

# Belchertown Route 202 Bikeability Assessment

**Healthy Hampshire/Mass in Motion | September 12, 2015**

Prepared for the Town of Belchertown by:

The Massachusetts Bicycle Coalition in partnership with Healthy Hampshire, Mass in Motion,  
Department of Public Health

---





## Overview & Methodology

Healthy Hampshire organized a bikeability assessment to take place on September 12, 2015. The Massachusetts Bicycle Coalition (MassBike) led the assessment. Programs Director, Barbara Jacobson led a training about bike infrastructure to participants before fieldwork commenced. The purpose of the bikeability assessment is to build local knowledge and capacity to improve bicyclist safety, to provide guidance for potential specific projects, policies, and programs, and to identify opportunities for further study.

This bikeability assessment report summarizes the observations made in the selected study area. The observations vary from specific infrastructure deficits, such as a lack of on-road bicycle facilities, to general comments on traffic speeds or land use patterns (e.g., land ownership). Likewise, the recommendations range from specific fixes (e.g., striped bike lanes) to suggestions for further study (e.g., evaluate the feasibility of intersection redesign using Complete Streets policy as a guide). The guiding principle of Complete Streets design is that streets should be designed to be used safely by everyone using a variety of modes of transportation. The report may also include suggestions for policy changes or programs to enhance bicycling safety and participation.

The assessment is not meant to be a complete inventory of infrastructure deficiencies, nor is it meant to provide specific designs for improvement. MassBike leads the assessments as a means to build local capacity and create a forum to bring various stakeholders to the table with the goal of improving the built environment for biking. MassBike staff members are not licensed design or engineering professionals. This report may be used as a resource for municipal staff, traffic engineers, and design professionals who municipalities may engage to design and implement policies, programs, and infrastructure improvements.

For the assessment, the team split up into groups and each focused on selected segments of the corridor. After the fieldwork, the assessment participants met for a discussion and debrief session.

## Study Area

The study area focused on Route 202/Maple St/State Street. The key points of interest are:

- Town Common (adjacent to Park Street)
- Checkers General Store and shopping area



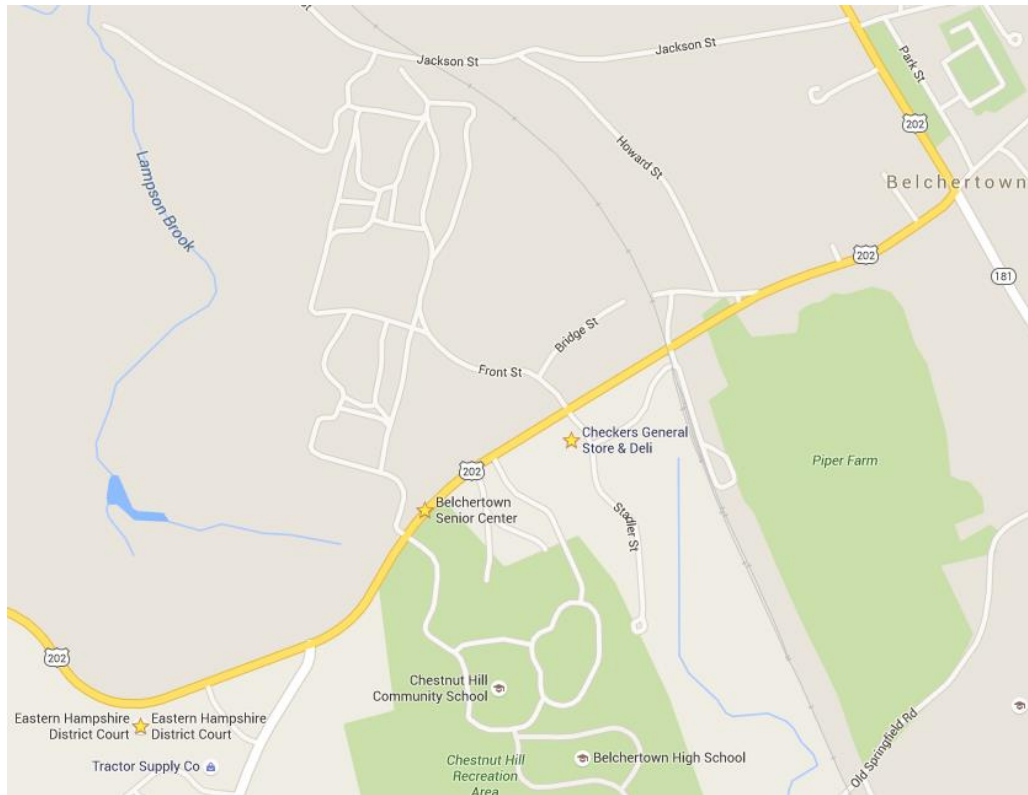
Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org

- Senior Center
- Courthouse



The route was selected based on the high rates of bicyclists using the segment and as a catalyst to create a bikeable network for connectivity within Belchertown. Route 202 connects many destinations of the town, including Piper Farm recreational area, schools and the Belchertown state school property that is being redeveloped.

The sections of Route 202 that were looked at as a part of the bikeability assessment connect Belchertown's Main Street with open spaces, a shopping plaza, the senior center and the courthouse. The roadway is the major thoroughfare in Belchertown. The roadway has varying widths, with the bridge as the most narrow pinch point. Some assessment participants noted that they avoid using Route 202 when possible due to the lack of bike infrastructure and high volumes of traffic. Some assessment participants noted that they use an unofficial off road trail network to get to destinations.

A sidewalk runs parallel to Route 202. However, it is in need of repair and an upgrade to be ADA-compliant.



## Overall Recommendations:

- Narrow travel lanes along the length of Route 202 to calm automobile traffic and implement 5' bike lanes where feasible.
- Assess the feasibility of connecting the separated trail network more officially between Piper Farm Recreational Area and Checkers.
- Work with developers of the Belchertown state school property to improve the biking and walking environment.
- Consider implementing wayfinding signage to connect people with destinations and key points of interest in time and distance.
- Consider working with MassDOT to reduce the speed limit from 35 mph to 30 or 25 mph.
- Consider working with local businesses to hold a bike/walk street festival to highlight the benefits of biking and walking on the local economy
- Assess feasibility of creating a multi-use trail that could run parallel to State St. in the vicinity of the Belchertown state school property , that would accommodate both pedestrians and cyclists



## Town Common to Checkers



**Route 202 & Main Street**

The area along the Common is Main Street. There are many commercial points of interest along Main Street, including a bike shop and the library. In the segment along Main Street has a no parking zone, marked with diagonal painted lines, motorists were observed passing cars in the marked lane and parking in it to go into a Chinese restaurant. Assessment participants noted that when MassDOT redesigned the intersection at Routes 181 and 202, they moved the right turn lane to accommodate large turning trucks. Additionally, there are pavement markings indicating, "Bicyclists wait here for green." However, there is no detection loop in the pavement. As a result, bicyclists who may be waiting for the green light will not be detected.

The crosswalks at are two parallel lines. Overgrown vegetation blocks the neon pedestrian crossing signage at the crosswalk adjacent to the Common. There is no sidewalk parallel to the Common.





Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org



***Pedestrian Crosswalk Sign blocked by overgrown vegetation***



Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org



***'No Parking' lane markings***

Bicyclists were observed bicycling along the segment. One person was observed biking against traffic and then transitioned to riding on the sidewalk. One person was riding uphill with the flow of traffic. On the western approach, there may be room to implement a dashed climbing bike lane to feed into a bike box at the intersection of Route 202 and Main Street. The dashed bike lane will provide protection for cyclists going uphill - they tend to go slower than cars in this situation. Further study and evaluation will be needed to determine if there is enough space on the roadway to implement a climbing bike lane.

The bike box at the western approach will provide cyclists space to establish road position to make turns or continue straight. With the implementation of better bike infrastructure on the roadway, it will help to



Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org

improve the perceptions of safety of the built environment and deter cyclists from riding against traffic and on sidewalks.



***Bicyclist riding uphill on Route 202***

The narrowest part of Route 202/State Street along the segment is the bridge. There is a narrow sidewalk on the northern side of the roadway, approaching from the east. During the assessment, participants walked along a 2' shoulder & 2' sidewalk on the southern side. Due to the constricted roadway, bike lanes cannot be added to this portion of Route 202. However, the bridge overlooks an off-road trail network that many of the participants use instead of traversing Route 202. By paving the trails and adding wayfinding signage, they could serve to be a connector route from Checkers to the Common and other points of interest.





Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org



***Route 202/State Street bridge facing west***



***Bicycle tire marks on dirt trail path parallel to train tracks***



***Termination of trail adjacent to Checkers***

**Recommendations:**

- Consider implementing bump outs to square off the intersection. This will help to calm turning traffic from Main Street to Route 202 & 21 and shorten the crosswalk length for pedestrians.
- Consider implementing bike parking near the Common and along the Commercial section of Main Street.
- Consider removing the diagonal 'no parking' lane markings. Doing so, will open up the opportunity to implement a 5' bike lane on the western side of Main Street.
- Consider removing the striping along the shoulder on the eastern side of Main Street. Consider implementing a 5' bike lane in its place.
- Consider implementing 5' bike lanes (where feasible) along Route 202. Due to the changing width of the roadway from the Common to Checkers, sharrows are a good option where bike lanes do not fit.



- Consider implementing a climbing bike lane from the western side of Route 202. Consider implementing a bike box at the top of the hill where the climbing bike lane terminates. This will help bicyclists establish road position for turns or continuing straight.
- Consider implementing sharrows and 'Bikes may use full lane' signs at both the eastern and western approaches of the bridge.
- Work with railway stakeholders to sign and repave the off-road trails. This trail network is a way to connect people to open spaces such as Piper Farm and commercial centers such as Checkers.

## Checkers to Senior Center

The approaches to enter/exit Checkers are not conducive for pedestrians and bicyclists. The radii of the turns are quite wide and create opportunities for motorists to make quick turns. By squaring off the intersections, it will shorten pedestrian crossing distances, and improve the safety of turning movements by allowing users to make eye contact with each other before turning in/out of Checkers. The intersection modifications can be made using temporary curbing and paint.



***Wide turn radii & poor pavement quality, Checkers General Store area***

By redesigning the roadway to accommodate all users from children to senior citizens, it will create a safer environment for vulnerable road users and create a better walking and bicycling environment. During the assessment, motorists were observed travelling at high speeds along the segment of Route 202 between Checkers and the Senior Center. The shoulder of the roadway is 2' and there is a narrow side path parallel to Route 202. There appears to be enough space to stripe 5' bike lanes along the segment. Considering that





the Senior Center is adjacent to the Belchertown state school redevelopment, this could be a great opportunity for the implementation of on-road bike accommodations as a part of a community benefits agreement.



***Route 202/State Street adjacent to Senior Center***

### **Recommendations:**

- Consider working with the developer of the Belchertown state school redevelopment project to see about widening and upgrading the side path to meet ADA standards.
- Consider further study about the about the feasibility of implementing bike lanes along this stretch of Route 202 or widening the path along the roadway, making it a shared use path for both cyclists and pedestrians.
- Consider implementing sharrows and 'bikes may use full lane' signage where applicable.
- Consider implementing wayfinding signage to destinations in time and distance
- Consider implementing bicycle parking at Checkers

## **Senior Center to Courthouse**

The segment of Route 202 between the Senior Center and the Courthouse is not as straight as the other portions assessed. The paved, marked shoulder ranges from 3' to 1' in some locations, with an additional gravel shoulder in some locations.





Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org

In order to improve the safety of the intersection for all users, it is recommended to square off the intersection at 90-degree angles and implement a bike lane through the intersection. The roadway improvements will calm traffic and create a dedicated space for bicyclists along the roadway, and could encourage more students to bike to school.

A challenging intersection is when Route 202 and Route 21 meet. There is no clear lane delineation on the Route 21 approaches and the turn radii is not 90 degrees. In order for the safety and usability of the intersection to be improved, the intersection should be modified to 90-degree angles at both approaches. This will slow motorists down while making turns and create a safer environment for bicyclists and pedestrians, as there is more opportunity for roadway users to make eye contact as turning movements are happening.



***Intersection of Route 202 & Route 21***

At the intersection with the courthouse, there is a patch adjacent to the roadway that is worn due to motorists passing as cars turn into the courthouse parking lot. Considering that the turn is after a curve, it may be beneficial to implement a warning sign that cars will be turning ahead.



***Courthouse Intersection***

### **Recommendations:**

- Consider squaring off intersection at high school and striping bike lanes. This will calm traffic and perhaps encourage more students to bike to school.
- Consider an intersection redesign of Route 202 and Route 21. By slowing down automobile traffic, it will improve the safety and usability for all roadway users.
- Consider implementing 5' bike lanes where feasible. Perhaps MassDOT will consider paving the gravel shoulder adjacent to the roadway to accommodate a bike lane where the marked shoulder is at its narrowest.
- Consider implementing sharrows where bike lanes will not fit.
- Consider implementing 'Bicycles may use full lane' signage where applicable.
- Consider implementing signage indicating that motorists will be turning ahead of the entrance to the courthouse.






Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org

## Appendix A: Infrastructure Guide

Infrastructure Type	Description	Picture
Bike Box	A bike box provides an advanced stop bar for vehicles, allowing bicyclists to stop at a traffic signal ahead of vehicle traffic to increase visibility, reduce bikes stopping in the crosswalks, and allow for left turns. Note that bike boxes are considered experimental by FHWA; installation requires a request for experiment.	
Bike Corral	A bike corral is a bike rack placed within the parking lane of a roadway. A single corral can replace one vehicle parking space with 10 to 12 bicycle parking spaces.	
Bike Lane	A bike lane is an exclusive travel lane for bikes, typically located along the right side of the travel lanes on a two-way street; however, bike lanes may be located on either side of a one-way street.	




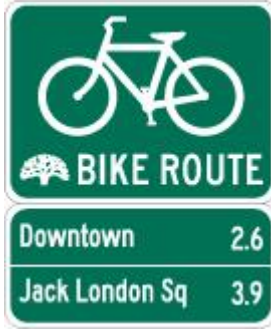




Massachusetts  
Bicycle Coalition

171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org

Bike Parking Rack	Individual bike racks may be placed along sidewalks to provide incremental bicycle parking throughout a larger area. Bike racks should be designed to support each bike in two locations above the center of gravity (e.g. inverted U rack, post and ring).	
Bike Wayfinding Signage	Wayfinding signage provides guidance for cyclists on recommended routes to key destinations.	
Buffered Bike Lane	Buffered bike lanes provide a higher quality bike facility where right-of-way allows. On roads with higher speeds, a buffer between the travel lane and the bike lane allows for increased comfort for cyclists. On roads with on-street parking, a buffer should be placed between the parking lane and the bike lane, reducing dooring crashes.	
Climbing Bike Lane	Climbing lanes allow slower-moving, uphill bicyclists to have a designated bicycle lane space, facilitating easier and safer passing by motor vehicles.	





Massachusetts  
Bicycle Coalition


171 Milk Street, Suite 33  
Boston, MA 02109

617-542-BIKE (2453)  
617-542-6755 fax

MassBike.org

Curb Extensions	Curb extensions shift the curb and accessible ramp at a crosswalk to the edge of the bicycle lane or travel lane in order to reduce vehicle speeds and increase visibility for pedestrians. Care should be taken when designing curb extensions to ensure that they do not extend beyond parking lanes, reducing the width for safe bicycle travel.	
Reverse Angle Parking	Reverse Angle Parking is an alternate form of parking where cars back into angled parking spots. It has been praised among traffic engineers as a traffic calming mechanism that increases the safety of a street for motorists, bicyclists, and pedestrians.	
Shared Lane Markings ("Sharrows")	Shared Lane Markings designate positioning for cyclists within lanes shared by vehicles and bicyclists as well as alert drivers to the presence of cyclists. Shared lane markings should be considered in constrained corridors where installation of bicycle lanes is not feasible or as temporary until future improvements can provide full bicycle facilities.	



<b>Zebra Crosswalk</b>	<p>A Zebra Crosswalk uses diagonal white lines to delineate a crosswalk zone. With angled lines, the crosswalk becomes more visible to motorists and the paint lasts longer since cars are not directly driving over entire line segments.</p>	
------------------------	--	--