

# AT-GRADE SHARED USE PATH AND ROADWAY INTERSECTIONS IN THE PIONEER VALLEY

## ADDENDUM REPORT

OCTOBER 2020



Images from top: Google Earth Image of College Highway Side Path (Southampton), East Hadley Side Path intersection with Southpoint Drive (Amherst), and Whippletree Lane approach along the side path (Amherst).

**Prepared in cooperation with the Massachusetts Department of Transportation and the U. S. Department of Transportation**

**The views and opinions of the Pioneer Valley Planning Commission expressed herein do not necessarily state or reflect those of the Massachusetts Department of Transportation or the U. S. Department of Transportation.**

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## Background

This report serves as an addendum to the Pioneer Valley Planning Commission's (PVPC) At Grade Shared Used Paths and Roadway Intersections Report March 2019. Based on the input from the Joint Transportation Committee members, this report includes information collected along 16 additional crossings which are situated along 'Side Paths' or selected as locations frequently utilized by the patrons of shared used paths in the vicinity.

MassDOT categorizes shared use paths as 'Independently aligned and not necessarily parallel to the roadway.' Based on those guidelines, all the shared use paths identified during the previous report were off road facilities which were either a part of larger network of trails throughout the region or were constructed as smaller independent grids within a community.

Upon the Joint Transportation Committee's (JTC) recommendations, PVPC commenced the work on additional locations along paths constructed parallel to roadways. 'Side Path' is recognized by the PVPC as: 'A minimum of 10 feet wide bituminous, brick, or concrete trail located parallel to the existing roadway which is utilized by non- motorists for commuting or recreational purposes.' In order to identify and differentiate these new locations from sidewalks, PVPC utilized the above-mentioned minimum width criterion and designated these trails as 'Side Paths.' The previous report did not include crossings along the side paths. As this report is being drafted, more and more communities are developing additional such facilities and side paths in the region. It is PVPC's intent to keep updating the information and inventory within subsequent updates to the report.

The JTC also recommended that additional information regarding the transportation features along the shared use paths and roadways at these crossings is added to the report. It was suggested to organize crossings based on roadway classification and highlight key transportation safety elements along the locations belonging to the similar categories. This information and supplementary resources which provide more in-depth analysis and design guidelines are described towards the later part of the report.

## Addendum Locations

Three side paths in the region were identified for the purpose of this report. Two of those are located in Amherst and one in Southampton. The name of the roadway parallel to the side paths was utilized in naming the paths. Two additional locations in Northampton have been included upon the City's request because of their proximity and connection to the Northampton Bikeway / MassCentral Rail Trail shared use path in the vicinity of Look Park and Veterans Affairs Medical Center. Table 1 depicts the crossings and side paths that have been included in this report.

**Table 1: At-Grade Side Path and Roadway Intersections/Crossings**

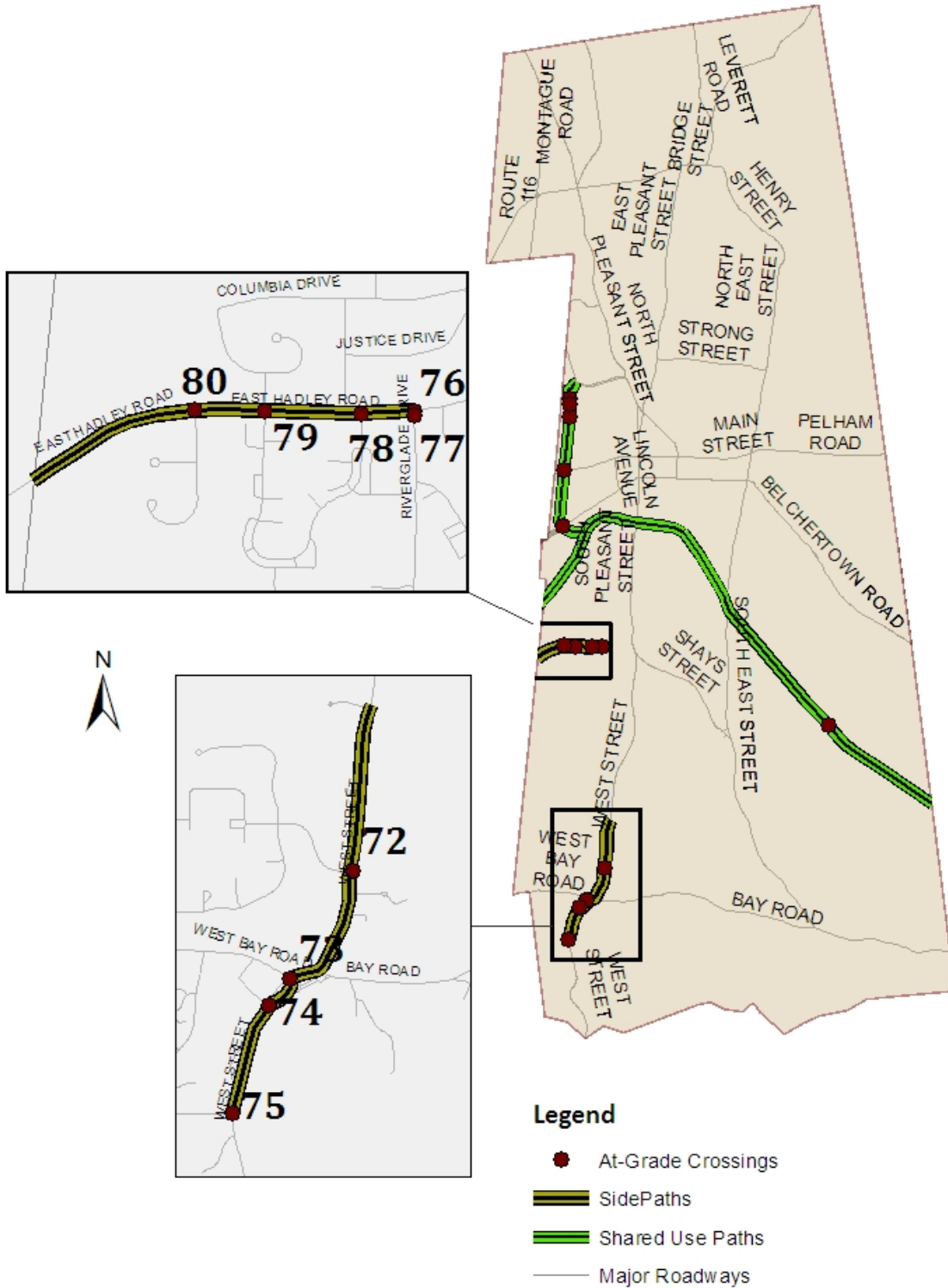
No.	Crossing Number	Roadway	Side Path / Shared Use Path	Community
1.	72.	Kendall Drive	West Street (Route 116) Side Path	Amherst
2.	73.	West Bay Road at the Double Roundabout		
3.	74.	Lannon Lane		
4.	75.	Country Corners Road		
5.	76.	East Hadley Road	East Hadley Road Side Path	
6.	77.	Riverglade Drive		
7.	78.	Brittany Manor Driver (The Boulders)		
8.	79.	Southpoint Drive		
9.	80.	Whippletree Lane		
10.	81.	North Main Street (Between Look Park and VAMC*)	Northampton Bikeway / MassCentral Rail Trail	Northampton
11.	82.	North Main Street (In the Vicinity of VAMC*)		
12.	83.	Parc Place	College Highway (Route 10) Side Path	Southampton
13.	84.	Country Garden		
14.	85.	Mountain View Circle (East)		
15.	86.	Mountain View Circle (West)		
16.	87.	Pomeroy Meadow Road		

Source: PVPC

\* VAMC: Veterans Affairs Medical Center

# Side Path and Roadway Intersections and New Added Locations

# AMHERST



**72. KENDALL DRIVE** (Urban area crossing without overhead lighting)

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
03/09/2011	1:12 AM	None	Single vehicle crash	Non-fatal injury	Dark	Sand	Clear
04/07/2011	8:22 AM	None	Single vehicle crash	Non-fatal injury	Daylight	Dry	Clear
04/25/2011	4:58 PM	None	Single vehicle crash	Non-fatal injury	Daylight	Wet	Cloudy/Rain
07/25/2013	8:30 AM	None	Angle	No injury	Daylight	Dry	Clear

**Kendall Drive Safety Features: (Local Road, 2 Lanes, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
EB	None	None	None	Stop	None	Poor	None	Good	Downward	None	10'4" / 1'2"
WB	-	-	-	-	-	-	-	-	-	-	-

Kendall Drive provides access to the Hampshire College Campus. The Stop sign has been vandalized with a scratch and pasted sticker along the lower edge.

**West Street (Route 116) Side Path Safety Features: (Stop Control, 10' Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
NB	None	None	None	Good	8'	None	33' 4"	None	Continental 9'10"	Concrete	Undivided
SB	None	None	None	Good							

The crosswalk markings are in poor condition. The southbound approach of the side path has pavement markings that indicate an uninstalled bollard.

From Left: (i) Southbound approach of the Side Path depicting the location of uninstalled bollard and street name signs, (ii) Vandalized Stop sign at the Kendall Drive approach, (iii) Eastbound approach of Kendall Drive depicting the westbound branch of the SIDE PATH parallel to the road.



**Remarks:**

The side path is aligned parallel to West Street (Route 116). Kendall Drive intersects the side path and West Street at a three-way intersection. Kendall Drive provides access to Hampshire College. The side path has a downward grade along the southbound approach. The northbound approach of the side path has another branch that follows the westbound path parallel to Kendall Drive.



**73. WEST BAY ROAD (DOUBLE ROUNDABOUT) (Urban area crossing with overhead lighting)**

A total of 13 crashes were reported in the vicinity of this crossing along the roundabout located at the intersection of West Bay Road and West Street between the calendar years of 2011 and 2015. None of these crashes involved non-motorists.

**West Bay Road Safety Features: (Urban Principal Arterial, 2 Lanes, divided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
EB	None	Yes	None	Yield	None	Poor	Round-about	Good	Downward	35	9'4" / 4'2"
WB	None	Yes	None		None	Poor		Good	None	20	9'2" / 2'0"

Both approaches of West Bay Road have a Yield sign ahead of the roundabout approach. The side path crossing is marked by crosswalk sign. There is a large median between the lanes along the crosswalk.

**West Street (Route 116) Side Path Safety Features: (Stop Control, 11 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
NB	Stop	Good	None	Good	9' 11"	Median	20' 2"	Yes	10' Continental	Concrete	Undivided
SB	Stop	Good	None	Good							

The side path crosses West Bay Road in the vicinity of the roundabout. The side path has two branches: one continues westbound along West Bay Road and the other continues northbound along West Street (Route 116). The crosswalk markings are in poor condition.

*From Left: (i) Northbound approach of the side path depicting the median and faded crosswalk markings, (ii) Eastbound approach of West Bay Road, (iii) Westbound approach of West Bay Road depicting the crosswalk sign*



**Remarks:**

This intersection is in the vicinity of the double roundabout and Atkins Farm retail store. The intersection has pedestrian scale lighting and supplemental overhead lighting along with a median between the crosswalk which separates the two lanes of West Bay Road. The side path has two branches one continues westbound along West Bay Road and the other continues northbound along West Street (Route 116). The crosswalk markings are in poor condition.

**74. LANNON LANE (Urban area crossing with overhead lighting)**

No crashes were reported in the vicinity of this crossing between the calendar years of 2011 and 2015.

**Lannon Lane Safety Features: (Local Road, 2 Lanes, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
EB	None	None	None	Stop	None	Poor	None	Good	Downward	None	12' 2"
WB	-	-	-	-	-	-	-	-	-	-	-

Lannon Lane forms a four-way intersection with West Street (Route 116) and a driveway to the east of the intersection. Lannon Lane provides entrance into the Atkins Farm Store. It is a local road with a minor downward gradient towards the intersection. There are no shoulders on either side of the road. The pavement markings in the vicinity of the intersection are in poor condition.

**West Street (Route 116) Side Path Safety Features: (No Control, 10' 2" Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
NB	None	None	None	Good	10'	Bollard	39' 8"	None	10'1" Continental	Concrete	Undivided
SB	None	None	None	Good		Bollard					

The side path is aligned parallel to West Street separated by a grass shoulder. Bollards are located along both approaches of the side paths to separate bicycles and pedestrians. There is a sign posted at the intersection of the side path with Lannon Lane which guides bicyclists to stay to the left side and pedestrians to the right side of the path.

*From Left: (i) Southbound approach of the side path with bollard, (ii) Faded crosswalk markings and stop line for Lannon Lane, (iii) Eastbound approach of Lannon Lane and driveway to the east of the intersection with West Street (Route 116)*



**Remarks:**

This intersection has a moderately high volume of traffic as Lannon Lane is the primary entrance for the Atkins Farm Retail Facility. The pavements markings along Lannon Lane and the crosswalk markings are in poor condition. The side path approaches do not have Stop control. A huge open storm water drainage tunnel is located along the northbound approach of the side path.

**75. COUNTRY CORNERS ROAD (Urban area crossing with overhead lighting)**

No crashes were reported in the vicinity of this crossing between the calendar years of 2011 and 2015.

**Country Corner Road Safety Features: (Local Road, 2 Lanes, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
EB	None	None	None	Stop	None	None	None	Good	None	None	11' 2" / 1' 8"
WB	-	-	-	-	-	-	-	-	-	-	-

Country Corners Road is a local residential street with a lower volume of traffic which intersects West Street (Route 116) at a three-way intersection. There is no advance warning for the side path which is aligned parallel to West Street and terminates at the intersection of Country Corners Road with West Street.

**West Street (Route 116) Side Path Safety Features: (No Control, 10' 3" ft. Wide Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Xwalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
NB	-	-	-	-	10' 3"	-	35' 3"	None	None	Concrete	Undivided
SB	None	None	None	Good		-					

The side path is aligned parallel to West Street separated by a grass shoulder. The intersection does not have curbing. Poor drainage along the northwest corner of the intersection at the edge of the grass shoulder that separates the side path from West Street has resulted in damage to the existing pavement.

*From Left: (i) Southbound approach of the side path, (ii) Northwest corner of the intersection of West Street (Route 116) and Country Corners Road, (iii) Eastbound approach of Country Corners Road*



**Remarks:**

The side path terminates at this three-way intersection. West Street has considerably higher travel speeds and daily traffic volumes compared to Country Corners Road.

**76. EAST HADLEY ROAD (Urban area crossing with overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
09/01/2012	12:55 AM	None	Rear End	Unknown	Dark	Dry	Clear
05/13/2014	8:23 PM	None	Rear End	Property Damage	Dusk	Dry	Clear

**East Hadley Road Safety Features: (Urban Major Collector, 2 Lane, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
EB	None	None	None	None	Poor	Fair	None	Fair	None	None	11'2"/3'4"
WB	None	None	None		Fair	Fair		Fair	Upward	40mph	11'3"/7'1"

There are two crosswalks across East Hadley Road in the vicinity of its intersection with Riverglade Drive. The crosswalk across the westbound approach is located along the side path.

**East Hadley Road Side Path Safety Features: (No Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
NB	None	None	None	Good	7'8"	Crosswalk along both approaches	37'5"	None	7'9" Ladder	Concrete	None
SB	None	None	None	Fair							

The side path terminates at this location. There is a crosswalk along East Hadley Road which connects the side path with the sidewalk along the northern side of East Hadley Road.

*From Left: (i) Westbound approach of East Hadley Road, (ii) Crosswalk and Shark Teeth Yield markings, (iii) PVTA Bus Stop and Bike Racks located in the west of the crossing*



**Remarks:**

The pavement in the vicinity of this crossing was under construction. This crossing is in the vicinity of the PVTA bus stop with a ValleyBike station. The side path currently terminates at this location.

**77. RIVERGLADE DRIVE (Urban area crossing with overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
09/01/2012	12:55 AM	None	Rear End	Unknown	Dark	Dry	Clear
05/13/2014	8:23 PM	None	Rear End	Property Damage	Dusk	Dry	Clear

**Riverglade Drive Safety Features: (Local Road, 2 Lane, divided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	None	None	None	Stop	None	Fair	Median	Fair	None	None	16'4"
SB	-	-	-	-	-	-	-	-	-	-	-

Riverglade Drive is a residential street without shoulders. There is a median between the two lanes of the road at the intersection. The median does not extend into the crosswalk. The road provides access to a mix of residential and commercial development.

**East Hadley Road Side Path Safety Features: (No Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	7'11"	None	51'1"	Not in the crosswalk	10'4" Ladder	Concrete	Undivided
WB	None	None	None	Good							

The side path is located along the southern side of East Hadley Road. It intersects several local residential streets along marked crosswalks.

*From Left: (i) Eastbound approach of side path with concrete ramp, (ii) Northbound approach of Riverdale Drive with median, (iii) Crosswalk and ramp along westbound approach of the side path*



**Remarks:**

The pavement in the vicinity of this crossing was under construction. This crossing is in the vicinity of the PVTA bus stop with a ValleyBike station. The side path currently terminates at this location. The westbound approach ramp of the side path did not have tactile warning plates at the time of the survey.

**77. RIVERGLADE DRIVE (Urban area crossing with overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
09/01/2012	12:55 AM	None	Rear End	Unknown	Dark	Dry	Clear
05/13/2014	8:23 PM	None	Rear End	Property Damage	Dusk	Dry	Clear

**Riverglade Drive Safety Features: (Local Road, 2 Lane, divided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	None	None	None	Stop	None	Fair	Median	Fair	None	None	16'4"
SB	-	-	-	-	-	-	-	-	-	-	-

Riverglade Drive is a residential street without shoulders. There is a median between the two lanes of the road at the intersection. The median does not extend into the crosswalk. The road provides access to a mix of residential and commercial development.

**East Hadley Road Side Path Safety Features: (No Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	7'11"	None	51'1"	Not in the crosswalk	10'4" Ladder	Concrete	Undivided
WB	None	None	None	Good							

The side path is located along the southern side of East Hadley Road. It intersects several local residential streets along marked crosswalks.

*From Left: (i) Eastbound approach of side path with concrete ramp, (ii) Northbound approach of Riverdale Drive with median, (iii) Crosswalk and ramp along westbound approach of the side path*



**Remarks:**

The pavement in the vicinity of this crossing was under construction. This crossing is in the vicinity of the PVTA bus stop with a ValleyBike station. The side path currently terminates at this location. The westbound approach ramp of the side path did not have tactile warning plates at the time of the survey.

**78. BRITTANY MANOR DRIVE (THE BOULDERS) (Urban area crossing with overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
07/04/2012	10:58 PM	Cyclist	Head-on	Injury	Dark	Dry	Clear
04/01/2013	5:51 PM	None	Sideswipe	Not Reported	Daylight	Dry	Clear
05/21/2015	12:21 AM	Cyclist	Rear End	Injury	Dark	Dry	Clear

**Brittany Manor Drive Safety Features: (Local Road, 1 Lane, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	None	None	None	None	None	Good	None	Good	None	None	25'2"
SB	-	-	-	-	-	-	-	-	-	-	-

Brittany Manor Drive is the driveway for the residential development called 'The Boulders'. The driveway does not have stop control or pavement markings. The bituminous curbing along the driveway is highlighted with yellow paint.

**East Hadley Road Side Path Safety Features: (No Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	10'	None	41'5"	None	12'3" Ladder	Concrete	Undivided
WB	None	None	None	Good							

The side path is located along the southern side of East Hadley Road. It intersects several local residential streets along marked crosswalks.

*From Left: (i) Northbound approach of Brittany Manor Lane, (ii) Sign for the residential neighborhood along the driveway, (iii) Crosswalk and view along eastbound approach of the side path*



**Remarks:**

The side path is aligned parallel to East Hadley Road. Brittany Manor Drive intersects the side path and East Hadley Road at a three-way intersection.

**79. SOUTHPOINT DRIVE** (Urban area crossing with overhead lighting)

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
06/16/2011	4:38 PM	Cyclist	Angle	Injury	Daylight	Dry	Clear
10/20/2012	2:34 AM	None	Single Vehicle Crash	Injury	Dark	Wet	Rain
09/09/2014	10:06 PM	None	Angle	Property Damage	Dark	Dry	Clear
10/21/2015	2:58 PM	None	Single Vehicle Crash	Injury	Daylight	Dry	Clear

**SOUTHPOINT DRIVE Safety Features: (Local Road, 1 Lane, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	None	None	None	Stop	None	Fair	None	Good	Upward	None	25' 1"
SB	-	-	-	-	-	-	-	-	-	-	-

Southpoint Drive is a local residential road without double yellow centerline pavement markings or shoulder markings. There is a PVTA bus stop inside one of the apartment driveways along Southpoint Drive.

**East Hadley Road Side Path Safety Features: (No Control, 8'5" ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	9'10"	None	38'7"	None	12'1" Ladder	Concrete	Undivided
WB	None	None	None	Good							

The side path is located along the southern side of the East Hadley Road. It intersects several local residential streets along marked crosswalks including the driveway to the residential development 'The Boulders' located in southern Amherst.

From Left: (i) Northbound approach of Southpoint Drive, (ii) Faded stop line and crosswalk markings, (iii) Eastbound approach of the side path



**Remarks:** The side path is aligned parallel to East Hadley Road. Southpoint Drive intersects the side path and East Hadley Road at a three-way intersection. Overhead street lighting along East Hadley Road is in the vicinity of this intersection. The stop line and the crosswalk pavement markings are faded along several locations at the intersection.



**80. WHIPPLETREE LANE (Urban area crossing without overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
04/02/2012	5:18 PM	None	Rear End	Injury	Daylight	Dry	Clear

**Whippletree Lane Safety Features: (Local Road, 1 Lane, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	None	None	None	Stop	None	Good	None	Fair	None	None	24'
SB	-	-	-	-	-	-	-	-	-	-	-

Whippletree Lane is a local residential road without double yellow centerline pavement markings or shoulder markings.

**East Hadley Road Side Path Safety Features: (No Control, 8'5" ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	7'7"	None	45'10"	None	10'4" Ladder	Concrete	Undivided
WB	None	None	None	Good							

The side path is located along the southern side of East Hadley Road. It intersects several local residential streets along marked crosswalks including the driveway to the residential development 'The Boulders'.

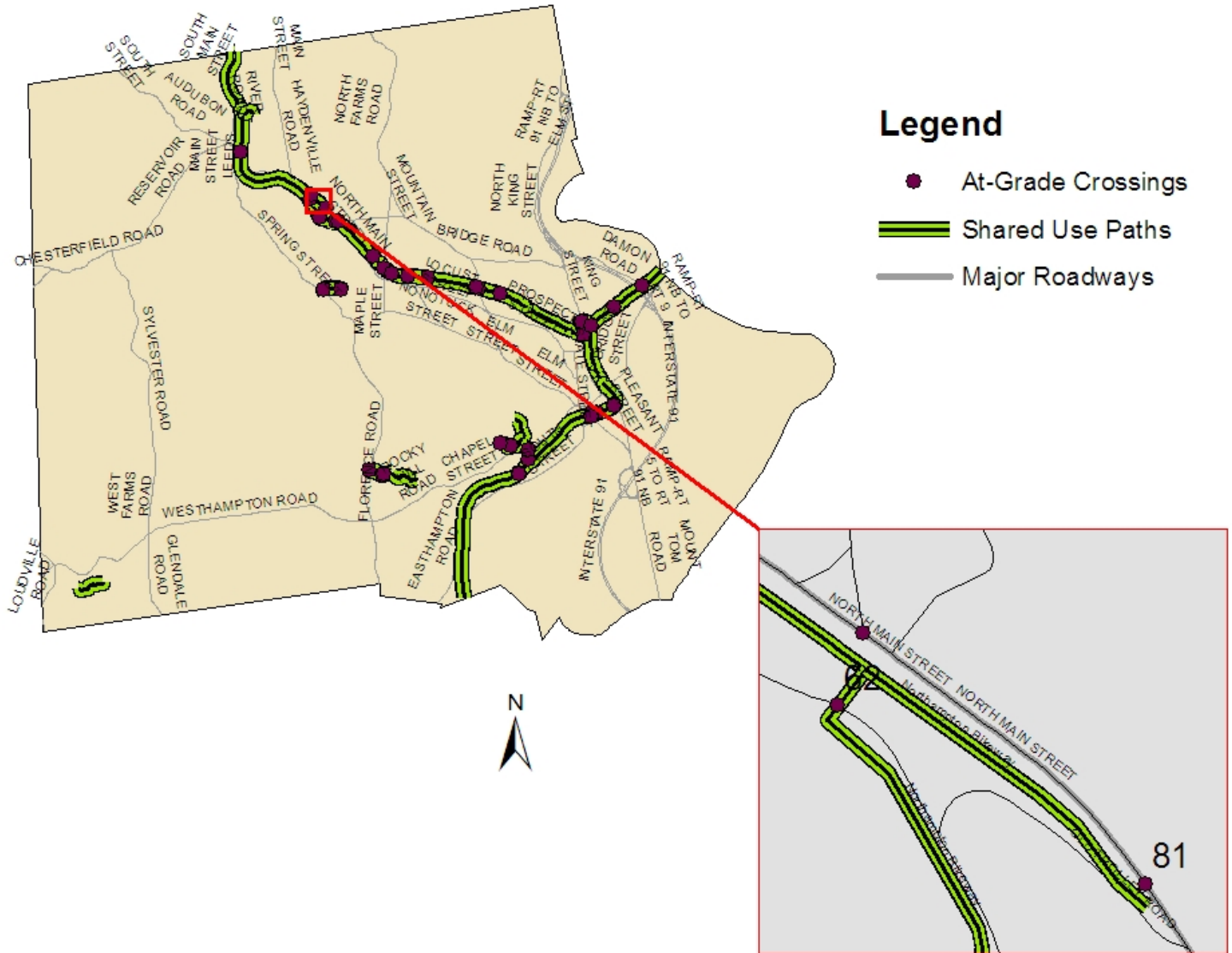
*From Left: (i) Northbound approach of Whippletree Lane, (ii) Westbound approach of the side path, (iii) Graffiti on the 'Stop' sign at the approach of Whippletree Lane*



**Remarks:**

The side path is aligned parallel to East Hadley Road. Whippletree Lane intersects the side path and East Hadley Road at a three-way intersection. The 'Stop' sign at the Whippletree Lane approach had some graffiti on it.

# NORTHAMPTON



**81. NORTH MAIN STREET** (Urban area crossing without overhead lighting)

No crashes were reported in the vicinity of this crossing between the calendar years of 2011 to 2015.

North Main Street Safety Features: (Urban Principal Arterial, 2 Lanes, ADT: 11,139 (2017, MassDOT), undivided, Jurisdiction: City Accepted)

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	Good	Good	None	None	Poor	Poor	None	Fair	None	40 mph	13'4" / 5'4"
SB	Good	Good	None	None	Poor	Poor	None	Fair	None	30 mph	13' 3" / 5' 1"

The pole that carries the advance warning sign for the southbound approach of North Main Street is at an angle tilting towards the west side.

North Main Side Walks Safety Features: (No Control, 4' Wide, Bituminous Pavement and Concrete Sidewalks, Jurisdiction: Municipal)

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
NB	None	None	None	Good	4'	None	38' 3"	None	Continental 14'11"	Concrete	Undivided
SB	None	None	None	Good							

This crossing connects sidewalks along both sides of North Main Street. The North Main Street Side Path and shared use path inside Look Park are in the vicinity of this crossing which is used by pedestrians to access these facilities. The sidewalk and ramps are not compliant with the Americans with Disabilities Act.

From Left: (i) Crosswalk view from sidewalk along west side of the road, (ii) Southbound approach of North Main Street depicting the damaged sign post, (iii) Ramp along the sidewalk along the west side of North Main Street.



**Remarks:**

Crosswalk markings and stop lines have faded along several locations along the pavement in the vicinity of this crossing. The shark teeth yield markings are visible in very few locations and need to be repainted.

**82. NORTH MAIN STREET AT VETERANS AFFAIRS MEDICAL CENTER DRIVEWAY**

**(Urban area crossing with overhead lighting)**

No crashes were reported in the vicinity of this crossing between the calendar years of 2011 to 2015.

**North Main Street Safety Features: (Urban Principal Arterial, 2 Lanes, ADT: 11,139 (2017, MassDOT), undivided, Jurisdiction: City Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
EB	None	None	None	Signal	None	Poor	Push Button Activated Ped Signal	Fair	None	40 mph	12'10" / 8'
WB	None	None	None		None	Poor		Fair	None	30 mph	13' 6" / 5'

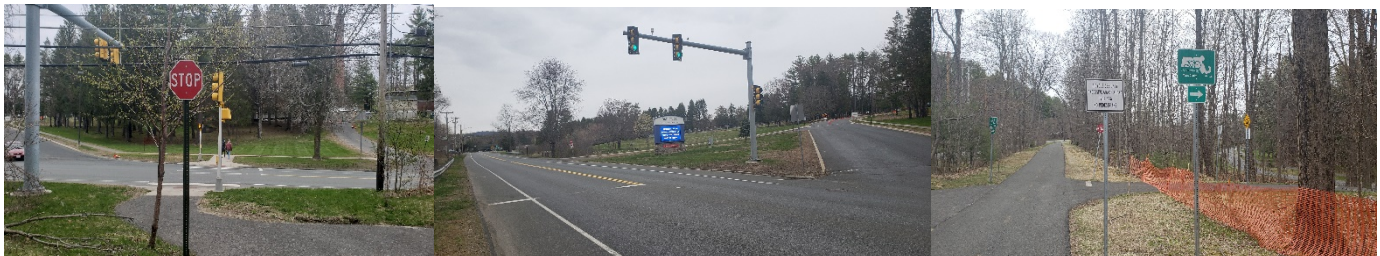
North Main Street has bike lanes on both sides. Stop lines along both approaches are faded. There is a Bicycle Share the Road sign for eastbound traffic after the crossing. The Veterans Affairs Medical Center Driveway is north of the crossing and there are MassDOT Park and Ride Lot signs along both approaches that direct drivers towards their parking lot.

**North Main Street Side Walks Safety Features: (Signal Control, 10' Wide, Bituminous Pavement and Concrete Sidewalks, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
NB	Signal	Good	Good	Good	12'	Push Button Activated Ped Signal	42' 10"	None	Continental 15'10"	Concrete	Undivided
SB	Signal	None	None	Good							

The Northampton Bikeway is located along the southern side of North Main Street which connects to the sidewalk along the northern side of this signalized crossing. The bikeway has a sign along the northeast bound approach which indicates the end of the pedestrian right of way further along the path because of steep grades. Therefore, this crossing provides pedestrians a path to continue along sidewalks located across the street.

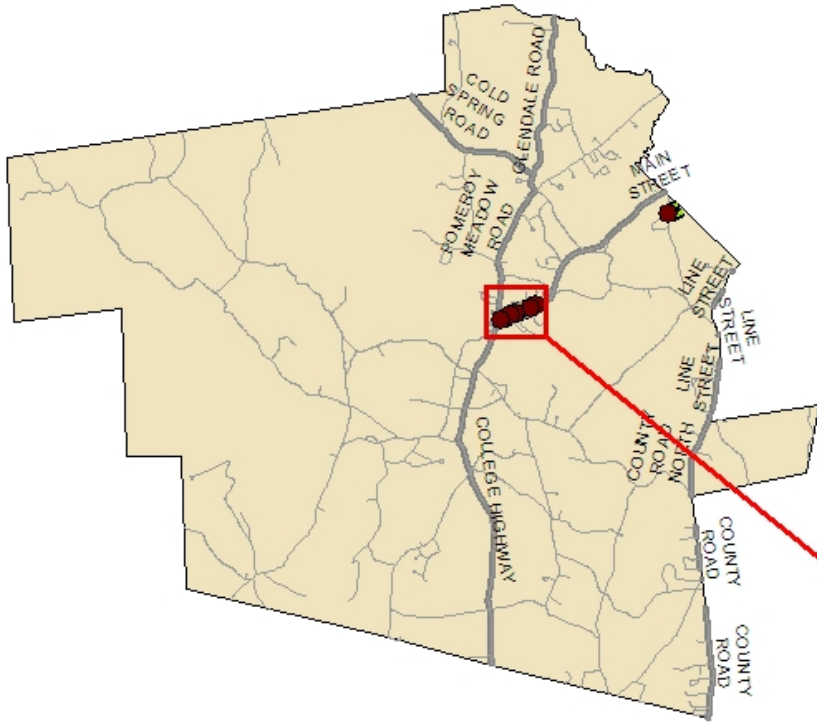
*From Left: (i) Northbound approach of the shared use path depicting the stop sign and the signal head, (ii) Westbound approach of North Main Street with Veteran's Affairs Medical Center Sign and driveway access to MassDOT park and ride lot, (iii) Sign for pedestrians along the shared use path*



**Remarks:**

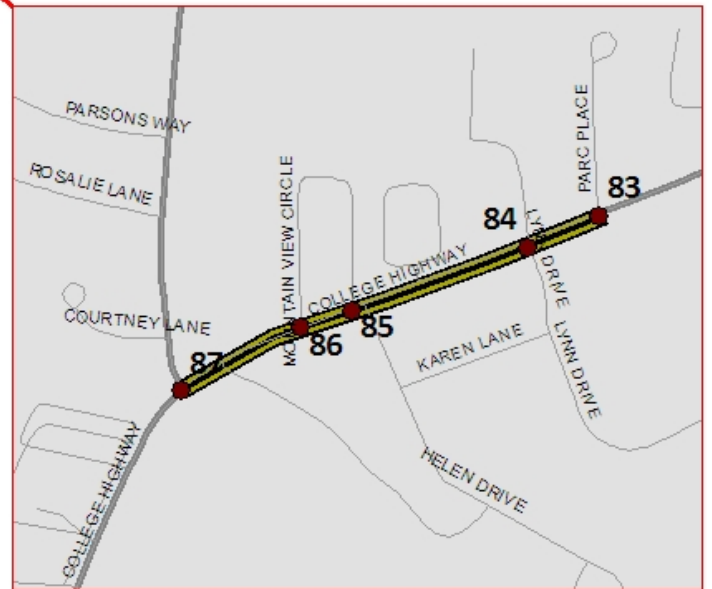
Crosswalk markings and stop lines have faded at several locations along the pavement in the vicinity of this crossing. The signal provides approximately 15 seconds of walk time for pedestrians to cross the street.

# SOUTHAMPTON



## Legend

- At-Grade Crossings
- ▬ Side Paths
- ▬ Shared Use Paths
- Major Roadways



**83. PARC PLACE (Urban area crossing without overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
02/18/2011	5:33 PM	None	Angle	Property Damage	Dusk	Wet	Rain
03/19/2011	3:21 PM	None	Rear-end	Property Damage	Daylight	Dry	Clear
06/26/2011	5:28 PM	None	Single vehicle crash	Injury	Daylight	Dry	Cloudy
12/06/2011	5:56 PM	None	Rear-end	Injury	Daylight	Wet	Rain
02/14/2015	9:37 AM	None	Rear-end	Property Damage	Daylight	Dry	Clear

**Parc Place Safety Features: (Local Road, 2 Lanes, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	-	-	-	-	-	-	Street Lights	-	-	-	-
SB	None	None	None	Stop	None	Good		Good	None	None	15' 0" / 5' 0"

Parc Place is a local residential street with well-maintained sidewalks separated by grass shoulders with streetlights.

**College Highway (Route 10) Side Path Safety Features: (Stop Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	Stop	Missing	Poor	Good	10'	End Trail Sign	38' 11"	None	10' 2" Continental	Concrete	Undivided
WB	None	-	None	Good							

This intersection marks the eastern end of the side path. It is located in the vicinity of a gas station with a convenience store. The side path eastbound approach is controlled by a stop line without a sign. The stop line and pavement markings along the side path are in poor condition. There is a guide sign for users of the path to utilize the crosswalk for crossing Parc Place.

*From Left: (i) Westbound approach of the Side Path, (ii) Parc Place approach, (iii) Pavement markings at the eastbound approach of the Side Path*



**Remarks:**

There is a push button activated Rectangular Rapid Flashing Beacon (RRFB) in the vicinity of the westbound approach of the side path for pedestrians trying to cross College Highway. The intersection is well lighted by streetlights. The pavement markings along the side path are faded and the approach is missing the Stop sign.

**84. COUNTRY GARDEN (Urban area crossing with overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
03/30/2011	10:08 AM	None	Angle	Property damage	Daylight	Dry	Clear
10/15/2011	4:28 PM	None	Rear-end	Non-fatal injury	Daylight	Dry	Clear
04/09/2013	5:13 PM	None	Rear-end	Property damage	Daylight	Dry	Clear
08/23/2013	8:49 PM	None	Sideswipe, opposite direction	Property damage	Daylight	Dry	Clear
08/30/2015	11:34 AM	None	Single vehicle crash	Non-fatal injury	Daylight	Dry	Clear

**Country Garden Safety Features: (Local Road, 2 Lanes, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	-	-	-	-	-	-	-	-	-	-	-
SB	None	None	None	Stop	None	Fair	None	Good	None	None	24' 4"

Country Garden serves a mix of commercial and residential land use along College Highway. The road does not have any curbing or shoulders.

**College Highway (Route 10) Side Path Safety Features: (No Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'x'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	10'	None	37' 6"	None	9'10" Continental	Concrete	Undivided
WB	None	None	None	Good							

The intersection is located in the vicinity of a strip mall and Country Garden serves as a driveway to the mall and the apartment units next to the mall.

*From Left: (i) Eastbound approach of the Side Path, (ii) Country Garden approach, (iii) Faded crosswalk marking*



**Remarks:**

Crosswalk markings are faded at several locations.

**85. MOUNTAIN VIEW CIRCLE (EAST)** (Urban area crossing with overhead lighting)

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
09/07/2012	4:00 PM	None	Rear End	Injury	Daylight	Dry	Clear
08/10/2014	10:57 AM	None	Rear End	Injury	Daylight	Dry	Clear

**Mountain View Circle Safety Features: (Local Road, 2 Lanes, undivided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	-	-	-	-	-	-	-	-	-	-	-
SB	None	None	None	Stop	None	Good	None	Good	None	None	12' 2"

Mountain View Circle is a local residential street without shoulders.

**College Highway (Route 10) Side Path Safety Features: (No Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	9'11"	None	37' 10"	None	9'10" Continental	Concrete	Undivided
WB	None	None	None	Good							

The overhead light along the side path is in the vicinity of the crossing. The side path approaches do not have stop control.

*From Left: (i) Eastbound approach of the side path showing snowbanks, (ii) Westbound approach of the side path, (iii) Mountain View Circle approach*



**Remarks:**

Snowbanks created from plowing the street were observed to block the ramps of the side path at the time of the field visit.



**86. MOUNTAIN VIEW CIRCLE (WEST)** (Urban area crossing with overhead lighting)

No crashes were reported in the vicinity of this crossing between the calendar years of 2011 and 2015.

**Mountain View Circle Safety Features:** (Local Road, 2 Lanes, undivided, Jurisdiction: Town Accepted)

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	-	-	-	-	-	-	None	-	-	-	-
SB	None	None	None	Stop	None	Good		Good	None	None	11' 11"

Mountain View Circle is a local residential street without shoulders.

**College Highway (Route 10) Side Path Safety Features:** (No Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	None	None	None	Good	10'	None	35' 3"	None	10' Continental	Concrete	Undivided
WB	None	None	None	Good							

The overhead light along the side path is located in the vicinity of the crossing. The side path approaches do not have stop control.

From Left: (i) Westbound approach of the side path depicting the crosswalk, (ii) Mountain View Circle approach, (iii) Snowbanks along the ramp of the side path



**Remarks:**

Snowbanks created from plowing the street were observed to block the ramps of the side path at the time of the field visit.

**86. POMEROY MEADOW ROAD (Urban area crossing with overhead lighting)**

**Crash History in the Vicinity of the Crossing**

Date	Time	Non-Motorist	Manner	Severity	Light	Road	Weather
01/15/2011	3:38 PM	None	Single Vehicle Crash	Property Damage	Daylight	Dry	Clear
12/18/2014	3:52 PM	None	Rear End	Injury	Dusk	Dry	Clear

**Pomeroy Meadow Road Safety Features: (Local Road, 2 Lanes, divided, Jurisdiction: Town Accepted)**

Dir.	Advance Warning Signs	Side Path Signs	Advance Pavement Markings	Control Type	Shark Teeth Yield Markings	Cross Walk Markings	Additional Safety Features	Visibility of Side Path	Grade	Posted Speed Limit	Avg. Lane and Shoulder Width
NB	-	-	-	-	-	-	Bicycles Share the Road Signs	-	-	-	-
SB	None	None	None	Stop	None	Poor		Good	None	None	27'2" / 3'3"

Pomeroy Meadow Road has bicycle share the road pavement markings and signs. There is an overhead flashing red signal along with two Stop signs at the southbound approach of Pomeroy Meadow Road. A median divides the two opposing traffic lanes at the approach.

**College Highway (Route 10) Side Path Safety Features: (Stop Control, 10 ft. Wide, Bituminous Pavement, Jurisdiction: Municipal)**

Dir.	Control Type	Condition of Signage	Pavement Markings	Sight Distance	Width at the 'X'	Additional Features	Crossing Distance	Median Between Crosswalk	Crosswalk Width and Style	Ramp Material	Tactile Warning Plates
EB	-	-	-	-	9' 11"	None	73' 1"	Yes	9' 10" Continental	Concrete	Undivided
WB	Stop	None	None	Good							

A sign along the westbound approach marks the end of the side path. There is a 'Share the Road' sign posted for bicyclists. The approach has a stop line with pavement markings; however, there is no sign.

*From Left: (i) Westbound approach of the side path depicting the median and faded crosswalk markings, (ii) Southbound approach of Pomeroy Meadow Road, (iii) Eastbound end of sidewalk and faded crosswalk markings*



**Remarks:**

Snowbanks created from plowing the street were observed to block the ramps of the side path at the time of the field visit.

## Transportation Safety Features by Roadway Classification

As noted in the previous report, a wide array of transportation safety features were observed along at-grade crossings in the region. Based on the input from the Joint Transportation Committee, a review of existing conditions along roadways with different classifications was conducted subject to primary transportation safety elements. The following tables summarize the existing conditions based on the roadway classification at each crossing.

A majority of crossings have 2 roadway approaches and two shared use path approaches. Some crossings are located along the end of a shared use path and therefore have only one shared use path approach. Similarly, crossings along the side paths have only one roadway approach.

### Pavement Markings and Signage

Table 2 summarizes the primary transportation safety elements like advance warning signs, information signs, advance pavement markings, shark teeth yield markings, and crosswalk markings present along the roadway approaches based on the roadway classification of the highway at the crossing.

**Table 2: Transportation Safety Elements along Roadway Approaches**

		Roadway Features									
		Advance Warning Signs Present		Shared Use Path Signs Present		Advance Pavement Markings Present		Shark Teeth Yield Markings Present		Crosswalk Markings Present	
	Number of Approaches	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>Local Road</b>	84	56	28	31	53	53	31	65	19	14	70
<b>Minor Collector</b>	24	16	8	4	20	16	8	18	6	3	21
<b>Major Collector</b>	4	3	1	3	1	3	1	1	3		4
<b>Minor Arterial</b>	42	17	25	10	32	24	18	30	12	4	38
<b>Principal Arterial</b>	20	14	6	7	13	18	2	16	4	3	17

Source: PVPC

As depicted in table above, about half of the at-grade shared use path and roadway crossings are located along local roads, followed by minor arterials, and minor collectors. A majority of these approaches do not have advance warning signs or advance pavement markings. Shared use path signs are present along almost 70% of approaches.

Table 3 depicts the safety features existing along shared use path approaches. Three primary elements of shared use path safety design that were incorporated in this study's data collection were regulatory

signs (Stop sign), supplemental pavement markings, and median between the crosswalk. A vast majority of shared use path approaches are ‘Stop’ controlled. However, some locations do not have a posted ‘Stop’ signs. Most of these uncontrolled approaches are located along the side paths intersecting local streets.

**Table 3: Transportation Safety Features along Shared Use Path Approaches**

		Shared Use Path Features					
		Signage Along SUP Approach Present		Pavement Markings Present		Median Between Crosswalk Present	
	Number of Approaches	No	Yes	No	Yes	No	Yes
<b>Local Road</b>	84	34	50	45	39	50	34
<b>Minor Collector</b>	24	2	22	9	15	10	14
<b>Major Collector</b>	4	4		4		2	2
<b>Minor Arterial</b>	42	9	33	11	31	28	14
<b>Principal Arterial</b>	20	5	15	7	13	12	8

Source: PVPC

### Control Type

Vehicle traffic along a majority of roadway approaches to at-grade shared use path crossings in the region is uncontrolled. A total of 28 locations (more than half of which are along local roads) had some form of control or supplemental transportation safety and traffic calming feature for motor vehicles; the type of control according to roadway classification is summarized in Table 4 below.

A pattern of signals existing along arterials is observed based on this data.

Table 5 summarizes the control measures along shared use path approaches. As mentioned previously, ‘Stop’ control in the form of a regulatory sign, with or without supplemental pavement markings, exists along more than half of all approaches that intersect all classes of roadways. Eight locations have signalized crossings and one approach in Amherst along the southbound direction of the Norwottuck Branch of the MassCentral Rail Trail intersecting a local street (Southwest Circle) has a ‘Yield’ sign.

**Table 4: Control Type for Roadway (Number of Approaches)**

	Local Road	Minor Collector	Major Collector	Minor Arterial	Principal Arterial	Total Approaches	Total Crossings
Raised Crosswalk	2					2	1
RRFB*		8		4		12	6
Signal				8	8	16	8
Speed Bump	2					2	1
Stop	17	2				19	10
Yield					3	3	2
							28

Source: PVPC

\*RRFB Rectangular Rapid Flashing Beacon

**Table 5: Control Type for Shared Use Path (Number of Approaches)**

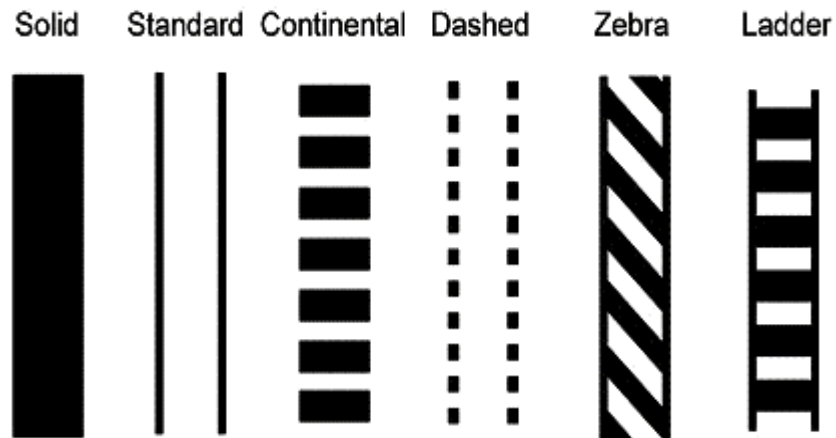
	Local Road	Minor Collector	Major Collector	Minor Arterial	Principal Arterial	Total Approaches	Total Crossings
None	36	2	2	9	6	56	30
Signal				8	8	16	8
Stop Sign	46	21		25	4	96	48
Yield	1					1	1
							87

Source: PVPC

## Crosswalk Type

Figure 1 illustrates different types of crosswalk markings in practice throughout the country. As depicted in Table 6, a majority of locations have the 'Continental' type of crosswalk markings.

**Figure 1: Types of Crosswalk Markings**



Source: Department of Transportation, Federal Highway Authority (FHWA), Publication Number: FHWA-HRT-04-100  
Date: September 2005.

<https://www.fhwa.dot.gov/publications/research/safety/04100/02.cfm>

**Table 6: Type of Crosswalk Markings by Roadway Classification**

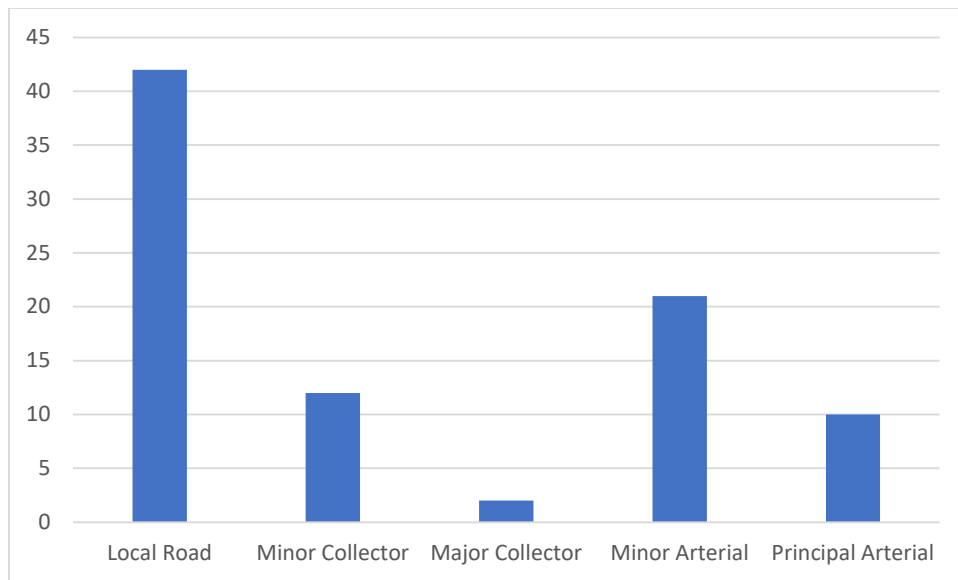
Types of Crosswalks	Functional Classification of Roadway Approaches					Total Approaches	Number of Crossings
	Local Road	Minor Collector	Major Collector	Minor Arterial	Principal Arterial		
Concrete	2					2	1
Boutique	4					4	2
Raised Brick				2	6	8	4
Standard	8					8	4
Zebra	6	2		8	2	18	9
Ladder	20	6	2	8	2	38	19
Continental	34	12		20	10	76	38
None	10	4		4		18	10
							<b>87</b>

Source: PVPC

## Summary

Based on the data summarized in this section it can be observed that existing conditions along various at-grade crossings cannot be categorized based on roadway classification to deduce best practices or recommend guidelines for newly proposed locations in the region. The primary reason is that nearly half (42 out of 87) of the crossings surveyed are along local roads (Figure 2). The only clear pattern observed was at the signalized crossings as all 8 are located along arterials.

**Figure 2: At-grade Crossings by Roadway Classification**



There is an absence of any uniform theme among transportation treatments at crossings along higher classified roadways. Additionally, there are many differences in the type of existing treatments and features. In the next chapter some of the existing best practices are highlighted which provide an insight into current conditions in the vicinity of at-grade shared use path crossings in the region.

## Existing Best Practices Along Select Locations

### East Street and Norwottuck Branch of MassCentral Rail Trail Crossing in Hadley

(Local Road, No Control for Roadway, Stop Control for Shared Use Path)

This crossing was selected to highlight the advance warning signs and pavement markings along the roadway, the shared use path signs which depict bicycle and pedestrian traffic, and 'Stop' signs and pavement markings along the shared use path.

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#### *Shared Use Path Highlights*

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1. Well Defined Advance Pavement Markings
2. Clear Signage for Stop Control
3. Demarcated lanes for separating westbound and eastbound non-motorists



---

#### *Roadway Highlights*

---

1. Advance Warning Signs
2. Type and location of Advance Pavement Markings (Faded at the time of survey)
3. The type of Shared Use Path Signs that depict both bicycles and pedestrians





South Maple Street and Norwottuck Branch of MassCentral Rail Trail Crossing in Hadley  
(Minor Arterial, Rectangular Rapid Flashing Beacon (RRFB) for Roadway, Stop Control for Shared Use Path)

This crossing was selected to highlight the treatments along a Rectangular Rapid Flashing Beacon (RRFB) Controlled Crossing.

---

*Shared Use Path Highlights*

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1. Well Defined Advance Pavement Markings
2. Clear Signage for Stop Control
3. Demarcated lanes for separating westbound and eastbound non-motorists



---

*Roadway Highlights*

---

1. Advance Warning Signs
2. Type and location of Advance Pavement Markings and shark teeth yield markings (Faded at the time of survey)
3. Supplemental RRFB Warning Signs\*

\* - While this location is a good example of the use of a RRFB in the region, it was observed that many bicyclists and pedestrians fail to activate the device prior to crossing South Maple Street.



## Feeding Hills Road and Southwick Rail Trail

(Principal Arterial, Signalized)

This crossing was selected amongst the signalized crossings because of the advanced pavement markings and signage that informs the drivers about the location of the shared use path approaches. The advance warning signs do not depict bicycles and pedestrians. A shared use path sign should ideally depict both.

---

### *Roadway Highlights*

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1. Advance Pavement Markings
2. Advance Signal Ahead Sign
3. Advance Shared Use Path Warning Sign
4. Shared Use Path Sign (Ideally it should depict both bicycles and pedestrians)



## Recommendations for Countermeasures Based on Roadway Characteristics

Federal Highway Administration’s (FHWA) Report number FHWA-SA-18-018 titled Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations provides guidelines for selecting appropriate transportation safety treatments and countermeasures along at-grade midblock unsignalized crossings.

The guide provides instructions on field data collection and analysis along with detailed instructions to determine the most appropriate counter measure. Figure 3 depicts the table from the guide which breaks down the roadway features like the number of lanes, speed limit, and annual average daily traffic volume in order to provide help in selecting suitable transportation safety treatments. This resource can provide valuable guidance to local officials in selecting suitable transportation improvements for at-grade crossings.

**Figure 3: Guidelines for Countermeasures Along Pedestrian Crossings**

Roadway Configuration	Speed Limit								
	≤30 mph			35 mph			≥40 mph		
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
2 lanes*	1 2 3 4 5 6	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7
3 lanes with raised median*	1 2 3 4 5	1 3 5 7	1 3 5 7	1 3 4 5 7	1 3 5 7	1 3 5 7	1 3 4 5 7	1 3 5 7	1 3 5 7
3 lanes w/o raised median†	1 2 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7	1 3 4 5 6 7	1 3 5 6 7	1 3 5 6 7
4+ lanes with raised median‡	1 3 5	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7	1 3 5 7
4+ lanes w/o raised median‡	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8	1 3 5 6 7 8

\*One lane in each direction    †One lane in each direction with two-way left-turn lane    ‡Two or more lanes in each direction

Given the set of conditions in a cell,

- # Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

- 1 High-visibility crosswalk markings, parking restriction on crosswalk approach, adequate nighttime lighting levels
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Pedestrian Hybrid Beacon
- 8 Road Diet

This table was developed using information from: Zegeer, C. V., Stewart, J. R., Huang, H. H., Lagerwey, P. A., Feaganes, J., & Campbell, B. J. (2005). Safety effects of marked versus unmarked crosswalks at uncontrolled locations: Final report and recommended guidelines (No. FHWA-HRT-04-100); Manual on Uniform Traffic Control Devices, 2009 Edition, Chapter 4F. Pedestrian Hybrid Beacons; the Crash Modification Factors (CMF) Clearinghouse website (<http://www.cmfclearinghouse.org>); and the Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE) website (<http://www.pedbikesafe.org/PEDSAFE/>).

Source: [https://safety.fhwa.dot.gov/ped\\_bike/step/docs/pocket\\_version.pdf](https://safety.fhwa.dot.gov/ped_bike/step/docs/pocket_version.pdf)