COMMUNITY
connectivity program

Weston

Town Center Road Safety Audit

June 6, 2016

CONNECTICUT DEPARTMENT OF TRANSPORTATION

AECOM

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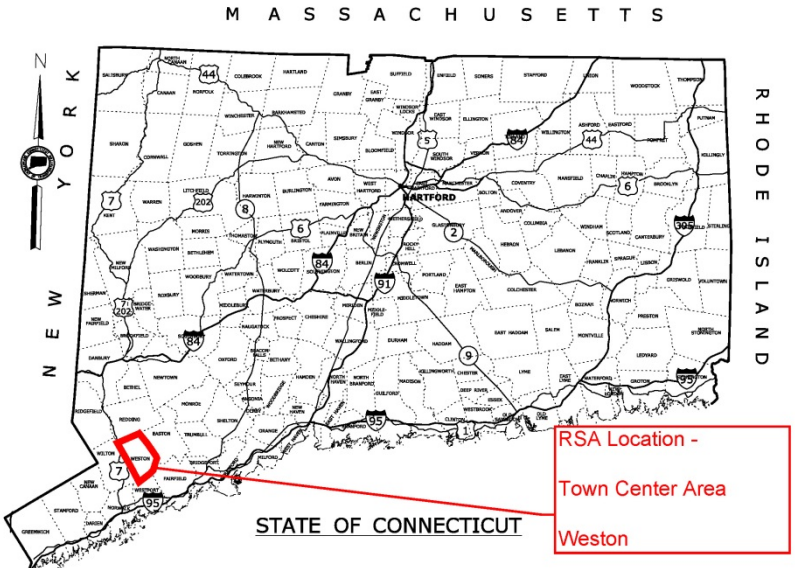
The Connecticut Department of Transportation (CTDOT) is undertaking a Community Connectivity Program that focuses on improving the state's transportation network for all users, with an emphasis on bicyclists and pedestrians. A major component of this program is conducting Road Safety Audits (RSA's) at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

The Town of Weston submitted an application to complete an RSA along several streets in the Town Center area, particularly focusing on School Road, Weston Road (State Route 53/State Route 57), Norfield Road, Old Hyde Road and Lords Highway to improve safety for pedestrians and bicyclists. In particular, Weston expressed concerns with the volume and speed of traffic on Weston Road contributing to what is perceived as a challenging environment for pedestrians and cyclists. The Town of Weston would like to improve sidewalk facilities and crosswalks to encourage pedestrian use in this area due to the proximity to the public schools and shopping areas.

The Town of Weston's 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

The site consists of several streets located near the Town Center area in the Town of Weston (Figure 1). Weston submitted an application identifying Weston Road, Norfield Road, Old Hyde Road, School Road and Lords Highway as in need of improved pedestrian connections. Particular emphasis was requested for a section of Weston Road between School Road and Norfield Road. All of Weston's public schools are located on School Road, so there is considerable pedestrian traffic in this area from school and recreational activities. There are currently no sidewalks on School Road near the Weston Road intersection. Weston Road is a Minor Arterial and provides and north-south connection in western Connecticut (Figure 2). As a result, this route is often used by commuters heading to the New York metro area. The Average Daily Traffic (ADT) on Route 57 ranges from 8,600 near School Road to 12,100 near Norfield Road.

Figure 1. Town Center Area in Weston

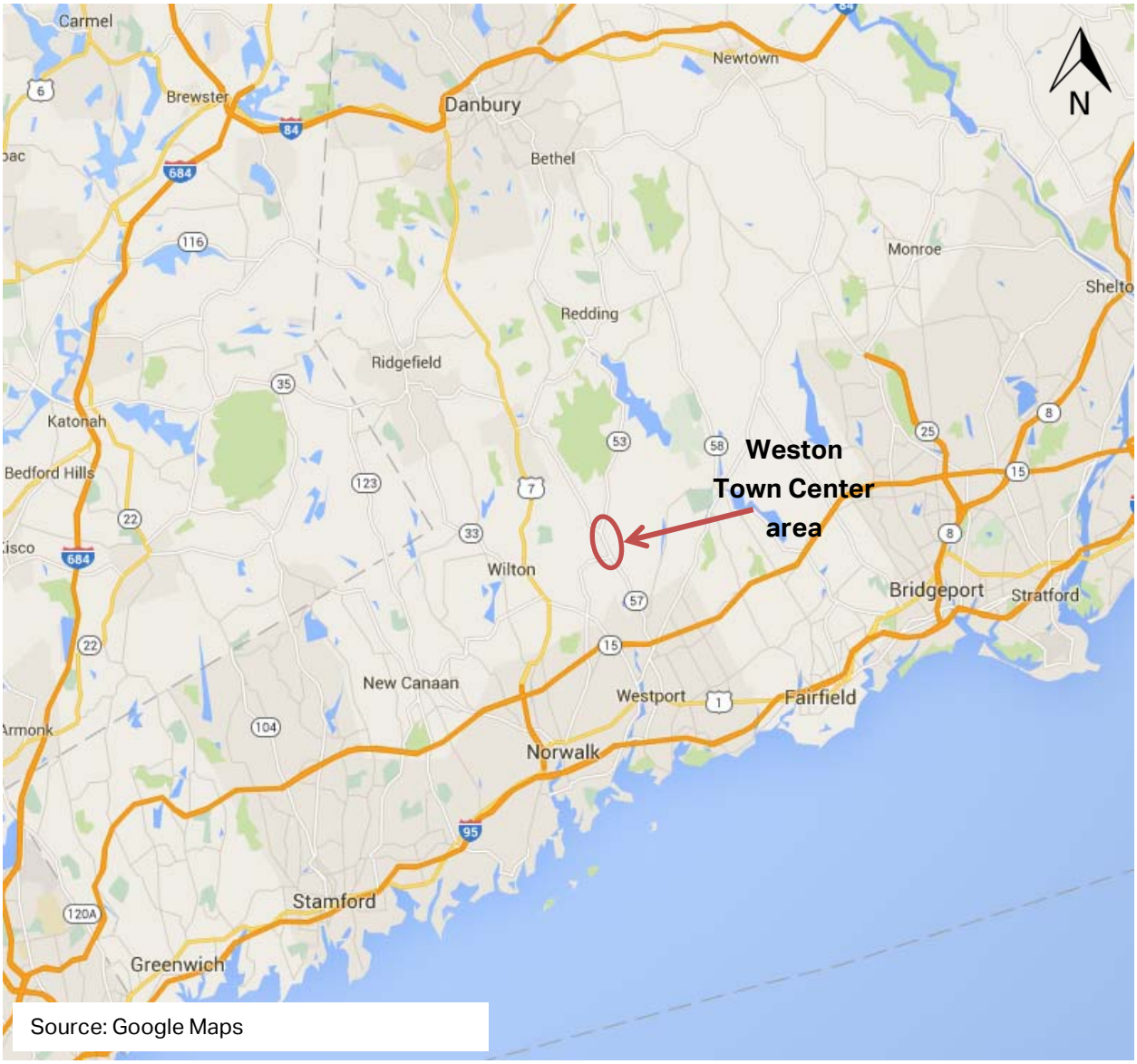


Figure 2. Weston Town Center Area - Regional Context

2 Pre-Audit Assessment

2.1 Pre-Audit Information

Between 2012 and 2014, there were 46 crashes near the Town Center area along Weston Road, School Road, Norfield Road, Old Hyde Road and Lords Highway. A majority (37%) of these crashes involved rear-end collisions. It is important to note that the second highest crash type (15%) involved turning movements (intersecting paths). The majority of crashes resulted in property damage only, however 8 crashes reported there were injuries to involved parties (Table 1). One crash involved a pedestrian near the Lords Highway intersection with

Weston Road; this collision resulted in injuries. Figure 3 displays the location of crashes in the town center area that occurred in 2015. A cluster of accidents is evident at the Route 53 and Norfield Road intersection.

Severity Type	Number of Accidents	
Property Damage Only	38	83%
Injury (No fatality)	8	17%
Total	46	

Table 1. Crash Severity

2012-2014

Source: UConn Connecticut Crash Data Repository

Manner of Crash / Collision Impact	Number of Accidents	
Unknown	1	2%
Sideswipe-Same Direction	2	4%
Rear-end	17	37%
Turning-Intersecting Paths	7	15%
Turning-Opposite Direction	3	7%
Fixed Object	5	11%
Backing	1	2%
Angle	3	7%
Turning-Same Direction	1	2%
Moving Object	4	9%
Parking	0	0%
Pedestrian	1	2%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	1	2%
Miscellaneous- Non Collision	0	0%
Total	46	

Table 2. Crash Type

2012-2014

Source: UConn Connecticut Crash Data Repository

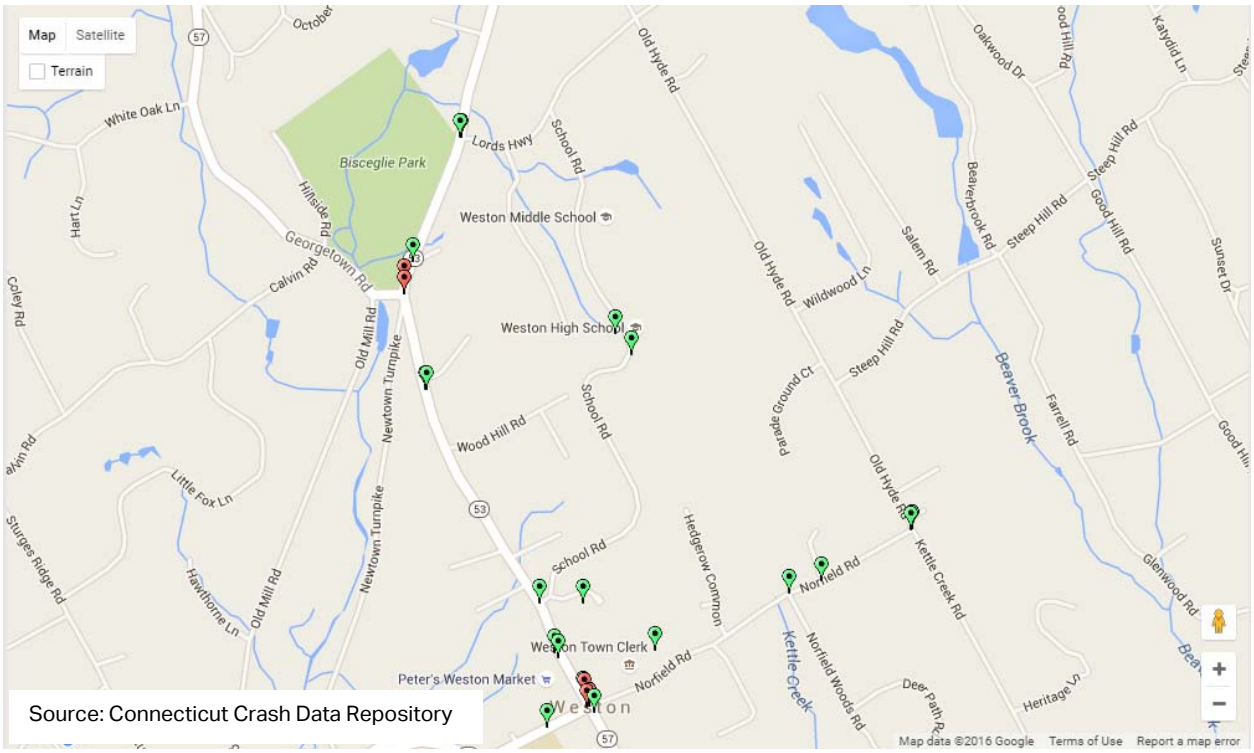


Figure 3. Crashes that Occurred in 2015 (Connecticut Crash Data Repository)

Weston Road (Route 53) is a state owned and maintained facility and runs in a relatively north-south direction through the center of Weston. This road is often used as a bypass for commuters and as a result experiences significant traffic congestion during the commuter peak morning and evening periods. Through the town center, Weston Road has one northbound and one southbound travel lane. There are no sidewalks on Weston Road between School Road and Norfield Road.

School Road is a town owned and maintained facility and provides access to all of Weston's schools including Weston Intermediate School, Weston Middle School, and Weston High School. The intersection with Weston Road is controlled by a traffic signal. School Road has a two lane approach, striped as a left turn and right turn lane. The traffic signal provides pedestrian pushbuttons on the northeastern and northwestern corners of the intersection, but there is no pedestrian phase, no pedestrian signal, and no pedestrian crosswalk. Activity on School Road increases in the morning and early afternoon during school arrival and dismissal periods.

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

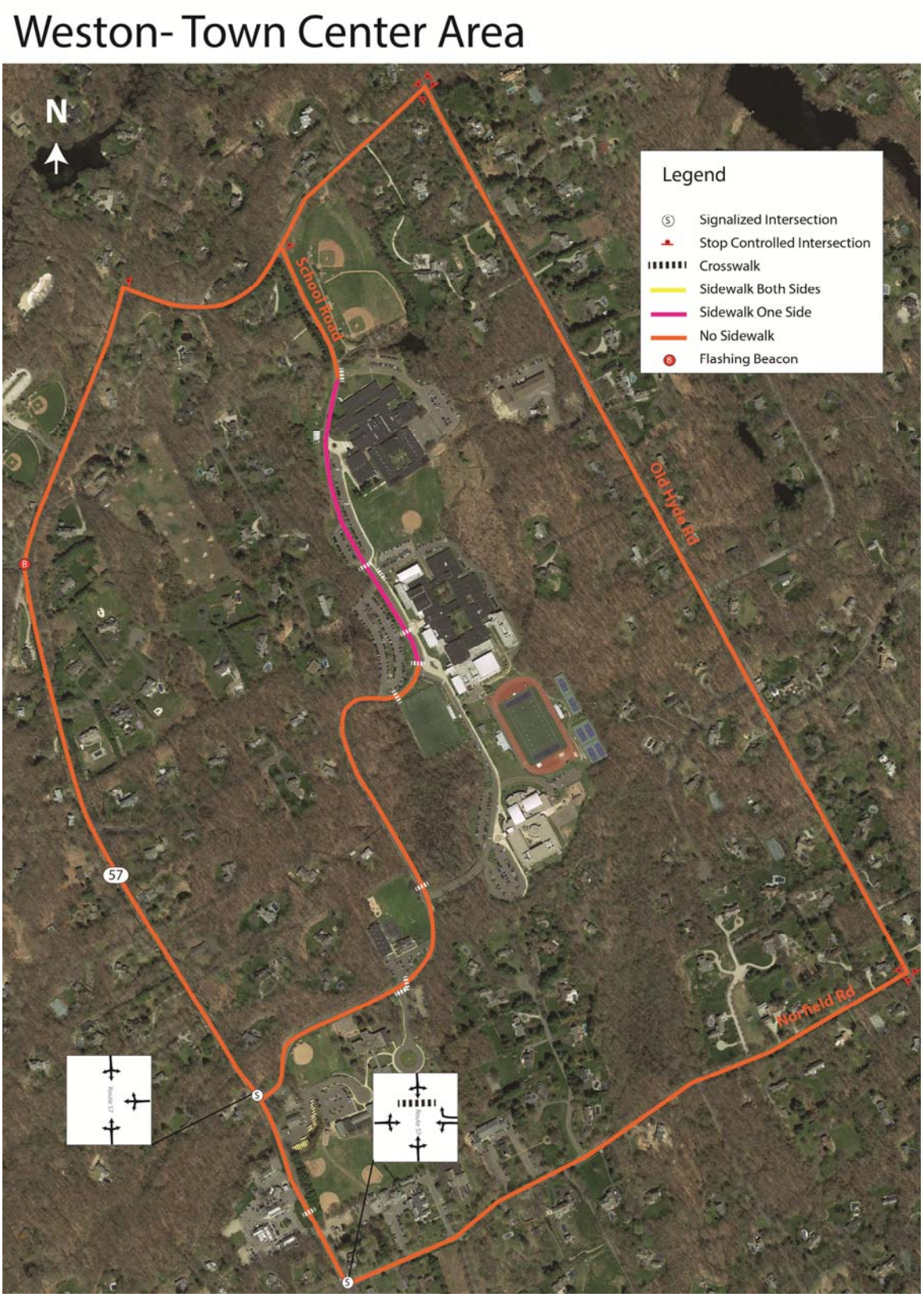


Figure 4. Town Center Area Road Geometrics

Weston - Town Center Area

Street Inventory

Street	Route	Lanes	Avg. Lane Width	Sidewalk				Curb	Parking	Shoulder	Ramps	
				Side	Type	Width	Condition*				Exist	Compliant
Weston Road	Route 53/Route 57	1	(+/-) 12'	NB	No	N/A	N/A	Asphalt	No	(+/-) 3'	No	N/A
		1	(+/-) 12'	SB	No	N/A	N/A	Asphalt	No	(+/-) 3'	No	N/A
School Road	-	1	(+/-) 11' - 13'	NB	Partial	(+/-) 10'	Good	Asphalt	No	(+/-) 1' - 4'	Yes	No
	-	1	(+/-) 11' - 13'	SB	No	N/A	N/A	Asphalt	Partial	(+/-) 1' - 4'	No	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 Weston. Along School Road, Weston installed several advanced pedestrian warning signs (Figure 5) and placed traffic cones in the roadway. A flashing school crossing sign was installed on the western side of School Road. A pedestrian crossing and two pushbuttons were installed at the School Road and Weston Road intersection. A painted crosswalk is located adjacent to the Weston Center shopping plaza.

Figure 5. School Zone Flashing Sign

Figure 6. Pedestrian Crosswalk at Weston Center Plaza

2.3 Pre-Audit Meeting

The RSA was conducted on June 6, 2016. The Pre-Audit meeting was held at 9:00 AM in the Town Hall located at 56 Norfield Road in Weston.

The RSA Team was comprised of staff from CTDOT and AECOM, as well as representatives from several Weston departments and organizations, including the First Selectmen, Town Administrator, Board of Education, Public Works Department, and Police Department. 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 Weston presented relevant information for the audit, including:

- There is direct connection with sidewalks for students to travel from school to the town center.
- The high school is an open campus for juniors and seniors who are able to walk down to the town center area for lunch.

- There is a curved area near the High School that has a posted speed limit of 25 mph, however it seems that vehicles often travel faster than this.
- There is a lot of pedestrian traffic from residents using the schools facilities for recreational activities including the track, tennis courts and playgrounds.
- The senior center would benefit from a pedestrian connection to visit places including the town center or library.
- There are no sidewalk ordinances in Weston.
- There are plans for the State to widen the intersection of Route 57 and School Road to add a passing lane. The recommendations from the RSA should be included in that project where applicable.
- Route 57 receives a lot of vehicular traffic from commuters.
- There are multiple driveways at the Weston Center shopping plaza that contribute to the confusion on Route 57.
- Improvements to the area should be mindful of school security.
- An officer is located near the School Road and Route 57 intersection to help direct traffic and crossing pedestrians during peak school hours (arrival and dismissal).
- The playground area on School Road will be closing.
- There is currently a CTDOT pedestrian crossing sign replacement project in district 3, and the signs and markings on Route 53 in the vicinity of Weston Center are on the list to be replaced. The town should coordinate with CTDOT on the sign replacement and approve the replacement plan.

3 RSA Assessment

3.1 Field Audit Observations

- Overgrown vegetation blocks sight line and shoulder area on School Road.
- Pedestrian cones in middle of the road are often run over or moved by vehicles.
- The school zone sign previously had flashing lights, but they no longer are functional.
- A worn path is visible where pedestrians travel on School Road and cross Route 57 (Figure 8) instead of the aforementioned crossing area.
- A pushbutton is located on the northern side of the Route 57 and School Road intersection (Figure 9) to call the vehicle phase. There is no painted crosswalk at this crossing.
- There are wide driveways at the Weston Center plaza and gas station.
- The roadway on Route 57 curves near the painted crosswalk and may contribute to decreased visibility for crossing pedestrians.
- The overgrown vegetation on the northbound side of Route 57 may force pedestrians to walk in the shoulder area to reach the painted crosswalk at the Weston Center plaza.
- The proposed sidewalk project will construct sidewalks on the northbound side of School Road between Route 57 and Lords Highway.

Figure 7. Overgrown Vegetation

Figure 8. Worn Pathway

Figure 9. Pedestrian Crossing Signal

3.2 Post-Audit Workshop - Key Issues

1. The existing pedestrian crosswalk signal at the Route 57 and School Road intersection is not often used by pedestrians. This crossing does not have a painted crosswalk. Observations during the audit indicate worn pathways in the grass at the southeastern corner of this intersection where pedestrians walk.

2. Overgrown vegetation (Figure 10) should be trimmed to increase visibility of pedestrians to motorists. Trimming the vegetation will also increase the walkable area in the roadway shoulder.

3. The painted crosswalk at the Weston Center plaza does not have a stop control. Pedestrians must wait for vehicles to stop before crossing.

4. The school administration would prefer students to cross at a signalized intersection, Route 57 and School Road, rather than at an uncontrolled intersection.

5. Construction of a sidewalk on the southbound side of Route 57 at the School Road intersection might require the stone wall on the Vet's property to be moved.

6. Weston feels the numerous driveways located at the Weston Center plaza (Figure 12) contribute to a confusing environment for vehicles, pedestrians and cyclists. The driveways are wide and the right of way is not always clear for motorists. Pedestrians crossing at this location may often be overlooked due to the speed, volume and turning movements of traffic on Weston Road.

7. Weston plans to build sidewalks on School Road.

Figure 10. Overgrown Vegetation on School Road

Figure 11. Stone Wall Adjacent School Road Intersection

Figure 12. Wide Driveways on Route 57

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) Clear overgrown vegetation on School Road and Weston Road (Figure 13).
2) Upgrade existing school zone signs (Figure 14) and activate flashing lights.
3) Upgrade all pedestrian and advanced warning signage to dayglow green (Figure 15).

Figure 16 depicts these recommendations.

Figure 13. Trim Areas With Overgrown Vegetation

Figure 14. Upgrade Existing School Zone Sign and Replace Lights

Figure 15. Upgrade all Signage

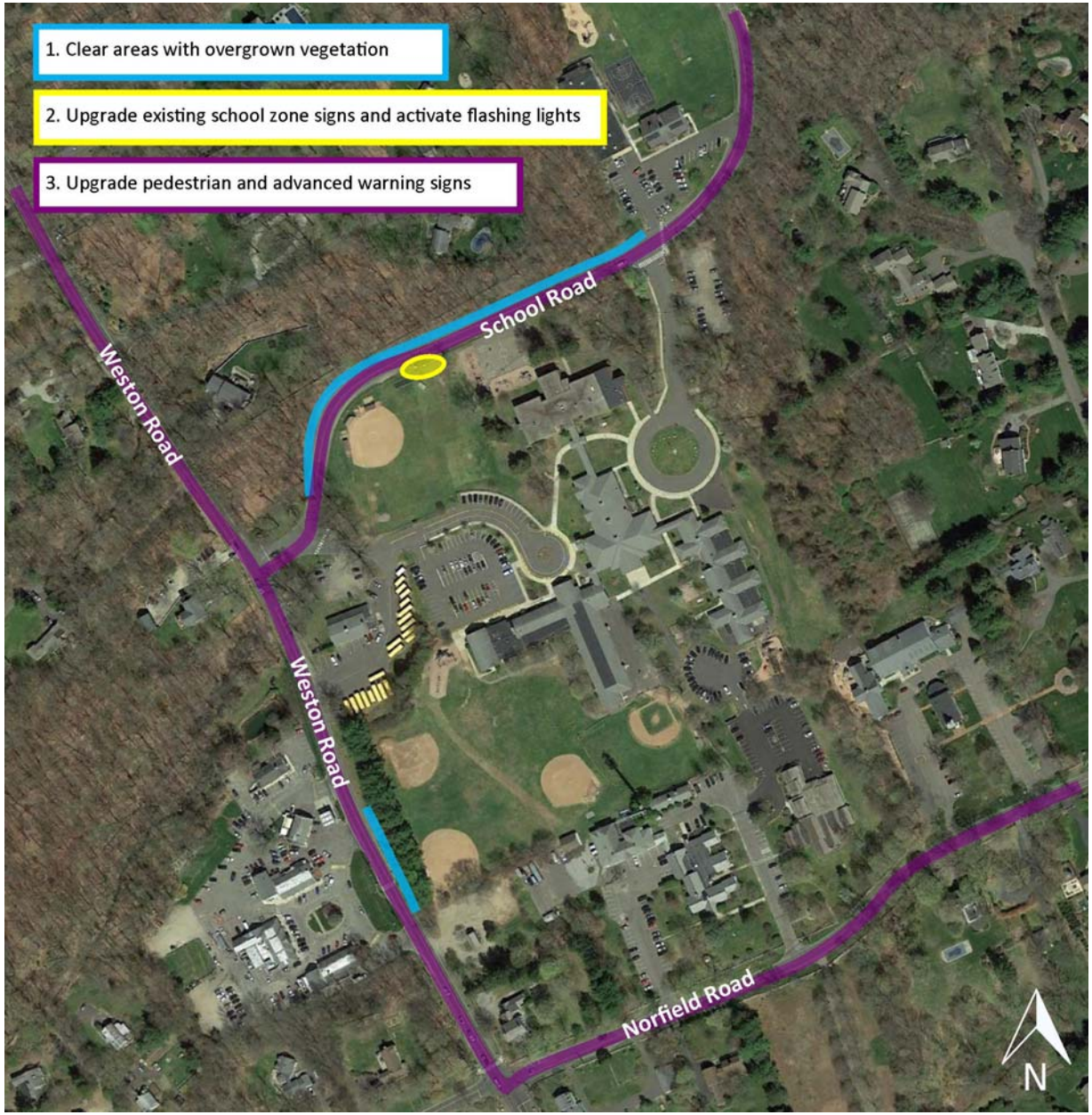


Figure 16. Short Term Recommendations

4.2 Medium Term

1) Evaluate traffic signal timing at the School Road (Figure 17) and Norfield Road intersections.
2) Install a Rectangular Rapid Flashing Beacon (RRFB) (Figure 18) at the existing crosswalk located in front of the Weston Center plaza. This will increase the visibility of pedestrians for passing motorists on Weston Road.

Figure 19 depicts these recommendations.

Figure 17. Evaluate Traffic Signal Timing

Figure 18. Install a Rectangular Rapid Flashing Beacon at Weston Center Crosswalk

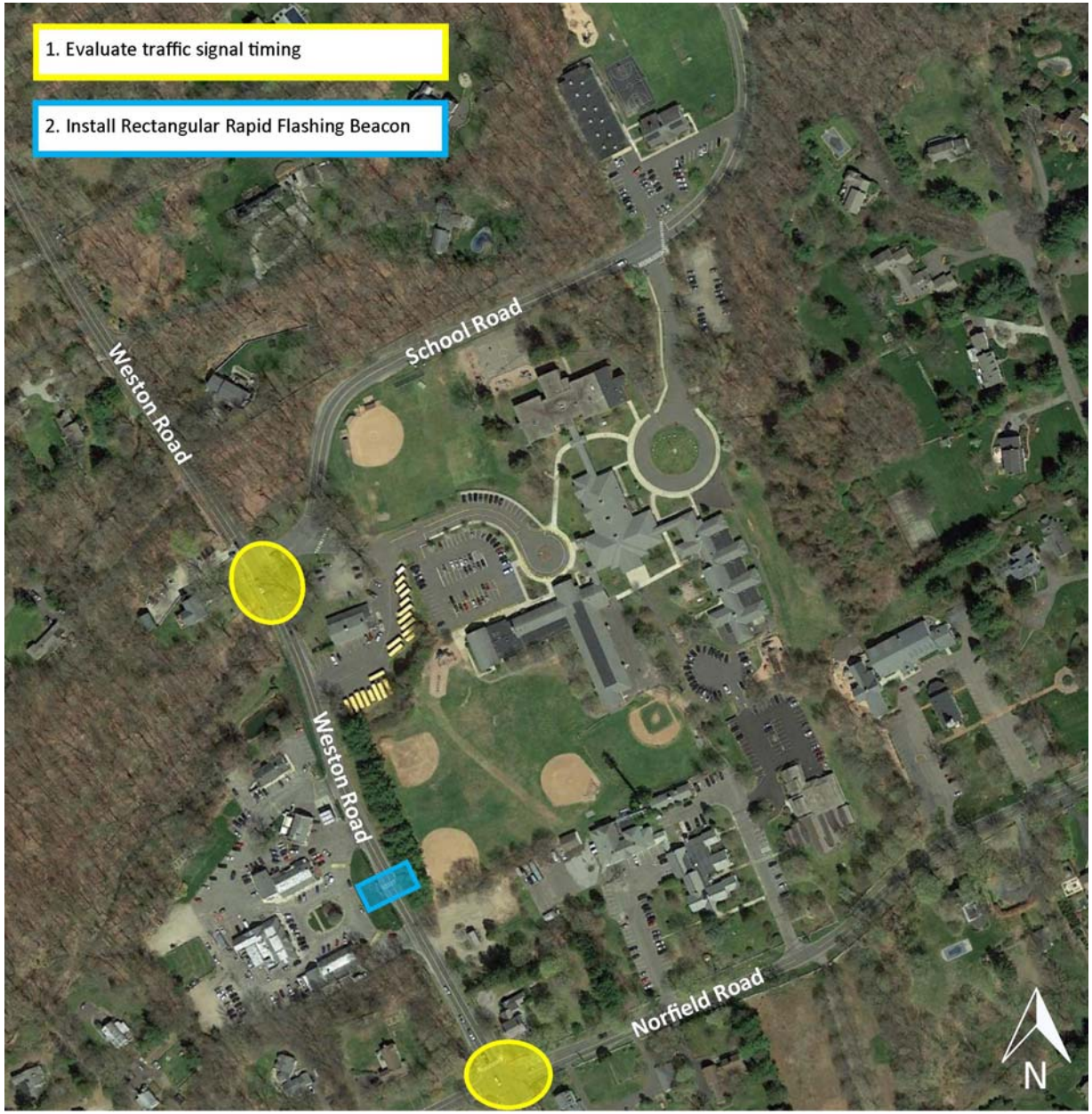


Figure 19. Medium Term Recommendations

4.3 Long Term

1) Evaluate access management and consider consolidating driveways at the Weston Center plaza.
2) Install sidewalk on the western side of Weston Road to connect the School Road crosswalk with the Weston Center plaza. (This may require right of way or easement acquisition in some locations).

Figure 20. Access Management for Weston Center Plaza

Figure 21. Install Sidewalk Along Weston Road

Figure 22 depicts these recommendations.

Figure 22. 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 Weston RSA and provides Weston with an outlined strategy to improve the transportation network in the Town Center area for all road users, particularly focusing on pedestrians and cyclists. Moving forward, Weston 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 this area.

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Appendix A

CONNECTICUT DEPARTMENT OF TRANSPORTATION

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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	Tom Landry
Title	Town Administrator, Town of Weston
Email Address	tlandry@westonct.gov
Telephone Number	(203) 222-2677

2. Location information

Address	Weston Town Hall, 56 Norfield Road
Description	Bicycle Improvements- Lyons Plain Road Loop
City / Town	Weston, CT 06883

3. Roadway type
(Please select all that apply)

- [x] **State road**
- [x] **Local road**
- [ ] **Private Road**
- [ ] **Other (please specify)**

4. Zoning
(Please select all that apply)

- [ ] **Industrial**
- [x] **Residential**
- [ ] **Commercial**
- [ ] **Mixed Use**
- [x] **Retail**
- [ ] **N/A (not applicable)**
- [ ] **Other (please specify)**

Weston Public Library, Weston Town Hall and Norfield Fire Station, Jarvis House (Parks and Recreation Departmment). Weston Food Pantry

5. Approximate mile radius around the location

Greater than a ½ mile

Other (Please Specify)

The roads to be evaluated for bicycle improvements as part of the Lyons Plain Road Loc

6. Community Sites
(Please select all that apply)

- [x] **Community Centers**
- [x] **Business Districts**
- [ ] **Restaurant/Bar Districts**
- [x] **Churches**
- [ ] **Housing Complexes**
- [x] **Proximity to Schools**
- [ ] **Tourist Locations (examples – Casino, Malls, Parks, Aquarium, etc...)**
- [ ] **N/A (not applicable)**
- [x] **Other (please specify)**

Weston Public Library, Weston Town Hall and Norfield Fire Station, Jarvis House (Parks and Recreation Departmment). Weston Food Pantry

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

- [x] **Yes**
- [ ] **No**

If Yes please describe (please specify)

The center of Weston, bounded on the north by Lords Highway, on the west by Weston Road. SR 57, on the south by Norfield Road and on the east by Old Hyde Road, contains the town's major employers. The Weston Public Schools campus with teachers and staff numbering 277, is the Town's largest employer. The Town

8. Educational facilities
(Please select all that apply)

- [x] **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**
- [x] **N/A (not applicable)**
- [ ] **Other (please specify)**

10. Safety Concerns
(Please select all that apply)

- [x] **Traffic (volumes & speed)**
- [x] **Collisions**
- [x] **Sidewalks**
- [x] **Traffic Signals**
- [x] **Traffic Signs**
- [ ] **Parking Restrictions / Additions**
- [ ] **Drainage**
- [ ] **ADA Accommodations**
- [ ] **Agricultural & Live Stock crossing**
- [ ] **Maintenance issues (cutting grass, leaves, snow removal)**
- [ ] **N/A (not applicable)**
- [x] **Other (please specify)**

Traffic congestion on SR 57, SR 53 and Lyons Plain Road. Most Weston roads were

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

Yes

If Yes please describe and list all projects.

1. Future: The Town will be performing maintenance work on the existing bridge at Davis Hill Road and Valley Forge Road during the 2016 construction season.

2. Past: The Town replaced the Valley Forge Road Bridge (between Davis Hill Road and Bradley Road) in 2014.

3. Past: The State of Connecticut replaced one of the retaining walls adjacent to SR 53 (below Weston Field Club) in 2015.

4. Past: The State of Connecticut replaced the Cobb's Mill Bridge (near the SR 57 and SR 53 intersection) in 2015.

5. Current: The State of Connecticut is replacing culverts under SR 57, between Kettle Creek Road and Good Hill Road.

12. Environmental Concerns:

If Yes please describe and list.

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

The Town would like to have a RSA completed on a number of roads in Town to create a bike route that focuses on Lyons Plain Road and then connects back to the proposed sidewalks/bike route in the center of Weston (Weston RSA Application #1). The main issue is the feasibility of adding bike lanes to Weston's already narrow roads.

The Town believes that Lyons Plain Road has a high the potential for the creation of a bike lane and other improvements to make cycling along that road safer. The most active bicycling route through Town is currently Lyons Plain Road to Valley Forge Road. It is part of the Aspetuck Saugatuck Reservoir Bike Routes identified by Ride with GPA and CT Bike Routes (website prepared by bike enthusiasts).

https://ridewithgps.com/routes/1034645

During the preparation of the Town's 2010 Plan of Conservation and Development, residents expressed a great deal of interest is developing more routes for bicycle use. The community even discussed clsing School Road and Valley Forge Road (between Davis Hill Road and SR 53) to vehicular access for a small number of days during the summer to provide safe areas to walk, bicycle and gather. One of the key Implementation Recommendations of the Plan of Conservation and Development is "Appoint committee to explore pedestrian/biking trails, including occaisional closure of School Road and Valley Forge, and study means of providing greater bicycle access." See attached pages 29 - 30 of the 2010 Town Plan of Conservation and Development (attached).

The streets to be evaluated for the feasibility of creating a bike route that connects to the center of Weston are listed below. There are 2 potential loops shown with red arrows on the attached location map.

Route #1

Rte. 57 (School to Lyons Plain)
Lyons Plain (Rte. 57 to Davis Hill)
Davis Hill (Lyons Plain to Steep Hill)
Steep Hill (LP to Old Hyde)
Old Hyde (Steep Hill to Lords Hwy)
Lords Hwy (Old Hyde to School)
Old Hyde (Steep Hill to Norfield Rd.)
Norfield Rd. (Old Hyde to Rte. 57)

Route #2 (longer)

Rte. 57 (School to Lyons Plain)
Lyons Plain (Rte. 57 to Valley Forge Road)
Valley Forge Road (Lyons Plain to Rte. 53)
Rte. 53 (Valley Forge to Lords Hwy)

14. Are there plans to expand the area?
(Transportation Oriented Development, Economic Development, housing, etc...)

No

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

No

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)

Submit Application

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Appendix B

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Road Safety Audit

Town: Weston
RSA Location: Bicycle Improvements- Lyons Plain Road Loop
Meeting Location: Town Hall
Address: 56 Norfield Road
Date: 6/6/2016
Time: 9:00am

Participating Audit Team Members

Audit Team Member	Agency/Organization
Kristin Hadjstylianos	AECOM
Lorenzo Varone	AECOM
Joseph Olenik	BoE
Roy Sachnin	WestCOG
Michael Cohen	CTDOT
Anna Bergeron	CTDOT
Elise Major	Weston BoE
Nina Daniel	Weston 1st Selectman
Tracy Kulikowki	Weston
John Troxell	Weston PD
Steve Mitchell	AECOM
John Conte	Town Engineer
Tom Landry	Town Administrator

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Appendix C

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Road Safety Audit – Weston

Meeting Location: Town Hall
Address: 56 Norfield Road
Date: 6/6/2016
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

Pedestrian Crossings
• Sufficient time to cross (signal)
• Signage
• Pavement Markings
• Detectable warning devices (signal)
• Adequate sight distance
• Wheelchair accessible ramps
  o Grades
  o Orientation
  o Tactile Warning Strips
• Pedestrian refuge at islands
• Other	

Pedestrian Facilities
• Sidewalk
  o Width
  o Grade
  o Materials/Condition
  o Drainage
  o Buffer
• Pedestrian lighting
• Pedestrian amenities (benches, trash receptacles)
• Other	

Bicycles • 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	
• Speed-related issues o Alignment; o Driver compliance with speed limits o Sight distance adequacy o Safe passing opportunities	
• Geometry o Road width (lanes, shoulders, medians); o Access points; o Drainage o Tapers and lane shifts o Roadside clear zone /slopes o Guide rails / protection systems	

• Intersections o Geometrics o Sight Distance o Traffic control devices o Safe storage for turning vehicles o Capacity Issues	

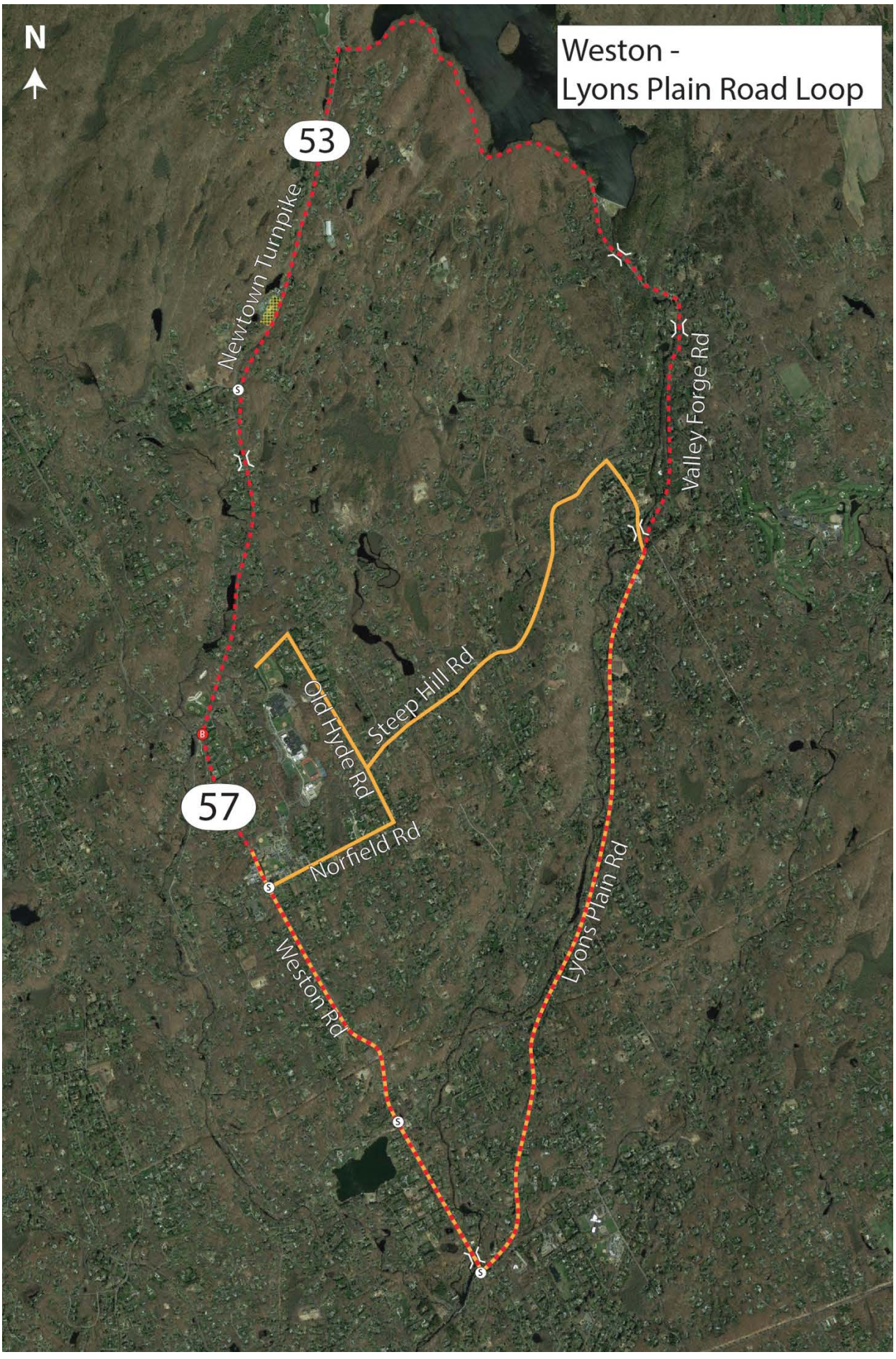
• Pavement
  o Pavement Condition (excessive roughness or rutting, potholes, loose material)
  o Edge drop-offs
  o Drainage issues
• Lighting Adequacy	

• Signing
  • Correct use of signing
  • Clear Message
  • Good placement for visibility
  • Adequate retroreflectivity
  • Proper support	

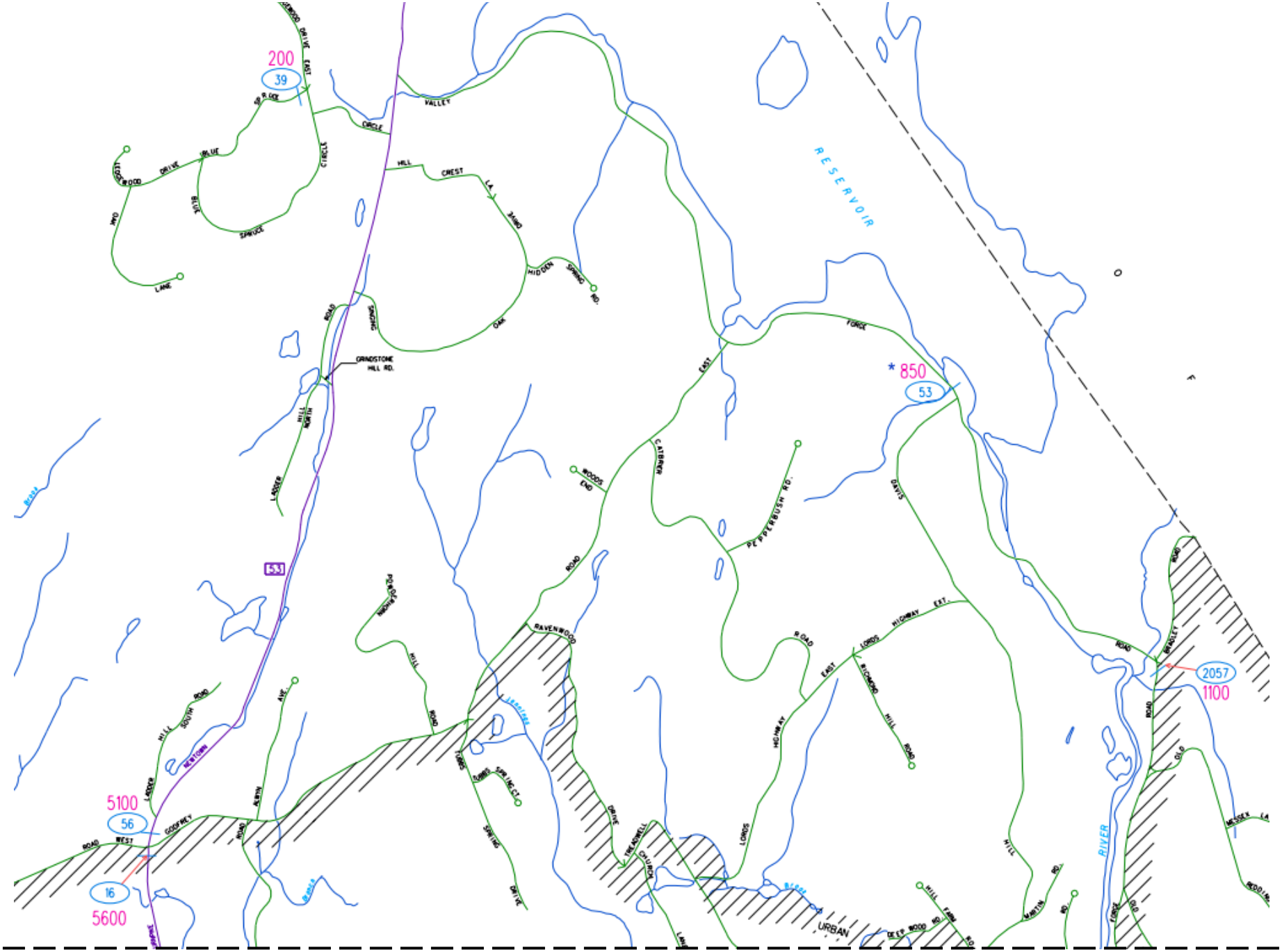
• Signals
  o Proper visibility
  o Proper operation
  o Efficient operation
  o Safe placement of equipment
  o Proper sight distance
  o Adequate capacity	

• Pavement Markings
  o Correct and consistent with MUTCD
  o Adequate visibility
  o Condition
  o Edgelines provided	

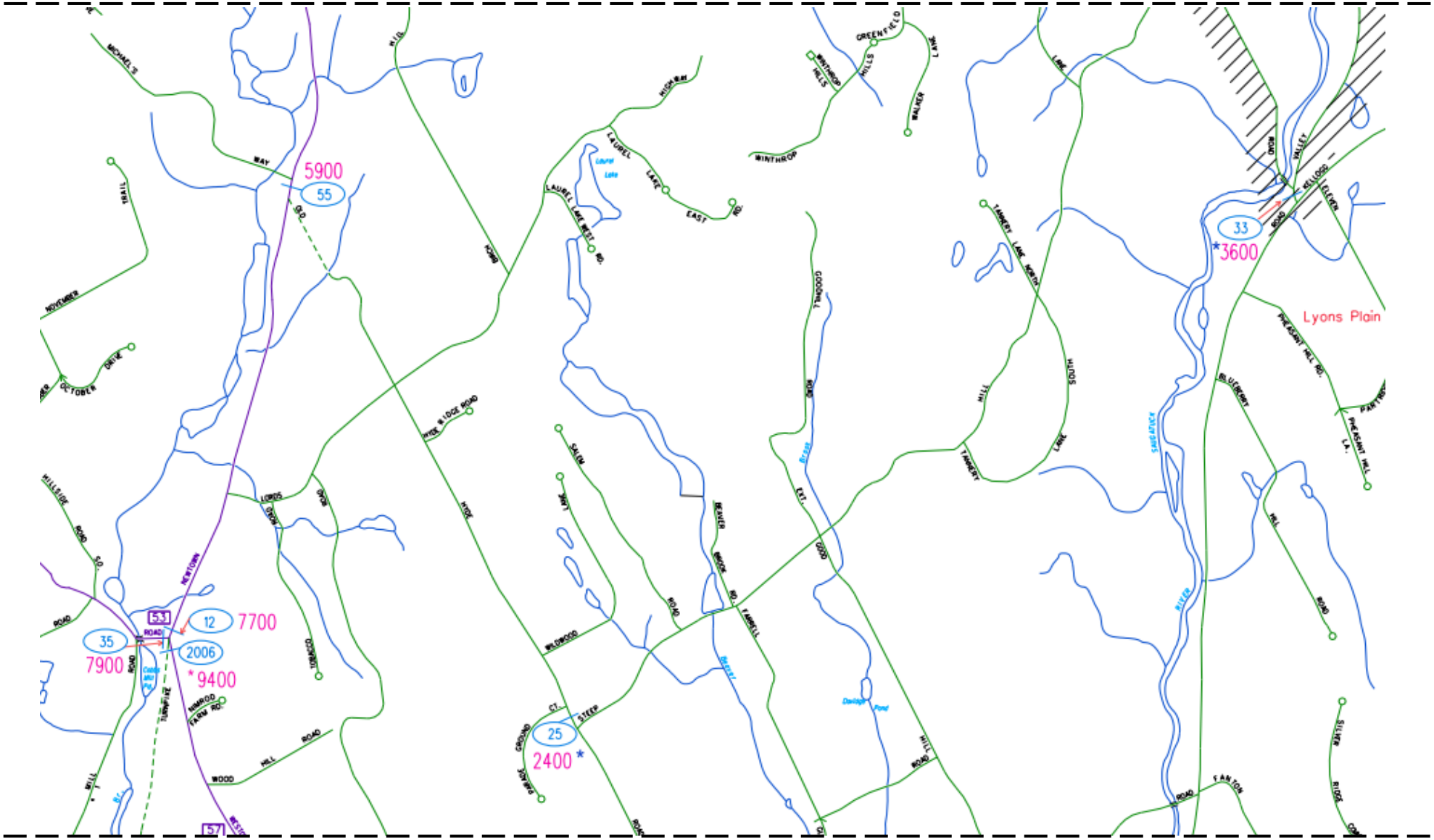
• Miscellaneous
  o Weather conditions impact on design features.
  o Snow storage	


N
Weston -
Lyons Plain Road Loop
53
Newtown Turnpike
Valley Forge Rd
Steep Hill Rd
Old Hyde Rd
57
Norfield Rd
Weston Rd
Lyons Plain Rd

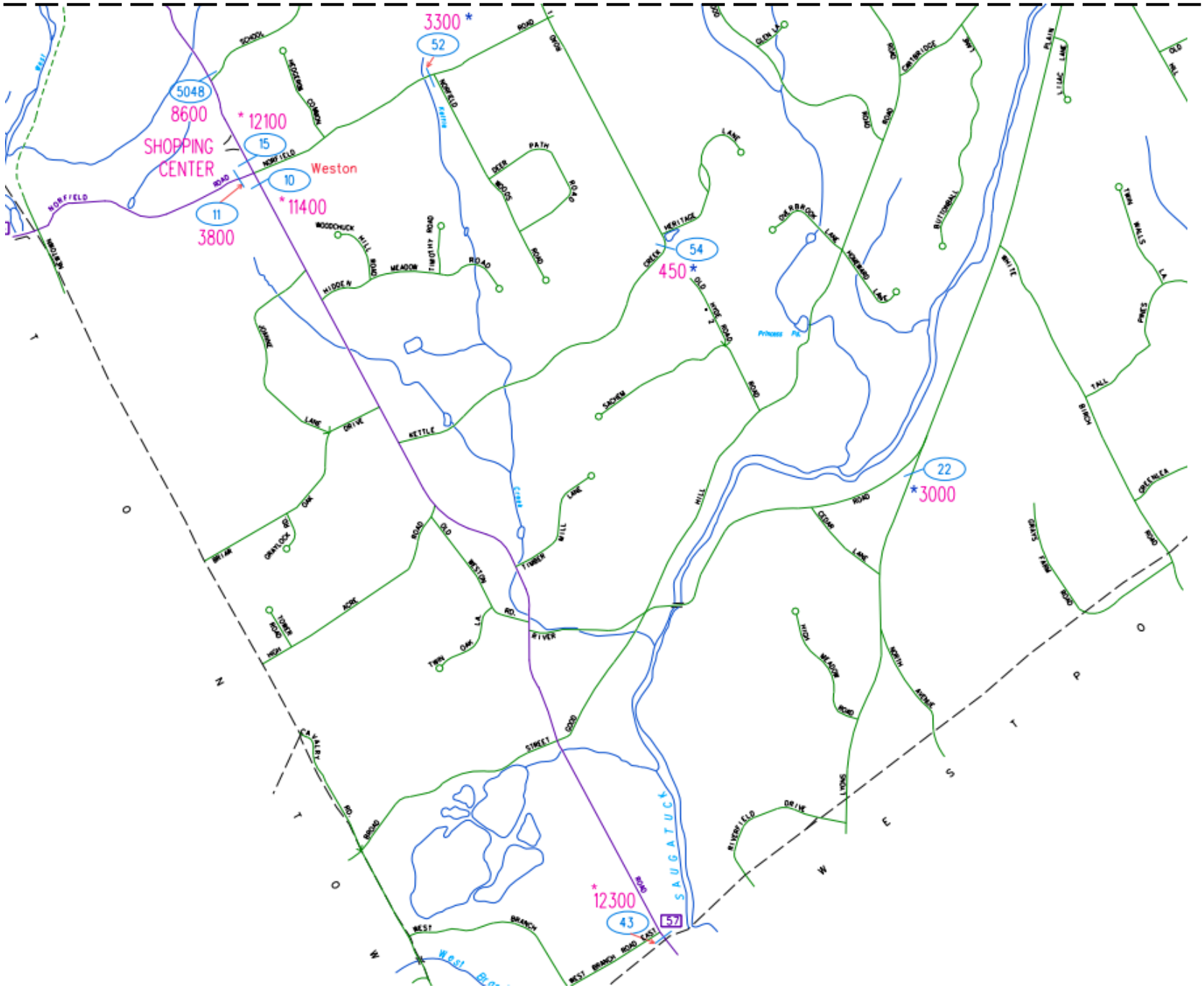
Average Daily Traffic (ADT)



Average Daily Traffic (ADT)



Average Daily Traffic (ADT)

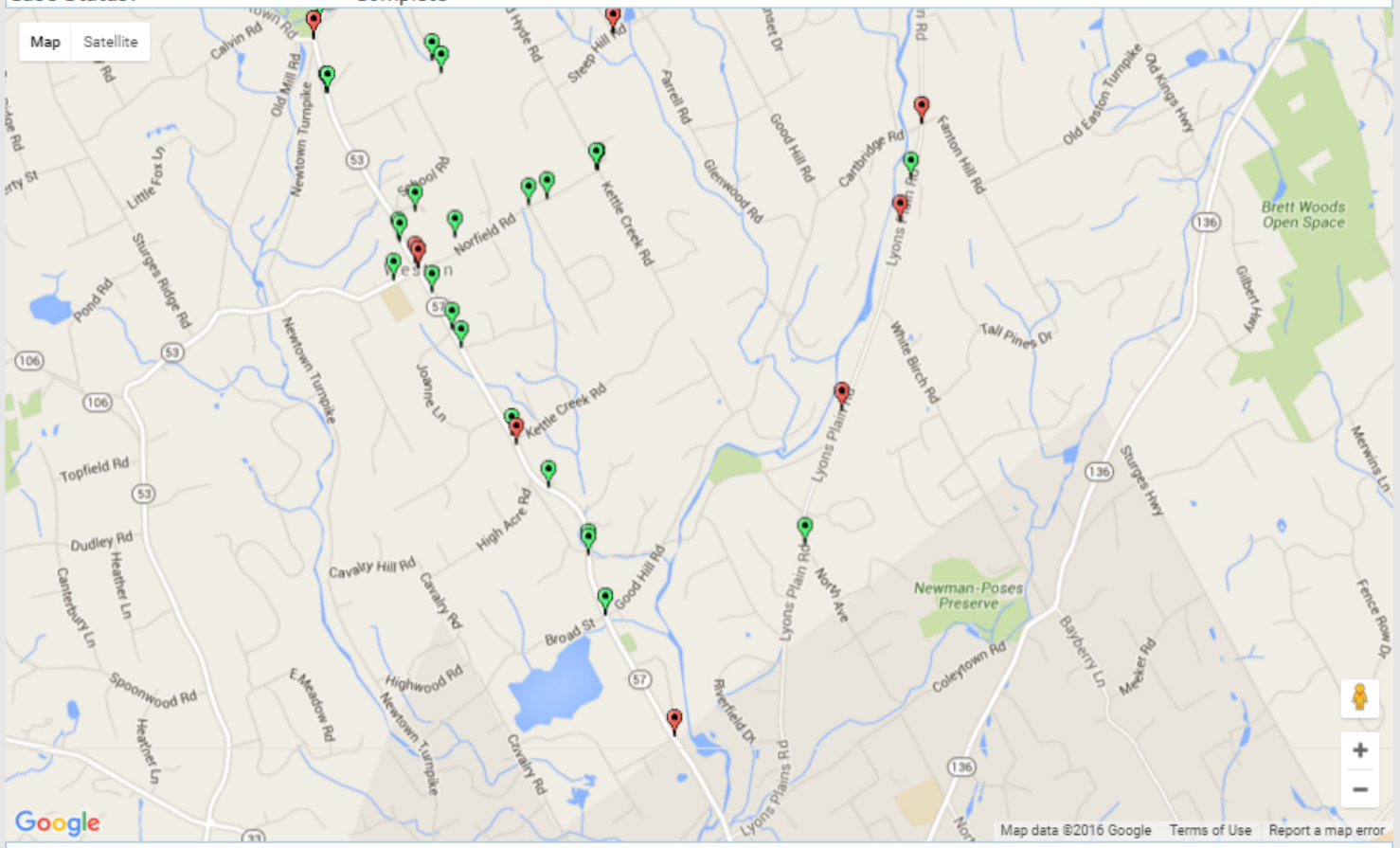


2015 Crashes

UCONN Connecticut Crash Data Repository

Search Criteria:

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



Markers | Heatmap | Select & Query | Query Selection

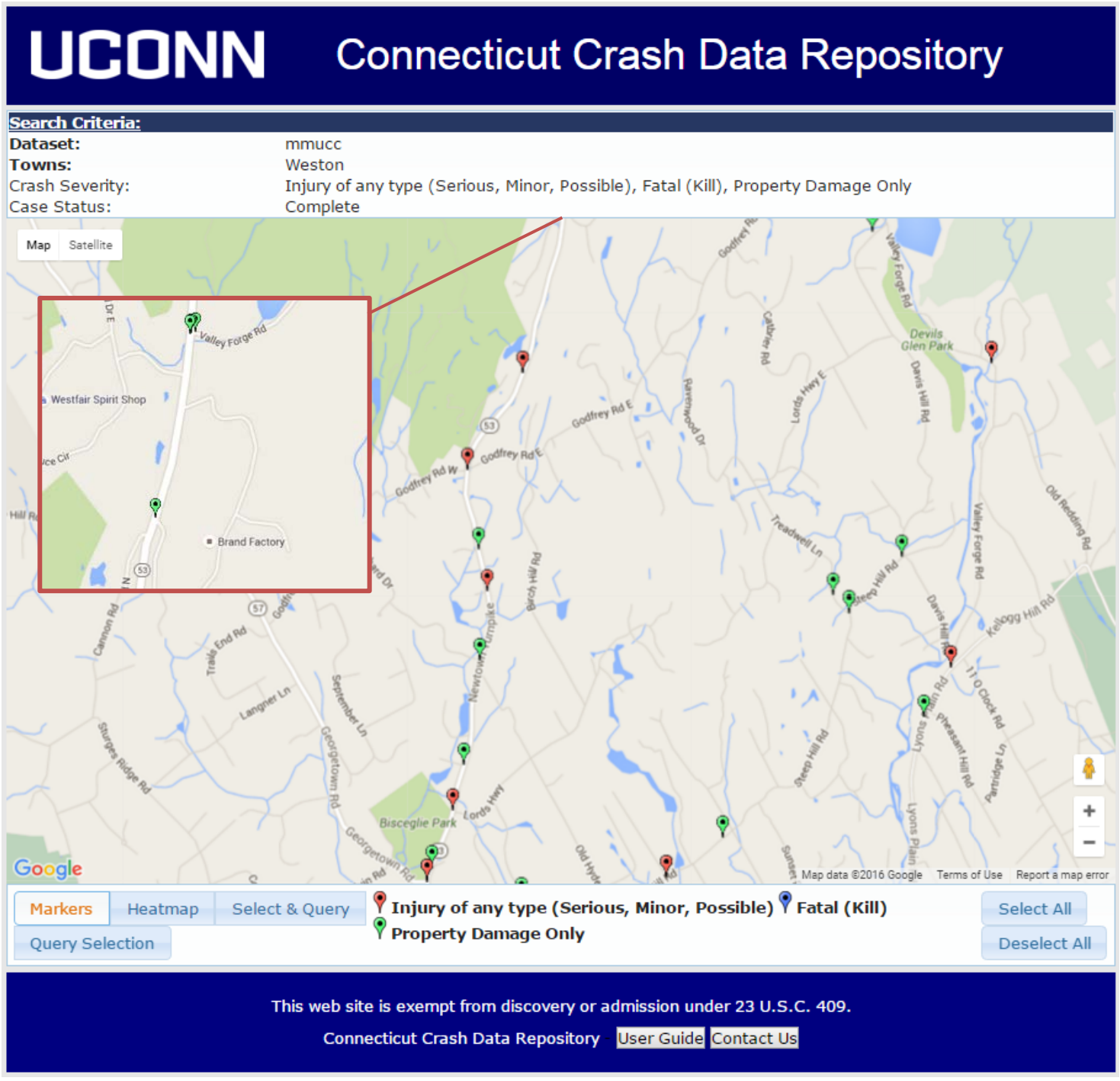
Injury of any type (Serious, Minor, Possible) | Fatal (Kill) | Property Damage Only

Select All | Deselect All

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

Connecticut Crash Data Repository | User Guide | Contact Us

2015 Crashes



Road Safety Audit – Weston

Crash Summary

Data: 3 years (2012-2014)

3 accidents involved bicyclists and all of these resulted in injuries.

No accidents involved pedestrians.

Severity Type	Number of Accidents	
Property Damage Only	79	71%
Injury (No fatality)	32	29%
Fatality	0	0%
Total	111	

Manner of Crash / Collision Impact	Number of Accidents	
Unknown	2	2%
Sideswipe-Same Direction	5	5%
Rear-end	26	23%
Turning-Intersecting Paths	11	10%
Turning-Opposite Direction	6	5%
Fixed Object	29	26%
Backing	2	2%
Angle	4	4%
Turning-Same Direction	3	3%
Moving Object	17	15%
Parking	0	0%
Pedestrian	0	0%
Overturn	0	0%
Head-on	2	2%
Sideswipe-Opposite Direction	2	2%
Miscellaneous- Non Collision	2	2%
Total	111	

Weather Condition	Number of Accidents	
Snow	9	8%
Rain	11	10%
No Adverse Condition	90	81%
Unknown	1	1%
Blowing Sand, Soil, Dirt or Snow	0	0%
Other	0	0%
Severe Crosswinds	0	0%
Sleet, Hail	0	0%
Total	111	

Light Condition	Number of Accidents	
Dark-Not Lighted	27	24%
Dark-Lighted	4	4%
Daylight	77	69%
Dusk	1	1%
Unknown	2	2%
Dawn	0	0%
Total	111	

Road Surface Condition	Number of Accidents	
Snow/Slush	7	6%
Wet	16	14%
Dry	87	78%
Unknown	1	1%
Ice	0	0%
Other	0	0%
Total	111	

Time		Number of Accidents	
0:00	0:59	1	1%
1:00	1:59	3	3%
2:00	2:59	4	4%
3:00	3:59	1	1%
4:00	4:59	0	0%
5:00	5:59	0	0%
6:00	6:59	3	3%
7:00	7:59	10	9%
8:00	8:59	7	6%
9:00	9:59	3	3%
10:00	10:59	6	5%
11:00	11:59	9	8%
12:00	12:59	6	5%
13:00	13:59	6	5%
14:00	14:59	9	8%
15:00	15:59	5	5%
16:00	16:59	6	5%
17:00	17:59	6	5%
18:00	18:59	5	5%
19:00	19:59	4	4%
20:00	20:59	5	5%
21:00	21:59	4	4%
22:00	22:59	6	5%
23:00	23:59	2	2%
Total		111	

Weston - Lyons Plain Road Loop

N

CTDOT Epoxy Pavement Marking Program

Bridge Maintenance Work

Culvert Replacement by CTDOT

DRAFT

Newtown Turnpike

Valley Forge Rd

Old Hyde Rd

Steep Hill Rd

Norfield Rd

Weston Rd

Lyons Plain Rd

53

57

S

B

Route 53	Lyons Plain Rd	Steep Hill Rd
Speed =	Speed =	Speed =
Lanes =	Lanes =	Lanes =
Roadway width =	Roadway width =	Roadway width =
Shoulder width =	Shoulder width =	Shoulder width =
Route 57	Valley Forge Rd	Old Hyde Rd
Speed =	Speed =	Speed =
Lanes =	Lanes =	Lanes =
Roadway width =	Roadway width =	Roadway width =
Shoulder width =	Shoulder width =	Shoulder width =

Legend

- Signalized Intersection
- Stop Controlled Intersection
- Steep Slope
- Route #1
- Route #2
- Bridge or Culvert
- Flashing Beacon
- Proposed Limits

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 – Weston

Fact Sheet

Functional Classification:

- Route 57 is classified as a Minor Arterial
- Route 53 is classified as a Major Collector and a Minor Arterial
- Valley Forge Road is classified as a Minor Collector and a Collector
- Collector:
    - Lyons Plain Road
    - Norfield Road
    - Old Hyde Road

ADT

- Valley Forge Road: 850
- Route 53 and Route 57: 5,100 – 12,300
- Lyons Plain Road : 1,100 – 3,600
- Norfield Road: 3,300
- Old Hyde Road: 2,400

Population and Employment Data (2014):

- Population: 10,319
- Employment: 1,269

Urbanized Area

- Part of this corridor is located within the Bridgeport-Stamford Urbanized Area

Demographics

- The statewide average percentage below the poverty line is 10.31%. There are no areas in Weston exceeding the state's average.

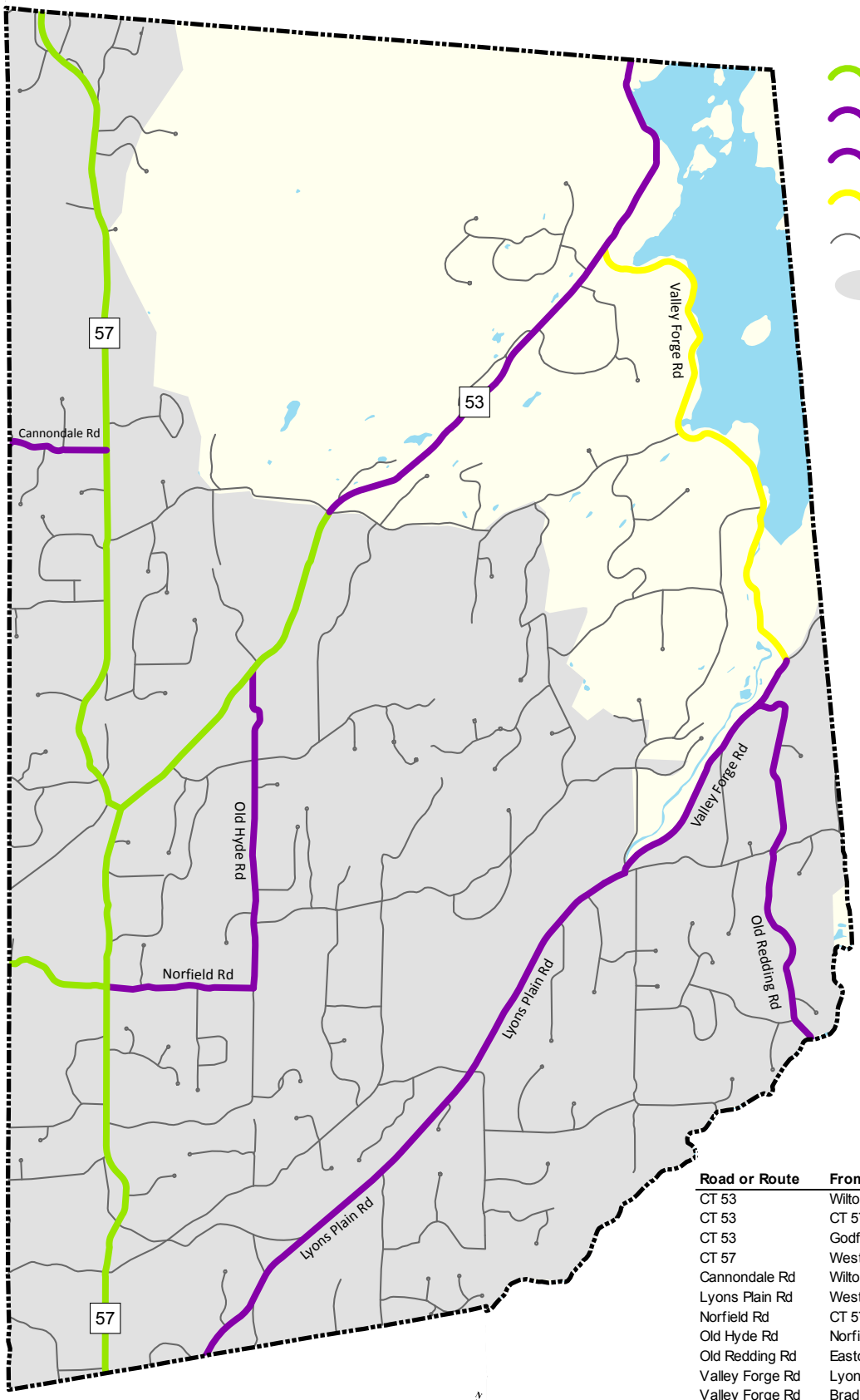
- The statewide average percentage minority population is 30.53%. There are no areas in Weston exceeding the state's average.

Air Quality

- Weston's CIPP number 121
- Weston is within the NY/NJ/CT Marginal Ozone Area and $PM_{2.5}$ Attainment/Maintenance Area
- Weston is within a CO Maintenance Area

Functional Classification

2010 Weston Plan of Conservation and Development



- Minor Arterial
- Collector (Urban)
- Major Collector (Rural)
- Minor Collector (Rural)
- Local Road
- Bridgeport-Stamford Urbanized Area

Road or Route	From	To	Functional Classification	Urban/Rural
CT 53	Wilton TL	CT 57	Minor Arterial	Urban
CT 53	CT 57	Godfrey Rd	Minor Arterial	Urban
CT 53	Godfrey Rd	Redding TL	Major Collector	Rural
CT 57	Westport TL	Redding TL	Minor Arterial	Urban
Cannondale Rd	Wilton TL	CT 57	Collector	Urban
Lyons Plain Rd	Westport TL	Valley Forge Rd	Collector	Urban
Norfield Rd	CT 57	Old Hyde Rd	Collector	Urban
Old Hyde Rd	Norfield Rd	CT 53	Collector	Urban
Old Redding Rd	Easton TL	Valley Forge Rd	Collector	Urban
Valley Forge Rd	Lyons Plain Rd	Bradley Rd	Collector	Urban
Valley Forge Rd	Bradley Rd	CT 53	Minor Collector	Rural

0 0.25 0.5 1 1.5 2
Miles

Disclaimer: This map is intended for general planning purposes only.

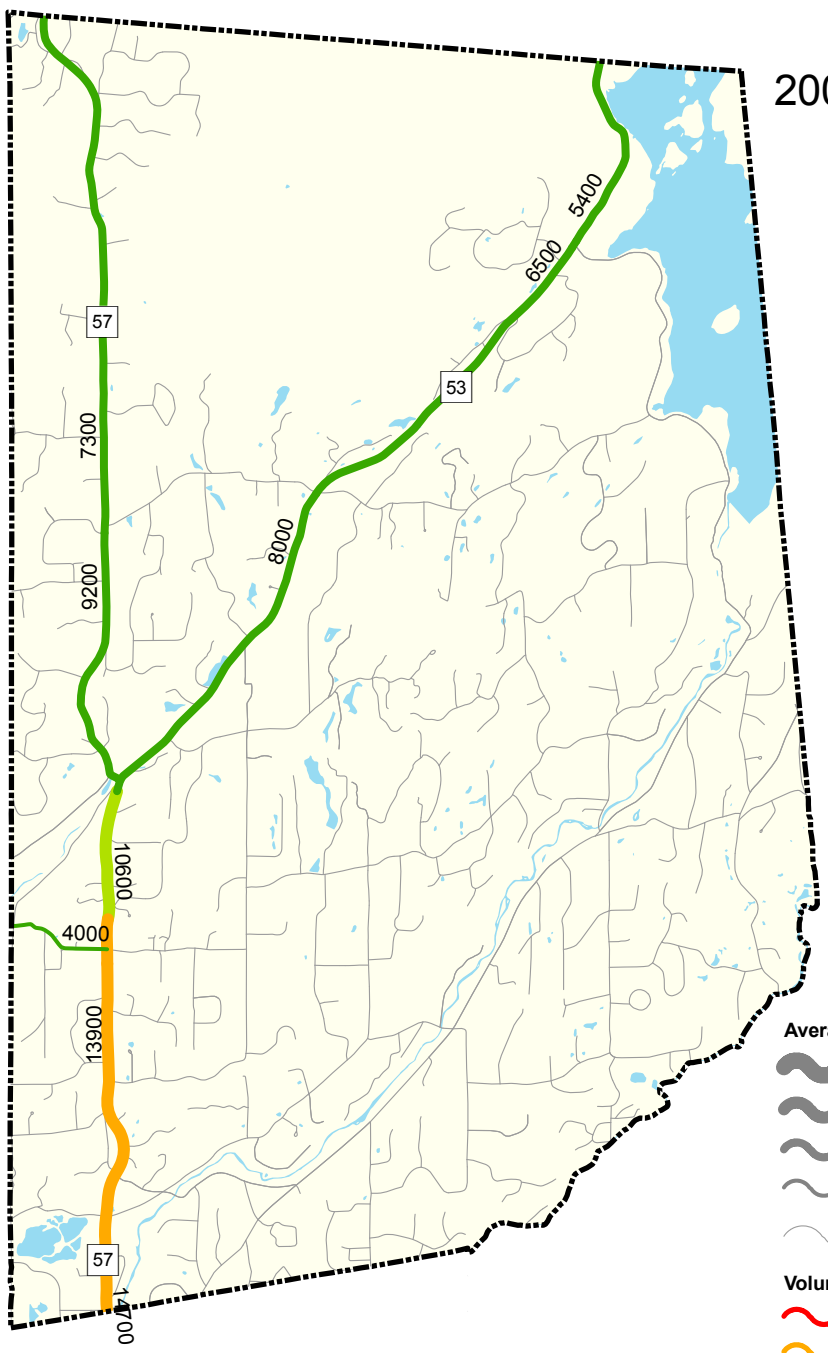
Sources: Connecticut Department of Transportation, Highways, Functional Classification, Town Road Maps (TRU); Locational Guide Map; Connecticut Department of Public Safety, Streets; Connecticut Department of Environmental Protection, Environmental GIS Data for Connecticut.

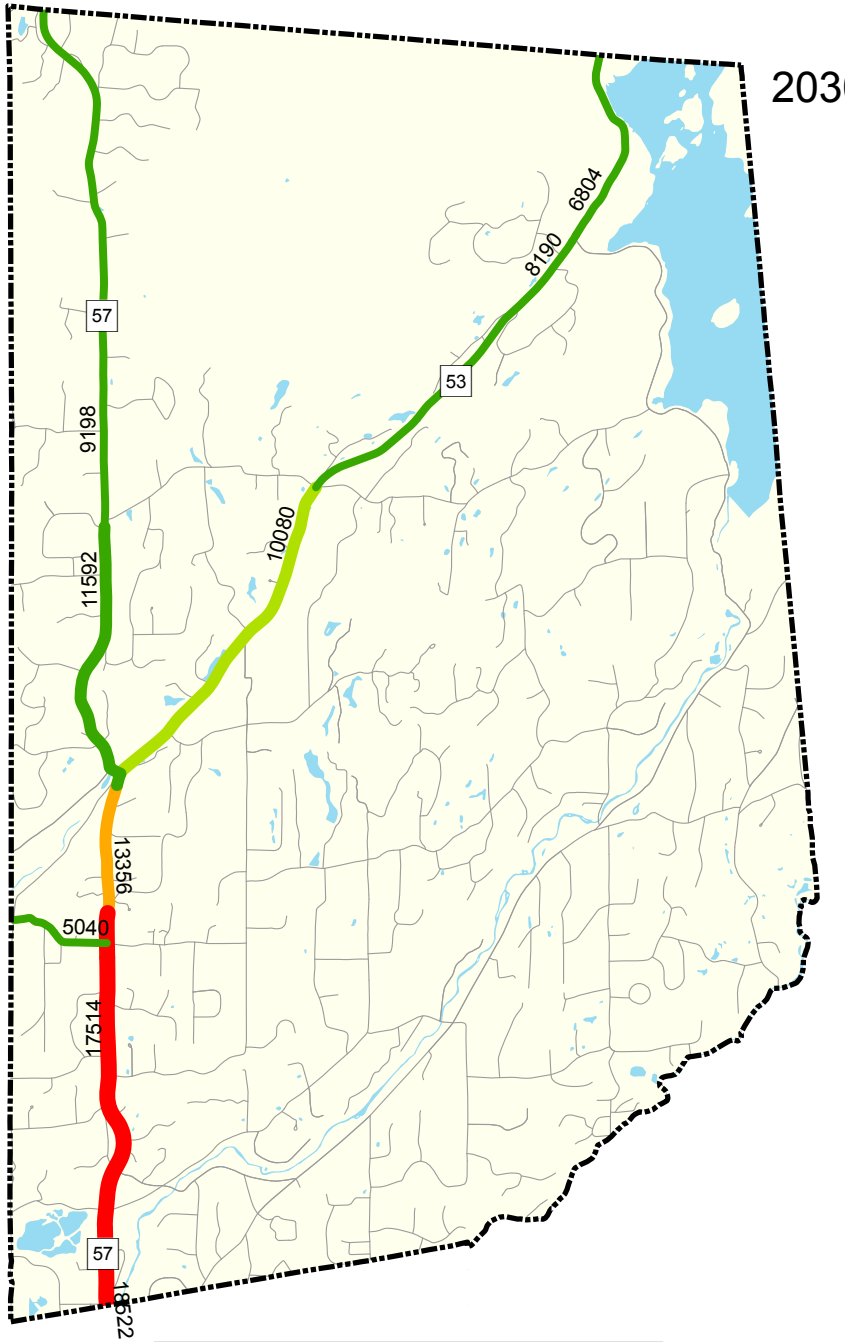
Prepared on April 15, 2010 by

SWRPA
South Western Regional Planning Agency

Traffic Volume and Volume-to-Capacity Ratio

2010 Weston Plan of Conservation and Development





Average Daily Traffic (ADT)

- 15,001 - 20,000
- 10,001 - 15,000
- 5,001 - 10,000
- 1,400 - 5,000
- Local Road

Volume-to-Capacity Ratio

- Severe Congestion (v/c = >1.0)
- Moderate Congestion (v/c = 0.8-1.0)
- Marginal Congestion (v/c = 0.6-0.8)
- No Congestion (v/c = <0.6)

0 0.25 0.5 1 1.5 2
Miles

Disclaimer: This map is intended for general planning purposes only.

Sources: Connecticut Department of Transportation, Highways and Congestion Screening and Monitoring Report, Town Road Maps (TRU); Connecticut Department of Environmental Protection, Environmental GIS Data for Connecticut;

Prepared on April 15, 2010 by

SWRPA

South Western Regional Planning Agency

COMMUNITY
connectivity program

Appendix D

AECOM
Built to deliver a better world

TOWN PLAN OF CONSERVATION AND DEVELOPMENT

PLANNING AND ZONING COMMISSION
TOWN OF WESTON, CONNECTICUT - JULY 1, 2010

Transportation

A. Pedestrian Facilities

Weston residents largely rely on their cars to get to their chosen destinations, although there are some who prefer to bicycle or walk. Weston has no mass transit and no sidewalks. [20]

The public expressed a great deal of interest in developing a system of sidewalks along School Road to the Town Hall complex as well as more routes for bicycle use. The desire to connect the schools, the Town Hall complex, Weston Center, school parks and the public library appears motivated by the desire to enhance the small town feel of Weston and to enable travel among these places by foot. The Committee believes that walking in these central areas of town should be encouraged.

An idea that anecdotally received a great deal of support was a program to close a road to vehicular access on a small number of days during the summer to provide a safe area to walk, bicycle, and gather. The Town once closed School Road for this purpose and the Committee feels this should be explored as a possibility, if school activities permit. Another alternative is to close Valley Forge Road between the intersection of Davis Hill Road and the end of the Valley Forge Road at Newtown Turnpike. There are small parking areas at each end, there are no houses along its length, and it is one of the most attractive roads in Weston. One lane could be dedicated to walkers, while another could be open to bicyclists.

Consequently, the Committee recommends the following:

1. The Board of Selectmen should appoint a committee to study, in consultation with the Town Engineer, Police Department, Board of Education, and the Board of Finance, the feasibility and cost of installing walking/biking paths connecting key locations in the center of Town.

2. If that committee determines that such a project is physically and economically feasible and enhances the quality of life in Weston, such construction should go forward.

3. The Board of Selectmen should close School Road or Valley Forge Road several Sundays each summer for pedestrian and bicycle traffic.

B. Bicycles

Many members of the public voiced concern with the hazards of biking on certain roads in Weston.[21] It was proposed that bike lanes be added to Weston's already narrow roads. This suggestion would entail widening roads and, in some instances, using the power of eminent domain over private property to accomplish that goal. The Committee believes that the Town is

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[20] Weston participates in the State funded program known as "Dial-A-Ride." This service provides transportation to seniors primarily for local medical appointments.

[21] Weston residents consistently raised their voices about this problem at each of the public meetings held on the Plan.

not in a position to undertake this project at this time, nor does it support the use of condemnation of private property for this purpose. The Committee believes bicycling should not only be supported, but should be encouraged in Weston. In fact, as of October 1, 2010, one percent of the transportation funds provided to a town by the State must be used for facilities for all users including bicyclists and pedestrians pursuant to Public Act 09-154.

A cyclist in Weston

The Committee recommends as follows:

1. The Board of Selectmen should appoint a Bicycle Committee, which, in consultation with the Town Engineer, the Police Department, the Police Commission and the Fire Department, should:
   (a) Categorize Weston roads for bicycle use: (a) Beginner/family friendly; (b) Intermediate cyclist; (c) Advanced cyclist; and (d) Dangerous, all with the explicit understanding that these are suggested categories only and are not so officially sanctioned by the Town.
   (b) Maintain a resource of bike trails, roads, and other routes for cyclists, such information to be made available on the Town website.
   (c) Identify and propose appropriate roads, if any, for the installation of "Share the Road" signs.
   (d) Identify opportunities, if any, during regular road maintenance to provide a wide, well-paved shoulder(s) without impinging on private property rights.
   (e) Install bicycle racks strategically.

COMMUNITY
connectivity program

Appendix E

AECOM
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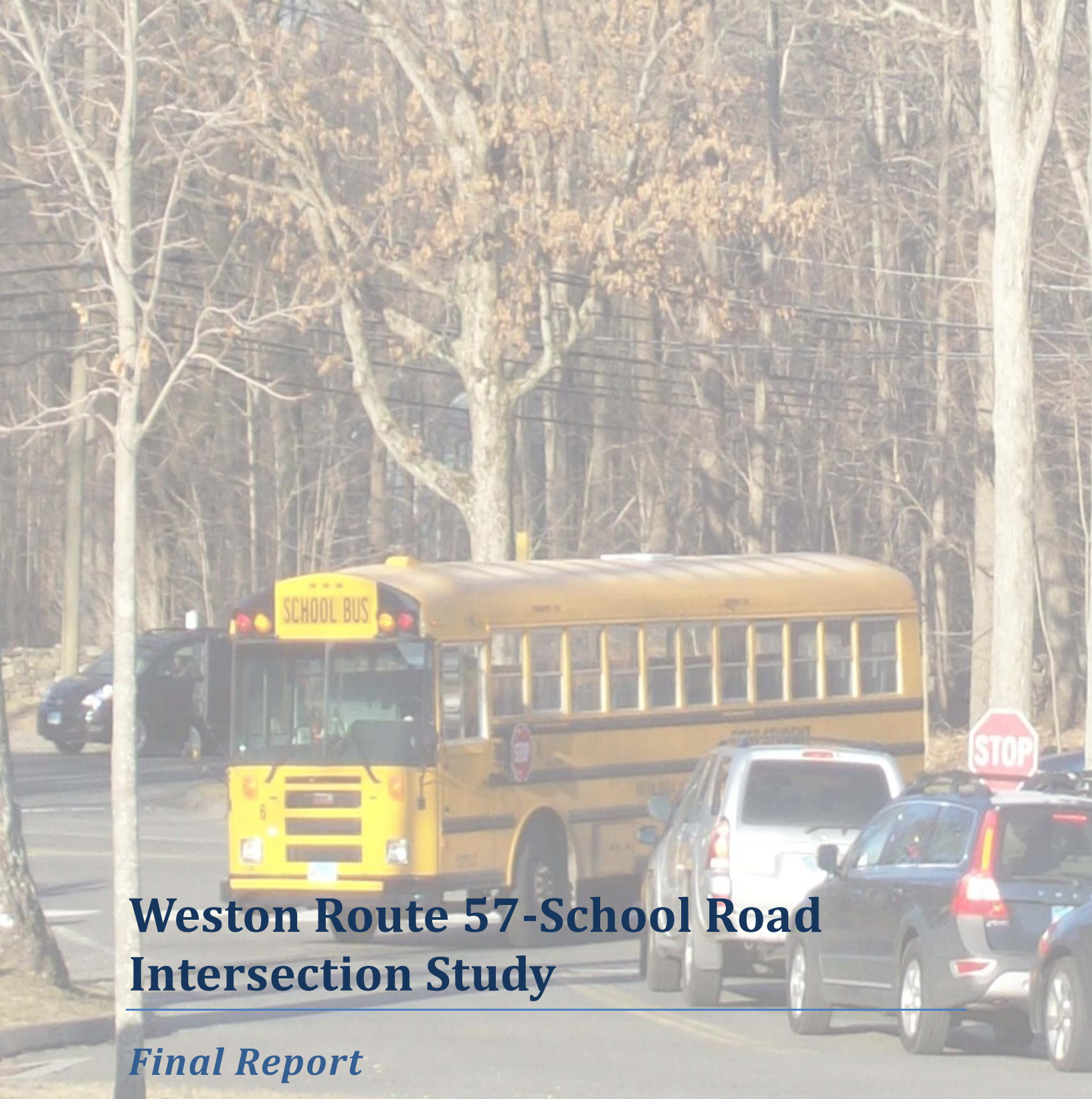


Weston Route 57-School Road Intersection Study

Final Report

Prepared for the South Western Regional Planning Agency

7/25/2012

SWRPA
South Western Regional Planning Agency

MILONE & MACBROOM®

Table of Contents

1 Introduction

The South Western Regional Planning Agency (SWRPA) in conjunction with the Connecticut Department of Transportation (CTDOT) and the Town of Weston identified the need to undertake improvements at the intersection of State Route 57 and School Road in Weston, Connecticut. The study intersection serves as a major access point to four schools within the town. As a result, this intersection is often subject to congestion and excessive delays during peak school hours. The absence of pedestrian facilities such as sidewalks and crosswalks at the intersection also presents some safety concerns. Signage in this school zone is also inadequate and needs to be improved. A previous study undertaken by Purcell Associates in 1996 recommended a number of traffic operations and geometric improvements for the intersection, none of which have been implemented to date.

The primary objectives of this latest study are to:

- Collect and review all available traffic and safety data
- Analyze data and develop improvement alternatives
- Consider the needs of all users, in particular students from the neighboring schools
- Produce a final technical report with recommendations for a preferred alternative

The SWRPA contracted with Milone & MacBroom, Inc. (MMI) to serve as the primary consultant on this intersection improvement study for Route 57 and School Road. MMI subcontracted with VN Engineers (DBE) to assist in accident analysis.

This report summarizes the existing and future conditions assessment and proposed improvement alternatives for the intersection of Route 57 and School Road.

2 Existing Conditions

2.1 Existing Roadway Conditions

The intersection of Route 57 and School Road is a signal-controlled "T" intersection. Route 57 is a north/south urban minor arterial characterized by one 12-foot travel lane in each direction with two-foot shoulders. School Road is a two-way local roadway characterized by two 12-foot approach lanes and one exiting lane at its intersection with Route 57 with no shoulders. School Road serves as the main access to four schools located on School Road. The traffic signal at the intersection of Route 57 and School Road is fully actuated and is owned and maintained by the state. Approximately 70 feet east of the study intersection is a driveway to the Hurlbutt Elementary School. This intersection is stop controlled on the elementary school driveway and the School Road westbound approach.

There is currently a pedestrian push button signal at the intersection of Route 57 and School Road; however, there are no handicap ramps or sidewalks. There are no crosswalks at the study intersection; however, there is an unsignalized mid-block pedestrian crossing on Route 57 between School Road and Norfield Road, which is located south of School Road. Route 57 at the intersection with Norfield Road is currently signalized. This traffic signal is also owned and maintained by the state. It is understood that this intersection will be improved with new traffic signal equipment and pedestrian facilities (State Project # 173-403). Signage within the study area is also quite limited and needs to be improved.

Figure 1: Site Location Map

2.1.1 Vehicular Speeds

Vehicular travel speed data on Route 57 was obtained from CTDOT. Route 57 has a regulatory posted speed limit of 35 miles per hour in this area. In 2009, it was found that the 85th percentile speed for northbound traveling vehicles on Route 57 was 42 miles per hour. Southbound vehicles on Route 57 had an 85th percentile speed of 43 miles per hour. The 85th percentile speed is the speed at or below which 85 percent of the vehicles were recorded to have traveled. The average speed of vehicles traveling on Route 57 through this area was recorded to be 40 miles per hour.

2.2 School Data

As indicated, there are currently four schools located on School Road. These schools are:

- Hurlbutt Elementary School
- Weston Intermediate School
- Weston Middle School
- Weston High School

Information on the schools was provided by the Weston Board of Education and is summarized below:

	School Hours
Hurlbutt Elementary School	8:30 a.m. to 3:15 p.m.
Weston Intermediate School	8:30 a.m. to 3:15 p.m.
Weston Middle School	7:45 a.m. to 2:30 p.m.
Weston High School	7:45 a.m. to 2:30 p.m.
Total Number of Students	2,500
Total Number of Staff/Teachers	377
Number of School Buses	22
Percentage of Students via bus	63%
Percentage of Students via car	37%
Percentage of Staff via car	100%

Source: Weston Board of Education

School bus and parent pickup/drop-off activity information was also provided for the four schools. The driveways to the intermediate, middle, and high schools are located approximately one-half mile to one mile from the intersection of Route 57 and School Road; therefore, school bus and parent pickup/drop-off activity at these schools do not directly impact traffic operations at the study intersection. The driveway to the Hurlbutt Elementary School, however, is located in close proximity to the study intersection, which results in pickup/drop-off activity at the elementary school directly impacting the study intersection. Parent pickup/drop-off activity at the elementary school occurs in front of the school building via the first driveway while school bus pickup/drop-off occurs in the rear of the building via a second driveway located further up School Road.

2.3 Existing Traffic Conditions

The intersection of Route 57 and School Road experiences significant delays and congestion during the morning and afternoon school peak periods due to the heavy volume of traffic accessing School Road during these hours. In addition, the close proximity of the Hurlbutt Elementary School driveway exacerbates the existing traffic situation and leads to further congestion and delays. Currently, these intersections require the services of a police officer at the intersection of Route 57 and School Road and a traffic person at the intersection of School Road and the elementary school driveway during school peak hours. It is also our understanding, based on information provided by the Weston Board of Education, that there are on average two sporting events per week and one concert/play per month at the schools, which generates higher than normal traffic on School Road.

2.3.1 Traffic Volumes

A review of traffic data at the nearest CTDOT traffic monitoring station on Route 57 in the vicinity of the study intersection was undertaken. The traffic data is presented in **Table 1** below.

TABLE 1
Two-Way Annual Daily Traffic (ADT) on Route 57

Year	ADT
2010	10,700
2007	10,400
2004	11,200

Source: Connecticut Department of Transportation

The most recent data indicates that Route 57 carries approximately 10,700 vehicles daily. This segment of Route 57 has experienced fluctuating traffic volumes over the past decade or so with a decline in traffic volumes from 2004 to 2007 and some marginal growth from

2007 to 2010. 2008 vehicle classification data provided by CTDOT indicates that approximately 98.5 percent of the traffic on Route 57 was comprised of light vehicles with 1.5 percent heavy vehicle traffic. The light vehicle traffic was broken up as passenger cars – 88 percent and four-tire single unit trucks – 10.5 percent. The heavy vehicle traffic was broken up as buses – 0.1 percent, three- or four-axle single unit trucks – 1.3 percent, and single trailer trucks – 0.1 percent. There were no multitrailer trucks recorded on Route 57.

To supplement the CTDOT data, turning movement traffic counts were manually conducted at the intersections of Route 57 at School Road and School Road at the elementary school driveway during the morning and afternoon peak periods on Wednesday, January 25, 2012. The counts were performed from 7:00 a.m. and 9:00 a.m. and from 2:00 p.m. and 6:00 p.m. in order to capture both the school dismissal and commuter peak periods. The peak hour traffic counts were found to be comparable to the CTDOT 2010 traffic data.

Figures 2 and **3** illustrate the peak hour traffic volumes that were extracted from the counts. The weekday morning peak hour occurred from 7:30 a.m. to 8:30 a.m. while the afternoon peak hour occurred from 2:45 p.m. to 3:45 p.m. These afternoon traffic volumes depict the school dismissal peak. A separate, less noticeable commuter peak did occur later in the afternoon. However, the total volume of traffic through the study area during the later commuter peak was significantly less than during the school dismissal peak. The afternoon commuter peak was not analyzed as a result.

The volume of traffic experienced at the intersection was observed to be greater during the morning peak hour than during the afternoon peak hour. This is due to the school arrival period and commuter period coinciding during the morning, whereas during the afternoon the dismissal and commuter peak periods occur separately.

Buses were enumerated during both morning and afternoon count periods. As illustrated in Figures 2 and 3, approximately 42 buses were observed entering and exiting the study intersection during the morning peak period while 32 buses were observed during the afternoon peak period. During the morning peak hour, the majority of buses traveling along Route 57 arrived from the south, turned right onto School Road, and continued through past the elementary school driveway. A notable number of buses also traveled westbound on School Road and turned left into the elementary school driveway during the morning peak hour.


School Road
Weston Road (Route 57)
203 (6)
44 (20)
44 (2)
225 (5)
24
66 (1)
476
96 (3)
(12) 333
(1) 109
224 (4)
346 (10)
Route 57 at School Road
Weston, CT
Figure: 2
Existing Traffic Volumes
Weekday Morning Peak Hour
7:30 AM - 8:30 AM
00 = All Vehicles
(00) = Buses
Source:
Aerial: Microsoft Bing Aerial
N
Milone & MacBroom


School Road
Route 57
254 (13)
19
49 (2)
290 (11)
18
85
260 (1)
36 (5)
(15) 145
24
316 (3)
133 (10)
Route 57 at School Road
Weston, CT
Figure: 3
Existing Traffic Volumes
Weekday Afternoon Peak Hour
2:45 PM - 3:45 PM
00 = All Vehicles
(00) = Buses
Source:
Aerial: Microsoft Bing Aerial
N
Milone & MacBroom

During the afternoon peak hour, similar to the morning, the majority of bus traffic along Route 57 arrived from the south, turned right onto School Road, and continued past the driveway. The opposite predominant flow also occurred during the afternoon peak hour where a large percentage of buses arrived from the east along School Road and turned left onto Route 57.

2.3.2 Pedestrian Activity

No pedestrian activity was observed during the morning peak hour. During the afternoon peak hour, however, a number of pedestrians were observed to cross traffic. The pedestrians were all students. Five pedestrians crossed at the intersection of Route 57 and School Road. At the intersection of School Road and the school driveway, nine pedestrians were observed to cross the street. It should be noted that these pedestrian counts were conducted in January and could therefore be considerably higher during the warmer months of the year.

2.4 Capacity Analysis

The adequacy of the intersections to handle the peak hour traffic volumes was evaluated using the *Synchro* Program. This software package adheres to the methodologies outlined in the *Highway Capacity Manual* (HCM)[1] to determine Level of Service (LOS). LOS is a qualitative measure of the efficiency of intersection operations in terms of delay and inconvenience to motorists.

A description of the various LOS designations, A through F, for signalized and unsignalized intersections is presented in the Appendix. **Table 2** summarizes the analysis results for the intersection of Route 57 and School Road.

As mentioned above, the intersections handle more traffic during the morning peak hour than during the afternoon peak hour. As a result, operations are better during the afternoon peak hour. The intersection of Route 57 and School Road operates overall at LOS E during the morning peak hour. A large volume of traffic makes a right turn from Route 57 onto School Road during this period. Accordingly, the northbound approach operates at LOS F during the morning peak hour. During the afternoon peak hour, the intersection operates overall at LOS C while the School Road westbound left-turn movement operates at LOS E.

At the intersection of the school driveway intersection with School Road, the stop sign controlled school driveway approach operates at LOS F during the morning peak hour and LOS C during the afternoon peak hour.

[1] *Highway Capacity Manual*, Transportation Research Board.

TABLE 2
Capacity Analysis Summary
Existing (2012) Traffic Volumes

LOCATION/MOVEMENTS	LEVEL OF SERVICE	
	WEEKDAY MORNING	WEEKDAY AFTERNOON
SIGNALIZED		
Route 57 at School Road		
Route 57 Northbound Approach	F	C
Route 57 Southbound Approach	D	A
School Road Westbound Left	E	E
School Westbound Right	A	A
Overall	**E**	**C**
UNSIGNALIZED		
School Road at school driveway		
Driveway Northbound Approach	F	C
School Road Westbound Approach	B	B

2.5 Accident History

Information on three years of traffic accidents occurring from 2006 through 2008 was obtained from CTDOT for the segment of Route 57 from mile marker 4.50 to 4.60. This segment of Weston Road is about 500 feet in length and includes the intersection with School Road. It should be noted that at the time of writing this report accident data from the Town of Weston had been requested but not received. **Table 3** exhibits a summary of these accidents by severity and collision type.

TABLE 3
Accident Summary
Route 57 at School Road

LOCATION: Route 57, Weston, CT STUDY DURATION: 1/1/2006 to 12/31/2008	ACCIDENT SEVERITY				TYPE OF COLLISION												
					TURN												
	FATALITY	INJURY	PROPERTY DAMAGE ONLY	**TOTAL**	SAME DIRECTION	OPPOSITE DIRECTION	INTERSECTING PATHS	REAR-END	HEAD-ON	BACKING	ANGLE	OVERTURN	SIDE SWIPE (Same Direction)	PEDESTRIAN / BICYCLIST	ANIMAL IMPACT	FIXED OBJECT	**TOTAL**
Route 57 (Weston Road) at School Road (Mile Marker 4.50 to 4.60)	0	1	6	**7**	0	0	0	6	0	0	0	0	1	0	0	0	**7**
TOTAL	0	1	6	**7**	0	0	0	6	0	0	0	0	1	0	0	0	**7**

During the three-year study period, seven collisions occurred within the vicinity of this intersection, with one crash resulting in a personal injury. Most of the accidents were rear-end type collisions that transpired with no adverse weather or road surface conditions, and all reported accidents occurred during daylight hours. Of the six rear-end collisions, two occurred north of the intersection in the southbound direction while two occurred south of the intersection in the northbound direction. One rear-end accident occurred north of the intersection traveling north while the sideswipe accident occurred north of the intersection traveling south. A collision diagram of the study intersection is presented in **Figure 4**.

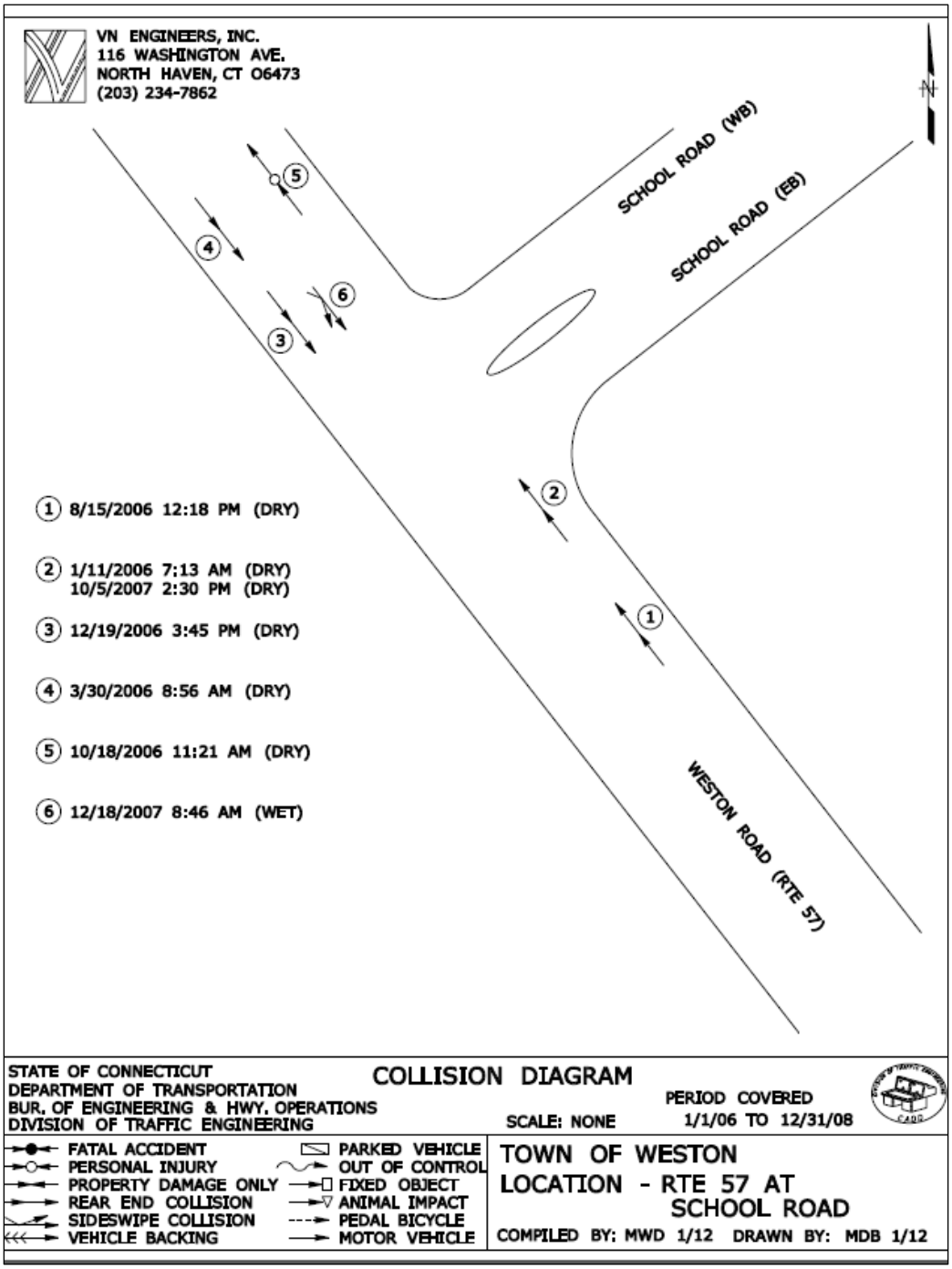


Figure 4: Collision Diagram

2.6 Sightlines

Based on the 85th percentile speed on Route 57, the minimum acceptable intersection sight distance per the CTDOT guidelines is 390 feet. The measured sight distances looking left and right from the School Road approach are approximately 650 feet and 200 feet, respectively. The sightline looking right is restricted by a stone wall and vegetation. This sightline can be improved by relocating the stone wall and some clearing of the vegetation on the northeastern corner of the intersection.

3 Future Conditions

3.1 Future Traffic Conditions

A future (2030) planning year horizon was utilized for this study. A review of traffic data at the nearest CTDOT traffic monitoring station on Route 57 in the vicinity of the study intersection indicates fluctuating traffic volumes over the past decade or so with a decline in traffic volumes from 2004 to 2007 and some marginal growth from 2007 to 2010. However, a one (1) percent per year ambient roadway traffic growth into the future was conservatively assumed for this study. The growth rate was vetted and approved by CTDOT. The existing intersection traffic volumes were, therefore, projected to year 2030 using a one percent annual growth factor.

CTDOT was also contacted to determine whether there were any approved or yet to be constructed projects in the immediate vicinity of the study intersection to include as part of the future (2030) background traffic. CTDOT determined that there were no such projects to include. **Figures 5** and **6** illustrate the future (2030) weekday morning and afternoon peak hour traffic volumes.

3.2 Capacity Analysis

The adequacy of the study intersection to handle the peak-hour traffic volumes under 2030 conditions was evaluated using the *Synchro* program. This software package adheres to the methodologies outlined in the *Highway Capacity Manual* (HCM)[2] to determine Level of Service (LOS).

A description of the various LOS designations, A through F, for signalized and unsignalized intersections is presented in the Appendix. **Table 4** summarizes the analysis results for the intersection of Route 57 and School Road and the intersection of School Road at the Hurlbutt Elementary school driveway under future (2030) peak hour conditions.

[2] *Highway Capacity Manual*, Transportation Research Board.


Weston Road (Route 57)
School Road
245 (10)
55 (25)
55 (5)
270 (10)
575
120 (5)
30
80 (5)
(15) 400
(5) 135
270 (5)
420 (15)
Route 57 at School Road
Weston, CT
Figure: 5
Future Traffic Volumes
Weekday Morning Peak Hour
7:30 AM - 8:30 AM
00 = All Vehicles
(00) = Buses
Source:
Aerial: Microsoft Bing Aerial
N
Milone & MacBroom


School Road
Route 57
305 (20)
25 (5)
60 (5)
350 (15)
315 (5)
45 (10)
25
105
(20) 175
30
380 (5)
160 (15)
Route 57 at School Road
Weston, CT
Figure: 6
Future Traffic Volumes
Weekday Afternoon Peak Hour
2:45 PM - 3:45 PM
00 = All Vehicles
(00) = Buses
Source:
Aerial: Microsoft Bing Aerial
N
Milone & MacBroom

TABLE 4
Capacity Analysis Summary
Future (2030) Traffic Volumes

LOCATION/MOVEMENTS	LEVEL OF SERVICE	
	A.M. PEAK	P.M. PEAK
SIGNALIZED		
Route 57 at School Road		
Route 57 Northbound Approach	F	D
Route 57 Southbound Approach	F	A
School Road Westbound Left	F	F
School Westbound Right	A	A
Overall	**F**	**E**
UNSIGNALIZED		
School Road at school driveway		
Driveway Northbound Approach	F	D
School Road Westbound Approach	C	B

Under future (2030) conditions, the intersection of Route 57 and School Road will operate overall at LOS F during the morning peak hour and LOS E during the afternoon peak hour. It is projected that approximately 420 vehicles will make a right turn from Route 57 onto School Road during future (2030) morning peak hour conditions. Accordingly, the northbound approach will operate at LOS F during the morning peak hour. During the afternoon peak hour, the School Road westbound left-turn movement will operate at LOS F.

At the intersection of the Hurlbutt school driveway at School Road, the stop sign controlled school driveway northbound approach will operate at LOS F during the future morning peak hour and LOS D during the future afternoon peak hour. The westbound approach on School Road will operate at LOS C and LOS B during future (2030) morning and afternoon peak hours, respectively.

4 Preliminary Improvement Alternatives

The traffic and safety issues at the intersection of Route 57 and School Road and its immediate environs necessitate the need for traffic/geometric improvements. For this study, two (2) near- and two (2) long-term improvement alternatives were developed for the intersection.

The near-term alternatives were identified as improvements that can be implemented within a one- to five-year time frame. These improvements would usually involve minimal to no property, utility, or environmental impacts. Costs associated with these improvements are not expected to exceed $500,000.

The long-term alternatives were identified as improvements that will most likely be implemented beyond a five-year time frame. These improvements would involve property, utility, or environmental impacts and would, therefore, involve some permitting process. Costs associated with these improvements are expected to exceed $500,000.

In a nut shell, the major difference between the near term and long term alternatives for this location relates to the cost of construction. A description of the proposed improvement alternatives is presented in sections below.

4.1 Preliminary Near-Term Alternatives

Preliminary Near-Term Alternative 1

This alternative would involve the relocation of the existing parent pickup/drop-off driveway to the Hurlbutt Elementary School further to the east on School Road along the lower western boundary of the baseball field. The relocation would create more separation from the Route 57- School Road intersection and reduce the number of conflict points at that location. A stop control would be installed on the driveway approach while School Road will be free flow. In addition, signal timing improvements and potential coordination with the newly redesigned traffic signal at the intersection of Route 57 and Norfield Road to the south would be implemented.

The proposed improvements would involve impacts to the school property. **Figure 7** presents a conceptual layout of *Preliminary Near-Term Alternative 1*.

Figure 7: Preliminary Near-Term Alternative 1

Preliminary Near-Term Alternative 2

Preliminary Near-Term Alternative 2 would involve the construction of a new parent pickup/drop-off driveway to the Hurlbutt Elementary School further to the east on School Road along the eastern boundary of the baseball field, while leaving the existing driveway open for bus access only to the school bus depot. This new configuration would create more separation from the Route 57- School Road intersection and reduce the number of conflict points within the study area. Similar to *Preliminary Near-Term Alternative 1*, signal timing improvements and potential coordination with the newly redesigned traffic signal at the intersection of Route 57 and Norfield Road to the south would be implemented. In addition, the existing stop sign on School Road westbound would be removed making School Road free flow. The proposed improvements would involve impacts to the school property. **Figure 8** presents a conceptual layout of *Preliminary Near-Term Alternative 2*.

Figure 8: Preliminary Near-Term Alternative 2

4.2 Preliminary Long-Term Alternatives

Preliminary Long-Term Alternative 1

Preliminary Long-Term Alternative 1 would involve widening the Route 57 northbound approach along its eastern edge to provide an exclusive right-turn lane and a through lane. This improvement would reduce queuing on the Route 57 northbound approach. A new sidewalk would be installed along the eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk and advance crosswalk signage. The proposed improvements would involve some right-of-way (ROW) impacts. **Figure 9** presents a conceptual layout of *Preliminary Long-Term Alternative 1*.

Figure 9: Preliminary Long-Term Alternative 1

Preliminary Long-Term Alternative 2

Preliminary Long-Term Alternative 2 would involve widening the Route 57 northbound approach along its eastern edge to provide an exclusive right-turn lane and a through lane. The Route 57 southbound approach would also be widened along the eastern edge to provide a 20-foot bypass to help minimize queuing on this approach. Similar to *Preliminary Long- Term Alternative 1*, a new sidewalk would be installed along the eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk and advance crosswalk signage. This alternative would involve some ROW impacts. **Figure 10** presents a conceptual layout of *Preliminary Long-Term Alternative 2*.

Figure 10: Preliminary Long-Term Alternative 2

4.3 Capacity Analysis of Alternatives

The proposed improvement alternatives were analyzed to determine LOS under future (2030) peak-hour conditions. The *Synchro* program was utilized in the capacity analysis of the improvement alternatives. **Table 5** summarizes the analysis results for the future conditions with and without the proposed improvements.

TABLE 5
Capacity Analysis of Alternatives
Future (2030) Peak-Hour Traffic Volumes

LOCATION/MOVEMENTS	No-Build		Near-Term Alt.1		Near-Term Alt. 2		Long-Term Alt. 1		Long-Term Alt. 2	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Route 57 at School Road										
Overall LOS	**F**	**E**	**D**	**C**	**D**	**C**	**B**	**C**	**B**	**C**
Route 57 NB Approach	F	D	B	B	B	B	A	B	A	B
Route 57 NB Through	-	-	-	-	-	-	B	B	B	B
Route 57 NB Right Turn	-	-	-	-	-	-	A	A	A	A
Route 57 SB Approach	F	A	D	A	D	A	B	A	A	A
School Road WB Left Turn	F	F	D	D	D	D	D	D	D	D
School Road WB Right Turn	A	A	A	A	A	A	A	A	A	A

Under Preliminary Near-Term Alternative 1, the intersection of Route 57 and School Road is anticipated to operate at overall LOS D and LOS C during future 2030 morning and afternoon peak hours, respectively. During the morning peak hour, the LOS on the Route 57 northbound approach is expected to improve from LOS F under the no-build condition to LOS B with the proposed improvements in place while the Route 57 southbound approach is anticipated to improve from LOS F to LOS D. The westbound left-turn movement on School Road is expected to improve from LOS F to LOS D during future 2030 morning and afternoon peak hours.

Under Preliminary Near-Term Alternative 2, the intersection of Route 57 and School Road is anticipated to also operate at overall LOS D and LOS C during future 2030 morning and afternoon peak hours, respectively. During the morning peak hour, the LOS on the Route 57 northbound approach is expected to improve from LOS F under the no-build condition to LOS B with the proposed improvements in place while the Route 57 southbound approach is anticipated to improve from LOS F to LOS D. The westbound left-turn movement on School Road is expected to improve from LOS F to LOS D during future 2030 morning and afternoon peak hours.

Under Preliminary Long-Term Alternative 1, the study intersection is anticipated to operate overall at LOS B and LOS C during future (2030) morning and afternoon peak hours, respectively. With the exception of the School Road westbound left-turn movement, which will operate at LOS D, all other movements are anticipated to operate at LOS B or better with the proposed improvements in place.

Under Preliminary Long-Term Alternative 2, the study intersection is anticipated to operate overall at LOS B and LOS C during future (2030) morning and afternoon peak hours, respectively. With the exception of the School Road westbound left-turn movement, which will operate at LOS D, all other movements are anticipated to operate at LOS B or better with the proposed improvement in place.

4.4 Refinement of Preliminary Alternatives

The preliminary alternatives were presented to officials from SWRPA and the Town of Weston for review and vetting at a stakeholder meeting. Some of the items that were considered in the review of the alternatives include ROW and utility impacts, traffic improvements, and safety improvements.

For *Preliminary Near-Term Alternative 1*, it was agreed that the proposed elementary school driveway should be realigned to avoid impacts to the existing infiltration system in that area. This alternative with the proposed revisions was acceptable to SWRPA and the Town as a near-term improvement for the intersection.

For Preliminary Near-Term Alternative 2, the town indicated that school children would have to cross the proposed driveway to get from the school playground to the ball field during recess, which was a source of concern. In addition, the town indicated that there is an existing sewage system located where the new driveway is proposed. Of the two near-term alternatives, *Preliminary Near-Term Alternative 2* was the least preferred option.

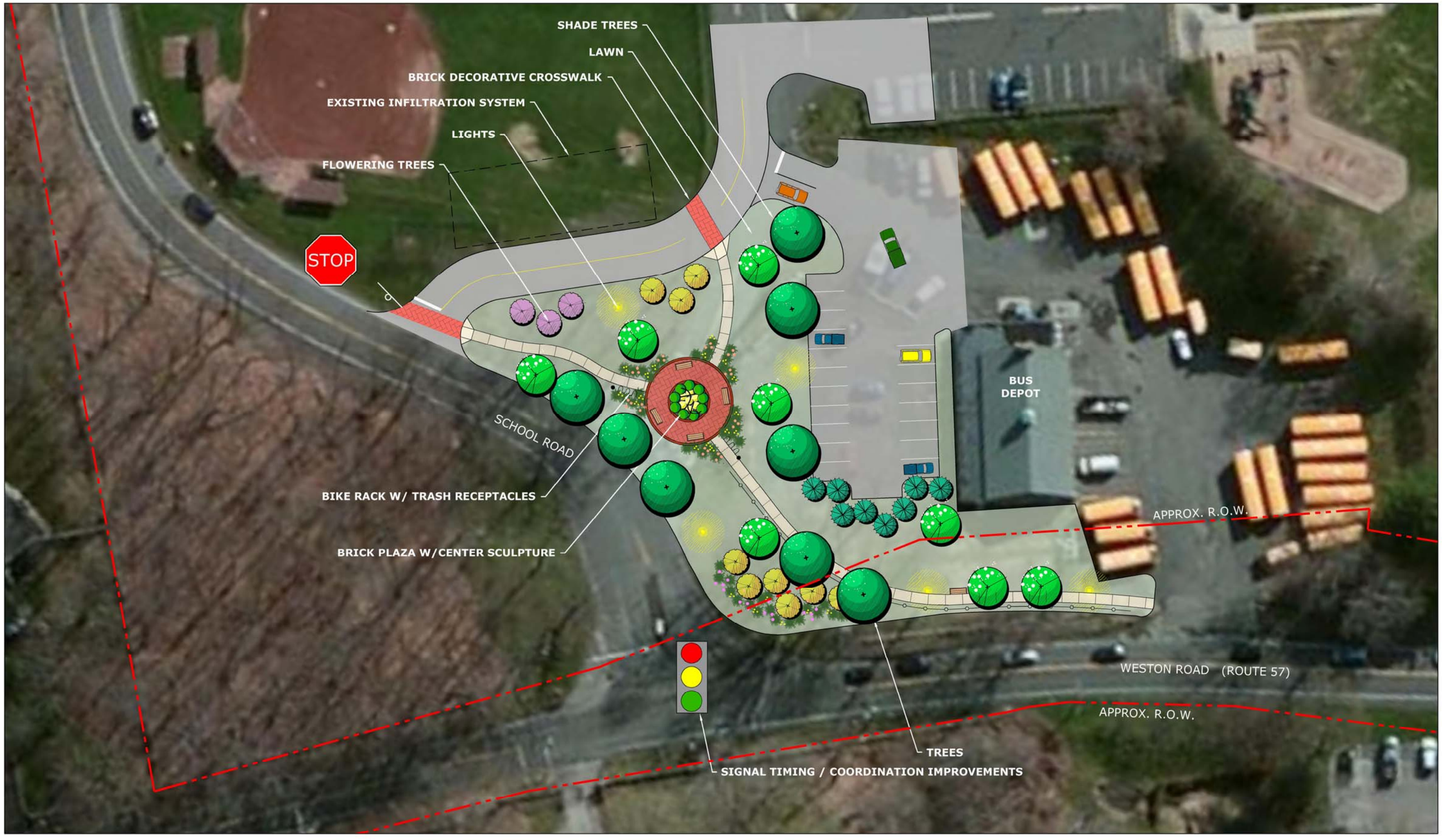
For the Long-Term Alternatives, it was decided that the Route 57 roadway widening improvements would serve as one standalone long-term alternative while the sidewalk improvements would serve as a second long-term alternative.

The preliminary alternatives were revised in accordance with comments provided by SWRPA and the Town of Weston into Preferred Improvement Alternatives. It was agreed that the Preferred Alternatives would be presented to CTDOT for further review and input prior to finalizing the alternatives.

5 Preferred Improvement Alternatives

Preferred Near-Term Alternative

The *Preferred Near-Term Alternative* for the study intersection is presented in ***Figure 11***. This alternative would involve the relocation of the existing driveway to the Hurlbutt Elementary School further to the east on School Road and aligned to avoid any impacts to the existing infiltration system on the school ball field. The proposed relocation would create more separation from and reduce the number of conflict points at the Route 57-School Road intersection. Stop control at the proposed driveway or possibly All-Way stop control at the proposed school driveway - School Road intersection would be provided. In addition, signal timing improvements and potential coordination with the newly redesigned traffic signal at the intersection of Route 57 and Norfield Road to the south would be implemented. Furthermore, a landscaped parklet with street lighting could be provided in the area bounded by the new school driveway, School Road, and Route 57. The proposed improvements would involve impacts to the school property. The order of magnitude cost for this alternative is anticipated to be approximately **$537,000** inclusive of a 40% incidentals/contingency factor. Approximately half of the construction cost comprises costs associated with the parklet and traffic signal upgrade. It should also be noted that costs associated with ROW impacts, permitting, and environmental compliance were not included in the cost estimates. A breakdown of the cost estimates is presented in the Appendix.



PREFERRED NEAR TERM ALTERNATE

WESTON (ROUTE 57) & SCHOOL ROAD INTERSECTION

WESTON, CONNECTICUT MAY 2012

FIGURE 11

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0 20' 40' 60' 80'

NORTH

Preferred Long-Term Alternative 1

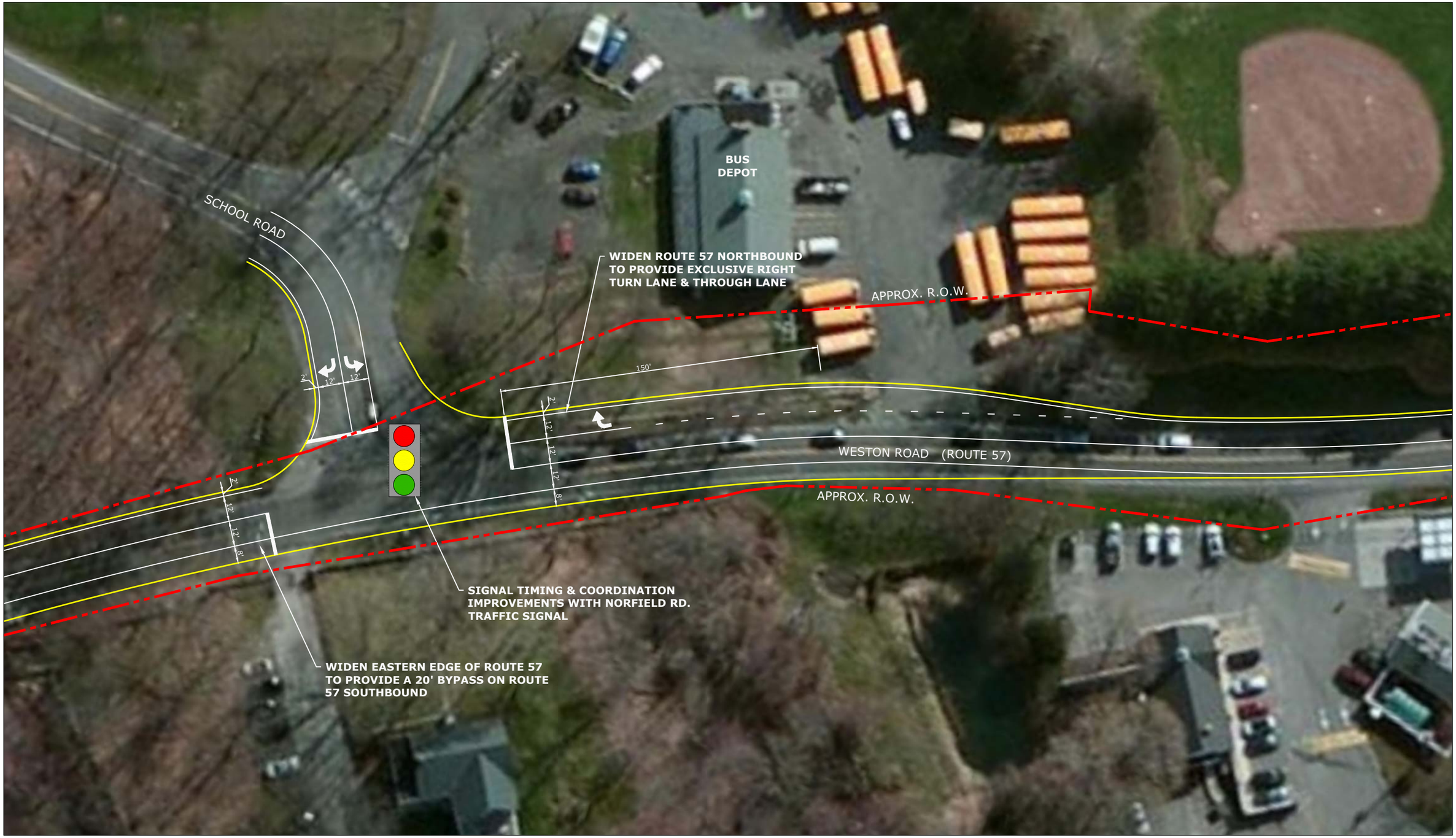
Preferred Long-Term Alternative 1 for the study intersection is presented in ***Figure 12***. This alternative would involve widening the Route 57 northbound approach along its eastern edge to provide an exclusive right-turn lane and a through lane. The Route 57 southbound approach would also be widened along the eastern edge to provide a 20-foot bypass to help minimize queuing on this approach. These improvements would involve little to no ROW impacts. The order of magnitude cost for this alternative is anticipated to be approximately **$866,000** inclusive of a 40% incidentals/contingency factor. It should be noted that costs associated with ROW impacts, permitting, and environmental compliance were not included in the cost estimates. A breakdown of the cost estimates is presented in the Appendix.

Preferred Long-Term Alternative 2

Preferred Long-Term Alternative 1 for the study intersection is presented in ***Figure 13***. This alternative would involve installing a new sidewalk along the eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk and advance crosswalk signage. This alternative would involve some ROW impacts. In addition, landscaping and street lighting would be provided along the sidewalk. The order of magnitude cost for this alternative is anticipated to be approximately **$709,000** inclusive of a 40% incidentals/contingency factor. It should be noted that costs associated with ROW impacts, permitting, and environmental compliance were not included in the cost estimates. A breakdown of the cost estimates is presented in the Appendix.

5.1 Right-of-Way Impacts

As indicated in previous sections of this report, the *Preferred Long-Term Alternatives* will be constructed within the existing ROW; therefore, no impacts are anticipated. The *Preferred Near-Term Alternative* on the other hand will be undertaken on town/school property. The estimated area of impact for this alternative is approximately 37,000 square feet



PREFERRED LONG TERM ALTERNATIVE 1

WESTON (ROUTE 57) & SCHOOL ROAD INTERSECTION

WESTON, CONNECTICUT MAY 2012

FIGURE 12

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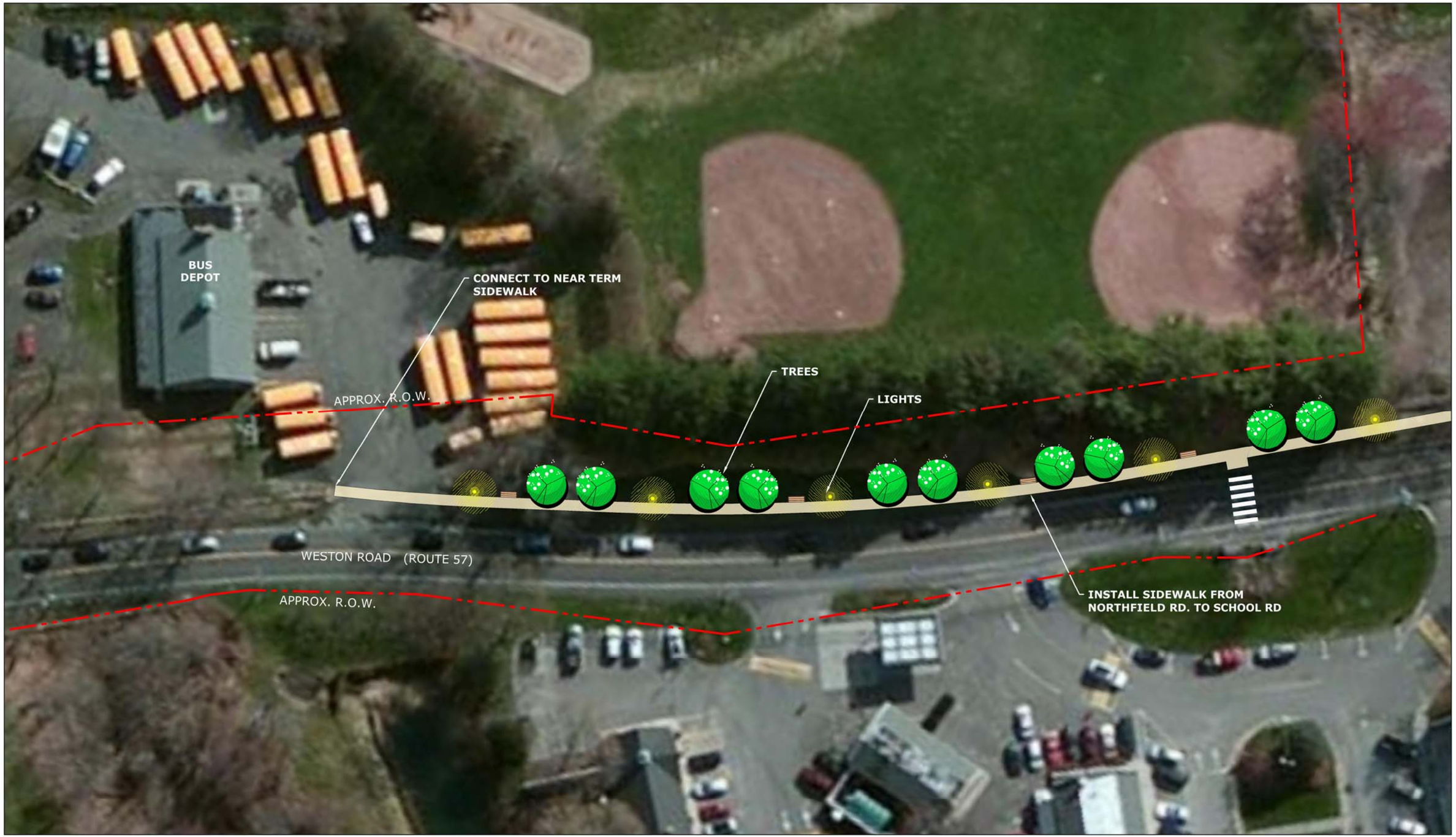
NORTH



PREFERRED LONG TERM ALTERNATIVE 2

WESTON (ROUTE 57) & SCHOOL ROAD INTERSECTION

WESTON, CONNECTICUT MAY 2012

FIGURE 13

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NORTH

5.2 Summary of Preferred Improvement Alternatives

TABLE 6
Summary of Preferred Alternatives

Weston Route 57-School Road Intersection Study				
Improvement	**Description**	**Cost***	**R.O.W Impacts**	**Oversight Agency**
Preferred Near-Term Alternative	◦ Relocate existing driveway to the Hurlbutt Elementary School further to the east of School Road. ◦ Provide Stop Control at proposed driveway or All-Way Stop Control at proposed school driveway. ◦ Provide signal timing improvements and potential coordination with newly redesigned traffic signal at the intersection of Route 57 and Norfield Road to the south. ◦ Landscaped parklet with street lighting in the area bounded by the new driveway, School Road, and Route 57.	$537,000	37,000 S.F	Town of Weston CT DOT
Preferred Long-Term Alternative 1	◦ Widen the Route 57 northbound approach along its eastern edge to provide an exclusive right-turn lane and through lane. ◦ Widen Route 57 Southbound approach along the eastern edge to provide a 20 foot bypass.	$866,000	Little or no ROW impacts	Town of Weston CT DOT
Preferred Long-Term Alternative 2	◦ Install new sidewalk along eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk and advance crosswalk signage. ◦ Provide landscaping and street lighting along new sidewalk.	$709,000	Little or no ROW impacts	Town of Weston CT DOT

*Includes a 40% incidentals/contingency factor.

6 Project Funding

The process of advancing a project from its conceptual phase through implementation is not guaranteed. The reality is that many projects do not get implemented due to the lack of funds.

The fiscal constraints brought about by the downturn of the U.S. economy means that funding for projects has become increasingly difficult to come by, and towns and agencies constantly have to compete for the limited funds available. The proposed near-term and long-term improvement projects at the intersection of Route 57 and School Road are no exception. It will, therefore, be prudent to identify sources of funding early on in the process to improve the chances of implementing these improvement projects. The following are potential sources of funding for the proposed improvements at the intersection of Route 57 and School Road.

- ***Small Town Economic Assistance Program (STEAP)*** – This program, which is administered by the Connecticut Office of Policy and Management, provides funding for projects that promote economic development, community conservation, and quality of life. Examples of such projects include roadway construction, roadway repair, environmental protection, and public safety improvements.

- ***Surface Transportation Program (STP) - Urban Program*** – This program is one of the Surface Transportation programs with funding for projects on minor arterials and collector roads in urban areas. Candidate projects include roadway widening, capacity enhancements, and transit enhancements.

- ***STP - Enhancement Program*** – This program is one of the Surface Transportation Programs that provides funding for projects geared towards expanding transportation choices with emphasis on pedestrian, bicycle infrastructure, safety improvements, landscaping and scenic improvements, and historical preservation.

- ***Safe Routes to School Program*** – This program provides funding for projects that promote safe walking and bicycling to school. Examples of such projects include sidewalk improvements, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, and bicycle and pedestrian facility projects.

APPENDIX

Level of Service Criteria

LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions (the absence of traffic control, geometric delay, any incidents, and any other vehicles). Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables including the quality of progression, the cycle length, the green ratio, and the volume to capacity (v/c) ratio for the lane group. The criteria are given below.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY (seconds/vehicle)
A	<10
B	>10 and <20
C	>20 and <35
D	>35 and <55
E	>55 and <80
F	>80

Specific descriptions of each LOS for signalized intersections are provided below:

Level of Service A describes operations with very low control delay, up to 10 seconds per vehicle (s/veh.). This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with delay greater than 10 and up to 20 s/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 s/veh. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 s/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with control delay greater than 55 and up to 80 s/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 s/veh. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE
UNSIGNALIZED INTERSECTIONS

The LOS for a TWSC (two-way stop controlled) intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS is not defined for the intersection as a whole. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS criteria are given in the table below.

LEVEL OF SERVICE CRITERIA FOR TWSC INTERSECTIONS

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (seconds/vehicle)
A	0-10
B	>10 and <15
C	>15 and <25
D	>25 and <35
E	>35 and <50
F	>50

Reference: Highway Capacity Manual 2010, Transportation Research Board, 2010.

Capacity Analysis Worksheets

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	225	44	224	346	96	476
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1770	1538	1700	0	0	1845
Flt Permitted	0.950					0.304
Satd. Flow (perm)	1770	1538	1700	0	0	565
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		80	129			
Link Speed (mph)	25		30			30
Link Distance (ft)	106		324			282
Travel Time (s)	2.9		7.4			6.4
Peak Hour Factor	0.71	0.55	0.68	0.68	0.91	0.91
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	317	80	838	0	0	628
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2			2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	19.0	19.0	31.0	0.0	18.1	49.1
Total Split (%)	27.9%	27.9%	45.5%	0.0%	26.6%	72.1%
Maximum Green (s)	14.0	14.0	25.0		15.0	
Yellow Time (s)	3.0	3.0	3.5		3.0	
All-Red Time (s)	2.0	2.0	2.5		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5		3.0	
Recall Mode	None	None	Min		Max	
Walk Time (s)	9.0	9.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	13.6	13.6	25.0			42.9
Actuated g/C Ratio	0.20	0.20	0.37			0.63
v/c Ratio	0.89	0.22	1.18			0.98
Control Delay	56.4	7.9	116.7			44.5
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	56.4	7.9	116.7			44.5
LOS	E	A	F			D
Approach Delay	46.7		116.7			44.5
Approach LOS	D		F			D
Queue Length 50th (ft)	129	0	~397			145
Queue Length 95th (ft)	#173	8	#367			#356
Internal Link Dist (ft)	26		244			202
Turn Bay Length (ft)						

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Base Capacity (vph)	366	382	710			642
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.87	0.21	1.18			0.98

Intersection Summary			
Area Type:	Other		
Cycle Length: 68.1			
Actuated Cycle Length: 67.7			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 77.4		Intersection LOS: E	
Intersection Capacity Utilization 88.3%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	270	55	270	420	120	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1770	1538	1700	0	0	1843
Flt Permitted	0.950					0.223
Satd. Flow (perm)	1770	1538	1700	0	0	415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		100	130			
Link Speed (mph)	25		30			30
Link Distance (ft)	106		324			282
Travel Time (s)	2.9		7.4			6.4
Peak Hour Factor	0.71	0.55	0.68	0.68	0.91	0.91
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	100	1015	0	0	764
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2			2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	19.0	19.0	31.0	0.0	18.1	49.1
Total Split (%)	27.9%	27.9%	45.5%	0.0%	26.6%	72.1%
Yellow Time (s)	3.0	3.0	3.5		3.0	
All-Red Time (s)	2.0	2.0	2.5		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min		Max	
Act Effct Green (s)	14.0	14.0	25.0			42.9
Actuated g/C Ratio	0.21	0.21	0.37			0.63
v/c Ratio	1.04	0.25	1.44			1.33
Control Delay	89.6	7.5	226.2			177.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	89.6	7.5	226.2			177.9
LOS	F	A	F			F
Approach Delay	72.5		226.2			177.9
Approach LOS	E		F			F
Queue Length 50th (ft)	~176	0	~559			~349
Queue Length 95th (ft)	#226	7	#499			#553
Internal Link Dist (ft)	26		244			202
Turn Bay Length (ft)						
Base Capacity (vph)	364	396	706			576
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.04	0.25	1.44			1.33

Intersection Summary		
Area Type:	Other	
Cycle Length: 68.1		
Actuated Cycle Length: 68.1		
Natural Cycle: 150		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 1.44		
Intersection Signal Delay: 177.2		Intersection LOS: F
Intersection Capacity Utilization 104.3%		ICU Level of Service G
Analysis Period (min) 15		

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	290	49	316	133	36	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1736	1553	1744	0	0	1825
Flt Permitted	0.950					0.927
Satd. Flow (perm)	1709	1553	1744	0	0	1702
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		75	43			
Link Speed (mph)	25		30			30
Link Distance (ft)	106		324			282
Travel Time (s)	2.9		7.4			6.4
Confl. Peds. (#/hr)	5	3		5	3	
Peak Hour Factor	0.71	0.65	0.79	0.79	0.80	0.80
Heavy Vehicles (%)	4%	4%	2%	8%	14%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	408	75	568	0	0	370
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2			2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	19.0	19.0	31.0	0.0	10.1	41.1
Total Split (%)	31.6%	31.6%	51.6%	0.0%	16.8%	68.4%
Yellow Time (s)	3.0	3.0	3.5		3.0	
All-Red Time (s)	2.0	2.0	2.5		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min		Max	
Act Effct Green (s)	14.1	14.1	21.7			31.7
Actuated g/C Ratio	0.25	0.25	0.38			0.56
v/c Ratio	0.95	0.17	0.82			0.39
Control Delay	60.0	6.7	26.1			6.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	60.0	6.7	26.1			6.9
LOS	E	A	C			A
Approach Delay	51.7		26.1			6.9
Approach LOS	D		C			A
Queue Length 50th (ft)	~151	0	155			52
Queue Length 95th (ft)	#210	13	212			75
Internal Link Dist (ft)	26		244			202
Turn Bay Length (ft)						
Base Capacity (vph)	428	440	793			1063
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Reduced v/c Ratio	0.95	0.17	0.72			0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 60.1			
Actuated Cycle Length: 57			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	60	380	160	45	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1736	1553	1744	0	0	1825
Flt Permitted	0.950					0.731
Satd. Flow (perm)	1709	1553	1744	0	0	1342
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		92	43			
Link Speed (mph)	25		30			30
Link Distance (ft)	106		324			282
Travel Time (s)	2.9		7.4			6.4
Confl. Peds. (#/hr)	5	3		5	3	
Peak Hour Factor	0.71	0.65	0.79	0.79	0.80	0.80
Heavy Vehicles (%)	4%	4%	2%	8%	14%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	493	92	684	0	0	450
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2			2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	19.0	19.0	31.0	0.0	10.1	41.1
Total Split (%)	31.6%	31.6%	51.6%	0.0%	16.8%	68.4%
Yellow Time (s)	3.0	3.0	3.5		3.0	
All-Red Time (s)	2.0	2.0	2.5		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min		Max	
Act Effct Green (s)	14.0	14.0	23.9			33.9
Actuated g/C Ratio	0.24	0.24	0.40			0.57
v/c Ratio	1.20	0.21	0.93			0.54
Control Delay	136.4	6.5	38.9			8.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	136.4	6.5	38.9			8.9
LOS	F	A	D			A
Approach Delay	116.0		38.9			8.9
Approach LOS	F		D			A
Queue Length 50th (ft)	~227	0	211			67
Queue Length 95th (ft)	#272	14	#325			94
Internal Link Dist (ft)	26		244			202
Turn Bay Length (ft)						
Base Capacity (vph)	412	438	764			851
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Reduced v/c Ratio	1.20	0.21	0.90			0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 60.1			
Actuated Cycle Length: 59.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 57.3		Intersection LOS: E	
Intersection Capacity Utilization 80.9%		ICU Level of Service D	
Analysis Period (min) 15			

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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	270	55	270	420	120	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.918			
Flt Protected	0.950					0.991
Satd. Flow (prot)	1770	1538	1700	0	0	1843
Flt Permitted	0.950					0.541
Satd. Flow (perm)	1770	1538	1700	0	0	1006
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60	134			
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	293	60	293	457	130	625
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	60	750	0	0	755
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	26.0	26.0	53.0	0.0	11.0	64.0
Total Split (%)	28.9%	28.9%	58.9%	0.0%	12.2%	71.1%
Maximum Green (s)	21.0	21.0	48.0		7.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	2.0	2.0	2.0		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5		3.0	
Recall Mode	None	None	C-Min		Min	
Act Effct Green (s)	18.1	18.1	50.9			60.7
Actuated g/C Ratio	0.20	0.20	0.57			0.67
v/c Ratio	0.82	0.17	0.74			1.00
Control Delay	53.4	9.1	17.8			49.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	53.4	9.1	17.8			49.1
LOS	D	A	B			D
Approach Delay	45.9		17.8			49.1
Approach LOS	D		B			D
Stops (vph)	249	13	443			330
Fuel Used(gal)	4	0	7			10
CO Emissions (g/hr)	304	17	468			720

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
NOx Emissions (g/hr)	59	3	91			140
VOC Emissions (g/hr)	70	4	108			167
Dilemma Vehicles (#)	0	0	0			0
Queue Length 50th (ft)	158	0	253			~206
Queue Length 95th (ft)	#260	31	430			#526
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)						
Base Capacity (vph)	413	405	1020			752
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.71	0.15	0.74			1.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 35.9		Intersection LOS: D	
Intersection Capacity Utilization 103.5%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	400	135	55	245	80	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.966				0.963	
Flt Protected				0.991	0.965	
Satd. Flow (prot)	1773	0	0	1700	1731	0
Flt Permitted				0.991	0.965	
Satd. Flow (perm)	1773	0	0	1700	1731	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	200			135	97	
Travel Time (s)	5.5			3.7	2.6	
Peak Hour Factor	0.61	0.61	0.60	0.60	0.29	0.29
Heavy Vehicles (%)	4%	2%	45%	3%	2%	2%
Adj. Flow (vph)	656	221	92	408	276	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	877	0	0	500	379	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	60	380	160	45	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.960			
Flt Protected	0.950					0.994
Satd. Flow (prot)	1770	1538	1783	0	0	1849
Flt Permitted	0.950					0.900
Satd. Flow (perm)	1770	1538	1783	0	0	1674
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		65	32			
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	380	65	413	174	49	342
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	65	587	0	0	391
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	31.0	31.0	48.0	0.0	11.0	59.0
Total Split (%)	34.4%	34.4%	53.3%	0.0%	12.2%	65.6%
Maximum Green (s)	26.0	26.0	43.0		7.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	2.0	2.0	2.0		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5		3.0	
Recall Mode	None	None	C-Min		Min	
Act Effct Green (s)	22.6	22.6	46.6			56.2
Actuated g/C Ratio	0.25	0.25	0.52			0.62
v/c Ratio	0.86	0.15	0.63			0.37
Control Delay	50.9	7.4	19.2			8.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	50.9	7.4	19.2			8.9
LOS	D	A	B			A
Approach Delay	44.6		19.2			8.9
Approach LOS	D		B			A
Stops (vph)	320	12	367			169
Fuel Used(gal)	5	0	6			2
CO Emissions (g/hr)	381	17	385			166

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
NOx Emissions (g/hr)	74	3	75			32
VOC Emissions (g/hr)	88	4	89			38
Dilemma Vehicles (#)	0	0	0			0
Queue Length 50th (ft)	202	0	222			90
Queue Length 95th (ft)	#322	29	355			148
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)						
Base Capacity (vph)	511	491	938			1064
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.74	0.13	0.63			0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 24.3		Intersection LOS: C	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	270	55	270	420	120	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950					0.991
Satd. Flow (prot)	1770	1538	1863	1568	0	1843
Flt Permitted	0.950					0.887
Satd. Flow (perm)	1770	1538	1863	1568	0	1649
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60		457		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	293	60	293	457	130	625
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	60	293	457	0	755
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	26.0	26.0	53.0	53.0	11.0	64.0
Total Split (%)	28.9%	28.9%	58.9%	58.9%	12.2%	71.1%
Maximum Green (s)	21.0	21.0	48.0	48.0	7.9	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5	2.5	3.0	
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	18.1	18.1	50.9	50.9		60.7
Actuated g/C Ratio	0.20	0.20	0.57	0.57		0.67
v/c Ratio	0.82	0.17	0.28	0.42		0.67
Control Delay	53.4	9.1	11.6	2.4		12.1
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	53.4	9.1	11.6	2.4		12.1
LOS	D	A	B	A		B
Approach Delay	45.9		6.0			12.1
Approach LOS	D		A			B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Stops (vph)	249	13	135	26		418
Fuel Used(gal)	4	0	2	1		6
CO Emissions (g/hr)	304	17	144	99		388
NOx Emissions (g/hr)	59	3	28	19		76
VOC Emissions (g/hr)	70	4	33	23		90
Dilemma Vehicles (#)	0	0	0	0		0
Queue Length 50th (ft)	158	0	83	0		191
Queue Length 95th (ft)	#260	31	137	43		306
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	413	405	1054	1085		1129
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.71	0.15	0.28	0.42		0.67

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 77.7%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	60	380	160	45	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Satd. Flow (prot)	1770	1538	1863	1568	0	1849
Flt Permitted	0.950					0.923
Satd. Flow (perm)	1770	1538	1863	1568	0	1717
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		65		174		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	65	413	174	0	391
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	31.0	31.0	48.0	48.0	11.0	59.0
Total Split (%)	34.4%	34.4%	53.3%	53.3%	12.2%	65.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	22.6	22.6	46.6	46.6		56.2
Actuated g/C Ratio	0.25	0.25	0.52	0.52		0.62
v/c Ratio	0.86	0.15	0.43	0.19		0.36
Control Delay	50.9	7.4	16.1	2.8		8.8
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	50.9	7.4	16.1	2.8		8.8
LOS	D	A	B	A		A
Approach Delay	44.6		12.1			8.8
Approach LOS	D		B			A
Stops (vph)	320	12	232	16		169
Fuel Used(gal)	5	0	3	1		2
CO Emissions (g/hr)	381	17	244	41		166
NOx Emissions (g/hr)	74	3	47	8		32
VOC Emissions (g/hr)	88	4	56	9		38
Dilemma Vehicles (#)	0	0	0	0		0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	202	0	143	0		90
Queue Length 95th (ft)	#322	29	229	32		148
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	511	491	964	896		1087
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.74	0.13	0.43	0.19		0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	270	55	270	420	120	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950					0.991
Satd. Flow (prot)	1770	1538	1863	1568	0	2089
Flt Permitted	0.950					0.887
Satd. Flow (perm)	1770	1538	1863	1568	0	1869
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60		457		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	293	60	293	457	130	625
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	60	293	457	0	755
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	26.0	26.0	53.0	53.0	11.0	64.0
Total Split (%)	28.9%	28.9%	58.9%	58.9%	12.2%	71.1%
Maximum Green (s)	21.0	21.0	48.0	48.0	7.9	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5	2.5	3.0	
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	18.1	18.1	50.9	50.9		60.7
Actuated g/C Ratio	0.20	0.20	0.57	0.57		0.67
v/c Ratio	0.82	0.17	0.28	0.42		0.59
Control Delay	53.4	9.1	11.6	2.4		9.9
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	53.4	9.1	11.6	2.4		9.9
LOS	D	A	B	A		A
Approach Delay	45.9		6.0			9.9

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	D		A			A
Stops (vph)	249	13	135	26		371
Fuel Used(gal)	4	0	2	1		5
CO Emissions (g/hr)	304	17	144	99		348
NOx Emissions (g/hr)	59	3	28	19		68
VOC Emissions (g/hr)	70	4	33	23		81
Dilemma Vehicles (#)	0	0	0	0		0
Queue Length 50th (ft)	158	0	83	0		177
Queue Length 95th (ft)	#260	31	137	43		273
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	413	405	1054	1085		1280
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.71	0.15	0.28	0.42		0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 77.7%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: School Road & Route 57

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	60	380	160	45	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950					0.994
Satd. Flow (prot)	1770	1538	1863	1568	0	2096
Flt Permitted	0.950					0.923
Satd. Flow (perm)	1770	1538	1863	1568	0	1946
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		65		174		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	380	65	413	174	49	342
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	65	413	174	0	391
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	31.0	31.0	48.0	48.0	11.0	59.0
Total Split (%)	34.4%	34.4%	53.3%	53.3%	12.2%	65.6%
Maximum Green (s)	26.0	26.0	43.0	43.0	7.9	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5	2.5	3.0	
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	22.6	22.6	46.6	46.6		56.2
Actuated g/C Ratio	0.25	0.25	0.52	0.52		0.62
v/c Ratio	0.86	0.15	0.43	0.19		0.32
Control Delay	50.9	7.4	16.1	2.8		8.1
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	50.9	7.4	16.1	2.8		8.1
LOS	D	A	B	A		A
Approach Delay	44.6		12.1			8.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	D		B			A
Stops (vph)	320	12	232	16		158
Fuel Used(gal)	5	0	3	1		2
CO Emissions (g/hr)	381	17	244	41		158
NOx Emissions (g/hr)	74	3	47	8		31
VOC Emissions (g/hr)	88	4	56	9		37
Dilemma Vehicles (#)	0	0	0	0		0
Queue Length 50th (ft)	202	0	143	0		87
Queue Length 95th (ft)	#322	29	229	32		141
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	511	491	965	896		1233
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.74	0.13	0.43	0.19		0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: School Road & Route 57

Cost Estimates

CONCEPTUAL LEVEL CONSTRUCTION COST OPINION
NEAR TERM 1
ROUTE 57 AT SCHOOL ROAD
WESTON, CONNECTICUT

ITEM/DESCRIPTION	UNIT	QTY	UNIT COST	COST
Pavement	SY	520	$ 74.00	$38,480.00
Earthwork	CY	350	$ 30.00	$10,500.00
Pavement Removal, Turf, Topsoil	SY	600	$ 20.00	$12,000.00
Curbing	LF	470	$ 50.00	$23,500.00
				$84,480.00
Drainage (20%)				$ 16,896.00
				$101,376.00
Minor Items (30%)				$ 30,412.80
				$131,788.80
Lump Sum Items (14.5%)				$ 19,109.38
Traffic Person	EA	1	$ 12,000.00	$12,000.00
			Roadway Cost:	***$162,898.18***
Traffic Signal Modifications/Upgrade	Ea.	1	$ 100,000.00	$100,000.00
Streetscape (Lighting and Landscaping)	Est.	1	$ 120,000.00	$120,000.00
			Construction Cost:	***$382,898.18***
			Contingency ±10%:	$38,289.82
			Incidentals to Construction ±30%	$114,869.45
			2012 Project Total:	**$536,057.45**
			2012 Project Total (Rounded):	**$537,000.00**

Note:
Exclusions: Right of Way Impacts, Permitting, Environmental Compliance, Handling of Harzadous materials

CONCEPTUAL LEVEL CONSTRUCTION COST OPINION
LONG TERM 1-ROADWAY
ROUTE 57 AT SCHOOL ROAD
WESTON, CONNECTICUT

ITEM/DESCRIPTION	UNIT	QTY	UNIT COST	COST
Pavement	SY	1,360	$ 74.00	$100,640.00
Earthwork	CY	904	$ 30.00	$27,120.00
Mill	SY	5,010	$ 6.00	$30,060.00
2" Overlay	TON	576	$ 110.00	$63,376.50
Tack Coat	GAL	501	$ 9.00	$4,509.00
Curbing	CF	2,400	$ 10.00	$24,000.00
				$249,705.50
Drainage (20%)				$49,941.10
				$299,646.60
Minor Items (30%)				$ 89,893.98
				$ 389,540.58
Lump Sum Items (14.5%)				$ 56,483.38
Traffic Person	EA	1		$72,000.00
			Roadway Cost:	***$ 518,023.96***
Traffic Signal Modifications/Upgrade	Ea.	1	$ 100,000.00	$100,000.00
			Construction Cost:	***$ 618,023.96***
			Contingency ±10%:	$61,802.40
			Incidentals to Construction ±30%	$185,407.19
			2012 Project Total:	**$865,233.55**
			2012 Project Total (Rounded):	**$866,000.00**

Note:
Exclusions: Right of Way Impacts, Permitting, Environmental Compliance, Handling of Harzadous materials

CONCEPTUAL LEVEL CONSTRUCTION COST OPINION
LONG TERM 2- SIDEWALK
ROUTE 57 AT SCHOOL ROAD
WESTON, CONNECTICUT

ITEM/DESCRIPTION	UNIT	QTY	UNIT COST	COST
Sidewalk	SF	6,900	$ 15.00	$103,500.00
Minor Items (20%)				$ 20,700.00
Traffic Person	EA	1	$ 12,000.00	$ 12,000.00
				$136,200.00
Lump Sum Items (14.5%)				$ 19,749.00
			Roadway Cost:	***$155,949.00***
Streetscape (Lighting and Landscaping)	LF	1,000	$ 350.00	$350,000.00
			Construction Cost:	***$505,949.00***
			Contingency ±10%:	$50,594.90
			Incidentals to Construction ±30%	$151,784.70
			2012 Project Total:	**$708,328.60**
			2012 Project Total (Rounded):	**$709,000.00**

Note:
Exclusions: Right of Way Impacts, Permitting, Environmental Compliance, Handling of Harzadous materials

Report of Meetings

KICK-OFF MEETING NOTES

Weston Route 57-School Road Intersection Study

Westport Route 136 – Bayberry Lane Extension Intersection Study

Held on December 7, 2011

In attendance:

Gayle Weinstein	-	Weston First Selectman
Chief John Troxell	-	Weston Police Department
Chief Dale Call	-	Westport Police Department
Peter Ratkiewich	-	Town of Westport Department of Public Works
Barry Hammons	-	Town of Westport Department of Public Works
Sue Prosi	-	South Western Regional Planning Agency (SWRPA)
Alex Karman	-	South Western Regional Planning Agency (SWRPA)
Ron Malone		
Steve Halstead		
Dave Sullivan	-	Milone & MacBroom (MMI)
Kwesi Brown	-	Milone & MacBroom (MMI)

1. Introductions and Study Overview

Sue Prosi from SWRPA welcomed everyone and led introductions around the room. Dave Sullivan from MMI gave a brief overview of the study while Kwesi Brown from MMI discussed the study approach, tasks, deliverables and schedule for the two studies.

2. Discussion Items

Weston Route 57 - School Road Intersection

- Data Collection
  - Traffic data collection effort should not be limited to school peak hours but should include commuter hours as well.
  - Collection of school information should be coordinated through Joann Keating, Weston Board of Education.
  - Traffic issues at the Route 57-School Road intersection are also due to the geometric layout of intersection.

- SWRPA will provide available information including previous reports and GIS/survey information.
- There are potential wetland issues north of school road to consider.
- SWRPA to look into obtaining wetland delineation resources.
- MMI to contact CTDOT for wetlands mapping, available information, past studies (including the Project Development Unit review of the intersection, and the current signal upgrade.
- Weston Police Department will provide accident records for study area. This data will cover CTDOT's most recent three year period and accidents that have occurred since then.

- Analysis
  - Anticipated land use changes
    - Possible relocation of school bus depot to town highway department not likely to materialize.
    - Potential long term conversion of school bus depot area to a senior center or some other use. This will not impact current intersection study.

- Alternatives
  - Improvement recommendations from previous Purcell Study required ROW acquisition for turn lanes. The property owner directly opposite School Road was opposed to it.
  - Recommended alternatives for the Route 57-School Road intersection should not be limited to signal improvements. Geometric improvements such as turn lanes should be considered as well.
  - There are currently limited-to-no pedestrian accommodations at the study intersection.
  - The provision of sidewalks along the western side of Route 57 to Northfield Road should be considered at a minimum and as one of the full build alternatives.
  - The "Safe Routes to School" program would be a good source of funding for some of the pedestrian and bicyclist improvements within the study area.
  - MMI to coordinate with Fred Kulakowski and Joe Ouellette of the CTDOT on the
    - CTDOT improvements at Route 57 - School Road intersection.
    - Upgrade of existing signal at Northfield Road.

- Schedule
  - Data collection effort would likely begin after the holidays.
  - Both studies will run concurrent to each other.

Westport Route 136 – Bayberry Lane Extension Intersection

- Data Collection
    - MMI will contact CTDOT Traffic for available information and previous reports, studies, and design concepts.
    - Barry Hammons and Peter Ratkiewich of Westport DPW will provide GIS mapping /shapefiles and CADD based survey files for study area.
    - Westport Police Department will provide accident records for study area. This data will cover CTDOT's most recent three year period and accidents that have occurred since then.

- Analysis
    - The study should consider that there is an elementary school south of Berkley Road.
    - The northwestern corner of the intersection of Route 136 at Bayberry Lane is sometimes used as a pull over area by trucks.

- Alternatives
    - Attendees agreed that bicycle and pedestrian usage was not significant, though will be considered in the analysis as part of the complete streets approach.
    - MMI to develop a roundabout alternative for intersection.
    - MMI to develop alternatives that look into sight line improvement and maintenance issues on Route 136.
    - Vehicular speeds are an issue on Route 136. MMI to look at posted speeds and advance signage improvements.
    - Property, utility and environmental impacts
        - There is currently a Tenneco gas pipeline going through the parcel north of the intersection.
        - There is a seasonal pond on the parcel north of the intersection.
        - There are some other wetlands in the study area.

- Schedule
    - Both studies will run concurrent.

- Meetings
    - Possible consolidation of second meeting for the two studies into one meeting.

MEETING NOTES ON PRELIMINARY IMPROVEMENT ALTERNATIVES

Weston Route 57-School Road Intersection Study

Westport Route 136 – Bayberry Lane Extension Intersection Study

Held on April 10, 2012

In attendance:

Gayle Weinstein	-	Weston First Selectman
Chief John Troxell	-	Weston Police Department
John Conte	-	Town of Weston
Dan Clarke	-	Weston Schools
Jo-Ann Keating	-	Weston Schools
Peter Ratkiewich	-	Town of Westport Department of Public Works
Sue Prosi	-	South Western Regional Planning Agency (SWRPA)
Alex Karman	-	SWRPA
Dave Sullivan	-	Milone & MacBroom (MMI)
Kwesi Brown	-	MMI

1. Introductions and Study Update

Dave Sullivan from MMI welcomed everyone and led introductions around the room. Kwesi Brown gave an update on the existing and future conditions assessment for the two study sites and presented the preliminary near term and long term improvement alternatives that were being considered for the intersection of Route 57 at School Road in Weston and the intersection of Route 136 at Bayberry Lane in Westport.

2. Weston Route 57- School Road Intersection Preliminary Alternatives

The following improvements were presented as potential improvement alternatives for the intersection of Route 57 at School Road:

<u>Weston Near Term 1</u>

- Close the existing parent-pickup drop off driveway and relocate it further to the east on School Road along the lower western boundary of the baseball field. This will create more separation from the Route 57/School Road intersection and reduce the number of conflict points at that location.

- Implement signal timing improvements and potential coordination with the re-designed traffic signal at the intersection of Route 57 at Norfield Road to the south.
- Remove the existing stop sign on School Road westbound so that School Road becomes free flow.

Weston Near Term 2

- Construct a new parent pickup/drop off driveway further to the east on School along the eastern boundary of the baseball field. While leaving the existing driveway open only for bus access to the school bus depot. This will create more separation from the Route 57/School Road intersection and reduce the number of conflict points within that area.
- Implement signal timing improvements and potential coordination with the re-designed traffic signal at the intersection of Route 57 at Norfield Road to the south.
- Remove the existing stop sign on School Road westbound so that School Road becomes free flow.

Weston Long Term 1

- Widen the Route 57 northbound approach along the eastern side to provide an exclusive right turn lane and a through lane. This would reduce queuing on the northbound approach.
- Install a new sidewalk along the eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk. Provide appropriate signage in advance of the mid-block crosswalk.

Weston Long Term 2

- Widen the Route 57 northbound approach along the eastern side to provide an exclusive right turn lane and a through lane.
- Widen the Route 57 southbound approach along the eastern side to provide a 20 foot bypass to reduce queuing on this approach.
- Install a new sidewalk along the eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk. Provide appropriate signage in advance of the mid-block crosswalk.

Comments on Weston Improvements

- Near Term 1 - Realign the proposed driveway to minimize impacts to the ball field and utilities in that area. Also, provide an All Way Stop at the School Road/new driveway intersection. This alternative with the proposed revisions was acceptable to all as a near term improvement.
- Near Term 2 – According to the town, this alternative would not work as students would have to cross the proposed driveway to get from the playground to the ball field. Also there is currently a sewage system located where the new roadway is proposed. Of the two near term alternatives, Near Term 2 was the least preferred option by the town.
- Long Term Alternatives – It was decided that the sidewalk improvements would serve as one standalone long term alternative while the Route 57 roadway widening improvements would serve as the second long term alternative. The proposed location of the sidewalks along the eastern edge of Route 57 was acceptable to all.

3. Westport Route 136- Bayberry Lane Extension Intersection Preliminary Alternatives

The following improvements were recommended for the intersection of Route 136 at Bayberry Lane:

<u>Westport Near Term 1</u>

- Realign the intersection of Route 136 at Bayberry Lane to slow vehicles down; the Bayberry Lane Extension westbound approach will remain unchanged.
- Provide an All Way Stop control at the intersection of Route 136 at Bayberry Lane to reduce vehicular speeds and improve sightlines.

<u>Westport Near Term</u> 2

- Construct a three point single lane roundabout at the intersection of Route 136 at Bayberry Lane to calm traffic and also to improve sightlines.

<u>Westport Long Term 1</u>

- Reconfigure the intersection into a four-legged intersection with Two-Way stop sign control on the Bayberry Lane approaches.
- The proposed intersection reconfiguration will involve impacts to the property on northwestern quadrant of the intersection.

Westport Long Term 2

- Reconfigure the intersection and construct a four point single lane roundabout. The intersection reconfiguration will involve impacts to the property on northwestern quadrant of the intersection.

Comments on Westport Improvements

- Near Term 1 – It was agreed that the proposed All Way Stop at the intersection may get some push back from the Connecticut Department of Transportation (CTDOT).
- Near Term 2 – It is likely that CTDOT would be open to a roundabout at the intersection.
- Long Term Alternatives – The long term may be a viable option if the town is able to acquire the property on the northwestern quadrant of the intersection. The town of Westport was in favor of all four improvement alternatives

4. Other Items

- There was a discussion on potential funding sources for the two studies. SWRPA identified the STP Urban Grant, the Safe Routes to School Program and the Small Town Economic Assistance Program (STEAP) as potential funding sources. SWRPA also talked about helping the towns of Weston and Westport sign up for the Safe Routes to School Program. It was agreed that MMI should have a section on funding sources in the final report.
- It was decided that MMI will forward the alternatives to CTDOT for their review and input.
- It was confirmed that MMI would quantify ROW impacts by calculating area of impacts as well as conduct cost estimates of the proposed improvements.