



Walk and Bike Assessment Pittsfield, MA

January 20, 2015

Prepared for the Massachusetts Department of Transportation Bicycle and Pedestrian Safety Awareness and Enforcement Program in partnership with the Massachusetts Department of Public Health

Background

WalkBoston and the Massachusetts Bicycle Coalition (MassBike) working with Toole Design Group (TDG) led a walk and bike assessment in Pittsfield, Massachusetts on Thursday, December 4, 2014. The assessment is part of the Massachusetts Department of Transportation's (MassDOT) Bicycle and Pedestrian Safety Awareness and Enforcement Program, funded by the Federal Highway Safety Improvement Program (HSIP), in association with the Massachusetts Department of Public Health. The MassDOT program is a collaboration among Federal, State, regional, and local agencies, along with advocacy groups, WalkBoston and MassBike, to improve pedestrian and bicyclist safety in identified high-crash areas.

WalkBoston is a pedestrian advocacy organization whose mission is to make walking safer and easier in Massachusetts to encourage better health, a cleaner environment and vibrant communities. The purpose of the walk assessment is to develop knowledge and awareness of the pedestrian environment at the State and municipal level.

MassBike is a nonprofit advocacy organization whose mission is to promote a bicycle-friendly environment and encourage bicycling for fun, fitness and transportation. 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 assessment report has been prepared by TDG based on comments and observations made by members of the assessment team during the assessment, as well as data collected by WalkBoston and MassBike prior to the assessment. The report summarizes the observations made in the assessment area and makes recommendations for improvements to the built environment to increase walkability and bikeability. The observations vary from specific infrastructure deficits for walking and bicycling (such as lack of sidewalks and/or on-road bicycle facilities) to general comments on traffic speed or land use patterns (e.g., vacant storefronts). Likewise, the recommendations range from specific fixes (e.g., paint crosswalks and/or stripe bicycle lanes) to suggestions for further study (e.g., evaluate the feasibility of intersection redesign for raised crosswalks or bicycle infrastructure). The report may also include suggestions for policy changes or programs to enhance bicycling and walking safety and participation.

The City of Pittsfield is one of the twelve communities participating in the Massachusetts Department of Transportation's multi-disciplined program to improve pedestrian and bicycle safety in Massachusetts. The assessments have three goals:

- Foster an awareness of the infrastructure elements which contribute to the walking and bicycling environment;
- Evaluate the safety and quality of the walking and bicycling environment along the route; and
- Recommend improvements.

The assessment is not meant to be a complete inventory of infrastructure deficiencies, nor is it meant to provide specific designs for improvements. WalkBoston and MassBike lead the assessments as a means to build local capacity for improving the built environment for walking and bicycling. 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.

Assessment Team

Representatives from the City of Pittsfield, MassDOT, Mass in Motion, WalkBoston, MassBike, and TDG participated in the walk and bicycle assessment. The members and their affiliations are provided in **Table 1**.

Table 1 - Assessment Team

Team Member	Agency/Affiliation	Email Address
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The assessment took approximately three hours, including a brief introduction about the process, walking the assessment area, and a debrief session afterwards.

Assessment Location

Prior to the assessment, WalkBoston and MassBike met with City staff and representatives from the Pittsfield police department on November 14, 2014 to discuss the MassDOT safety program, select the assessment corridors, and conduct a pre-assessment walk. The City Master Plan includes a Complete Streets policy; however there is no bicycle network developed to date. The Pittsfield Police Department has been implementing a bicycle/pedestrian enforcement and awareness program that works in conjunction with this safety assessment. One of the enforcement locations is in the study area at Tyler Street/Pleasure Avenue. The police have also identified eighteen high-priority intersections that are of concern for pedestrians and bicyclists; Tyler Street at Burbank Street is one of these intersections. Although the majority of intersections fall outside the study area, the assessment team chose the location to address safety concerns near the Morningside Community School, and to support the City and the Tyler Street Business Group's current efforts to improve safety in the areas near Tyler Street. Additionally, Tyler Street is a commercial corridor with high volumes of traffic. Currently there are no streetscape plans underway but there are potential opportunities for economic development.

The study area for the Pittsfield walk and bike assessment includes the corridors of:

- Tyler Street from Dalton Avenue/Woodlawn Avenue to 1st Street;
- North Street from Burbank Street to Tyler Street; and
- Burbank Street from 1st Street to Tyler Street.

The assessment also focused on the intersections of:

- Tyler Street/Woodlawn Avenue/Dalton Avenue;
- Tyler Street/Burbank Street;
- Tyler Street/1st Street; and
- Wahconah Street/Park Street.

The assessment area is shown in **Figure 1**. The streets were selected to increase walking and bicycling safety, and to enhance the pedestrian and bicycle network. The roads and intersections in the study area do not have existing on- or off-street bicycle facilities.



Figure 1 - Assessment Area Map

Observations and Recommendations

The assessment focused on providing pedestrian and bicycle facilities that are easy and safe for all users to navigate. During the assessment, the topics covered included the potential traffic calming strategies, providing ADA-accessible curb ramps, and accessible pedestrian signals including signal timing and indications. Exclusive versus concurrent signal timing was also discussed to provide pedestrians more opportunities and less delay to cross the street and less delay when heavy turning movements do not conflict. Other topics covered during the assessment included considering improving bicycle conditions on roadways and at the intersections, and providing secure bicycle parking.

The following sections describe both the observations and recommendations for the assessment area. The observations and recommendations are divided by location including:

- City-wide;
- Tyler Street;
- Tyler Street/Woodlawn Avenue/ Dalton Avenue;
- Tyler Street/Burbank Street; Tyler Street/1st Street;
- Burbank Street;
- North Street; and
- Wahconah Street/Park Street.

City-wide

During the assessment, the team noted observations that are applicable throughout the City of Pittsfield. The assessment team observed several snow-covered sidewalks and discussed the importance of maintaining clear sidewalks and curb ramps especially during winter. The City of Pittsfield's policy is that abutters are responsible for snow clearance along sidewalks and will be ticketed if they have not cleared snow within approximately 24 hours after snow fall. It was also discussed that bicycle facilities should be clear of snow in the winter as well, as a growing percentage of the population depends on bicycling for transportation year-round.



Figure 1: Curb ramp and sidewalk with snow.

The few bicyclists observed during the assessment were riding in the door zone, on the sidewalk, and/or riding in vacant parking lanes where available. The team also discussed that bicyclists typically ride on the sidewalk in the downtown core, which is undesirable because it requires bicyclists to navigate pedestrians and street furniture. The City Ordinance, Section 13-130, states “bicycles may be ridden on sidewalks when necessary in the interest of safety, except no bicycle shall be operated on the sidewalks of North Street between the intersection of Tyler Street on the north, and East and West Streets on the south and South Street between Park Square on the north, and East and West Housatonic Streets on the south by any person over the age of 10 years old. The person operating a bicycle on a sidewalk shall

yield the right-of-way to pedestrians and give an audible signal before overtaking and passing the pedestrian.” In addition, bicyclists riding on sidewalks are a safety concern for pedestrians, and can create uncomfortable conditions for walking.



Figure 2: Typical continental crosswalk striping across Forest Place at Tyler Street facing eastbound.

Continental crosswalk striping is the standard pavement marking used in the City of Pittsfield. The team discussed the addition of transverse pavement markings to provide additional visual cues to motorists. In-street ‘YIELD TO PEDESTRIANS’ signs were noted as being used in warmer months and removed for plowing during the winter. Local team members commented that the in-street signs are often stolen or hit within the assessment area.

A majority of the intersections within the assessment area have curb ramps; however, most lacked tactile warning panels. The assessment team recommends curb ramps be upgraded to meet current accessibility standards and tactile warning panels should be provided within the median of a pedestrian refuge islands that are wider than 6 feet.

Many of the existing crosswalks within the assessment area, including crosswalks at signalized intersections, have pedestrian warning signs, often supplemented with ‘STOP FOR PEDESTRIANS IN CROSSWALK’ plaques. The assessment team noted that these signs need to be replaced with signs that meet current Manual of Uniform Traffic Control Device (MUTCD) standards and Massachusetts law which is to yield to pedestrians in crosswalks.

The assessment team discussed several issues observed during the walk that involving signal phasing and timing, as well as outdated pedestrian traffic signal equipment. None of the signalized intersections observed as part of the assessment have countdown pedestrian indications. Pedestrians must push the pushbutton to activate an exclusive pedestrian phase. Some pedestrians were observed jaywalking to cross the minor streets because there were few conflicts due to low turning volumes. The assessment team discussed instituting concurrent pedestrian phasing to automatically recall at all intersections, and consideration should be given to providing a leading pedestrian interval where feasible. The assessment team also noted that signal phasing and clearance intervals did not appear to provide adequate crossing time, and should be reviewed to ensure signal timing meets current MUTCD standards. The signal cycle lengths should be minimized to provide more opportunities for all movements at intersections. The team also discussed that accessible pedestrian signals should be provided at all intersections to improve safety and access for pedestrians with disabilities. ‘NO TURN ON RED’ signs were discussed as potential treatment to reduce conflicts at intersections.

Throughout the assessment area, the assessment team observed that many businesses have multiple curb cuts with off-street parking located between storefronts and the sidewalk. The team discussed how potential zoning changes should consider encouraging buildings to front the sidewalk, and prohibit parking between building fronts and the sidewalk; this will help to reduce conflicts between vehicles entering and exiting parking spaces, provide a sense of enclosure to help calm traffic, and allow active uses along sidewalks such as sidewalk cafés.



Figure 3: Multiple curb cuts to access car wash on Tyler Street at Brown Street facing eastbound.

The assessment team noted that access management should also be considered to consolidate driveways and curb cuts. Several locations throughout the assessment area have multiple curb cuts and wide driveways such as the Dairy Cone at Pleasure Avenue and the plaza at 303 Tyler Street and Pine Street. Also driveway widths should be narrowed to reduce conflict points. The sidewalk must be maintained across driveways to emphasize that pedestrians have priority and to alert motorists of potential conflicts. An example discussed was the asphalt sidewalk at the carwash in the westbound direction at Brown Street shown above; the team recommended maintaining the concrete sidewalk across this large driveway and reducing curb cuts to consolidate potential conflict points. It is also important that sidewalks be ADA compliant when crossing driveways. During the assessment, the team noted that bicycle parking was not provided. The assessment team suggests that the City of Pittsfield consider installing bicycle parking racks including post and ring style racks in commercial areas.

Short-term Recommendations:

- Provide ADA-accessible curb ramps at all crosswalks and tactile warning panels at refuge islands 6 feet or wider.
- Maintain clear sidewalks and curb ramps, especially in snow.
- Consider 'NO TURN ON RED' signs at signalized intersections.
- Maintain access of bicycle facilities year-round by clearing debris and snow.
- Upgrade pedestrian warning signs at uncontrolled crosswalks to meet current standards including advanced warning, and warning signs on both approaches to the crossing with arrow placards pointing toward the crosswalk.
- Remove pedestrian warning signs at signalized intersections.
- Consider installing bicycle parking racks such as post and ring style racks in commercial areas.
- Study the existing phasing and clearance intervals to ensure pedestrian signal timing meets current MUTCD standards.
- Provide concurrent pedestrian phasing at all signalized intersections where turning volumes are less than 250 vehicles per hour. Provide leading pedestrian intervals where feasible.

Short-term Recommendations (continued):

- Consolidate driveways by removing curb cuts along the corridor to reduce conflict points. Narrow driveway widths to reduce crossing distances.
- Install concrete sidewalks across driveways.

Long-term Recommendations:

- At signalized intersections, provide accessible pedestrian signals.

Tyler Street

Tyler Street is a two lane roadway, with one lane in each direction and a marked shoulder with on-street parking permitted on both sides of the street. Tyler Street is outside of the downtown core with commercial and residential uses along the corridor. There are existing sidewalks on both sides of Tyler Street for the length of the assessment area, with a narrow sidewalk buffer varying in width west of Brown Street; there is no sidewalk buffer east of Brown Street. There are existing wayfinding signs for the Morning Side Loop walking route along Tyler Street.

The assessment team discussed narrowing travel and parking lanes to provide on-street bicycle lanes and as an effort to calm traffic. The assessment team also discussed conducting a parking utilization study along Tyler Street to consider removing parking on one side of the street to provide additional separation for bicycle facilities.



Figure 4: Tyler Street typical cross section, approaching Burbank Street heading westbound.

The team observed that Tyler Street is serviced by multiple bus routes by the Berkshire Regional Transit Authority. Service runs every day except Sundays between 5:45 pm and 7:20 pm Monday through Friday, and 7:15 am – 7:00pm on Saturdays at approximately hour-long headways. Bicycle racks are provided on the front of all the buses serving the assessment area. It was noted that there are no marked bus stops along Tyler Street, and the team did not observe any bus stop signs. The team



Figure 5: Tyler Street at Forest Place facing westbound.

observed passengers waiting for the bus and loading/unloading at different locations along Tyler Street. The team discussed the challenges of providing bicycle facilities on Tyler Street without designated bus stops such as anticipating when buses will be crossing a bicyclist's path.

The assessment team noted at the intersection of Tyler Street and Plunkett Street a no parking zone was installed on the near-side approach denoted by

pavement markings and signs; however, local team members discussed how motorists continue to park and block visibility of pedestrians in the crosswalk. Curb extensions were discussed as a recommendation for the entire corridor to improve visibility and calm traffic. The team discussed when installing curb extensions, considerations include access for street cleaning and snow plowing, and bicycle facility operations.

During the assessment, the team discussed the typical land use and streetscape along Tyler Street. There were no observed bicycle racks, trash/recycling receptacles, or benches along the corridor. Lighting is currently located only on the south side of the roadway. The team discussed the importance of lighting along both the north and south sides the corridor, as well as the scale of lighting. Pedestrian scale lighting as well as ornamental fixtures were discussed to denote Tyler Street as a commercial district. Generally, creating a streetscape with a welcoming pedestrian environment with traffic calmed streets and active uses along the sidewalk such as sidewalk cafés and parklets were discussed to enliven the pedestrian realm.

Short-term Recommendations:

- Provide dedicated bicycle facilities by narrowing lanes and/or removing parking. Conduct a parking utilization study to assess if removing parking along one side of the street is feasible to provide additional separation for bicyclists.
- Increase enforcement at the no parking zones.

Long-term Recommendations:

- Install designated bus stops along the corridor to reduce conflicts and increase predictability between modes.
- Install curb extensions along the corridor to calm traffic.
- Consider Tyler Street for future streetscape project including bicycle parking, benches, trash/recycling receptacles, street trees, and potentially widening sidewalks.
- Installing lighting on the north side of the street. Consider pedestrian scale lighting and ornamental fixtures.
- Consider updating the zoning code along Tyler Street and other commercial districts to encourage buildings to front the sidewalk and provide parking in the rear of buildings.

Tyler Street/Dalton Avenue/Woodlawn Avenue

The intersection of Tyler Street/Dalton Avenue/Woodlawn Avenue is a five-leg unsignalized intersection. Stop control is provided on the northbound and southbound Woodlawn Avenue approaches and the westbound and eastbound Tyler Street approaches. The Tyler Street north-east bound approach turns into south-west bound Dalton Avenue forming the uncontrolled major approaches.

To the south on Woodlawn Avenue is a large development parcel previously owned by GE and planned to be redeveloped as an innovation center. The intersection will provide a gateway into the development. It was noted that the City has considered installing a signal at this intersection. The assessment team discussed installing a rectangular rapid flash beacon as a potential interim treatment on the western leg of the intersection across Tyler Street.

Team members also discussed the potential for a modern roundabout. A roundabout would help to slow speeds by channelizing traffic at the approach to the intersection, reduce conflict points, facilitate turning movements, and potentially eliminate the need for a traffic signal. Consideration should be given to accommodating larger vehicles by providing aprons or mountable curbs. Bicycle accommodations at modern roundabouts were also discussed. The team recommends providing bicycle ramps to allow bicyclists to transition off the roadway and use the sidewalk as a shared-use path. The team recommends high visibility crosswalks and additional pedestrian safety features such as median refuge islands. The assessment team also recommends the proposed development enhance the bicycle and pedestrian network within the project site and connect to the surrounding neighborhood.

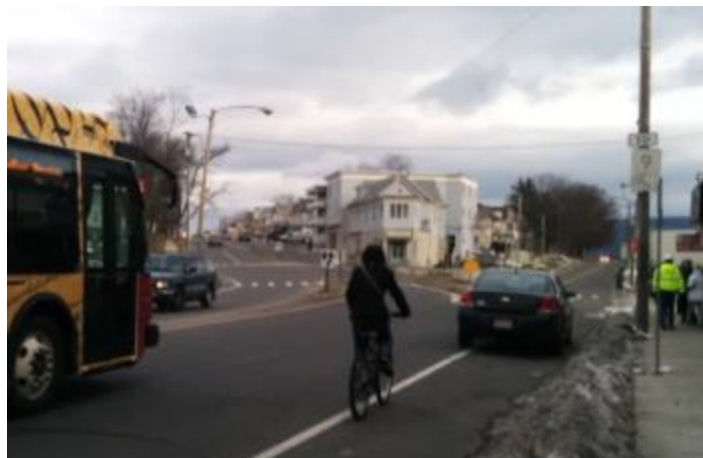


Figure 6: Tyler Street approaching Dalton Avenue/Woodlawn Avenue eastbound.

Also, the Ashuwillticook rail trail ends about four miles northeast of this intersection near the Berkshire Mall, and bicyclists may travel through this intersection to access Pittsfield and points south. It was noted that there are large driveways with multiple curb cuts on the northwest corner of the intersection, and the sidewalk is not continuous. The team also discussed the potential to remove an unused curb cut on the southwest side of the intersection at Pizza Works.

Short-term Recommendations:

- Consider installing a rectangular rapid flash beacon with pushbutton or passive detection for the western leg of the intersection across Tyler Street.
- Provide dedicated bicycle facilities through the intersection.

Long-term Recommendations:

- Consider reconstructing the intersection with a modern roundabout or a traffic signal.
- If a roundabout is installed, provide aprons or mountable curbs to maintain heavy vehicle access. Provide bicycle ramps prior to entering the roundabout to transition bicyclists to a shared-use path around the roundabout. Provide high-visibility crosswalks and pedestrian refuge islands on all approaches.

Tyler Street/Burbank Street

Tyler Street at Burbank Street is a skewed T-intersection with marked crosswalks across Burbank Street and across Tyler Street on the west leg. The intersection is stop-controlled on the Burbank Street approach. The crosswalk across Tyler Street has been noted by local team members as a dangerous crosswalk location. The crosswalk is located at the bottom of a hill, restricting visibility and sightlines. The large curb radii on Burbank Street allow high speed right turns onto Tyler Street for vehicles that do not stop at the stop sign. It was noted that the Pittsfield Police Department will not use this location for enforcement operations to ticket motorists for not yielding to pedestrians in crosswalks because of documented safety concerns. In 2010, the intersection of Tyler Street at Burbank Street was classified by MassDOT as a high crash location as a part of the Highway Safety Improvement Program (HSIP). There is an existing signalized crosswalk approximately 250 feet to the east at Tyler Street/Brown Street; this intersection was a 2012 HSIP location. There is also a marked crosswalk approximately 800 feet to the west at the signalized intersection of Tyler Street/Pine Street; this intersection was a 2011 HSIP location. The team discussed potential traffic calming measures and relocating the crosswalk to the far-side of the next intersection at Tyler Street/Grove Street in the westbound direction to improve sightlines and visibility. A curb extension at this location could also improve sight lines and visibility.

Short-term Recommendations:

- Investigate relocating the crosswalk across Tyler Street to the far-side of Grove Street in the westbound direction.
- Consider additional pedestrian safety treatments at the relocated crosswalk such as pedestrian refuge islands, raised crosswalks, and/or rectangular rapid flash beacons.

Long-term Recommendations:

- Reconstruct the intersection of Tyler Street/Burbank Street to for a “T” intersection at a 90 degree angle. Consider right-of-way impacts and necessary easements for reconstruction.
- Install curb extensions for the crosswalk at Tyler and Grove to increase pedestrian visibility.

Tyler Street/First Street

The intersection of Tyler Street/First Street is a four-leg signalized intersection with turning lanes. There are crosswalks provided on all legs of the intersection. The northbound approach to the intersection on First Street provides a yield-controlled right-turn slip lane onto Tyler Street eastbound. Team members noted that motorists turn onto Tyler Street from First Street at high speeds and the crosswalk is at the bottom of the hill with a large curb radius.

Navigating the slip lane can be difficult for pedestrians as experienced by the assessment team. There is a pushbutton in the pedestrian refuge island. The pedestrian signal timing did not provide adequate clearance time during the flashing don’t walk phase. The team discussed removing the slip lane and tightening the geometry of the intersection to reduce vehicle speeds and crossing distances for pedestrians. This intersection is a 2012 HSIP location and is also part of a larger 2012 HSIP Bicycle Cluster. The gas station at the corner of Tyler and First Streets has multiple,

wide curb cuts that can be difficult for pedestrians to navigate. There are four curb cuts to access the gas station and adjacent businesses on Tyler Street including one on First Street and two on Burbank Street. There are safety concerns with the curb cut on Tyler Street closest to the intersection. The team discussed limiting access to two points of entry / exit to consolidate conflict points.



Figure 7: Pedestrian approaching crosswalk to cross right turn slip lane at Tyler Street and First Street.

Short-term Recommendations:

- For the right turn slip lane, install yield lines prior to the crosswalk to emphasize motorists must yield to pedestrians in the crosswalk (and vehicles on Tyler Street). Pedestrian warning signage is not recommended at this location due to the traffic signal and yield controls.

Long-term Recommendations:

- Remove the right turn slip lane on the southern leg of the intersection, replacing it with a standard right turn lane.
- Install accessible pedestrian signals.
- Minimize the curb radii to reduce the crossing distance turning vehicle speeds.
- Limit access to the gas station to two points of entry /exit. Remove the curb cut closest to the intersection slip lane on Tyler Street.

Burbank Street

Burbank Street is a two-way street with one lane in each direction. Burbank Street is a low-volume residential neighborhood street. Land use on Burbank Street is comprised of residential homes, a recently constructed multi-family public housing development, and the Morning Side Community School located between 2nd Street and Cherry Street. There are sidewalks on both sides of Burbank Street varying in condition. New sidewalks have been installed adjacent to the public housing development, and the sidewalks in front of Morning Side Community School are in good condition. The sidewalks throughout the rest of the corridor are in poor condition. The team noted there are existing school zone pavement markings; however there are no school zone regulatory signs.



Figure 8: Intersection of Burbank Street/Cherry Street facing northbound.

Intersections are typically stop-controlled on the minor streets and Burbank Street is uncontrolled. The intersection of Burbank Street and Cherry Street is an all-way stop-controlled intersection at the approach to the school. The team noted that the marked crosswalks did not align with the curb ramps at this intersection. Also the team discussed removing the yield to pedestrian signs on the far-sides of the stop-controlled intersection as they are not appropriate for a stop-controlled intersection. It was also noted that the school warning signs were installed too low, and are not visible to motorists.

Parking is typically permitted along Burbank Street except on the north side of the street in front of the school; however parking was observed during parent pick-up in no parking zones, as well as double parking making it difficult for motor vehicles to navigate the street. Parked cars were also observed blocking the crosswalk in front of the school connecting to the north side of the street.

Parents and students were observed walking through the abandoned gas station parking lot directly north of the School to access Tyler Street. The team also observed a parent parking in the abandoned gas station parking lot to pick-up students. There is an abandoned fire station on Tyler Street north of the school. Members of the team noted that the fire station may be converted to a community center in the future. The team discussed the potential for improving pedestrian access between the gas station parking lot and the fire station, and having the gas station parking lot converted to a pick-up drop-off location for students at Morning Side Community School.

The team discussed overall traffic calming strategies along Burbank Street. One potential treatment discussed was instituting a bicycle boulevard or “neighborway”, which prioritizes access for bicyclists and pedestrians by calming motor vehicle traffic and reducing cut-through traffic. Pavement markings and signs can be used to denote pedestrian and bicycle priority. Gateway treatments such as raised

crosswalks or curb extensions at Tyler Street and North Street could alert motorists of the slower speed environment and prioritization of non-motorized users. Other strategies discussed to calm traffic included changing directionality of the streets permanently or temporarily during school hours.

There is a crossing guard currently provided at Cherry Street and Burbank Street during school arrival and dismissal hours. The team recommended the crossing guard be relocated or an additional guard located at the intersection of Cherry Street and Tyler Street.

Short-term Recommendations:

- Reinstall crosswalk markings at Burbank Street/Cherry Street to align with curb ramps.
- Remove yield to pedestrian signs at the stop-controlled intersection of Burbank Street/Cherry Street.
- Adjust the school warning sign height at the crosswalk in front of the school.
- Install regulatory school zone signs.

Long-term Recommendations:

- Replace sidewalks as needed along the corridor.
- Install traffic calming elements and designate Burbank Street as a bicycle boulevard/neighborway. Traffic calming may include curb extensions, raised crosswalks/intersections, changes in street directionality, wayfinding, pavement markings, and signage.
- Designate the abandoned gas station parking lot on Tyler Street north of the school as a parent pick-up/drop-off area during school hours. Install wide sidewalks or a shared-use path to improve pedestrian and bicycle access between Tyler Street and Burbank Street. Maintain restricted vehicular access on Burbank Street and allow for vehicular access to the parking lot from Tyler Street only.

North Street from Tyler Street to Wahconah Street

North Street was recently reconstructed to include bicycle lanes, new sidewalks, and turning lanes. There is no parking permitted along on this section of North Street. The team noted that at the intersection of North Street/Tyler Street the bicycle lane ends without warning signs or pavement markings to transition bicyclists to a shared roadway. Bicyclists continuing straight on North Street are directed into the on-street parking lane north of the intersection. The team discussed providing pavement markings and signage to alert bicyclists and motorists that the bicycle lane ends, and providing shared lane markings and signage to transition through bicyclists to a shared travel lane. Also, it was noted there are no bicycle lane pavement marking symbols provided in the southbound direction on North Street.



Figure 9: End of bike lane on North Street approaching Tyler Street northbound.

Short-term Recommendations:

- Install bicycle lane ends warning sign and 'MAY USE FULL LANE' regulatory sign on North Street at the northbound approach to Tyler Street.
- Install pavement markings to transition bicyclists through the intersection of Tyler Street and North Street to direct them into the travel lane. Install shared lane markings and signs north of the intersection.
- Provide connections to the proposed bicycle lanes on Tyler Street from North Street.
- Install bicycle lane pavement marking symbols in the southbound bicycle lane.

Wahconah Street/Park Street

Park Street/Wahconah Street is an unsignalized T intersection. There is a parking lot for the Berkshire Medical Center encompassed by North Street and Wahconah Street. A new parking garage was constructed on the south west corner of Wahconah Street/Park Street. As a part of recent construction, a crosswalk on the south side of Wahconah Street/Park Street was relocated to the north side of the intersection with a flashing yellow beacon. The entrance to the garage is on the south west corner of the intersection or Wahconah Street/Park Street. There is also a sidewalk connecting the parking lot for the Medical Center on the south side of the intersection. It was noted that many pedestrians cross Wahconah Street on the south side of the intersection to access the parking garage entrance. The team discussed removing the flashing beacon at the north side crosswalk across Wahconah Street, and reinstalling the crosswalk on the south side of the intersection to connect the existing sidewalk and the parking garage entrance. The team also discussed installing a rectangular rapid flash beacon for the crosswalk on the south side of the intersection.



Figure 10: Pedestrian crossing intersection of Wahconah Street/Park Street on the south side of the intersection where the crosswalk was removed.



Figure 11 - Aerial view of intersection of Park Street, Wahconah Street, North Street, and Tyler Street.

Short-term Recommendations:

- Reinstall a marked crosswalk on the south side of the intersection.
- Remove the existing flashing beacon on the north side of the intersection.
- Install a rectangular rapid flash beacon on the south side of the intersection.

Appendix A lists all the observations and recommendations that were discussed during the assessment and described in the previous sections. The observations and recommendations are divided by location. For each observation and recommendation, the appendix includes the estimated time frame for completion, estimated construction costs, and the responsible agency. The time frame is categorized as short-term (0 to 3 years) or long-term (>3 years). The costs are categorized as low (<\$10,000), medium (\$10,001 to \$50,000), or high (>\$50,000).

Appendix B provides a toolkit of pedestrian facilities that summarizes typical pedestrian treatments and provides a description. The treatments may or may not be recommendations outlined in this report. This toolkit may be used by the Town of Watertown to assist in developing a pedestrian-friendly town.

Appendix C provides a toolkit of bicycle facilities that summarizes typical treatments and provides a description. The treatments may or may not be recommendations outlined in this report. This toolkit may be used by the City of Pittsfield to assist in the development of a bicycle facility network.

Appendix A: Table of Recommendations

Location	Observation	Recommendation	Time Frame	Cost	Responsible Agency
City-Wide	Lack of Pedestrian Accommodations	Provide ADA-accessible curb ramps.	Short-term	Medium	City of Pittsfield
		Install tactile warning panels at pedestrian refuge islands 6 feet or wider.	Short-term	Low	City of Pittsfield
	Improve Snow Clearance	Maintain clear sidewalk and intersection passage during winter.	Short-term	Low	City of Pittsfield
		Maintain clear bicycle facilities during winter.	Short-term	Low	City of Pittsfield
	Inadequate Intersection Signal Operations	Study pedestrian signal timing and upgrade to meet current MUTCD standards as necessary.	Short-term	Low	City of Pittsfield
		Consider implementing concurrent signal phasing with leading pedestrian intervals.	Short-term	Low	City of Pittsfield
		Consider installing 'NO TURN ON RED' signs.	Short-term	Low	City of Pittsfield
		Provide accessible pedestrian signals and detectors.	Long-term	Medium	City of Pittsfield
	Upgrade Pedestrian Warning Signs	Upgrade pedestrian warning signs and plaques at uncontrolled crosswalks.	Short-term	Low	City of Pittsfield
		Remove pedestrian warning signs at signalized intersections.	Short-term	Low	City of Pittsfield
	Increase Bicycle Parking	Install bicycle racks.	Short-term	Low	City of Pittsfield
	Access Management	Consolidate driveways to reduce number of curb cuts.	Short-term	Low	City of Pittsfield
		Narrow driveway widths.	Short-term	Low	City of Pittsfield
		Maintain or install concrete sidewalk across driveways.	Short-term	Low	City of Pittsfield

Location	Observation	Recommendation	Time Frame	Cost	Responsible Agency
Tyler Street	Lack of Bicycle Facilities	Construct bicycle lanes or separated bicycle lanes and signage on Tyler Street.	Short-term	Medium	City of Pittsfield
		Conduct parking utilization study and consider removing parking on one side of the street to provide additional separation for bicycle facilities.	Short-term	Medium	City of Pittsfield
	Undefined Bus Stops	Provide designated bus stop locations and install bus stop signs.	Short-term	Low	City of Pittsfield
	Traffic Calming	Construct curb extensions.	Long-term	High	City of Pittsfield
	Streetscape Improvements	Initiate Tyler Street for streetscape project; consider installing benches, trash/recycling receptacles, street trees, and widening sidewalks.	Long-term	High	City of Pittsfield
		Modify zoning requirements for buildings to front sidewalks; proposed parking should be located in the rear of buildings.	Short-term	Low	City of Pittsfield
	Lack of Lighting	Install lighting on north side of roadway.	Long-term	High	City of Pittsfield
Tyler Street/Dalton Avenue/Woodlawn Avenue (continued on next page)	Uncontrolled High-Volume Intersection	Install rectangular rapid flash beacon on western leg of intersection as interim treatment.	Short-term	Medium	City of Pittsfield
		Provide dedicated bicycle facilities through intersection.	Short-term	Low	City of Pittsfield






Location	Observation	Recommendation	Time Frame	Cost	Responsible Agency
Tyler Street/Dalton Avenue/Woodlawn Avenue (continued on previous page)	Uncontrolled High-Volume Intersection	Complete proper forms (PNF's and PIF's) and initiate a project to reconstruct intersection with a modern roundabout. Provide aprons or mountable curbs to maintain heavy vehicle access. Provide bicycle ramps prior to entering the roundabout to transition bicyclists to a shared-use path. If a roundabout is not desirable, consider installation of a traffic signal. Provide high-visibility crosswalks and pedestrian refuge islands on all approaches of roundabout.	Long-term	High	City of Pittsfield
Tyler Street/First Street	Improve Intersection Geometry	Install yield lines prior to the crosswalk across the right turn slip lane.	Short-term	Low	City of Pittsfield
		Replace right-turn slip lane on southern leg of intersection with standard right turn lane.	Long-term	Medium	City of Pittsfield
		Minimize curb radii.	Long-term	Medium	City of Pittsfield
	Access Management	Limit access to the gas station to two points of entry /exit. Remove the curb cut closest to the intersection slip lane on Tyler Street.	Long-term	Low	City of Pittsfield
Tyler Street/Burbank Street	Crosswalk Location and Additional Safety treatments	Investigate relocating crosswalk across Tyler Street to far-side of Grove Street in the westbound direction.	Short-term	Low	City of Pittsfield
		Install curb extensions at Tyler Street and Grove Street.	Long-term	Medium	City of Pittsfield



Location	Observation	Recommendation	Time Frame	Cost	Responsible Agency
Tyler Street/Burbank Street (continued)	Additional Safety treatments	Provide additional pedestrian safety treatments at Tyler Street/Grove Street such as pedestrian refuge islands, raised crosswalks, and/or rectangular rapid flash beacons.	Long-term	Medium	City of Pittsfield
	Improve Intersection Geometry	Reconstruct intersection of Tyler Street/Burbank Street to form a 90 degree angle.	Long-term	Medium	City of Pittsfield
Burbank Street (continued on next page)	Modifications to Pavement Markings and Signs	Eradicate existing crosswalk markings and install crosswalk markings to align with curb ramps.	Short-term	Low	City of Pittsfield
		Remove 'YIELD TO PEDESTRIAN' signs at stop-controlled intersection of Burbank/Cherry Street.	Short-term	Low	City of Pittsfield
	Modifications to Pavement Markings and Signs	Adjust school warning sign height at crosswalk in front of school.	Short-term	Low	City of Pittsfield
		Install regulatory school zone signs	Short-term	Low	City of Pittsfield
	Sidewalks in Poor Condition	Replace sidewalks as needed.	Long-term	Medium	City of Pittsfield
	Traffic Calming	Provide curb extensions, raised crosswalks/intersections, changes in street direction, wayfinding, adjusted and/or additional pavement markings, and/or signage.	Long-term	Medium to High	City of Pittsfield
	Abandoned Gas Station (continued on next page)	Designate as parent pick-up/drop-off for Morning Side Community School during school hours.	Long-term	Medium	City of Pittsfield

Location	Observation	Recommendation	Time Frame	Cost	Responsible Agency
Burbank Street (continued on previous page)	Abandoned Gas Station (continued on previous page)	Install wide sidewalks or a shared-use path between Tyler Street and Burbank Street around perimeter of proposed parent pick-up/drop-off area.	Long-term	Medium	City of Pittsfield
		Maintain restricted vehicular access on Burbank Street and allow for vehicular access to the parking lot from Tyler Street only.	Long-term	Low	City of Pittsfield
North Street	Bicycle Accommodations	Install bicycle lane ends and 'MAY USE FULL LANE' sign on North Street at the northbound approach to Tyler Street.	Short-term	Low	City of Pittsfield
		Install pavement markings to transition through bicyclists into shared travel lane and away from parked vehicles north of Tyler Street.	Short-term	Low	City of Pittsfield
		Connect to proposed bicycle facilities on Tyler Street.	Long-term	Low	City of Pittsfield
		Install bicycle lane pavement marking symbols in southbound bicycle lane.	Short-term	Low	City of Pittsfield
Wahconah Street/Park Street	Relocated Crosswalk	Reinstall marked crosswalk on south side of intersection.	Short-term	Low	City of Pittsfield
		Remove flashing pedestrian beacon on north side of intersection	Short-term	Low	City of Pittsfield
		Install rectangular rapid flash beacon on south side of intersection.	Short-term	Low	City of Pittsfield

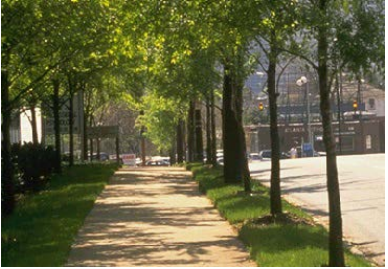
Appendix B: Pedestrian Facility Toolbox

Facility Type	Description	Sample Photo
<p>Accessible Pedestrian Signals (APS)</p>	<p>Accessible pedestrian signals systems are the components used at a signalized intersection to alert pedestrians when they may cross a roadway. Accessible pedestrian signals include audible feedback during the pedestrian crossing phase, vibrotactile feedback, and locator tones to assist visually-impaired pedestrians.</p>	
<p>Access Management</p>	<p>Access management is the process to regulate the amount of driveways or median openings along a corridor. Access management can increase roadway capacity and limit conflicts with motorists and pedestrians.</p>	
<p>Chicanes</p>	<p>Chicanes are a traffic calming device that horizontally deflects motor vehicles resulting in reducing vehicular speeds. Chicanes are typically designed by the addition of a median or by shifting on-street parking from one side of the roadway to the other side of the roadway.</p>	
<p>Crosswalks</p>	<p>Crosswalks indicate to pedestrians the appropriate place to cross the street and inform drivers of potential pedestrian movements in the street. Crosswalk pavement markings may vary in styles; however, must follow the guidelines in the MUTCD. Additional enhancement measures should be used when the speed limit is greater than 40 mph, on multi-lane roadways, or based on engineering judgment.</p>	

Facility Type	Description	Sample Photo
<p>Curb Ramps</p>	<p>ADA-compliant curb ramps provide ramped access and detectable warning for persons with disabilities. Curb ramps are typically at least 5 feet wide with a level landing pad. Detectable warning panels should be a contrasting color to the adjacent surface.</p>	
<p>Curb Extensions</p>	<p>A curb extension is an extension of the sidewalk at intersections or mid-block to reduce the pedestrian crossing distance and provide greater visibility for pedestrians waiting to cross a street. Curb extension should not impede on bicycle travel along the roadway.</p>	
<p>Curb Radii Improvements</p>	<p>Curb radii improvements are modifications to existing curb lines or edges of the pavement at an intersection. These modifications typically are used to decrease crossing distances for pedestrians, increase pedestrian visibility, and/or to reduce vehicular speed by tightening the turning radii at the intersection corners.</p>	
<p>Edge Lines</p>	<p>Edge lines are solid white lines painted along the roadside curb that defines the driving lane and visually narrows the travel lane.</p>	
<p>In-Street Pedestrian Crossing Sign</p>	<p>A high-visibility sign placed on the centerline of a street prior to a crosswalk to alert motorists to yield when pedestrians are present in the crosswalk. When the sign is present, there tends to be an improved compliance of motorists yielding to pedestrians.</p>	







Facility Type	Description	Sample Photo
<p>Leading Pedestrian Interval (LPI)</p>	<p>A pedestrian crossing indication that permits pedestrians to move into the intersection 3-7 seconds before a green light is given to turning motorists that may cross the crosswalk. This increases visibility of pedestrians and reduces conflicts.</p>	
<p>Parklet</p>	<p>Temporary gathering area installed in the street adjacent to the curb as an extension of sidewalk space. This is temporary retrofit until a permanent curb extension is installed.</p>	
<p>Pedestrian Hybrid Beacon</p>	<p>An overhead pedestrian activated signal that requires traffic to stop during the pedestrian walk phase. When the beacon is not activated, the signals are dark.</p>	
<p>Pedestrian Crossing Island</p>	<p>Raised median or island that provides in-street refuge at a pedestrian crossing. The island reduces the amount of exposure time for the pedestrian.</p>	
<p>Pedestrian-Scale Lighting</p>	<p>Light fixtures used to illuminate a sidewalk or pathway typically closer to the ground and placed closer together than roadway lighting.</p>	






Facility Type	Description	Sample Photo
<p>Raised Crosswalk</p>	<p>A crosswalk raised from street-level to sidewalk-level. This elevated crosswalk increases pedestrian priority and visibility and slows approaching vehicles.</p>	
<p>Raised Intersection</p>	<p>An entire intersection raised from street-level to sidewalk-level. This elevated intersection slows approaching vehicles and increases pedestrian visibility.</p>	
<p>Rectangular Rapid Flash Beacon (RRFB)</p>	<p>An on-demand activated flashing beacon with a strobe “wig-wag” pattern that alerts motorists to pedestrians in the crosswalk. The RRFB is currently an interim approved device in the MUTCD.</p>	
<p>Shared Street</p>	<p>The road surface is typically at the same level as the sidewalk surface to create a continuous pedestrian space. A shared street is for motorists, pedestrians, bicyclists, and heavy vehicles.</p>	
<p>Shared-use Path</p>	<p>A two-way path that is open for bicyclists, pedestrians, and other non-motorized users. The path wide may vary depending on demand according to AASHTO guidelines.</p>	

Facility Type	Description	Sample Photo
<p>Sidewalk</p>	<p>A concrete pathway adjacent to the roadway. A sidewalk must meet minimum dimensions and smoothness for ADA-compliance. Sidewalks may have decorative paving or plantings as a buffer from the roadway and should be wider where high pedestrian volumes are present or desired.</p>	
<p>Suggested References & Design Guidance</p>	<p>FHWA <i>Manual on Uniform Traffic Control Deveices</i> – 2009 Edition AASHTO <i>Guide for Planning, Design, and Operation of Pedestrian Facilities</i> – 1st Edition – 2004 MassDOT <i>Project Development & Design Guide</i> – 2006 Edition NACTO <i>Urban Bikeway Design Guide</i> – 2nd Edition – 2014 NACTO <i>Urban Street Design Guide</i> – 1st Edition – 2013 ITE <i>Designing Walkable Urban Throughfares: A Context Sensitive Approach</i> – 2010 Edition U.S. Access Board – www.access-board.gov ITE Traffic Calming Library – www.ite.org/traffic Pedestrian and Bicycle Information Center – www.pedbikeinfo.org</p>	

Appendix C: Bicycle Design Toolbox

Facility Type	Description	Sample Photo
<p>Bike Boulevard</p>	<p>A bike boulevard is a street with low traffic volumes and speeds that is designed to give bicycle traffic priority by using pavement markings, signs, and traffic calming measures.</p>	
<p>Bike Box</p>	<p>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.</p>	
<p>Bike Corral</p>	<p>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.</p>	
<p>Bike Lane</p>	<p>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.</p>	
<p>Bike Parking Racks</p>	<p>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).</p>	
<p>Bike Traffic Signal</p>	<p>Exclusive traffic signals for bikes provide time separation to manage conflicts between cyclists and vehicles, especially at locations with separated bike facilities. Note that FHWA has granted Interim Approval for their use; installation requires a request for permission.</p>	

Facility Type	Description	Sample Photo
<p>Bike Wayfinding</p>	<p>Wayfinding signage provides guidance for cyclists on recommended routes to key destinations.</p>	
<p>Buffered Bike Lane</p>	<p>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.</p>	
<p>Climbing Bike Lane</p>	<p>A climbing bike lane is a treatment providing a bike lane in the uphill direction on a street where limited roadway width does not allow for bike lanes in both directions. The bike lane in the uphill direction accommodates cyclists traveling at slower speeds, while higher speed cyclists in the downhill direction share the travel lane with vehicles.</p>	
<p>Contra-flow Bike Lane</p>	<p>A contra-flow bike lane is a bike lane provided on a one-way street in the opposing direction to vehicle traffic. Contra-flow lanes allow for improved access for bicycles in locations where two-way flow for vehicles is either not feasible or desirable.</p>	
<p>Curb Extensions</p>	<p>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.</p>	
<p>High Capacity Bike Parking</p>	<p>High capacity bike racks should be designed to provide parking for ten or more bikes (based on demand). Bike racks should be designed to support each bike in two locations (e.g. inverted U rack). Bike racks should always be placed in areas of high visibility in order to maximize use and security, and may be covered.</p>	

Facility Type	Description	Sample Photo
Separated Bike Lane	Separated bike lanes provide increased comfort and safety to cyclists. The lanes are separated from vehicle traffic by a vertical element, including flex posts, planters, parked cars, curbs, or raised medians.	
Shared Lane Markings	Shared Lane Markings designate positioning for cyclists within lanes shared by vehicles and bicyclists and 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.	
Shared-use Path	A shared use path is typically a paved path which may be located on an exclusive right-of-way or parallel to an existing roadway. Paths are typically two-way, open for bicyclists, pedestrians, and other non-motorized users. Shared use paths should be ADA-compliant and range between 10 to 14 feet wide.	
Traffic Signal Timing and Detection	Detection for bicycles should be provided at traffic signals where phases are not recalled during each cycle, in order to ensure that cyclists are able to legally cross an intersection. Traffic signal timing should be set to ensure that the total yellow and all-red time allows for a cyclist to clear the intersection.	
Two-Stage Turn Queue Box	A two-stage turn queue box is typically provided between the bike lane and the cross-street crosswalk, allowing cyclists to exit the bicycle lane and turn left after the traffic signal cycles to the side street phase. Note that two-stage turn queue boxes are considered experimental by FHWA; installation requires a request for experiment.	
Suggested References & Design Guidance	AASHTO <i>Guide for the Development of Bicycle Facilities</i> – 4 th Edition – 2012 FHWA <i>Manual on Uniform Traffic Control Deveices</i> – 2009 Edition MassDOT <i>Project Development & Design Guide</i> – 2006 Edition NACTO <i>Urban Bikeway Design Guide</i> – 2 nd Edition – 2014 NACTO <i>Urban Street Design Guide</i> – 1 st Edition – 2013 Pedestrian and Bicycle Information Center – www.pedbikeinfo.org	