



COMMUNITY
connectivity program

Bridgewater

Route 133 and Center Street – Road Safety Audit

August 2, 2016



AECOM

Acknowledgements:

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

With assistance from AECOM Transportation Planning Group

Contents

- 1 Introduction to Bridgewater Town Center RSA 6
 - 1.1 Location 6
- 2 Pre-audit Assessment..... 9
 - 2.1 Pre-audit Information 9
 - 2.2 Prior Successful Effort..... 14
 - 2.3 Pre-Audit Meeting 14
- 3 RSA Assessment..... 16
 - 3.1 Field Audit Observations 16
 - 3.2 Post Audit Workshop - Key Issues 21
- 4 Recommendations 21
 - 4.1 Short Term 22
 - 4.2 Medium Term 24
 - 4.3 Long Term..... 26
 - 4.4 Summary..... 29

Figures

Figure 1. Route 133 (Main Street), Center Street, and Clapboard Road, Bridgewater CT.....	7
Figure 2. Study Area – Regional Context.....	8
Figure 3. Crashes that Occurred in 2015 (Connecticut Crash Data Repository)	10
Figure 4. Roadway Geometrics	12
Figure 5. Intersection of Route 133 and Center Street.....	16
Figure 6. Wide radius at southeast corner of Route 133 and Center Street	16
Figure 7. Stop sign on Center Street set back from stop bar	16
Figure 8. Existing granite sidewalk on Center Street.....	17
Figure 9. East side of Center Street.....	17
Figure 10. Center Street cross section looking north.....	17
Figure 11. Crosswalk landing areas	18
Figure 12. Pedestrian crossing sign on Clapboard Road eastbound.....	18
Figure 13. Pedestrian crossing sign blocked by branches on westbound Clapboard Road	18
Figure 14. Clapboard Road cross section	19
Figure 15. Drainage issues and pavement rutting on northbound Route133 approach to Clapboard Road.....	19
Figure 16. Proposed Sidewalk alignment on east side of Route 133.....	19
Figure 17. Burnham School (north) driveway crosswalk.....	20
Figure 18. Burnham School (south) driveway crosswalk.....	20
Figure 19. Short Term Recommendations Map.....	23
Figure 20. Advance pedestrian sign.....	24
Figure 21. Example of one way street with angled parking.....	24
Figure 22. Medium Term Recommendations Map.....	25
Figure 23. Pedestrian detectable warning strip.....	27
Figure 24. Proposed new crosswalk location on Route 133 at Episcopal Church	27
Figure 25. Long Term Recommendations Map	28

Tables

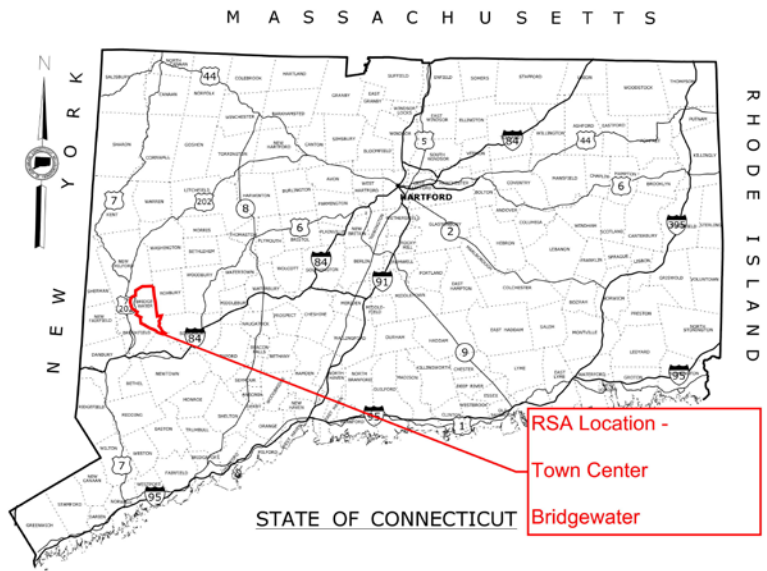
Table 1. Crash Severity 2012-2014.....	9
Table 2. Crash Type 2012-2014	9
Table 3. Street Inventory	13



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 FHWA. For details on this program, please refer to 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 Bridgewater Town Center RSA

The Town of Bridgewater submitted an application to complete an RSA on the streets within the town center to improve safety for pedestrians and bicyclists. The audit focuses on the streets surrounding the town green including Route 133 (Main Street), Center Street, and Clapboard Road. The Town utilizes the green for events attracting pedestrian traffic to the area. The audit corridor also includes town hall, library, an elementary school, two churches, a commercial plaza, and various residences. Despite the various destinations located in the town center, pedestrian and bicycle facilities are limited. There are a few pedestrian crosswalks in the area, but most do not connect to sidewalks.

The roads approaching the town center are rural in nature and generally do not discourage high vehicle travel speeds. The Town is concerned that drivers do not slow down adequately within the town center despite the 30 mph speed limit. The high traffic speeds coupled with a lack of adequate pedestrian and bicycle facilities contributes to an uncomfortable environment for pedestrians and cyclists.

The Town of Bridgewater’s application contained information on traffic volumes, crash data, and mapping of the corridor. The application and supporting documentation are included in Appendix A.

1.1 Location

The audit corridor (Figure 1) consists of the following streets and associated intersections within Bridgewater’s town center:

- Route 133 (Main Street) from the Burnham School to Clapboard Road;
- Clapboard Road from Route 133 to the Bridgewater Congregational Church’s auxiliary parking lot; and
- Center Street.

Route 133 (Main Street) is a state-owned facility classified as a major collector. It is a north/south road with one lane in each direction. The Average Daily Traffic (ADT) within the town center is 2,800 vehicles per day (vpd). The posted speed limit in the town center area is 30 mph. Main Street connects to Route 67 approximately 0.75 miles north of the town center (Figure 2), and Route 67 provides access to New Milford to the northwest and Roxbury to the east. Route 133 also continues south of the town center, crosses the Housatonic River, and provides access to Route 7, a limited access highway that connects to I-84. Figure 2 shows the regional context of the study area.

Clapboard Road (Route 867) is a state owned facility classified as a collector roadway. It begins at Route 133 and continues north/northeast until it terminates at Route 67. It

connects the town center to destinations to the east, such as Roxbury. It has a single lane in each direction, and an ADT of 2,000 vpd within the audit corridor.

Center Street is a town-owned facility classified as a local road. It is located entirely within the town center running parallel to Route 133 on the east side of the town green. It intersects Route 133 on the southern end and Clapboard Road on the northern end. On-street parking is provided on the east side of the street.

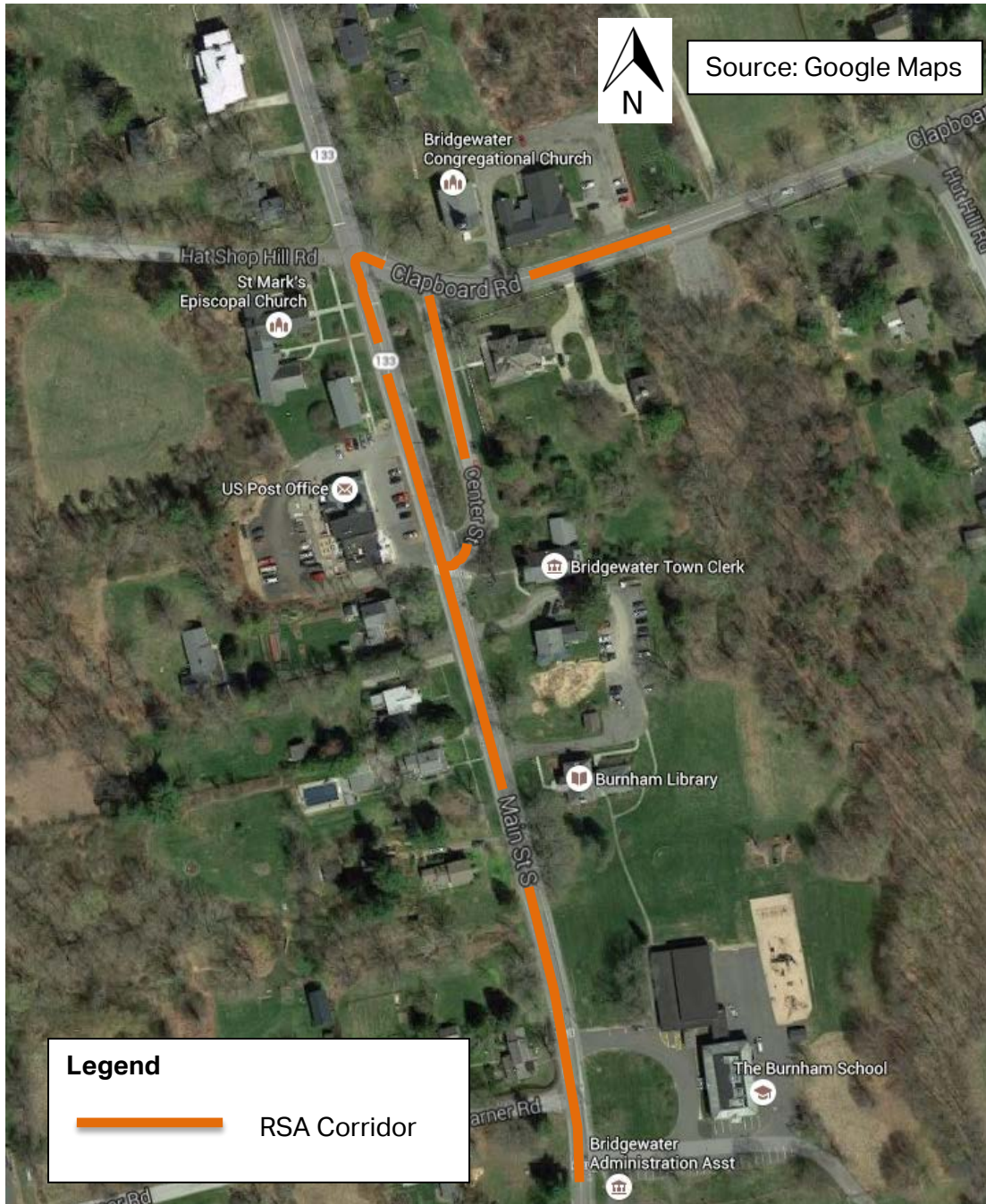


Figure 1. Route 133 (Main Street), Center Street, and Clapboard Road, Bridgewater CT

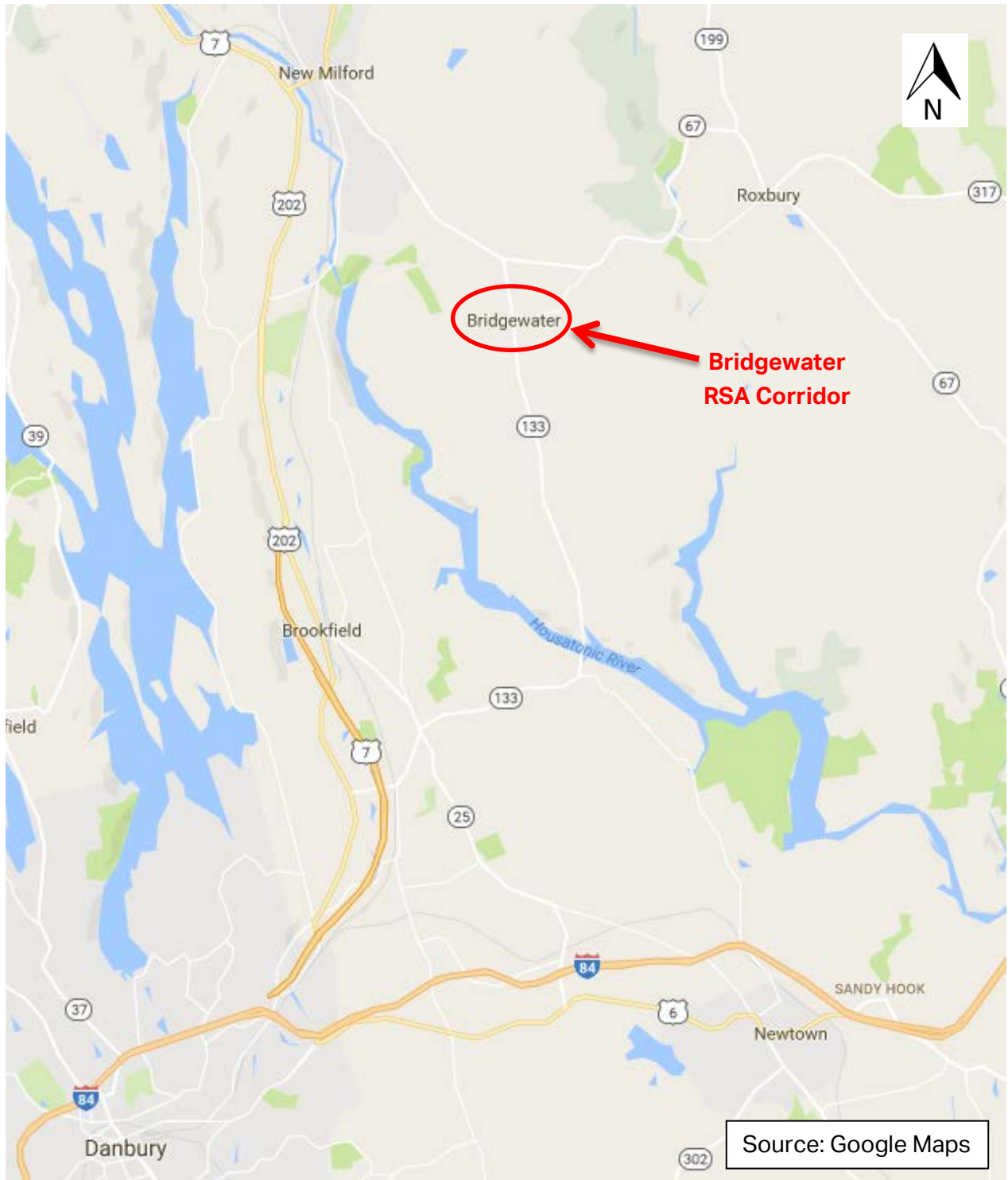


Figure 2. Study Area – Regional Context

2 Pre-audit Assessment

2.1 Pre-audit Information

The crash history in the corridor is low with only two accidents reported between 2012 and 2014 (Table 1). One accident resulted in an injury and the other resulted in property damage only. The reported crash types were one rear-end collision and one fixed object collision (Table 2). There were no crashes involving pedestrians or bicyclists.

Severity Type	Number of Accidents	
Property Damage Only	1	50%
Injury (No fatality)	1	50%
Total	2	

Table 1. Crash Severity 2012-2014

Source: UConn Connecticut Crash Data Repository

Manner of Crash / Collision Impact	Number of Accidents	
Unknown	0	0%
Sideswipe-Same Direction	0	0%
Rear-end	1	50%
Turning-Intersecting Paths	0	0%
Turning-Opposite Direction	0	0%
Fixed Object	1	50%
Backing	0	0%
Angle	0	0%
Turning-Same Direction	0	0%
Moving Object	0	0%
Parking	0	0%
Pedestrian	0	0%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	0	0%
Miscellaneous- Non Collision	0	0%
Total	2	

Table 2. Crash Type 2012-2014

Figure 3 displays the crashes that occurred along the corridor during 2015. Only one crash was reported just to the east of the study area at the intersection of Clapboard Road and Hut Hill Road. It is classified as property damage only with no injuries.

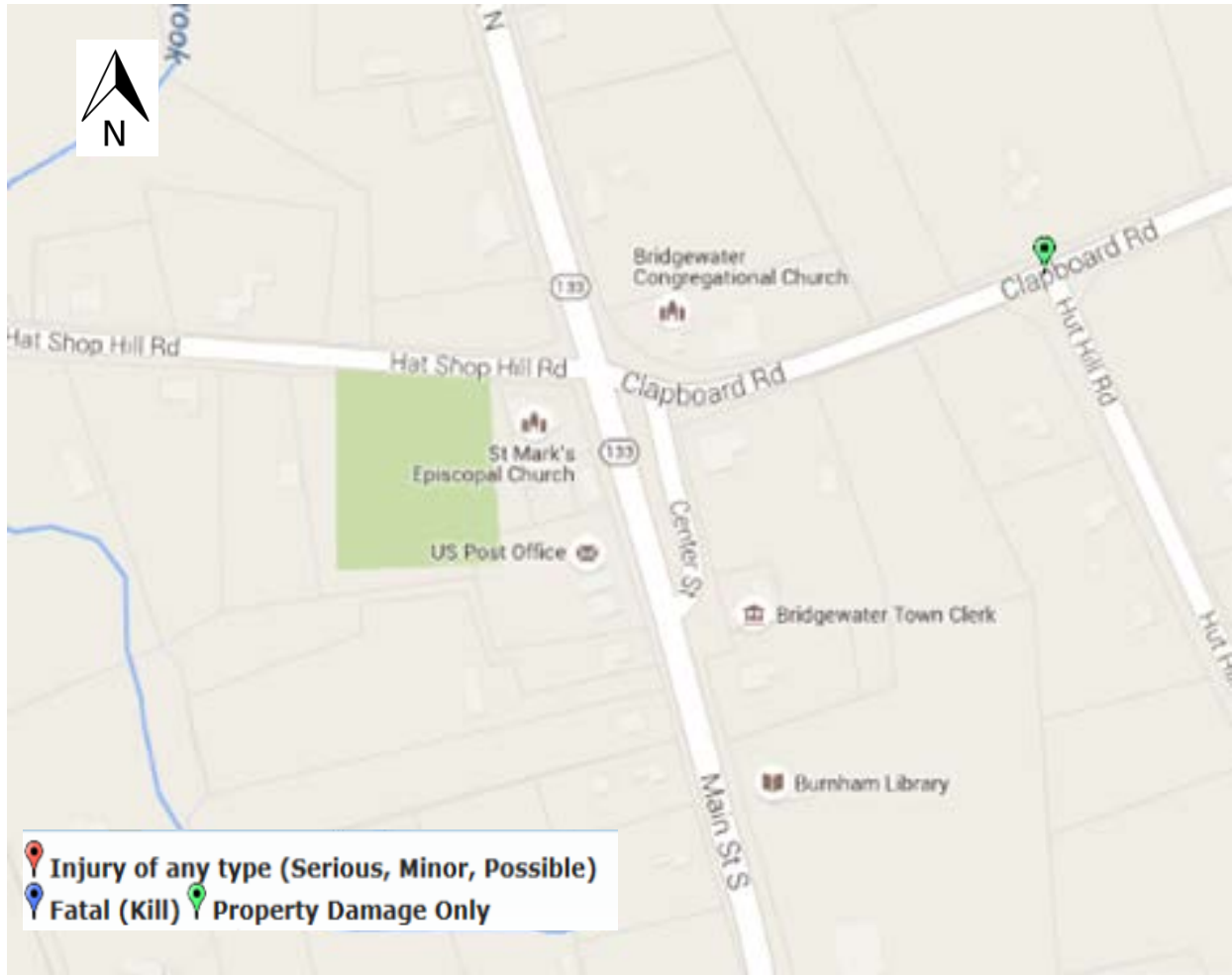


Figure 3. Crashes that Occurred in 2015 (Connecticut Crash Data Repository)

Route 133 is a two-way road with one lane in each direction separated by a double yellow centerline. The northbound direction consists of one 9.5-foot lane and a 1.5-foot shoulder. The southbound direction consists of one 10.5-foot lane and a three-foot shoulder. Two short sections of sidewalk varying in width from two to four feet are provided on the west side of the roadway. The sidewalks are discontinuous, narrow, and lack connections to pedestrian crossings. Sidewalks are not provided on the east side. Two mid-block pedestrian crossings are provided in front of the Burnham School. Route 133 provides access to many destinations within the town center, including the Burnham School, the Burnham Library, town hall, a commercial plaza, and residential properties.

The intersection of Clapboard Road, Route 133, and Hat Shop Hill Road is controlled by an All-way stop. A sidewalk is provided on the southwest corner, extending south on the west side of Route 133 only as far as the Village Store parcel. No pedestrian crosswalks are provided.

The intersection of Route 133 and Center Street is a T-intersection. The Center Street approach is stop controlled and the Route 133 approaches are uncontrolled. A crosswalk is provided across Route 133 on the south side of the intersection, connecting town hall with the commercial property's driveway.

Center Street is short, running approximately 325 feet from Route 133 to Clapboard Road. It is a two-way road approximately 27 feet wide with no pavement markings and parallel parking on the east side. A short section of 2.7-foot wide sidewalk is provided on the east side, in front of 9 Center Street.

The intersection of Center Street and Clapboard Road is a T-intersection. The Center Street approach is stop controlled and the Route 133 approaches are uncontrolled. A sidewalk is provided on the southeast corner extending down the east side of Center Street; however, it terminates after approximately 100 feet. Pedestrian crosswalks are not provided.

Clapboard Road is a two-way road with one lane in each direction separated by a double yellow centerline. Each direction has an 11-foot lane and a one-foot shoulder. The audit portion of Clapboard Road contains the Bridgewater Congregational Church on the north side and the church's auxiliary parking lot on the south side. A crosswalk is provided in front of the church leading to the driveway. No sidewalks are provided on either side of Clapboard Road.

Roadway geometrics for the audit corridor roadways and intersections are shown in Figure 4. An inventory of corridor streets is provided in Table 3.



Figure 4. Roadway Geometrics

Street	Direction	Lanes ¹	Avg. Lane Width	Sidewalk			Curb	Parking	Shoulder	Ramps	
				Type	Width	Condition*				Exist	Compliant
Main Street (Rte. 133)	NB	1	9.5'	None	N/A	N/A	Asphalt/ Granite	No	1.5'	No	N/A
	SB	1	10.5'	Concrete	2'-4' (Varies)	Poor/ Incomplete	Asphalt	No	3'	No	N/A
Center Street	NB	1	10'	Concrete	2.7'	Poor/ Incomplete	Granite Block	Yes (7')	None	No	N/A
	SB	1	10'	None	N/A	N/A	Granite Block	No	None	No	N/A
Clapboard Road	EB	1	11'	None	N/A	N/A	Asphalt	No	1'	No	N/A
	WB	1	11'	None	N/A	N/A	Asphalt	No	1'	No	N/A

*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.

Table 3. Street Inventory

2.2 Prior Successful Effort

Within the study area there are crosswalks at three spots on Route 133 in the town center and a crosswalk on Clapboard Road. A pedestrian crosswalk bollard is placed in the center of the crosswalk at the intersection of Route 133 and Center Street as a traffic calming measure.

The town center of Bridgewater has been designated a Historical District. In addition, the Town is in the process of restoring the Burnham Library, a popular destination in the town center.

2.3 Pre-Audit Meeting

The RSA was conducted on August 2, 2016. The Pre-Audit meeting was held at 8:30 AM in the Town Hall located at 44 Main Street South in Bridgewater.

The RSA Team was comprised of staff from AECOM, staff from CTDOT, representatives from several Bridgewater departments including Public Works, the First Selectmen, and Treasurer. The complete list of attendees can be found in Appendix B.

Several items were presented for general information prior to conducting the Audit in the field:

- Bridgewater is planning to construct a sidewalk on the east side of Route 133 to connect Center Street to the Burnham School. The Town is receiving \$50,000 from LoTCIP to fund the project.
 - Children walk from the Burnham School to the Burnham Library. The Town would like to widen the bituminous walkway from 30 inches to five feet.
 - The new sidewalk will be concrete and complete with handicap ramps that comply with current ADA standards.
 - The sidewalk will be maintained by local volunteers. There is currently no sidewalk ordinance that would require property owners to clear sidewalks abutting their property.
 - A sidewalk on Route 133 and Center Street would improve pedestrian flow during events such as the town fair.
 - Bridgewater would like to start sidewalk construction in the fall.
 - The churches in the study area are in support of sidewalks because there is very little parking for services on Sundays and parishioners have to walk a considerable distance.
 - The sidewalk is planned to be placed entirely on Town right of way.
 - The only property grade issue will be between the Burnham Library and the Burnham School, but this appears minor.
 - There are no trees or utilities located within the planned sidewalk alignment.
 - There will be a street tree committee for the new sidewalk.

- There should not be a need for street lighting along the new sidewalk. There is lighting in the area that should illuminate the facility. Most pedestrians walk during the day.
- Most crosswalks in the study area do not connect to sidewalks.
- The Town may want to consider a bump-out and realignment of the Route 133 crosswalk at the intersection with Center Street. Center Street may also be considered for a conversion from two-way to one-way travel with angle parking.
- The sidewalk plan may be extended to the south side of Clapboard Road between Bridgewater Congregational Church auxiliary parking lot and Route 133.
- During the RSA Bridgewater would like to focus on:
 - Crosswalks in the study area.
 - Adding a bump-out for the crosswalk at the intersection of Route 133 and Center Street.
 - Adding bike racks.
- Traffic:
 - Traffic volumes are relatively low, but still impact rural roadways and the town center.
 - There is a very small sample size for crash data in the study area. All crashes have occurred during daylight.
- The Town feels that there is too much signage in area.
- The Town does not want to take away any space from the town green.
- Vehicles travel at high speeds on Route 133. It is most likely used as a cut-through for commuters.
- The Bridgewater town center is a designated historic district.

3 RSA Assessment

3.1 Field Audit Observations

Intersection of Route 133 and Center Street:

- A bump-out on the southeast corner of Center Street was discussed (Figure 5) and (Figure 6). It would:
 - Create a much tighter T-intersection.
 - Force vehicles to slow down before making the turn onto Center Street.
 - Shorten the pedestrian crossing distance across Route 133.
 - Reduce impervious pavement area.
- The existing curb radius is very large.
 - This encourages drivers to make this turn at high speeds.
 - Drivers may be less likely to stop for pedestrians who are waiting to cross.
- The stop sign is set further back than the stop bar on Center Street (Figure 7).
- Pedestrian crossing signage has not yet been updated to the current standard retroreflective signs. The CTDOT may be replacing the signs soon.
- Remove the current crosswalk and realign new crosswalk from bump-out to an area between two driveways on the west side of Main Street. Driveways on the west side would need to be



Figure 5. Intersection of Route 133 and Center Street



Figure 6. Wide radius at southeast corner of Route 133 and Center Street



Figure 7. Stop sign on Center Street set back from stop bar

modified to make room for a handicap ramp and landing area.

Center Street:

- Proposed sidewalk can be aligned with the existing sidewalk in front of 9 Center Street (Figure 8) on east side of Center Street (Figure 9).
- If Center Street were to be converted to one way northbound travel, it would free up space to provide for angle on-street parking.
- With the conversion to one way, the road would need to be widened by only two to three feet (Figure 10).
 - Center Street would be widened on the east side because the Town does not want to cut into the town green on the west side.
- Granite block curbing on east side would need to be reset or replaced.
- Current Widths of Center Street (Figure 10) and (Figure 8):
 - Roadway = 27 feet
 - Curb to fence = 15 feet
 - Existing Sidewalk = 2.7 feet wide
 - Curb to existing sidewalk = 9 feet
- Even with a two to three foot widening of road, there should be room for about a five to six foot buffer between a five foot sidewalk and the roadway.
- It is suggested to maintain at least a four foot minimum buffer for landscaping and snow shelf.
- A concern was discussed that trucks with trailers will not be able to find parking once the street is converted to angle parking. One option identified



Figure 8. Existing granite sidewalk on Center Street



Figure 9. East side of Center Street



Figure 10. Center Street cross section looking north

was to provide long parallel spaces on the north end of Center Street for trucks and trailers.

Intersection of Clapboard Road and Center Street:

- The crosswalk leading to the Congregational Church is not ADA compliant:
 - The crosswalk connects a driveway with a grass area (Figure 11).
 - The crosswalk could be relocated east with a short sidewalk connection to the church driveway.
 - ADA compliant ramps and landing areas are needed.
 - The Town and church will need to discuss and coordinate who will pay for the construction of this segment of sidewalk.
- The crosswalk sign on the south side of the road is mounted below the seven foot standard height and not updated to the retroreflective standard (Figure 12).
- The branches from the tree on Congregational Church property are blocking a significant portion of the pedestrian crossing sign on north side (westbound) of the road (Figure 13).
- An option to bump out the southeast corner to slow traffic was discussed. This would protect on-street parking on Center Street and provide a shorter crossing distance for pedestrians.
 - The bump out could be a raised crosswalk with a handicap ramp.



Figure 11. Crosswalk landing areas



Figure 12. Pedestrian crossing sign on Clapboard Road eastbound



Figure 13. Pedestrian crossing sign blocked by branches on westbound Clapboard Road

- The bump out can also be curbed with grass and sidewalk extension.
- A low cost option would be to install a bollard and chain around the perimeter. This option may also better fit the character of town center
- The width of Clapboard Road consists of two 11-foot travel lanes and two one-foot shoulders (Figure 14).



Figure 14. Clapboard Road cross section

Intersection of Route 133, Clapboard Road and Hat Shop Hill Road:

- There is poor drainage on the southeast corner (Figure 15).
- There is deteriorating pavement at the intersection with severe deterioration on the northbound Route 133 approach. It is experiencing rutting (Figure 15).
- The right turn from Route 133 northbound onto Clapboard Road has a very tight turn radius. Trucks making a right turn from Route 133 onto Clapboard Road need to cross the center line.
- The crossing distance from the Episcopal Church to the town green is 30 feet. No crosswalk is provided. Two sidewalks connect from the church to Route 133 and both have steep slopes that are not ADA compliant.



Figure 15. Drainage issues and pavement rutting on northbound Route 133 approach to Clapboard Road.

Route 133 between the Town Hall and the Burnham School:

- There is adequate right of way for the proposed sidewalk on the east side of Route 133 (Figure 16).
- There is a minor grade issue between the Burnham Library and the Burnham School.



Figure 16. Proposed Sidewalk alignment on east side of Route 133

- The existing crosswalks at the Burnham School (Figure 17) and (Figure 18):

- The crosswalks do not connect with sidewalk and direct pedestrians into the school driveways or grass since there are no sidewalks.
- There are no handicap ramps.
- The crosswalk signs appear to meet the retroreflective requirements



Figure 17. Burnham School (north) driveway crosswalk

- There are no advance crossing signs provided.

- It was discussed that the north crosswalk at the Burnham School driveway can be eliminated.
- The south crosswalk at the Burnham School driveway can be relocated to the south side of the Warner Road and Route 133 intersection.



Figure 18. Burnham School (south) driveway crosswalk

- The posted speed limit is 30 mph in the vicinity of the Burnham School, Fire Department and town center.
- Town officials indicated that vehicles travel at speeds up to 40 or 50 mph.
- The width of Route 133 (moving west to east):
 - A three-foot shoulder, 10.5-foot and 9.5-foot travel lanes, and a 1.5-foot shoulder.

3.2 Post Audit Workshop - Key Issues

- The crosswalk on Route 133 at Center Street is a challenging crosswalk to cross. It is a long distance to cross due to the crosswalk placement and a large turn radius. The crosswalk is also difficult to cross because vehicles traveling northbound can turn right onto Center Street at high speeds due to the large turn radius. Pedestrians at the east side of the crosswalk struggle to see oncoming traffic.
- The crosswalks in the study area do not have handicap ramps and most do not connect with sidewalks or terminate at a desirable location. .
- Crosswalk signage is not completely updated to the retroreflective standards and some crosswalks are missing advanced pedestrian crossing signs.
- A sidewalk is desired throughout the town center in order to handle pedestrian traffic during town fairs, and during times when residents are attending church. A sidewalk will also connect the amenities in the Bridgewater town center.
- Some signs in the study area are mounted below the seven foot standard.
- There are fiber optic lines under Route 133. The lines are being moved and Route 133 will be closed off during summer 2017. Route 133 is currently being closed for construction in areas outside of Bridgewater.

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 more costly and require establishment of a funding source, or they may need some additional study or design in order to be accomplished. Nonetheless, they are relatively quick turn-around items, and 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 if funding is available. **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 or more years when funding is available.

4.1 Short Term

1. Coordinate with CTDOT to remove the crosswalk and pedestrian signs on Route 133 at the north Burnham School driveway.
2. The Town plans to provide a new bike rack on the south east corner of the Route 133 and Center Street intersection in front of Town Hall.
3. Town to evaluate converting Center Street to one way northbound travel.
4. Coordinate with CTDOT to move stop sign for Center Street westbound approach to Route 133 closer to intersection.
5. The Congregational Church is to trim branches from the tree blocking the pedestrian crosswalk sign on westbound Clapboard Road.
6. Coordinate with CTDOT to replace pedestrian signs at crosswalk on Clapboard Road with new retroreflective signs, raise height to seven feet, and install advance pedestrian signs.
7. The Local Traffic Authority (LTA) to request CTDOT to install School Zone signage on Route 133 at the Burnham School.
8. The LTA to request CTDOT update pedestrian crossing signs on Route 133 at Center Street.
9. Town to construct a sidewalk on east side of Route 133 to connect Center Street to the Burnham School.
10. Town to reconstruct walkway between Burnham School and Burnham Library.
11. The Town will evaluate whether additional public handicap parking spaces are needed in the town center in conjunction with planned improvements.
 - a) Check zoning code.
 - b) May not need new handicap spaces if there is handicap parking in back of town hall and at the store across from town hall.
12. CTDOT to check on Vendor In Place (VIP) status for Route 133 and the potential need for permits to modify the intersection of Center Street and Route 133.

Figure 19 depicts some of these recommendations.

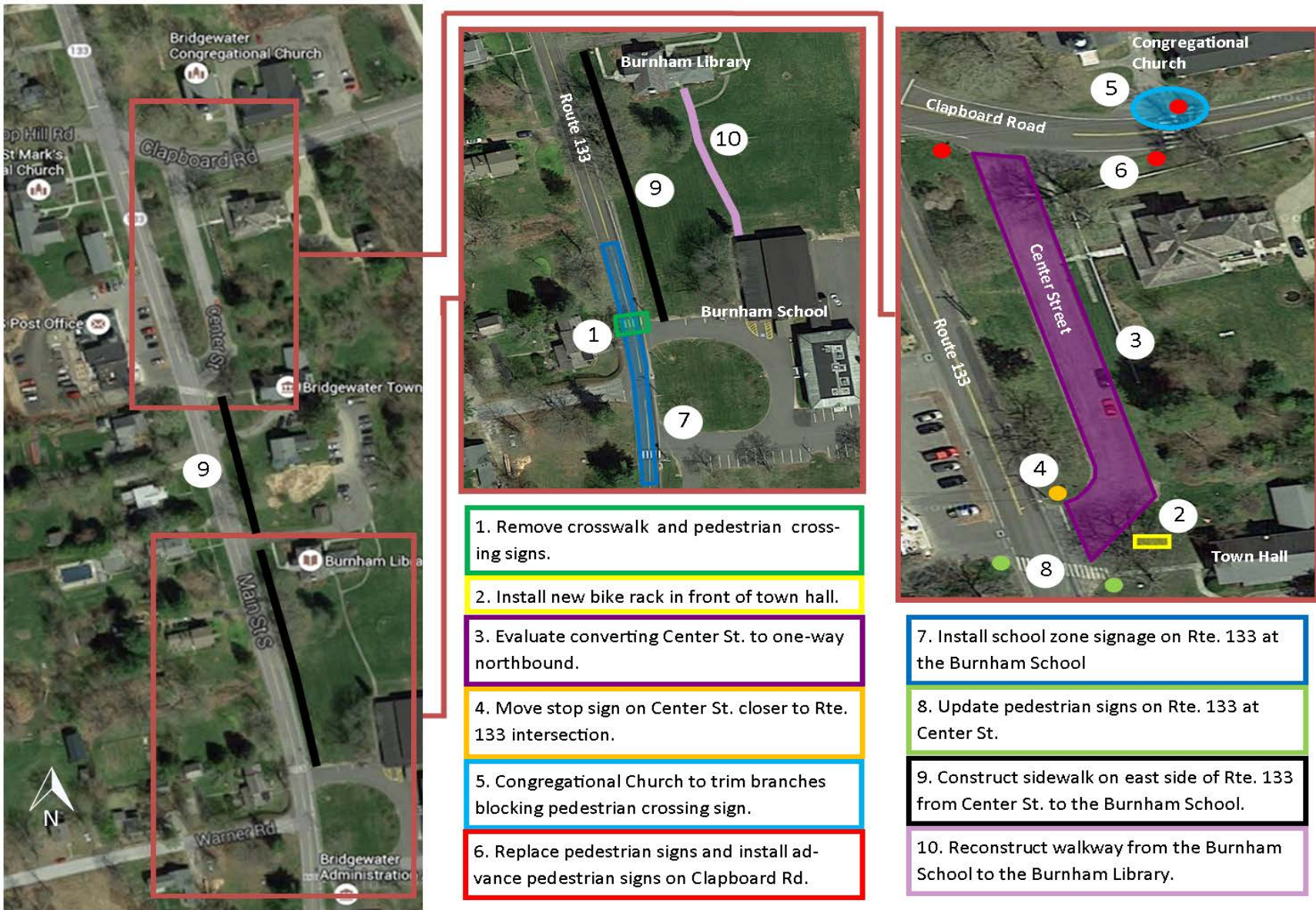


Figure 19. Short Term Recommendations Map

4.2 Medium Term

1. Coordinate with CTDOT to relocate the crosswalk and signs on Route 133 at Burnham School south driveway to align with the side street intersection of Warner Road. Install advance pedestrian crossing ahead signs (Figure 20) on Route 133.
2. Town to re-construct Center Street to provide new sidewalk on the east side. Angled parking will also be provided on the east side for automobiles and on the north end striped parallel spaces for trucks and trailers (Figure 21).

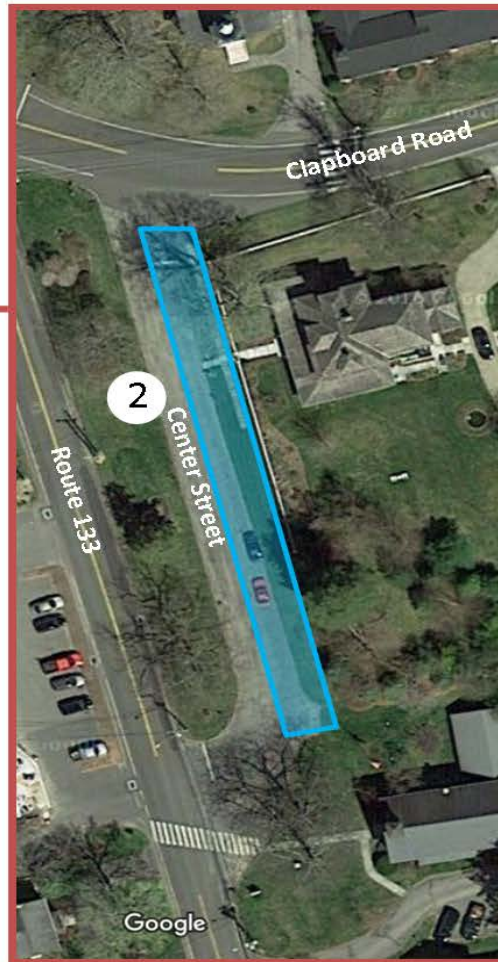


Figure 20. Advance pedestrian sign



Figure 21. Example of one way street with angled parking

Figure 22 depicts these recommendations.



1. Relocate crosswalk and pedestrian signs to align with Warner Road.

2. Provide new sidewalk and angled parking on the east side of Center St.



Figure 22. Medium Term Recommendations Map

4.3 Long Term

1. CTDOT to check whether VIP paving program would install ramps at crosswalks.
2. Bump out the curb on southeast corner of the intersection of Route 133 and Center Street.
 - a. Realign the Center Street intersection with Route 133 to a 90 degree T-intersection.
 - b. Radius to accommodate design vehicle.
 - c. Bump out the curb cut at the store exit driveway to make room for an ADA ramp.
3. Construct a pedestrian bump out on the southeast corner of Clapboard Road at Center Street.
 - a. Sidewalk should be extended for the area of the bump out.
 - b. Would require installation of a handicap ramp with pedestrian detectable warning strips (Figure 23).
 - c. Catch basin may need adjustment.
4. Construct a new sidewalk between the auxiliary lot across from the Congregational Church and Route 133:
 - a. Evaluate providing a new crosswalk across Clapboard Road on the west side of the auxiliary parking lot entrance. Handicap ramps should be provided on each side. The new crosswalk will provide a more direct connection and better sight distance.
 - b. Remove the existing crosswalk and pedestrians signs on Clapboard Road.
5. Install a sidewalk on the north side of Clapboard Road between the Congregational Church east driveway and the Congregational Church west driveway.
6. Coordinate with CTDOT to provide a new crosswalk on the south leg of Route 133 at Clapboard Road connecting the Episcopal Church and the town green (Figure 24).
 - a. Coordinate with the Episcopal Church to reconstruct sidewalks to ADA standards.



Figure 23. Pedestrian detectable warning strip



Figure 24. Proposed new crosswalk location on Route 133 at Episcopal Church

Figure 25 depicts some of these recommendations.

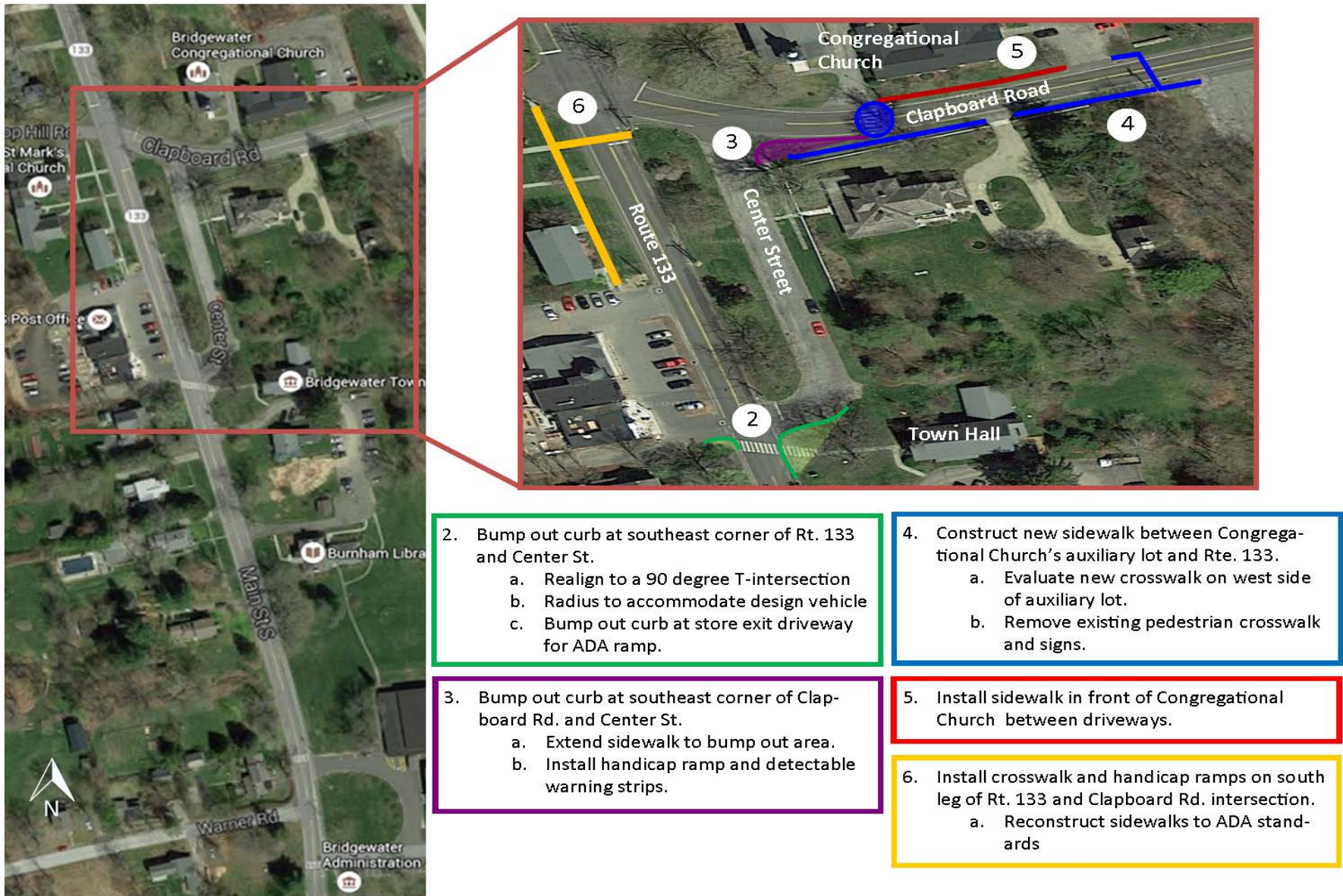


Figure 25. Long Term Recommendations Map

4.4 Summary

This report documents the observations, discussions and recommendations developed during the successful completion of the Town of Bridgewater RSA. It provides Bridgewater with an outlined strategy to improve the transportation network for all road users between on Route 133, Center Street and Clapboard Road within the town center, particularly focusing on pedestrians and cyclists. Moving forward, Bridgewater may use this report to prepare strategies for funding and implementing the improvements, and as a tool to plan for including these recommendations into future development in the Bridgewater Town Center area.



COMMUNITY
connectivity program

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

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

2. Location information

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

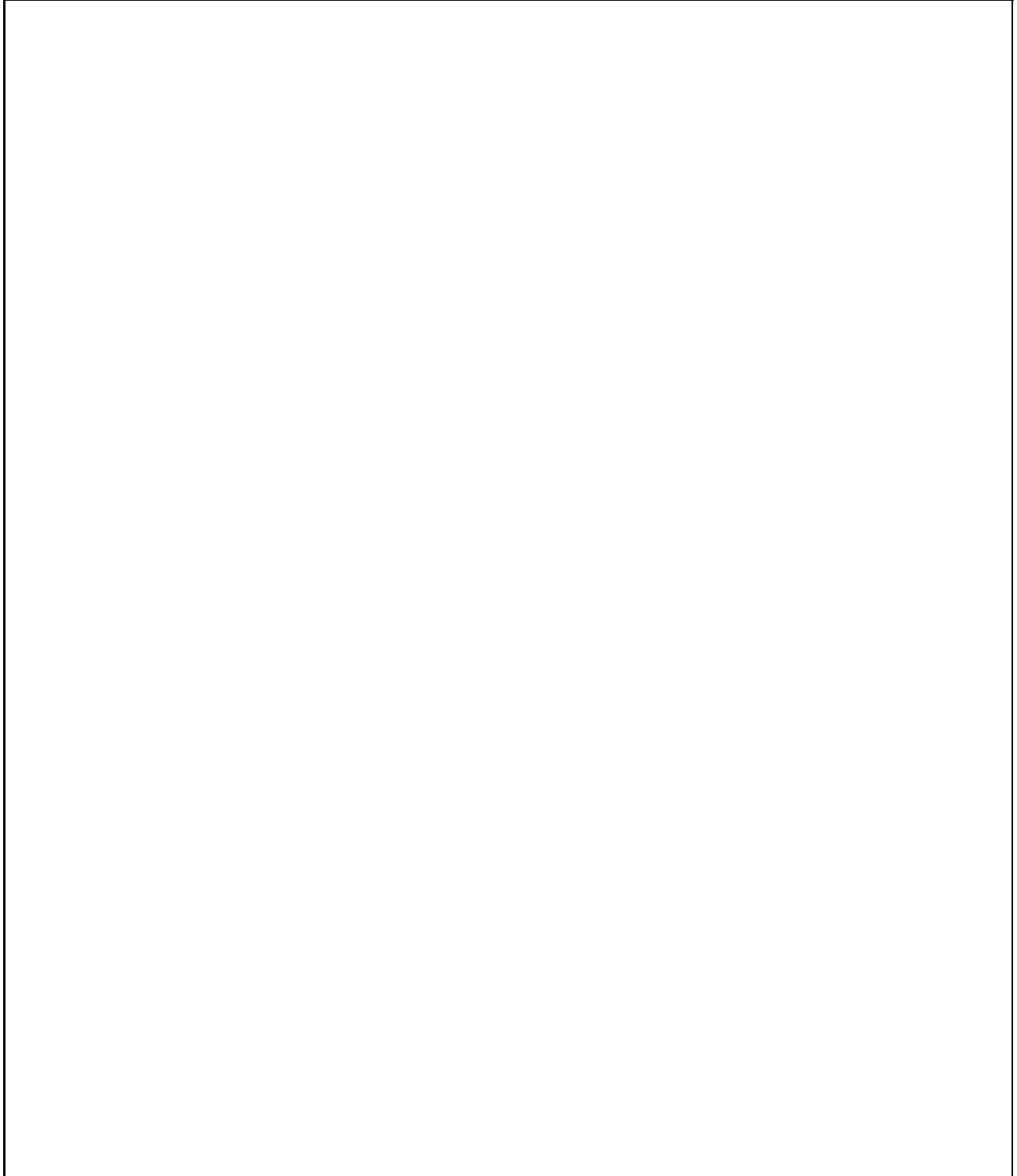
Maintenance issues (cutting grass, leaves, snow removal)

N/A (not applicable)

Other (please specify)

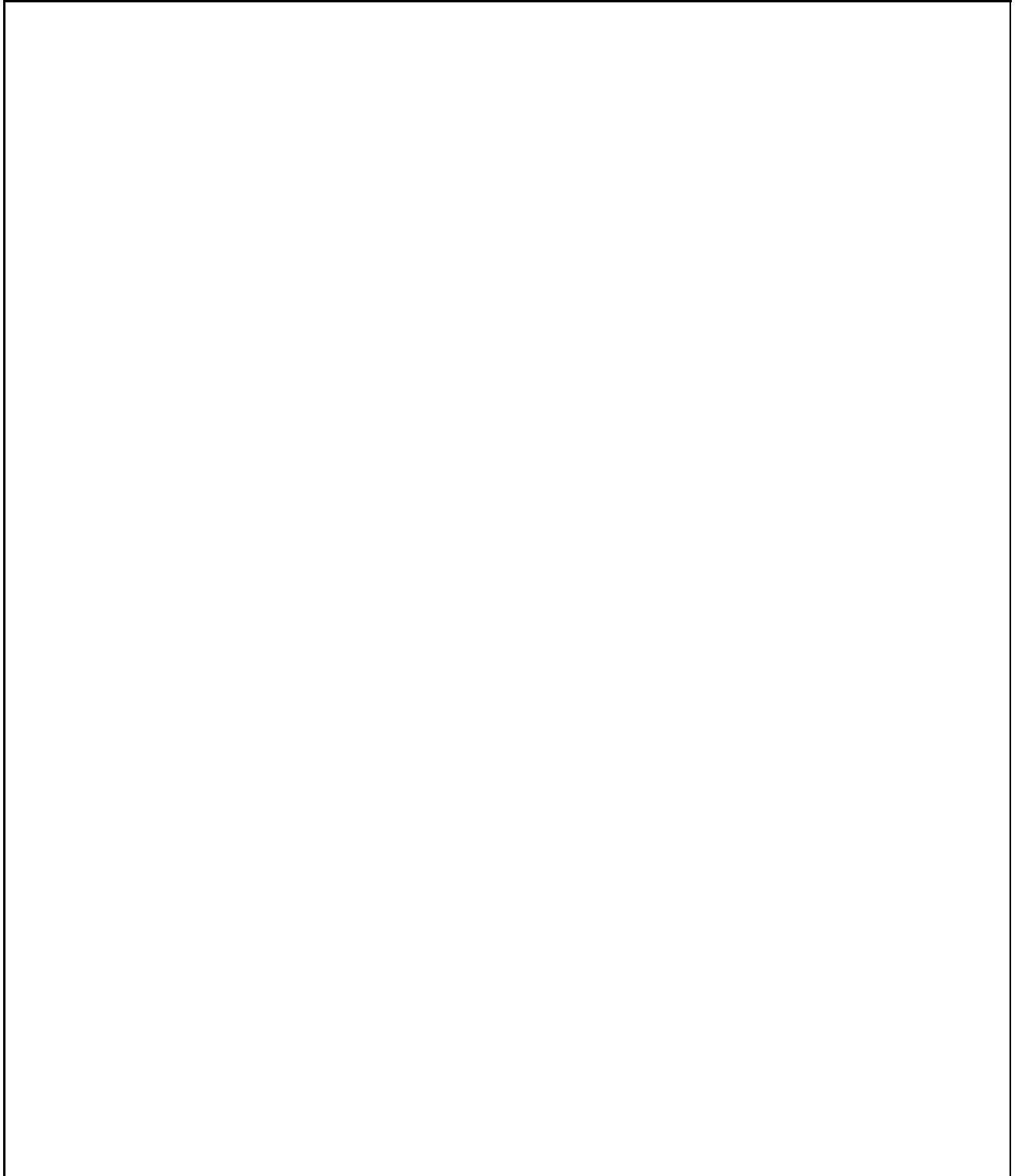
11. Are there any past, current or future transportation/economic development projects near this location (i.e. Federal, State or local projects)?

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.

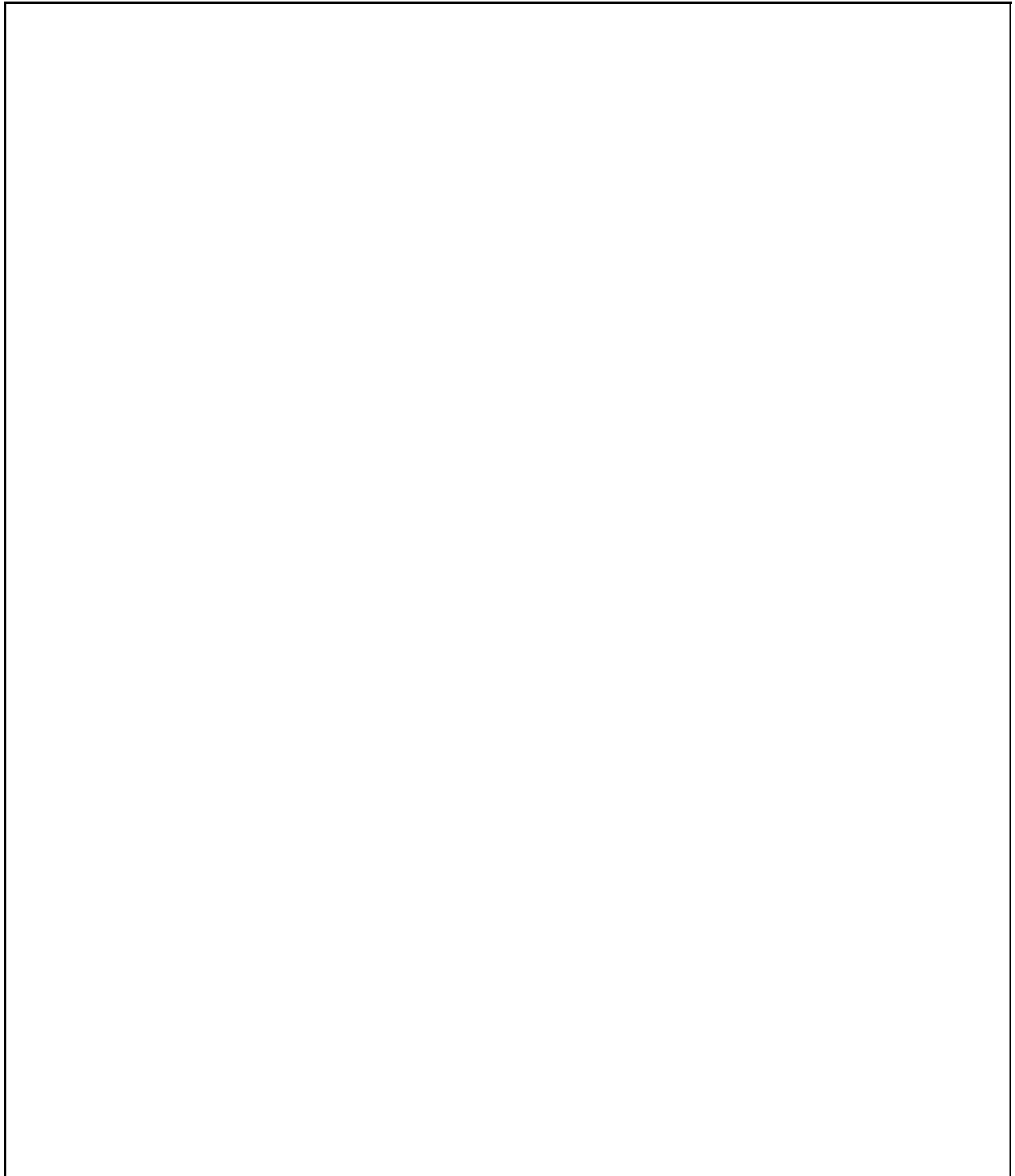
A large, empty rectangular box with a thin black border, intended for the user to describe and list any environmental concerns. The box occupies most of the page's vertical space below the instruction.

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)



COMMUNITY
connectivity program

Appendix B



AECOM
Built to deliver a better world



Road Safety Audit

Town: Bridgewater
RSA Location: Center Street intersection with CT Route 133
Meeting Location: Bridgewater Town Hall (First Selectman's Office)
Address: 44 Main Street South
Date: 8/2/2016
Time: 8:30AM

Participating Audit Team Members

Audit Team Member	Agency/Organization
Jeff Maxtutis	AECOM
Lorenzo Varone	AECOM
Craig Babowicz	CT DOT
Anne Marie Lindblom	TOB
Curtis Read	TOB First Selectman
Brian Sullivan	TOB Public Works Director
Alan Brown	TOB Selectman
Susan Wilcox	TOB Treasurer



COMMUNITY
connectivity program

Appendix C



AECOM
Built to deliver a better world



Road Safety Audit – Bridgewater

Meeting Location: Bridgewater Town Hall (First Selectman's Office)
Address: 44 Main Street South
Date: 8/2/2016
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>Pedestrian Crossings</p> <ul style="list-style-type: none">• Sufficient time to cross (signal)• Signage• Pavement Markings• Detectable warning devices (signal)• Adequate sight distance• Wheelchair accessible ramps<ul style="list-style-type: none">○ Grades○ Orientation○ Tactile Warning Strips• Pedestrian refuge at islands• Other	
<p>Pedestrian Facilities</p> <ul style="list-style-type: none">• Sidewalk<ul style="list-style-type: none">○ Width○ Grade○ Materials/Condition○ Drainage○ Buffer• Pedestrian lighting• Pedestrian amenities (benches, trash receptacles)• Other	



Bicycles <ul style="list-style-type: none">• Bicycle facilities/design• Separation from traffic• Conflicts with on-street parking• Pedestrian Conflicts• Bicycle signal detection• Visibility• Roadway speed limit• Bicycle signage/markings• Shared Lane Width• Shoulder condition/width• Traffic volume• Heavy vehicles• Pavement condition• Other	
--	--

Roadway & Vehicles	
<ul style="list-style-type: none">• Speed-related issues<ul style="list-style-type: none">○ Alignment;○ Driver compliance with speed limits○ Sight distance adequacy○ Safe passing opportunities	
<ul style="list-style-type: none">• Geometry<ul style="list-style-type: none">○ Road width (lanes, shoulders, medians);○ Access points;○ Drainage○ Tapers and lane shifts○ Roadside clear zone /slopes○ Guide rails / protection systems	

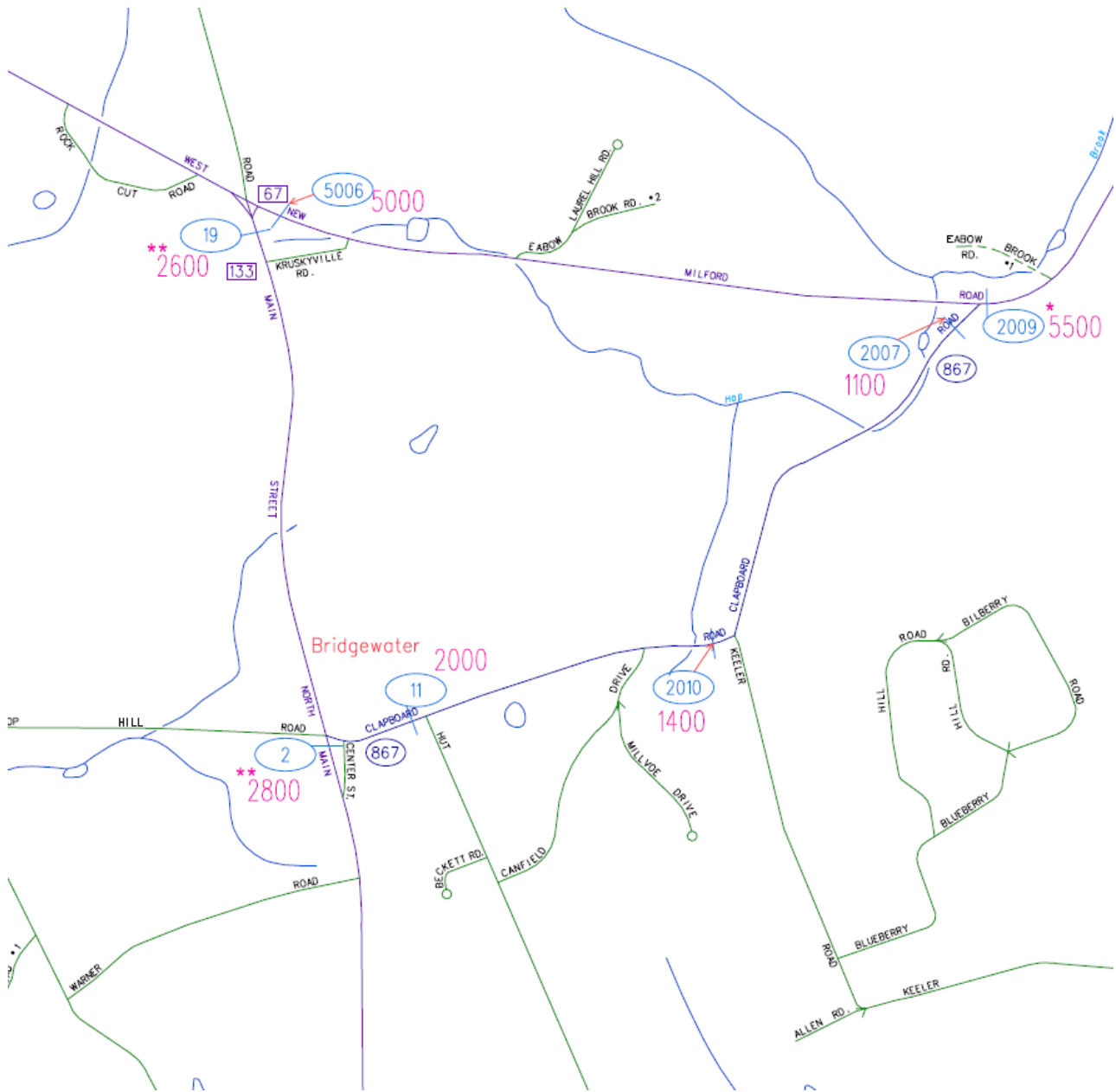
<ul style="list-style-type: none">• Intersections<ul style="list-style-type: none">○ Geometrics○ Sight Distance○ Traffic control devices○ Safe storage for turning vehicles○ Capacity Issues	
--	--



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



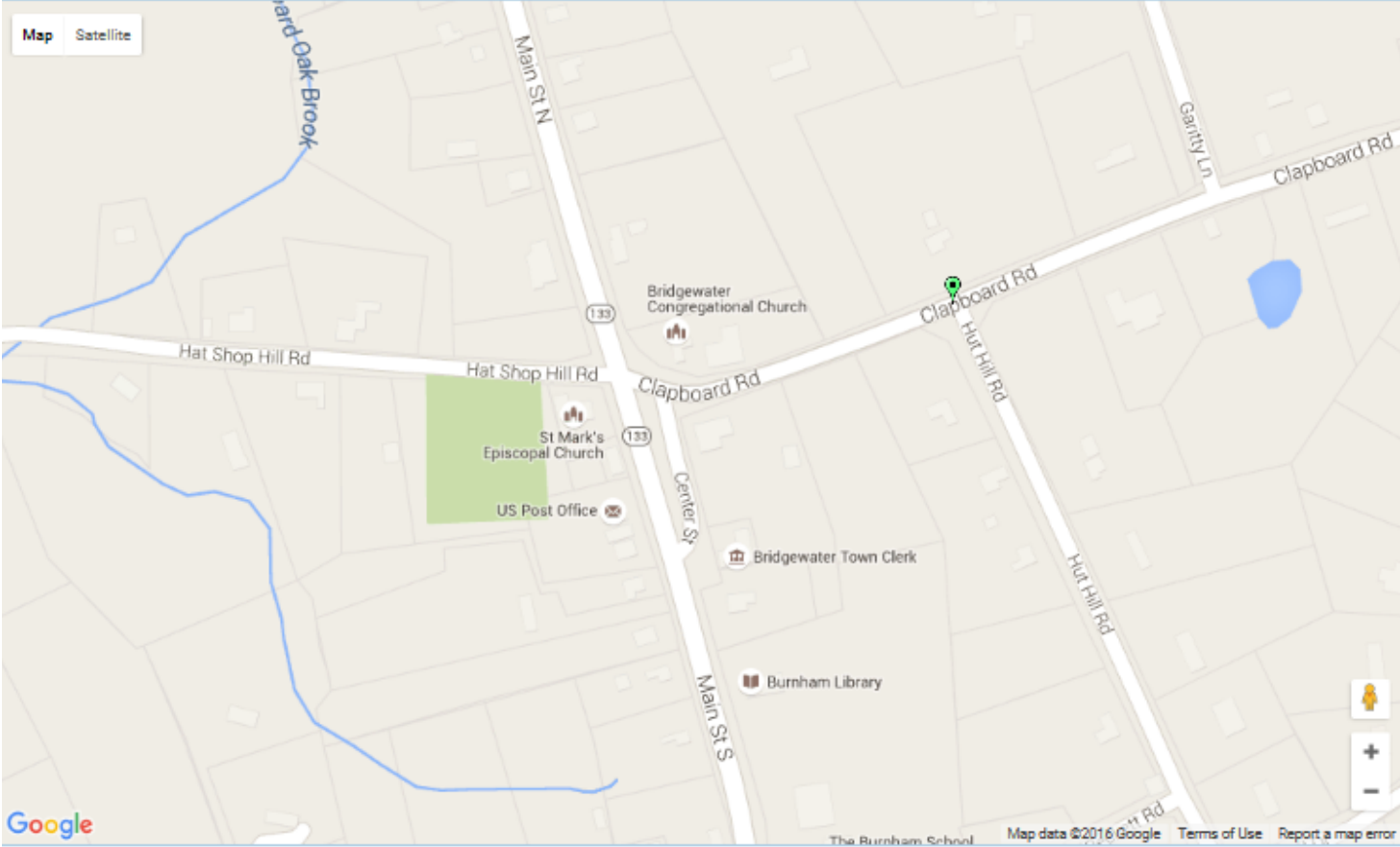
Average Daily Traffic (ADT)



2015 Crashes

Search Criteria:

Dataset: mmucc
Towns: Bridgewater
Crash Severity: Injury of any type (Serious, Minor, Possible), Fatal (Kill), Property Damage Only
Case Status: Complete



Google

Markers Heatmap Select & Query Query Selection

Injury of any type (Serious, Minor, Possible) Fatal (Kill) Property Damage Only

Select All Deselect All



Road Safety Audit – Bridgewater

Crash Summary

Data: 3 years (2012-2014)

There were no crashes involving pedestrians or bicyclists

Severity Type	Number of Crashes	
Property Damage Only	1	50%
Injury (No fatality)	1	50%
Fatality	0	0%
Total	2	

Manner of Crash / Collision Impact	Number of Crashes	
Unknown	0	0%
Sideswipe-Same Direction	0	0%
Rear-end	1	50%
Turning-Intersecting Paths	0	0%
Turning-Opposite Direction	0	0%
Fixed Object	1	50%
Backing	0	0%
Angle	0	0%
Turning-Same Direction	0	0%
Moving Object	0	0%
Parking	0	0%
Pedestrian	0	0%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	0	0%
Miscellaneous- Non Collision	0	0%
Total	2	



Weather Condition	Number of Crashes	
Snow	0	0%
Rain	0	0%
No Adverse Condition	2	100%
Unknown	0	0%
Blowing Sand, Soil, Dirt or Snow	0	0%
Other	0	0%
Severe Crosswinds	0	0%
Sleet, Hail	0	0%
Total	2	

Light Condition	Number of Crashes	
Dark-Not Lighted	0	0%
Dark-Lighted	0	0%
Daylight	2	100%
Dusk	0	0%
Unknown	0	0%
Dawn	0	0%
Total	2	

Road Surface Condition	Number of Crashes	
Snow/Slush	0	0%
Wet	0	0%
Dry	2	100%
Unknown	0	0%
Ice	0	0%
Other	0	0%
Total	2	



Time		Number of Crashes	
0:00	0:59	0	0%
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	0	0%
7:00	7:59	0	0%
8:00	8:59	0	0%
9:00	9:59	0	0%
10:00	10:59	0	0%
11:00	11:59	0	0%
12:00	12:59	0	0%
13:00	13:59	0	0%
14:00	14:59	0	0%
15:00	15:59	1	50%
16:00	16:59	1	50%
17:00	17:59	0	0%
18:00	18:59	0	0%
19:00	19:59	0	0%
20:00	20:59	0	0%
21:00	21:59	0	0%
22:00	22:59	0	0%
23:00	23:59	0	0%
Total		2	



133

SPEED
LIMIT
30

Main St N

Hat Shop Hill Rd

Bridgewater
Congregational
Church

Clapboard Rd

St Mark's
Episcopal Church

Bridgewater
Green

Center St

SPEED
LIMIT
30

133

Main St S

Post Office

Village Store

Town Hall

Grange

Burnham Library

DRAFT





133

Main St S

The Burnham School

Warner Rd

Legend

-  Sidewalk
-  Stop Controlled Intersection
-  Crosswalk
-  Pedestrian Crossing Sign

**Bridgewater - Center Street
Intersection with CT Rte 133**



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 – Bridgewater

Fact Sheet

Functional Classification:

- Center Street is classified as a Local Road
- Route 133 (Main Street) is classified as a Major Collector

ADT

- ADT on Clapboard Road (East of Center Street) is 2,000
- ADT on Route 133 is 2,800

Population and Employment Data (2014):

- Population: 1,747
- Employment: 271

Urbanized Area

- Bridgewater is not located in an urbanized area

Demographics

- The statewide average percentage below the poverty line is 10.31%. There are no areas in Bridgewater exceeding the state's average.
- The statewide average percentage minority population is 30.53%. There are no areas in Bridgewater that exceed the state's average.

Air Quality

- Bridgewater's CIPP number 303
- Bridgewater is within the Greater CT Marginal Ozone Area
- Bridgewater is within a CO Maintenance Area

