



COMMUNITY
connectivity program

Colchester

Halls Hill Road– Road Safety Audit

June 28, 2016



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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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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 the Colchester (Halls Hill Road) RSA

The Town of Colchester submitted an application to complete an RSA along Halls Hill Road to improve safety for pedestrians and bicyclists. Development in the area is dense with two schools, two child care facilities, several recreational areas, commercial/retail businesses, and single family homes. To create a safe environment for the many users including pedestrians, cyclists and motorists, Colchester wishes to create a complete streets environment.

The Halls Hill Road application contained information on traffic volumes, crash data, and mapping of the intersection. The application and supporting documentation are included in Appendix A.

1.1 Location

Halls Hill Road in Colchester is classified as a rural major collector, and provides a connection between two State Routes 85 and 616. The Average Daily Traffic (ADT) at the eastern end of Halls Hill Road is 2,600 vehicles per day (vpd.) and at the western end is 4,700 vpd¹.



Figure 1. Halls Hill Road

¹ ADT is from 2012 and was prepared by CTDOT <http://www.ct.gov/dot/cwp/view.asp?a=3532&q=567276>

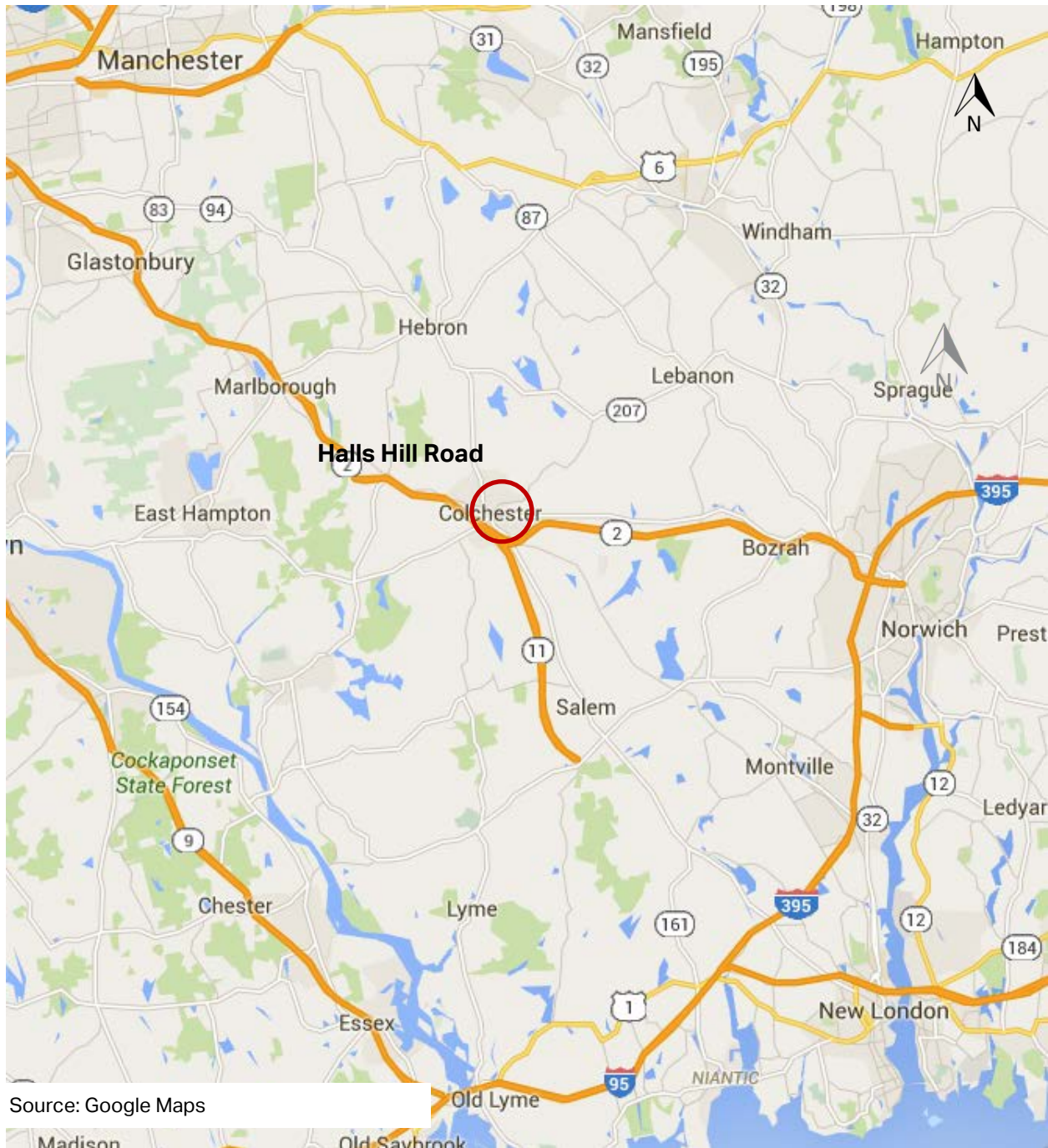


Figure 2. Halls Hill Road Regional Context

Halls Hill Road is a town owned and maintained facility that runs in an east/west direction. It is a two lane road with 15-foot lanes and no shoulder markings.

2 Pre-Audit Assessment

2.1 Pre-Audit Information

Crash history shows that the most frequent are rear-end crashes or turning vehicles (Table 1 and Table 2) primarily resulting in property damage. Most of the crashes occurred at the intersection of South Main Street (Route 85) and Halls Hill Road (Figure 3). The peak crash rate is in the afternoon, which can be attributed to commuting, shopping, and school activities.

Severity Type	Number of Accidents	
Property Damage Only	19	86%
Injury (No fatality)	3	14%
Fatality	0	0%
Total	22	

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	3	14%
Rear-end	5	23%
Turning-Intersecting Paths	5	23%
Turning-Opposite Direction	3	14%
Fixed Object	1	5%
Backing	2	9%
Angle	0	0%
Turning-Same Direction	0	0%
Moving Object	1	5%
Parking	0	0%
Pedestrian	1	5%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	1	5%
Miscellaneous- Non Collision	0	0%
Total	22	

Table 2. Crash Type 2012-2014

Source: UConn Connecticut Crash Data Repository

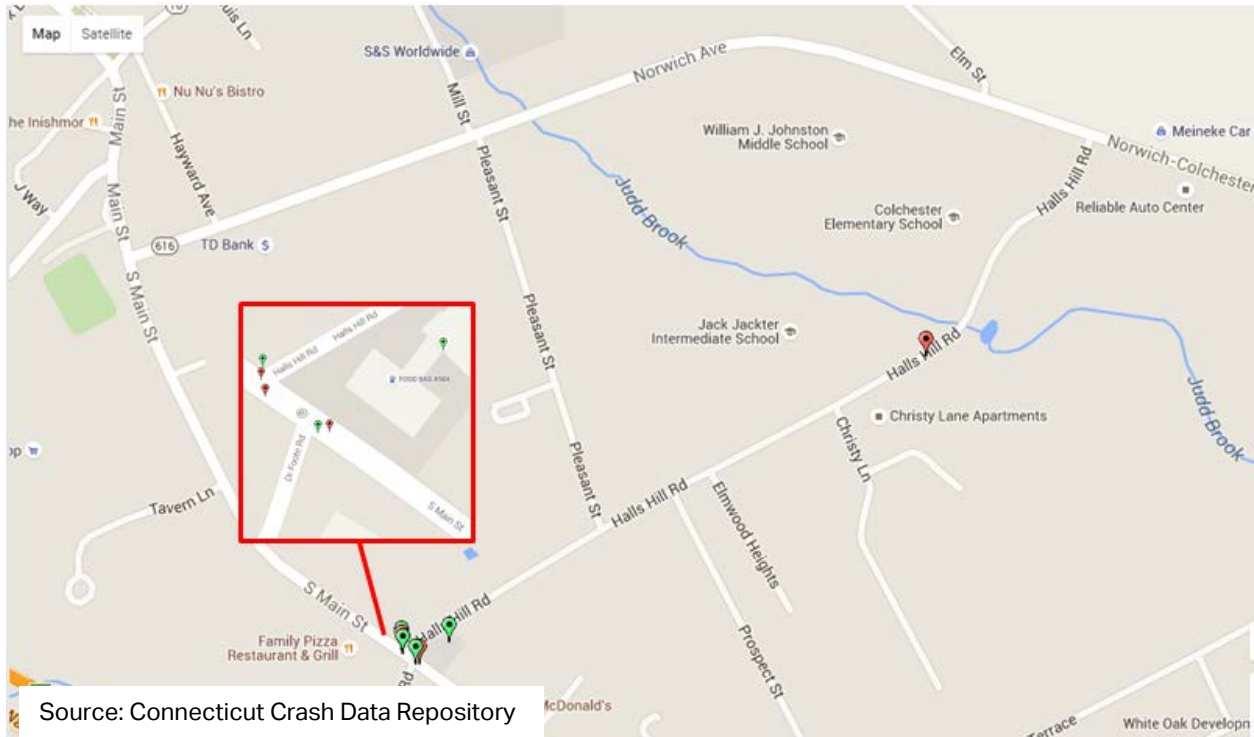


Figure 3. Crashes that Occurred in 2015 (Connecticut Crash Data Repository)

The sidewalk along the north side of Halls Hill Road is continuous. On the south side there is sidewalk only between Castle Kid Care and Apple Tree Learning Center, between Elmwood Heights and Prospect Street, and in front of the Citgo Station and D.H. Marvin & Sons Farm Equipment Storage Facility. In general the sidewalks are 4 feet wide except the section between Elmwood Heights and Prospect Street which is 2 feet wide. This section is also vertically inaccessible due to the current road grade. All of the driveways for both schools have painted crosswalks across the drives. There are only crosswalks across Halls Hill Road at the ends (South Main Street and Norwich Avenue). There are no crosswalks across any of the 4 intersecting streets. There is a crosswalk on Halls Hill Road at the intersection with Christy Lane.

The only signalized intersection is at Route 85; all others are stop controlled. The Route 85 and Halls Hill Road intersection is a "Dog-leg" intersection with Dr. Foote Road (Figure 4).

Table 3 summarizes the roadway and intersection geometrics along the Halls Hill Road study corridor.

Colchester - Halls Hill Road



Figure 4. Halls Hill Road Geometrics

Colchester - Halls Hill Road Street Inventory

From	To	Distance	Width	Sidewalk				Curb	Shoulder	Ramps	
				Side	Type	Width	Condition			Exist	Compliant
Route 85	Farm Equipment	600 feet	1 lane	North	Concrete	4'	Good	Asphalt	N/A	Yes	Yes
	Repair Shop		1 lane	South	Concrete	5'	Good	Asphalt	N/A	Yes	Yes
Farm Equipment Repair Shop	Apple Tree	0.5 miles	1 lane	North	Concrete	4'	Fair	Asphalt	N/A	Yes	No
	Learning Center		1 lane	South	No	N/A	N/A	Asphalt	N/A	N/A	N/A
Apple Tree Learning Center	Norwich Avenue	600 feet	1 lane	North	Concrete	4'	Fair	Asphalt	N/A	Yes	No
			1 lane	South	Concrete	4'	Good	Asphalt	N/A	Yes	Yes

***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 Efforts

A number of best practices have already been applied along Halls Hill Road. Sidewalks have been installed along the entire north side of the road and including ramps with detectable warning strips only in front of the schools. When the road was reconstructed in 1999, major improvements were made, including reducing the grade by 2.5% in order to extend the sight lines and redesigning the Norwich Avenue intersection to 90 degrees.

2.3 Pre-Audit Meeting

The RSA was conducted on June 28, 2016. The Pre-Audit meeting was held at 8:00 AM in the Colchester Town Hall located at 127 Norwich Avenue in Colchester.

The RSA Team was comprised of staff from CTDOT and AECOM, as well as representatives from several Colchester departments and organizations including the Engineering Department, Public Works, Planning Department, and the Board of Education. 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 Colchester presented relevant information for the audit, including:

- There are two schools on Hall Hill Road (Pre-kindergarten through second grade and third through fifth grade). The board of education has an established policy which allows these students to walk to school if they are within a quarter of a mile. Many parents drop off their kids. If sidewalks were added where missing, improved/upgraded and made to feel safer, the school board may be inclined to expand the walking distance. This could eliminate a bus and save the town \$38,000 - \$40,000 a year. There was concern that students would be walking in inclement weather but there are ways to resolve this.
- The schools delay opening when the temperature is less than negative 10 degrees. This happens (on average) two days each year.
- There are no crossing guards.
- There are continuous sidewalks on the north side of Halls Hill Road but not the south.
- Colchester has previously looked at Halls Hill Road for ways to improve pedestrian activity by extending sidewalks and creating connectivity between the recreational areas and schools along the road. Although cycling was not part of the initial examination, the community now wishes to consider this mode, as well.
- Many of the sidewalk ramps are outdated and do not meet current ADA requirements.
- In addition to the schools, there are athletic fields and the Lions pond, which generate substantial activity on Halls Hill Road.

- Excluding parents from dropping off kids at school would also help alleviate traffic.
- There are several big neighborhoods and the downtown all within walking distance but there are needs for connections with sidewalks.
- Connecting roads should also be examined. The town would like to see a map with a quarter mile, half mile and 1 mile buffers to determine how many children are in this catchment zone.
- Halls Hill Road was reconstructed in 1999. There were major improvements at that time, including realigning the intersection with Norwich Avenue.
- The intersection with Route 85 will be challenging because it is offset with Dr. Foote Road. It would be difficult to realign because of property impacts and topography.
- All buses that leave the schools head toward the Route 85 intersection. Coupled with parents picking and dropping off their children, this creates traffic and circulation issues.
- There has been an increase (almost 50%) in traffic on Route 85 and Halls Hill Road. In 1999 the ADT was 3,200 on Halls Hill Road just east of the Route 85 intersection.
- Since 1989 the population has doubled in Colchester.
- There is a lot of regional traffic in the area.
- The school system is expanding so in the future the traffic is projected to increase.
- Norwich Avenue, Route 85, and Halls Hill Road will be part of the regional bike system.
- Halls Hill Road is marked as 25 MPH but people drive faster.
- If traveling from Route 85 and heading east on Halls Hill Road, left turns onto Pleasant Street can be difficult. Vehicles wait a long time because of the downhill grade and short sight distance. Previously the grade was 13.5% but was improved to 11% in 1999; this extended the sight line. At the crest of hill there is crack that creates a sharp lip due to frost heave so sight distance is further diminished.
- Traffic calming is needed. Speed tables could help but there are concerns about plowing.
- Halls Hill Road is classified as a rural major collector. It was designated as such in 1997. This allowed the funding that was used to improve the roadway.
- Pleasant Street is used as cut through street, paralleling Route 85.
- There is a big subdivision being built with 140 residential lots. It is not complete at this time.
- There is still much vacant land in Colchester. Given recent growth patterns this indicates the community may continue to grow at a fast pace.
- Colchester requires all new developments to have sidewalks on their frontage.
- Colchester has a sidewalk ordinance, but there is nothing specific prohibiting cyclists from riding their bikes on the sidewalks (language is vague).
- The schools are responsible for maintaining the sidewalks in front of them.
- High School track team runs on Halls Hill Road and Pleasant Street.

3 RSA Assessment

3.1 Field Audit Observations

- The speed limit on Halls Hill Road is 25 MPH, but traffic travels much faster.
- The sidewalks along the northern side of Halls Hill Road are concrete, in good condition, have asphalt curbing and a snow shelf (Figure 5). The snow shelf is grass and at least 2 feet wide but as wide as 4 feet in some locations. The sidewalk appears narrower in front of the Jack Jackter Intermediate School because the grass has overgrown into the walkway giving the appearance of 3 feet.
- There are pedestrian crossing signs with "200 feet ahead" plaques.
- Most driveways have driveway aprons.
- There are no crossing guards.
- In front of the Castle Day Care there is a curb pull out that is used by buses dropping of children and parents picking up children (Figure 6). It is a curb pull out but vehicles are still required to stop when school bus lights are on. Vehicles often think they can pass the bus.
 - The striping is painted and maintained by Castle Day Care.
 - Children are bussed across to the two daycare facilities; they do not walk there due to liability issues.
- The Colchester Elementary School used to provide a walking school bus from the elementary school to the day care, but due to supervision



Figure 5. Sidewalk Along Halls Hill Road



Figure 6. Pullout in Front of Daycare

requirements and liability they have stopped and started bussing instead.

- There are no painted shoulder lines.
- There is no parking allowed on either side of Halls Hill Road.
- The catch basin grates are bicycle friendly.
- The roadway width is 30 feet, and there is 50 feet of right-of-way.
- There are crosswalks across all of the school driveways (Figure 7).
- The signs are generally in good condition.
- Most of the curbing is asphalt and in good condition. There are a few locations where it is concrete; these are the sections where damage exists (Figure 8).
- Four walkers, two runners and three bicyclists were observed in the corridor. It was a cloudy day with intermittent rain.
- The utility poles on the north side are located in the grass buffer strip or behind the sidewalk (Figure 9). The utility poles on the south side are located in the grass buffer strip.
- If shoulder striping is added with 11 foot lane widths, this would leave 4 feet for a shoulder. For a shoulder to be designated a bicycle lane five feet is required.
- Since all of the sidewalks have a snow shelf, it may be possible to widen the sidewalks and reduce the snow shelf in order to provide more space. A multi-use path would have to be at least 10 feet wide.



Figure 7. Crosswalk in Front of Elementary School



Figure 8. Broken Curbing



Figure 9. Sidewalk on the North Side

- Wider sidewalks would allow the town to plow them using existing equipment and would allow students to walk 3 abreast.
- The state has listed Halls Hill Road for upgrading signs to the most current standards.
- Colchester does not have an ordinance against riding bicycles on the sidewalk.
- There is a drainage consideration at the intersection of Halls Hill Road and the Norwich-Colchester Turnpike. There are wetlands on either side of Halls Hill Road with a culvert running under the road and a wetlands basin on the south side (Figure 10).
- There is a crosswalk across Halls Hill Road at the intersection with Norwich Avenue (Figure 11).
- When busses are dropping and picking up children at Colchester Elementary School they block the entrance for any other large vehicles. In the event of an emergency while buses are present there would be no access point for emergency vehicles. An alternative entrance or mountable curb is needed, which would be gated at other times.
- In the afternoon it takes approximately 7 to 10 minutes for the buses to queue, load and then depart.
- Parents picking up or dropping of their children must do so before the buses arrive or after they depart.
- There is guide rail in front of the parking area for Lion's Pond. It appears this is to prevent vehicles from entering after hours.



Figure 10. Wetlands Designed to Help with Drainage



Figure 11. Crosswalk at Norwich Avenue

- The sidewalk has sunk 1 to 2 inches below the curbline creating a tripping hazard at the main entrance to the Elementary School.
- The sign posts do not have red and white reflective taping.
- There are no "school zone" flashing lights.
- Vines are crawling up some of the utility poles and on to the wires.
- Overgrown vegetation blocks sign visibility, particularly on the south side of Halls Hill Road (Figure 12).
- There are no tactile warning strips on the sidewalk ramps in front Jack Jackter Intermediate School or at Pleasant Street (Figure 13).
- There is a lip in the driveway entrances and exits to the schools. This is to prevent water from draining down towards the schools
- The crosswalk from Christy Lane is not visible to westbound motorists due to the horizontal geometry of the roadway. There is no advanced warning for the crosswalk. The crosswalk is not perpendicular, creating a longer walking distance. There is also a bump in the sidewalk due to the driveway lip, this could create a tripping hazard and may not be ADA compliant. The paint is also faded and lacks retro reflectivity (Figure 14).
- In front of Jack Jackter Intermediate School sidewalk passing stations have been installed.
- The sidewalk ramp for the exit to Jack Jackter Intermediate school is in need of repair (Figure 15).
- The driveway to Jack Jackter Intermediate School is also the entrance for visitors going to Cody Camp (athletic fields).



Figure 12. Sign Blocked by Vegetation



Figure 13. Lack of Detectable Warning Strips



Figure 14. Crosswalk from Christy Lane



Figure 15. Broken Sidewalk Ramp

- There is only a short segment of sidewalk on the south side of Halls Hill Road between Prospect Street and Elmwood Heights. It is made of stone and is approximately 2 feet wide. It is in extremely poor condition (Figure 16). The sidewalk elevation is at least eight 8 above the roadway, with a steep embankment in the over-wide grass buffer.
- The grade of Halls Hill Road was lowered 2.5% in 1999. While this has improved the sight distance along Halls Hill Road, it has resulted in steep banks on either side and along Prospect Street in order to match grades. Lowering the road any more would require retaining walls along Prospect Street and possibly along Halls Hill Road.
- There is a large horizontal crack in the road between Prospect Street and Pleasant Street which developed from either frost heaving or groundwater issues. The crack poses an impediment to cyclists and creates a bump in the roadway (Figure 17).
- There is no crosswalk across Pleasant Street (Figure 18).
- The stop bar was moved forward on Pleasant Street approximately 8 to 10 feet in order to provide better sight distance. The stop sign was not moved up. This was done about 5 years ago.
- The western end of Halls Hill Road, near the Route 85 intersection, can get congested with visitors going to the gas station, Subway, and bakery during lunch time.
- The intersection with Route 85 is a “dog-leg” intersection with Halls Hill Road and Dr. Foote Drive being offset. Because of this the side streets have split phases.



Figure 16. Sidewalk Between Prospect Street and Elmwood Heights



Figure 17. Horizontal Crack in Road



Figure 18. Lack of Crosswalk at Pleasant Street.

- There is a “no turn on red” sign from Route 85 onto Halls Hill Road or Dr. Foote Rd.
- The signal at Route 85 has an advance left turn phase for southbound Route 85, an exclusive pedestrian phase, and split (protected) side street phases.
- The pedestrian signal heads do not have a countdown but are audible.
- The signal timing provides 12 seconds of clearance time for Halls Hill Road. This appears to be less than the newest standard of 3.5 feet per second.
- The crosswalk across Dr. Foote Drive is faded and does not have a pedestrian push button on the south side.



Figure 19. Route 85 and Halls Hill Road Intersection



Figure 20. Crosswalk at Dr Foote Drive

3.2 Post-Audit Workshop - Key Issues

- There are gaps in the sidewalk that need to be closed.
- Bike accommodations should be added to Halls Hill Road. Either shoulder lines should be painted or sharrows added.
- Shoulder line striping was installed on Elm Street for traffic calming and the town saw a reduction in 2 MPH.
- Students used to walk (with a leader) between the school and daycare but two years ago when kindergarten became full day they were bused. It would be difficult to have them walk since they would need to be supervised the entire time even though it is only a few hundred feet. Hiring crossing guards would only happen if the area was made pedestrian friendly.
- Any changes to the roadway pavement markings would require monitoring for tire marks to determine their effectiveness.
- There is an issue with the Route 85 intersection, while there is a green left turn arrow it is short. Could a left turn lane for Halls Hill Road be added?
- While there is a need to smooth out the lips on driveway apron to create accessibility they are there for gutter flow.
- The signal at the Route 85 intersection was redone 4-5 years ago. It was done by CTDOT and new mast arms were installed.

- The crack in the road between Pleasant Street and Prospect Street is an issue. It creates a heave in the road.
- Police enforcement (for speed on Halls Hill Road) would be difficult because the department is small (usually only 2 officers on patrol at a given time).

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 years or more when funding is available.

4.1 Short Term

1. Add a "School Zone Ahead" sign by Elmwood Street.
2. Request that Eversource trim the trees and vines growing on utility poles.
3. Create maps for each school to show 0.25, 0.5 and 1 mile buffers around each school to determine the potential catchment zones.
4. Cut vegetation blocking signs, particularly the "No Parking Signs" between Lions Pond and Jack Jackter Intermediate School.
5. Add a crosswalk across Pleasant Street (Figure 21).
6. Widen crosswalks to provide consistent 8 foot widths.
7. Request that CTDOT retime the pedestrian crossing phase to meet current standards.
8. Request count down pedestrian heads be installed (Figure 22).
9. Investigate why there is horizontal cracking
 - a) Perform structure rehabilitation (2 feet) around the crack to remove the hump in the road.
10. Repair broken sidewalk ramps (Figure 23).
11. Institute seasonal and detail enforcement of active speed detector signs.
12. Add shoulder striping to Halls Hill Road, 11 foot travel lanes and 4 foot shoulders.
13. Add "Ahead" under the pedestrian crossing sign.
14. Fix (jack up) sections of the sidewalk where it has sunk below the curb.
15. T-up the crosswalk from Christy Lane to Jack Jackter Intermediate School and make it ADA compliant (Figure 24).



Figure 21. Add Crosswalk



Figure 22. Example of Count Down Pedestrian Head



Figure 23. Repair Broken Ramp



Figure 24. Square up Crosswalk

16. Remove overgrown grass in the side walk in front of the Jack Jackter Intermediate school

Figure 25 depicts these recommendations.

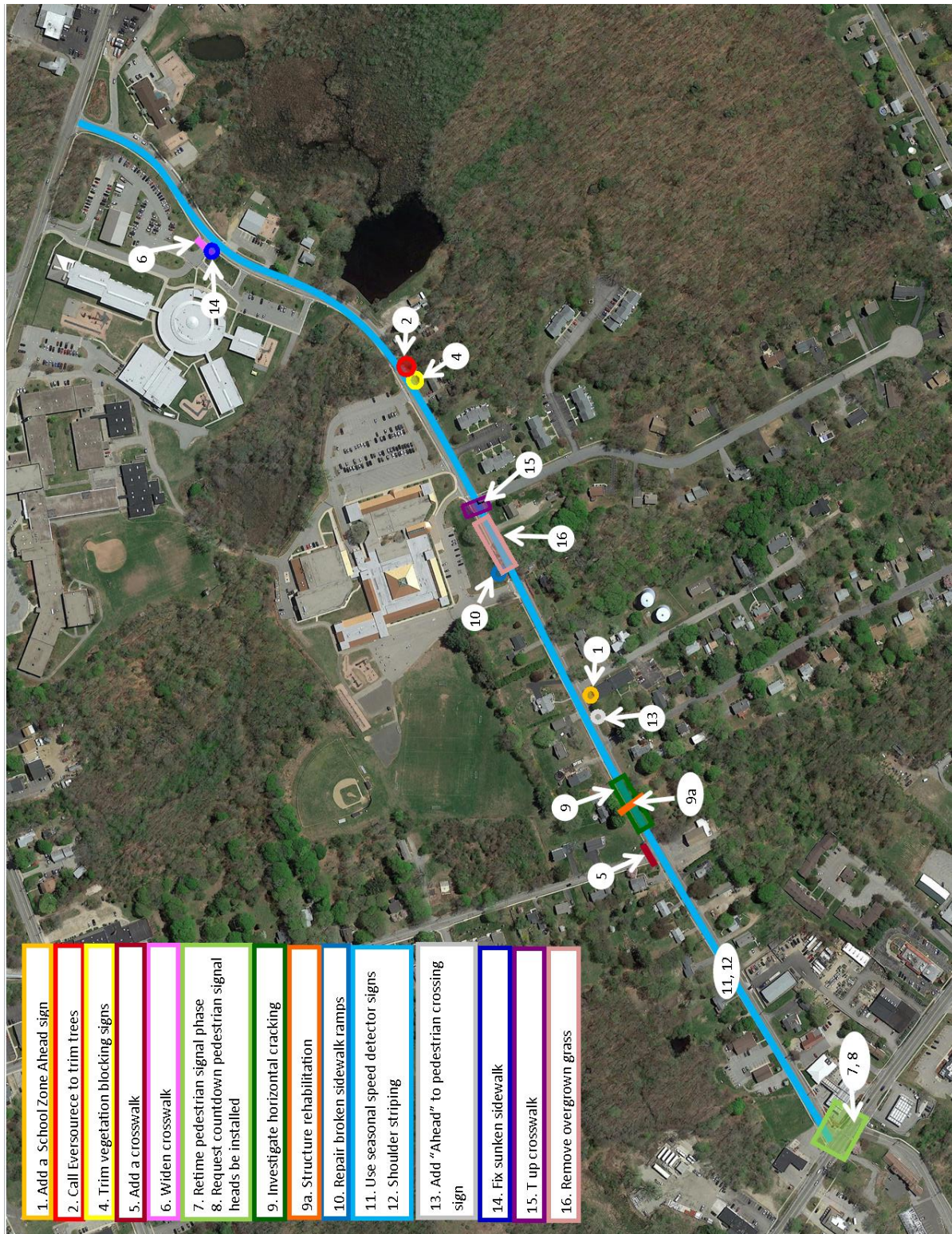


Figure 25. Short Term Recommendations

4.2 Medium Term

1. Upgrade sidewalk ramps on the north side of Halls Hill Road to meet current ADA standards.
2. Install tactile warning strips where missing (Figure 26).
3. Install an active pedestrian crossing sign, between Christy Lane and Jack Jackter School, with solar LED (Figure 27).
4. Generate more walking to school by increasing the distance children are allowed to walk to school.
5. Add a pedestrian push button to the signal on the south east corner of Dr. Foote Road and Route 85.
6. Paint a crosswalk across Dr. Foote Road.
7. Adjust the radius of the entrance to the Jack Jackter Intermediate School so that it is square.
8. Install a speed table along Halls Hill Road in front of the Colchester Elementary School (Figure 28).
9. Do a "safe routes to school" audit if the walking radius has been expanded.
10. Widen the sidewalks to 6 feet on the north side of Halls Hill Road in-between Jack Jackter Intermediate School and Norwich Avenue.

Figure 29 depicts these recommendations.



Figure 26. Example of Detectable Warning Strip



Figure 27. Example of Active Pedestrian Crossing Sign



Figure 28. Speed Table

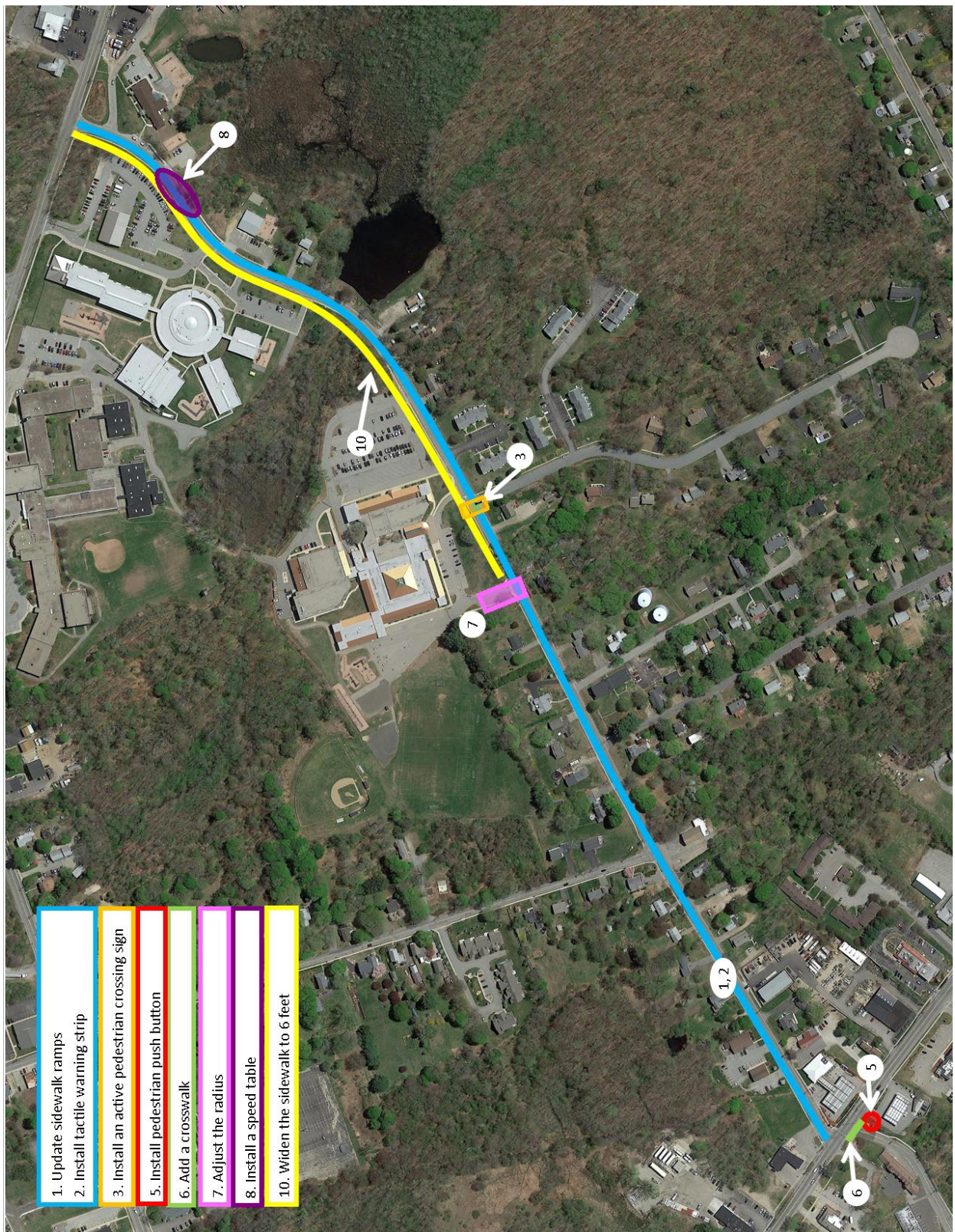


Figure 29. Medium Term Recommendations

4.3 Long Term

1. Widen the sidewalks to 6 feet on the north side of Halls Hill Road in-between Jack Jackter Intermediate School and Route 85.
2. Conduct a geotechnical analysis of the horizontal crack and repair it in accordance with the analysis recommendations.
3. Fill in the missing sidewalk gaps on the south side of Halls Hill Road.
4. Hire crossing guards (subject to other improvements).
5. Create an emergency entrance between the Elementary School and Norwich Avenue.
6. Add a left turn lane from Route 85 to Halls Hill Road and restripe the lanes to be 11 feet wide.
7. Improve the geometry of the crest in the hill on Halls Hill Road.
 - a) Install a crosswalk across Halls Hill road at Prospect Street.

Figure 30 depicts these recommendations.

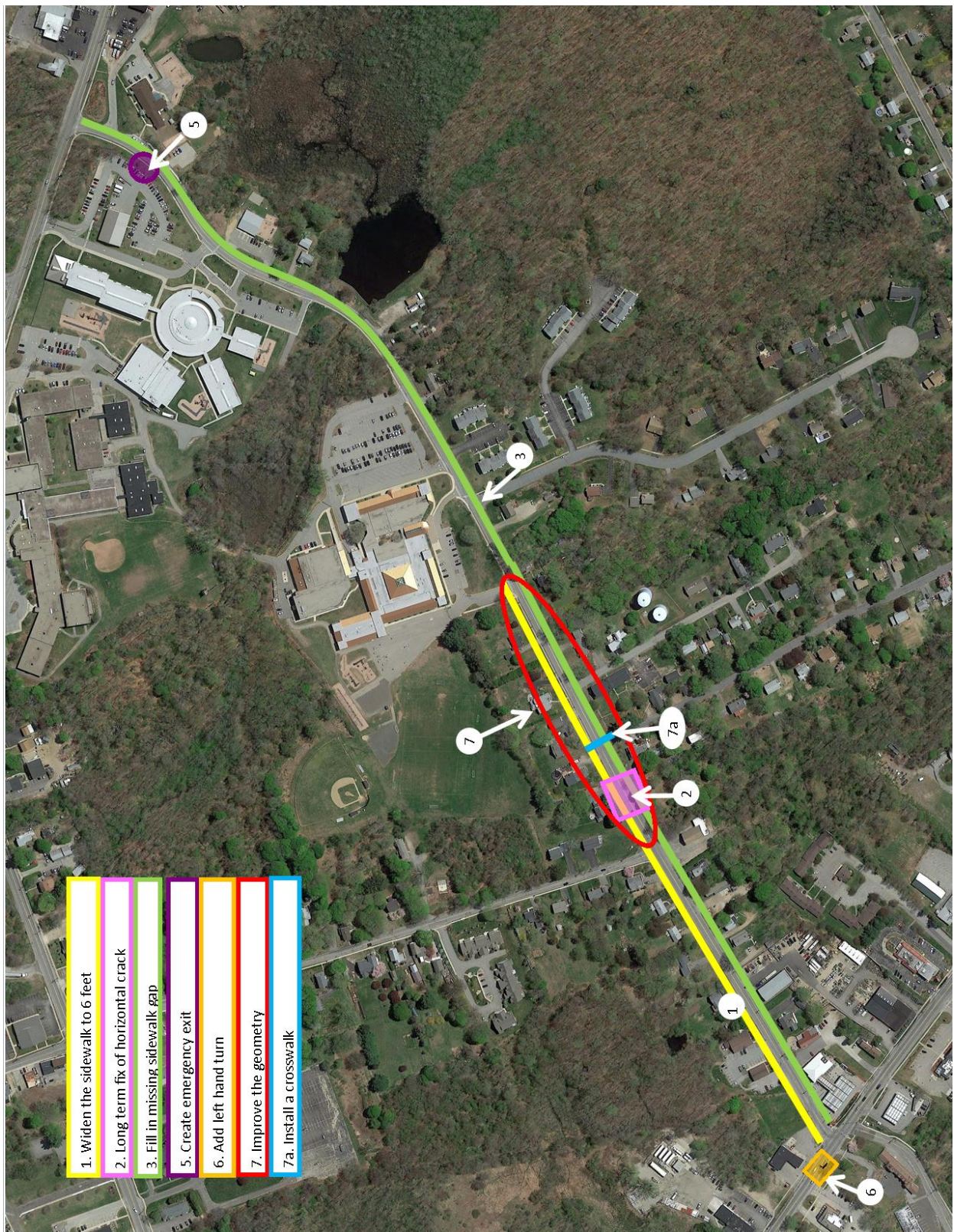


Figure 30. Long Term Recommendations

4.4 Summary

This report outlines the observations, discussions and recommendations developed during the RSA. It documents the successful completion of the Town of Colchester RSA and provides Colchester with an outlined strategy to improve the transportation network at Halls Hill Road for all road users, particularly focusing on pedestrians and cyclists. Moving forward, Colchester 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 area.



COMMUNITY
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Appendix A



AECOM
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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

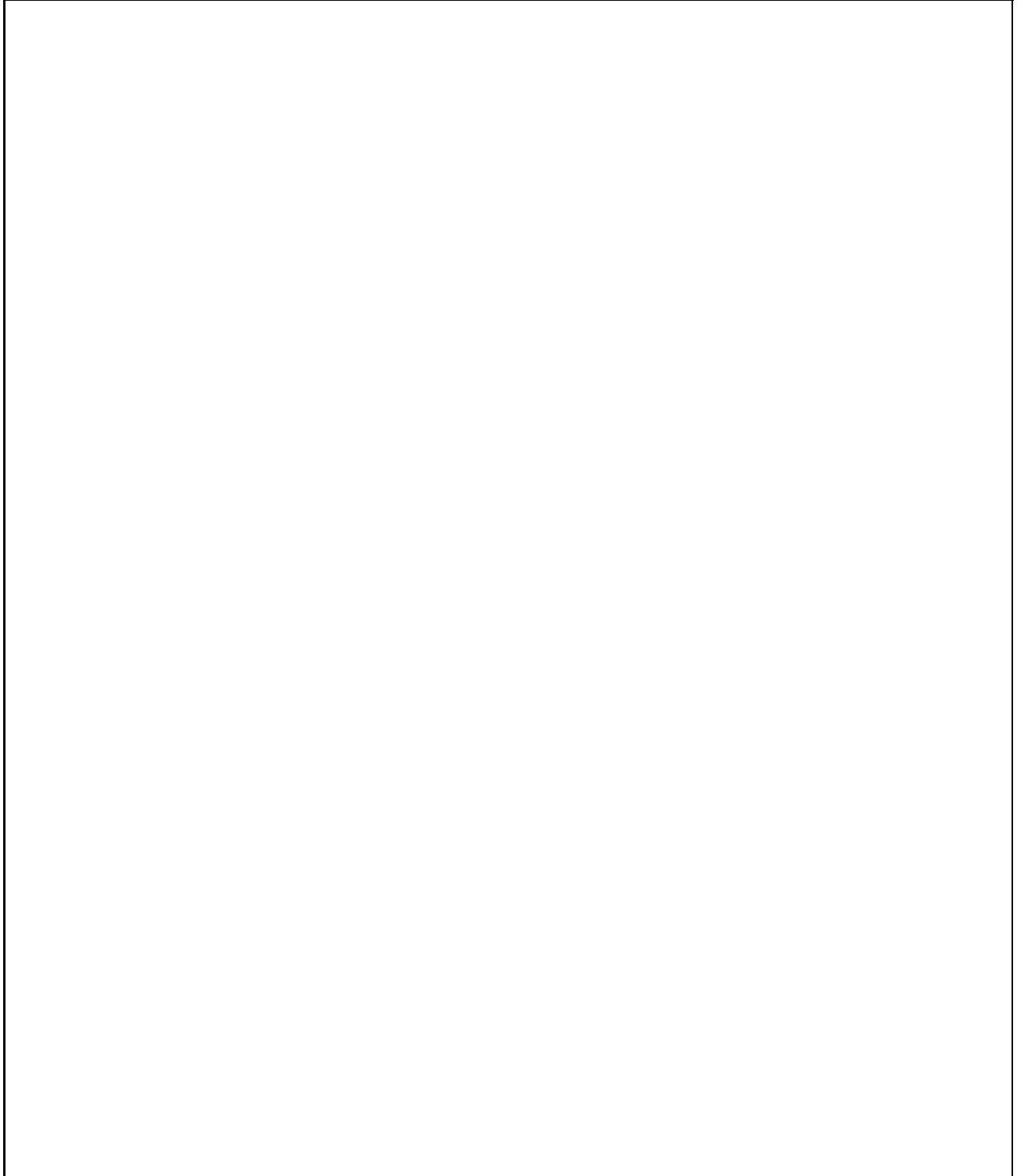
Maintenance issues (cutting grass, leaves, snow removal)

N/A (not applicable)

Other (please specify)

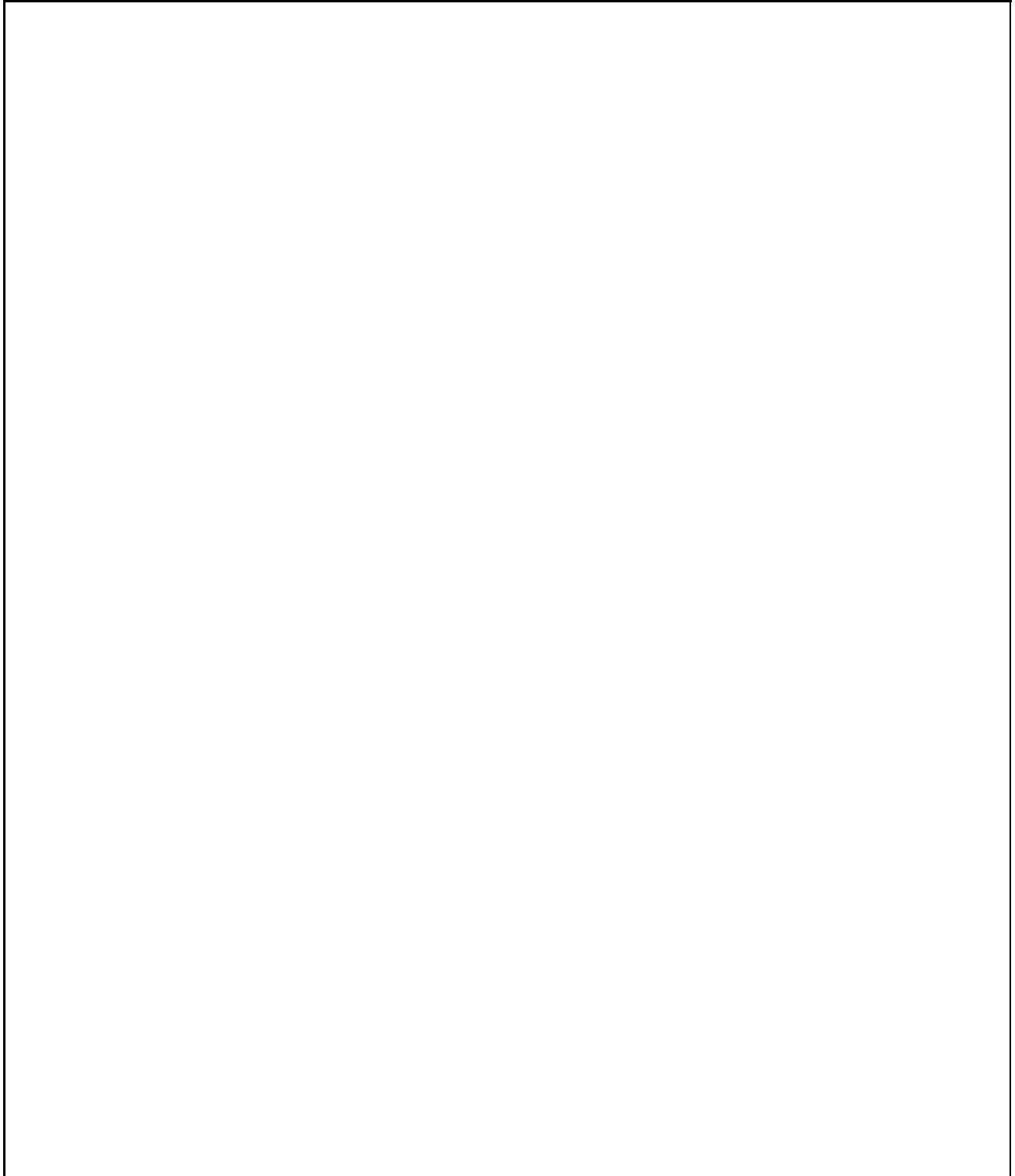
11. Are there any past, current or future transportation/economic development projects near this location (i.e. Federal, State or local projects)?

If Yes please describe and list all projects.

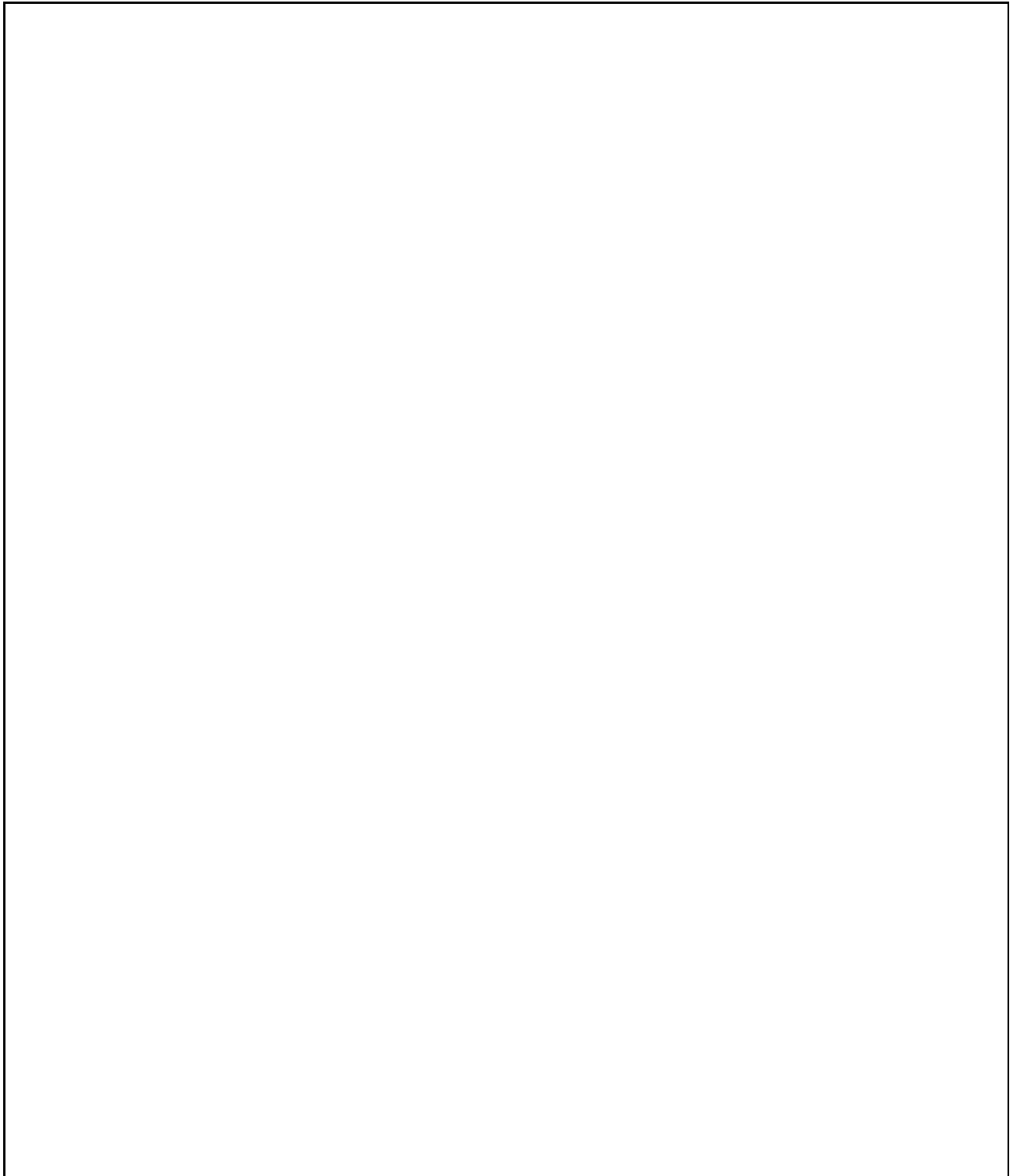
A large, empty rectangular box with a thin black border, intended for the user to describe and list any past, current, or future transportation or economic development projects near the location. The box is currently blank.

12. Environmental Concerns:

If Yes please describe and list.

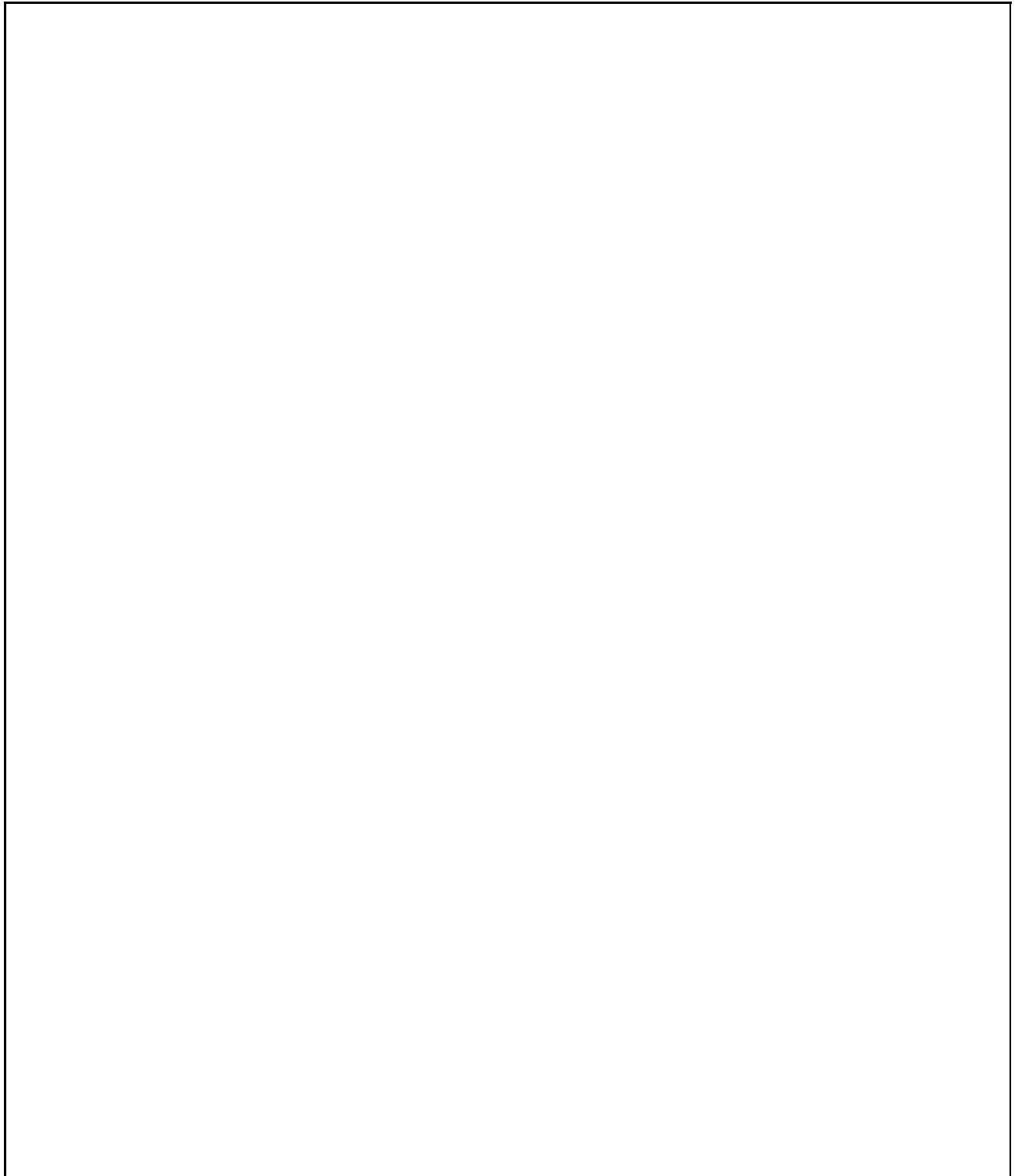
A large, empty rectangular box with a thin black border, intended for the user to describe and list any environmental concerns. The box occupies most of the page's vertical space below the instruction.

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



COMMUNITY
connectivity program

Road Safety Audit

Town: Colchester
RSA Location: Halls Hill Road
Meeting Location: Colchester Town Hall, Room 1
Address: 127 Norwich Avenue
Date: 6/28/2016
Time: 9:00am

Participating Audit Team Members

Audit Team Member	Agency/Organization
Krystal Oldread	Aecom
Ned Connell	SCCOG
Patrick Zapatka	CTDOT
Jay Gigliotti	Town of Colchester
Sal Tasson	Town of Colchester
Randy Benson	Town of Colchester
James Paggioli	Town of Colchester
Kendall Jackson	Colchester BOE



COMMUNITY
connectivity program

Appendix C



AECOM
Built to deliver a better world



Road Safety Audit – Colchester

Meeting Location: Colchester Town Hall, Room 1
Address: 127 Norwich Avenue
Date: 6/28/2016
Time: 9:00 AM

Agenda

- Type of Meeting:** Road Safety Audit – Pedestrian Safety
- Attendees:** Invited Participants to Comprise a Multidisciplinary Team
- Please Bring:** Thoughts and Enthusiasm!!
- 9:00 AM** **Welcome and Introductions**
- Purpose and Goals
 - Agenda
- 9:15 AM** **Pre-Audit**
- Definition of Study Area
 - Review Site Specific Data:
 - Average Daily Traffic
 - Crash Data
 - Geometrics
 - Issues
 - Safety Procedures
- 10:30 AM** **Audit**
- Visit Site
 - As a group, identify areas for improvements
- 12:30 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	

Halls Hill Road



Legend

- Curb
- Edge of Road
- SideWalks

Scale:

1 inch = 300 feet

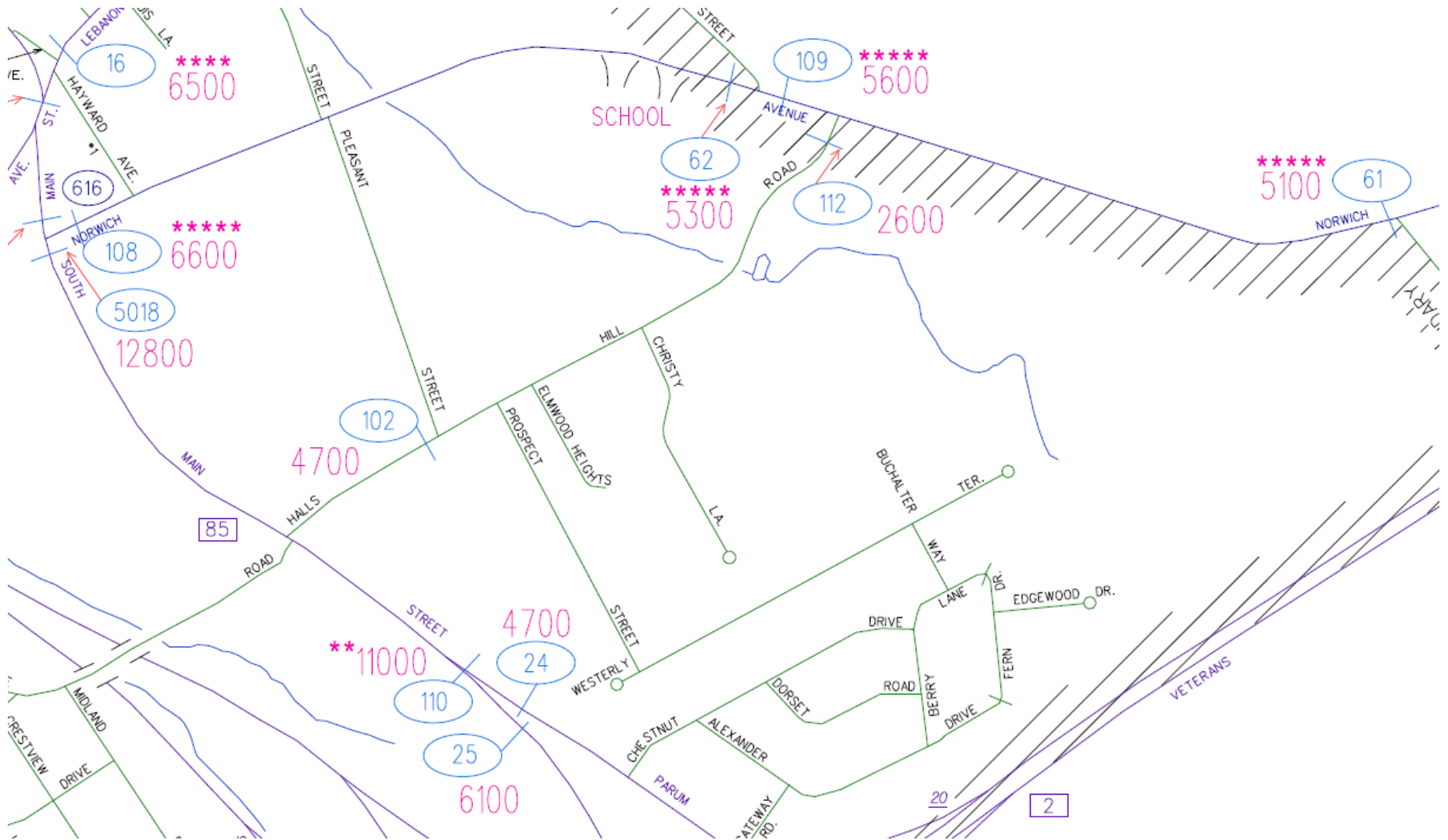
Mapping Prepared
by the Town of Colchester
Planning and Zoning
Department



John A. Lefebvre, Town Engineer

Map of Halls Hill Road showing property lines, road layout, and various street names including Norwich Avenue, Pleasant Street, Main Street, South Main Street, Westery Terrace, and Christy Lane.

Average Daily Traffic (ADT)



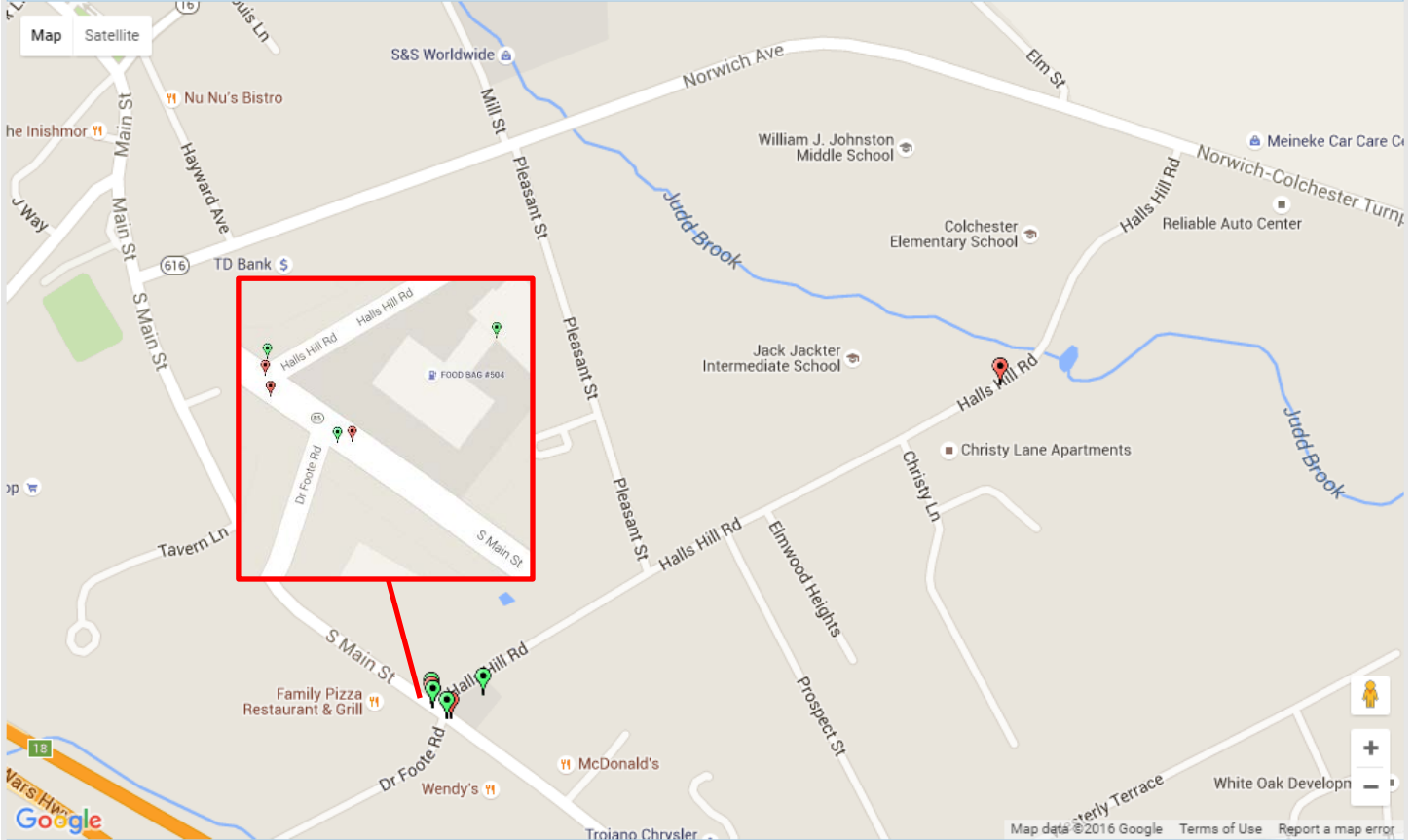
2015 Crashes

UConn

Connecticut Crash Data Repository

Search Criteria:

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



Markers Heatmap Crashes By Route Select & Query

Query Selection

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

Route Segment Scale
0 0



Road Safety Audit – Colchester

Crash Summary

Data: 3 years (2012-2014)

There was one crash involving a pedestrian which resulted in injuries.

There were no crashes involving bicycles.

Severity Type	Number of Crashes	
Property Damage Only	19	86%
Injury (No fatality)	3	14%
Fatality	0	0%
Total	22	

Manner of Crash / Collision Impact	Number of Crashes	
Unknown	0	0%
Sideswipe-Same Direction	3	14%
Rear-end	5	23%
Turning-Intersecting Paths	5	23%
Turning-Opposite Direction	3	14%
Fixed Object	1	5%
Backing	2	9%
Angle	0	0%
Turning-Same Direction	0	0%
Moving Object	1	5%
Parking	0	0%
Pedestrian	1	5%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	1	5%
Miscellaneous- Non Collision	0	0%
Total	22	



Weather Condition	Number of Crashes	
Snow	2	9%
Rain	0	0%
No Adverse Condition	20	91%
Unknown	0	0%
Blowing Sand, Soil, Dirt or Snow	0	0%
Other	0	0%
Severe Crosswinds	0	0%
Sleet, Hail	0	0%
Total	22	

Light Condition	Number of Crashes	
Dark-Not Lighted	0	0%
Dark-Lighted	5	23%
Daylight	16	73%
Dusk	1	5%
Unknown	0	0%
Dawn	0	0%
Total	22	

Road Surface Condition	Number of Crashes	
Snow/Slush	2	9%
Wet	0	0%
Dry	20	91%
Unknown	0	0%
Ice	0	0%
Other	0	0%
Total	22	



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

Colchester - Halls Hill Road



SPEED LIMIT 25

616

N



Cody Camp Memorial Baseball Field

Jack Jackter Elementary School

Colchester Elementary School

William J. Johnston Middle School

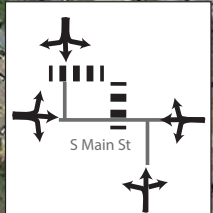
Castle Kid Care

Lions Pond Park/Rec Area

Apple Tree Learning Center

85

SPEED LIMIT 35



Legend

- Sidewalk
- Stop Controlled Intersection
- Crosswalk
- Pedestrian Crossing
- Driveway
- Waterway

DRAFT



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 – Colchester

Fact Sheet

Functional Classification:

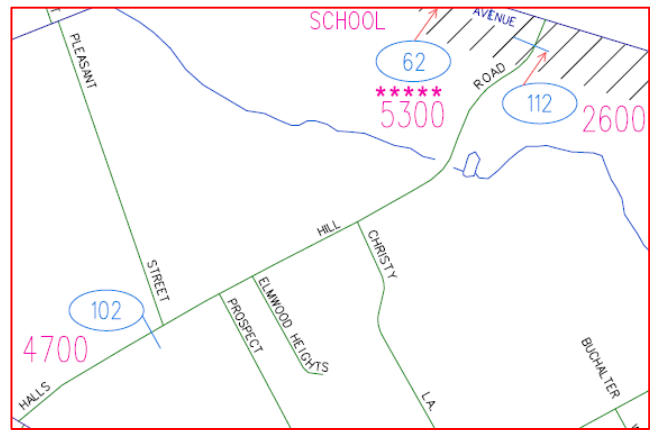
- Halls Hill Road is classified as a Collector

ADT

- ADT on Halls Hill Road is 2,600 – 4,700

Population and Employment Data (2014):

- Population: 16,143
- Employment: 3,746



Urbanized Area

- Halls Hill Road is located in the Colchester Urban Cluster

Demographics

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

Air Quality

- Colchester's CIPP number 602
- Colchester is within the Greater CT Marginal Ozone Area
- Colchester is within a CO Attainment Area