



COMMUNITY
connectivity program

Fairfield

Post Road (CT Route 130) – Road Safety Audit

June 22, 2016



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Acknowledgements:

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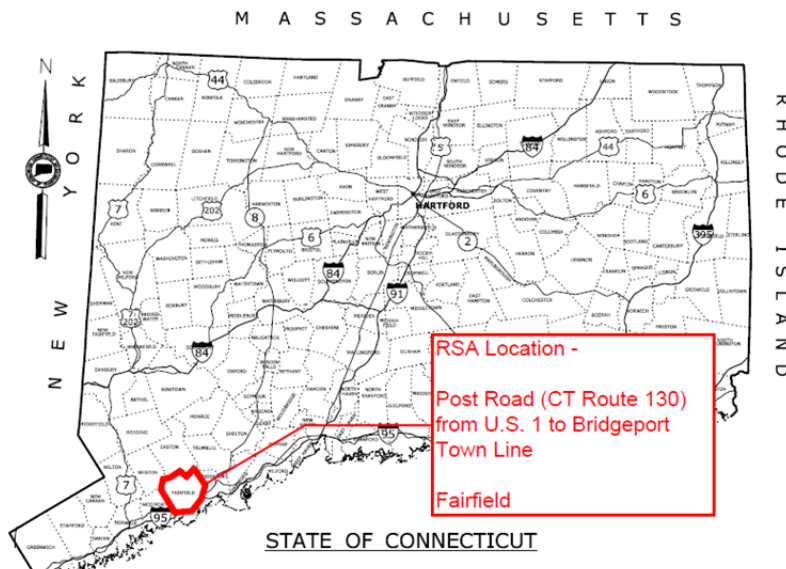
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The Connecticut Department of Transportation (CTDOT) is undertaking a Community Connectivity Program that focuses on improving the state's transportation network for all users, with an emphasis on bicyclists and pedestrians. A major component of this 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 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 Fairfield (Post Road) RSA

The Town of Fairfield submitted an application to complete an RSA along Post Road (Route 130) from the Bridgeport town line to the U.S. Route 1 rotary as well as Grasmere Avenue between Route 130 and Kings Highway to improve safety for pedestrians and bicyclists. The corridor consists of high traffic roadways with a large number of crashes and high Average Daily Traffic (ADT). Pedestrian and bicycle traffic is significant, as residents walk and bike to the beach, and local employees walk between the CT Transit bus stops and businesses in the area. The community would like to improve safety for bicycle traffic along the roadway and improve the pedestrian walkways. Sidewalks have aged and are in need of some repair and improvements to meet current ADA guidelines. Currently there are only a few pedestrian crosswalks in the corridor.

The Town of Fairfield's application contained information on traffic volumes, crash data, pedestrian counts and a mapping of the audit location. The application and supporting documentation are included in Appendix A.

1.1 Location

The study corridor is the 0.50 mile section of Post Road from the Bridgeport town line to the rotary at U.S. Route 1 (Figure 1 and Figure 2). In addition, the corridor includes a quarter mile long section of Grasmere Avenue between Post Road and King's Highway. During the Pre-audit meeting the Town of Fairfield requested that the study area be extended to the Post Road Rotary connection to Kings Highway. The Post Road ADT is between 10,300 – 13,700 vehicles per day (vpd). This is a moderately high volume of traffic for a roadway of this type to process. The Grasmere Avenue ADT is 4,600 vpd., which is a low to medium volume of traffic.

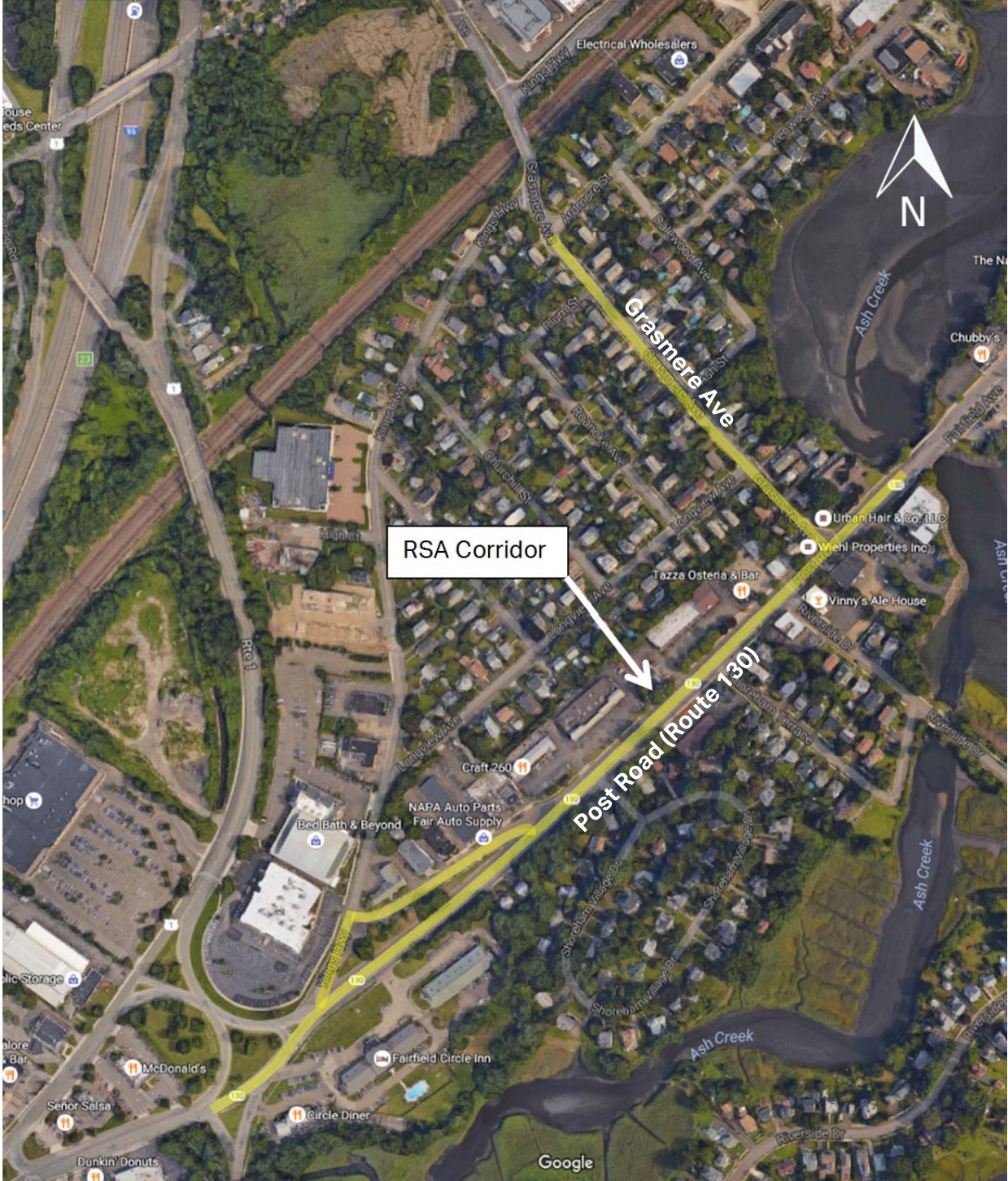


Figure 1. Location map – RSA Corridor: Post Road (Route 130) and Grasmere Ave

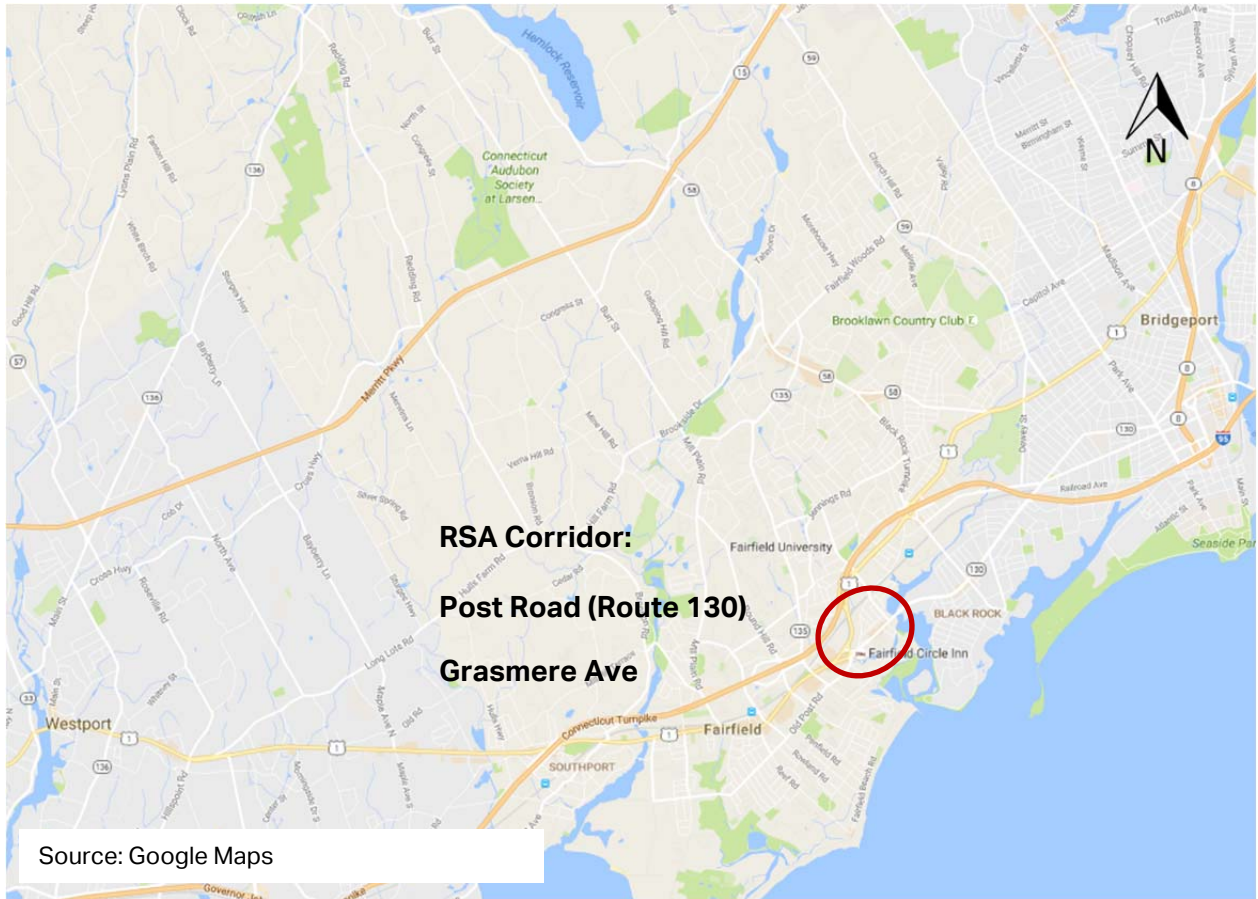


Figure 2. Regional context map

2 Pre-Audit Assessment

2.1 Pre-Audit Information

As noted previously, traffic volumes are significant at this location. The crash history for the three year period from 2012 to 2014 was obtained from the Connecticut Crash Data Repository, and is summarized in Tables 1 and 2. The location of crashes in 2015 is shown in Figure 3. The crash history within the RSA location shows that the most frequent are rear-end and sideswipe crashes. This is indicative of congestion coupled with access management issues (many driveways). The peak crash rates are during the afternoon hours.

Severity Type	Number of Accidents	
Property Damage Only	26	70%
Injury (No fatality)	11	30%
Fatality	0	0%
Total	37	

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	8	22%
Rear-end	16	43%
Turning-Intersecting Paths	6	16%
Turning-Opposite Direction	2	5%
Fixed Object	2	5%
Backing	0	0%
Angle	0	0%
Turning-Same Direction	1	3%
Moving Object	0	0%
Parking	0	0%
Pedestrian	1	3%
Overturn	0	0%
Head-on	1	3%
Sideswipe-Opposite Direction	0	0%
Unknown	0	0%
Total	37	

Table 2. Crash type 2012-2014

Source: UConn Connecticut Crash Data Repository

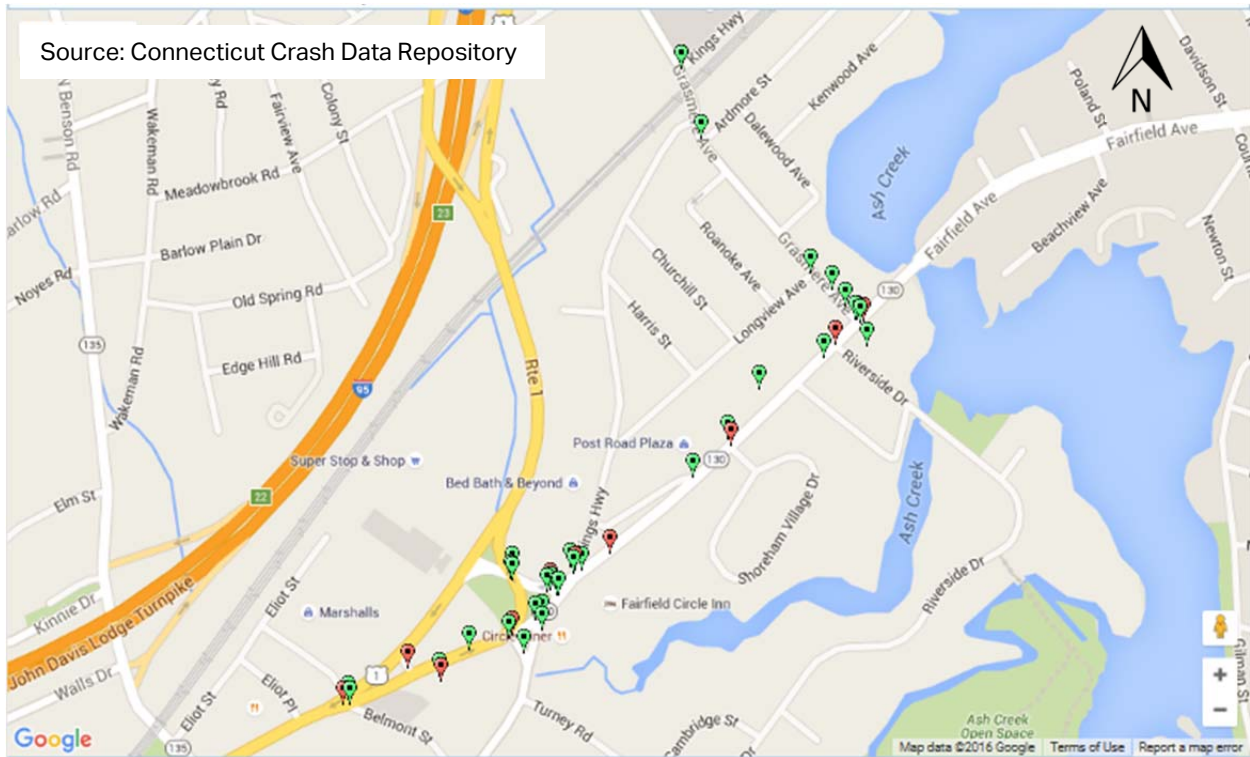


Figure 3. Crashes that occurred in 2015 (Connecticut Crash Data Repository)

Post Road is a state-owned and maintained facility that runs in a relatively straight northeast/southwest direction. It is used by local traffic and running parallel with I-95 to provide access to local businesses, residential areas, and corridor strip malls. Drivers will also use Post Road as a bypass to I-95 when it is seriously congested, which is a frequent occurrence. Post Road consists of two lanes in each direction for its entire length in the study area. The south side of Post Road has sidewalks throughout the corridor while the north side lacks sidewalks at the west end of the route in the study area. Land use on Post Road is primarily retail/commercial.

The Post Road Rotary is a state owned and maintained facility that is the junction between Route 130 and US Route 1, and provides an alternate connection to Kings Highway. The Post Road Rotary consists of one lane in each direction and on street parking is allowed on both sides of the street. There are no sidewalks on the south side of the Post Road Rotary and the sidewalk on the north side terminates about 180 feet before the Kings Highway intersection. The land use on the Post Road Rotary is all commercial, and an unusual feature of the circle is that there are businesses located within the circle itself, causing left turns within the circle, and requiring pedestrians to cross the circle to reach the interior sites.

Grasmere Avenue is a town owned and maintained facility that runs in a relatively straight north/south direction. Grasmere Avenue consists of one lane in each direction for its entire length in the study area. Grasmere Avenue has sidewalk on both sides of the road in the study area. However, at the northern border of the study area the sidewalk (on the east side of Grasmere Avenue) terminates at the intersection with Ardmore Street. Land use on Grasmere Avenue is medium-density residential.

Generally, there are concrete sidewalks along both sides of the streets throughout the entire corridor. The sidewalks vary in condition, but are generally serviceable, with some localized sections in need of replacement and maintenance. The sidewalk varies from 3 to 8 feet in width and a snow shelf is generally provided. The snow shelf varies between wide grass buffers and narrow (1 foot) brick paved separators.

Roadway geometrics for study area roadways and intersections are shown in Figure 4. An inventory of existing conditions of the intersection can be found in Table 3.

Fairfield - CT Rte 130 (Post Road) from Rotary at Rte 1 to Bridgeport Line

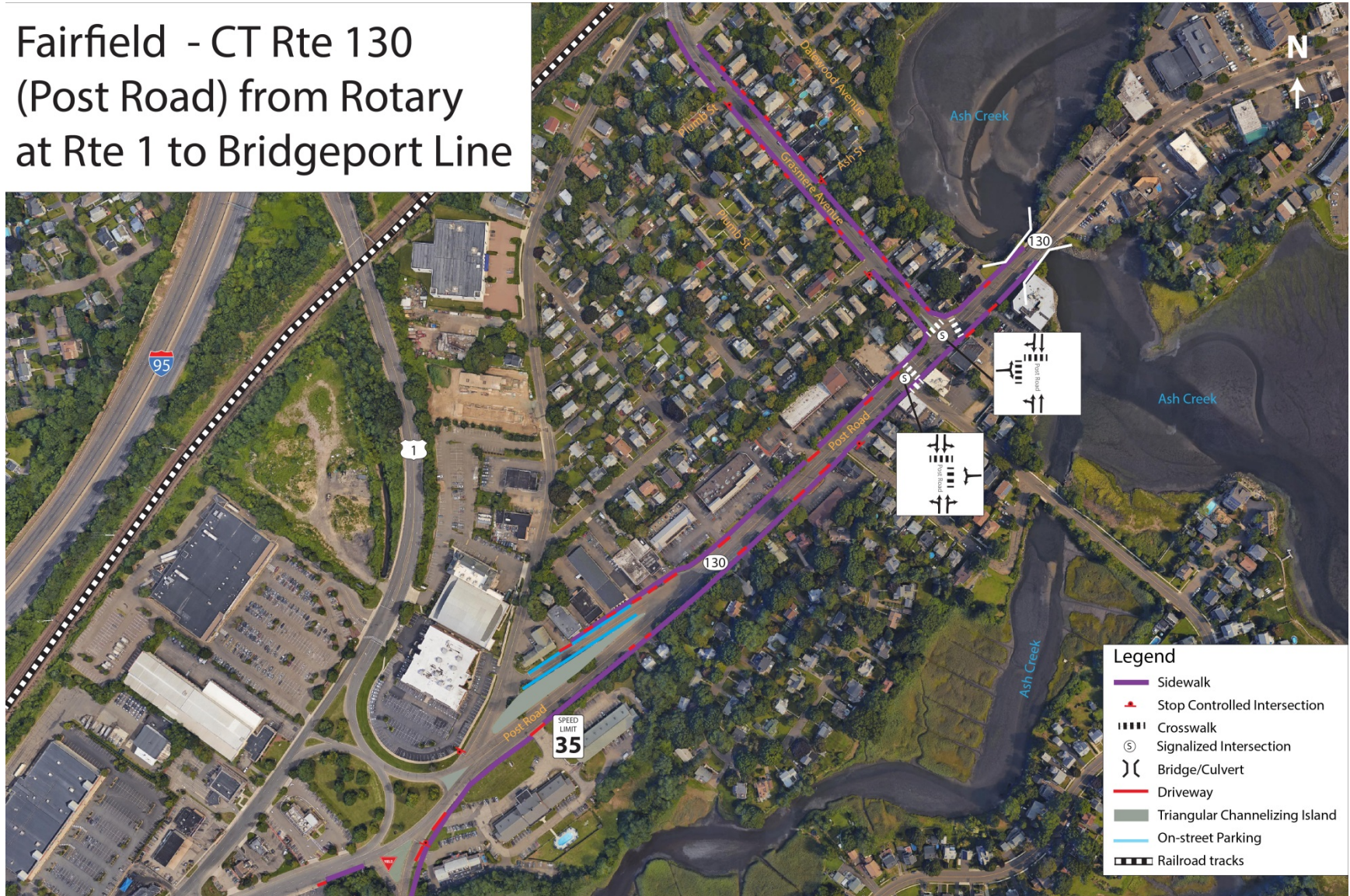


Figure 4. RSA road geometrics

Fairfield - Post Road (Route 130) Street Inventory

From	To	Distance	Lane width	Sidewalk				Curb	Parking	Shoulder	Ramps	
				Side	Type	Width	Condition				Exist	Compliant
Kings Highway	Shoreham Village	.18 miles	14', 12'	North	None	None	None	None	No	2'	None	None
	Drive		12', 14'	South	Concrete	?	Fair	Granite	No	2'	None	None
Shoreham Village Drive	Bridgeport City Line	0.23 miles	± 15', 12'	North	Concrete	5-6'	Fair-Good	Concrete	Yes	None	Yes	Some
			± 12', 18'	South	Concrete	5-6'	Fair-Good	Concrete	Yes	None	Yes	No
Jug Handle	Kings Highway	0.1 miles	12'	North	Concrete (Most)	± 4'-10'	Fair-Good	Concrete	Yes	8'	None	None
				South	None	None	None	Concrete	Yes	8'	None	None

Fairfield - Grasmere Ave Street Inventory

From	To	Distance	Lane width	Sidewalk				Curb	Parking	Shoulder	Ramps	
				Side	Type	Width	Condition				Exist	Compliant
Post Road	Ardmore Street	.22 miles	16'	East	Concrete	5'	Poor	None	Yes	None	Yes	No
			17'	West	Concrete	5'	Poor	Granite	Yes	None	Yes	No

*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 to this area of Fairfield. A bike rack was installed on Post Road to service the local businesses (Figure 5). Along Post Road, pedestrian crosswalks have been upgraded with fresh paint, new push buttons and detectable warning strips (Figure 6 and Figure 7).



Figure 5. Bike rack



Figure 6. Crosswalk and detectable warning strips



Figure 7. Push button

2.3 Pre-Audit Meeting

The RSA was conducted on June 22, 2016. The Pre-Audit meeting was held at 8:30 AM at the Fairfield Circle Inn, located at 417 Post Road in Fairfield.

The RSA Team was comprised of staff from CTDOT and AECOM, as well as representatives from several Fairfield departments and organizations, including the Engineering Department, Police Department, School Administration, Bike and Pedestrian Committee, Fairfield Circle Inn, Hazel Daze and the Fairfield Economic Development Office. 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 roadway geometrics, can be found in Appendix C.

RSA Team members from Fairfield presented relevant information for the audit, and the following issues were discussed:

- Bus riders must cross four lanes of traffic on Post Road in order to reach the bus stop at the end for the Post Road Rotary. The majority of employees at the Fairfield Circle Inn travel to and from work using public transit.
- Crosswalks on Post Road are not located in areas that are most convenient for pedestrian activity. Pedestrians do not always use the marked crosswalks to cross the road.

- There are no crosswalks for pedestrians to access the businesses located inside the Route 1 rotary and customers must drive to access these businesses.
- There are segments of sidewalk that are narrow and/or in poor condition. Members of the town noted that portions of sidewalk are lacking streetscaping and a buffer between the sidewalk and roadway. The town would like to consider widening the sidewalk to four to five feet where possible.
- Grasmere Avenue is residential and most families have up to three cars. Since each house has limited off street parking, the length of the street is used for on street parking.
- The majority of trips on Post Road are made to the strip malls by car.
- Traffic will back up past the Bridgeport city line during rush hour.
- There are pedestrian activated signals at some intersections:
 - When they are activated multiple times in a row traffic queues can build up quickly.
- The intersection of Kings Highway with the Post Road Rotary is unnecessarily wide.
- Guests of the Fairfield Circle Inn would like to be able to walk to local businesses and utilize the hotel's bike rental service.
- The town is concerned that the study area is a challenging environment for cyclists. If bike facilities were improved, the town feels that commuters may be more likely to bike from the train station.
- School bus route issues:
 - Buses must make stops on both sides of Post Road so that students do not have to cross the road.
 - Grasmere Avenue has many bus stops and the buses must navigate in and out of the neighborhoods off Grasmere Avenue.
 - Buses can only cross the train tracks in three locations.

3 RSA Assessment

3.1 Field Audit Observations and Questions

Post Road (Route 130)

- The sidewalk on the south side of Post Road is narrow (Figure 8).
 - Becomes even narrower in some locations where there is overgrowth on the sidewalk (Figure 9).
 - Utility poles are located in the middle of the sidewalk in some areas (Figure 8)
- The crosswalk at the signalized intersection of Post Road and Riverside Drive has an exclusive pedestrian phase. (Figure 9).
- There is one bike rack on the northwest corner of Post Road and Grasmere Avenue.
- Cyclists were observed riding on the roadway and sidewalk.
- The crosswalk at the intersection of Grasmere Avenue and Post Road (Figure 10):
 - Does not have pedestrian push buttons.
 - Is missing a detectable warning strip on the northeast corner.
- The sidewalk on the north side of Post Road ends abruptly at the Intersection of Post Road and Riverside Drive.
 - The sidewalk is interrupted by a parking lot for the local businesses.
 - At the sidewalk's end there is a paved area that is not a parking space. Customers park here and impede pedestrian travel (Figure 11).



Figure 8. Narrow sidewalks/utility poles in

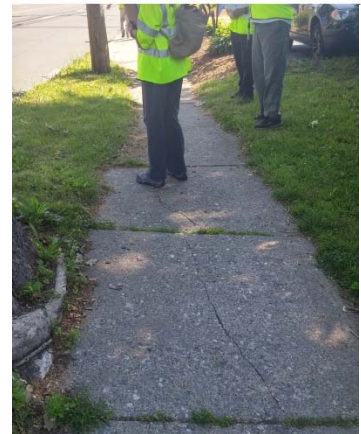


Figure 9. Overgrowth narrowing sidewalk



Figure 10. Missing pedestrian push button and detectable warning strip



Figure 11. Car not parked in a designated space

- Bus stops do not have shelters.

Grasmere Avenue:

- The northbound travel lane measures 16 feet and the southbound travel lane measures 17 feet. This includes space for on street parking.
- The sidewalks on both sides of Grasmere Avenue are overgrown in multiple areas (Figure 12).
- The sidewalks on both sides of Grasmere Avenue are deteriorating and uneven in multiple locations (Figure 13).
- Some catch basins have not been replaced with bike friendly grates that have smaller openings.
 - These are usually updated with paving projects.
 - Bikers can ride as far to the left as they need in order to ride safely.
- Southern signalized intersection of Grasmere Avenue and Kings Highway:
 - Very close proximity to northern signalized intersection of Grasmere Avenue and Kings Highway.
 - The town is hesitant to install an exclusive pedestrian phase across Grasmere Avenue due to concerns of traffic back up on the bridge and northern Grasmere Avenue and Kings Highway intersection.
- Vehicles travel much faster where there is no on street parking.
- At the intersection of Grasmere Avenue and Plum Street there is a one way sign pointing in the wrong direction and another one way sign partially blocked by tree branches (Figure 14).



Figure 12. Poorly maintained sidewalk landscaping



Figure 13. Poor sidewalk condition



Figure 14. One Way Sign pointing in wrong direction/covered by branches

- Intersection with Post Road has a very large turning radius. This is necessary due to heavy truck traffic on Grasmere Avenue.
- Some traffic signs are mounted below standard height (Figure 15).

Post Road “Jug Handle”:

- The road could be converted to a one way street but there is opposition from the businesses on the street.
- There is only a sidewalk on the north side of the road. The sidewalk on the north side is disjointed and ends in front of Physical Synergy (Figure 16).
- Converting the street to one way could create room for back in angled parking.
- There is on street parking for the length of the road.
- There are no crosswalks provided on the road despite the fact that people must cross the road when parking on the south side of the Jug Handle.
- Intersection of Post Road Jug Handle and Kings Highway:
 - The intersection is unnecessarily wide.
 - The stop bar on the Jug Handle is located far back from the intersection so that drivers may have difficulty seeing approaching traffic on Kings Highway when attempting to make a turn.
- Bus stop on Jug Handle Island (Figure 17):
 - There are no crosswalks on Post Road or the Rotary for pedestrians to use to reach the bus stop on the island.
 - Post Road is 61 feet wide at this location.



Figure 15. Signs mounted below standard height



Figure 16. Disjointed sidewalk



Figure 17. Post Road jug handle bus stop

- There is a bench with no shelter.
- Bus riders must navigate a steep grass slope where the bus picks up when boarding or getting off the bus. There is no sidewalk.

3.2 Post-Audit Workshop - Key Issues

1. The condition of the sidewalks in the study area is inconsistent:
 - a. The south side of Post Road consists of a three foot wide sidewalk with no buffer between the Circle Inn property and Shoreham Village Drive. This already narrow sidewalk is further restricted by overgrowth and utility poles.
 - b. Sidewalks are uneven, which may prove especially difficult to navigate by elderly and disabled pedestrians.
 - c. There are lengths of sidewalk on Grasmere Avenue that have overgrown trees and bushes. In these areas leaves and branches encroach upon the sidewalk and pedestrians must walk off of the sidewalk in order to avoid them.
 - d. In some areas the sidewalk network is fragmented. The sidewalk stops on the north side of Post Road across from Riverside Drive and in front of Physical Synergy. This occurs in areas where pedestrians may still expect to be able to continue walking.
2. Traffic volumes on Post Road may make it eligible for a road diet but a study would need to be conducted to determine the effect on peak hour congestion as this section is used as a bypass for I-95. If a road diet is desired, a possible lane restriping could remove one lane and designate the middle lane as a shared left turn lane for both travel directions. This could reduce speeds, improve sight lines for left turns, decrease the crossing distance for pedestrians and create room for bike facilities.
3. On Grasmere Avenue buses prefer to stop at street corners. However, cars often park on street corners preventing buses from stopping at their preferred spots. The town may want to look into removing one or two parking spaces at street corners. This could also help improve sightlines at pedestrian crossings of side streets. Alternatively, instead of removing the parking spaces entirely, parking could be restricted at the spaces during specific times.

4. Fairfield has an existing capital project in the 6-year Capital Improvement Program to repair and enhance the medians throughout this corridor. It is based on potential state or federal funding for the project.
5. Multiple crossings are not compliant to current ADA standards. Fairfield should look to install detectable warning strips to improve safety for disabled pedestrians.
6. The intersection of Kings Highway and the Post Road Jug Handle may be difficult to navigate for motorists. The stop bar on the Jug Handle is set too far back for driver to make a left onto Kings Highway without coming out into the intersection. Squaring up the intersection and moving the stop bar out could greatly improve sightlines. When squaring the intersection, the curbs can be bumped out in order to better define movements through the intersection.
7. The Town is interested in widening sidewalks wherever possible along the corridor.
8. The Town can apply for state funds in order to complete projects on town roads.

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 eighteen months 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 three 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 three years or more when funding is available.

4.1 Short-Term

1. Signage:
 - a. Trim branches in front of one way sign on Plum Street.
 - b. Correct one way sign on Plum Street that is facing the wrong way.
2. Pavement Marking:

- a. Paint no parking hash marks where customers park in areas that are not designated spaces in the parking lot opposite Riverside Drive (Figure 18).
3. Sidewalks:
 - a. Clear overgrowth on sidewalks and maintain branches that encroach on sidewalk space.
 - b. Repair damaged sidewalk areas (Figure 19).
4. Add new bike racks along Post Road at popular destinations.
 5. Remove one or two parking spaces on Grasmere Avenue at street corners for bus route stops.
 6. Perform a road diet study on Post Road.

Figure 20 depicts these short-term recommendations.



Figure 18. Paint no parking pavement markings



Figure 19. Repair uneven sidewalk

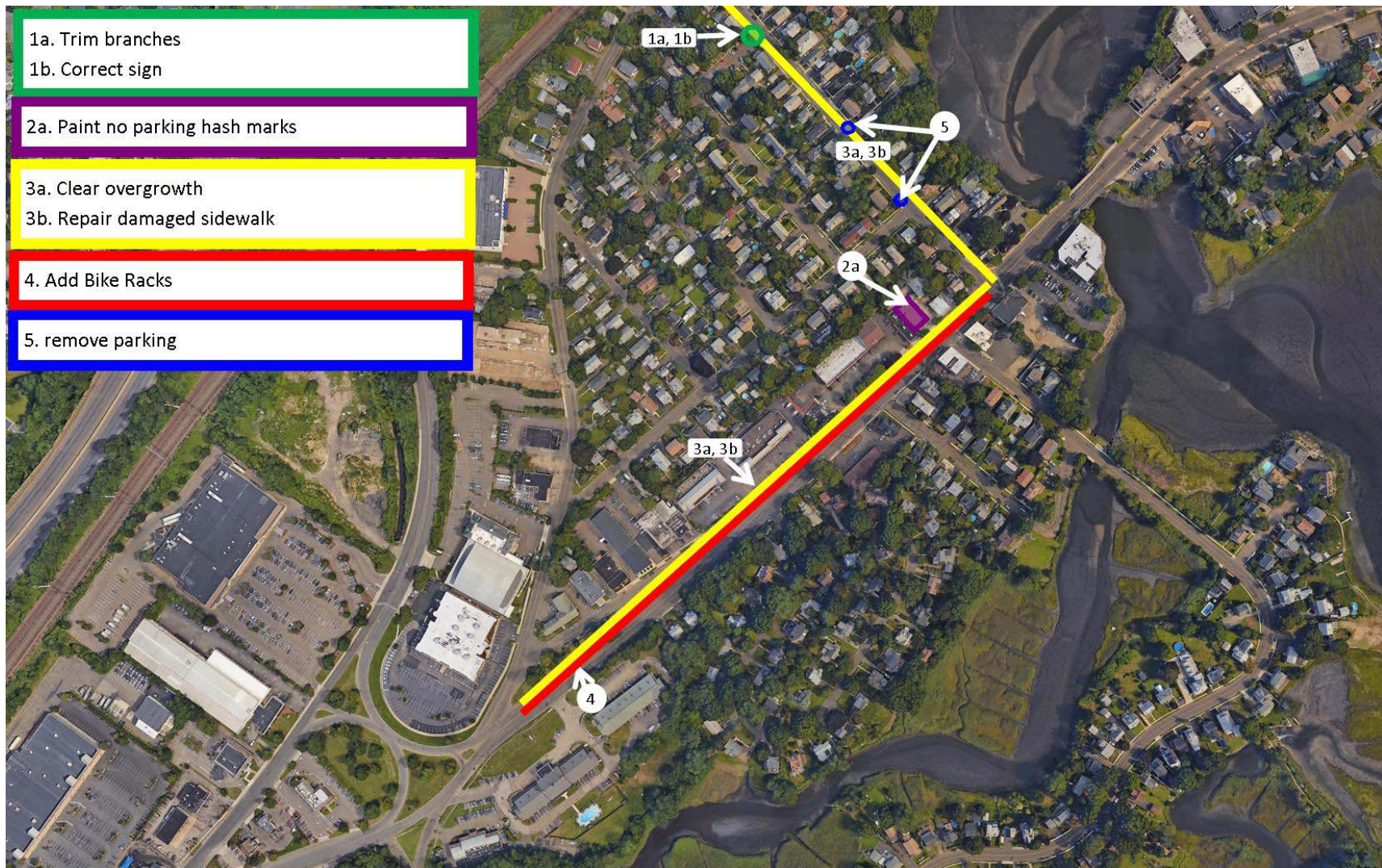


Figure 20. Short term recommendations map

4.2 Mid-Term

1. Install shelters at bus stops along the corridor.
2. Sidewalk network:
 - a. Continue sidewalk on Post Road Jug Handle from Physical Synergy to businesses further west on the street.
 - b. Connect sidewalks on both sides of the entrance to the parking lot opposite Riverside Drive. This could mean installing a sidewalk, using an alternate textured material or simply painting a crossing.
3. Crosswalks:
 - a. Replace sidewalk ramps and/or add detectable warning strips to ramps where needed (Figure 21).
 - b. Coordinate with CTDOT to install pedestrian push button and signal for the Grasmere Avenue crossing at Post Road.
 - c. Coordinate with CTDOT to install a midblock crosswalk on the Post Road Jug Handle in conjunction with a bus stop placement study.
4. Widen sidewalks where possible.
5. Conduct a road diet on Post Road by restriping one travel lane in each direction with middle shared left turning lane (Figure 22). Consider striping a bike lane with the extra street space.
6. Convert Post Road Jug Handle to one way travel and restripe for back in angled parking instead of parallel parking (Figure 23).
7. Ensure that bike friendly catch basins with smaller grates are installed along with pavement projects.



Figure 21. Typical detectable warning strip



Figure 22. Shared left turn lane



Figure 23. One way with back in angled parking

8. Move up stop bar at the intersection of Post Road Jug Handle and Kings Highway.

Figure 24 depicts these mid-term recommendations.

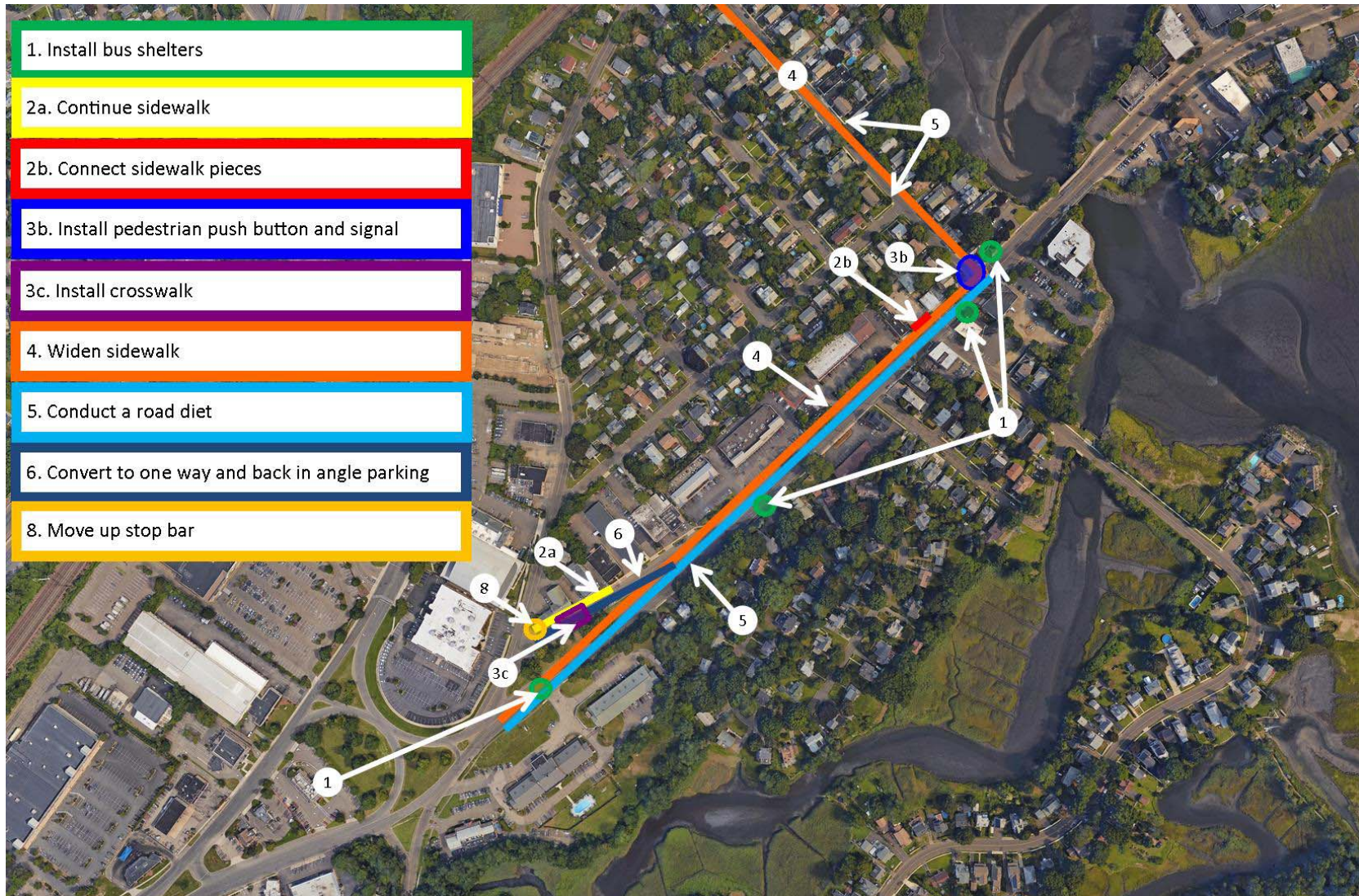


Figure 24. Medium term recommendations

4.3 Long-Term

1. Remove some of rock ledge on south side of Post Road to make room for widening the sidewalk to five feet. It is noted that there may be right of way implications.
2. Relocate utility poles on the south side of Post Road from the middle to the back of the sidewalk. Relocating utilities underground is an option but would be very costly.
3. Realign the intersection of the Post Road Jug Handle and Kings Highway by squaring off intersection and reducing curb radius.
4. Improve bus stop on the Jug Handle Island across from the Fairfield Circle Inn by installing a shelter and cutting into severe slope (Figure 25).
5. Provide a refuge island for pedestrians crossing between the bus stop on the Jug Handle Island and the Fairfield Circle Inn (Figure 26).
6. Reconfigure the rotary where Post Road meets U.S. 1
 - o Check for 345 KV lines that may be underground



Figure 25. Bus shelter



Figure 26. Pedestrian refuge island

Figure 27 depicts these long-term recommendations.

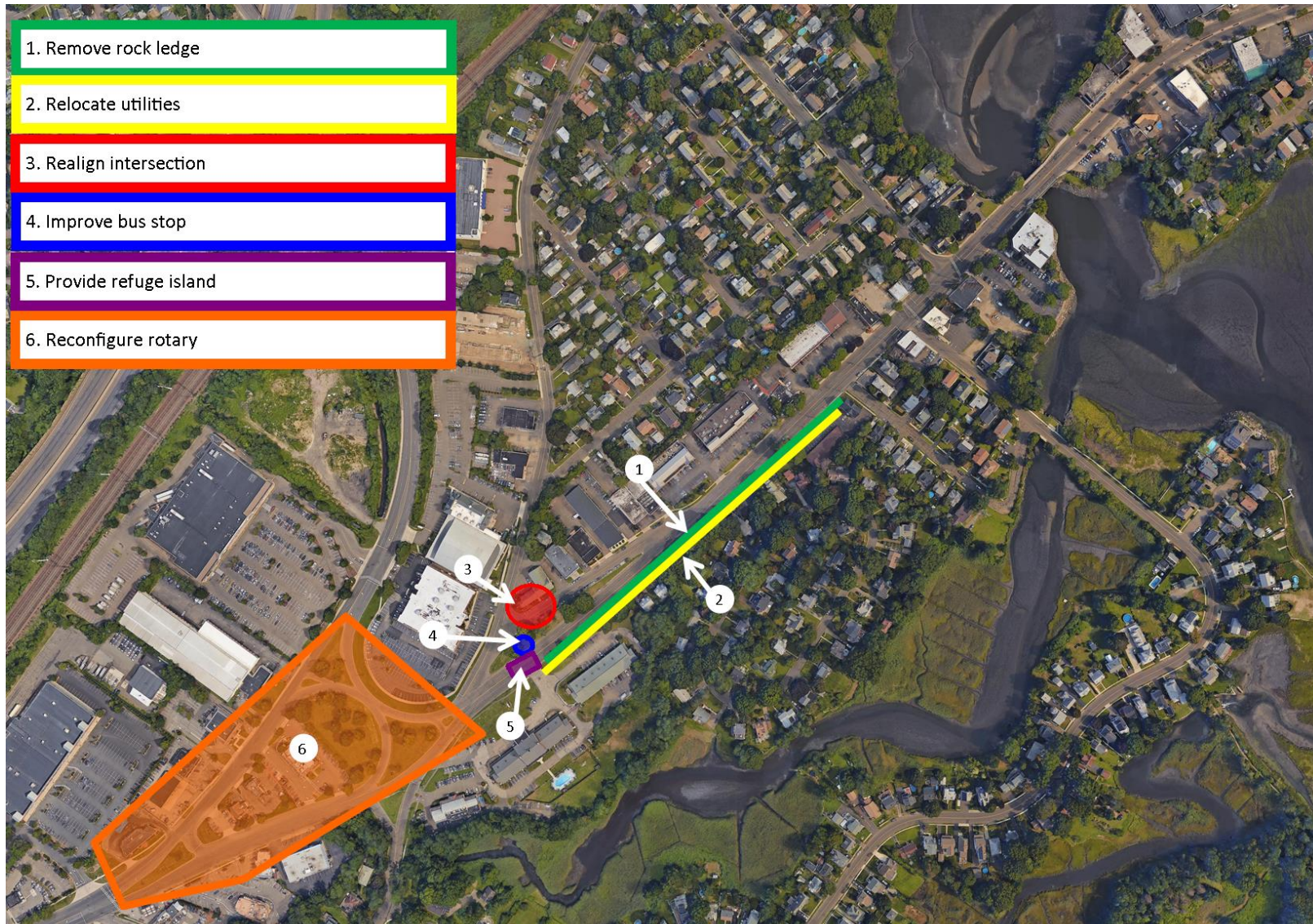


Figure 27. Long Term recommendations map

4.4 Summary

This report outlines the observations, discussions and recommendations developed during the RSA. It documents the successful completion of the Town of Fairfield RSA and provides Fairfield with an outlined strategy to improve the transportation network along Post Road (Route 130) and Grasmere Avenue for all road users particularly focusing on pedestrians and cyclists. Moving forward, Fairfield 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 along Post Road (Route 130) and Grasmere Avenue.