

CORRIDOR MITIGATION ASSESSMENT

**WASHINGTON STREET, PLEASANT STREET,
AND WEST WYOMING AVENUE CORRIDORS**

Prepared for:

City of Melrose

Prepared by:

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1.0 INTRODUCTION

1.1 OVERVIEW

Following receipt of a 2017 Community Mitigation Reserve Fund Grant from the Massachusetts Gaming Commission, Stantec Consulting Services Inc. has been retained by the City of Melrose to evaluate and prepare a Corridor Mitigation Assessment of Washington Street, Pleasant Street, and West Wyoming Avenue. All three streets are owned and maintained by the City of Melrose and classified by MassDOT as urban minor arterials measuring about 13,000 feet (approximately 2.5 miles) in length.

The Encore Casino's understandable goal is to attract area residents to its site in Everett. To minimize traffic impacts on already congested local streets in Melrose, Malden and Everett, the owners of the casino are providing a shuttle service from the MBTA Malden Center and Wellington Orange Line Stations to the casino site. As a result, accessing this shuttle service would require potential casino patrons to drive or take a bus to these stations. Alternatively local patrons could take the MBTA Orange Line from Oak Grove Station near the Malden/Melrose line. It is most likely these patrons would utilize one or more of these Melrose corridors. The goal of this study is to develop an acceptable implementation plan to improve or enhance the accessibility, in a safe and efficient manner, of all corridor users - pedestrians, drivers, bicyclists and transit riders – resulting from the expected increase in traffic. Over the years, development and general traffic growth has continued to place serious travel demands on these corridors while provisions for bicyclists and pedestrians are limited or non-existent. An improved bicycle/pedestrian facility along this corridor will provide an alternative means of mobility for residents, workers, and tourists traveling along these streets and between destinations or points of interest served by each of them.

A Locus Map of the Project area is shown in Figure 1.

1.2 PURPOSE AND NEED

The purpose of this corridor mitigation assessment is to provide an engineering review of existing conditions along Washington Street, Pleasant Street, and West Wyoming Avenue within the study area and provide recommendations for potential safety enhancements. Stantec has reviewed these corridors with respect to potential bicycle and intersection improvements as well as an engineering review of all crosswalks, pedestrian ramps and bus stops. The current edition of the Manual on Uniform Traffic Control Devices (MUTCD), ADA requirements, MassDOT Complete Streets Guide, and the AASHTO Guide for the Design of Bicycle Facilities were all referenced when reviewing these streets for conformance to applicable standards, guidelines and design criteria.

1.3 STUDY AREA

Our Study Area (see Figure 2) includes the segment of Washington Street from Fellsway East to the Melrose-Malden City Line (a point less than 1,500 feet from the MBTA Orange Line Oak Grove Station in Malden); the entire length of Pleasant Street from West Wyoming Avenue to Washington Street (MBTA Bus #132 runs along this route) and West Wyoming Avenue from Main Street to Cottage Street (encompassing the locations of the Lincoln Elementary School, the Lincoln Playground and the MBTA's Wyoming Hill Station on the Haverhill Commuter Rail Line).

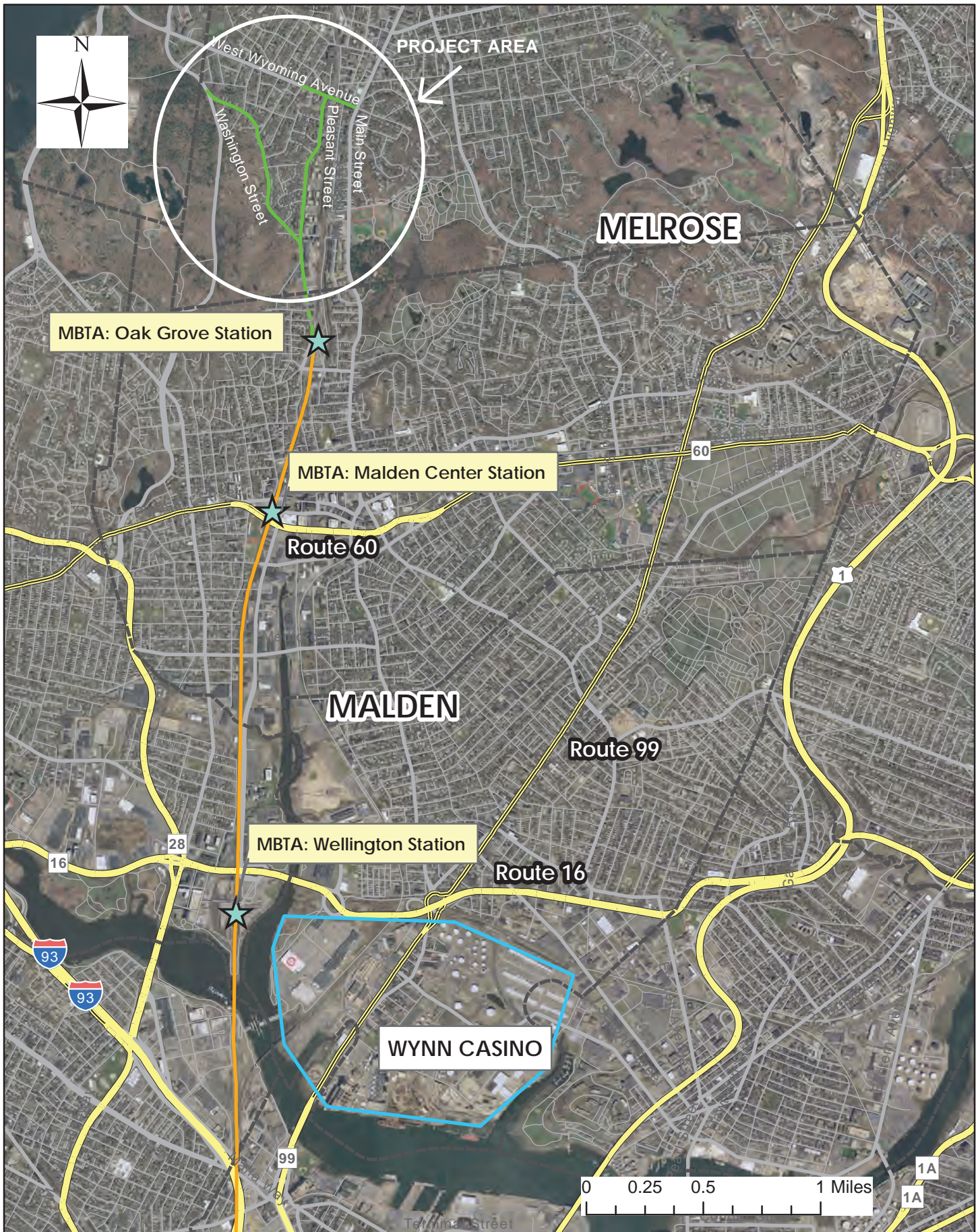


Figure 1: Locus Map Showing Oak Grove, Malden Center and Wellington MBTA Stations

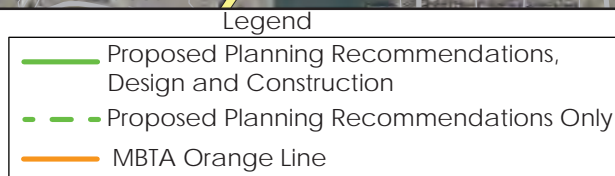




Figure 2: Pleasant Street, Washington Street and West Wyoming Avenue Project Location Map



2.0 EXISTING CONDITIONS

2.1 ROADWAY GEOMETRICS

2.1.1 Washington Street

For the most part Washington Street within the study area is a 2-lane roadway with one lane in each direction, separated by a double yellow centerline. The overall curb to curb width of the roadway varies. The segment between the Malden City Line and Pleasant Street has varying curb to curb dimensions, with travel lanes generally 13 feet wide. Shoulders are delineated by solid white edge lines with a parking line in the westerly shoulder. A continuous sidewalk is essentially present on both sides of Washington Street. The sidewalk on the westerly side of Washington Street does end abruptly just south of the Pleasant Street intersection.

Washington Street from Pleasant Street to Fellsway East has a curb to curb width of 28 feet, with travel lanes generally 12 feet wide and shoulders 2 feet wide delineated by solid white edge lines. A continuous sidewalk is present on the east side only whereas the sidewalk on the west side of Washington Street does not extend along these entire limits. Sidewalk on the west side of Washington Street is essentially missing from Pleasant Street northerly to Clinton Street and again missing from Pebble Road northerly to Fellsway East.

There are a total of 19 pedestrian ramps along Washington Street within the study area. We found that 16 ramps (84%) did not comply with MAAB/ADA requirements, 3 ramps (16%) complied with MAAB/ADA requirements and an additional 6 new ramps would be required if continuous sidewalk accommodation were provided along the westerly



1 - The one-way southbound segment of Washington Street south of Goodyear Avenue

side of Washington Street at some future time. Sidewalk cross slope readings were taken throughout the length of the corridor. Where possible, readings were taken on the sidewalk in the area where walks led to private homes. A total of 59 cross slope readings were obtained where 38 (64%) locations did not comply with the 2.0% maximum allowed by the MAAB/ADA while the remaining 21 locations (36%) complied with the 2.0% maximum allowed by the MAAB/ADA. The following is a table showing the ADA compliance of the Wheelchair Ramps along Washington Street, followed by a block by block assessment of the existing conditions for Washington Street.

Table 1 Washington Street Curb Ramp Compliance

Location	ADA Compliance
Pleasant St to Goodyear Ave	N/A
Goodyear Ave to Shadow Rd	N/A
Shadow Rd to Gould St	#43*: No #44: Yes
Gould St Crescent Ave	#45: Yes #46: No
Crescent Ave to Clinton Rd	#47: No #48: No
Clinton Rd to Trenton St	#49: No #50: No
Trenton St to Baldwin St	#51: No #52: No #53: No
Baldwin St to Lynde Ave	#54: No #55: No #56: No #57: No
Aaron St to Pebble Rd	#58: No #59: No #60: No
Pebble Rd to Fellsway E	#61: No

*Ramp Numbering refers to plan sheets

2.1.1.1 Pleasant Street to Goodyear Avenue

This is a one-way section of Washington Street for southbound traffic only. There are no sidewalks and no pedestrian ramps on either side of Washington Street for this block. The east side of this road segment contains regulatory signs for Speed Laws, Fines, and No Parking Anytime. The west side of the road segment contains a Stop Sign and No Parking Sign.

Table 2 Pleasant Street to Goodyear Avenue Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> • 2 Concrete • 2 Asphalt 	Washington Street <ul style="list-style-type: none"> • 15' (one way) at Pleasant St • 28' at Goodyear Ave (26') 	<ul style="list-style-type: none"> • 13' one-way southbound • 1' shoulders each side 	No sidewalk	No sidewalk

2.1.1.2 Goodyear Avenue to Shadow Road

This is a two-way segment of Washington Street with traffic separated by a double yellow centerline. The east side of the road has a cement concrete sidewalk with street lighting on existing utility poles. There is no signage. The west side of the road has a Stop Ahead sign but no sidewalk. There are no pedestrian ramps within this block.

Table 3 Goodyear Avenue to Shadow Road Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 5 Concrete 	Washington Street <ul style="list-style-type: none"> 28' at Goodyear Ave (26') 28' at Shadow Rd (24') 	<ul style="list-style-type: none"> 13' lane each direction 1' shoulders each side 	No sidewalk	5.5' Concrete sidewalk

2.1.1.3 Shadow Road to Gould Street (including Atkinson Terrace)

The east side of the road has a cement concrete sidewalk with a Speed Limit sign. The west side of the road has no sidewalk, but does have a Dead End sign, Rubbish Disposal Prohibited sign, and Speed Limit sign. Street lighting is provided on existing utility poles which cross from the east side to the west side near Pole #203.



The pedestrian ramp on the northeast corner of the intersection of Washington Street and Shadow Road does not comply with MAAB/ADA requirements. The level landing has a cross slope of 7.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp on the southeast corner on the intersection of Washington Street and Gould Street does comply with MAAB/ADA requirements. The level landing has a landing slope of 2.0% which is compliant with the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

2 - Looking southbound on Washington Street between Shadow Road and Gould Street

Table 4 Shadow Road to Gould Street Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 22 Concrete 3 Asphalt 	Washington Street <ul style="list-style-type: none"> 28' at Shadow Rd (24') 	<ul style="list-style-type: none"> 13' lane each direction 	No sidewalk	5.5' Concrete sidewalk

	<ul style="list-style-type: none"> • 28' at Gould St (24') 	<ul style="list-style-type: none"> • 1' shoulders each side 		
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2.1.1.4 Gould Street to Crescent Avenue

This segment of roadway contains a cement concrete sidewalk with a grass strip on its east side, but no sidewalk on its west side. Neither side contains any traffic signs. Street lighting is provided on existing utility poles that run along the west side.

The pedestrian ramp at the northeast corner of the intersection of Washington Street and Gould Street does comply with MAAB/ADA requirements. The level landing has a landing slope of 0.7% which is less than the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southeast corner of the intersection of Washington Street and Crescent Avenue does not comply with MAAB/ADA requirements. The level landing has a cross slope of 4.7% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 5 Gould Street to Crescent Avenue Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> • 1 Concrete 	Washington Street <ul style="list-style-type: none"> • 28' at Gould St (24') • 28' at Crescent Ave (24') 	<ul style="list-style-type: none"> • 13' lane each direction • 1' shoulders each side 	No sidewalk	<ul style="list-style-type: none"> • 5.5' Concrete sidewalk • 3' Grass strip

2.1.1.5 Crescent Avenue to Clinton Road

The east side of the road accommodates a cement concrete sidewalk with a grass strip, but no signs. The west side of the road has a Rubbish Disposal Prohibited sign and no sidewalk.

Street lighting is provided on existing utility poles that run along the west side.



3 - Looking Southbound on Washington Street just north of Crescent Avenue

The pedestrian ramp at the northeast corner of the intersection of Washington Street and Crescent Avenue does not comply with MAAB/ADA requirements. The level landing has a landing slope of 3.2% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southeast corner of the intersection of Washington Street and Clinton Road does not comply with MAAB/ADA requirements. The level landing has a cross slope of 4.9% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 6 Crescent Avenue to Clinton Road Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 3 Concrete 	Washington Street <ul style="list-style-type: none"> 28' at Crescent Ave (24') 28' at Clinton Rd (22') 	<ul style="list-style-type: none"> 13' lane each direction 1' shoulders each side 	No sidewalk	<ul style="list-style-type: none"> 4' Concrete sidewalk 4.5' Grass strip

2.1.1.6 Clinton Road to Trenton Street North

This segment of Washington Street contains cement concrete sidewalks with grass strips on both sides. It also has a State Law Stop for Pedestrians in Crosswalk sign on the east side at the crosswalk near Trenton Street North but no signs on the westerly side of the street.

Street lighting is provided on existing utility poles located along the west side.

The pedestrian ramp at the northeast corner of the intersection of Washington Street and Clinton Road does not comply with MAAB/ADA requirements. The level landing has a landing slope of 5.0% which exceeds the maximum



allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southeast corner of the intersection of Washington Street and Trenton Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.6% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

There is a crosswalk marked on the south side of the Clinton Street intersection but no pedestrian ramp on the westerly end of the crosswalk.

4 - Looking north on Washington Street between Clinton Road and Trenton Street North

Table 7 Clinton Road to Trenton Street North Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 8 Concrete 	Washington Street <ul style="list-style-type: none"> 28' at Clinton Rd (22") 28' at Trenton St North (32') 	<ul style="list-style-type: none"> 13' lane each direction 1' shoulders each side 	<ul style="list-style-type: none"> 4.5' Concrete sidewalk 4.5' Grass strip 	<ul style="list-style-type: none"> 4.5' Concrete sidewalk 4.5' Grass strip

2.1.1.7 Trenton Street North to Baldwin Street/Trenton Street South

This is a relatively short section of road due to the one-way segments of the Trenton Street approach to Washington Street, thus creating a small passive park between the one-way sections of Trenton Street. The east side of this section of road contains a cement concrete sidewalk and a Do Not Enter sign. The west side has a cement concrete sidewalk with grass strip along with a State Law \$100 Fine Stop for Pedestrians in Crosswalk sign.

Street lighting is provided on existing utility poles that run along the west side.

The pedestrian ramp at the northeast corner of the intersection of Washington Street and Trenton Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 7.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.



5 - Looking north on Washington Street adjacent to the passive park formed by the Trenton Street intersection

The pedestrian ramp at the southeast corner of the intersection of Washington Street and Trenton Street (across from Baldwin Street) does not comply with MAAB/ADA requirements. The level landing has a cross slope of 3.3% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southwest corner of the intersection of Washington Street and Baldwin Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 5.5% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 8 Trenton Street North to Baldwin Street/Trenton Street South Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 1 Concrete 	Washington Street <ul style="list-style-type: none"> 28" at Trenton North (32') 28' at Baldwin St (20') 28' at Trenton St South (38') 	<ul style="list-style-type: none"> 13' lane each direction 1' shoulders each side 	<ul style="list-style-type: none"> 5' Concrete sidewalk 4.5' Grass strip 	<ul style="list-style-type: none"> 5' Concrete sidewalk

2.1.1.8 Baldwin Street to Lynde Avenue/Aaron Street

The east side of this segment of Washington Street has a cement concrete sidewalk with grass strip and a pedestrian crossing sign. The west side of the road contains the following features: cement concrete sidewalk with grass strip, Dead End Private Way sign, Pedestrian Crossing sign, Speed Limit sign, Hidden Slow Drive sign, Blind Drive sign, and Slow Curve sign. Street lighting is provided on existing utility poles that run along the west side.

The pedestrian ramp at the northwest corner of the intersection of Washington Street and Baldwin Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 5.3% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1. The pedestrian ramp at the northeast corner of the intersection of Washington Street and Trenton Street (across from Baldwin Street) does not comply with MAAB/ADA

requirements. The level landing has a cross slope of 9.0% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southeast corner of the intersection of Washington Street and Lynde Avenue does not comply with MAAB/ADA requirements. The level landing has a landing slope of 3.0% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1. The pedestrian ramp at the southwest corner of the intersection of Washington Street and Aaron Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 3.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 9 Baldwin Street to Lynde Avenue/Aaron Street Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 9 Concrete 	Washington Street <ul style="list-style-type: none"> 28' at Baldwin St (20') 28' at Lynde Ave (22') 28' at Aaron St (22') 	<ul style="list-style-type: none"> 13' lane each direction 1' shoulders each side 	<ul style="list-style-type: none"> 5' Concrete sidewalk 3.5' Grass strip 	<ul style="list-style-type: none"> 5' Concrete sidewalk 4' Grass strip

2.1.1.9 Lynde Avenue/Aaron Street to Pebble Road

The east side of this segment of road accommodates a cement concrete sidewalk with grass strip and has signs for Pedestrian Crossing and Slow Children. The west side also contains a cement concrete sidewalk with grass strip and has a Slow Curve sign, Pedestrian Crossing sign, and Slow Children sign.

Street lighting is provided on existing utility poles that run along the west side of the road.

The pedestrian ramp at the northeast corner of the intersection of Washington Street and Lynde Avenue does not comply with MAAB/ADA requirements. The level landing has a landing slope of 4.6% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the northwest corner of the intersection of Washington Street and Aaron Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southwest corner of the intersection of Washington Street and Pebble Road does not comply with MAAB/ADA requirements. The level landing has a landing slope of 2.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 10 Lynde Avenue/Aaron Street to Pebble Road Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 8 Concrete 	Washington Street <ul style="list-style-type: none"> 28' at Lynde Ave.(22') 	<ul style="list-style-type: none"> 13' lane each direction 	<ul style="list-style-type: none"> 5' Concrete sidewalk 	<ul style="list-style-type: none"> 5' Concrete sidewalk

	<ul style="list-style-type: none"> • 28' at Aaron St (22') • 28' at Pebble Rd (22') 	<ul style="list-style-type: none"> • 1' shoulders each side 	<ul style="list-style-type: none"> • 3.5' Grass strip 	<ul style="list-style-type: none"> • 3' Grass strip
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2.1.1.10 Pebble Road to Fellsway East



6 - Looking north on Washington Street approaching the Fellsway East

The east side of this segment of Washington Street has a cement concrete sidewalk with grass strip and a Stop Ahead sign, Slow Blind Drive sign, Stop sign and No left Turn sign. The west side of the road has a cement concrete sidewalk with grass strip for only a portion of this section along with a Littering, Rubbish Disposal Prohibited sign, Strictly Enforced Speed sign and a Speed Limit sign.

Street lighting is provided on existing utility poles located along the west side of the street.

The pedestrian ramp at the northwest corner of the intersection of Washington Street and Pebble Road does not comply with MAAB/ADA requirements. The level landing has a landing slope of 6.0% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 11 Pebble Road to Fellsway East Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> • 7 Concrete 	Washington Street <ul style="list-style-type: none"> • 28' at Pebble Rd (22') • 28 feet at Fellsway East (Varies) 	<ul style="list-style-type: none"> • 13' lane each direction • 1' shoulders each side 	<ul style="list-style-type: none"> • 5' Concrete sidewalk • 3.5' Grass strip 	<ul style="list-style-type: none"> • 5' Concrete sidewalk • 3' Grass strip

2.1.2 Pleasant Street

Pleasant Street is a two-lane roadway with one lane in each direction, separated by a double yellow centerline, and some limited areas of parking. The overall edge to edge width of the roadway varies from 30 to 34 feet, with variable width travel lanes, but generally 15 feet wide and no delineated shoulder lines.

Cement concrete sidewalks are present along both sides of the street throughout its entire length with one exception along the west side of Pleasant Street from Stone Place to Washington Street. At this location there is a landscaped island/passive park with a Welcome to Melrose sign but no sidewalk or other pedestrian amenities (i.e., benches).



Pleasant Street, located entirely within the study area, has a total of 13 pedestrian ramps. There are 5 ramps (38%) that do not comply with MAAB/ADA requirements while there are 8 ramps (62%) that do comply with MAAB/ADA requirements.

Sidewalk cross slope readings were obtained throughout and, where possible, readings were taken on the sidewalk in the areas where walkways led to private homes. A total of 50 readings were obtained during our site reconnaissance efforts with 32 (64%) locations having cross slopes that did not comply with the 2.0% maximum allowed

7 - Looking north on Pleasant Street north of Stone Place

by the MAAB/ADA and the remaining 18 locations (36%) having cross slopes that did comply with the 2.0% maximum allowed by the MAAB/ADA. The following is a table showing the ADA compliance of the Wheelchair Ramps along Pleasant Street, followed by a block by block assessment of the existing conditions for Pleasant Street:

Table 12 Pleasant St Street Curb Ramp Compliance

Location	ADA Compliance
W Wyoming Ave to Everett St	#*11: No #12: No #32: Yes
Everett St to Frances St	#33: Yes
Frances St to Ashmont St	N/A
Ashmont St to Gould St	#34: Yes
Gould St to Converse Ln North	#35: No #36: No
Converse Ln North to Converse Ln South	#37: No #38: No
Converse Ln South to Stone Pl	#39: No #40: Yes #41: No
Stone Pl to Washington St	#42: Yes

*Ramp Numbering refers to plan sheets

2.1.2.1 West Wyoming Avenue to Everett Street

In this segment of Pleasant Street the west side of the road initially contains a cement concrete sidewalk with grass strip and then transitions to a cement concrete sidewalk only (no grass strip); there are two No Parking Here to Corner signs and four Two Hour Parking signs.

The east side of the street has the following elements: a cement concrete sidewalk with a small section having a grass strip, Railroad/Railroad Crossing signs, Stop sign, three No Parking at Any Time signs, Speed Limit sign and MBTA Bus Stop signs. Street lighting is provided on existing utility poles located on this side of the street.

The pedestrian ramp at the southwest corner of the intersection of West Wyoming Avenue and Pleasant Street does not comply with MAAB/ADA requirements. The ramp has a landing slope of 2.2% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.3.

The pedestrian ramp at the southeast corner of the intersection of West Wyoming Avenue and Pleasant Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the northwest corner of the intersection of Pleasant Street and Everett Street does comply with MAAB/ADA requirements. The ramp has a landing slope of 0.9% which is compliant with the 2.0% maximum allowed by the Massachusetts 521 CMR Section 21.3.

Table 13 West Wyoming Avenue to Everett Street Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 4 Concrete 	Pleasant Street <ul style="list-style-type: none"> 34' at West Wyoming Ave 30' at Everett St (24') 	<ul style="list-style-type: none"> 18' – 22' southbound lane 11' – 12' northbound lane 	W Wyoming Ave <ul style="list-style-type: none"> 5' Concrete sidewalk 3' Grass strip Everett St <ul style="list-style-type: none"> 6' Concrete sidewalk 	W Wyoming Ave <ul style="list-style-type: none"> 8' Concrete sidewalk Everett St <ul style="list-style-type: none"> 6.5' Concrete sidewalk

2.1.2.2 Everett Street to Frances Street

The west side of the road in this segment of Pleasant Street has a cement concrete sidewalk and three MBTA Bus Stop signs (two bus stops, one sign missing). The east side of the road also has a cement concrete sidewalk and Tow Away Zone during Snow Storm sign, three No Parking at Any Time signs, Speed Limit 25 sign and an MBTA Bus Stop sign with directional arrows left & right (one sign only). There are no marked crossings of Pleasant Street connecting the two bus stop zones near Everett Street nor the two bus stop zones near Frances Street. Street lighting is provided on existing utility poles that run along this east side of the street.

The pedestrian ramp at the southwest corner of the intersection of Pleasant Street and Everett Street does comply with MAAB/ADA requirements. The ramp has a level landing cross slope of 1.9%. The pedestrian ramp at the northwest corner of the intersection of Pleasant Street and Frances Street does not exist. The sidewalk cross slope is 8.7%.

Table 14 Everett Street to Frances Street Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 11 Concrete 	Pleasant Street <ul style="list-style-type: none"> 30' at Everett St (24') 30' at Frances St (24') 	<ul style="list-style-type: none"> 18' southbound lane 12' northbound lane 	<ul style="list-style-type: none"> 4.5' Concrete sidewalk 	Everett St <ul style="list-style-type: none"> 6.5' Concrete sidewalk Frances St <ul style="list-style-type: none"> 6' Concrete sidewalk

2.1.2.3 Frances Street to Ashmont Street

The west side of the road has a cement concrete sidewalk with a short section having a grass strip along with a Caution Blind Drive sign. The east side of the road has a cement concrete sidewalk and a graphical Right Turn and 20 MPH (Advisory) signs. Street lighting is provided on existing utility poles located along this east side.

A pedestrian ramp at the southwest corner of the intersection of Pleasant Street and Frances Street did not exist at the time of inspection. Also, a pedestrian ramp at the northwest corner of the intersection of Pleasant Street and Ashmont Street did not exist. The sidewalk cross slope is 4.5%. The City has noted that ramps have since been added at both of these locations.

Table 15 Frances Street to Ashmont Street Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 7 Concrete 	Pleasant Street <ul style="list-style-type: none"> 30' at Frances St (24') 30' at Ashmont St (24') 	<ul style="list-style-type: none"> 15 – 18' southbound lane 12' – 15' northbound lane 	At Frances St <ul style="list-style-type: none"> 5' Concrete sidewalk At Ashmont St <ul style="list-style-type: none"> 4' Concrete sidewalk 3' Grass Strip 	Pleasant St <ul style="list-style-type: none"> 5.5' – 7' Concrete sidewalk

2.1.2.4 Ashmont Street to Gould Street

Along this segment of Pleasant Street the west side of the street has a cement concrete sidewalk with grass strip and there are 2 Hour Parking signs and an MBTA Bus Stop sign (one sign missing at the bus stop zone near Gould Street). The east side of the road has a cement concrete sidewalk and a No Parking at Any Time sign. Street lighting is provided on existing utility poles run along this east side.

The pedestrian ramp at the southwest corner of the intersection of Pleasant Street and Ashmont Street did not exist at the time of inspection but has since been added. The sidewalk cross slope is 3.8%. The pedestrian ramp at the northwest corner on the intersection of Pleasant Street and Gould Street does comply with MAAB/ADA requirements. The level landing has a cross slope of 1.5%.

Table 16 Ashmont Street to Gould Street Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 6 Concrete 	Pleasant Street <ul style="list-style-type: none"> 30' at Ashmont St (24') 30' at Gould St (22') 	<ul style="list-style-type: none"> 15' lane each direction 	<ul style="list-style-type: none"> 4' Concrete sidewalk 3' Grass Strip 	Pleasant St <ul style="list-style-type: none"> 5.5' Concrete sidewalk

2.1.2.5 Gould Street to Converse Lane North

The west side of the road has a cement concrete sidewalk, two 2 Hour Parking signs, Slow sign, Speed Limit 25 sign, and an MBTA Bus Stop sign (one sign missing at the bus stop zone near Converse Lane North). The east side of the road contains a cement concrete sidewalk with grass strip, two MBTA Bus Stop signs (two bus stop zones, one sign missing at the bus stop zone near Gould Street and one sign missing at the bus stop zone opposite Converse Lane North), three No Parking at Any Time signs and a Tow Away Zone during Snow Storm sign. There are no marked crossings of Pleasant Street connecting the two bus stop zones near Gould Street nor the two bus stop zones near Converse Lane. Street lighting is provided on existing utility poles that cross to the west side at Gould Street and run along that side of the street.



8 - Looking north on Pleasant Street between Gould Street and Converse Lane North

The pedestrian ramp at the southwest corner of the intersection of Pleasant Street and Gould Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 3.7% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the northwest corner of the intersection of Pleasant Street and Converse Lane North does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.7% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 17 Gould Street to Converse Lane North Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> • 9 Concrete • 2 Asphalt 	Pleasant Street <ul style="list-style-type: none"> • 30' at Gould St (22') • 30' at Converse Lane North (26') 	<ul style="list-style-type: none"> • 15' lane each direction 	<ul style="list-style-type: none"> • 5' Asphalt sidewalk 	At Gould St <ul style="list-style-type: none"> • 5.5' Concrete sidewalk At Converse Lane <ul style="list-style-type: none"> • 5' Concrete sidewalk • 4' Grass strip

2.1.2.6 Converse Lane North to Converse Lane South

The west side of the road along this segment of Pleasant Street has an asphalt sidewalk and a 2 Hour Parking sign. The east side of the road contains a cement concrete sidewalk with grass strip, and two No Parking at Any Time signs. Street lighting is provided on existing utility poles that run along the west side.

The pedestrian ramp at the southwest corner of the intersection of Pleasant Street and Converse Lane North does not comply with MAAB/ADA requirements. The level landing has a cross slope of 6.8% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the northwest corner of the intersection of Pleasant Street and Converse Lane South does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 18 Converse Lane North to Converse Lane South Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> • 2 Asphalt 	Pleasant Street <ul style="list-style-type: none"> • 30' at Converse Lane North (26') • 30' at Converse Lane South (26') 	<ul style="list-style-type: none"> • 15' lane each direction 	<ul style="list-style-type: none"> • 5' Asphalt sidewalk 	<ul style="list-style-type: none"> • 5' Concrete sidewalk • 4' Grass strip (trip hazard)

2.1.2.7 Converse Lane South to Stone Place

The west side of the street has an asphalt sidewalk, four 2 Hour Parking signs, a No Parking at Any Time sign, an MBTA Bus Stop sign (one sign missing at this bus stop zone) and a Pedestrian Crosswalk sign. The east side of the road contains a cement concrete sidewalk with grass strip, three No Parking at Any Time signs, a Slow Children sign, an MBTA Bus Stop sign (one sign missing at this bus stop zone) and a Pedestrian Crosswalk sign. A few sidewalk panels along the east side sidewalk opposite the southerly walkway to #157 Pleasant Street have heaved creating a potential trip hazard for pedestrians. Street lighting is provided on existing utility poles located along the west side.

The pedestrian ramp at the southwest corner of the intersection of Pleasant Street and Converse Lane South does

not comply with MAAB/ADA requirements. The level landing has a cross slope of 10.2% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.



9 - Looking north on Pleasant Street just south of Converse Lane south

The pedestrian ramp at the northwest corner of the intersection of Pleasant Street and Stone Place does comply with MAAB/ADA requirements. The level landing has a cross slope of 0.5%.

The pedestrian ramp at the northeast corner of the intersection of Pleasant Street and Stone Place does comply

with MAAB/ADA requirements. The pedestrian ramp has a running slope of 6.0% which does not exceed the maximum of 8.3% allowed by the Massachusetts 521 CMR Section 21.3.

Table 19 Converse Lane South to Stone Place Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 12 Asphalt 	Pleasant Street <ul style="list-style-type: none"> 30' at Converse Lane South (26') 30' at Stone Place (28') 	Pleasant St <ul style="list-style-type: none"> 15' lane each direction Stone Pl <ul style="list-style-type: none"> 13' lane each direction 1' shoulder 	<ul style="list-style-type: none"> 5' Asphalt sidewalk 	<ul style="list-style-type: none"> 5' Concrete sidewalk 3.5' – 4' Grass strip

2.1.2.8 Stone Place to Washington Street

The west side of this last segment of Pleasant Street has no sidewalk along the edge of the landscaped/passive park area. Its cross section has a shoulder that varies from 2' at the north end to 4' at south end. It also accommodates a Speed Laws Strictly Enforced \$50.00 Minimum Fine sign, a No Left Turn sign, a No Parking at Any Time sign and Do Not Enter sign. Street lighting is provided on existing utility poles that run along this side of the street.

The east side of the road has a cement concrete sidewalk with granite curbing and a shoulder that varies in width



from 2' at the north end to 2.5' at the south end. Existing signs include a No Parking At Any Time sign, a Bus Stop Sign and a To Washington Street Northbound directional sign.

The pedestrian ramp at the southeast corner of the intersection of Pleasant Street and Stone Place does comply with MAAB/ADA requirements. The level landing has a cross slope of 1.2% which does not exceed the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

10 - Looking south on Pleasant Street into the intersection with Stone Place/Washington Street

Table 20 Stone Place to Washington Street Details

Driveways	Roadway Width	Lane Width	West Sidewalk	East Sidewalk
<ul style="list-style-type: none"> 1 Concrete 	Pleasant Street <ul style="list-style-type: none"> 30' at Stone Place (28') 32' at Washington St (Varies) 	Pleasant St <ul style="list-style-type: none"> 12.5 – 13' lane each direction 2' – 4' shoulder 	No sidewalk	<ul style="list-style-type: none"> 9' Concrete sidewalk

2.1.3 West Wyoming Avenue

West Wyoming Avenue is a two-lane road with one lane in each direction, separated by a double yellow centerline and areas of parking near the commercial district closer to Main Street. The overall edge to edge width of the roadway varies with travel lanes generally 11-12 feet wide. In the section of West Wyoming Avenue from Main Street to Waverly Place there are marked parking stalls along both sides of the street. In the section from Waverly Place to Pleasant Street, which includes an at grade street crossing for the MBTA Commuter Rail Haverhill Line, all conditions and roadway dimensions vary due to side street intersections and MBTA parking accommodations. In the section

from Pleasant Street to Cottage Street the curb to curb width is 28 feet and MBTA Bus #132 runs along this route. The Lincoln Elementary School is located along the south side of this segment of West Wyoming Avenue with eastbound bus drop off and pickup immediately in front of the school.

There are a total of 31 pedestrian ramps along West Wyoming Avenue within the study area. There are 16 ramps (52%) that do not comply with MAAB/ADA requirements while the remaining 15 ramps (48%) do comply with MAAB/ADA requirements.



11 - Looking east on West Wyoming Avenue between Cottage Street and the Lincoln Elementary School

Sidewalk cross slope readings were obtained throughout the study corridor. Where possible, readings were taken at the walkway connections to existing homes. A total of 30 readings were obtained where cross slopes at 19 (63%) locations did not comply with the 2.0% maximum allowed by the MAAB/ADA. However, cross slopes at the remaining 11 locations (37%) did comply with the 2.0% maximum allowed by the MAAB/ADA. The following is a table showing the ADA compliance of the Wheelchair Ramps along Washington Street, followed by a block-by-

block breakdown of existing conditions on West Wyoming Avenue.

Table 21 West Wyoming Avenue Curb Ramp Compliance

Location	ADA Compliance
Cottage St to Pleasant St	#*1: No #2: No #3: No #4: No #5: No #6: No #7: No #8: No #9: No #10: No #11: No
Pleasant St to Hurd St	#12: No #13: No #14: No
Hurd St to Berwick St	#15: No #16: No #17: N/A #18: N/A #19: No #20: No
Berwick St to Waverly Pl	#21: No #22: No #23: Yes #24: No #25: No #26: No
Waverly Pl to Corey St	#27: No #28: No
Corey St to Main St	#29: No #30: N/A #31: N/A

*Ramp Numbering refers to plan sheets

2.1.3.1 Cottage Street to Pleasant Street

The south (eastbound) side of West Wyoming Avenue in this segment of street has a cement concrete sidewalk, no shoulder markings, a Slow Children sign, two Bus Stop signs and a missing Pedestrian Crossing sign in front of an existing crosswalk. The pedestrian ramps and school pick-up/drop-off area near the elementary school at #87 West Wyoming Avenue need further review for compliance.



12 - Looking east on West Wyoming Avenue toward the pick-up/drop off area for the Lincoln School

The north (westbound) side of the street has a cement concrete sidewalk and grass strip with trees. There are no shoulder markings and one MBTA Bus Stop sign is present. The MBTA bus stop location needs further review as it requires pedestrians to cross the grass strip to get on and off a bus.

Street lighting is provided on existing utility poles that run along this south side of the street.

The pedestrian ramp at the southwest corner of the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The ramp has a

running slope of 8.8% which exceeds the maximum of 8.3% allowed by the Massachusetts 521 CMR Section 21.3.

The pedestrian ramp at the southeast corner of the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The ramp has a cross slope of 6.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.



13 - Looking east on West Wyoming Avenue from Cottage Street

The pedestrian ramp at the northwest corner of the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The ramp has a landing slope of 3.9% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the northeast corner of the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.7% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southwest corner of the intersection of West Wyoming Avenue and Pleasant Street does



not comply with MAAB/ADA requirements. The ramp has a landing slope of 2.2% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.3.

The pedestrian ramp at the northwest corner of the intersection of West Wyoming Avenue and Pleasant Street does not comply with MAAB/ADA requirements. The ramp has a landing slope which exceeds the maximum 2.0% allowed by the Massachusetts 521 CMR Section 21.3.

14 - Looking east on West Wyoming Avenue toward Pleasant Street

Table 22 Cottage Street to Pleasant Street Details

Driveways	Roadway Width	Lane Width	North Sidewalk	South Sidewalk
<ul style="list-style-type: none"> 9 Concrete 1 Asphalt (School) 	West Wyoming Ave <ul style="list-style-type: none"> 28' at Cottage St (22') 34' at Pleasant St (34') 	<ul style="list-style-type: none"> 10.5' eastbound (22' at school cutout) 17.5' westbound 	<ul style="list-style-type: none"> 6' Concrete sidewalk 5' Grass strip 	<ul style="list-style-type: none"> 10' Concrete sidewalk 8.5' Concrete (in front of school)

2.1.3.2 Pleasant Street to Hurd Street

The south side within this segment of street has a cement concrete sidewalk and Railroad Crossing Pavement sign. The north side of the street contains a Pedestrian Crossing sign, a cement concrete sidewalk, a 15 min parking sign and other Parking signs to accommodate business patrons opposite Pleasant Street up to Hurd Street.

In this segment of West Wyoming Avenue street lighting transitions from utility pole mounted to individual, ornamental light poles staggered between the north and south sidewalks. There are no overhead power lines.

The pedestrian ramp at the southeast corner of the intersection of West Wyoming Avenue and Pleasant Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the southwest corner of the intersection of West Wyoming Avenue and the asphalt driveway



to the MBTA parking lot does not comply with MAAB/ADA requirements. The level landing has a landing slope of 2.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramp at the northwest corner of the intersection of West Wyoming Avenue and Hurd Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 2.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

15 - Looking east on West Wyoming Avenue between Pleasant Street and the MBTA Commuter Rail tracks

Table 23 Pleasant Street to Hurd Street Details

Driveways	Roadway Width	Lane Width	North Sidewalk	South Sidewalk
<ul style="list-style-type: none"> • 1 Concrete • 1 Asphalt 	West Wyoming Ave <ul style="list-style-type: none"> • 34' at Pleasant St (34') • 34' at Hurd St (28') • 34' at T Station Parking Driveway (24') 	11.5' lane each direction w/parking lane along north side	<ul style="list-style-type: none"> • 8.5' Concrete sidewalk 	<ul style="list-style-type: none"> • 9.5' Concrete sidewalk

2.1.3.3 Hurd Street to Berwick Street

This segment of West Wyoming Avenue contains an at grade crossing for the MBTA's Commuter Rail Haverhill Line and the Wyoming Hill Station parking lot. Both the south side and north side of the street have Railroad Crossing signs and gate posts. One of the signs appeared to be obstructed by trees. Other signs exist including Do Not Enter signs at Berwick Street, crosswalk signs, no parking signs and some wayfinding signs.

Street lighting is provided on ornamental poles staggered between the north and south sidewalks. There are no overhead power lines.

Due to the at grade railroad crossing, some pedestrian ramp and crosswalk slopes are steeper than usual because they are controlled by the roadway profile.

The pedestrian ramp at the northeast corner of the intersection of West Wyoming Avenue and Hurd Street complies with MAAB/ADA requirements.

The pedestrian ramp at the southeast corner of the intersection of West Wyoming Avenue and Hurd Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.0% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.3.

The pedestrian ramp at the northwest corner of the intersection of West Wyoming Avenue and Berwick Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 3.9% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.3.

Table 24 Hurd Street to Berwick Street Details

Driveways	Roadway Width	Lane Width	North Sidewalk	South Sidewalk
<ul style="list-style-type: none"> 1 Concrete 	West Wyoming Ave <ul style="list-style-type: none"> 30' between Hurd St (28') and Berwick St (30') 	<ul style="list-style-type: none"> 15' lane each direction (includes MBTA Commuter Rail Crossing) 	<ul style="list-style-type: none"> 10' Concrete sidewalk 	<ul style="list-style-type: none"> 10' Concrete sidewalk

2.1.3.4 Berwick Street to Waverly Place

Both the south and north sides of this street segment have cement concrete sidewalks with tree pits and include Pedestrian Crossing signs at both the beginning and end of the block along with Railroad/No Train Horn signs and a 15 Min Parking sign along the north side of the street.

Street lighting is provided on ornamental poles staggered between the north and south sidewalks. There are no overhead power lines within this segment.

The pedestrian ramp at the northeast corner of the intersection of West Wyoming Avenue and Berwick Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.



The pedestrian ramps at the west crosswalk on West Wyoming Avenue comply with MAAB/ADA requirements.

The pedestrian ramp at the north side of the east crosswalk on West Wyoming Avenue does comply, but the south ramp does not with a cross slope of 6.3%.

The pedestrian ramp at the southwest corner of the intersection of West Wyoming Avenue and Waverly Place does comply with MAAB/ADA requirements.

16 - Looking east on West Wyoming Avenue between Berwick Street and Waverley Place

Table 25 Berwick Street to Waverly Place Details

Driveways	Roadway Width	Lane Width	North Sidewalk	South Sidewalk
<ul style="list-style-type: none"> 2 Concrete 	West Wyoming Ave <ul style="list-style-type: none"> 28' at Berwick St (30') 36' at Waverly Place (18') 	W Wyoming Ave <ul style="list-style-type: none"> 11' – 14' lane each direction 7' parking each direction Waverly St <ul style="list-style-type: none"> 18' one-way northbound 	<ul style="list-style-type: none"> 8.5' Concrete sidewalk Tree cutouts 	<ul style="list-style-type: none"> 8' – 11' Concrete sidewalk Tree cutouts

2.1.3.5 Waverly Place to Corey Street

The south side of the street has a cement concrete sidewalk with tree pits. Parking is available along this side of the street although there are time restrictions. The north side of the street has a cement concrete sidewalk with tree pits and a Pedestrian Crossing sign. Restricted parking is also available on this side of the street.

Street lighting is provided on ornamental poles staggered between the north and south sidewalks. No overhead power lines are present.

The pedestrian ramp at the southeast corner of the intersection of West Wyoming Avenue and Waverly Place does not comply with MAAB/ADA requirements. The level landing has a cross slope of 6.9% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1

The pedestrian ramp at the northwest corner of the intersection of West Wyoming Avenue and Corey Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.3% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1.

Table 26 Waverly Place to Corey Street Details

Driveways	Roadway Width	Lane Width	North Sidewalk	South Sidewalk
<ul style="list-style-type: none"> • 1 Concrete 	W Wyoming Ave <ul style="list-style-type: none"> • 36' at Waverly Place (18') • 36' at Corey Street (24') 	W Wyoming Ave <ul style="list-style-type: none"> • 11' lane each direction • 7' parking each direction Corey St <ul style="list-style-type: none"> • 24' one-way northbound 	<ul style="list-style-type: none"> • 7' – 8.5' Concrete sidewalk • Tree cutouts 	<ul style="list-style-type: none"> • 7' Concrete sidewalk • Tree cutouts

2.1.3.6 Corey Street to Main Street

Along this last segment of West Wyoming Avenue the south side of the street has a cement concrete sidewalk with a single tree pit, restricted parking (One Hour) signs throughout this block, a Hospital sign, and there is a missing No Parking sign. The north side of the street has a cement concrete sidewalk with two tree pits, and restricted parking (1 Hour) signs.

Street lighting is provided on ornamental poles staggered between the north and south sidewalks. There are no overhead power lines within this block.



17 - Looking east on West Wyoming Avenue between Corey and Main Streets

The pedestrian ramp at the northeast corner of the intersection of West Wyoming Avenue and Corey Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 7.3% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1.

The pedestrian ramps at the northwest and southwest corners of the Main Street intersection were not included in the study area.

Table 27 Corey Street to Main Street Details

Driveways	Roadway Width	Lane Width	North Sidewalk	South Sidewalk
<ul style="list-style-type: none"> 2 Concrete 	West Wyoming Ave <ul style="list-style-type: none"> 36' at Corey St (24') 36' at Main St (40') 	W Wyoming Ave <ul style="list-style-type: none"> 11' lane each direction 7' parking each direction 	<ul style="list-style-type: none"> 7' Concrete sidewalk Tree cutouts 	<ul style="list-style-type: none"> 7' Concrete sidewalk 4' Tree cutouts

2.2 PEDESTRIAN & BICYCLE ACCOMMODATIONS

Continuous sidewalks are provided on the east side of Washington Street and on both sides of Pleasant Street and West Wyoming Avenue. A number of locations, particularly along Pleasant Street, are non-compliant and have cracked sidewalk panels or tripping hazards due to cement concrete panels being pushed up by existing roots from nearby/adjacent trees. Marked crosswalks are provided throughout all corridors but only at select intersection locations and, for the most part, across side streets. Marked crossings of the Washington Street and Pleasant Street corridors are very limited and lacking in bus stop locations. The West Wyoming Avenue corridor does have at least six (6) corridor crossings to accommodate the presence of the Lincoln Elementary School, the Lincoln Playground,

the MBTA Wyoming Hill Haverhill Commuter Rail Station and a number of local businesses and commercial establishments in the vicinity of the station.

There is only one traffic signal within the study area and it is located at the intersection of West Wyoming Avenue and Main Street. There are pedestrian signals and pushbuttons located at each end of each crosswalk.

There is no specific accommodation for bicycles along any of the three corridors. Pleasant Street and West Wyoming Avenue lack any shoulder delineation. Despite the presence of the Lincoln Elementary School, the Lincoln Playground and the MBTA Wyoming Hill Haverhill Commuter Rail Station, no bicycle accommodation is provided along West Wyoming Avenue itself. There is a bicycle rack at the MBTA Wyoming Hill Station, however, more bicycle racks could be provided in the vicinity of the school and playground.

2.3 PUBLIC TRANSPORTATION

The Massachusetts Bay Transportation Authority (MBTA) operates one bus line along the three corridors – Route #132 runs north/south using West Wyoming Avenue & Pleasant Street. There are seven (7) bus stops in each direction along this route. The 132 runs approximately every 20 minutes during weekday peak hours, and once an hour weekday off peak and on Saturday. Through contact with the MBTA via the City, Stantec acquired year 2018 ridership data for MBTA Bus Route # 132, broken down by stop. The stops in the study area see 128 boardings and 161 alightings on an average weekday, and 47 boardings and 45 alightings on an average Saturday. MBTA Route #132 does not run on Sunday. The bus route provides connections between Redstone Stopping Center in Stoneham, through Melrose, and MBTA Subway Oak Grove Orange Line Station in Malden. Oak Grove Station is the northern terminus for the MBTA Orange Line subway and is located on Washington Street just south of the Malden city line. The Encore Boston Casino in Everett runs a complementary shuttle service bus service from the next two Orange Line stations to the south of Oak Grove, Malden Center Station and Wellington Station. The Casino anticipates that a significant portion of trips to the Casino will arrive via the shuttles originating from Malden Center and Wellington Stations.

Wyoming Hill MBTA Commuter Rail Station (on the Haverhill Line) is located within the study area, just south of West Wyoming Avenue and just east of Pleasant Street. The MBTA Bus Route #132 bus stop is in close proximity to Wyoming Hill MBTA Commuter Rail Station, at the intersection of West Wyoming Avenue and Pleasant Street. The Haverhill Line terminates at North Station in Boston, also offering stops at Malden Center Station.

As described above, both the Commuter Rail and Orange Line offer connections to the Casino. It is therefore anticipated that Casino related trips are using the study area corridor via bus, bicycle, or walking and making connections to heavy rail transit to access the Casino.

Bus Route #132 data was obtained electronically from the MBTA and can be made available upon request.

2.4 DEFICIENCIES/PROBLEM AREAS

Deficiencies were identified based on field observations and measurements. In addition, in the course of conducting field observations, some residents also provided feedback and observations, which are noted below.

2.4.1 Washington Street

Based on observations during a field visit, most of Washington Street has 1 ft shoulders on each side and two 13 ft travel lanes. Despite the multiple State Law Speeding Fine signs and history of crashes, residents told us that many vehicles speed on this street.

Bicycles were observed both utilizing the sidewalk and the narrow shoulders along the corridor.

Residents also told us of incidents of pedestrians tripping on the cracked and broken sidewalk surfaces which appear to have deteriorated over time. Sidewalks are not in conformance with ADA requirements and require maintenance/repair and or reconstruction.

Most of the pedestrian ramps do not comply with MAAB/ADA requirements. They do not have compliant level landings and do not have tactile warning pads. At the Shadow Street intersection there are no ramps and most of the crosswalk markings are faded or do not exist.

There is no sidewalk for most of Washington Street southbound. A sidewalk on both sides of Washington street is not required but is preferred. Residents did comment on the lack of on-street parking and so if ROW allows, adding an on-street parking lane along this southbound side of the corridor would seem to be a desirable improvement.

The Washington Street and Fellsway East intersection meet with a severe, angle alignment resulting in difficult and unsafe sight lines at the intersection, particularly for vehicles stopped on Washington Street. Since the time of inspection, the Massachusetts DCR has restriped the intersection to improve safety.

The segment of Washington Street from the Malden-Melrose City Limit to Pleasant Street has been reconstructed through recent redevelopment activities and is in a better state of repair.

2.4.2 Pleasant Street

Based on field observations, many pedestrian ramps do not have companion crosswalk markings and there is also a general lack of warning signs.

At Ashmont Street and Frances Street there were no pedestrian ramps or crossing signs for a crossing length of 48 feet at the time of inspection. Since that time, ramps have been added in conjunction with area paving projects.

At Everett Street, sight lines are restricted and visibility of pedestrians is difficult due to the geometry of the intersection.

Most of the pedestrian ramps do not comply with MAAB/ADA requirements. They do not have compliant level landings and do not have tactile warning pads.

For the most part, existing sidewalks are not ADA compliant and have many tripping hazards, especially along the east side of Pleasant Street from Gould Street to Converse Lane where there are many tree roots coming through the cement concrete sidewalk and pushing the sidewalk panels up. To address this problem, and to retain existing trees, we recommend installing asphalt panels where this is happening until a time when more permanent repairs can be made but only in those isolated areas.

In the vicinity of the Pleasant Street and Gould Street intersection there is an existing northbound bus stop. When the bus arrives to pick up or drop off passengers, sight lines are extremely compromised due to the curvature of the road and the stopped bus. Further discussion with the MBTA officials about the possibility of slightly shifting this bus stop location could improve visibility of pedestrians in this location.

2.4.3 West Wyoming Street

Based on our field observations, sidewalks should be reconstructed and redesigned to be ADA compliant, as many panels are cracked or in bad condition. Pedestrian ramps should be compliant and have level landings and tactile warning pads. Sidewalk widths also vary and some are too narrow, having a width of only 3 feet. Near the intersection of West Wyoming Avenue and Cottage Street, there is a Bus Stop on the westbound side which does not have a compliant bus zone. Passengers are forced to board and disembark via a grass area adjacent to the sidewalk. Any re-design of sidewalk should include accessibility improvements and provisions for the front and rear door of the bus.

Additionally, during school pickup times, through traffic is severely delayed along this corridor by standing vehicles waiting to pick up children after school. These waiting vehicles routinely encroach into the travel lanes, narrowing them and slowing or stopping through traffic. Reconfiguration of the street to include a parking/standing lane, even one that is limited in width, would help to reduce travel times for through traffic by providing sufficient width travel lanes.

3.0 ANALYSIS

3.1 ROADWAY CROSS SECTION

Washington Street

Washington Street from Pleasant Street to Fellsway East has a curb to curb width of 28 feet, with travel lanes generally 12 feet wide and shoulders 2 feet wide delineated by solid white edge lines. Within the 28 feet of curb-to-curb roadway width, it would not be possible to provide on-road bicycle lanes (5 or 6 feet in width) and maintain two travel lanes. If the travel lanes are reduced to 11 feet in width in each direction, 3 foot shoulders could be provided in each direction, which would improve bicycle accommodations. Under this scenario, even though a dedicated bicycle lane is not provided, a vehicle could pass a bicyclist in the shoulder without encroaching into the opposing travel lane.

Pleasant Street

Pleasant Street generally consists of a curb to curb width of 29 to 30 feet, and widens out to 34 feet as the roadway nears West Wyoming Avenue. On-street curbside parking is provided on segments of Pleasant Street. Due to the

continued provision of on-street parking on these segments, contiguous bicycle accommodating shoulders cannot be provided on Pleasant Street as there would be insufficient width to accommodate more than a 7-to-8 foot parking lane (in one direction) and one 11 foot travel lane in each travel direction. In segments of Pleasant Street where parking is prohibited in both directions, it would be possible to provide 3-to-4 foot shoulders and 11 foot travel lanes in each direction, which would constitute bicycle accommodation on those segments of Pleasant Street.

West Wyoming Avenue

West Wyoming Avenue generally consists of a curb to curb width of 28 to 36 feet. Between Cottage Street and the railroad tracks, on-street curbside parking is provided on the north side of West Wyoming Avenue. Between the railroad tracks and Main Street, on-street curbside parking is provided on both sides of West Wyoming Avenue. If the parking lanes are to be maintained, there is insufficient width to accommodate bicyclists. In a 36-foot width section there would be insufficient width to accommodate more than a 7-foot parking lane and one 11 foot travel lane in each travel direction. In the 28-foot width section, there would be insufficient width to accommodate more than a 6 foot parking lane (in one direction) and one 11 foot travel lane in each travel direction.

3.2 CRASH ANALYSIS

Crash data from MassDOT's Online Crash Data Portal was obtained for the study area between 2014-2016, the latest three-year crash data period available in the Portal. Crash data from the database includes only reported crashes with greater than \$1,000 in property damage. It is worthwhile to note that many of the crashes occurred between intersections and the crashes were spread out among the three study corridors. Table 25 summarizes study area crash data from 2014 to 2016. Figure 3 shows the approximate locations of the crashes listed in Table 25.

Table 28 – Study Area Crash Data Study (2014-2016)

	Washington Street			Pleasant Street			West Wyoming Ave.		
	2014	2015	2016	2014	2015	2016	2014	2015	2016
<u>Severity</u>									
Non-Fatal	1	1	1	2	0	1	1	1	2
Not Reported	0	0	1	0	0	1	1	0	0
Property Damage	3	1	3	6	4	8	5	7	8
Unknown	0	0	0	0	0	0	1	0	0
<u>Collision Type</u>									
Angle	0	2	1	4	1	1	2	4	4
Rear-end	0	0	2	2	0	1	1	2	3
Rear-to-rear	0	0	1	0	0	0	0	0	0
Sideswipe, opposite direction	0	0	1	0	0	1	1	0	1
Sideswipe, same direction	1	0	0	1	1	2	2	2	0
Single vehicle crash	2	0	0	1	2	4	1	0	2
Unknown	1	0	0	0	0	1	1	0	0
<u>Road Condition</u>									
Dry	1	2	4	8	4	9	7	6	8
Ice	0	0	1	0	0	0	0	0	0
Water (standing, moving)	1	0	0	0	0	0	0	0	0
Wet	2	0	0	0	0	1	1	1	2
Snow	0	0	0	0	0	0	0	1	0
<u>Season</u>									
Dec-Feb	1	1	0	1	1	1	3	2	3
Mar-May	1	0	1	1	1	4	1	1	3
Jun-Aug	1	0	3	3	1	2		2	1
Sep-Nov	1	1	1	3	1	3	4	3	3
<u>Light</u>									
Daylight	2	1	4	8	1	3	7	4	9
Dawn/Dusk	0	0	0	0	0	2	0	0	0
Dark (Unlit)	0	0	0	0	0	0	0	0	0
Dark (Lit)	2	1	1	0	2	5	1	4	1
Unknown	0	0	0	0	1	0	0	0	0
<u>Weather</u>									
Clear	2	2	3	8	4	8	4	5	8
Clear/Cloudy	0	0	0	0	0	0	1	0	1
Cloudy	0	0	1	0	0	1	2	1	0
Fog,Smog,Smoke	0	0	0	0	0	0	1	0	0
Cloudy/Rain	1	0	0	0	0	1	0	0	1
Rain	1	0	0	0	0	0	0	1	0
Snow	0	0	1	0	0	0	0	1	0
Sub-Total	4	2	5	8	4	10	8	8	10
Total		11			22			26	
Average per year		3.7			7.3			8.7	

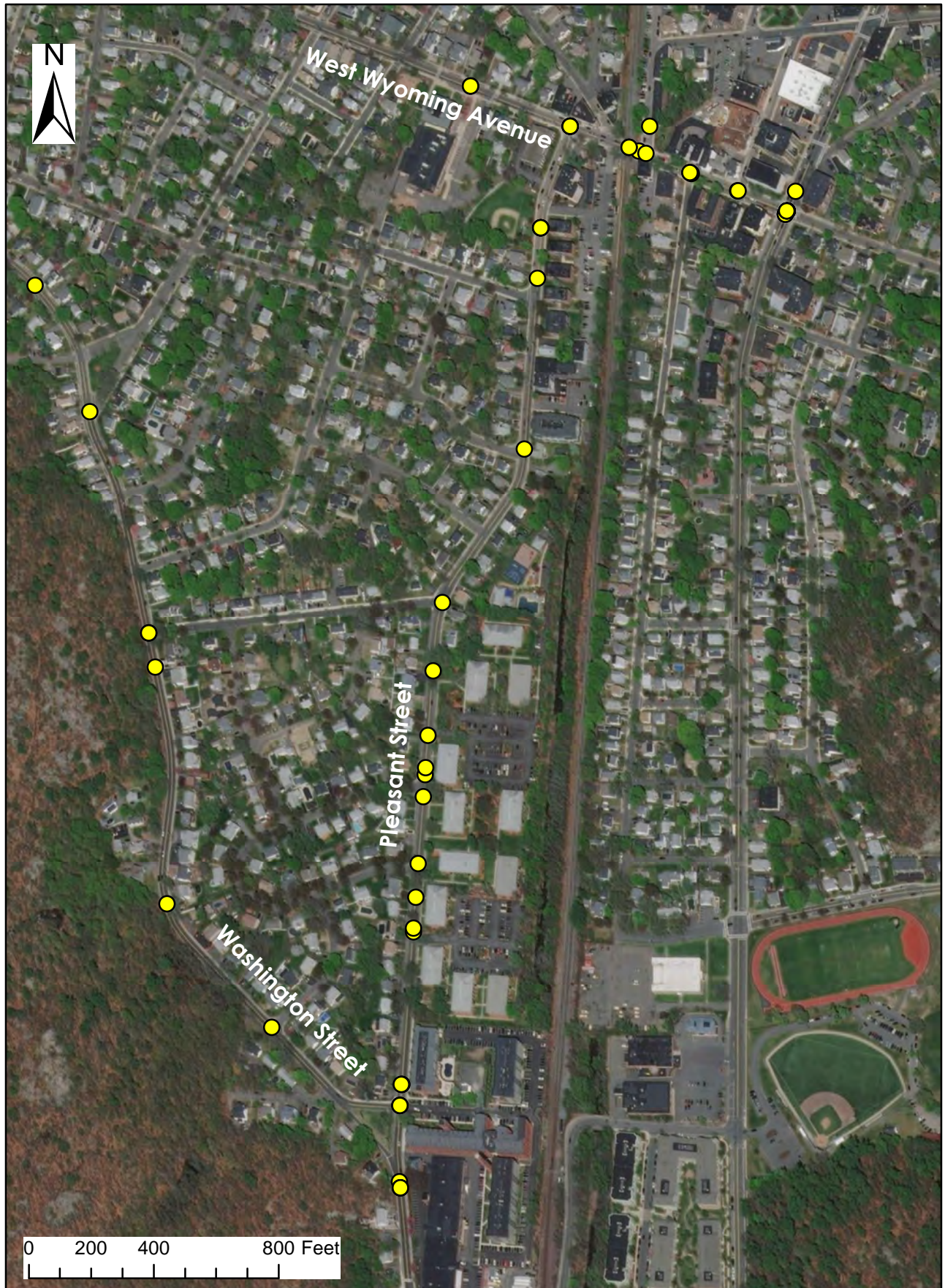


Figure 3: Study Area Crashes 2014-2016

4.0 RECOMMENDED IMPROVEMENTS

4.1 WASHINGTON STREET

With a goal of reducing the speed of vehicles and also providing additional shoulder width, it is recommended to reduce the 13 foot travel lanes to 11 foot travel lanes, allowing for shoulders that are 2 feet wider, in each direction, that can better accommodate bicycles. The basic cross-section would therefore consist of two 3 foot shoulders and two 11 foot travel lanes for a total curb-to-curb cross section width of 28 feet, which matches the existing condition. Additionally, to address the speeding vehicles on the winding section of Washington Street, (between Shadow Road and Gould Street) it is recommended that W1-8 Chevron warning signs be installed on curves where applicable to complement the existing traffic warning signs. In addition, to address driver behavior, it is recommended that digital speed feedback signs be installed along this section of the corridor.

Shallow tree roots below the surface are likely contributing to the deterioration of sidewalks, resulting in tripping hazards. We recommend placing hot mix asphalt sidewalk at these locations as a temporary measure, where tree roots cannot be cut back, and reconstruction of the remaining sidewalk panels in cement concrete to meet ADA compliance.

Currently most pedestrian curb ramps are non-compliant with current MAAB standards, lacking the required level landings at the top of the ramp and tactile warning panels near the bottom of the ramp. All pedestrian ramps should be reconstructed to comply with all MAAB/ADA requirements for grading and width and include tactile warning panels. As noted earlier, at the Shadow Street intersection there are no pedestrian curb ramps, and most of the crosswalk markings are faded or do not exist. The lack of pedestrian ramps is a complete barrier to access and breaks the continuity of any pedestrian access route (PAR).

There is no sidewalk for most of Washington Street southbound adjacent to the existing Middlesex Fells Reservation although assessors maps indicate right of way is available. Continuous sidewalks are not required for compliance but a continuous PAR is desired, linking both sides of the street where sidewalks are not continuous.

Where public ROW exists, a recommended improvement would be to create additional parking for residential use. During our site walk some residents have noted that there is no available space for visitor parking and that it would be a benefit to have that accommodation. Through a combination of narrower travel lanes to slow traffic and a minor widening along the westerly side of Washington Street between Shadow Road and Crescent Avenue where the Middlesex Fells Reservation is immediately adjacent to the right of way, accommodation for resident visitor parking could be provided if desirable.

The section of Washington Street from the Malden-Melrose City Limit to Pleasant street has been reconstructed within the last 2 years and, therefore, most accessibility improvements have been addressed. Bicycle accommodation, however, should be reviewed to determine the best possible approach.

At the Washington Street and Fellsway East intersection, we recommend realigning the road in order to slow down vehicles and improve sight lines on each approach to the intersection, thereby reducing the skewed geometry of the intersection. The current alignment requires drivers traveling from Washington Street onto Fellsway East to fully rotate their body in order to see any oncoming traffic traveling northbound on Fellsway East. Re-alignment of this

intersection will require field survey and a more thorough analysis due to the grade differential along the Fellsway East northbound approach. Advanced signage and improved lighting may be warranted and beneficial as well. It should be noted that this intersection is controlled by the Massachusetts DCR, so any improvements would fall within their jurisdiction and would be at their expense. Furthermore, as noted previously, recent restriping in this vicinity on the Fellsway has provided some safety improvements.

4.2 PLEASANT STREET

There are many pedestrian crossing locations where pedestrian ramps are provided but do not have crosswalk markings or pedestrian crossing warning signs. At Ashmont Street and Frances Street, for instance, there is no ramp or crossing sign. The existing crosswalk length on Frances Street is 48 feet, however, the roadway width eventually reduces to 24 feet, therefore, we recommend re-alignment of the crosswalk to reduce the crosswalk length and exposure time for crossing pedestrians. Additionally, at Everett Street, visibility for crossing pedestrians is limited due to the geometry of the intersection. As a result, we recommend reducing the crosswalk length which is currently 58 feet. Pedestrian curb ramps crossing Pleasant Street only exist at Stone Place and West Wyoming Avenue. An additional crossing or crossings of Pleasant Street should be installed to increase pedestrian safety. All pedestrian ramps should comply with MAAB/ADA requirements and have tactile warning pads.

Sidewalks are not compliant with current accessibility standards, with many trip hazards, especially along the segment between Gould Street and Converse Lane where there are tree root issues along the east side of the street. We recommend installing flexible, hot mix asphalt sidewalk where this is occurring but only in these isolated areas until more permanent solutions could be implemented. The remaining portions of sidewalk should be reconstructed to better control grades and ensure ADA compliance.

Near the intersection of Pleasant Street and Gould Street, we recommend an evaluation of the potential relocation of the MBTA bus stop to improve sight lines and enhance pedestrian/vehicular safety through this curved segment of street. This bus route requires pedestrians to cross from one side of Pleasant Street to the other to board the bus in either direction. Additional crosswalks across Pleasant Street are recommended near the bus stop zone locations to serve desire lines, as currently there is only a cross walk at West Wyoming Avenue and at Stone Place.

From Stone Place to West Wyoming Avenue, there are 6 MBTA bus stops in each direction. This results in an average of a bus stop approximately every 500 feet. Based on early communication with MBTA officials there is an apparent desire on behalf of the MBTA to consolidate bus stop locations which would help to limit the number of potential corridor crosswalks. Further discussions with the MBTA are recommended to advance this issue.

4.3 WEST WYOMING AVENUE

Our field observations indicate existing sidewalks should be reconstructed and redesigned to be MAAB/ADA compliant. All pedestrian ramps should have tactile warning pads. Existing sidewalk widths vary with some only 3 feet wide and not meeting regulations. At the bus stop in the vicinity of the West Wyoming Avenue and Cottage Street intersection there should be a redesign of that segment of sidewalk to provide a compliant bus stop zone with accommodation for front and rear door accessibility for pedestrians and wheelchairs. We recommend elimination of the existing grass strip and provision of a limited width bus pull off within that area to make room for a compliant bus stop zone while providing additional paved roadway width for through vehicles to pass.

To reduce travel delays during school pickup times, we recommend elimination of the existing grass strip and a similar pull off along the north side of West Wyoming Avenue to create a wider shoulder allowing vehicles to stand/park while waiting to pick up children after school. This enhancement would allow through traffic to move through the area with less disruption and delay. Overall, pedestrian circulation and sidewalk accessibility, as well as bicycle accommodation and parking, need to be improved in the vicinity of the Lincoln Elementary School, the Lincoln Playground and the MBTA's Wyoming Hill Commuter Rail Station on the Haverhill Line.

4.4 BICYCLE IMPROVEMENTS

As noted previously, the roadway segments along Washington Street, Pleasant Street and West Wyoming Avenue are all insufficient in width to allow for a dedicated bicycle facility, such as an on-road bicycle lane or separated bicycle lane. There may be some opportunities to provide bicycle accommodating shoulders (3 feet wide) on Washington Street and on some segments of Pleasant Street. Bicycles will have to continue to ride in the roadway in mixed traffic with motor vehicles.

In order to make drivers more aware of this mixed traffic, it is recommended the shared use bicycle pavement markings ("sharrows") be applied to the road surface on each of the corridors. The sharrows will have the effect of warning drivers of the potential presence of bicyclists and also provide guidance to bicyclists.

5.0 SUMMARY

5.1 PRIORITY IMPROVEMENTS

5.1.1 The MBTA Bus Route #132 runs along Washington Street and Pleasant Street and connects to both the MBTA Orange Line Station at Oak Grove and the MBTA Commuter Rail station at Wyoming Hill resulting in high pedestrian activity. Therefore, elimination of ADA barriers to accessibility along this corridor is a priority. This can be achieved by creating continuous sidewalks and compliant pedestrian ramps with a focus on achieving this scope for the limits of Pleasant Street and the section of Washington Street between Malden City Line to Pleasant Street.

Work required includes:

- Construct two compliant pedestrian ramps at the intersection of Pleasant Street and Frances Street – this has recently been completed.
- Construct two compliant pedestrian ramps at the intersection of Pleasant Street and Ashmont Street – this has recently been completed.
- Construct one compliant pedestrian ramp at the intersection of Pleasant Street and Stone Place – currently there is one at the northwest corner and no pedestrian ramp at the southwest corner. In addition, install a crosswalk at this location.
- Construct sidewalk to connect from Stone Place to Washington Street. This sidewalk could either be parallel with Pleasant Street along the edge of the landscaped island or could cross through the island.

- Construct two compliant pedestrian ramps to connect from the landscaped island to the westerly side of Washington Street (approx. address #108) – currently there are no pedestrian ramps. In addition, install a crosswalk at this location.
- Construct sidewalk to connect from approx. #108 Washington Street to approx. #98 Washington Street where the existing sidewalk currently ends.
- Construct three new crosswalks and associated pedestrian ramps to cross Pleasant Street as there are only safe crossing points at the extreme ends of the street.
- Reconstruct sidewalks as necessary to bring the entire corridor into compliance.

5.1.2 A second priority would be ADA improvements associated with accessibility for access to the Lincoln Elementary School, the Lincoln Playground and access to the MBTA Wyoming Hill Commuter Rail Station from West Wyoming Avenue.

Work required includes:

- Adjusting the northerly curb line in front of the school to create a wider shoulder or parking for use during school drop-off and pickup along with pavement markings creating a less restricted through travel lane.
- Construct compliant pedestrian ramps at seven existing locations in front of the school.
- Construct compliant pedestrian ramps at existing locations associated with the Commuter Rail Station.

5.1.3 A lesser priority would be elimination of ADA barriers to accessibility for Washington Street between Pleasant Street and Fellsway East by creating a continuous sidewalk and compliant pedestrian ramps along the odd numbered side of Washington and sidewalk improvements along the even side to link isolated sections of existing sidewalk including ramps and crosswalks.

Work required includes:

- Construct two compliant pedestrian ramps at the intersection of Washington Street and Shadow Road – currently there is one non-compliant pedestrian ramp.
- Relocate existing Washington Street crosswalk at Trenton Street to Clinton Street. Construct one compliant pedestrian ramp at the relocated crosswalk on the even side of Washington Street.
- Install crosswalk on Washington Street at the Pebble Road intersection as a loop closure of the pedestrian access route loop due to the existing Washington Street sidewalk ending at #386 on the even side.

5.2 NEXT STEPS

The City intends to conduct a neighborhood meeting and further discussion with the Mayor's office, City staff, and the City Council to finalize the priority list for implementation. Following this coordination, an application will be submitted to the Massachusetts Gaming Commission to use the remaining mitigation funds already allocated to the City to complete the first list of improvements. Future applications could also be made to the Gaming Commission to advance further recommendations of this report if deemed advantageous by the City.

APPENDIX A

Field Observation Data – Washington Street

Existing Conditions: Washington Street from City Limit to Fellsway E

LOCATION		DIRECTION	HORIZONTAL DIMENSION: WIDTH (feet)							CROSS SLOPE (%)	
			SIDEWALK				ROADWAY				SIDEWALK
			Tree Pit	Grass Strip	Concrete	TOTAL	Shoulder	Parking	Lane		
WASHINGTON STREET	Pleasant St to Goodyear Ave	Right	No sidewalk				1	0	13	15	No sidewalk
		Left	No sidewalk				1	0			No sidewalk
GOODYEAR AVENUE	West (Looking West)	Right	No sidewalk				0	0	26	26	No sidewalk
		Left	No sidewalk				0	0			No sidewalk
WASHINGTON STREET	Goodyear Ave to Shadow Rd	Right	0	0	5.5	5.5	1	0	13	28	Varies: 2.4 - 5.5
		Left	No sidewalk				1	0	13		No sidewalk
SHADOW ROAD	East (Looking West)	Right	No sidewalk				0	0	24	24	No sidewalk
		Left	No sidewalk				0	0			No sidewalk
WASHINGTON STREET	Shadow Rd to Gould St	Right	0	0	5.5	5.5	1	0	13	28	Varies: 0.6 - 4.5
		Left	No sidewalk				1	0	13		No sidewalk
GOULD STREET	East (Looking West)	Right	0	4	4	8	0	0	24	24	Varies:
		Left	No sidewalk				0	0			No sidewalk
WASHINGTON STREET	Gould St to Crescent Ave	Right	0	3	5	8	1	0	13	28	Varies: 0.2 - 3.1
		Left	No sidewalk				1	0	13		No sidewalk
CRESCENT AVENUE	East (Looking West)	Right	0	2.5	5	7.5	0	0	24	24	No measurement
		Left	0	2.5	5	7.5	0	0			No measurement
WASHINGTON STREET	Crescent Ave to Clinton Rd	Right	0	4.5	4	8.5	1	0	13	28	Varies: 2.9 - 3.5
		Left	No sidewalk				1	0	13		No sidewalk
CLINTON ROAD	East (Looking West)	Right	No sidewalk				0	0	22	22	No sidewalk
		Left	No sidewalk				0	0			No sidewalk
WASHINGTON STREET	Clinton Rd to Trenton St	Right	0	4.5	4.5	9	1	0	13	28	Varies: 2.3 - 3.5
		Left	0	4.5	4.5	9	1	0	13		Varies: 1.0 - 4.3
TRENTON STREET	East (Looking West)	Right	No sidewalk				0	0	32	32*	No measurement
		Left	0	4.5	4.5	9	0	0			No measurement
WASHINGTON STREET	Trenton St to Baldwin St	Right	0	0	5	5	1	0	13	28	4.4
		Left	0	3.5	5	8.5	1	0	13		Varies: 0.6 - 3.4
BALDWIN STREET	West (Looking West)	Right	No sidewalk				0	0	20	20	No sidewalk
		Left	No sidewalk				0	0			No sidewalk
WASHINGTON STREET	Baldwin St to Lynde Ave	Right	0	4	5	9	1	0	13	28	Varies: 0.9 - 3.3
		Left	0	3.5	5	8.5*	1	0	13		Varies: 1.5 - 2.4
LYNDE AVENUE	East (Looking West)	Right	0	4	5	9	0	0	22	22	No measurement
		Left	0	4	5	9	0	0			No measurement
WASHINGTON STREET	Aaron St to Pebble Rd	Right	0	3	5	8	1	0	13	28	Varies: 0.2 - 4.3
		Left	0	3.5	5	8.5	1	0	13		No measurement
AARON STREET	West (Looking West)	Right	No measurement				0	0	21	21	No measurement
		Left	No sidewalk				0	0			No sidewalk
WASHINGTON STREET	Pebble Rd to Fellsway E	Right	0	3	5	8*	1	0	13	28**	Varies: 0.1 - 5.4
		Left	0	3.5	5	8.5	1	0	13		Varies: 1.9 - 4.5
PEBBLE ROAD	West (Looking West)	Right	No sidewalk				0	0	22	22	No sidewalk
		Left	No sidewalk				0	0			No sidewalk

WHEELCHAIR RAMP

LOCATION	#*	TYPE	LEVEL LANDING SLOPE (%)
Pleasant St to Goodyear Ave			None
Goodyear Ave to Shadow Rd			None
Shadow Rd to Gould St	43		7.4
	44		2.0
Gould St to Crescent Ave	45		0.7
	46		4.7
Crescent Ave to Clinton Rd	47		3.2
	48		4.9
Clinton Rd to Trenton St	49		5.0
	50		5.6
Trenton St to Baldwin St	51		7.4
	52		3.3
	53		5.5
Baldwin St to Lynde Ave	54		5.3
	55		9.0
	56		3.0
	57		3.1
Aaron St to Pebble Rd	58		4.6
	59		2.1
	60		2.4
Pebble Rd to Fellsway E	61		6.0

*Ramp Numbers reference plan sheets

DRIVEWAY

LOCATION	#*	WIDTH (inch)	LEVEL LANDING SLOPE (%)
Pleasant St to Goodyear Ave	71	31	13.0
	72	22	17.6
	73	20	14.5
	74	20	14.3
Goodyear Ave to Shadow Rd	75	12	1.2
	76	12	13.8
	77	30	11.4
	78	13	8.5
	79	11	4.3
Shadow Rd to Gould St	80	44.5	101.0
	81	16.5	5.0
	82	19	9.8
	83	15.5	4.1
	84	28.5	5.3
			3.6
	85	34	5.2
			10.3
	86	26.5	6.7
			7.5
	87	16	7.5
	88	25	12.6
	89	18	10.2
	90	16	8.9
	91	26	4.2
			6.6
	92	25	11.3
	93	28	3.9
			3.1
	94	20	8.9
	95	12	0.2
	96	42	1.2
			1.4
	97	20.5	4.4
98	25.5	3.5	
99	18	0.2	
100	14	0.6	
101	27	0.4	
		2.3	
102	15	0.1	
103	18.5	3.4	
104	28	3.5	
		3.6	

*Ramp Numbers reference plan sheets

Gould St to Crescent Ave	105	14.5	0.1
Crescent Ave to Clinton Rd	106	10.5	0.1
	107	12.5	0.2
	108	38	14.0
Clinton Rd to Trenton St	109	15	8.7
	110	18.5	6.3
	111	12.5	1.8
	112	19.5	3.3
	113	12	2.4
	114	12	4.3
	115	18	7.5
Trenton St to Baldwin St	116	12.5	0.7
Baldwin St to Lynde Ave	117	14.5	3.7
	118	13	3.0
	119	13.5	12.6
	120	20	2.3
	121	13	1.5
	122	12	2.4
	123	14	6.8
	124	18.5	9.8
Aaron St to Pebble Rd	125	12	1.8
	126	19.5	2.0
	127	25	2.7
			4.6
	128	13	4.6
	129	13	2.3
	130	21	7.1
	131	26	1.6
Pebble Rd to Fellsway E	132	17	10.3
	133	20.5	3.0
	134	17	3.2
	135	18	2.4
	136	21	4.6
	137	18	2.3
	138	14	1.8
	139	14.5	4.3
	140	16	3.9
	141	18	5.6

*Ramp Numbers reference plan sheets

WASHINGTON STREET EXISTING CONDITIONS

Washington Street (Pleasant Street to Fellsway East)

There are a total of 19 pedestrian ramps within the project limits. There are 16 ramps (84%) that do not comply with MAAB/ADA requirements. 3 ramps (16%) complied with MAAB/ADA requirements.

Cross slope readings were taken throughout the project. Where possible readings were taken at the doorway to homes. A total of 59 readings were made. 38 (64%) locations did not comply with 2.1% maximum allowed by the MAAB/ADA. 21 locations (36%) complied with the 2.1% maximum allowed by the MAAB/ADA.

Washington Street (Pleasant Street to Goodyear Avenue)

Washington Street – 2 Concrete Driveways; 2 Asphalt Driveway

(Right Side of Road)

No sidewalk; Speed Laws and Fine Sign; No Parking Anytime Sign.

(Left Side of Road)

Concrete Sidewalk only in front of the house; Stop Sign; No Parking Anytime Sign

Roadway Width – 15' at Washington Street, 26' at Goodyear Avenue.

Lane Width – 13' one lane, one way going south for Washington Street, 1' shoulders each side.

Sidewalk Width Right – No Sidewalk

Sidewalk Width Left – No Sidewalk

There are no Pedestrian Wheelchair ramps in this block.

Washington Street (Goodyear Avenue to Shadow Road)

Washington Street – 5 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk; No Signs

(Left Side of Road)

No Sidewalk; Stop Ahead Sign

Roadway Width – 28’ at Washington Street, 24’ at Shadow Road.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 5.5’ Concrete Sidewalk

Sidewalk Width Left – No Sidewalk

There are no Pedestrian Wheelchair ramps in this block.

Washington Street (Shadow Road to Gould Street)

Washington Street – 22 Concrete Driveways; 3 Asphalt Driveway

(Right Side of Road)

Concrete Sidewalk; Speed Limit 30 Sign.

(Left Side of Road)

No Sidewalk; Dead End Sign; Rubbish Disposal Prohibited Sign; Speed Limit 30 Sign.

Roadway Width – 28’ at Washington Street, 24’ at Gould Street.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 5.5’ Concrete Sidewalk

Sidewalk Width Left – No Sidewalk

Pedestrian ramp on the northeast corner on the intersection of Washington Street and Shadow Road does not comply with MAAB/ADA requirements. The level landing has a cross slope of 7.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southeast corner on the intersection of Washington Street and Gould Street does comply with MAAB/ADA requirements. The level landing has a landing slope of 2.0% which is less than the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Washington Street (Gould Street to Crescent Avenue)

Washington Street – 1 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with grass strip; No Signs.

(Left Side of Road)

No Sidewalk; No Signs

Roadway Width – 28’ at Washington Street, 24’ at Crescent Avenue.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 5’ Concrete Sidewalk, 3’ Grass Strip

Sidewalk Width Left – No Sidewalk

Pedestrian ramp on the northeast corner on the intersection of Washington Street and Gould Street does comply with MAAB/ADA requirements. The level landing has a landing slope of 0.7% which is less than the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southeast corner on the intersection of Washington Street and Crescent Avenue does not comply with MAAB/ADA requirements. The level landing has a cross slope of 4.7% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Washington Street (Crescent Avenue to Clinton Road)

Washington Street – 3 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with grass strip; No Signs.

(Left Side of Road)

No Sidewalk; Rubbish Disposal Prohibited Sign

Roadway Width – 28’ at Washington Street, 22’ at Clinton Road.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 4’ Concrete Sidewalk, 4.5’ Grass Strip

Sidewalk Width Left – No Sidewalk

Pedestrian ramp on the northeast corner on the intersection of Washington Street and Crescent Avenue does not comply with MAAB/ADA requirements. The level landing has a landing slope of 3.2% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southeast corner on the intersection of Washington Street and Clinton Road does not comply with MAAB/ADA requirements. The level landing has a cross slope of 4.9% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Washington Street (Clinton Road to Trenton Street)

Washington Street – 8 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with grass strip; State Law Stop Sign.

(Left Side of Road)

Concrete Sidewalk with grass strip; No Signs.

Roadway Width – 28’ at Washington Street, 32’ at Trenton Street.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 4.5’ Concrete Sidewalk, 4.5’ Grass Strip

Sidewalk Width Left – 4.5’ Concrete Sidewalk, 4.5’ Grass Strip

Pedestrian ramp on the northeast corner on the intersection of Washington Street and Clinton Road does not comply with MAAB/ADA requirements. The level landing has a landing slope of 5.0% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southeast corner on the intersection of Washington Street and Trenton Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.6% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Washington Street (Trenton Street to Baldwin Street)

Washington Street – 1 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk; Do not Enter Sign;

(Left Side of Road)

Concrete Sidewalk with grass strip; State Law Stop Fine Sign.

Roadway Width – 28’ at Washington Street, 20’ at Baldwin Street, 39’ at Trenton Street.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 5’ Concrete Sidewalk, 4.5’ Grass Strip

Sidewalk Width Left – 5’ Concrete Sidewalk, 3.5’ Grass Strip

Pedestrian ramp on the northeast corner on the intersection of Washington Street and Trenton Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 7.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southeast corner on the intersection of Washington Street and Trenton Street (Front of Baldwin Street) does not comply with MAAB/ADA requirements. The level landing has a cross slope of 3.3% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southwest corner on the intersection of Washington Street and Baldwin Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 5.5% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Washington Street (Baldwin Street to Lynde Avenue)

Washington Street – 9 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with grass strip; Pedestrian Crossing Sign.

(Left Side of Road)

Concrete Sidewalk with grass strip; Dead End Private Way Sign; Pedestrian Crossing Sign; Speed Limit 30; Hidden Slow Drive Sign; Blind Drive Sign; Slow Curve Sign.

Roadway Width – 28’ at Washington Street, 22’ at Lynde Avenue.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 5’ Concrete Sidewalk, 4’ Grass Strip

Sidewalk Width Left – 5’ Concrete Sidewalk, 3.5’ Grass Strip

Pedestrian ramp on the northwest corner on the intersection of Washington Street and Baldwin Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 5.3% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the northeast corner on the intersection of Washington Street and Trenton Street (Front of Baldwin Street) does not comply with MAAB/ADA requirements. The level landing has a cross slope of 9.0% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southeast corner on the intersection of Washington Street and Lynde Avenue does not comply with MAAB/ADA requirements. The level landing has a landing slope of 3.0% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southwest corner on the intersection of Washington Street and Aaron Street does not comply with MAAB/ADA requirements. The level landing has a landing slope of 3.1% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Washington Street (Aaron Street to Pebble Road)

Washington Street – 8 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with grass strip; Pedestrian Crossing Sign; Slow Children Sign.

(Left Side of Road)

Concrete Sidewalk with grass strip; Slow Curve Sign; Pedestrian Crossing Sign; Slow Children Sign.

Roadway Width – 28’ at Washington Street, 21’ at Aaron Street.

Lane Width – 13’ each lane (2), two ways, 1’ shoulders each side.

Sidewalk Width Right – 5’ Concrete Sidewalk, 3’ Grass Strip

Sidewalk Width Left – 5’ Concrete Sidewalk, 3.5’ Grass Strip

Pedestrian ramp on the northeast corner on the intersection of Washington Street and Lynde Avenue does not comply with MAAB/ADA requirements. The level landing has a landing slope of 4.6% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the northwest corner on the intersection of Washington Street and Aaron Street does comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which is the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southwest corner on the intersection of Washington Street and Pebble Road does not comply with MAAB/ADA requirements. The level landing has a landing slope of 2.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Washington Street (Pebble Road to Fellsway East)

Washington Street – 7 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with grass strip; Stop Ahead Sign; Slow Blind Drive Sign; Stop Sign; No turn Left Sign.

(Left Side of Road)

Concrete Sidewalk with grass strip; No Littering Sign; Rubbish Disposal Prohibited Sign; Speed Laws Strictly Enforced Sign; Speed Limit 30 Sign.

Roadway Width – 28' at Washington Street, 22' at Pebble Road

Lane Width – 13' each lane (2), two ways, 1' shoulders each side.

Sidewalk Width Right – 5' Concrete Sidewalk, 3' Grass Strip

Sidewalk Width Left – 5' Concrete Sidewalk, 3.5' Grass Strip

Pedestrian ramp on the northwest corner on the intersection of Washington Street and Pebble Road does not comply with MAAB/ADA requirements. The level landing has a landing slope of 6.0% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.



CITY		STREET NAME	
DATE	PROJECT	SHEET NO.	TOTAL SHEETS
MA	PROJECT FILE	700000X	
SHEET NO.			

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Goodyear Ave

WASHINGTON ST

Shadow Rd

PLEASANT ST



WASHINGTON ST

Converse Ln

Shadow Rd



CITY/TOWN
STREET/ROUTE STATE
YEAR
PROJECT NUMBER
SHEET NAME

CITY/TOWN	STREET/ROUTE & OR NAME
DATE	PROJECT FILE NO.
SCALE	SHEET NAME

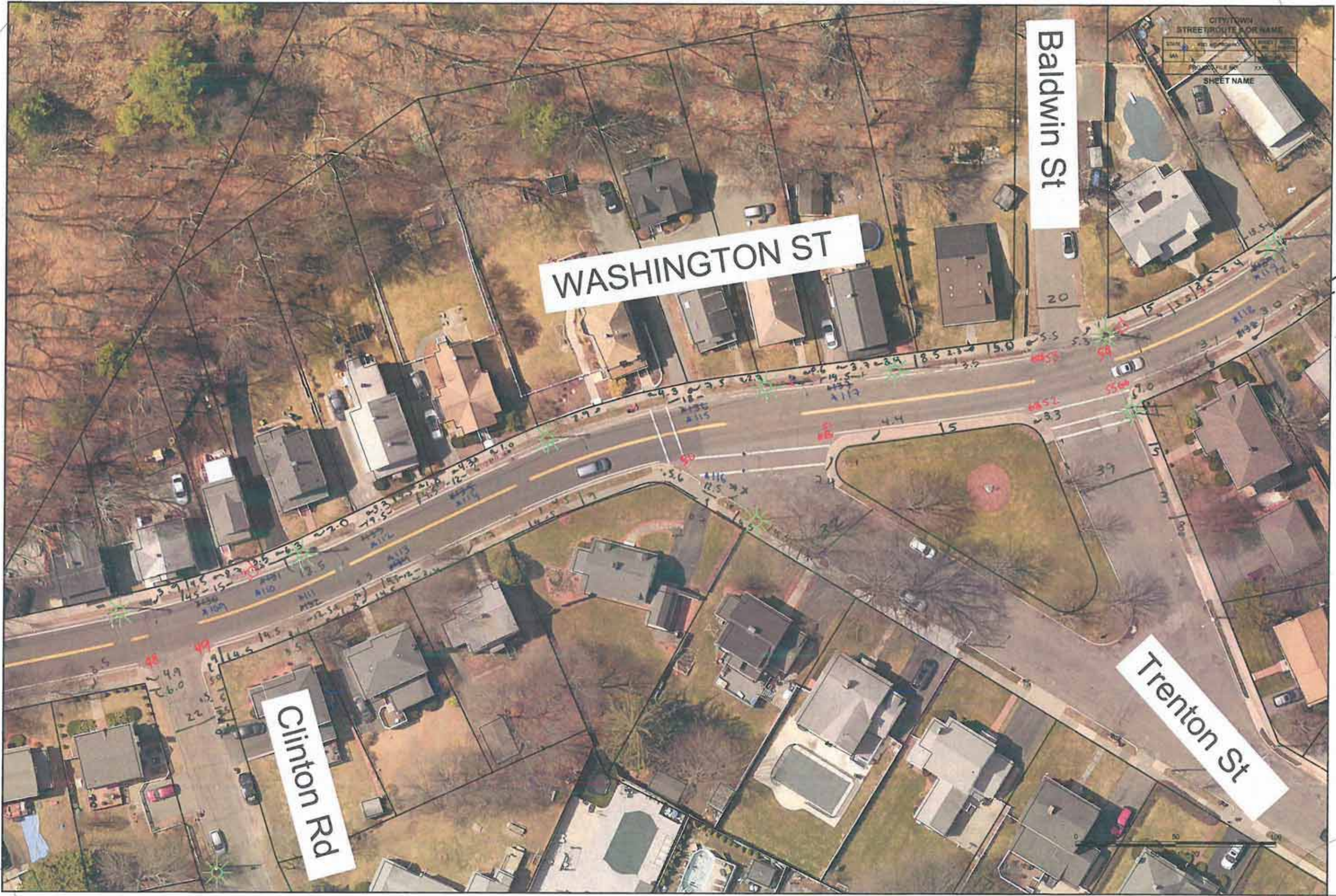
WASHINGTON ST

Gould St

Crescent Ave



[Handwritten signature]



WASHINGTON ST

Baldwin St

Clinton Rd

Trenton St

CITY/TOWN		STREET/ROUTE & OR NAME	
DATE	BY	DATE	BY
MA			
PROJECT FILE NO.		SHEET NAME	

010 BASE MAP.DWG Plotted on 18-May-2016 8:49 AM

Driveway





CITY/TOWN	
STREET/ROUTE OR NAME	
PREPARED BY	
DATE	
PROJECT NO.	
SHEET NAME	

CITY/TOWN		
STREET/ROUTE/FORM NAME		
DATE	FILE NUMBER	DATE
SHEET NAME		

GIS BASE MAP.DWG Printed on: 10 May 2018 8:55 AM



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APPENDIX B

Field Observation Data – Pleasant Street

Existing Conditions: Pleasant Street from W Wyoming Avenue to Washington Street

LOCATION		DIRECTION	HORIZONTAL DIMENSION: WIDTH (feet)							CROSS SLOPE (%)	
			SIDEWALK				ROADWAY				SIDEWALK
			Tree Pit	Grass Strip	Concrete	TOTAL	Shoulder	Parking	Lane	TOTAL	
PLEASANT STREET	W Wyoming Ave to Everett St	Right	-	-	-	*	0	0	15	26**	1.5
		Left	-	-	-	*	0	0	11		3.4
EVERETT STREET	West (Looking West)	Right	0	0	7	7	No measurement			58*	No measurement
		Left	0	3.5	5	8.5	No measurement				
PLEASANT STREET	Everett St to Frances St	Right	0	0	4.5	4.5	0	0	17	29	Varies: 2.6 - 5.7
		Left	0	0	6.5	6.5*	0	0	12		Varies: 2.1 - 4.8
FRANCES STREET	West (Looking West)	Right	0	3	4.5	7.5	No measurement			24*	No measurement
		Left	0	3	4.5	7.5	No measurement				8.7
PLEASANT STREET	Frances St to Ashmont St	Right	0	3	4	7*	0	0	17	29**	Varies: 3.4 - 5.4
		Left	0	0	6	6*	0	0	12		Varies: 0.8 - 3.3
ASHMONT STREET	West (Looking West)	Right	0	4.5	4	8.5	No measurement			23	No measurement
		Left	0	0	7.5	7.5	No measurement				
PLEASANT STREET	Ashmont St to Gould St	Right	0	3.5	4	7.5	0	0	15	30	Varies: 0.5 - 3.8
		Left	0	0	5.5	5.5	0	0	15		5.1
GOULD STREET	West (Looking West)	Right	None				No measurement			12.5	None
		Left	0	4	5	9	No measurement				0.9
PLEASANT STREET	Gould St to Converse Ln1	Right	0	0	5	5*	0	0	15	30	Varies: 5.4 - 6.5
		Left	0	4	5	9*	0	0	15		Varies: 0.9 - 3.2
CONVERSE LANE 1	West (Looking West)	Right	None				No measurement			26*	None
		Left	None				No measurement				
PLEASANT STREET	Converse Ln1 to Converse Ln2	Right	0	0	5	5	0	0	15	30	Varies: 0.6 to 3.6
		Left	0	4	5	9	0	0	15		Varies: 1.3 to 3.7
CONVERSE LANE 2	West (Looking West)	Right	None				No measurement			25*	None
		Left	None				No measurement				
PLEASANT STREET	Converse Ln2 to Stone Pl	Right	0	0	5	5	1	0	14	30	Varies: 1.5 - 8.7
		Left	0	3.5 - 4.0	5	8.5 to 9.0	1	0	14		Varies: 0.2 - 4.2
STONE PLACE	West (Looking West)	Right	None				1	0	13	28	None
		Left	0	0	5	5	1	0	13		No measurement
PLEASANT STREET	Stone Pl to Washington St	Right	ALL GRASS				2.5	0	12.5	32*	None
		Left	0	0	9	9	4	0	13		Varies: 0.1 - 1.8

WHEELCHAIR RAMP

LOCATION	#*	TYPE	LEVEL LANDING SLOPE (%)
W Wyoming Ave to Everett St	11		2.1
	12		2.1
	32		0.9
Everett St to Frances St	33		1.9
Frances St to Ashmont St	None		
Ashmont St to Gould St	34		1.5
Gould St to Converse Ln1	35		3.7
	36		5.7
Converse Ln1 to Converse Ln2	37		6.8
	38		5.4
Converse Ln2 to Stone Pl	39		10.2
	40		0.5
	41		2.1
Stone Pl to Washington St	42		1.2

*Ramp Numbers reference plan sheets

DRIVEWAY

LOCATION	#*	WIDTH (inch)	LEVEL LANDING SLOPE (%)
W Wyoming Ave to Everett St	17	23	2.8
	18	26	3.8
	19	30	2.1
	20	15	7.5
Everett St to Frances St	21	21	4.5
	22	14	4.6
	23	18	2.8
	24	13.5	3.9
	25	14	11.4
	26	16	3.2
	27	14	3.4
	28	15	3.2
	29	28	3.9
	30	14	6.7
	31	20	1.8
Frances St to Ashmont St	32	24	2.6
	33	16.5	2.3
	34	16	0.9
	35	16.5	2.3
	36	15	0
	37	15	4.3
	38	15	3.1
Ashmont St to Gould St	39	15	4
	40	16	2.7
	41	16	2.1
	42	22	1
	43	15.5	0.1
	44	16	2.8
Gould St to Converse Ln1	45	24	6.5
	46	13	8
	47	22.5	2.7
	48	14.5	8.8
	49	16	9.2
	50	24	10.4
	51	15	8.1
	52	14	11.6
	53	34	1.7
	54	16	10
	55	15	4.2
Converse Ln1 to Converse Ln2	56	30	3.4
	57	16.5	7.2
	58	24	7.5
	59	18	9.8

*Ramp Numbers reference plan sheets

Converse Ln2 to Stone Pl	60	13	11.3
	61	30	4.1
	62	24	8.6
	63	24	9.2
	64	16	16.8
	65	20	8.5
	66	16	9.5
	67	22	6.5
	68	15	5.5
	69	18	4.9
Stone Pl to Washington St	70	36	No measurement

*Ramp Numbers reference plan sheets

PLEASANT STREET EXISTING CONDITIONS

Pleasant Street (Washington Street to West Wyoming Avenue)

There are a total of 13 pedestrian ramps within the project limits. There are 5 ramps (38%) that do not comply with MAAB/ADA requirements. Leaving with 8 ramps (62%) complied with MAAB/ADA requirements.

Cross slope readings were taken throughout the project. Where possible readings were taken at the doorway to homes. A total of 50 readings were made. 32 (64%) locations did not comply with 2.1% maximum allowed by the MAAB/ADA. 18 locations (36%) complied with the 2.1% maximum allowed by the MAAB/ADA.

Pleasant Street (W Wyoming Avenue to Everett Street)

Pleasant Street – 4 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with Grass Strip at the beginning, only Concrete Sidewalk at the end; 2-No Parking Here to Corner Sign; 4-Two Hour Parking Sign.

(Left Side of Road)

Concrete Sidewalk with a small section of Grass Strip; Rail Road Sign; Stop Sign; 3-No Parking at Any Time Sign; Rail Road Crossing Sign; MBTA Bus Stop; Speed Limit 30 Sign; MBTA Bus Stop.

Roadway Width – 34' Pleasant St at the beginning and 29' at the end, 23.5 Everett Street, 58' Everett Street Crossing

Lane Width – 21.5' right lane, 12.5 left lane; 18' right lane, 11' left lane Pleasant Street

Sidewalk Width West – 5' Concrete Sidewalk and 3' Grass Strip at beginning, 6' Concrete Sidewalk at end.

Sidewalk Width East – 8' Concrete Sidewalk at beginning, 5' Concrete and 3' Grass Strip at middle, 6.5' Concrete Sidewalk at the end.

Pedestrian ramps on the southwest corners on the intersection of West Wyoming Avenue and Pleasant Street does not comply with MAAB/ADA requirements. The ramp has a landing slope of 2.2% which exceeds the maximum of 2.1% allowed by the Massachusetts 521 CMR Section 21.3.

Pedestrian ramp on the southeast corner on the intersection of West Wyoming Avenue and Pleasant Street does comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which is the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramps on the northwest corner on the intersection of Pleasant Street and Everett Street does comply with MAAB/ADA requirements. The ramp has a landing slope of 0.9% which exceeds the maximum of 2.1% allowed by the Massachusetts 521 CMR Section 21.3.

Pleasant Street (Everett Street to Frances Street)

Pleasant Street – 11 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk; 3-MBTA Bus Stop Signs

(Left Side of Road)

Concrete Sidewalk; Tow Away Zone during Snow Storm Sign; 3-No Parking at Any Time Sign; Speed Limit 25 Sign; MBTA Bus Stop Sign

Roadway Width – 29' Pleasant Street; 24' Frances Street and 48' Crosswalk (No ramps)

Lane Width – 17' Right lane and 12' left lane of Pleasant St

Sidewalk Width West – 4.5' Concrete Sidewalk

Sidewalk Width East – 6.5 Concrete Sidewalk and 6' at the end

Pedestrian ramps on the southwest corners on the intersection of Pleasant Street and Everett Street does comply with MAAB/ADA requirements. The ramp has a landing slope of 1.9%.

Pedestrian ramp on the northwest corner on the intersection of Pleasant Street and Frances Street does not exist. The cross slope for that side is 8.7%.

Pleasant Street (Frances Street to Ashmont Street)

Pleasant Street – 7 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with a section of Grass Strip; Caution Blind Drive Sign

(Left Side of Road)

Concrete Sidewalk; Right Turn 20 MPH Sign

Roadway Width – 29' at the beginning, past the curve changes to 30'; 23' at Ashmont St

Lane Width – 17' right lane, 12' left lane, then turns to 15' each lane at Pleasant St

Sidewalk Width West – 5' Concrete at the beginning, then 4' Concrete and 3' Grass Strip

Sidewalk Width East – Goes from 6.5' to 7' to 6' at curve and continues 5.5' all the way

Pedestrian ramp on the southwest corner on the intersection of Pleasant Street and Frances Street does not exist.

Pedestrian ramp on the northwest corner on the intersection of Pleasant Street and Ashmont Street does not exist. The cross slope for that side is 4.5%.

Pleasant Street (Ashmont Street to Gould Street)

Pleasant Street – 6 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk with Grass Strip; 2 Hour Parking Sign; MBTA Bus Stop Sign

(Left Side of Road)

Concrete Sidewalk; No Parking at Any Time Sign

Roadway Width – 30' Pleasant Street; 12.5' Gould St

Lane Width – 15' each lane Pleasant St

Sidewalk Width West – 4' Concrete Sidewalk and 3' Grass Strip

Sidewalk Width East – 5.5 Concrete Sidewalk

Pedestrian ramp on the southwest corner on the intersection of Pleasant Street and Ashmont Street does not exist. The cross slope for that side is 3.8%.

Pedestrian ramp on the northwest corner on the intersection of Pleasant Street and Gould Street does comply with MAAB/ADA requirements. The level landing has a cross slope of 1.5%.

Pleasant Street (Gould Street to Converse Lane1)

Pleasant Street – 9 Concrete Driveways; 2 Asphalt Driveway

(Right Side of Road)

Concrete Sidewalk; 2-2 Hour Parking Sign; Slow Sign; Speed Limit 25; MBTA Bus Stop

(Left Side of Road)

Concrete Sidewalk with Grass Strip; 2-MBTA Bus Stop; 3-No Parking at Any Time; Tow Away Zone during Snow Storm Sign;

Roadway Width – 30' Pleasant St; 26' Converse Ln1 and 40' at crosswalk

Lane Width – 15' each lane at Pleasant St

Sidewalk Width West – 5' Concrete Sidewalk

Sidewalk Width East – 5.5' Concrete Sidewalk, then 5 Concrete and 4' Grass Strip

Pedestrian ramp on the southwest corner on the intersection of Pleasant Street and Gould Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 3.7% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the northwest corner on the intersection of Pleasant Street and Converse Lane1 does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.7% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pleasant Street (Converse Lane1 to Converse Lane2)

Pleasant Street – 2 Concrete Driveways

(Right Side of Road)

Concrete Sidewalk; 2 Hour Parking Sign

(Left Side of Road)

Concrete Sidewalk with Grass Strip; MBTA Bus Stop Sign; 2-No Parking at Any Time Sign

Roadway Width – 30' at Pleasant St; 25' at Converse Ln2 and 34' at crosswalk

Lane Width – 15' each lane at Pleasant St

Sidewalk Width West – 5' Concrete Sidewalk

Sidewalk Width East – 5' Concrete Sidewalk and 4' Grass Strip (Trip Hazard)

Pedestrian ramp on the southwest corner on the intersection of Pleasant Street and Converse Lane1 does not comply with MAAB/ADA requirements. The level landing has a cross slope of 6.8% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the northwest corner on the intersection of Pleasant Street and Converse Lane2 does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pleasant Street (Converse Lane2 to Stone Place)

Pleasant Street – 12 Asphalt Driveway

(Right Side of Road)

Concrete Sidewalk; 4-2 Hour Parking Sign; No Parking at Any Time Sign; MBTA Bus Stop Sign; Pedestrian Crosswalk Sign

(Left Side of Road)

Concrete Sidewalk with Grass Strip; 3-No Parking At Any Time Sign; Slow Children Sign; MBTA Bus Stop Sign; Pedestrian Crosswalk Sign

Roadway Width – 30' at Pleasant St; 28' Stone Place

Lane Width – 14' each lane with a 1' shoulder at Pleasant St; 13' each lane with a 1' shoulder at Stone Pl

Sidewalk Width West – 5' Concrete Sidewalk

Sidewalk Width East – 5' Concrete Sidewalk with 3.5-4' Grass Strip

Pedestrian ramp on the southwest corner on the intersection of Pleasant Street and Converse Lane2 does not comply with MAAB/ADA requirements. The level landing has a cross slope of 10.2% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the northwest corner on the intersection of Pleasant Street and Stone Place does comply with MAAB/ADA requirements. The level landing has a cross slope of 0.5%.

Pedestrian ramp on the northwest corner on the intersection of Pleasant Street and Stone Place does comply with MAAB/ADA requirements. The ramp has a running slope of 6.0% which does not exceed the maximum of 8.3% allowed by the Massachusetts 521 CMR Section 21.3.

Pleasant Street (Stone Place to Washington Street)

Pleasant Street – 1 Asphalt Driveway

(Right Side of Road)

No Sidewalk, only granite curbing and grass; 2' Shoulder at beginning and 4' at end; Speed Law Fine Sign; No Left Turn Sign; No Parking At Any Time Sign; Do Not Enter Sign

(Left Side of Road)

Concrete Sidewalk with granite curbing; 2' Shoulder at beginning and 2.5' at end; No Parking At Any Time Sign; Bus Stop Sign; Washington Street Northbound direction sign.

Roadway Width – 30' at beginning of Pleasant Street, 32' at ending

Lane Width – 13' both right and left side at beginning of Pleasant Street, 12.5' left side and 13' right side of at end; 13' both sides of Stone Place westbound with 1' shoulders each side.

Sidewalk Width West – All Grass

Sidewalk Width East – 9' Sidewalk and No Grass Strip

Pedestrian ramp on the southeast corner on the intersection of Pleasant Street and Stone Place does comply with MAAB/ADA requirements. The level landing has a cross slope of 1.2% which does not exceed the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.



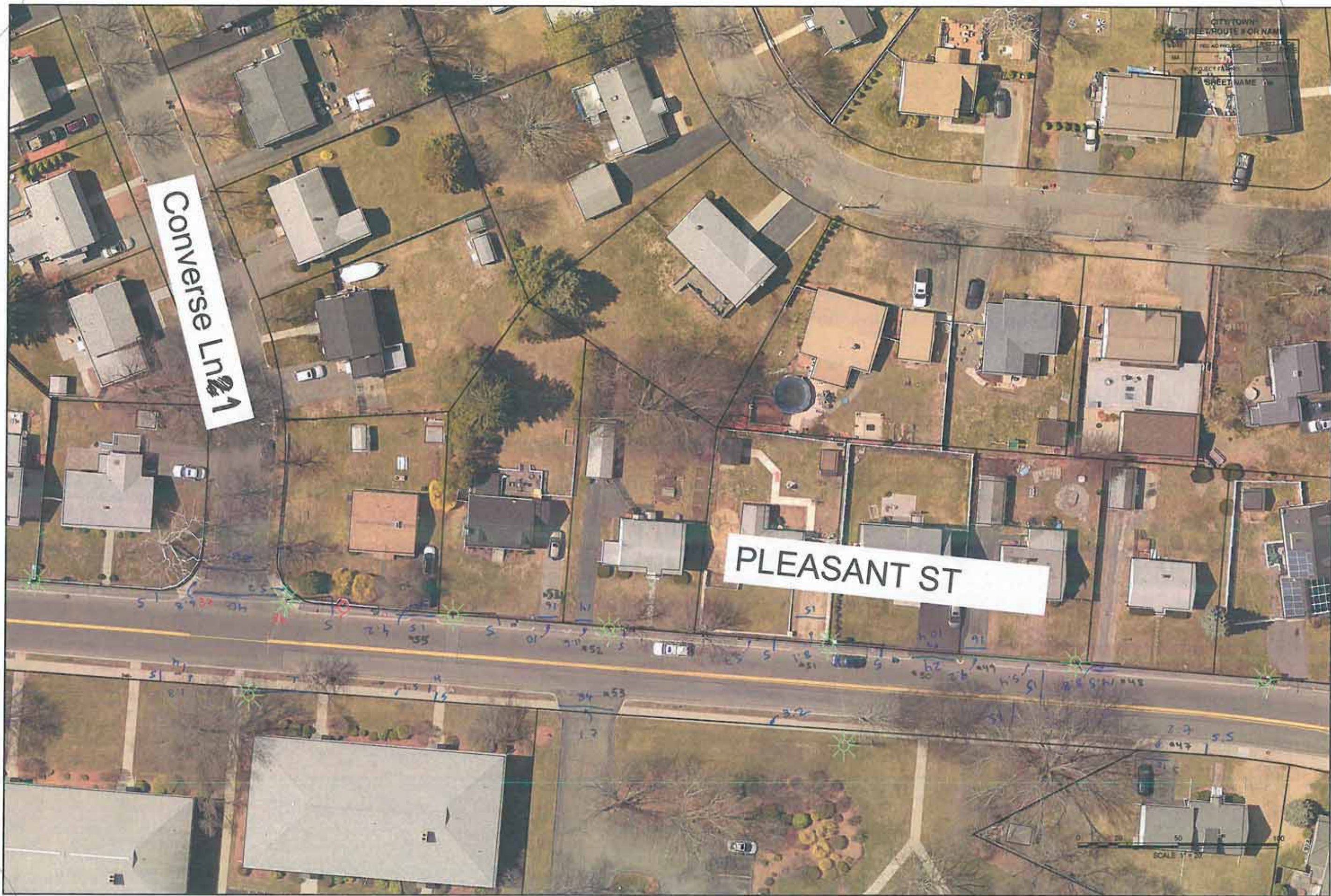
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STREET/ROUTE # OR NAME			
DATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
MA		7	8
PROJECT FILE NO.		833000	
SHEET NAME			

CIS BASE MAP/DWG Posted on 19-May-2018 8:00 AM

CITY OF
STREET TROUTMAN
PROJECT FILE NO.
SHEET NAME



GIS BASE MAP DWG
Printed on 15-May-2018 8:56 AM



Converse Ln 21

PLEASANT ST



Gould St

Ashmont St

PLEASANT ST

Frances St

CITY NAME	STREET ROUTE #	STREET NAME

CITY NAME	STREET ROUTE #	STREET NAME

12 12



CITY/TOWN
STREET/ROUTE # OR NAME

STATE	TOLL ADDRESS (MI)	SHEET NO.	TOTAL SHEETS
GA		7	8

PROJECT FILE NO. 00000000
SHEET NAME

GIS BASE MAP (DWG) Printed on 10-May-2018 8:56 AM

SCALE: 1" = 20'

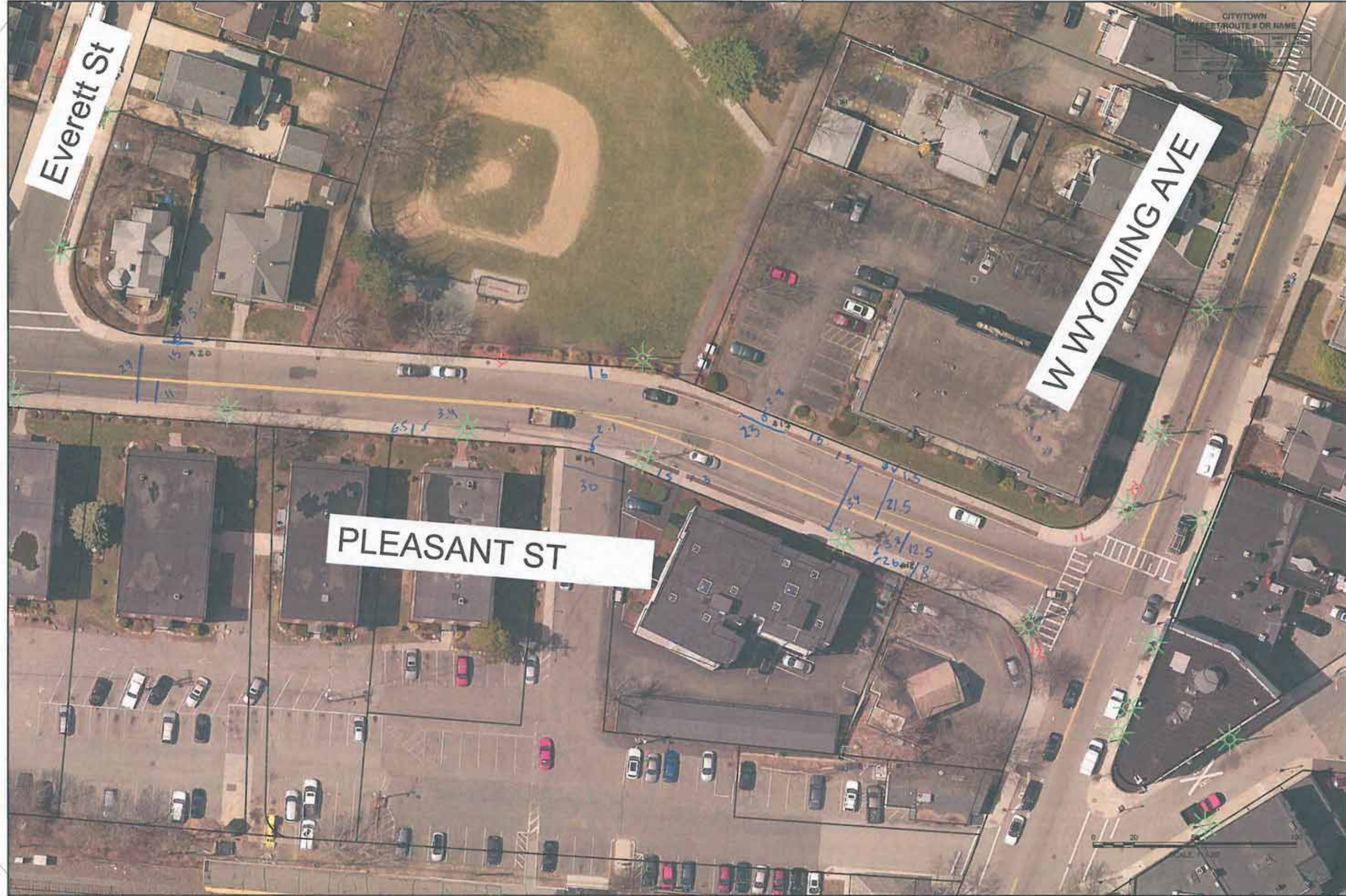
wheelchair #** Driveway

CITY/TOWN	ROUTE # OR NAME	DATE

Everett St

W WYOMING AVE

PLEASANT ST



APPENDIX C

Field Observation Data – West Wyoming Avenue

Existing Conditions: West Wyoming Avenue from Cottage Street to Main Street

LOCATION		DIRECTION	HORIZONTAL DIMENSION: WIDTH (feet)								CROSS SLOPE (%)
			SIDEWALK				ROADWAY				SIDEWALK
			Tree Pit	Grass Strip	Concrete	TOTAL	Shoulder	Parking	Lane	TOTAL	
COTTAGE STREET	North (Looking North)	Right	No measurements				No measurements			21	No measurements
	South (Looking North)	Right	0	0	6	6	No measurements			21	No measurements
WEST WYOMING AVENUE	Cottage St to Pleasant St	Left	0	2	4	6	No measurements			21	No measurements
		Right	0	0	10	10	0	0	10.5	28	Varies: 2.0 - 3.0
WEST WYOMING AVENUE	Cottage St to Pleasant St	Left	0	5.5	6	11.5	0	0	17.5	28	Varies: 2.0 - 3.6
		Right	0	0	7.5	7.5	0	0	13.5	33.5	2.1
PLEASANT STREET	South (Looking North)	Left	0	3	5	8	0	0	20	33.5	2.1
		Right	0	0	9.5	9.5	0	0	10.5	28	2.1
WEST WYOMING AVENUE	Pleasant St to Hurd St	Left	No measurements			8.5	0	7	10.5	28	2.1
		Right	No measurements				No measurements			23	No measurements
HURD STREET	North (Looking North)	Left	No measurements				No measurements			23	No measurements
WEST WYOMING AVENUE	Hurd St to Berwick St	Right	0	0	10	10	No measurements			23	Varies: 2.1 - 8.2
		Left	No measurements				No measurements			23	No measurements
BERWICK STREET	North (Looking North)	Right	0	0	5.5	5.5	0	8	11	30	No measurements
		Left	No measurements				0	0	11	30	No measurements
WEST WYOMING AVENUE	Berwick St to Waverly Pl	Right	4.5	0	3.5	8*	0	7	11	36**	Varies: 2.1 - 3.5
		Left	No measurements				0	7	11	36**	2.1
WAVERLY PLACE	South (Looking North)	Right	No measurements				No measurements			18	No measurements
		Left	No measurements				No measurements			18	No measurements
WEST WYOMING AVENUE	Waverly Pl to Corey St	Right	0	0	7	7	0	7	11	36	No measurements
		Left	-	0	-	8.5 to 7	0	7	11	36	2.1
COREY STREET	North (Looking North)	Right	0	0	8.5	8.5	No measurements			23	No measurements
		Left	No measurements				No measurements			23	6.3
WEST WYOMING AVENUE	Corey St to Main St	Right	3	0	4	7	0	7	11	36	Varies: 7.3 - 14.5
		Left	3	0	4	7	0	7	11	36	No measurements

WHEELCHAIR RAMP

LOCATION	#*	TYPE	LEVEL LANDING SLOPE (%)
Cottage St to Pleasant St	1		3.9
	2		2.7
	3		8.8
	4		6.4
	5		2.1
	6		2.1
	7		5.3
	8		2.1
	9		3.5
	10		2.1
	11		2.2
Pleasant St to Hurd St	12		2.1
	13		2.1
	14		2.1
Hurd St to Berwick St	15		2.1
	16		5
	17		Roadway Level
	18		Roadway Level
	19		2.1
	20		2.1
Berwick St to Waverly Pl	21		2.1
	22		2.1
	23		1.7
	24		2.1
	25		6.3
	26		2.1
Waverly Pl to Corey St	27		6.9
	28		2.3
Corey St to Main St	29		7.3
	30		No measurement
	31		No measurement

*Ramp Numbers reference plan sheets

DRIVEWAY

LOCATION	#*	WIDTH (inch)	LEVEL LANDING SLOPE (%)
Cottage St to Pleasant St	1	14	4
	2	13.5	5.6
	3	14	4
	4	12	4.3
	5	26.5	4.6
	6	16.5	2.1
	7	18	No measurement
	8	26	2.1
Pleasant St to Hurd St	9	34.5	2.1
	10	24.5	Roadway level
Hurd St to Berwick St	11	17	2.1
Berwick St to Waverly Pl	12	19	No measurement
	13	26	No measurement
Waverly Pl to Corey St	14	11	No measurement
Corey St to Main St	15	16.5	14.5
	16	20	No measurement

*Ramp Numbers reference plan sheets

WEST WYOMING AVENUE EXISTING CONDITIONS

West Wyoming Avenue (Cottage Street to Main Street)

There are a total of 31 pedestrian ramps within the project limits. There are 16 ramps (52%) that do not comply with MAAB/ADA requirements. 15 ramps (48%) complied with MAAB/ADA requirements.

Cross slope readings were taken throughout the project. Where possible readings were taken at the doorway to homes. A total of 30 readings were made. 19 (63%) locations did not comply with 2.1% maximum allowed by the MAAB/ADA. 11 locations (37%) complied with the 2.1% maximum allowed by the MAAB/ADA.

West Wyoming Avenue (Cottage Street to Pleasant Street)

West Wyoming Avenue – 9 Concrete Driveways; 1 Asphalt Driveway (School)

(Right Side of Road)

Concrete Sidewalk with granite curbing; No Shoulder; Slow Children Sign; Bus Stop Sign; Pedestrian Crossing Sign missing in front of crosswalk; Wheel chair ramp in front of school 87 W Wyoming Ave is not compliant; No ramp access for crosswalk on W Wyoming Ave, only one for parking access; Pedestrian Crossing Sign is present in next crosswalk for Pleasant Street.

(Left Side of Road)

Concrete Sidewalk with grass strip with a big tree, trip hazard; No shoulder marked but with space for stopping; Bus Stop Sign with no access to actual MBTA Bus.

Roadway Width – 21' at Cottage Street, 28' at W Wyoming Avenue and 33.5' at Pleasant Street

Lane Width – 10.5' right side except for school bus entrance (22' total), 17.5' left side of W Wyoming Avenue

Sidewalk Width Left – 6' Sidewalk and 5.0' Grass Strip

Sidewalk Width Right – 10' Sidewalk and No Grass Strip, 8.5' front of school

Pedestrian ramps on the southwest corners on the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The ramp has a running slope of 8.8% which exceeds the maximum of 8.3% allowed by the Massachusetts 521 CMR Section 21.3.

Pedestrian ramp on the southeast corner on the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The ramp has a cross slope of 6.4% which exceeds the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the northwest corner on the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The ramp has a landing slope of 3.9% which exceeds the maximum of 2.1% allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the northeast corner on the intersection of West Wyoming Avenue and Cottage Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.7% which exceeds the maximum of 2.1% allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramps on the southwest corners on the intersection of West Wyoming Avenue and Pleasant Street does not comply with MAAB/ADA requirements. The ramp has a landing slope of 2.2% which exceeds the maximum of 2.1% allowed by the Massachusetts 521 CMR Section 21.3.

West Wyoming Avenue (Pleasant Street to Hurd Street)

West Wyoming Avenue – 1 Concrete Driveway, 1 Asphalt Driveway (Wyoming Hill Station Parking)

(Right Side of Road)

Concrete Sidewalk; Railroad Crossing Pavement Sign present.

(Left Side of Road)

Pedestrian Crossing Sign present; Concrete Sidewalk; 15 min parking sign, Parking Signs present

Roadway Width – 28' at W Wyoming Avenue, 24.5' at asphalt driveway, and 23' at Hurd Street

Lane Width – 11.5' each lane of Hurd Street

Sidewalk Width Left – 8.5' Sidewalk and No Grass Strip

Sidewalk Width Right – 9.5' Sidewalk and No Grass Strip

Pedestrian ramp on the southeast corner on the intersection of West Wyoming Avenue and Pleasant Street does comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which is the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

Pedestrian ramp on the southwest corner on the intersection of West Wyoming Avenue and asphalt driveway does comply with MAAB/ADA requirements. The level landing has a landing slope of 2.1% which is the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

West Wyoming Avenue (Hurd Street to Berwick Street)

West Wyoming Avenue – 1 Concrete Driveway

(Right Side of Road)

Railroad Crossing Pole Sign present beginning and end.

(Left Side of Road)

Railroad Crossing Pole Sign present beginning and end (End one obstructed by trees); Do Not Enter Sign.

Roadway Width – 30' at Berwick Street

Lane Width – 19' (8' of parking) into Berwick Street and 11' out off.

Sidewalk Width Left – 10' Sidewalk and No Grass Strip

Sidewalk Width Right – 10' Sidewalk and No Grass Strip

Due to the Railroad, slopes are steep and same level as roadway.

Pedestrian ramp on the northwest corner on the intersection of West Wyoming Avenue and Hurd Street complies with MAAB/ADA requirements.

Pedestrian ramp on the southeast corner on the intersection of West Wyoming Avenue and Hurd Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 5.0% which exceeds the maximum of 2.1% allowed by the Massachusetts 521 CMR Section 21.3.

Pedestrian ramp on the northwest corner on the intersection of West Wyoming Avenue and Berwick Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 3.9% which exceeds the maximum of 2.1% allowed by the Massachusetts 521 CMR Section 21.3.

West Wyoming Avenue (Berwick Street to Waverly Place)

West Wyoming Avenue – 2 Concrete Driveways

(Right Side of Road)

Pedestrian Crossing Sign present at beginning and end of block; Concrete Sidewalk with tree pits.

(Left Side of Road)

Concrete Sidewalk with tree pits; Pedestrian Crossing Sign present at beginning and end of block; Railroad Sign No Train Horn; 15 Minutes Parking Sign.

Roadway Width – 28' at pedestrian crosswalk of W Wyoming Ave, 36' at next pedestrian crosswalk, 18' at Waverly Street

Lane Width – 14' each lane at the beginning and 18' each at end of W Wyoming Ave

Sidewalk Width Left – 8.5' Sidewalk and Tree Pits

Sidewalk Width Right – 11' at first crossing and 8' at rest, Tree Pits

Pedestrian ramp on the northeast corner of the intersection of West Wyoming Avenue and Berwick Street does comply with MAAB/ADA requirements. The level landing has a cross slope of 2.1% which is the maximum allowed by the Massachusetts 521 CMR Section 21.6.1.

First pedestrian ramps on the north and south corridor of West Wyoming Avenue complies with MAAB/ADA requirements.

Second pedestrian ramp on the north corridor of West Wyoming Avenue does comply but the south one does not with a cross slope of 6.3%.

Pedestrian ramp on the southwest corner of the intersection of West Wyoming Avenue and Waverly Place does comply with MAAB/ADA requirements.

West Wyoming Avenue (Waverly Place to Corey Street)

West Wyoming Avenue – 1 Concrete Driveway

(Right Side of Road)

Parking Limit Sign; Parking available through the block; Concrete Sidewalk.

(Left Side of Road)

Pedestrian Crossing Sign; Parking Limit Sign; Parking available through the block; Concrete Sidewalk with some tree pits.

Roadway Width – 36' at corridor, 23' at Corey St

Lane Width – 18' each lane at corridor

Sidewalk Width Left – 8.5' at the beginning, 7' at the end, Tree Pits

Sidewalk Width Right – 7.0' Sidewalk and Tree Pits

Pedestrian ramp on the southeast corner on the intersection of West Wyoming Avenue and Waverly Place does not comply with MAAB/ADA requirements. The level landing has a cross slope of 6.9% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1

Pedestrian ramp west of the intersection of West Wyoming Avenue and Corey Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 2.3% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1

West Wyoming Avenue (Corey Street to Main Street)

West Wyoming Avenue – 2 Concrete Driveway

(Right Side of Road)

Concrete Sidewalk with one tree strip; 1 Hour Parking Sign; Parking available through the block; Hospital Sign; No Parking Sign missing;

(Left Side of Road)

Concrete Sidewalk with two tree strips; 1 Hour Parking Sign; Parking available through the block.

Roadway Width – 36' at W Wyoming Ave

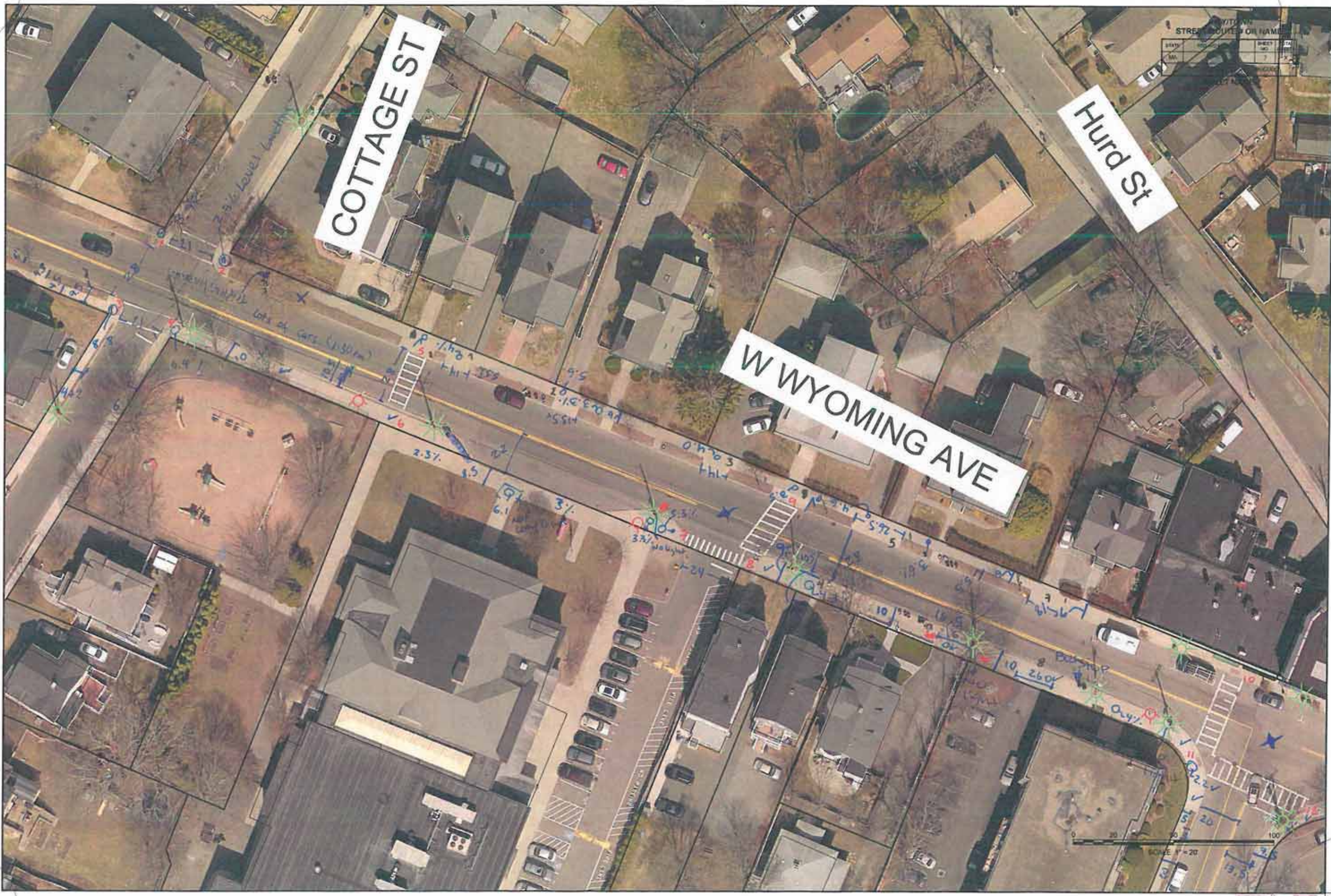
Lane Width – 18' each lane

Sidewalk Width Left – 7.0' Sidewalk and Tree Pit

Sidewalk Width Right – 7.0' Sidewalk, 3' concrete and 4' Tree Pit

Pedestrian ramp on the northeast corner on the intersection of West Wyoming Avenue and Corey Street does not comply with MAAB/ADA requirements. The level landing has a cross slope of 7.3% which exceeds the maximum of 2.0% allowed by the Massachusetts 521 CMR Section 21.6.1.

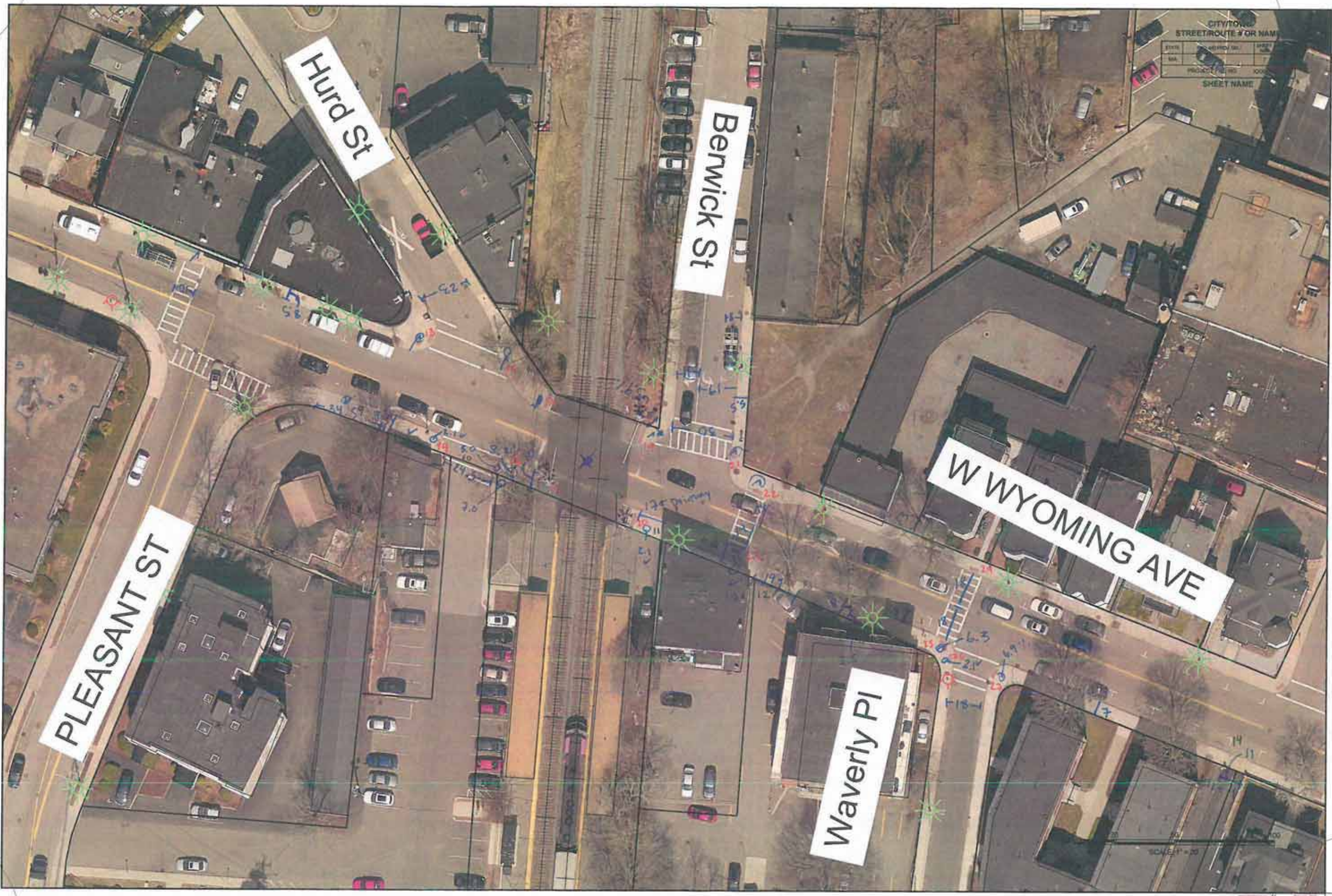
V = complaints crossing



GIS BASE MAP DATA PHONE 01/16/2018 8:38 AM

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* Bus stop no complaint



CITY/TOWN			
STREET/ROUTE # OR NAME			
STATE	CD	OFFICE	SHEET
NO.			NO.
PROJECT		DATE	SCALE
SHEET NAME			

PLEASANT ST

Hurd St

Berwick St

W WYOMING AVE

Waverly Pl

SHEET # 20

→ sidewalks needs to be reconstructed



