
	Trying to walk on sidewalk on west side of st is very stressful. Cars are flying by and cross walk there might as well not be there cars do not stop
	Another cross walk along here would be good
	Historically, there was a pedestrian staircase here.
	If a car is parked in this area is is very difficult to pass without an obstructed view of oncoming traffic
	Road surface is very poorly graded. Very unsafe to walk here--I had a bad fall one winter evening.
	There needs to be a safe place for pedestrians to cross from north side of Western to South side of Western so they can use the sidewalk over 91. This could be at the deli and/or closer to 91 where the sidewalk ends on the north side.
	Parking in front of the Deli should be eliminated because it is extremely dangerous. Painted crosswalks on Western Ave at Williams Street lead pedestrians directly into the sides of parked cars with no way around except walking in the street.
	Need blinking light crosswalk. There is a crosswalk, but cars don't stop for pedestrians. Let us hit a button to make lights blink here for visibility.
	Add a stop sign for drivers going up Elliot St. toward Birge St. There is a crosswalk, but cars coming up the hill don't have enough time or visibility to stop for pedestrians in the crosswalk. Needs to be a 4-way stop sign.
	Need a speed bump just before or after park! Cars RACE down Elliot St. in front of a park where kids play. Big safety hazard for everyone. This was done at Living Memorial Park. PLEASE HELP!
	strongly seconding the previous comment on bridge narrowness and the approach to it from both ends. Appreciate the signs but they're not enough for this dangerous area.
	More safe/covered bike parking everywhere please!! In actual parking lots, encouraging businesses to add good bike parking, etc
	Bike lane gets blocked by large semis. Car traffic is impatient at this point because we all just got beyond the traffic circle.
	Storm drains, manhole covers and bicycles don't mix. There are several in the bike lane making it hazardous to navigate.
	Car traffic does not know what to do with bicycle traffic at the entrance of this circle. I tend to occupy the road here so that I can safely get into the left lane.
	I call this "the gauntlet." Very narrow shoulder and a guardrail, coming into the home stretch before car traffic can finally make it onto I91 make them very impatient which makes it extremely unsafe for bicycle commuters.



## UPVOTE

## PUBLIC COMMENTS FROM INTERACTIVE MAPPING TOOL

This crosswalk is at the wrong place, going from sort of the middle of the block to a random lawyers' office. Would be better going from the other side of Williston St to the Courthouse parking lot. Super easy change to make--just repaint the crosswalk

It's extremely difficult to walk from North of Western/High to the South side of the Whetstone. Union is direct but way too dangerous to walk.

Uneven, broken sidewalk

Crumbling sidewalk

Crumbling sidewalk

No sidewalks on a street that's right next to two large schools. Dozens of kids walking in the road in heavy traffic. During snowy conditions this is especially dangerous as the shoulder is even narrower.


Continuous bike lane needed from West B to downtown, along Western Ave and Guilford St needed! Intermittent bike lane is ineffective and dangerous. Shoulder very narrow in spots, often has debris and patching has led to uneven, treacherous surface.

Town of Brattleboro Department of Public Work and public safety has 4 sets of Engineering conceptual designs for Rt9 and Williams Street safety around the Deli area. Public has had input toward the plans on several occasions.

Sidewalks of Canal Street are in Terrible disarray for walking and using a wheelchair  or for people with strollers!

Walking Canal Street

No bike Lanes on Canal Street for people to bike back and forth to work

We need more flashing Stop  signs for an on Canal Street for the intersection of Canal Street and going down Elm Street by Early Education and by Canal and Birge Street Intersection and up by Price Chopper

**Brattleboro Walk/Bike Action Plan – 1<sup>st</sup> Public Meeting | Thursday, September 22 | 6:30pm**  
**By Zoom and in-person at the Selectboard Meeting Room at the Municipal Center**

**Meeting Notes**

**Attendees:**

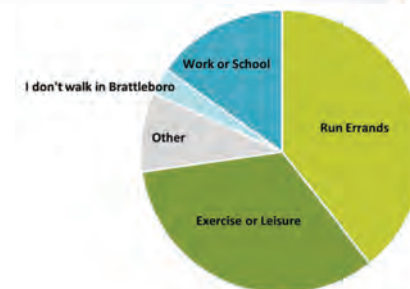
- |                                      |                             |
|--------------------------------------|-----------------------------|
| • Sue Fillion, Town of Brattleboro   | • Rebecca Jones             |
| • Dan Tyler, Town of Brattleboro     | • Stuart Lindsey            |
| • Brian Bannon, Town of Brattleboro  | • Beth Johnson              |
| • Stephen Hayes, Town of Brattleboro | • Alice Charkes             |
| • Kevin O'Brien, Town of Brattleboro | • Aileen Chute              |
| • Dan Handy                          | • Sharon Brown              |
| • Prudence Mackinney                 | • Peter Doran               |
| • Gary Stroud                        | • Jamina Shupack            |
| • Steve Minkin                       | • Andrew Watkins            |
| • Janet                              | • Philip Duchastel          |
| • Barry Aleshnick                    | • RA                        |
| • Tom Mosakowski                     | • Brandy Saxton, PlaceSense |
| • Elizabeth McLoughlin               | • Emily Foster, SLR         |
| • Gretchen Cowan                     | • Holly Parker, SLR         |
| • Phillip Duchastel                  |                             |

Please note that others joined – but did not sign in.

Sue Fillion began the meeting by welcoming everyone and discussing the agenda, after which, Holly Parker introduced herself and the consultant team working with Sue on the Walk/Bike Action Plan. Holly also explained the project's timeline and read the Vision Statement.

To gauge the degree of walking, biking and bus ridership among the meeting's participants, Sue asked a series of polling questions. The questions and their results follow:

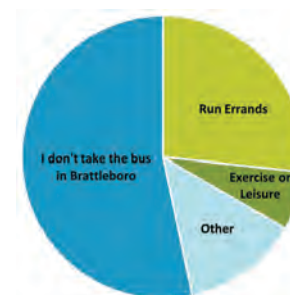
**Polling Question 1:** When you walk in Brattleboro, where are you going?



**Polling Question 2:** When you bike in Brattleboro, where are you going?



**Polling Question 3:** When you take the bus in Brattleboro, where are you going?



**Polling Question 4:** How do you get to the bus?

The next topic of discussion was the existing bicycle and pedestrian infrastructure and its condition, which led into an explanation of the project's interactive mapping tool that allowed participants to put points on an online map to show areas they wanted to see improved. A comment could be supported or "upvoted," and the bicycle- and pedestrian-related comments that got the highest number of votes were presented and discussed.

Meeting attendees were shown how the public comments on bicycle and pedestrian infrastructure aligned with upcoming projects in Brattleboro, and the presenters paused to take questions.

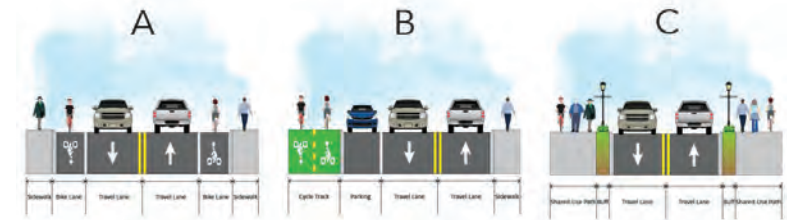
- Philip Duchastel asked if there was a possibility to have a bicycle way down Main Street from the post office to the bottom of Main Street. He noted that it would require the removal of parking.
- Kevin O'Brien asked if the heat maps and charts took the individual comments into consideration not just the upvoted comments.
- Gary Stroud stated that there are blind spots at certain turns and asked if these conditions could be factored into the report.
- Kevin asked if there will be an opportunity for people to add more comments.

Emily Foster of SLR then provided details of the upcoming bicycle and pedestrian improvements that will be coming on Putney Road from West River to the Exit 3 roundabout, as well as possible improvements on Western Avenue/Green Street from Edward Heights to High Street, and how to accommodate bicycles and pedestrians on Main Street.

Brandy Saxton of PlaceSense added more context and explanation of bicycle and pedestrian connection options through Main Street downtown, and specifically through the Bridge Street/Main Street/Canal Street area.

Canal Street was the next area discussed, and Emily provided some background on Canal Street's existing conditions, then presented options to describe potential new designs for Canal Street. Option A shows two vehicle travel lanes, and bike lanes and sidewalks on both sides of the street. Option B showed a 2-way bike lane on one side of the street, parking lane, two vehicle travel lanes, and sidewalk on the other side of the street. Option C showed shared-use paths wide enough for bicyclists and pedestrians) on both sides of Canal Street - with a buffer between the path and the two vehicle travel lanes. Only Option B retained any on-street parking.

The audience was again asked to answer polling questions to determine if one of these options was a clear preference.



**Polling Question 5:** Which of the following 3 options do you prefer for Canal Street?



Prudence Mackinney said she preferred Option A, to maintain the sidewalk on both sides of Canal Street. She also stated that shared-use paths are a really bad idea with a lot of pedestrians, especially with e-bikes.

Alice Charkes said that Canal street is a heavy pedestrian area and speeding isn't really an issue so bike lanes would be fine. She also stated that a two-way cycle track will be hard for people in Brattleboro to understand.

Janet said that wo-way cycle tracks are hard to understand, however it might be a good treatment at Maple street for bicyclists trying to turn left.

Gary said that the core section of Canal Street can be very tricky with the school near Elm Street.



Barry said that two-way cycle tracks are confusing and hard to get used to. Shared-use paths are preferred over bike lanes to get bicycles as far away from cars as possible. Bike lanes are nice, but they are scary. Having a bike lane with a buffer is the priority. He also stated that he understands the issues with pedestrians and e bikes sharing the paths but he hopes that there is enough respect. Maybe shared-use paths can work with enough education and understanding. The shared-use paths can also have markings to show the pedestrian and bicycle areas.

Someone who attended in-person stated that people often drive 10 to 15 mph over the speed limit which really puts bicyclists in danger. He also stated that indications of bicycles and pedestrians help.

Kevin said that he chose C thinking that so many drivers use the bike lane as a way to go around cars which causes a lot of safety issues. Additionally, a lot of the year the bike lanes are covered in snow. Shared-use paths would be an interesting option if they were on the high priority plow list.

Barry said that drivers don't respect bike lanes.

Alice said that she is pleased that we are talking about getting rid of parking. Streets should be for travel. On-street parking drives car travel.

Someone who attended in-person stated that you need to have on-street parking for the to accommodate the elderly and for people with disabilities. At the very least loading zones would have to be maintained. He also stated that there is a lack of off-street parking in some areas.

Peter Doran stated that the issue with option C will be the cyclists who are trying to go at speed will still travel on the road. A strong cyclist can move at 10-15 mph.

Holly Parker of SLR presented the final slides, including the criteria for prioritizing projects – which include *safety, connectivity, equity, feasibility, and cost*. This led to a discussion of connectivity in the context of Brattleboro's destinations, and of the cost of bicycle and pedestrian projects relative to the Town's budget.

The last slide presented showed the project's next steps, which include a second public meeting later in the fall, and a presentation to the Select Board. People were asked to pose any additional comments or questions to Planning Services at (802) 251-8154 or to email Sue Fillion at [sfillion@brattleboro.org](mailto:sfillion@brattleboro.org)

Alice said increasing funding for improvements is crucial. The town has increased the funds but it requires taking it away from other funds as well. The bicycle and pedestrian community is willing to sacrifice vehicle improvements. Currently, when it comes to vehicle improvements, no cost is too great. It makes her upset to see how little funding bicycle and pedestrian facilities receive. She also stated that the sidewalks on Elliot Street need to be improved.

Ra stated that planning as far into the future as we can is going to save money. It costs more money to do little improvements over and over.



Gary stated that the downtown needs on-street parking to accommodate the elderly. Proposed designs can't be exclusive. Finding Handicap parking can be hard. Need to find a more common ground. He also stated that there are more people coming into Brattleboro which requires more parking.

Prudence stated that there is a critical need for sidewalks. The town should look at a bond for sidewalk improvements. Major steps need to be taken.

Kevin stated that most of the greenhouse gas budget is used in transportation and heating. This is a good opportunity for pedestrian and bicycle improvements. And in reference to the comment that more people are coming to Brattleboro. Kevin noted that the more walking and biking, the more habitable.

Barry stated that the need to advocate for sidewalk and bicycle improvements is vital for safety and climate change concerns and to reduce emissions. The current budget is pitiful. Bicycle and pedestrian improvements are important for the sake of environmental priorities.

Alice suggested putting bike lanes on Main Street and sharrows where there are pinch points. The pinch point shouldn't be a reason to not have bike lanes. She also stated that she will not use "The Way Around" concept. Parking lots present their own set of problems for bicycles and pedestrians.

Kevin stated that he likes the bike lanes and sharrows on Main Street. He also stated the bicycle facilities on Main Street would help bicyclists access the proposed woonerf (shared street concept). He then expressed concern that people may not know what sharrows mean and that downtown already has a lot going on but sharrows will be helpful to warn motorists of cyclists.

Gary stated that lowering noise emissions is a benefit of pedestrian and bicycle travel as well. He said, imagine hearing all bikes and e bikes.

Andrea Watkins asked if the presentation will be available online somewhere.

#### Meeting Chat:

01:48:37 Janet's iPhone

In Austria sidewalks are shared by pedestrians and cyclists, and it seems to work. C could work.



**Brattleboro Walk/Bike Action Plan – 2nd Public Meeting | Monday, November 28 | 6:30pm By Zoom and in-person at the Selectboard Meeting Room at the Municipal Center**

**Meeting Notes**

**Attendees:**

- |                                      |                             |
|--------------------------------------|-----------------------------|
| • Sue Fillion, Town of Brattleboro   | • Sam Ruth-Isaacson, Miller |
| • Brian Bannon, Town of Brattleboro  | • Mary Grove                |
| • Stephen Hayes, Town of Brattleboro | • Andrea                    |
| • Kevin O'Brien, Town of Brattleboro | • Melissa Lee               |
| • Dan Handy                          | • Linda Bailey              |
| • Barry Aleshnick                    | • Alice Rodgers             |
| • Tom Mosakowski                     | • Susan Westa               |
| • Rebecca Jones                      | • Franz Reichsman           |
| • Alice Charkes                      | • Mollie Burke              |
| • Andy Davis                         | • Kathleen White            |
| • Abigail Mnookin                    | • Malcolm                   |
| • Laura Stamas                       | • Robert Oeser              |
| • Zeke C                             | • Allan Gill                |
| • Tony Duncan                        | • Marilyn Gill              |
| • Dana Ruppert                       | • Fhar Miess                |
| • Benny                              | • Jama Zeller               |
| • Jeff Nugent                        | • Norm Skorstad             |
| • Emma Schneider                     | • Brandy Saxton, PlaceSense |
| • Zak Grace                          | • Emily Foster, SLR         |
| • Viv Woodland                       | • Holly Parker, SLR         |

Sue Fillion began the meeting by welcoming everyone, discussing the agenda, introducing herself and the consultant team working on the Walk/Bike Action Plan, and explaining the project's timeline. Holly Parker, of SLR Consulting, continued by providing some context on the reasoning behind the specific recommendations being made, the timeframe for making improvements (short-term vs long-term), and cost considerations.

Emily Foster, also of SLR, continued by presenting the existing condition of Brattleboro's bicycle infrastructure, planned improvements, and recommended short- and long-term improvements. Emily then paused for questions and comments.

- 00:22:07 Alice Rodgers asked if cyclists who are in the "bike box" would trigger the traffic lights, which are motion detected for vehicles.

- 00:24:04 Zeke asked if any thought has been placed on pedestrian safety on Putney Road, specifically in the area of Great River Terrace north of the roundabout.

The next topic of discussion was the existing pedestrian infrastructure (00:42:55), planned pedestrian improvements, and the recommended short- and long-term improvements. Emily then paused for questions and comments.

- 00:46:25 During the presentation period a participant asked what a curb extension is. Following the response to this question she further commented that she particularly was happy to see the addition of a curb extension at High Street and Green Street but expressed concern of them causing a "pinch point" for cyclists, and encouraged that attention be given to maintaining a shoulder along curb extensions.
- 00:48:50 During the presentation a participant who identified as a biker and pedestrian as well as a driver expressed concern about snow removal along newly added sidewalks.

The implementation of the short-term improvements was discussed next – highlighting the fact that the town generates a list of roads it plans to pave each year – and tying that paving plan to the roads targeted for bicycle and pedestrian improvements that could be completed when the repaved road is re-painted with lane markings. Following this discussion, the presenters took more questions and comments.

- 00:58:00 A participant was wondering how far up Canal Street the improvements would occur, specifically in regard to safe routes for cyclists to travel to/from the schools i.e., in the area of Guilford Extension, right after Memorial Park where a bike lane suddenly ends and the shoulder disappears – as well as the area near Market 32.
- 01:03:00 A participant asked what the timeline is for completion of the short-term improvements.

As the presentation component of the meeting approached its end, Holly Parker discussed the grant and other funding options available to pay for these improvements. There are both federal and state funds available, and the American Rescue Plan Act of 2021 (ARPA) funds the Town received could also be used for improving bicycle and pedestrian safety. Bonding could also be an option. At current interest rates, a 20-year bond for \$100,000 requires annual repayment of \$7,000. A \$500,000 bond would require a commitment of \$35k for 20 years. A \$1m bond would require a commitment of \$70k for 20 years.

Brandy Saxton, of PlaceSense, explained that most grants require a 20% match, so having a fund available for matching bicycle and pedestrian improvement project grants is important.



- 01:07:24 – A participant asked where would the bike lanes be with respect to the sidewalks and the parking lot? Specifically in the area of Western Avenue from Crowell Lot and out to the Interstate.
- 01:08:50 – Following the response to the above question the same speaker then asked what sidewalks were planned to be widened to shared use paths for both bike and pedestrians.
- 01:20:11 – Another participant asked who is in charge of applying for the grant funds?

More discussion followed.

- 01:24:55 – Barry asked if the path across the common has to wait until after issues are addressed on Putney Road. He noted that he believed it could be woven into what was previously discussed about alternative routes becoming formalized with signage and a corresponding map.
- 01:27:25 – A participant stated his appreciation for the good work that was being done. He noted that in his prior experience as a resident of Burlington, VT that quality of life increased due to improvements made to pedestrian and bicycle routes, and safety.
- 01:28:18 – Kevin Brown noted that there should be some sort of educational campaign to inform people of what sharrows are, and what they mean. He suggested signage in certain areas, including at highway off ramps to inform drivers that Brattleboro is a bike friendly town.
- 01:30:10 – Tony expressed his appreciation for the work that has been done. He then made a few comments surrounding his concerns to facilitate open communication about planned improvements so that any potential antagonistic conflict among bikers, pedestrians and motorists could be avoided.
- 01:45:19 – Andy Davis noted his concern that areas without shoulders, specifically on blind curves create dangerous situations when motorists attempt to pass cyclists and cross the double yellow line into oncoming traffic. (eg., Maple Street, coming from Living Memorial up toward the Austine Campus).
- 01:47:04 – Barry also expressed his appreciation for the progress made. He then added comments similar to Andy Davis' regarding the dangers of cars passing cyclists by crossing the double line into oncoming traffic, specifically when it results in cyclist/motorist collisions. He finished by requesting that the final report express the urgency to get the plan in motion with respect to these concerns.



- The final comment was from a participant who asked when the plan would be presented to the Select Board Presentation.

#### Meeting Chat:

18:45:57 From Tony Duncan:

How much was the road repaving on south main compared to building the sidewalk?

18:53:07 From Alice Rodgers:

Could the downtown lights also have a bike light to allow bikes in bike boxes additional time to move through the intersection without cars?

18:53:56 From Andy Davis:

What thinking has gone into the danger of drivers in parked cars opening their doors into bicycle lanes? I avoid congested roads with parked cars such as Main St at all costs. Painted lanes in general provide little security from distracted drivers.

18:55:25 From Tony Duncan:

What is the connection between west river trail and rt 30?

18:55:44 From Susan Westa:

Can you repeat where that last piece - the shared road is?

19:03:53 From Andy Davis:

What thinking has gone into alternate routes for bicycles? For example North St to Wantastiquet Dr is a much better choice than Putney Rd between the Common and the Veterans Bridge. Could we have a meeting of cyclists to share alternative - lower traffic routes - that connect our town in a much safer way. I drive all over Brattleboro and rarely drive on much of our heavier traveled roads. Separate is safer when it comes to bikes and cars.

19:07:18 From Tony Duncan:

tristan and other reps are having a meeting December 10th

19:09:53 From Zeke C:

I'll reach out to Sue and Molly with contact info. TY

19:10:49 From Zeke C:

I agree 1000% with Molly's concern about the area by the Marina. I've thought for years that that was a pedestrian strike waiting to happen

19:13:38 From Becky she/her:



I know that Main street being a numbered road can't become pedestrian only the way Church Street in Burlington is, but is there a reason it couldn't be converted to Woonerf? as a way to signal the very shared function of downtown and maybe a way to encourage cars and trucks to use different roads

19:14:27 From Susan Westa:  
Thanks! That makes sense

19:14:44 From Zeke C:  
again, lots of elderly and disabled pedestrians in this area, lots of dogs and cats as well as wild animals, many folks who commute to work by bicycle

19:15:26 From Zeke C:  
I have a neighbor who bikes from this neighborhood to work at the Chelsea royal several times a week

19:15:49 From Linda Bailey:  
I was wondering about how much the condition of the road surface is talked about, and recommendations include making a bike friendly road surface, which is different than what is adequate for cars.

19:27:28 From Andy Davis:  
I can relate to the "pinch point" comment! Those curb extensions sometimes force a cyclist to come dangerously close to car traffic. Honestly, I sometimes move on to the sidewalk (if there are no pedestrians around!) to avoid this "pinch point" situation. There is a conspicuous one on Linden St between the Common and the Courthouse.

19:27:56 From barryaleshnick:  
Agree with Andy about getting an info sharing session to discuss alternate routes. The Wantastiquet suggestion is a perfect example. Whenever i am heading back to town from Putney Rd, I always turn off there, what a relief! Similar options to get off the busy car streets exist on my main route to town, Canal St. So, yes, let's talk, and maybe a map or other form of communication can be produced to share this information

19:29:03 From Susan Westa:  
Yes! It would be great to redo all the sidewalks at once!!

19:29:23 From Andy Davis:  
Yes, Barry! I will reach out on this. Anyone who wants to attend a bike alternative routes discussion feel free to contact me. andy@dancingmasters.com

19:41:52 From Dan Handy:  
Can you discuss the idea to make Flat Street one way westbound, and any other one-way conversions?



19:45:26 From Kathleen White:  
I think Norm is referring to the Bridge St woonerf.

19:46:22 From Andrea:  
Also curious if cyclists have said they would use Flat Street Westbound. Seems very difficult for a cyclist westbound, because it leaves one at a low elevation.

19:49:02 From Andy Davis:  
Interesting... the Dutch word 'woonerf' translates as 'residential area' in English.

19:53:56 From Kevin O'Brien:  
I may have missed this in the map, but is there a plan for a multi-use path across the top of the Commons - behind the gazebo

19:59:14 From Andy Davis:  
I use the imaginary path across the top of the Commons quite a bit. Much better option - even with no actual path - than competing with cars on the Courthouse racetrack!

20:01:18 From Kathleen White:  
That would be excellent, thank you!

20:02:04 From Andy Davis:  
Yes, yes! Good work moving these projects forward.

20:02:22 From Becky she/her:  
Thanks for all your work on this, it is very exciting and great for the greater Brattleboro community

20:02:52 From Linda Bailey:  
yes, great to have that link on the Common included.

20:03:05 From Andrea:  
A flashing cross at the end of Wantastiquet would be fabulous!

20:03:52 From Mollie Burke:  
One issue coming up in the future is the proposed housing development at the former Austine Campus.

20:03:58 From Kathleen White:  
We have applied and got an honorable mention. We will apply again to upgrade our designation.

20:04:47 From Mollie Burke:  
Maple St. is like a speedway and neighbors will appreciate some traffic calming, perhaps stop signs, and pedestrian crossings



20:06:39 From Linda Bailey:

what are next steps for us as advocates to get these plans and ideas closer to implementation and reality?

20:10:54 From Andy Davis:

What does it mean for automobile drivers to “share the road” with cyclists? Some drivers treat bikes and pedestrians like a co-equals. For example: Some drivers wait until they can actually see oncoming traffic before passing a cyclist on a blind curve. Too often, drivers do not slow down in the least, hoping for the best - as they cross a double line - if an oncoming car or truck appears. Does Vermont driver education actually define what it means to safely “share the road”?

20:11:41 From Andrea:

Again is one-way motorized vehicle access on Flat St really necessary? Is east-west cycling there difficult? How does cyclist connect westbound to higher elevation roads?

20:12:15 From Zeke C:

any volunteer grant writers? worth posting about i suppose 😊

20:12:42 From Tony Duncan:

biggest issue by far that limits bike usage is safety. My wife and dozens of others have expressed real fear biking on the main rods where there are bottlenecks

20:17:30 From Linda Bailey:

Getting funding seems to be key. And working on increasing the societal acceptance of bikes, and having that be incorporated in institutional budgets on a more equitable footing.

20:17:54 From Emma Schneider:

Having driver's be at fault for right turn crashes would be a good step for sure.

20:20:57 From Abigail Mnookin District 2:

Thanks who has put in so much time and effort into these plans. Continuing to invest in and improve bike and pedestrian infrastructure and safety is much appreciated!!

20:21:58 From Kevin O'Brien:

Thank you all for your engagement and support. Active transportation is a huge step towards ensuring we have a livable planet

20:22:44 From Becky she/her:

<https://www.nytimes.com/2022/11/27/upshot/road-deaths-pedestrians-cyclists.html?searchResultPosition=1>

20:23:53 From Emma Schneider:



Thank you Barry for your comment about urgency!

20:24:41 From Dan Handy:

Re: Flat Street. Yes good question for more thought, Andrea, because if car traffic is one-way westward but bikes are both directions it could create more problems than it solves. Riding downhill from Canal Street down Elm Street to Flat Street is a way to short cut around Malfunction junction to go north on Main Street. Agreed also with the presenters that Flat Street is low traffic currently, but that may also change with the Bridge street changes at Malfunction. Regardless it may still be necessary to cut down the eastward car flow out of Flat Street to Main.

20:24:51 From Kevin O'Brien:

Agreed and another great resource: <https://usa.streetsblog.org/>

20:25:07 From Steve Haves:

streetsblog is fantastic, thanks Kevin!

20:27:30 From barryaleshnick:

After 50 years on a bike as my primary transportation here and abroad, i've never felt as worried as i do now



## BCAT Survey on Active Transportation 2020

The Brattleboro Coalition for Active Transportation (BCAT) hosts an annual Safe Streets Forum each fall that is used to collect information from community members and serves to guide their work for the upcoming year. Due to COVID, the coalition created a survey to collect information from Brattleboro community members in place of the forum. 139 community members filled out the survey and the following document categorizes common areas of concern noted in long answer responses from the survey. The original survey document can be found at:

[https://docs.google.com/forms/d/e/1FAIpQLSdaNUdM0wxjUHxzZiAdN-kTkohiXd\\_8HbmGdZwS6gseytA5FA/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSdaNUdM0wxjUHxzZiAdN-kTkohiXd_8HbmGdZwS6gseytA5FA/viewform?usp=sf_link)

### Overview

- Top 3 responses when asked what resources were relied upon for information related to active transportation:
  - Local newspaper (43.3%)
  - VBike (38.1%)
  - 'I haven't been able to find a good resource for..' (23.1%)
- Majority of respondents (55.5%) were not aware of BCAT
- Of those that replied that they were aware of BCAT (44.5%), most (63.7%) did not know how to contact BCAT
- The bulk of survey participants had access to a standard bicycle (74.6%) and safety helmet (88.3%)
- If a workshop on bike maintenance was made available, 'maybe' was the most popular answer (46.7%)
- An overwhelming number of respondents (83.2%) replied that they had specific areas of concern regarding walking, bicycling, wheelchair, scooter, etc. safely (\*see summary at the end).
- Most survey participants (69.6%) noted that they were not aware of where to find Brattleboro bicycle ordinance information
- Likewise, 76.1% of those that took the survey were not aware where to find information on what Brattleboro is doing to improve infrastructure for walking and biking
- 33.1% of respondents said that they would ride more regularly for transportation if they owned an electric or e-cargo bike (\*45.6% of respondents to this question reported already owning an electric or e-cargo bike)
- Participants noted the following as being the top 3 destinations for themselves regarding active transportation modes:
  - Recreation (72.8%)
  - Errands/daily tasks (66.2%)
  - Work (34.6%)
- Participants noted the following as being the top 3 destinations for their children regarding active transportation modes (\*59.3% reported not having a child):
  - Recreation (20%)
  - Errand/daily tasks (12.6%)
  - 'None of the Above' (11.9%)

- The top 3 motivating factors listed for choosing modes of active transportation were:
  - Health/physical activity (87.9%)
  - Environmental impact (74.7%)
  - Behavioral (ie improved moved, increased focus, etc.) (72.7%)
- The top 3 barriers listed for not choosing modes of active transportation were:
  - Safety (50%)
  - Community design (39.1%)
  - Inconvenience (34.8%)

\*Summary of Specific areas of concern regarding walking, bicycling, wheelchair safety in the community:

There were 187 individual comments stating specific areas of concern regarding walking, bicycling, wheelchair safety in the community. Many Brattleboro residents do not feel they can move safely around town outside of a car and they took the time to express their greatest concerns. We categorized the comments by location and by topic; some comments appear in more than one category. 24 respondents mentioned needing more and better bike lanes. 21 respondents commented specifically about problems with Western Ave/High Street, 22 about Putney Road (most of which will be addressed with the major reconstruction plans) and 17 about Downtown. Of the 27 requests for new infrastructure, 9 focus on biking, 5 were walking related and 10 requests relate to both walking and biking. There are 15 comments about sidewalk maintenance. The category Health Equity, includes many concerns about moving around town via wheelchair. There are also comments related to elder specific challenges.

Here is link to the specific comments: <https://docs.google.com/document/d/17vbdyPotqN-I7sP7Rmyl7XL559qS5wgw/edit#>



# BRATTLEBORO, VERMONT

## SIDEWALK LOCATIONS AND CONDITIONS

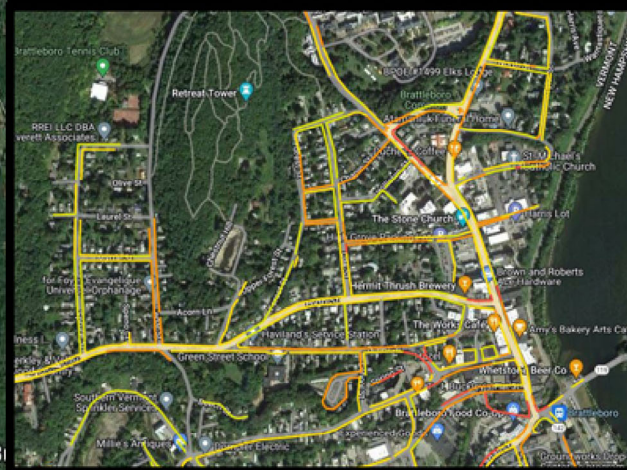


DEPARTMENT OF PUBLIC WORKS  
211 FAIRGROUND ROAD  
BRATTLEBORO, VT 05301

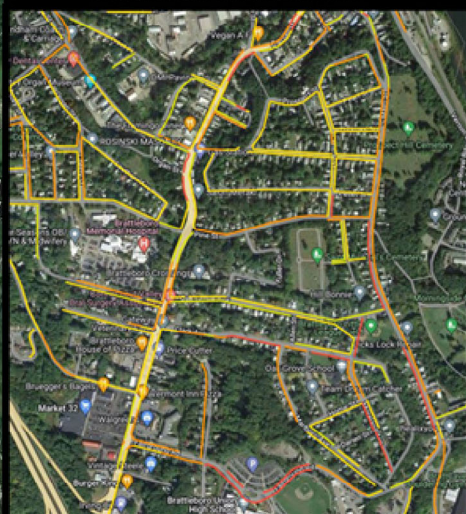
### CONDITION

- 1 NEW
- 2 GOOD
- 3 FAIR
- 4 POOR

### DOWNTOWN AREA



### SOUTHERN BRATTLEBORO

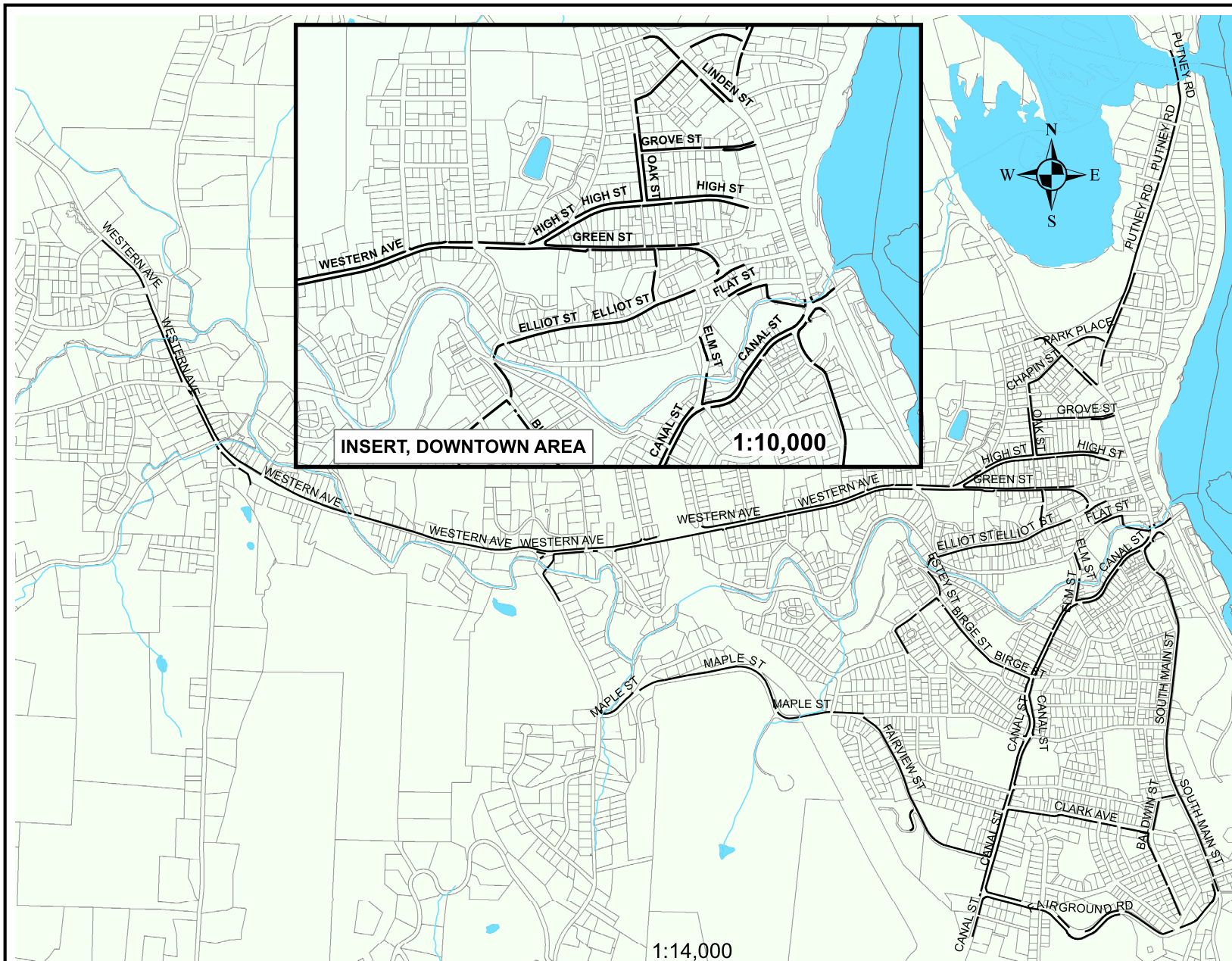




# TOWN OF BRATTLEBORO VERMONT

## SIDEWALKS

### Winter Plow Route



Brattleboro Public Works  
211 Fairground Road  
Brattleboro, Vt. 05301  
802-254-4255

Gary King  
Engineer Tech.  
gking@brattleboro.org  
Updated: Nov. 2012

