



**COMMUNITY**  
connectivity program

# Watertown/ Waterbury

Bunker Hill Road - Bunker Hill Avenue – Road Safety Audit

April 18, 2017



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Acknowledgements:

OFFICE OF INTERMODAL PLANNING  
BUREAU OF POLICY AND PLANNING  
CONNECTICUT DEPARTMENT OF TRANSPORTATION

With assistance from AECOM Transportation Planning Group

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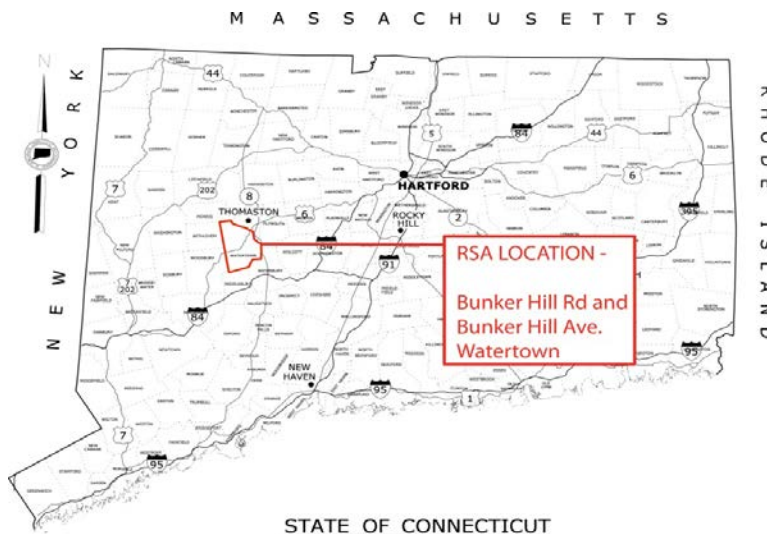
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The Connecticut Department of Transportation (CTDOT) is undertaking a Community Connectivity Program that focuses on improving the state's transportation network for all users, with an emphasis on bicyclists and pedestrians. A major component of this program is conducting Road Safety Audits (RSA's) at selected locations. An RSA is a formal safety assessment of the existing conditions of walking and biking routes and is intended to identify the issues that may discourage or prevent walking and bicycling. It is a qualitative review by an independent team experienced in traffic, pedestrian, and bicycle operations and design that considers the safety of all road users and proactively assesses mitigation measures to improve the safe operation of the facility by reducing the potential crash risk frequency or severity.

The RSA team is made up of CTDOT staff, municipal officials and staff, enforcement agents, AECOM staff, and community leaders. An RSA Team is established for each municipality based on the requirements of the individual location. They assess and review factors that can promote or obstruct safe walking and bicycling routes. These factors include traffic volumes and speeds, topography, presence or absence of bicycle lanes or sidewalks, and social influences.

Each RSA was conducted using RSA protocols published by the Federal Highway Administration (FHWA). For details on this program, please refer to [www.ctconnectivity.com](http://www.ctconnectivity.com). Prior to the site visit, area topography and land use characteristics are examined using available mapping and imagery. Potential sight distance issues, sidewalk locations, on-street and off-street parking, and bicycle facilities are also investigated using available resources. The site visit includes a "Pre-Audit" meeting, the "Field Audit" itself, and a "Post-Audit" meeting to discuss the field observations and formulate recommendations. This procedure is discussed in the following sections.



# 1 Introduction to the Bunker Hill Rd/Bunker Hill Ave, Watertown and Waterbury RSA

The Town of Watertown submitted an application to complete an RSA on the Bunker Hill Road and Bunker Hill Avenue corridor to improve safety for pedestrians and bicyclists. In Watertown, the sidewalk is on the south side of Bunker Hill Road, but in Waterbury it is on the north side of Bunker Hill Avenue. This creates a disconnect in the pedestrian path. There are also vertical and horizontal sight line issues in area. At least one pedestrian fatality has occurred as a result of a jogger crossing from one sidewalk to the other across Bunker Hill Road. The proposed RSA will analyze pedestrian connections between Watertown and Waterbury.

The Town of Watertown's application contained information on mapping of the corridor. The application and supporting documentation are included in Appendix A.

## 1.1 Location

The RSA corridor includes Bunker Hill Road and Bunker Hill Avenue from Straits Turnpike to Whitewood Road (Figure 1). The Bunker Hill Road and Bunker Hill Avenue Average Daily Traffic (ADT) ranges from 9,500 to 9,600 vehicles per day (VPD). The cross street connection between the Town of Watertown and the City of Waterbury makes pedestrian and bicycle traffic movement more difficult, especially for students of Carrington Elementary School commuting to school. Figure 2 shows the regional context of the study area.

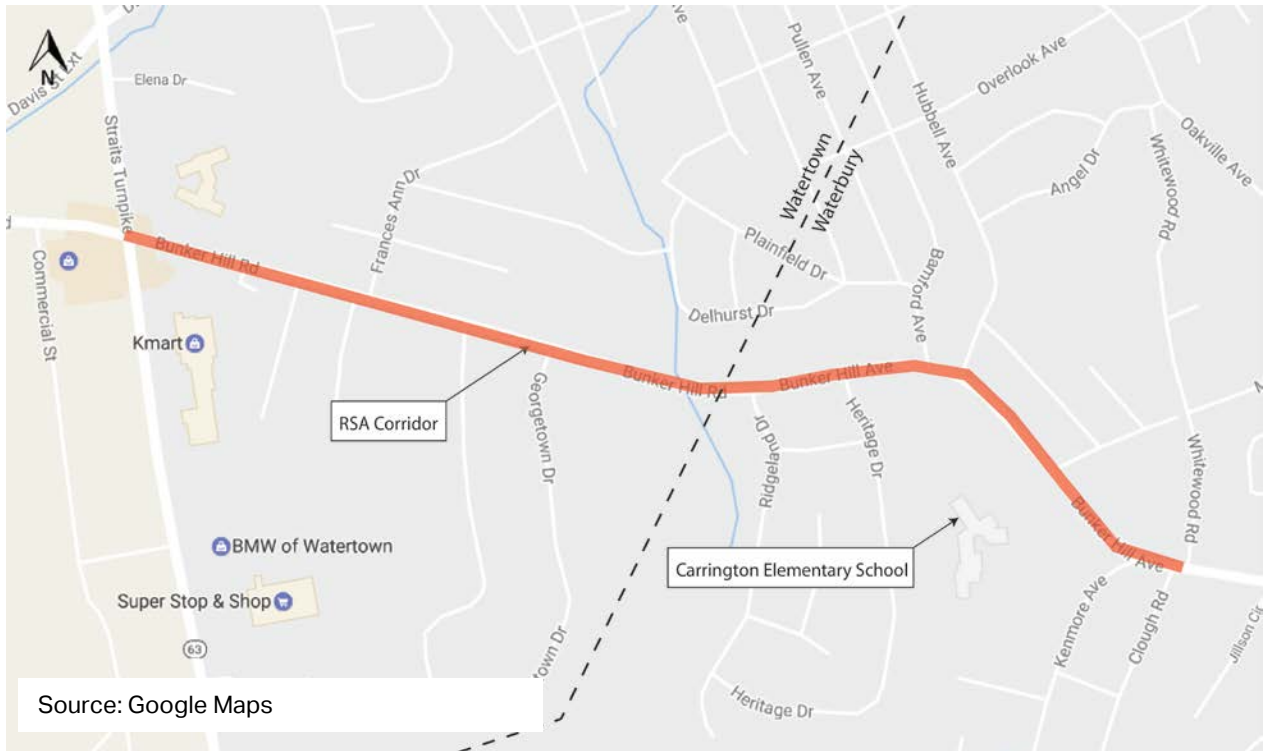


Figure 1: Watertown and Waterbury RSA Corridor

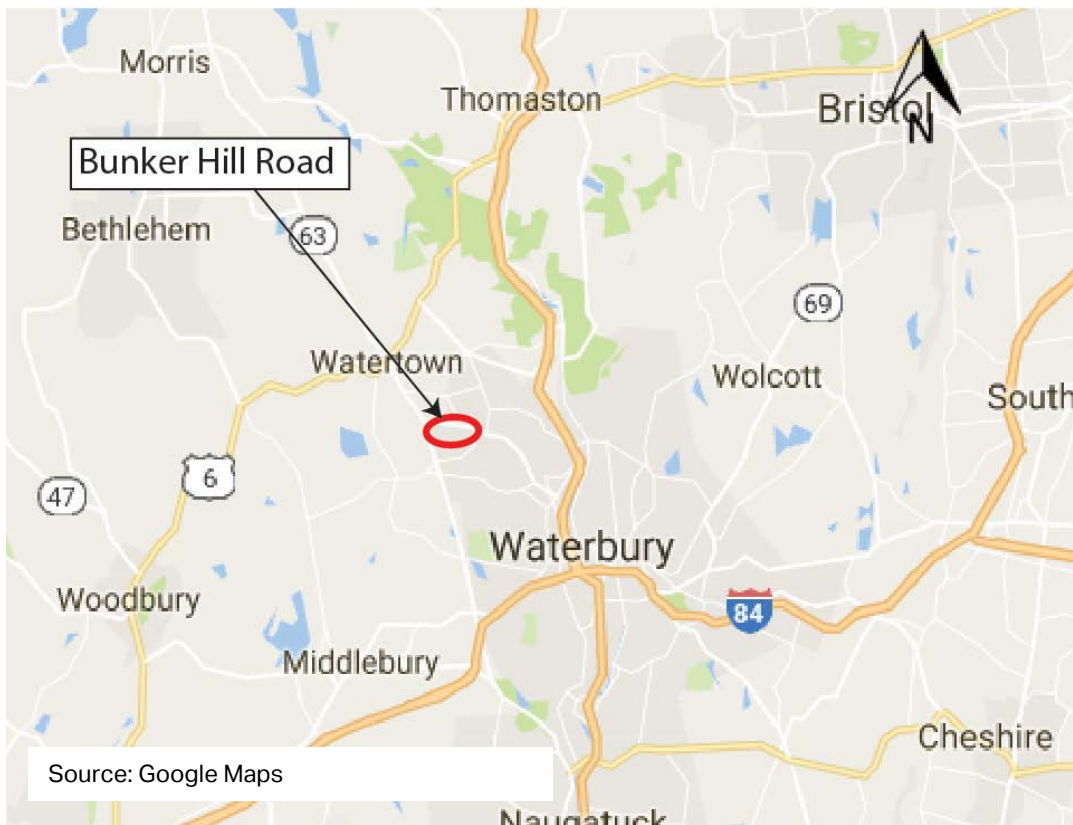


Figure 2: Regional Context

## 2 Pre-Audit Assessment

### 2.1 Pre-Audit Information

Between 2012 and 2014 there were 46 crashes in the RSA corridor. Most crashes (71%) reported in this area resulted in property damage only; the remaining 29% of crashes resulted in an injury (Table 1). No crashes involved cyclists but there was one pedestrian fatality in 2013 between Bamford Avenue and Genoa Avenue in Waterbury.

The crash types reported were primarily rear-end (Table 2). Figure 3 displays crashes that occurred in this area during 2015. The crash history for year 2015 shows that they are dispersed throughout the corridor.

Severity Type	Number of Accidents	
<b>Property Damage Only</b>	32	70%
<b>Injury (No fatality)</b>	13	28%
<b>Fatality</b>	1	2%
<b>Total</b>	46	

Table 1: Crash Severity 2012-2014

Source: UConn Connecticut Crash Data Repository

Manner of Crash / Collision Impact	Number of Accidents	
<b>Unknown</b>	2	4%
<b>Sideswipe-Same Direction</b>	9	20%
<b>Rear-end</b>	10	22%
<b>Turning-Intersecting Paths</b>	5	11%
<b>Turning-Opposite Direction</b>	2	4%
<b>Fixed Object</b>	4	9%
<b>Backing</b>	5	11%
<b>Angle</b>	3	7%
<b>Turning-Same Direction</b>	1	2%
<b>Moving Object</b>	0	0%
<b>Parking</b>	2	4%
<b>Pedestrian</b>	1	2%
<b>Overturn</b>	2	4%
<b>Head-on</b>	0	0%
<b>Sideswipe-Opposite Direction</b>	0	0%
<b>Miscellaneous- Non Collision</b>	0	0%
<b>Total</b>	46	

Table 2: Crash Type 2012-2014

Source: UConn Connecticut Crash Data Repository





Figure 3: Crashes that Occurred in 2015 (Connecticut Crash Data Repository)

Bunker Hill Road / Bunker Hill Avenue is a two-lane, local road with a posted speed limit of 25 MPH. Bunker Hill Road has sidewalk on the south side from the Waterbury town line to Straits Turnpike. Bunker Hill Avenue has sidewalk on the north side between the town line and Whitewood Road and on the south side between Genoa Avenue and Kenmore Road. The corridor has two midblock crosswalks at Georgetown Drive and Kenmore Road. There is one signalized intersection at the four-way junction of Straits Turnpike (Route 63) and Bunker Hill Road. The geometry of the corridor is shown in Figure 4 and described in Table 3.



Figure 4: Bunker Hill Road Geometrics

Street Name	Route	Travel Direction	Lane Width	Sidewalk				Curb	Parking	Shoulder	Ramps	
				Side	Type	Width	Condition*				Exist	Compliant
Bunker Hill Road/Straits Turnpike	n/a	east	20'	south	Concrete	5'	good	concrete	no	no	yes	no
	n/a	west	35' (3 lanes)	north	n/a	n/a	n/a	concrete	no	no	yes	no
Bunker Hill Road/Birch Meadow Drive	n/a	east	20'	south	Concrete	4'	fair-good	concrete	no	no	yes	no
	n/a	west	20'	north	n/a	n/a	n/a	concrete	no	no	n/a	n/a
Bunker Hill Road/Sprucewood Road	n/a	east	20'	south	Concrete	4-5'	good	concrete	no	no	yes	no
	n/a	west	20'	north	n/a	n/a	n/a	concrete	no	no	n/a	n/a
Bunker Hill Road/Georgetown Drive (west)	n/a	east	20'	south	Concrete	4'	good	concrete	no	no	yes	
	n/a	west	20'	north	n/a	n/a	n/a	concrete	no	no	no	
Bunker Hill Road/Georgetown Drive (west)t	n/a	east	16'	south	Concrete	4'	good	concrete	no	1'	yes	yes
	n/a	west	two 12' lanes	north	n/a	n/a	n/a	concrete	no	1'	no	n/a
Bunker Hill Ave/Ridgeland Drive	n/a	east	16'	south	no	n/a	n/a	asphalt/ low reveal	no	7'	yes	no
	n/a	west	16'	north	asphalt	3'	poor	asphalt/ low reveal	no	6	n/a	n/a
Bunker Hill Ave/Heritage Drive	n/a	east	13'	south	n/a	n/a	n/a	asphalt	no	6'	no	no
	n/a	west	15'	north	bituminous asphalt	5'	poor	asphalt	no	5'	yes	no
Bunker Hill Ave/Bamford Avenue	n/a	east	16'	south	n/a	n/a	n/a	asphalt	no	6'	no	no
	n/a	west	14'	north	bituminous asphalt	3-4'	poor	asphalt	no	5'	yes	no
Bunker Hill Ave/Genoa Street	n/a	east	16'	south	bituminous asphalt	4'	poor	asphalt low reveal	no	7-8'	no	no
	n/a	west	15'	north	bituminous asphalt	4'	poor	asphalt low reveal	no	4-5'	no	no
Bunker Hill Avenue/Martone	n/a	east	14'	south	bituminous asphalt	4'	poor	asphalt low reveal	no	7-8'	no	no
	n/a	west	14'	north	bituminous asphalt	4'	poor	asphalt low reveal	no	4-5'	no	no
Bunker Hill Avenue/ Kenmore road	n/a	east	16'	south	bituminous asphalt	4'	poor	asphalt low reveal	no	7-8'	no	no
	n/a	west	16'	north	bituminous asphalt	4'	poor	asphalt low reveal	no	4-5'	no	no

**Table 3 Roadway Inventory**

\*CONDITION – “Good” is Serviceable Condition that meets current design standards. “Fair” is generally serviceable, but may need minor repairs, or may not completely align with current design standards. “Poor” is not serviceable, and generally inadequate for continued long-term use.

## 2.2 Prior Successful Efforts

There are no relevant prior efforts in this corridor. The corridor does have planned projects that will upgrade handicap accessibility and traffic signs.

## 2.3 Pre-Audit Meeting

The RSA was conducted on April 18, 2017. The Pre-Audit meeting was held at 8:30 AM in the Hemingway Municipal Center located at 61 Echo Lake Road, Watertown, CT.

The RSA Team was comprised of staff from CTDOT, AECOM and VN Engineers, and representatives from several Watertown and Waterbury departments and organizations including the Engineering Department, Police Department and the Department of Public Works. The complete list of attendees can be found in Appendix B. Materials distributed to the RSA Team, including the agenda, audit checklist, ADT counts, crash data and road geometrics, can be found in Appendix C.

RSA Team members from Watertown presented relevant information for the audit, including:

- The City of Watertown and Waterbury are willing to cooperate to ensure the safety of pedestrians along this corridor.
- The primary objective is to create a continuous pedestrian path between Straits Turnpike and Bunker Hill Avenue in Waterbury.
- Within this corridor there was a pedestrian fatality.
- ADT on Bunker Hill Road (Watertown) is 9,500.
- ADT on Bunker Hill Ave (Waterbury) is 9,600.
- Heavy traffic for a local road.
- No parking along the corridor.
- Highest causes of crashes were rear-end and sideswipe same direction.
- Two overturn crashes which are attributed to speed and/or geometry of roadway.
- No speed counts have been conducted.
- CTDOT will consider GPS and STRAVA data for the Town and City to evaluate.
- Along this corridor there are two facilities with physically compromised residents: The Apple Rehab located at 35 Bunker Hill Road and Pleasant View Manor at 225 Bunker Hill Road.
- Staff at Pleasant View Manor stated that the facility's 18 residents have difficulty safely crossing Bunker Hill Road to the sidewalk on the south side of the corridor; residents use this corridor for exercise and travel to the shops on Route 63.
- 20% of accidents occurred at night; possibly attributed to lighting.

- The highest percentage of crashes occur midday; possibly attributed to drivers going to businesses along Route 63 in Watertown.
- No schools along Bunker Hill Road or Avenue in this section of the corridor; Carrington Elementary School is located to the south of the study area at 24 Kenmore Avenue, which intersects Bunker Hill Avenue at the easternmost portion of this corridor.
- The Crosswalk at the crest of Bunker Hill Road and Georgetown Road is of primary concern for the Town of Watertown; limited sight distance for cars approaching in both directions due to vertical and horizontal curvature.
- Providing a safe crossing for pedestrians from the sidewalk termination along the south side of Bunker Hill Road to its continuation along the north side at the Waterbury and Watertown line is a major concern.
- Cars exiting the eastern leg of Georgetown Drive must take a right onto Bunker Hill Road.
- There are two bus stops eastbound and two bus westbound within the corridor, located just east of Ridgeland Drive and east of Straits Turnpike in front of Apple Rehab; they do not have bus shelters.
- Discussion occurred regarding installing a crosswalk at the bus stop near Ridgeland Drive but line of sight issues exist.
- Possible coordination with CT Transit to relocate bus stops closer to pedestrian signals at intersection with Route 63.
- The Town of Watertown was granted LOTCIP funding for ramp upgrades along Bunker Hill Road but project status is currently unknown.
- Upcoming Watertown Projects:
  - 2017-2018 Watertown town-wide signage update program with retroreflective strips on all posts.
  - 2018-2019 Town to replace all current regulatory signs with updated retroreflective materials.

### 3 RSA Assessment

#### 3.1 Field Audit Observations

- Bunker Hill Avenue and Straits Turnpike (Route 63) a four-way signalized intersection in the Town of Watertown.
- At this intersection, exclusive pedestrian activated signals are in operation; the eastern leg of the crossing is 83' long (Figure 5).
- Crosswalks are in good condition on all legs of



Figure 5: Straits Turnpike and Bunker Hill Road Intersection

the intersection.

- The Bunker Hill westbound approach widens to three lanes at the intersection with Straits Turnpike, with exclusive right turn, exclusive through, and exclusive left turn lanes.
- Pedestrian head on the south-east corner is not properly aligned.
- Bunker Hill Ave measures 40' in overall width, east of Straits Turnpike; there is a double yellow center line only. There are no shoulder lines. (Figure 6).
- There is adequate space to stripe a bike lane or a shoulder to if the travel lanes are narrowed to 11'.
- There is concrete sidewalk on the south side, adjacent to the eastbound travel lanes. They end at the town line.
- A four-foot grass strip provides a sufficient buffer between vehicles and pedestrians.
- There is street lighting throughout the entire corridor.
- Bunker Hill Road is primarily residential and intersected by several side streets.
- Apple Rehab is located on the north side. There is an unorthodox pedestrian crossing sign along the westbound side just east of the entrance to the facility (Figure 7).
- The following roads have striped crosswalks and non-ADA compliant ramps:
  - Birch Meadow, Sprucewood Road, Georgetown Drive - western portion.
- Crosswalks with ADA compatible ramps:
  - Georgetown Drive eastern intersection.
- There is a significant vertical curve at Sprucewood Drive and Georgetown Drive, posing a challenge for ADA compliant sidewalk grades.
- There is a water gate that poses a tripping hazard in this section of sidewalk due to settlement (Figure 8).



Figure 6: View of Bunker Hill Road corridor facing east



Figure 7: Pedestrian Crossing Sign



Figure 8: Utility access point obstruction

- Georgetown Drive is a U-shaped road with two spurs intersecting Bunker Hill Road. The eastern leg intersects Bunker Hill Road in front of Pleasant View Manor. (Figure 9).
- Crosswalks are striped on Georgetown Drive and Bunker Hill Road (Figure 10).
- The Bunker Hill crossing has limited sight distance for vehicles approaching from both directions.
- Island in the center of the Georgetown Drive crossing separates the egress and ingress flow; exiting vehicles are restricted to turn right onto Bunker Hill Road at this intersection.
- Current pedestrian crossing signs lack the supplemental arrows to indicate the exact location of the crosswalk; the advanced warning signage along both approaches is incomplete, with no corresponding distance plaque.
- A left turn bay for Georgetown Drive (eastern leg) measures 10 feet wide, reducing the shoulder to less than a foot in both directions; the through lanes are reduced to 16' eastbound and 12' westbound.
- East of the intersection at Ridgeland Drive, Bunker Hill Avenue (in Waterbury) widens to 45', with 6-7' shoulders along both sides.
- Sidewalk abruptly terminates on the southern side at the Waterbury/Watertown line (Figure 11).
- Sidewalk continues on the northern side of Bunker Hill Avenue in Waterbury.
- There are no pedestrian crossing features to cross Bunker Hill Road. The horizontal curvature and high travel speeds pose a hazard to walkers in this corridor.



**Figure 9: Crosswalk at Pleasant View Manor**



**Figure 10: Bunker Hill Road**



**Figure 11: Sidewalk termination in Watertown**

- The Waterbury segment of sidewalk is in poor condition, and constructed of bituminous asphalt. There is significant erosion and deterioration; sand deposits from the treatment of winter roads collect in the sidewalk area. (Figure 12).
- East of Genoa Avenue sidewalks are constructed along both sides of the road.
- There is no buffer between the sidewalk edge and road in the Waterbury section.
- The curb reveal is low on both sides of the corridor.
- The intersection of Kenmore Road and Bunker Hill Avenue is controlled by a side street stop sign. Signing for the school located on Kenmore Road is inconsistent. Although advanced School Zone crossing signs are posted, the eastbound sign has a 25-speed limit sign placard and the westbound sign does not. School crossing signs are posted on the west approach, but not the east.



Figure 12: Sidewalk along Waterbury side

### 3.2 Post-Audit Workshop - Key Issues

1. Request COG to perform speed counts along corridor.
2. Install Crosswalks between Heritage and Ridgeland Drive.
3. Extend sidewalk from Watertown side, determine best location and install a crosswalk with adequate sight distance to connect to Waterbury sidewalk.
4. High speeds have been noted along this corridor, despite posted speed of 25 MPH (Figure 13).
5. Increased enforcement would deter speeding, speed trailers are a viable option.



Figure 13: 25 MPH Speed Limit Posted



6. The Town and City would like to make bus stops along this corridor ADA compliant and more visible by installing bus stop signage.
7. Plan of Conservation and Development to be published in December of 2017 with a *complete streets* approach for future development.
8. Waterbury and Watertown share the same priorities along this corridor: speed control, pedestrian safety at the few crossings, and better bicycle accommodations.
9. The audit team would like to narrow travel lanes to 11' or 12' (Figure 14).
10. The team discussed installing rapid flashing rectangular beacons and advanced pedestrian crossing signs with beacons and distance plaques on both approaches to the crosswalk at Pleasant View Manor.
11. The left-turn bay at the Bunker Hill Avenue and Georgetown Drive intersection could be reviewed for turning movements to determine if it is justified; current lane geometry precludes striping a shoulder.
12. The Town discussed installing a crosswalk with flashing beacons and texturized crossing to link the sidewalks along Bunker Hill Road and Bunker Hill Avenue between Heritage Drive and Ridgeland Drive.
13. Members were unsure of the Plan of Conservation and Development requirements for lane width.
14. Bunker Hill Avenue (Waterbury) shows signs of erosion, sidewalk deterioration, and debris and sand deposits.
15. The Town to contact the COG for pedestrian counts.
16. Town to investigate the warrant for installing a HAWK signal at the current crosswalk at Pleasant View Manor and at the proposed one on Bunker Hill Avenue (Figure 15).



Figure 14: Current lane widths



Figure 15: Hybrid Pedestrian Beacon

## 4 Recommendations

From the discussions during the Post-Audit meeting, the RSA team compiled a set of recommendations that are divided into short-term, mid-term, and long-term categories. For the purposes of the RSA, **Short-term** is understood to mean modifications that can be expected to be completed very quickly, perhaps within six months, and certainly in less than a year if funding is available. These include relatively low-cost alternatives, such as striping and signing, and items that do not require additional study, design, or investigation (such as right-of-way acquisition). **Mid-term** recommendations may be costlier and require establishment of a funding source, or they may need some additional study or design. They should not require significant lengths of time before they can be implemented. Generally, they should be completed within a window of eighteen months to two years. **Long-term** improvements are those that require substantial study and engineering, and may require significant funding mechanisms and/or right-of-way acquisition. These projects generally fall into a horizon of two years or more once funding is secured.

**Note** – Since RSA has been completed the following has been accomplished:

- Sidewalk has been swept.
- NVCOG assistance has been requested for speed/traffic counts on road between Heritage Drive and Ridgeland Drive.
- NVCOG assistance has been requested with turning counts on Bunker Hill Road at the Georgetown Drive left turn lane.
- NVCOG reports that there are a couple of bus stop studies being done by Northeast Transportation. Status of studies is unknown.
- Report has been transmitted to LTA and City of Waterbury for review and comment.

### 4.1 Short Term

1. Town of Watertown and City of Waterbury to remove sand and debris from roads and sidewalks along corridor.
2. Town of Watertown to coordinate with CTDOT to determine status of LOTCIP funding for ramp upgrades along Bunker Hill Road (Figure 16).
3. Town and City to stripe shoulders and narrow travel lanes to 11' in both directions to channelize traffic and provide visual cues to motorists and vulnerable users.
4. City of Waterbury and Town of Watertown to collaborate with law enforcement to install speed radar trailers at strategic locations throughout corridor, to enforce current posted speed.



Figure 16: Sample ADA compliant ramps

5. Town of Watertown to coordinate with CTDOT District office to fix the pedestrian head at the Straits Turnpike and Bunker Hill Road intersection.
6. The Town of Watertown and City of Waterbury to coordinate with COG to conduct speed and pedestrian counts along the corridor.
7. The Town of Watertown to conduct turning moving counts to determine if the left turn bay is justified at the Bunker Hill Road and Georgetown Drive intersection.
8. The Town of Watertown and the City of Waterbury to coordinate with CTTransit to discuss relocating bus stops at current or future crosswalks along this corridor.
9. Town to replace outdated pedestrian signs and install MUTCD compliant advanced crosswalk signage with distance indicator and down arrows for the Bunker Hill Road crosswalk in front of Pleasant View Manor (Figure 17).
10. Town to reset the protruding water gate along the sidewalk in Watertown section of Bunker Hill Road.
11. Town of Watertown to remove pedestrian crossing sign at the Apple Rehab building, westbound.
12. Town and City to replace all catch basin with traversable grates with bike compatible grates.
13. Town of Watertown to coordinate with CTDOT Office of the State Traffic Administration, as the segment of Bunker Hill Road between Route 63 and the Waterbury Town Line listed as a 30 mph zone with a posted speed of 25mph. The speed limit signage should be changed to reflect this fact.



Figure 17: Sample of rectangular flashing pedestrian beacon

Figure 18 depicts these recommendations.

# Short-term improvements

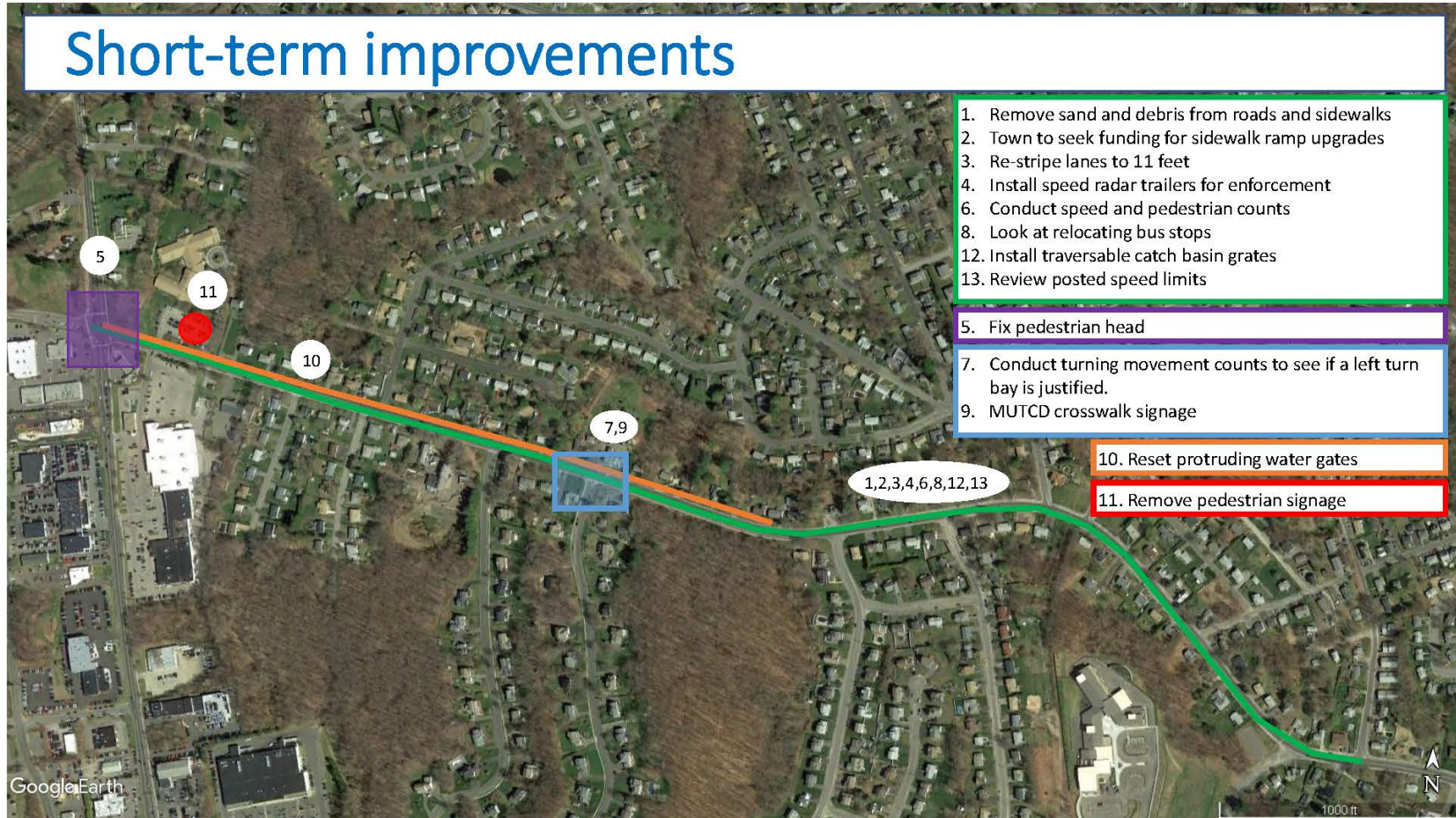


Figure 18 Short Term Recommendations

## 4.2 Medium Term

1. Town to install a crosswalk to link the sidewalks along Bunker Hill Road and Bunker Hill Ave at current town line where sidewalks terminate and consider installing rectangular flashing pedestrian beacons at this crossing.
2. Town to determine if advanced pedestrian crossing warning signs with flashing beacons are warranted at this crossing.
3. Town to consider upgrading the crosswalk at Pleasant View Manor with the following safety features if warranted:
  - a. texturized materials;
  - b. raised crosswalk;
  - c. bump outs to narrow crossing (Figure 19); and
  - d. installing a hybrid pedestrian beacon signal.



Figure 19: Sample bump out

Figure 20 depicts these recommendations.

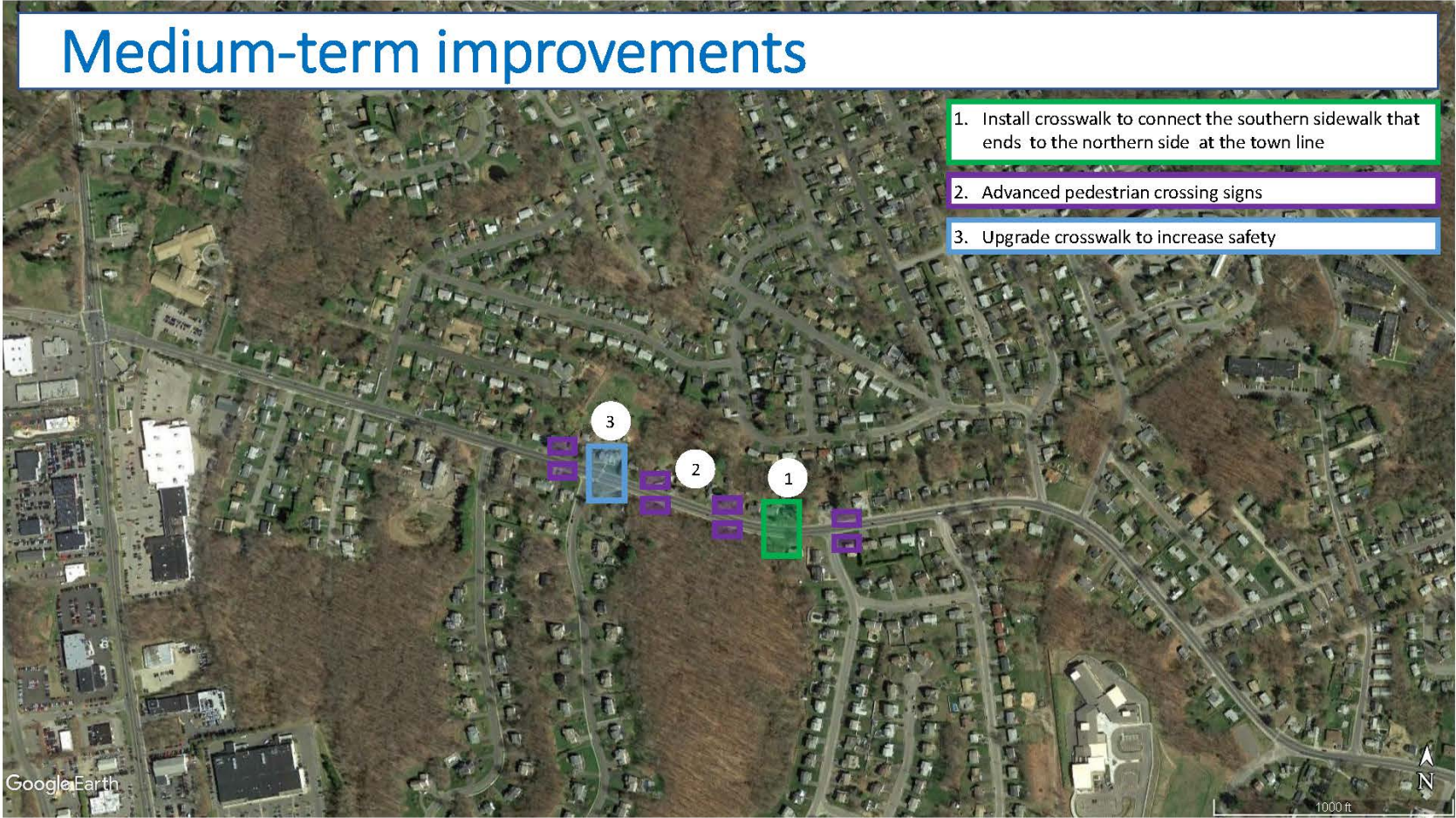


Figure 20 Mid Term Recommendations

### 4.3 Long Term

1. Town to extend sidewalk along Bunker Hill Road east across Waterbury town line to connect to sidewalk at Genoa Avenue.
2. City to fix deteriorated sidewalk along Bunker Hill Ave in the City of Waterbury

Figure 21 depicts these recommendations.

# Long-term improvements

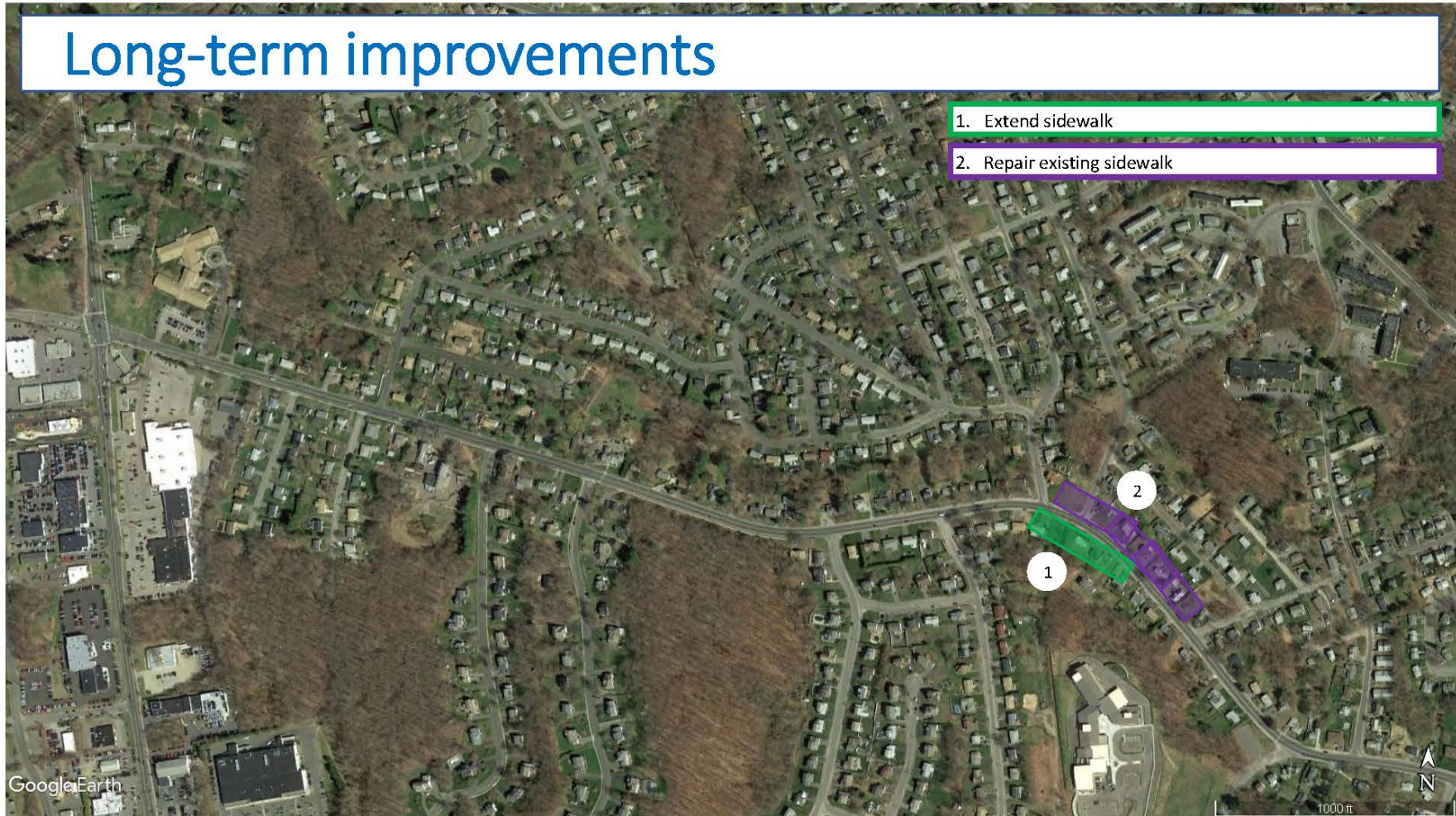


Figure 21 Long Term Recommendations



#### 4.4 Summary

This report outlines the observations, discussions and recommendations developed during the RSA. It documents the successful completion of the City of Waterbury and Town of Watertown RSA and provides an outlined strategy to improve the transportation network along Bunker Hill Road/Bunker Hill Avenue for all road users, particularly focusing on pedestrians and cyclists. Moving forward, the City of Waterbury and Town of Watertown may use this report to prepare strategies for funding and implementing the improvements along Bunker Hill Road/Bunker Hill Avenue, and as a tool to plan for including these recommendations into future development.



**COMMUNITY**  
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# Appendix A



**AECOM**  
Built to deliver a better world

# Welcome to the Community Connectivity Program Application



Please fill in the following information to provide the Audit team leaders with a comprehensive description of the area contained in this application.

## 1. Applicant contact information

<b>Name</b>	<input type="text"/>
<b>Title</b>	<input type="text"/>
<b>Email Address</b>	<input type="text"/>
<b>Telephone Number</b>	<input type="text"/>

## 2. Location information

<b>Address</b>	<input type="text"/>
<b>Description</b>	<input type="text"/>
<b>City / Town</b>	<input type="text"/>

**3. Roadway type**  
**(Please select all that apply)**

State road

Local road

Private Road

Other (please specify)

**4. Zoning**  
**(Please select all that apply)**

Industrial

Residential

Commercial

Mixed Use

Retail

N/A (not applicable)

Other (please specify)

**5. Approximate mile radius around the location**

Other (Please Specify)

**6. Community Sites**  
**(Please select all that apply)**

Community Centers

Business Districts

Restaurant/Bar Districts

Churches

Housing Complexes

Proximity to Schools

Tourist Locations (examples – Casino, Malls, Parks, Aquarium, etc...)

N/A (not applicable)

Other (please specify)

**7. Employment Facilities**  
**(Retail, Industrial, etc...)**

Yes

No

**If Yes please describe (please specify)**

**8. Educational facilities**

**(Please select all that apply)**

Public, Parochial, Private Schools (more than 1 school within a ½ mile)

University / Community Colleges

N/A (not applicable)

Other (please specify)

**9. Transit facilities**

**(Please select all that apply)**

Bus

Rail

Ferry

Airport

Park and Ride Lot

N/A (not applicable)

Other (please specify)

**10. Safety Concerns**  
**(Please select all that apply)**

Traffic (volumes & speed)

Collisions

Sidewalks

Traffic Signals

Traffic Signs

Parking Restrictions / Additions

Drainage

ADA Accommodations

Agricultural & Live Stock crossing

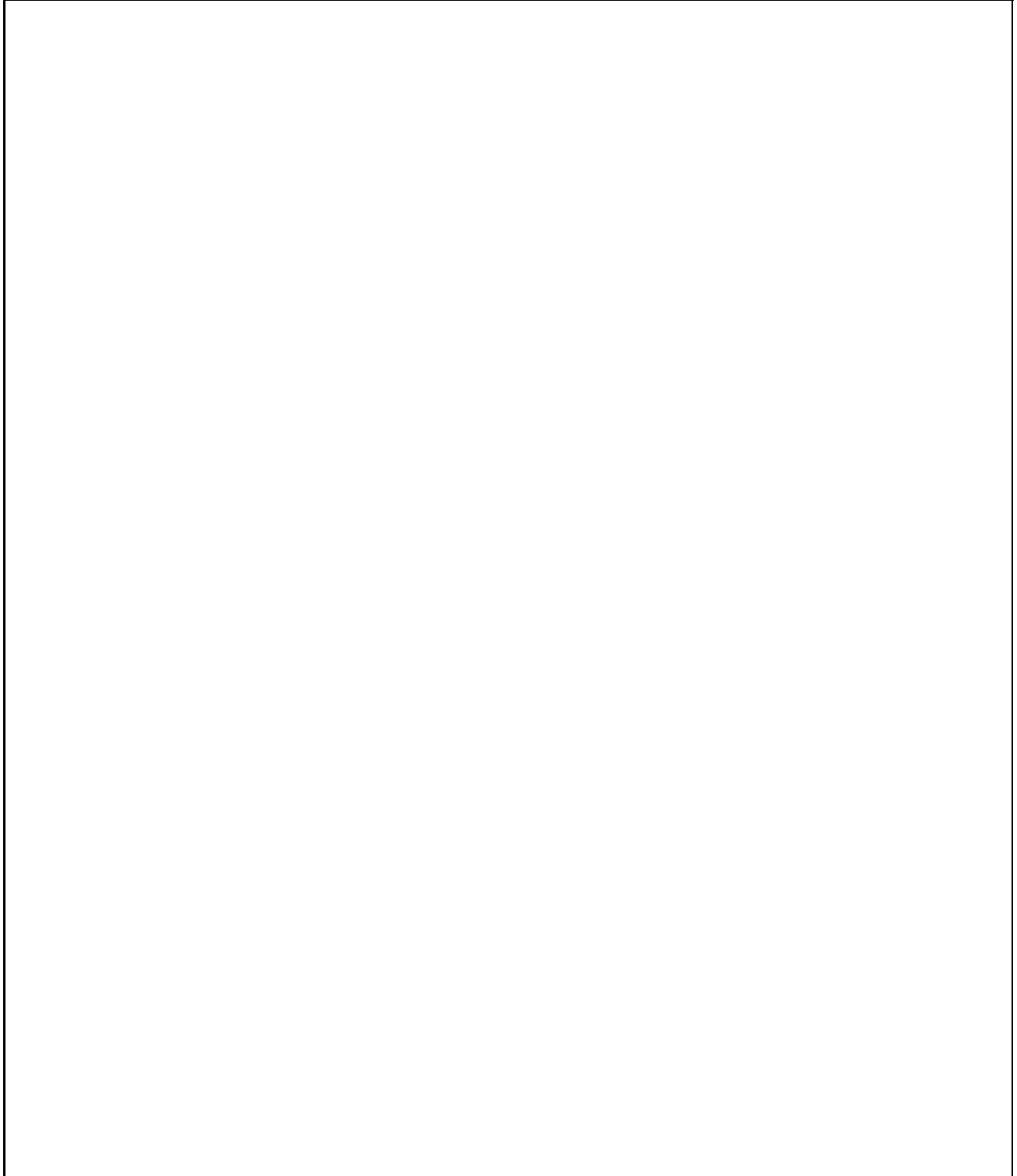
Maintenance issues (cutting grass, leaves, snow removal)

N/A (not applicable)

Other (please specify)

**11. Are there any past, current or future transportation/economic development projects near this location (i.e. Federal, State or local projects)?**

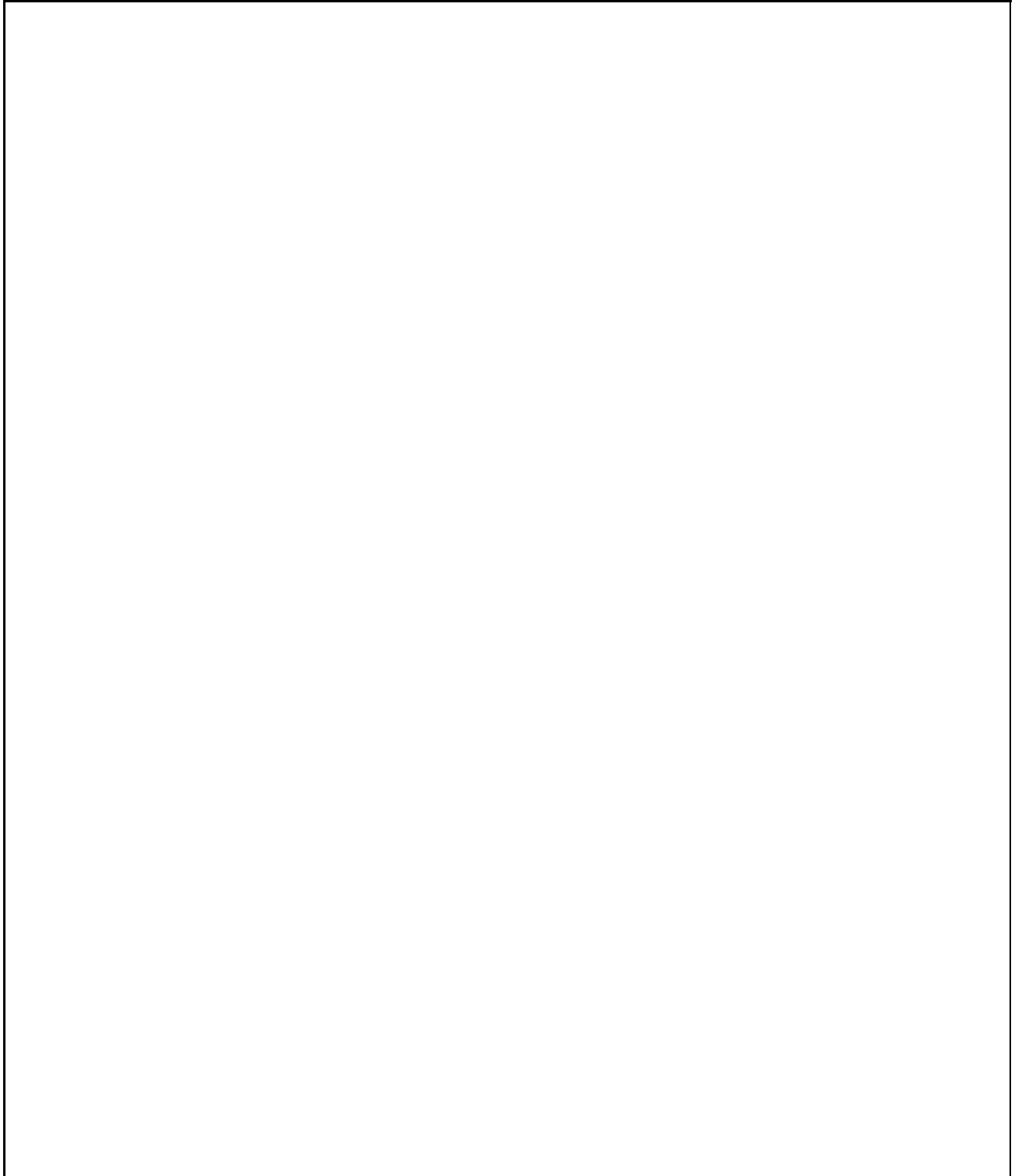
**If Yes please describe and list all projects.**

A large, empty rectangular box with a thin black border, intended for the user to describe and list any past, current, or future transportation or economic development projects near the location. The box is currently blank.



**12. Environmental Concerns:**

**If Yes please describe and list.**

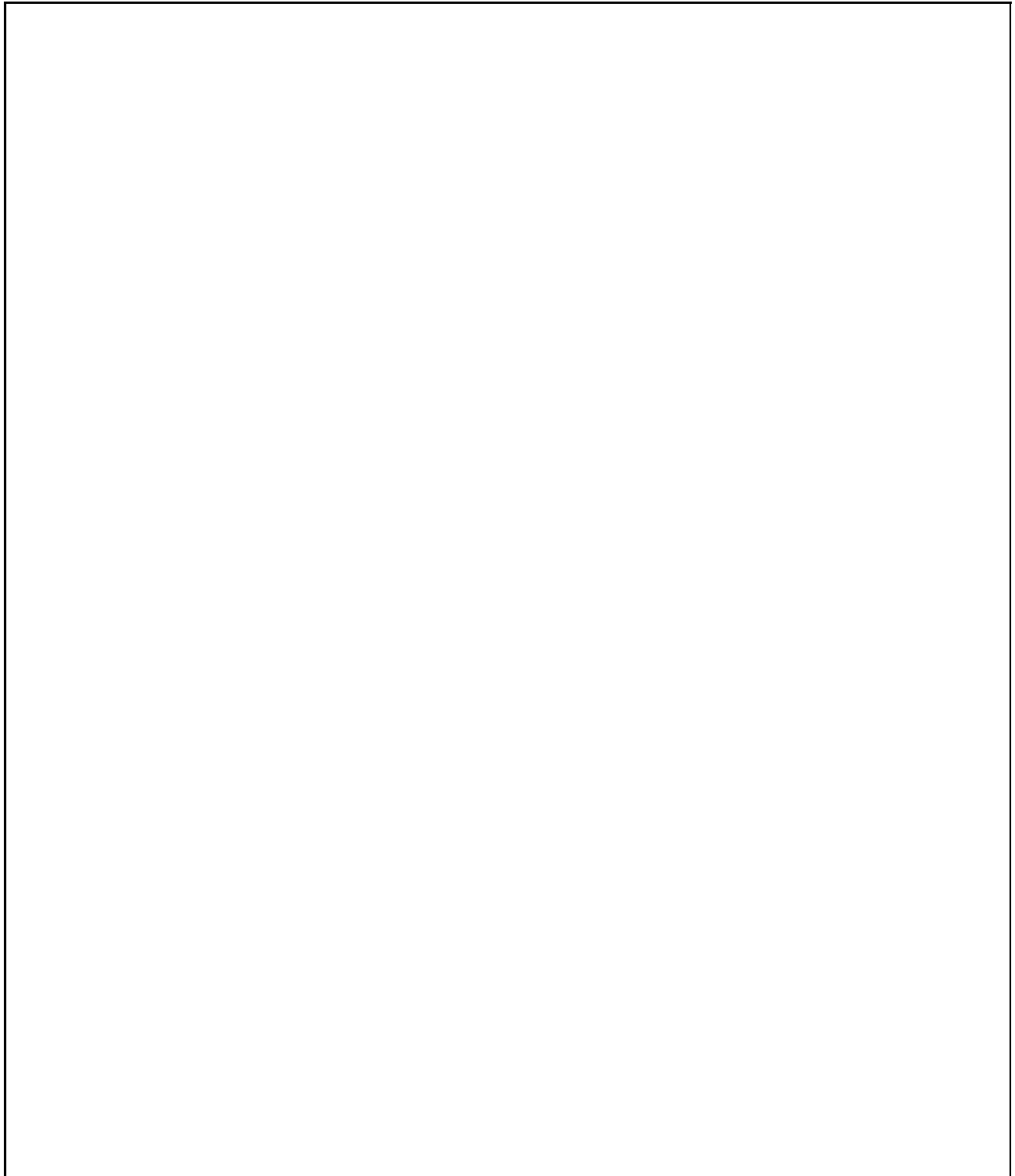
A large, empty rectangular box with a thin black border, intended for the user to describe and list any environmental concerns. The box occupies most of the page's vertical space below the instruction.

**13. Please explain why this location should be considered for an RSA**

A large, empty rectangular box with a thin black border, intended for the user to provide an explanation for why a location should be considered for an RSA. The box occupies most of the page's vertical space below the question.

**14. Are there plans to expand the area?**

(Transportation Oriented Development, Economic Development, housing, etc...)



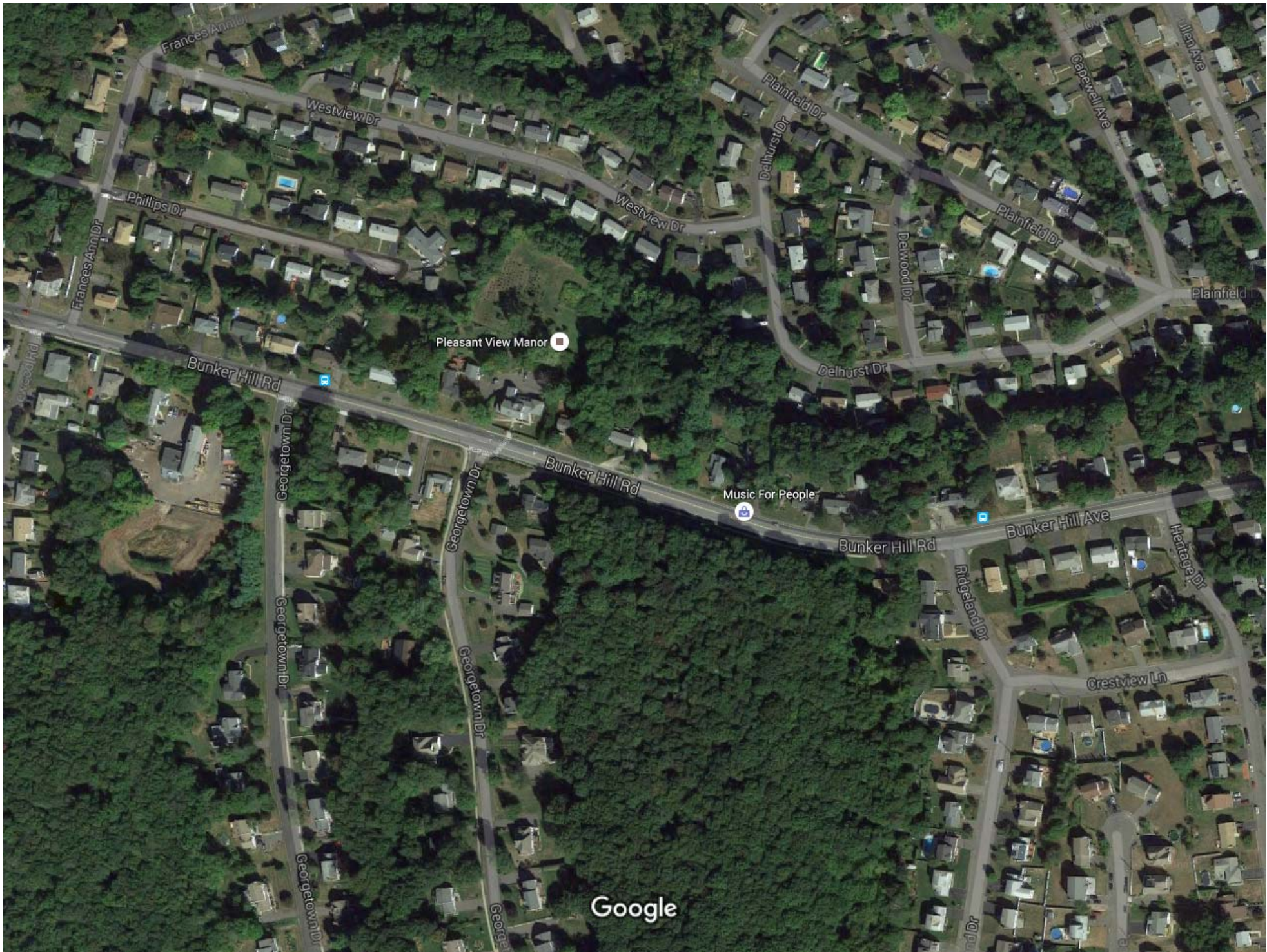
**15. Any other pertinent information that is unique to this location?**

A large, empty rectangular box with a thin black border, intended for the user to provide any other pertinent information unique to the location.

**Thank you for completing the Community Connectivity application.**

**Please click on the "submit button" below and include the following attachments**

- 1 Location map (google, GIS) **(Required)**
- 2 Collision data (If available)
- 3 Traffic data (ADT or VMT) (If available)
- 4 Pedestrian/bicycle data (If available)



Pleasant View Manor

Music For People

Google



**COMMUNITY**  
connectivity program

# Appendix B



**AECOM**  
Built to deliver a better world



## Road Safety Audit

**Town:** Watertown  
**RSA Location:** Bunker Hill Road  
**Meeting Location:** Heminway Municipal Center  
**Address:** 61 Echo Lake Road, Watertown, CT 06795  
**Date:** 4/18/2017  
**Time:** 8:30AM

## Participating Audit Team Members

Audit Team Member	Agency/Organization
Audit Team Member	Agency/Affiliation
Stephen Mitchell	AECOM
Bridget Boucaud	VN Engineers
Kara Chandler	CTDOT
Craig Babowicz	CTDOT
Marlon Pena	CTDOT
Paul Bunevich	WTN Town Engineer
Joseph Millette Jr.	WTN Engineer Tech II
Paul Bellagamba	Waterbury
David Simpson	Waterbury
Mark Massoud	Watertown
Roy Cavanaugh	Watertown DPW





**COMMUNITY**  
connectivity program

# Appendix C



**AECOM**  
Built to deliver a better world



# Road Safety Audit – Watertown

**Meeting Location:** Heminway Municipal Center  
**Address:** 61 Echo Lake Road, Watertown, CT 06795  
**Date:** 4/18/17  
**Time:** 8:30 AM

## Agenda

- Type of Meeting:** Road Safety Audit – Pedestrian Safety
- Attendees:** Invited Participants to Comprise a Multidisciplinary Team
- Please Bring:** Thoughts and Enthusiasm!!
- 8:30 AM**                      **Welcome and Introductions**
- Purpose and Goals
  - Agenda
- 8:45 AM**                      **Pre-Audit**
- Definition of Study Area
  - Review Site Specific Data:
    - Average Daily Traffic
    - Crash Data
    - Geometrics
  - Issues
  - Safety Procedures
- 10:00 AM**                      **Audit**
- Visit Site
  - As a group, identify areas for improvements
- 12:00 PM**                      **Post-Audit Discussion / Completion of RSA**
- Discussion observations and finalize findings
  - Discuss potential improvements and final recommendations
  - Next Steps
- 2:30 PM**                      **Adjourn for the Day – but the RSA has not ended**

### Instruction for Participants:

- Before attending the RSA, participants are encouraged to observe the intersection and complete/consider elements on the RSA Prompt List with a focus on safety.
- All participants will be actively involved in the process throughout. Participants are encouraged to come with thoughts and ideas, but are reminded that the synergy that develops and respect for others' opinions are key elements to the success of the overall RSA process.
- After the RSA meeting, participants will be asked to comment and respond to the document materials to assure it is reflective of the RSA completed by the multidisciplinary team.



## Audit Checklist

Pedestrians and Bicycles	Comment
<p><b>Pedestrian Crossings</b></p> <ul style="list-style-type: none"><li>• Sufficient time to cross (signal)</li><li>• Signage</li><li>• Pavement Markings</li><li>• Detectable warning devices (signal)</li><li>• Adequate sight distance</li><li>• Wheelchair accessible ramps<ul style="list-style-type: none"><li>○ Grades</li><li>○ Orientation</li><li>○ Tactile Warning Strips</li></ul></li><li>• Pedestrian refuge at islands</li><li>• Other</li></ul>	
<p><b>Pedestrian Facilities</b></p> <ul style="list-style-type: none"><li>• Sidewalk<ul style="list-style-type: none"><li>○ Width</li><li>○ Grade</li><li>○ Materials/Condition</li><li>○ Drainage</li><li>○ Buffer</li></ul></li><li>• Pedestrian lighting</li><li>• Pedestrian amenities (benches, trash receptacles)</li><li>• Other</li></ul>	



<b>Bicycles</b> <ul style="list-style-type: none"><li>• Bicycle facilities/design</li><li>• Separation from traffic</li><li>• Conflicts with on-street parking</li><li>• Pedestrian Conflicts</li><li>• Bicycle signal detection</li><li>• Visibility</li><li>• Roadway speed limit</li><li>• Bicycle signage/markings</li><li>• Shared Lane Width</li><li>• Shoulder condition/width</li><li>• Traffic volume</li><li>• Heavy vehicles</li><li>• Pavement condition</li><li>• Other</li></ul>	
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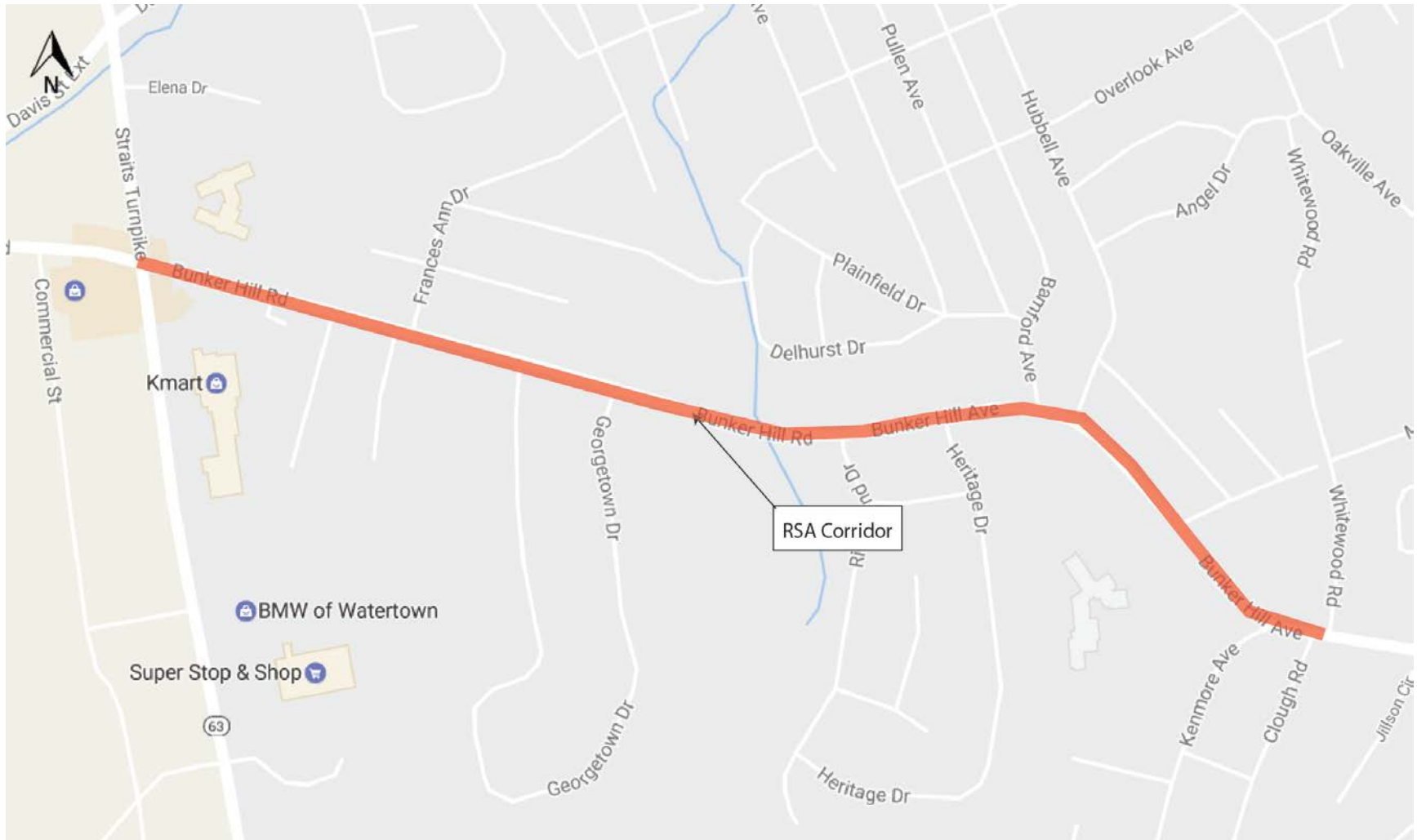
<b>Roadway &amp; Vehicles</b>	
<ul style="list-style-type: none"><li>• Speed-related issues<ul style="list-style-type: none"><li>○ Alignment;</li><li>○ Driver compliance with speed limits</li><li>○ Sight distance adequacy</li><li>○ Safe passing opportunities</li></ul></li></ul>	
<ul style="list-style-type: none"><li>• Geometry<ul style="list-style-type: none"><li>○ Road width (lanes, shoulders, medians);</li><li>○ Access points;</li><li>○ Drainage</li><li>○ Tapers and lane shifts</li><li>○ Roadside clear zone /slopes</li><li>○ Guide rails / protection systems</li></ul></li></ul>	

<ul style="list-style-type: none"><li>• Intersections<ul style="list-style-type: none"><li>○ Geometrics</li><li>○ Sight Distance</li><li>○ Traffic control devices</li><li>○ Safe storage for turning vehicles</li><li>○ Capacity Issues</li></ul></li></ul>	
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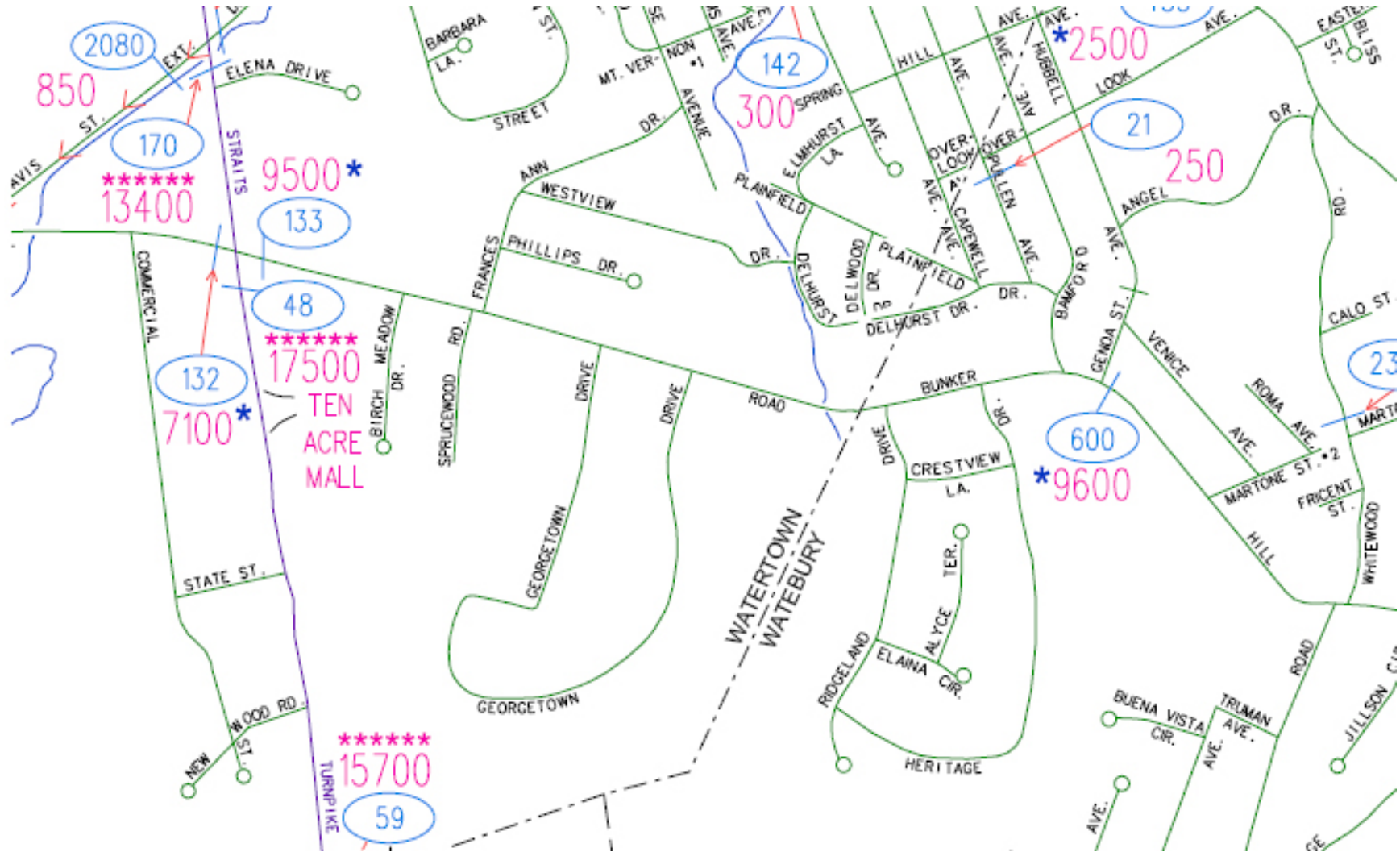


<ul style="list-style-type: none"><li>• Pavement<ul style="list-style-type: none"><li>○ Pavement Condition (excessive roughness or rutting, potholes, loose material)</li><li>○ Edge drop-offs</li><li>○ Drainage issues</li></ul></li><li>• Lighting Adequacy</li></ul>	
<ul style="list-style-type: none"><li>• Signing<ul style="list-style-type: none"><li>• Correct use of signing</li><li>• Clear Message</li><li>• Good placement for visibility</li><li>• Adequate retroreflectivity</li><li>• Proper support</li></ul></li></ul>	
<ul style="list-style-type: none"><li>• Signals<ul style="list-style-type: none"><li>○ Proper visibility</li><li>○ Proper operation</li><li>○ Efficient operation</li><li>○ Safe placement of equipment</li><li>○ Proper sight distance</li><li>○ Adequate capacity</li></ul></li></ul>	
<ul style="list-style-type: none"><li>• Pavement Markings<ul style="list-style-type: none"><li>○ Correct and consistent with MUTCD</li><li>○ Adequate visibility</li><li>○ Condition</li><li>○ Edgelines provided</li></ul></li></ul>	
<ul style="list-style-type: none"><li>• Miscellaneous<ul style="list-style-type: none"><li>○ Weather conditions impact on design features.</li><li>○ Snow storage</li></ul></li></ul>	

# Location Map



# ADT MAP

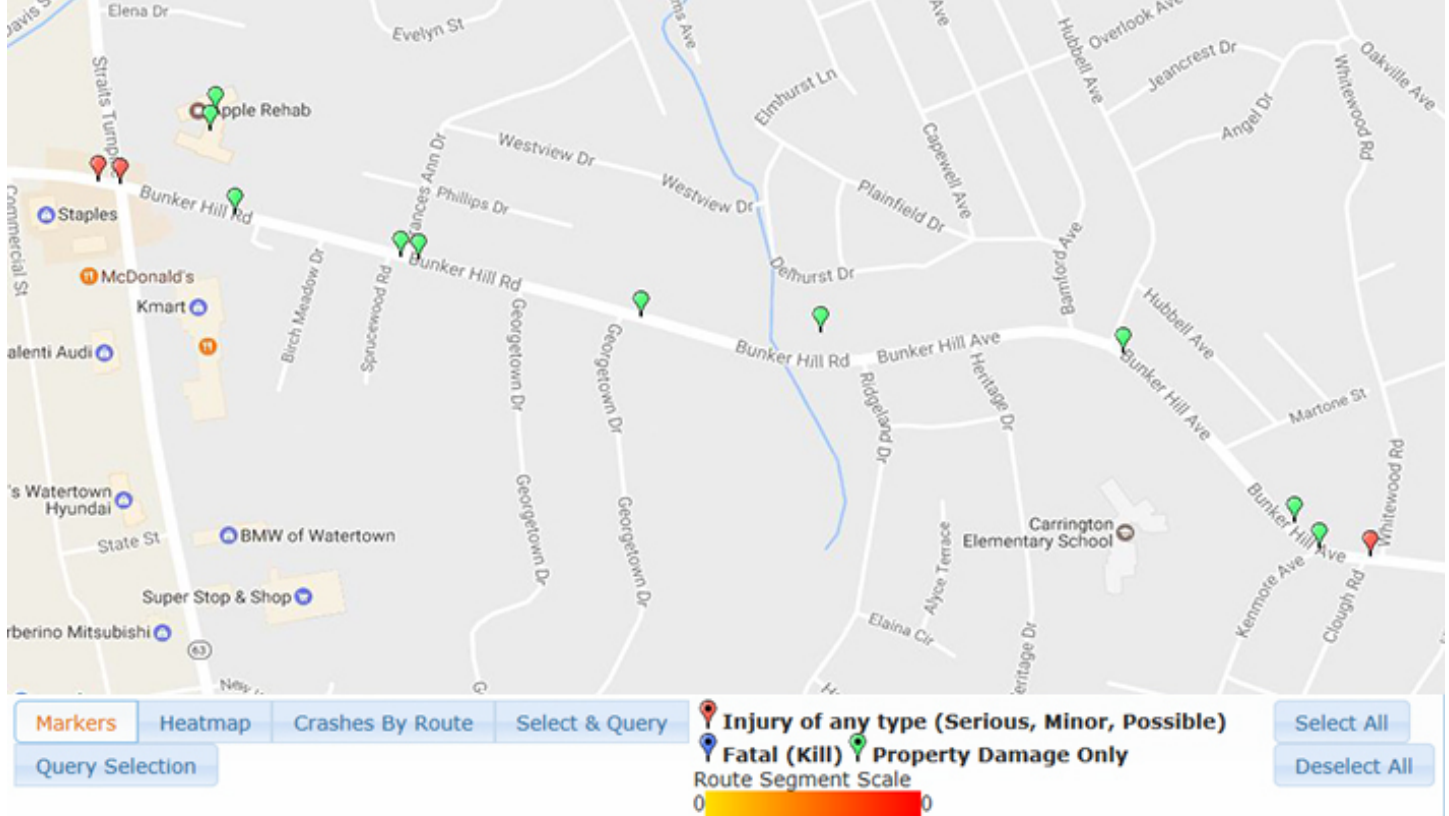


# 2015 Crashes

**UConn**

Connecticut Crash Data Repository

Search Criteria:



This web site is exempt from discovery or admission under 23 U.S.C. 409.

Connecticut Crash Data Repository [User Guide](#) [Contact Us](#)





## Road Safety Audit – Watertown

### Crash Summary

Data: 3 years (2012-2014)

There were no crashes that involved pedestrians.

There were no crashes involving bicyclists.

Severity Type	Number of Crashes	
Property Damage Only	32	71%
Injury (No fatality)	13	29%
Fatality	0	0%
<b>Total</b>	<b>45</b>	

Manner of Crash / Collision Impact	Number of Crashes	
Unknown	2	4%
Sideswipe-Same Direction	9	20%
Rear-end	10	22%
Turning-Intersecting Paths	5	11%
Turning-Opposite Direction	2	4%
Fixed Object	4	9%
Backing	5	11%
Angle	3	7%
Turning-Same Direction	1	2%
Moving Object	0	0%
Parking	2	4%
Pedestrian	0	0%
Overturn	2	4%
Head-on	0	0%
Sideswipe-Opposite Direction	0	0%
Miscellaneous- Non Collision	0	0%
<b>Total</b>	<b>45</b>	



Weather Condition	Number of Crashes	
Snow	1	2%
Rain	5	11%
No Adverse Condition	38	84%
Unknown	1	2%
Blowing Sand, Soil, Dirt or Snow	0	0%
Severe Crosswinds	0	0%
Sleet, Hail	0	0%
Other	0	0%
<b>Total</b>	<b>45</b>	

Light Condition	Number of Crashes	
Dark-Not Lighted	3	7%
Dark-Lighted	9	20%
Daylight	30	67%
Dusk	2	4%
Unknown	1	2%
Dawn	0	0%
<b>Total</b>	<b>45</b>	










Road Surface Condition	Number of Crashes	
Snow/Slush	1	2%
Wet	7	16%
Dry	35	78%
Unknown	1	2%
Ice	1	2%
Other	0	0.0%
<b>Total</b>	<b>45</b>	



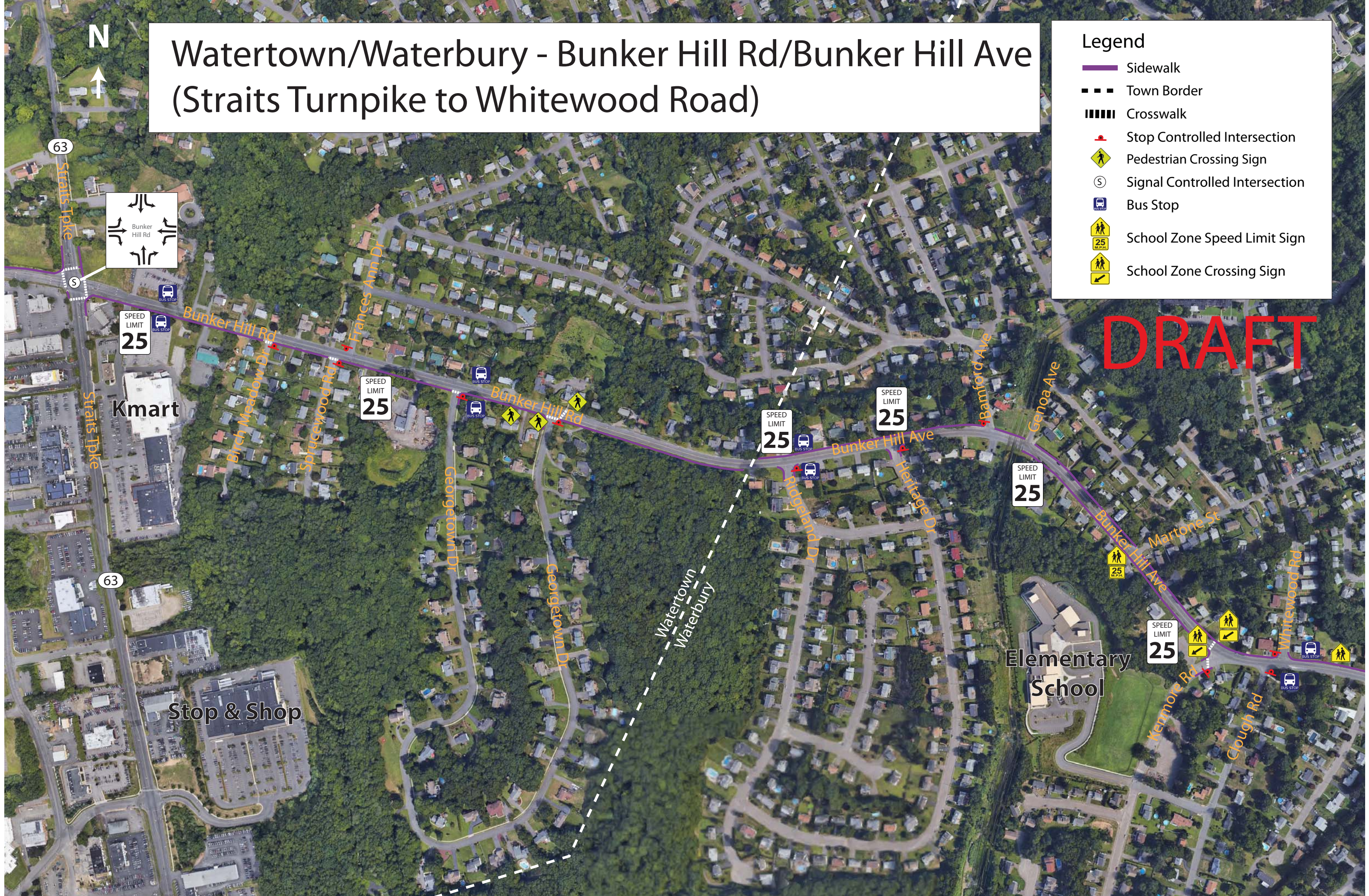
Time		Number of Crashes	
0:00	0:59	1	2%
1:00	1:59	0	0%
2:00	2:59	0	0%
3:00	3:59	0	0%
4:00	4:59	0	0%
5:00	5:59	0	0%
6:00	6:59	1	2%
7:00	7:59	2	4%
8:00	8:59	2	4%
9:00	9:59	1	2%
10:00	10:59	3	7%
11:00	11:59	1	2%
12:00	12:59	8	18%
13:00	13:59	2	4%
14:00	14:59	3	7%
15:00	15:59	5	11%
16:00	16:59	4	9%
17:00	17:59	1	2%
18:00	18:59	4	9%
19:00	19:59	2	4%
20:00	20:59	0	0%
21:00	21:59	4	9%
22:00	22:59	0	0%
23:00	23:59	1	2%
<b>Total</b>		45	

# Watertown/Waterbury - Bunker Hill Rd/Bunker Hill Ave (Straits Turnpike to Whitewood Road)

## Legend

-  Sidewalk
-  Town Border
-  Crosswalk
-  Stop Controlled Intersection
-  Pedestrian Crossing Sign
-  Signal Controlled Intersection
-  Bus Stop
-  School Zone Speed Limit Sign
-  School Zone Crossing Sign

**DRAFT**





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## **Post-Audit Discussion Guide**

### **Safety Issues**

- Confirmation of safety issues identified during walking audit

### **Potential Countermeasures**

- Short Term recommendations
  
  
  
  
  
  
  
  
  
  
- Medium Term recommendations
  
  
  
  
  
  
  
  
  
  
- Long Term recommendations

### **Next Steps**

- Discussion regarding responsibilities for implementing the countermeasures (including funding)



# Road Safety Audit – Watertown

## Fact Sheet

### Functional Classification:

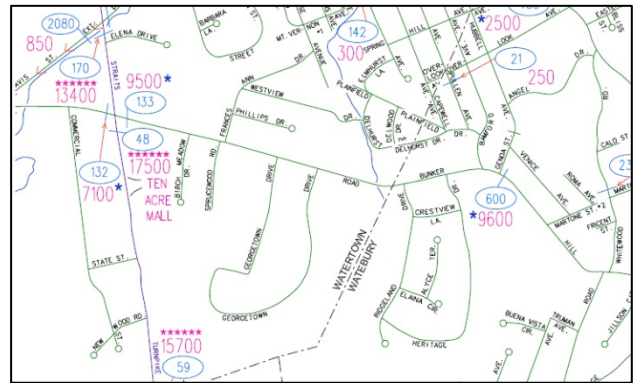
- Bunker Hill Road is classified as a Minor Arterial

### ADT

- ADT on Bunker Hill Road is 9,500 – 9,600

### Population and Employment Data (2014):

- Population: 22,286
- Employment: 8,168



### Urbanized Area

- Watertown is in the Waterbury Urbanized Area

### Demographics

- The statewide average percentage below the poverty line is 10.31%. There are no areas in Prospect exceeding the state average.
- The statewide average percentage minority population is 30.53%. There are no areas in Prospect exceeding the state average.

### Air Quality

- Watertown's CIPP number 324
- Watertown is within the Greater CT Marginal Ozone Area
- Watertown is within a CO Maintenance Area