Road Safety Audit:

Springfield Avenue between Becker Terrace and Ellis Avenue
Irvington Township, Essex County

DEPARTMENT OF TRANSPORTATION
THE STATE OF NEW JERSEY

SEPTEMBER 2018

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Executive Summary

This document is the final report of the Springfield Avenue Road Safety Audit (RSA). It was conducted along Springfield Avenue (CR 603) from Becker Terrace to Ellis Avenue (MP 0.00-1.71) in Irvington Township, Essex County. An RSA is an effective way of identifying crash-causing trends and appropriate countermeasures utilizing a nontraditional approach that promotes transportation safety while maintaining mobility.

This section of Springfield Avenue was identified on NJTPA's Local Safety Program Network Screening list as a high priority location. According to the NJDOT crash database, 478 crashes occurred during the three-year period between January 1, 2014 and December 31, 2016 along the study area of Springfield Avenue with 132, 160 and 186 crashes occurring in 2014, 2015 and 2016, respectively. Additionally, 84 pedestrian crashes occurred over the five-year period between January 1, 2012 and December 31, 2016.

This one-day RSA was conducted on Thursday, May 24, 2018 from 9:00 am to 3:00 pm. The pre- and post-audit meetings were held in the Irvington Municipal Building, located at 1 Civic Square, Irvington, NJ. Representatives from NJDOT, NJTPA, Essex County and Irvington Township were in attendance with NJDOT serving as the facilitator.

The RSA site and crash history is described in Sections II and III of this report, respectively. Section II also identifies previous and on-going studies conducted by the agency representatives. Corridor-wide and site-specific issues and recommendations, organized by location, are discussed in Section V. The most common recommendations were to improve pedestrian safety by investigating curb extensions at intersections, repairing sidewalks and ensuring ADA compliance. Additionally, many suggestions were made to upgrade traffic signals, improve, and simplify signage, and increase parking enforcement efforts.

The recommendations contained herein were developed collaboratively with the roadway owner and local stakeholders from the RSA Team (members listed in Appendix A). The study partners have expressed interest in implementing many of the recommendations as time and funds allow. Many of the maintenance items, which are typically low cost, can be addressed without additional engineering.

Please note this RSA report does not constitute an engineering report. The agency responsible for design and construction should consult a licensed professional engineer in preparing the design and construction documents, to implement any of the safety countermeasures mentioned in this report.

I. Introduction

A. Site Selection

This section of Springfield Avenue (CR 603), from Becker Terrace to Ellis Avenue (MP 0.00-1.79), was identified on NJTPA's Local Safety Program Network Screening list as a high priority location, as shown in the below FY 2017-2018 ranking. Of note, these rankings are based on 2011-2013 vehicular and 2009-2013 pedestrian crash data.

Table 1 – Springfield Avenue NJTPA FY 2017-18 LSP Ranking (Corridor)

Location	Ped Corridor	Regional Corridor
Springfield Avenue	#1 County (MP 0.51-1.51)	#34 NJTPA (2010-2012)

Table 2 – Springfield Avenue NJTPA FY 2017-18 LSP Ranking (Intersection)

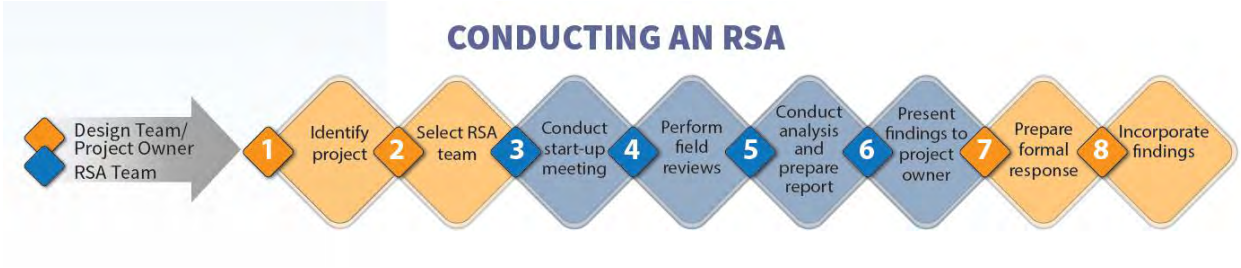
Location	Intersections	Pedestrian Intersections
Elmwood Ave (MP 0.60)	#11 County	#27 County
William S. Bull St (MP 0.82)	#47 County	#8 County
Smith St (MP 0.90)	#97 County	Not Ranked
Orange Ave (MP 0.96)	#49 County	#3 County
Clinton Ave (MP 1. 10)	#8 County	#23 County
N Maple Ave (MP 1.47)	#75 County	#9 County
Grove St (MP 1.53)	#23 County	#25 County
Stuyvesant Ave (MP 0.66)	Not Ranked	#123 County
Park Pl (MP 0.78)	Not Ranked	#115 County

B. What is a Road Safety Audit?

A Road Safety Audit (RSA) is a formal safety performance examination of an existing or future road or intersection by a multi-disciplinary audit team. It qualitatively estimates and reports on existing and potential road safety issues, as well as identifies opportunities for improvements in safety for all road users. RSAs can be used on any size project, from minor maintenance to mega-projects, and can be conducted on facilities with a history of crashes, or during the design phase of a new roadway or planned upgrade. RSAs consider all road users, account for human factors and road user capabilities, are documented in a formal report, and require a formal response from the road owner.

The RSA program is conducted to generate improvement recommendations and countermeasures for roadway segments demonstrating a history of, or potential for, a high frequency of crashes, or an identifiable pattern of crash types. Recommendations range from low-cost, quick-turnaround safety improvements to more complex strategies. Implementation of improvement strategies identified through this process may be eligible for Local Federal Aid Safety Funds. Because the RSA process is adaptable to local needs and conditions, recommendations can be implemented incrementally as time and resources permit.

The RSA process, one of FHWAs proven safety countermeasures, is shown in the figure below.



C. The Springfield Avenue RSA Event

This one-day RSA was conducted on Thursday, May 24, 2018 from 9:00 am to 3:00 pm. The pre- and post-audit meetings were held in the Irvington Municipal Building, located at 1 Civic Square, Irvington, NJ. Representatives from NJDOT, NJTPA, Essex County and Irvington Township were in attendance with NJDOT serving as the facilitator. A list of team members can be found in Appendix A.

II. Corridor Description and Analysis

A. Study Location

The study area consists of approximately 1.7 miles of Springfield Avenue within Irvington Township limits. This stretch of Springfield Avenue is a mix of commercial and retail properties. Commercial sites consist of one- and two-story retail, professional and service establishments; and a grocery store-anchored shopping plaza. The study area encompasses the Springfield Avenue Corridor Special Improvement District (SASID) and the Township is part of NJ Urban Enterprise Zone (UEZ) Program.

B. Roadway and Intersection Characteristics

Springfield Avenue is classified as an urban principal arterial with no posted speed limit. Therefore, a statutory speed limit of 25 mph is assumed based on the urban setting. The corridor study section is primarily 4-lanes, undivided, with no shoulders and parking on both sides. The roadway's horizontal alignment is generally straight and crosses over the Garden State Parkway towards the eastern limits. There are 16 signalized and 24 unsignalized intersections along this section.

C. Existing Bicycle/Pedestrian Accommodations

Sidewalks are currently available along both sides of Springfield Avenue and are typically more than 6 feet wide. Sidewalk conditions vary from newly installed to needing maintenance. Standard, ladder, and continental style crosswalks are provided throughout the corridor, with some of the latter designed as ergonomic crosswalks. There are no bicycle lanes or other bicycling infrastructure identified along the corridor.

D. Traffic Volumes

Based on available data, the 2016 ADT along Springfield Avenue is approximately 12,000 vehicles per day within the study area. A copy of the available data can be found in Appendix C.

E. Transit Service

NJ Transit bus service is provided along Springfield Avenue via numerous routes. The Irvington Bus Terminal, the second busiest bus facility in NJ, is located along Springfield Avenue at Washington Avenue. GO Bus service, express to NYC, is also provided along Springfield Avenue. The nearest train stations are in Newark and Maplewood.

F. Community Profile

Population and income characteristics from the 2010 Census (U.S. Census Bureau) were used to identify minority populations and low-income populations. Updates to the 2010 Census were performed by the Census Bureau through the American Community Survey (ACS) estimate. The latest ACS for this study area is a five-year estimate from 2012 through 2016, except for LEP, which was from the 2011-2015 ACS. A summary of the demographics is listed below.

Table 3 – Springfield Avenue Area Demographics

Characteristic		Springfield Ave Area	County Average
Poverty		25.4%	17.2%
Race/ Ethnicity	Black or African American	81.8%	38.9%
	Hispanic/Latino	13.1%	22.0%
	White	1.9%	31.5%
	Asian	2.1%	5.0%
	American Indian/Alaskan	0.0%	0.1%
	Other[1]	1.2%	2.5%
Limited English Proficiency (LEP)		11.8%	9.5%

In addition, approximately 26% of the population uses public transportation compared to the Essex County average of 21%. Roughly 5% of the area population walk or bike to work, which is similar to the county average.

G. Redevelopment

The Township has been making a concerted effort to take advantage of the upswing in the Newark economy to bolster Irvington's business climate, attract entrepreneurs, stabilize the real estate market, and build a better quality of life for residents. Towards that end, vacant and dilapidated residential buildings are demolished on a rolling basis. The Township also updated its Master Plan in 2002 (reexamined in 2008) to balance the need for growth and business attraction with housing density and protection of current neighborhoods. Essex County's 2013 Comprehensive Traffic Plan identified Clinton Avenue and Grove Street as intersections in need of improvement. Excerpts from the County and Township reports can be found in Appendix I and J, respectively.

III. Crash Findings

The analysis used in the RSA was based on reportable crashes that resulted in a fatality, injury and/or property damage as found in the NJDOT crash database. Corridor-wide crash characteristics and overrepresentations were compared to the 2016 statewide average for the county road system as further detailed below. All crashes were plotted onto collision diagrams, which can be found in Appendix D and E. Of note, crashes during 2016 may be skewed due to the reconstruction of the Springfield Avenue bridge over the Garden State Parkway (GSP) and its associated construction staging.

A. Temporal Trends

According to the NJDOT crash database, there were 478 crashes occurred during the three-year period between January 1, 2014, and December 31, 2016, along the study area of Springfield Avenue with

[1] Percentages may not equal 100% due to rounding. Other includes individuals who identified themselves as 'Native Hawaiian or Pacific Islander', 'Some Other Race Alone' or 'Two or More Races'

132, 160 and 186 crashes occurring in 2014, 2015 and 2016, respectively. Total crashes were highest in December and lowest in June and August compared to the county average. The day with the most of crashes is Saturday and the day with the fewest is Thursday.

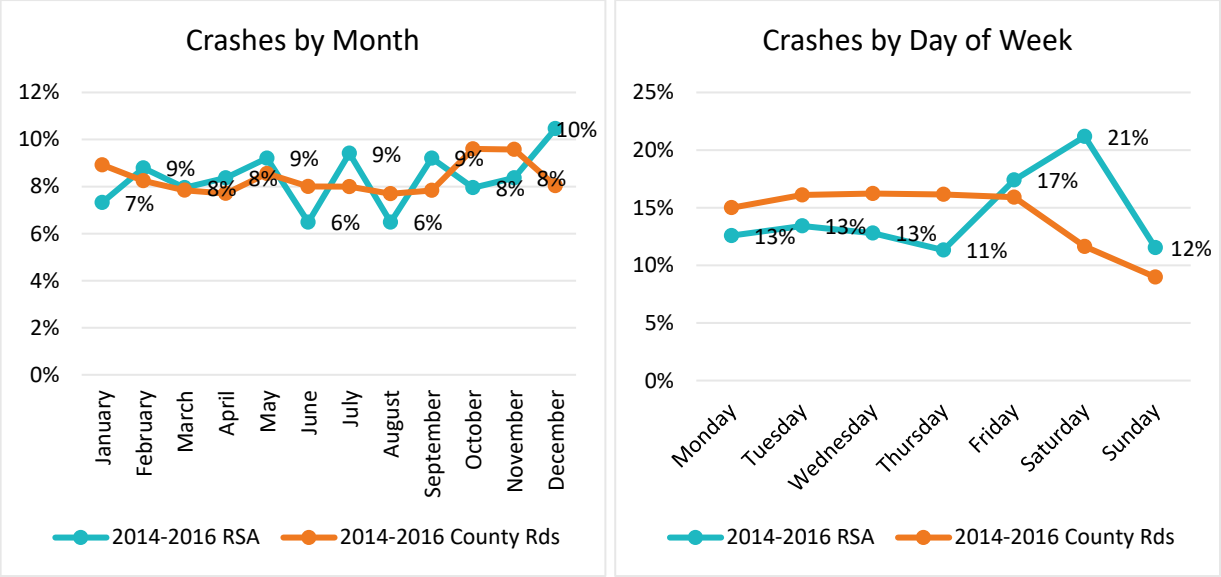


Figure 1 – Total Crashes by Month and Day of Week

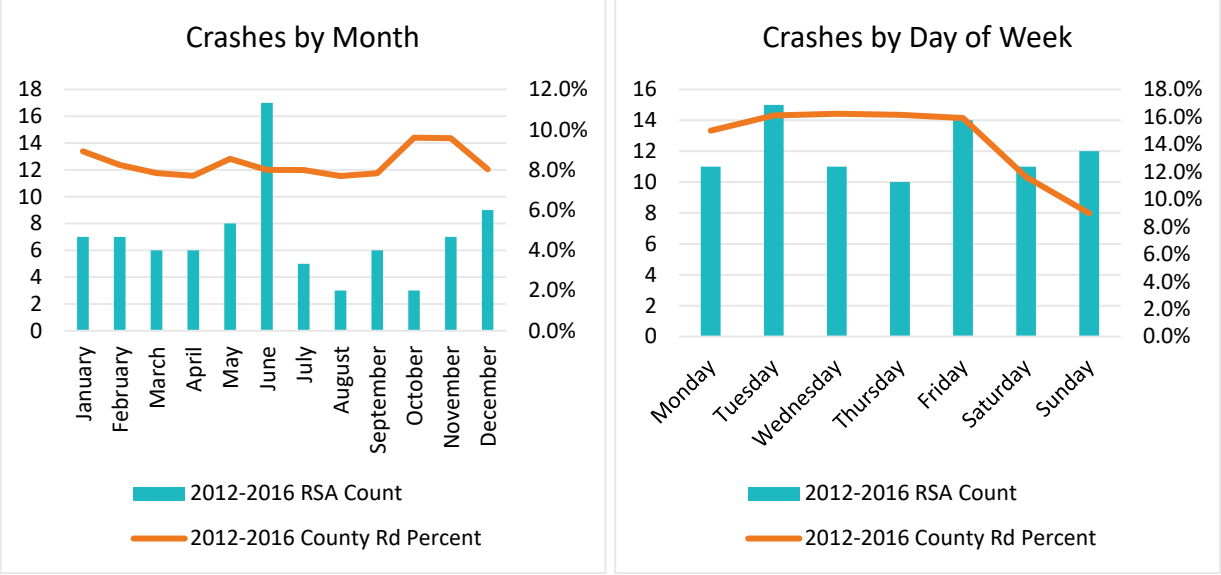


Figure 2 – Pedestrian/Bicyclist Crashes by Month and Day of Week

Additionally, 84 pedestrian crashes occurred over the five-year period from 2012 to 2016. Most of these crashes included minor to moderate injury. More crashes occurred at non-daylight hours than the county average. Collisions with pedestrians were most common Tuesdays and Fridays and in June. It should be noted that the low number of crashes compared to the county road system may be statistically insignificant since they could not be correlated with an identified event. For example, while the monthly chart indicates 17 pedestrian crashes occurred in June, this equates to 20% of total

pedestrian crashes versus the county average of approximately 175 pedestrian crashes (8%) for the same month.

B. Collision Types

Overrepresented crash types over the three-year period from 2014 to 2016 included sideswipe, parked vehicle, backing, and pedestrian. Of the 84 pedestrian/cyclist crashes over the five-year period from 2012 to 2016, two were pedalcyclists (scooter, skateboard, or bicycle) traveling alongside traffic, within the roadway.

Table 4 – Overrepresented Crash Types (2014-2016)

Collision Type	Count	% of Total	2016 County Road System Average
Same Direction (Side Swipe)	161	33.68%	13.13%
Parked Vehicle	63	13.18%	5.73%
Backing	31	6.49%	2.28%
Pedestrian*	46	9.62%	1.83%

* fatal crash

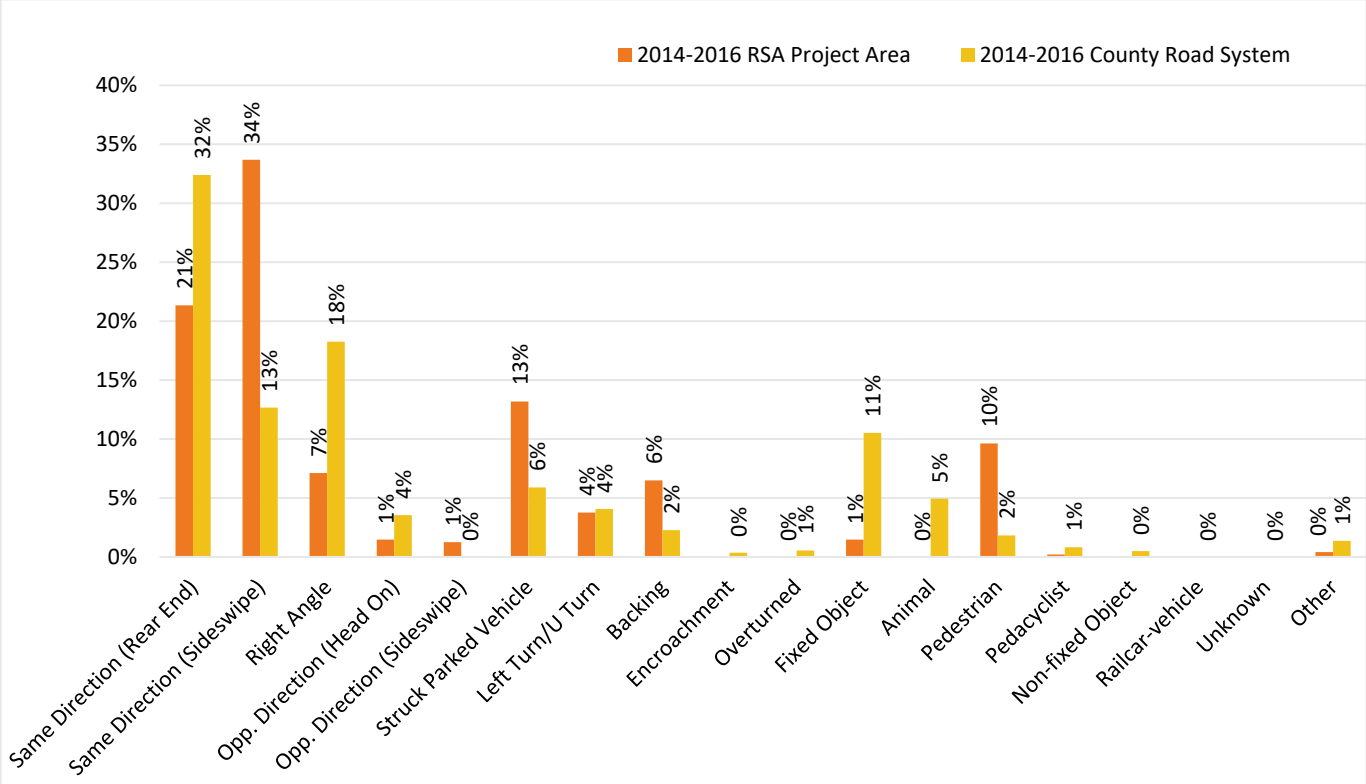


Figure 3 – Crash Type Breakdown

C. Severity

Crashes resulting in property damage only were overrepresented compared to the county road system. This is likely due to the parked vehicle and backing crashes, which tend to damage stationary vehicles with no occupants.

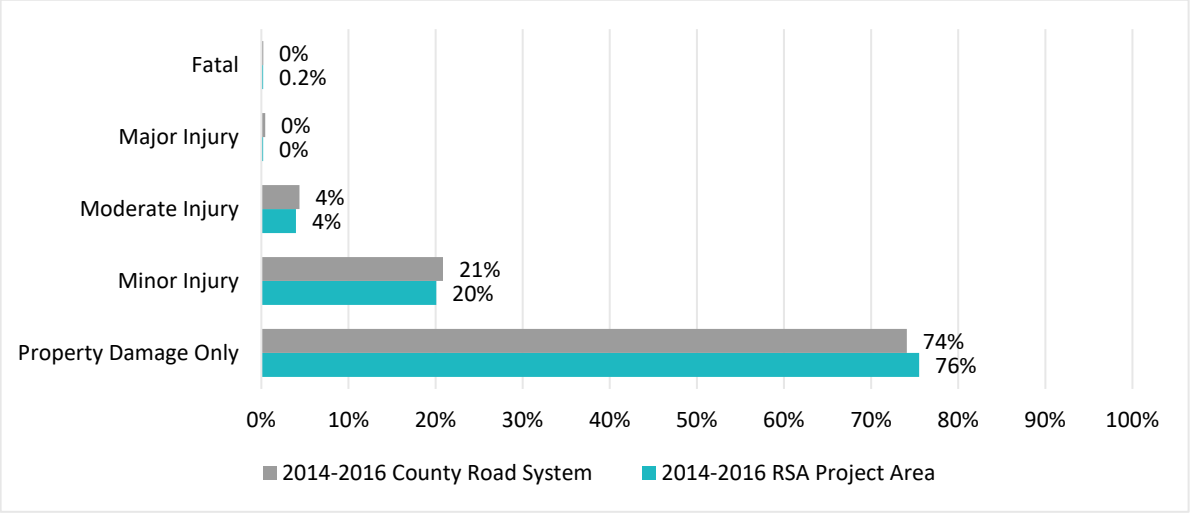


Figure 4 – Severity (All Crashes)

Pedestrian crashes resulting in minor and moderate injury were significantly overrepresented compared to the county road system from 2012 to 2016. One fatal crash involving a pedestrian occurred during the study period.

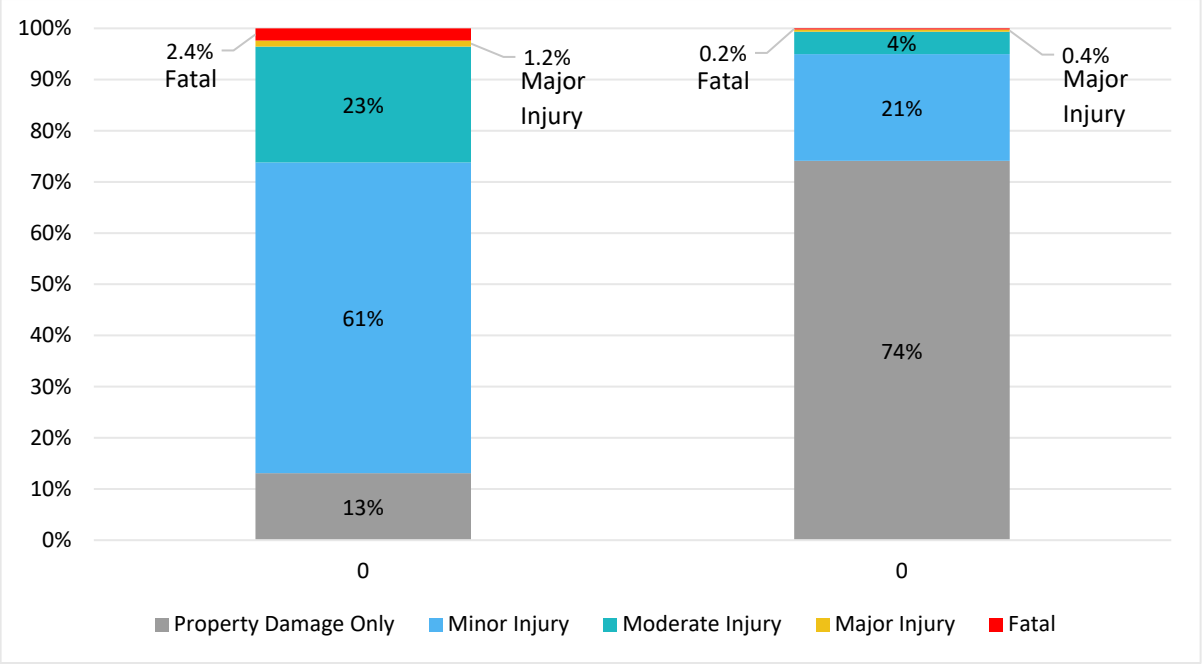


Figure 5 – Severity (Pedestrian/Bicycle Crashes)

D. Roadway Surface & Light Condition

Overrepresented crash types included dry surface and non-daylight hours. Dry surface conditions accounted for approximately 82% of total crashes, suggesting that road surface was not a significant contributing factor in the majority of crashes. While 65% of crashes occurred during daylight, approximately 35% occurred at dawn, dusk, or at night, which is higher than the county road statewide average of 28%.

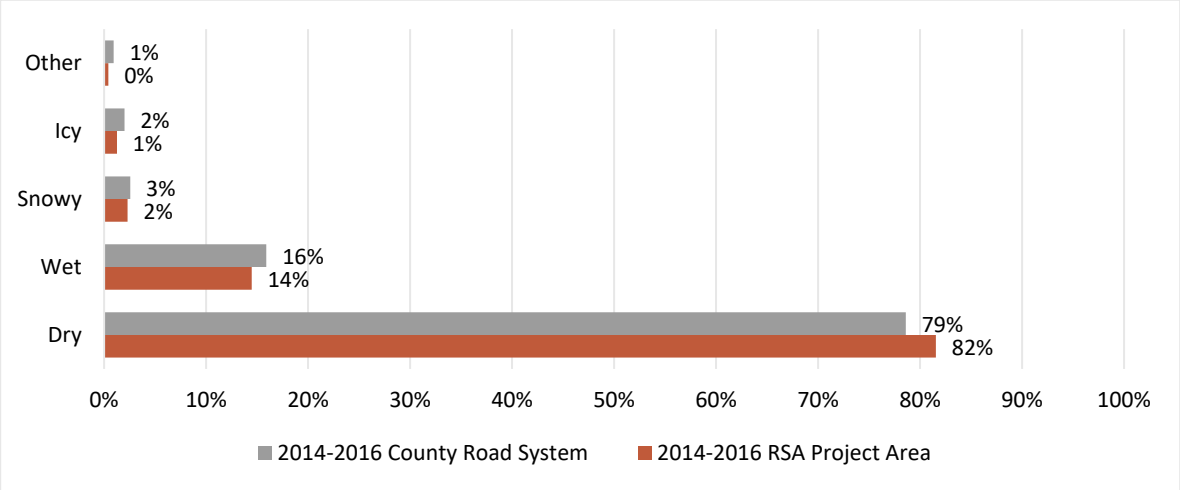


Figure 6 – Surface Conditions (All Crashes)

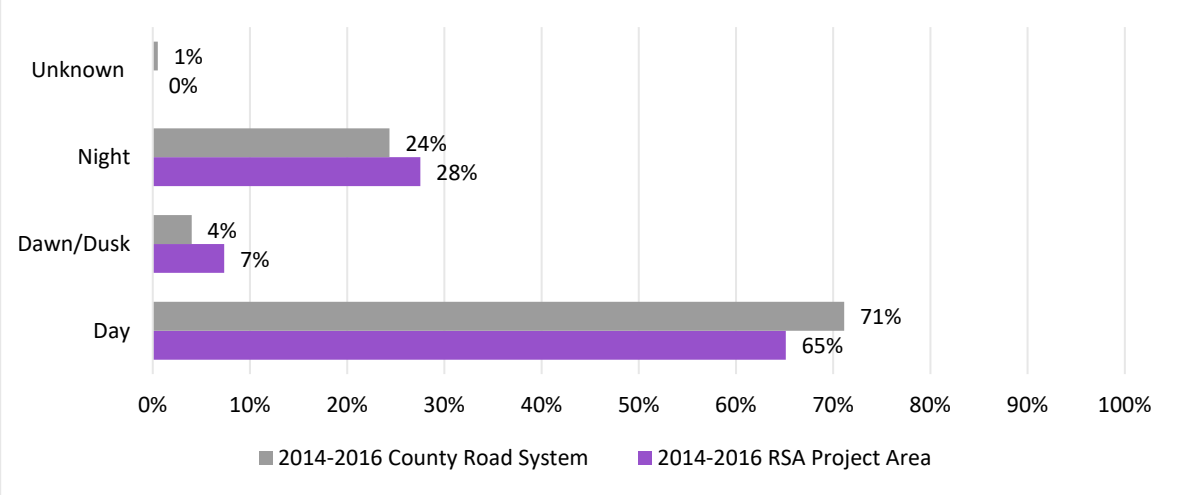


Figure 7 – Light Conditions (All Crashes)

Wet surface crashes involving pedestrians and bicyclists were overrepresented compared to the County average at 19%, or 16 crashes. In addition, 27 or approximately 32% of pedestrian crashes occurred at night, which is slightly higher than the county road statewide average of 28%. Of note, the low number of crashes compared to the county road system may be statistically insignificant.

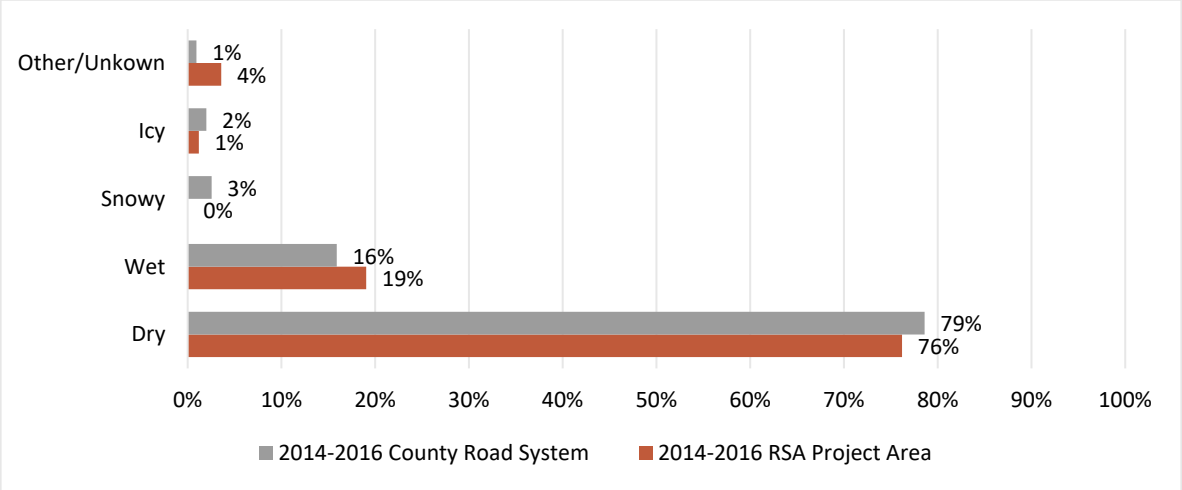


Figure 8 – Surface Conditions (Pedestrian/Bicycle Crashes)

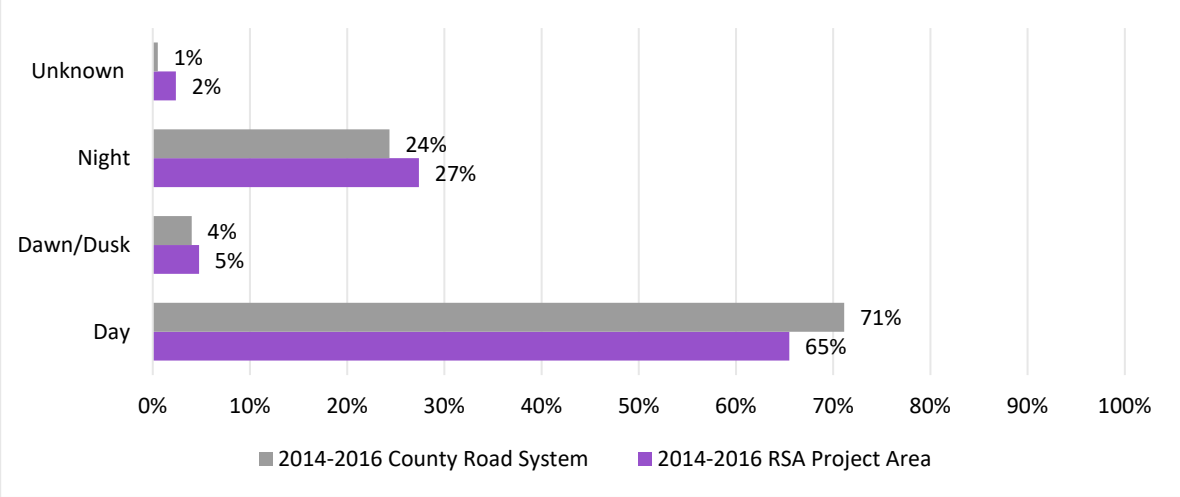


Figure 9 – Light Conditions (Pedestrian/Bicycle Crashes)

E. Location

Crashes at signalized intersections were overrepresented compared to the county road system average. Twenty-four percent (24%) of crashes occurred at signalized intersections compared to 14% on all county roads. More crashes occurred at or near 40th Street, Stuyvesant Avenue, Eastern Parkway and Ellis Avenue. Pedestrian/bicyclist crashes occurred more often at Maple Avenue than at any other study intersection. Crash frequency in 0.1-mile increments, as shown in the following figures, shows the highest concentration of vehicular and pedestrian crashes.

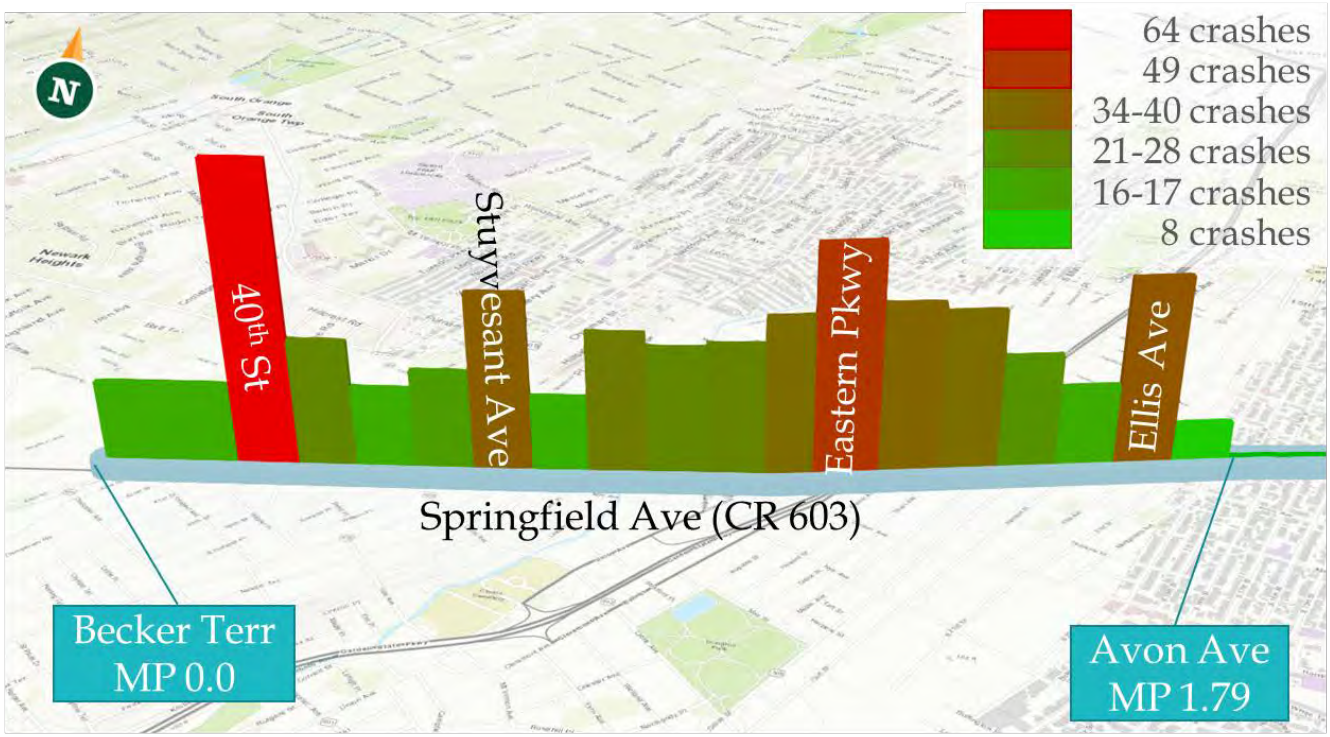


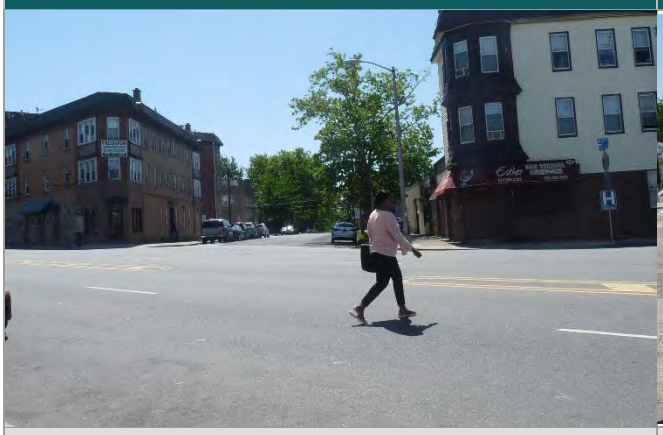
Figure 10 – Total Crash Locations (2014-2016)

Figure 11 – Pedestrian Crash Locations (2012-2016)

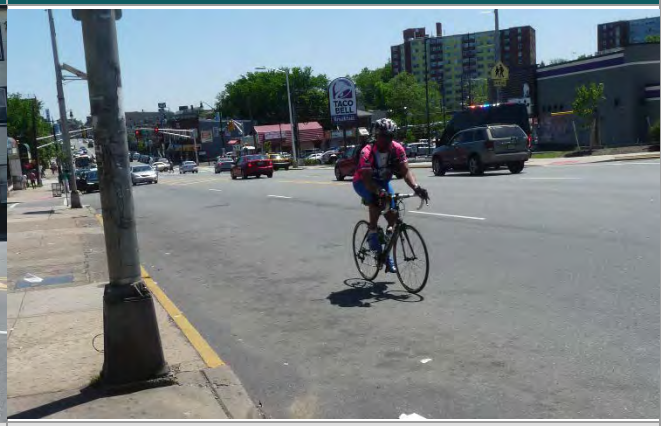
IV. Identified Issues & Observations

This section summarizes the site-specific and corridor-wide safety issues identified during the RSA. They are categorized into operations (including visibility), pedestrian, bicyclist, and maintenance. Additional issues and photographs can be found in Appendix F.

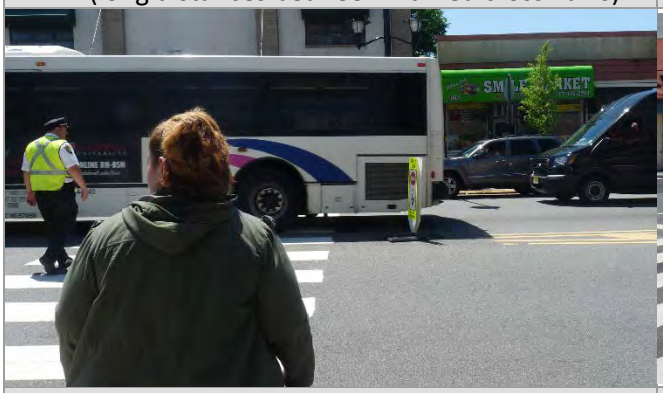
Pedestrian/Bicyclist



1. Pedestrians cross midblock outside crosswalks (long distances between marked crosswalks)



2. Lack of bicycle facilities along Springfield Avenue

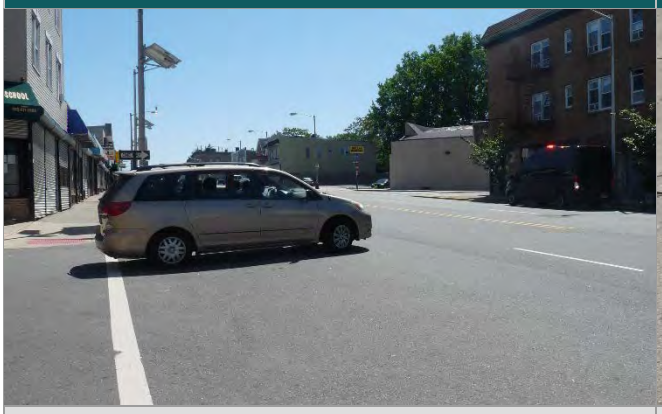
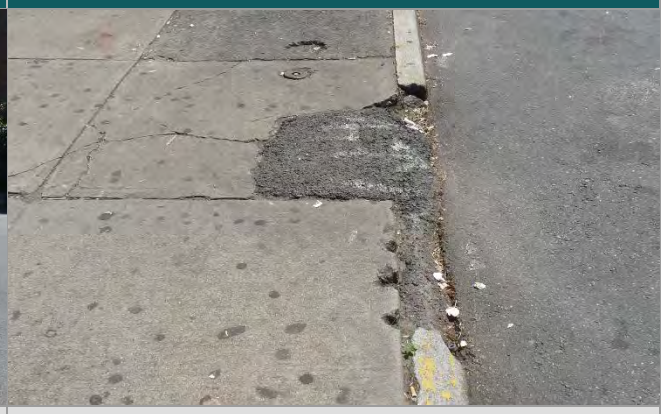
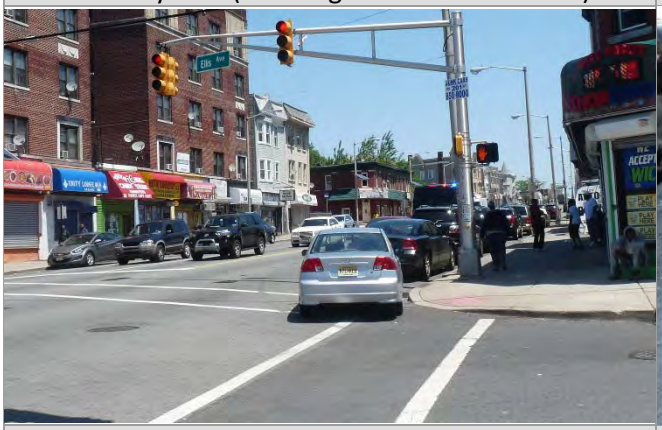


3. Vehicles do not stop for pedestrians in marked crosswalk

4. Wide 5-leg intersection with Clinton Ave difficult and confusing for pedestrians to traverse

5. Damaged sidewalk and stairs pose tripping hazards for pedestrians

6. Tripping hazards throughout sidewalk

Operations & Visibility	Maintenance
	
7. Poor sight distance at unsignalized intersections	**8.** Broken curb filled with asphalt
	
9. Vehicles travel through intersection from left turn only lane (2 through lanes on each side)	**10.** Some pedestrian heads not functioning properly
	
11. Vehicles parked improperly at curb ramps and partially within crosswalks	**12.** Areas of sidewalk are damaged, crumbling and/or have settled over time

Additional issues, observations and details identified during the RSA include the following, listed from south to north:

- The cross section and lane usage is inconsistent throughout the corridor and can be confusing to motorists and pedestrians (see Figure 12).
- Striping is worn on the structure carrying Springfield Avenue/Irvington bus terminal over the GSP.

- Title 39 parking violations were observed throughout the corridor (i.e. parking within or too close to an intersection, parking within a bus stop, double parking).
- Lincoln Place / Civic Square, New Street and Maple Avenue are major bus stop locations with a high number of pedestrians crossing and waiting for buses; adequate crossing time may not be provided.
- Pedestrian crashes at Maple Avenue may be the result of allowing left turns from the center lane in addition to the exclusive left turn lane (see Figure 13). A total of 12 crashes occurred due to this conflict over the five year period between 2012 and 2016. See Appendix E for crash information.

Figure 12 – Non-uniform Cross Section on Springfield Avenue

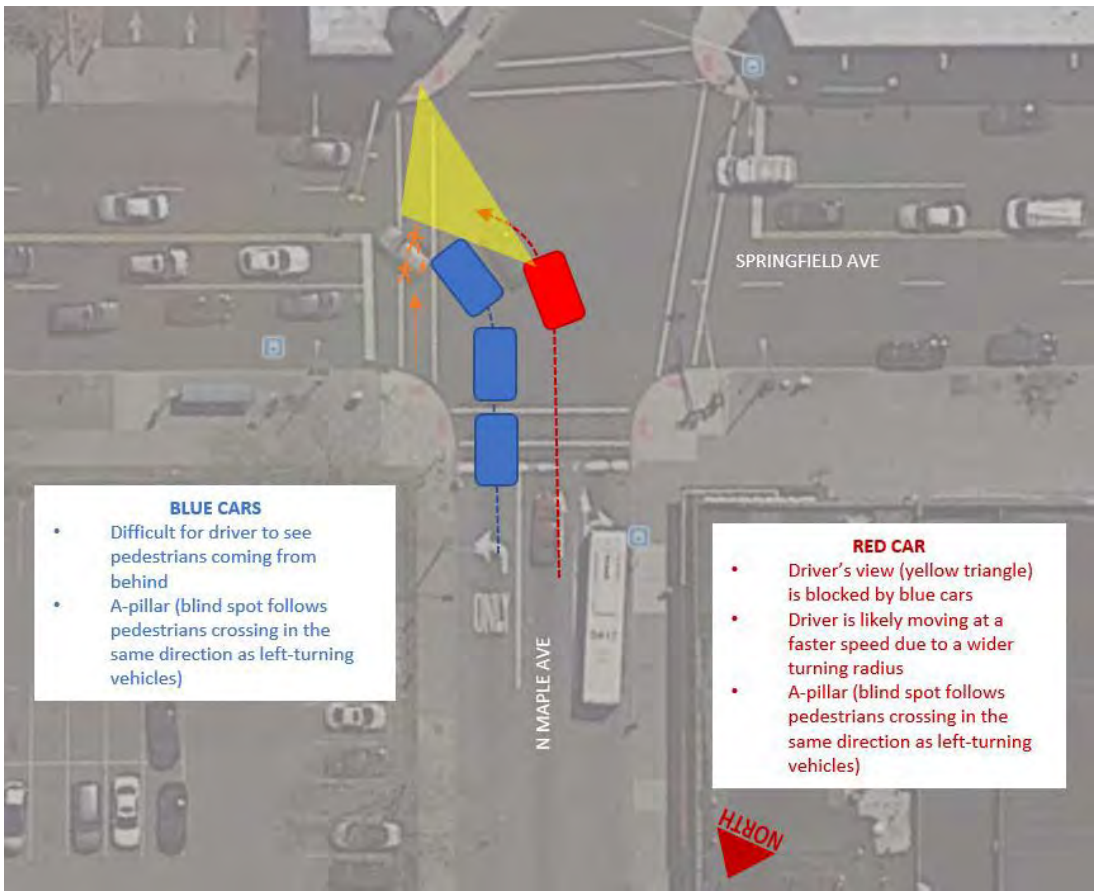


Figure 13 – Conflict between Pedestrians and Left Turn Vehicles at N Maple Avenue

V. Findings and Recommendations

This section summarizes the site-specific and corridor-wide safety issues, potential strategies, and recommendations to improve the same, safety benefit, time frame, cost, and jurisdiction. Ratings used in the recommendation tables are described as follows:

Symbol	Meaning	Definition
✓	Low safety benefit potential	May reduce total crashes by 1-25%[2]
✓✓	Low to moderate safety benefit potential	May reduce total crashes by 26-49%[2]
✓✓✓	Moderate safety benefit potential	May reduce total crashes by 50-74%[2]
✓✓✓✓	High safety benefit potential	May reduce total crashes by 75+%[2]
$	Low cost	Could be accomplished through maintenance
$$	Medium cost	May require some engineering or design and funding may be readily available
$$$	High cost	Longer term; may require full engineering, ROW acquisition and new funding
◔	Short term	Could be accomplished within 1 year
◑	Medium term	Could be accomplished in 1 to 3 years; may require some engineering
◕	Long term	Could be accomplished in 3 years or more; may require full engineering

A. Recommendations

The following represents the specific findings and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated with due diligence and designed as appropriate by the roadway owner and/or a professional engineer for conformance to all applicable codes, standards, and best practices.

Table 5 – Corridor-Wide Recommendations

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
	Operations				
1	Consider upgrading all ramps for ADA compliance	✓✓✓[3]	**$$$**	◕	County
2	Investigate converting to a 3-lane section (2 travel lanes, TWLTL and shoulders; i.e. road diet)	✓✓	**$$**	◑	County
3	Explore a uniform cross section through the corridor to reduce driver confusion with striping to delineate on-street parking areas	✓[3]	**$$**	◕	County
4	Investigate on-street parking requirements where business have existing parking lots (parking study) and for conformance with Title 39.	✓[3]	**$$**	◑	Township

[2] Based on existing Crash Modification Factors (CMFs), the Highway Safety Manual (HSM), FHWA Proven Safety Countermeasures and current research, where applicable. All safety benefits are approximate.

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
5	Consider development of an access management plan within the project limits (for vehicles and pedestrians)	✓	**$$**	◕	County
6	Consider corridor-wide signal upgrades (replace 8" traffic signal heads with 12", install backplates with retroreflected border, evaluate clearance intervals, update to countdown pedestrian signal heads, replace push buttons in compliance with ADA, etc.)	✓✓	**$$$**	◕	County
7	Study roadway and pedestrian scale lighting	✓✓✓	**$$$**	◑	County
8	Consider striping shoulders and edgelines	✓[2]	**$**	◑	County
	Bicycle/Pedestrian				
9	Inspect, repair and construct sidewalks in compliance with ADA as needed.	✓✓✓	**$$**	◔	County
10	Examine inlets and install bicycle-safe grates	✓[3]	**$$**	◔	County
11	Study corridor-wide implementation of curb extensions (bump outs) based on the site-specific recommendations to maintain consistency – especially 'T' and offset intersections	✓✓[3]	**$$**	◕	County
12	Examine crosswalks status: change to continental style, check placement and alignment; ergonomic	✓✓	**$**	◔	County
13	Explore enhancements to bus stop areas through pavement markings	✓[3]	**$**	◔	County
14	Consider leading pedestrian intervals (LPI) or all pedestrian phase at signalized intersections with high pedestrian activity	✓✓✓	**$**	◔	County
15	Consider installing a bicycle lane and/or sharrow striping per NJ Complete Streets Design Guide	✓✓	**$**	◑	County
	Maintenance				
16	Inspect existing striping for wear and restripe accordingly	✓✓	**$**	◔	County
17	Inspect and replace faded, damaged or incorrect/ outdated signage as needed (i.e. signs mounted below 7', on non-breakaway posts or back-to-back signs that obscure shapes [e.g. Do Not Enter behind Stop sign])	✓	**$**	◔	County
18	Inspect drainage facilities; ensure they are free of debris	✓[3]	**$$**	◑	County
	Education				
19	Consider sidewalk, crosswalk, multimodal education campaign and code enforcement	✓[3]	**$**	◑	Town/ County

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
20	Explore ways to deter vehicles from speeding along Springfield Avenue	✓	$	◔	Town/ County

The following site-specific recommendations are in addition to the corridor-wide improvements, except where noted otherwise. Essex County currently has plans to signalize Smith Street and Orange Avenue (one-way pair) and perform improvements at the intersection of Avon Avenue.

Table 6 – Site-Specific Recommendations

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
	Becker Terrace				
21	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
22	Consider corridor-wide recommendation 1, 8 and 11 regarding crosswalks, sidewalk and ADA compliance	✓✓✓[3]	$$$	◕	County
23	Consider corridor-wide recommendation 7 regarding intersection lighting	✓✓✓	$$$	◑	County
	43rd Street/Prospect Street				
24	Investigate a pedestrian median island and marked crosswalks	✓✓✓	$$$	◕	County
25	Study implementation of a roundabout	✓✓✓✓	$$$	◕	County
26	Consider corridor-wide recommendation 1, 8 and 11 regarding crosswalks, sidewalk and ADA compliance	✓✓✓[3]	$$$	◕	County
	Fredrick Terrace and 42nd Street				
27	Study corridor-wide recommendation 10 for curb extensions to improve sight distance	✓✓[3]	$$	◕	County
28	Consider corridor-wide recommendation 1, 8 and 11 regarding crosswalks, sidewalk and ADA compliance	✓✓✓[3]	$$$	◕	County
29	Consider performing a MUTCD signal warrant analysis for 42nd Street	✓✓	$$	◑	County
30	Explore installation of a Rectangular Rapid Flashing Beacon (RRFB)[4] or HAWK if #27 signal not warranted	✓✓	$$	◑	County
	Franklin Terrace				
31	Study corridor-wide recommendation 10 for curb extensions to improve sight distance and Title 39 compliance	✓✓[3]	$$	◕	County
32	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	40th Street, Headley Terrace and Florence Avenue				
33	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

[4] Interim Approval 21 – Rectangular Rapid-Flashing Beacons at Crosswalks

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
34	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	38th Street and Elmwood Terrace				
35	Investigate a pedestrian median island and marked crosswalks	✓✓✓	$$$	◕	County
36	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	Sanford Avenue				
37	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
38	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	Durand Place and Chapman Place				
39	Investigate a pedestrian median island and marked crosswalks	✓✓✓	$$$	◕	County
40	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
41	Consider corridor-wide recommendation 15 regarding missing, damaged, and/or faded signage	✓	$	◔	County
42	Consider replacing the existing No Left Turn sign with a Right Turn Only Symbol sign to prevent motorists from crossing Springfield Avenue to access Chapman Place.	✓	$	◔	County
	Lyons Avenue				
43	Study implementation of a roundabout	✓✓✓✓	$$$	◕	County
44	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
45	Study corridor-wide recommendation 10 for curb extensions	✓✓[3]	$$	◕	County
46	Examine curb radii and consider revising as needed	✓[3]	$$	◑	County
47	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
48	Study implementing a right turn only lane along Springfield Avenue eastbound	✓[3]	$	◔	County
	Elmwood Avenue/Grant Place				
49	Study corridor-wide recommendation 10 for curb extensions and/or elimination of channelizing island	✓✓[3]	$$	◕	County
50	Examine curb radii and consider revising as needed	✓[3]	$$	◑	County
51	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
52	Consider corridor-wide recommendation 15 regarding signage upgrades	✓✓	$$$	◑	County
	Stuyvesant Avenue				
53	Study corridor-wide recommendation 10 for curb extensions	✓✓[3]	$$	◕	County
54	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
55	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
56	Consider corridor-wide recommendation 3 regarding on-street parking along westbound side	✓[3]	$$	◑	Town/ County
57	Investigate installing track marks along Stuyvesant through the intersection due to the skew	✓[3]	$	◔	County
	Nye Avenue/Nesbit Terrace				
58	Investigate closing all or part of the Nesbit intersection with Springfield Avenue and extending the existing park-like area	✓✓✓[3]	$$$	◕	County
59	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
60	Investigate a pedestrian median island and marked crosswalks	✓✓✓	$$$	◕	County
61	Consider corridor-wide recommendation 15 regarding signage (motorists treat 2-way intersection as one-way out)	✓	$	◔	County
	Lincoln Place/Civic Square				
62	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
63	Examine additional pedestrian accommodations at this location (LPI, exclusive ped phase or ped recall)	✓✓✓	$	◑	County
64	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	Smith Street and Orange Avenue (one-way pair)				
65	Consider performing a MUTCD signal warrant analysis	✓✓	$$	◑	County
66	Explore installation of a RRFB or HAWK if #61 signal not warranted	✓✓	$$	◑	County
67	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	New Street				
68	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
69	Examine additional pedestrian accommodations at this location (LPI, exclusive ped phase or ped recall)	✓✓✓	$	◑	County
70	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	Clinton Avenue and Myrtle Avenue				
71	Study implementation of a roundabout	✓✓✓✓	$$$	◕	County
72	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage, specifically illuminated no turn signs, yellow clearance and split phasing	✓✓	$$$	◑	County
73	Examine geometric improvements to relocate the crosswalk on the Clinton Ave NB approach so it aligns more with the east/west sidewalk flow	✓[3]	$$	◑	County
74	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
75	Explore installing through lane-use arrows pavement markings and line striping on Springfield Ave EB, before and after the stop line, to prevent motorists from turning right onto Clinton Ave SB	✓	$	◔	County
76	Consider replacing the existing overhead signage with two Through Only signs, one over each eastbound lane	✓	$	◔	County
	Washington Avenue				
77	Investigate shifting the lanes to allow 2 through lanes along the eastbound direction by eliminating the shoulder striping.	✓[3]	$$	◑	County
78	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
79	Explore a color or material change for white pavement markings on concrete or use black for contrast (MUTCD 3A.05)	✓[3]	$$	◔	County
80	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	Eastern Parkway/Sharon Avenue				
81	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage (LPI)	✓✓	$$$	◑	County
82	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
83	Explore improving the curb radii and consider revising as needed for the WB right turn lane	✓[3]	$$	◑	County
84	Consider corridor-wide recommendation 3 regarding on-street parking along westbound side	✓[3]	$$	◑	Town/ County

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
	Bruen Avenue				
85	Investigate a pedestrian median island and marked crosswalks	✓✓✓	$$$	◕	County
86	Explore installing a RRFB	✓✓	$$	◑	County
87	Study corridor-wide recommendation 10 for curb extensions to improve sight distance	✓✓[3]	$$	◕	County
88	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	Maple Avenue				
89	Examine additional pedestrian accommodations at this location (LPI, exclusive ped phase or ped recall)	✓✓✓	$	◑	County
90	Investigate a pedestrian median island	✓✓✓	$$$	◕	County
91	Study corridor-wide recommendation 10 for curb extensions in addition to or in lieu of #82	✓✓[3]	$$	◕	County
92	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
93	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
94	Explore revising the lane use on the SB approach to permit left turns from the one lane only due to the high number of similar pedestrian crashes	✓✓[3]	$$	◑	County
	Grove Street				
95	Investigate eliminating the channelized right turn and revise curb radii as needed	✓[3]	$$	◑	County
96	Study corridor-wide recommendation 10 for curb extensions in addition to or in lieu of #92	✓✓[3]	$$	◕	County
97	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	$$$	◑	County
98	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County
	Harrison Place				
99	Study corridor-wide recommendation 10 for curb extensions to improve sight distance	✓✓[3]	$$	◕	County
100	Investigate a pedestrian median island and marked crosswalks	✓✓✓	$$$	◕	County
101	Explore installing a RRFB	✓✓	$$	◑	County
102	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	$$$	◕	County

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
103	Explore positive delineation between sidewalk and parking lot so vehicles do not encroach on path	✓✓	**$$**	◑	County
	Ellis Avenue				
104	Consider corridor-wide recommendations 5 and 15 regarding signal upgrades and signage	✓✓	**$$$**	◑	County
105	Consider corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓[3]	**$$$**	◕	County

B. Road Owner Response

An important part of the RSA process is the road owner's response: an acknowledgment of the audit's findings and recommendations, and their planned follow-up. In responding to the RSA's findings, the road owner must bear in mind all the competing objectives involved when implementing the recommendations, and foremost among them is available resources. Because the audit process generated a long and wide-ranging list of improvements, the road owner is expected to implement these recommended improvements as time and funds allow in coordination with other projects and priorities.

Essex County delivered their response following the finalization of the findings and recommendations table, a copy of which can be found in Appendix K.

A. Recommendation Visualizations

Examples of some of the site-specific and corridor-wide safety recommendations identified in Tables 5 and 6 are shown below and are based on current practices and standards. Descriptions and images of each treatment are from the *2017 NJ Complete Street Design Guide* (CSDG) and NACTO's *Urban Street Design Guide* (NACTO-US) and *Urban Bikeway Design Guide* (NACTO-UB), including sources contained therein.

1. Pedestrian Facilities

Curb extensions visually and physically narrow the roadway at intersections and midblock locations, creating safer and shorter pedestrian crossings, while increasing the available space for streetscape. They increase the overall visibility of pedestrians by aligning them with the shoulder or parking lane and help prohibit vehicles from parking in violation of Title 39. Crossing islands, or pedestrian refuge islands, reduce the exposure time of pedestrians to vehicular traffic. They enable pedestrians to make a crossing in two stages — crossing one direction of vehicular travel lanes, pausing at the island, and then completing the crossing. They are recommended where a pedestrian must cross three lanes of traffic in one or both directions but may be implemented on smaller cross sections where space permits.

[3] CMF/quantitative data not available for this type of roadway or treatment. Therefore, perceived safety benefit of the same was estimated relative to other similar treatments.

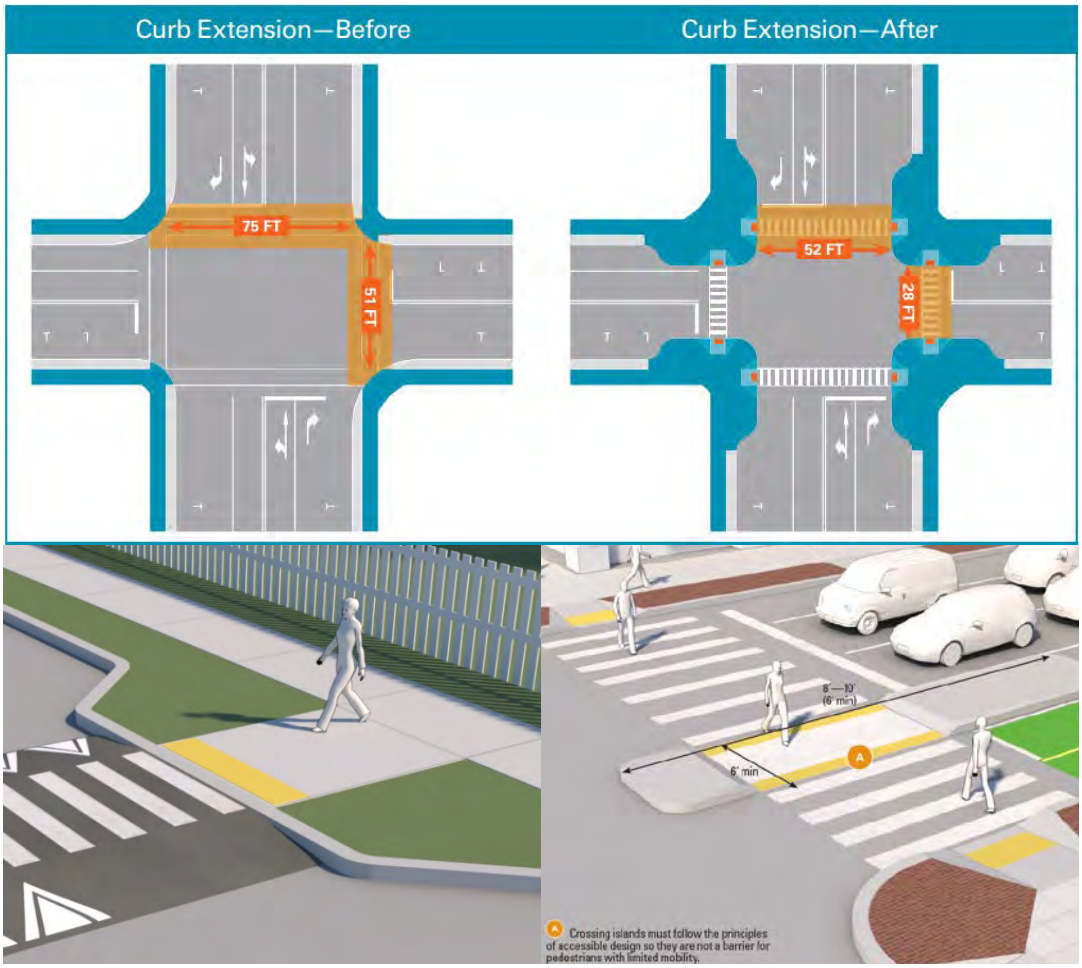


Figure 14 – Pedestrian Facility Examples

Top: Curb Extension. Left: Midblock Curb Extension. Right: Crossing Island (Source: CSDG)

Parklets are typically applied where narrow or congested sidewalks prevent the installation of traditional sidewalk cafes, or where local property owners or residents see a need to expand the seating capacity and public space on a given street. Parklets can be implemented on an interim basis. Heavy planters, granite blocks, moveable seating, and other elements may be incorporated into the interim design.

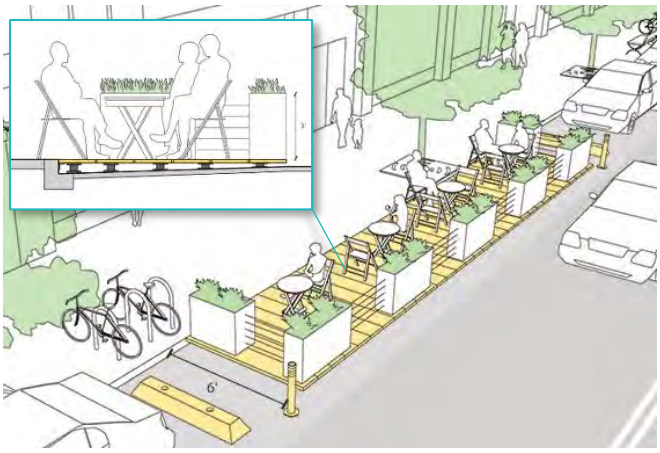


Figure 15 – Parklet Example (Source: NACTO)

A parklet could be considered near the Senior Community Center at Smith Street, as well as across 'T' intersections to prohibit parking.

2. Bicycle Facilities

Bicycle lanes provide an exclusive space for bicyclists using pavement markings and signage. Intended for one-way travel, they are typically located on both sides of a two-way street. Bicycle lanes enable bicyclists to ride at their preferred speed, free from interference from motorists. Where it is not feasible or appropriate to provide dedicated bicycle facilities, shared-lane markings (e.g. “sharrows”) may be used to indicate a shared environment for bicycles and vehicles. Bicycle lanes and shared-lane markings should be extended through intersections and major driveways to enhance continuity, guide bicyclists through the intersection, and improve driver awareness of bicycle activity and movement.

Figure 16 – Bicycle Facility Examples

Left: Bicycle Lane Adjacent to Parking or Curb (Source: NACTO-UB). Right: Sharrow Markings along Route 71/Main Street in Bradley Beach (Source: Jusel Claro Alvarez, Google Maps Photos)

3. Roadway Reconfiguration

This treatment allows reallocation of existing street space (i.e. roadway cross section) to accommodate multi-modal users. Lane configuration and width for travel, turning movements, parking, and bicycle lanes can be adjusted to optimize use for vehicles, pedestrians, bicyclists, and transit. The most common roadway reconfiguration, known as a road diet, involves converting an existing four-lane undivided segment into a three-lane segment with two through lanes and a center two-way left turn lane (TWLTL). Other roadway reconfiguration options are shown on the following pages.

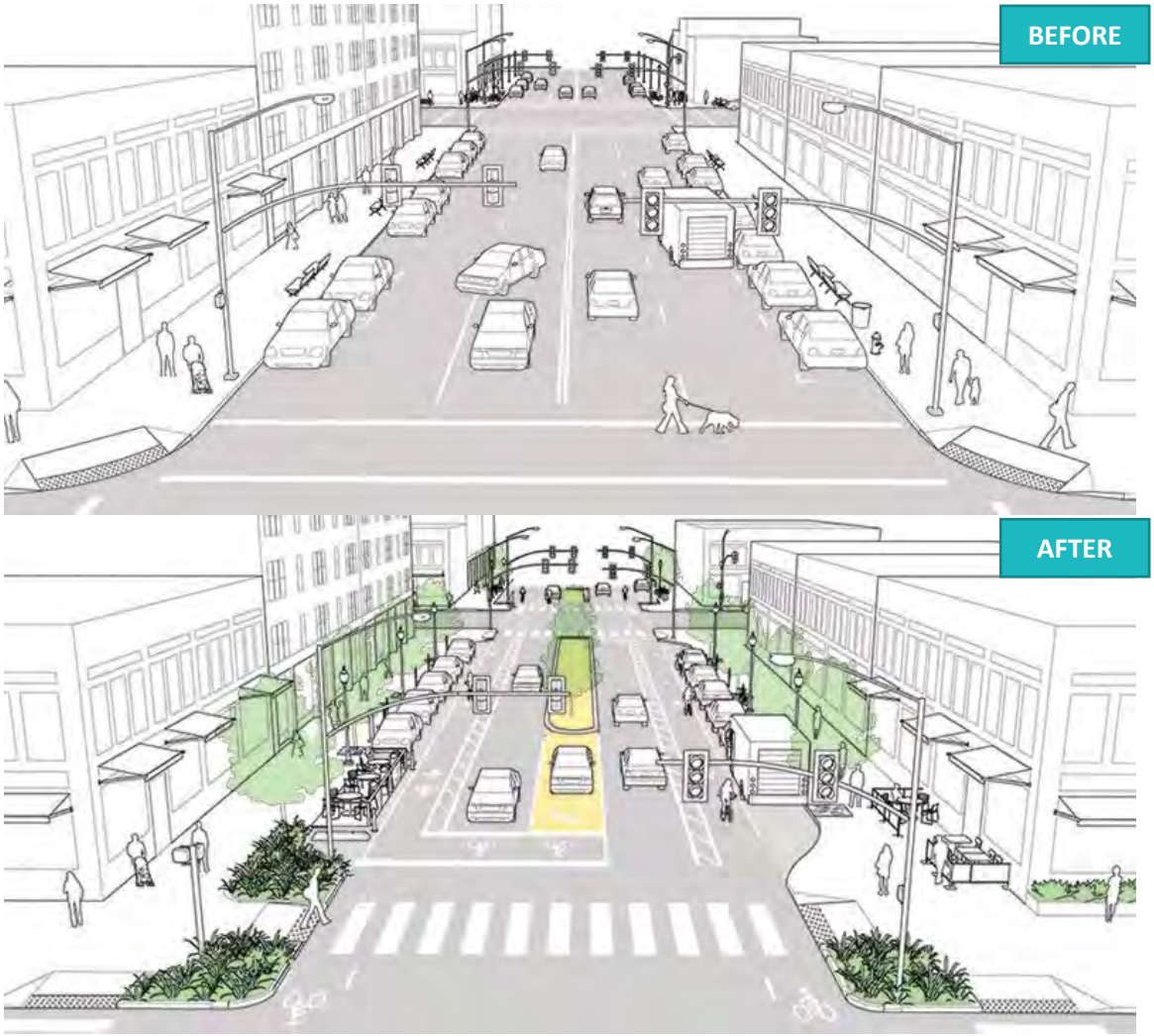


Figure 17 – Example of a Main Street Typology (Source: NACTO-US)

<u>Top:</u> With medium traffic volumes and high pedestrian activity, the street has significant potential for regeneration as a retail district, yet currently underperforms. Frequent destinations have resulted in multiple turning and weaving conflicts along the street.

<u>Bottom:</u> While road diets are not appropriate on all 4-lane cross sections, they can improve traffic flow and reduce conflicts with turning vehicles, enhancing safety. From an economic standpoint, they often rank favorably with business owners and have a positive impact on local business activity. Alternatively, a center 6-foot pedestrian safety island can be implemented in the above configuration by tapering the bike lane buffer near the intersection and shifting the through lanes to the right. Streets also benefit from dedicated loading zones near intersections. Implementation should consider availability of parallel routes, potential for mode shift, and channelization of traffic.

Figure 18 – Example of a Two-Lane Downtown Street Typology (Source: NACTO-US)

<u>Top:</u> The above illustration depicts a 2-way street in a central business district that is congested by buses, bikes, people, and cars. Curbside bus stops may be undermined by double-parked vehicles and heavy rush-hour traffic. Double-parking also creates conflicts and safety hazards for all modes.

<u>Bottom:</u> Bus bulbs serve as dedicated waiting areas for transit users while decreasing pedestrian exposure during crossings and can connect to existing sidewalk or be designed as a bus-boarding island with a bicycle cut-through. Delineation in the roadway can be created using striping, cycle tracks, and narrow travel lanes. Restricting delivery, encouraging off-peak delivery, and/or dedicated loading zones are critical to eliminating double-parking obstructions.

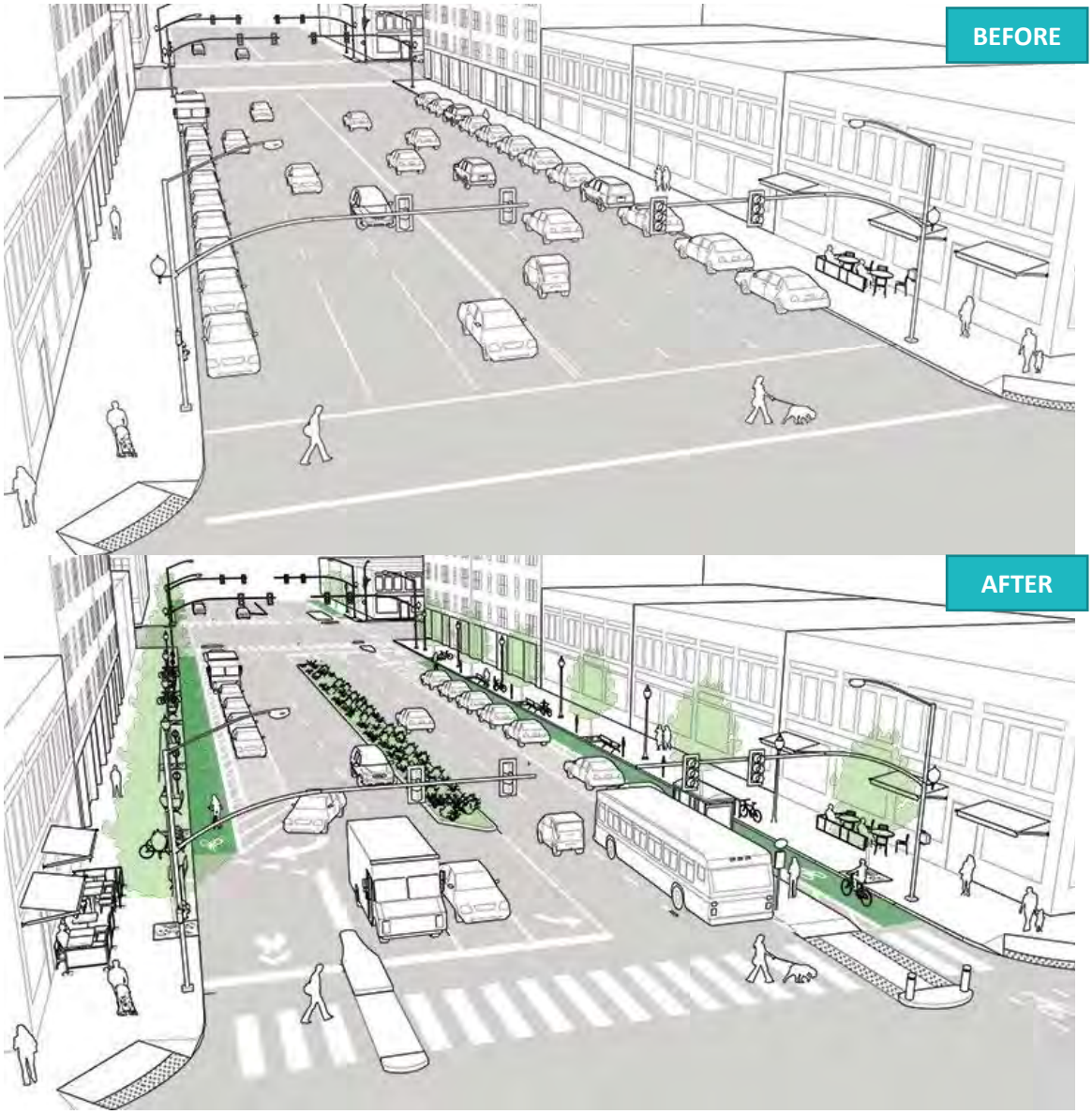


Figure 19 – Example of a Downtown Thoroughfare Typology (Source: NACTO-US)

Top: Left turns are a frequent source of conflict between motorists and pedestrians and the crossing distance for pedestrians is substantial. Buses experience frequent delay due to the encroachment of parked cars, loading freight vehicles, and through traffic. Bicyclists lack any accommodation on the street, forcing many to utilize the sidewalk.

Bottom: Assess left-turn volumes and evaluate the overall traffic network to determine whether left turns can be restricted or removed at a particular intersection. A parking-buffered 1-way bike lane can be applied on each side of the street. This lane can be combined with an offset bus-boarding island and other amenities. Alternatively, a center 6-foot pedestrian safety island can be implemented at the intersection by tapering the bike lane buffer and shifting the through lanes to the right. Land use changes and access management should be coordinated with the overall vision and redesign of the street.

4. Transit Facilities

While stop location determines to a large extent how transit vehicles approach stops and interact with traffic, the physical configuration of stops and stations impact how riders interact with the transit system. Transit stops play a significant role in the urban street puzzle and can be used not only to provide comfortable and accessible transit access, but also to organize traffic interactions and manage curbside activity.

Curbside pull-out stops (or bus bays) are areas separated from the travel lanes and off the normal section of a roadway that provides for the pickup and discharge of passengers. This design allows through traffic to flow freely without the obstruction of stopped buses and works well for bus stops on streets with curbside parking.

Boarding bulb stops use curb extensions that align the transit stop with the parking lane, creating an in-lane stop. They can become a focal point for improved public space along the street, creating space for waiting passengers, furnishings, bike parking, and other pedestrian amenities and community facilities without encroaching on the pedestrian through zone.

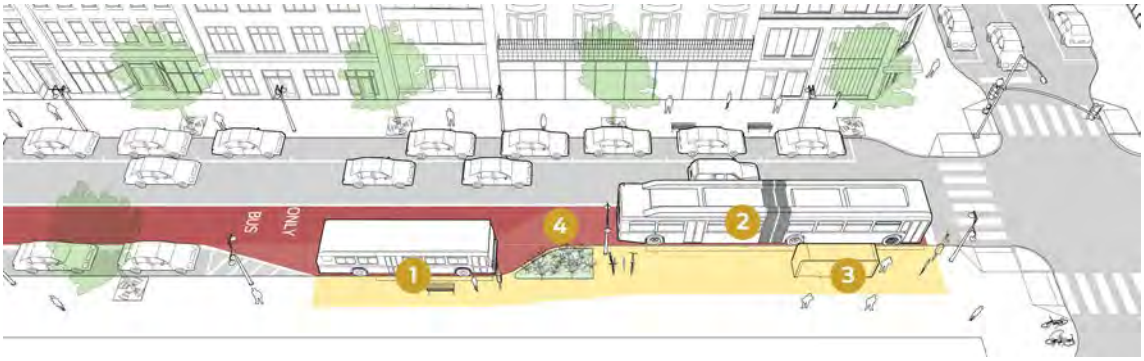


Figure 20 – Example of Bus Pull-Out Stop & Bulb Stop (alternative use of curbside)

5. Roundabout

Roundabout design, which was recommended at the intersections of Springfield Avenue with Lyons Avenue, 43rd Street/Prospect Street and Clinton Avenue, should create conditions that reduce vehicle speed and provide a consistent speed into, through, and out of the roundabout. Lower speeds reduce crash frequency and severity for all roadway users, allow safer and easier merging of traffic, provide more reaction time for drivers, and make the facility more accessible for novice users.

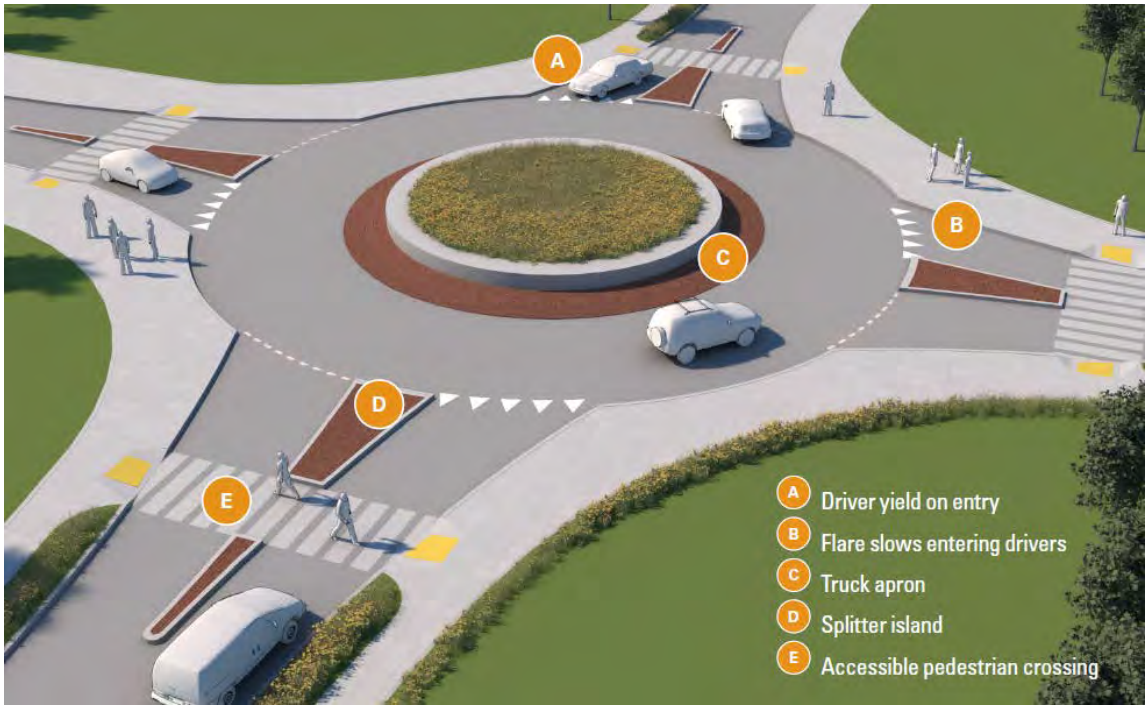


Figure 21 – Roundabout Example (Source: CSDG)

VI. Conclusions

The Springfield Avenue RSA was conducted to identify safety issues and corresponding countermeasures that compromise multimodal use of the roadway. The team identified a long list of issues from the field visit, as well as many practical short-, mid-, and long-term improvements during the post-audit.

The recommendations documented in this report are designed to improve safety for all users of Springfield Avenue. Some of the strategies identified can be implemented through routine maintenance; all will be constrained by available time and budgetary priorities. The audit process and the resulting final document highlight the safety issues and present the needed improvements by location organized for systematic implementation by the roadway owner.

It is important to note that when it comes to improving safety, engineering strategies alone only go so far, especially in areas undergoing redevelopment. Education, with support from a targeted enforcement campaign, is an effective approach for addressing driver and pedestrian behaviors that lead to crashes. Employing a multipronged approach is an effective course of action to advance the goal of improved safety on the corridor.

APPENDIX A

RSA TEAM

Audit Team

Name	Agency
Asif Mahmood	Essex County Engineering (*pre-audit*)
Rick Valderrama	Essex County Engineering
John Wiggins	Irvington Township Engineer (*pre-audit*)
Capt. Harold Wallace	Irvington Township Police Department
Stephan Antoine	NJ Transit
Pavan Sheth	NJDOT - Bureau of Transportation Data and Safety
Angela Quevedo	NJDOT - Bureau of Transportation Data and Safety
Zilkumari Patel	NJDOT - Bureau of Transportation Data and Safety
Reba Oduro	NJDOT – Office of Bicycle and Pedestrian Programs
Christine Mittman	NJTPA (*pre-audit and field*)
Aimee Jefferson	NJTPA (*post-audit*)
Bernie Boerchers	Greenman-Pedersen, Inc. (NJDOT Consultant)
Andrew Halloran	Greenman-Pedersen, Inc.
Julia Steponanko	Greenman-Pedersen, Inc.
Alicia Ulmes	Greenman-Pedersen, Inc.

Special thanks to Officer Rodriguez for his time at Clinton Avenue and Irvington PD for transportation!

APPENDIX B

AREA MAP

NJDOT HSIP
ROAD SAFETY AUDIT
SPRINGFIELD AVENUE

IRVINGTON TOWNSHIP
ESSEX COUNTY

PROJECT LOCATION

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

N.T.S.

APPENDIX C

TRAFFIC DATA

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Traffic Count Data - Classified Turning Movement Count Summary

Street Name: Springfield Avenue (CR 603)
Location: See below
Direction: EB/WB
Milepost: Various

County: Essex
Municipality: Irvington
Site Code:
Count Start Date: 10/27/2017

Location	Smith St		Orange Ave		Maple Ave		Avon Ave				Maple Ave		Avon Ave					
Date	10/27/2016		10/27/2016		11/2/2017		11/2/2017				11/18/2017		11/18/2017		Weekday Average		Weekend Average	
Day	Thursday		Thursday		Thursday		Thursday		Friday		Saturday		Saturday					
Direction	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM - 1:00 AM																		
1:00 AM - 2:00 AM																		
2:00 AM - 3:00 AM																		
3:00 AM - 4:00 AM																		
4:00 AM - 5:00 AM																		
5:00 AM - 6:00 AM																		
6:00 AM - 7:00 AM	346	199	315	182	319	299	460	200							360	220		
7:00 AM - 8:00 AM	692	396	648	391	631	544	1046	400							754	433		
8:00 AM - 9:00 AM	704	529	576	455	597	729	1011	590							722	576		
9:00 AM - 10:00 AM	579	476	475	424	456	588	718	429							557	479		
10:00 AM - 11:00 AM	502	444	430	390							467	639	745	482	466	417	606	561
11:00 AM - 12:00 PM	529	424	446	384							525	784	788	549	488	404	657	667
12:00 PM - 1:00 PM	533	508	453	456							487	822	842	595	493	482	665	709
1:00 PM - 2:00 PM	580	527	482	440							501	841	786	638	531	484	644	740
2:00 PM - 3:00 PM	605	542	505	469	446	737	764	599							580	587		
3:00 PM - 4:00 PM	720	558	582	475	524	815	870	644							674	623		
4:00 PM - 5:00 PM	723	587	571	501	484	896	844	738							656	681		
5:00 PM - 6:00 PM	660	618	536	542	496	862	813	708							626	683		
6:00 PM - 7:00 PM	594	546	498	489	514	768	885	661							623	616		
7:00 PM - 8:00 PM																		
8:00 PM - 9:00 PM																		
9:00 PM - 10:00 PM																		
10:00 PM - 11:00 PM																		
11:00 PM - 12:00AM																		
13 Hours															7,529	6,683	2,571	2,675
Seasonal Factor**															0.997		0.997	
Axle Cor. Factor**															1		1	
Avg Volume ("ADT")															7,507	6,663	2,563	2,667
2-way ADT															14,170		5,230	
K-Factor															0.095		0.265	
D-Factor															0.51		0.54	

** NJDOT 2016 Correction Factors, Region 1
(Functional Class 14: Urban Principal) - November
Axle correction not applied since counts were classified by # axles

Data provided by Essex County/NV5

Springfield Ave & Orange Ave - TMC

Thu Oct 27, 2016
Full Length (6AM-7PM)
All Classes (Motorcycles, Cars, Light Goods Vehicles, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 358977, Location: 40.726062, -74.231314

Provided by: NV5 Inc.
7 Campus Drive, Suite 300,
Parsippany, NJ, 07054, US

Leg / Direction	North Southbound					East Westbound					West Eastbound					
Time	R	L	U	App	Ped*	R	T	U	App	Ped*	T	L	U	App	Ped*	Int
2016-10-27 6:00AM	18	47	0	**65**	2	0	182	0	**182**	3	315	0	0	**315**	4	**562**
7:00AM	36	60	0	**96**	39	0	391	0	**391**	2	648	0	0	**648**	5	**1135**
8:00AM	65	71	0	**136**	48	0	455	0	**455**	3	576	0	0	**576**	3	**1167**
9:00AM	48	46	0	**94**	79	0	424	0	**424**	3	473	0	2	**475**	26	**993**
10:00AM	63	49	0	**112**	102	0	389	1	**390**	14	429	0	1	**430**	41	**932**
11:00AM	36	50	0	**86**	130	1	382	1	**384**	13	445	0	1	**446**	45	**916**
12:00PM	58	49	0	**107**	129	0	456	0	**456**	11	453	0	0	**453**	50	**1016**
1:00PM	72	57	0	**129**	125	0	440	0	**440**	14	481	0	1	**482**	44	**1051**
2:00PM	79	59	0	**138**	122	0	469	0	**469**	2	505	0	0	**505**	33	**1112**
3:00PM	71	56	0	**127**	231	0	474	1	**475**	16	582	0	0	**582**	50	**1184**
4:00PM	79	66	0	**145**	180	0	501	0	**501**	5	571	0	0	**571**	62	**1217**
5:00PM	65	54	0	**119**	124	0	542	0	**542**	13	536	0	0	**536**	42	**1197**
6:00PM	65	54	0	**119**	98	0	489	0	**489**	6	497	0	1	**498**	23	**1106**
Total	755	718	0	**1473**	1409	1	5594	3	**5598**	105	6511	0	6	**6517**	428	**13588**
% Approach	51.3%	48.7%	0%	-	-	0%	99.9%	0.1%	-	-	99.9%	0%	0.1%	-	-	-
% Total	5.6%	5.3%	0%	**10.8%**	-	0%	41.2%	0%	**41.2%**	-	47.9%	0%	0%	**48.0%**	-	-
Motorcycles	0	0	0	**0**	-	0	1	0	**1**	-	0	0	0	**0**	-	1
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Cars	679	663	0	**1342**	-	0	4794	1	**4795**	-	5729	0	5	**5734**	-	11871
% Cars	89.9%	92.3%	0%	**91.1%**	-	0%	85.7%	33.3%	**85.7%**	-	88.0%	0%	83.3%	**88.0%**	-	87.4%
Light Goods Vehicles	59	40	0	**99**	-	0	361	2	**363**	-	377	0	1	**378**	-	840
% Light Goods Vehicles	7.8%	5.6%	0%	**6.7%**	-	0%	6.5%	66.7%	**6.5%**	-	5.8%	0%	16.7%	**5.8%**	-	6.2%
Single-Unit Trucks	11	10	0	**21**	-	0	86	0	**86**	-	106	0	0	**106**	-	213
% Single-Unit Trucks	1.5%	1.4%	0%	**1.4%**	-	0%	1.5%	0%	**1.5%**	-	1.6%	0%	0%	**1.6%**	-	1.6%
Articulated Trucks	0	0	0	**0**	-	0	9	0	**9**	-	13	0	0	**13**	-	22
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0.2%	0%	**0.2%**	-	0.2%	0%	0%	**0.2%**	-	0.2%
Buses	5	5	0	**10**	-	0	342	0	**342**	-	285	0	0	**285**	-	637
% Buses	0.7%	0.7%	0%	**0.7%**	-	0%	6.1%	0%	**6.1%**	-	4.4%	0%	0%	**4.4%**	-	4.7%
Bicycles on Road	1	0	0	**1**	-	1	1	0	**2**	-	1	0	0	**1**	-	4
% Bicycles on Road	0.1%	0%	0%	**0.1%**	-	100%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	1408	-	-	-	-	105	-	-	-	-	428	
% Pedestrians	-	-	-	-	99.9%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0.1%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Springfield Ave & Smith St - TMC
Thu Oct 27, 2016
Full Length (6AM-7PM)
All Classes (Motorcycles, Cars, Light Goods Vehicles, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 358976, Location: 40.725922, -74.232494

Provided by: NV5 Inc.
7 Campus Drive, Suite 300,
Parsippany, NJ, 07054, US

Leg / Direction	North Southbound					East Westbound					West Eastbound					
Time	R	L	U	App	Ped*	R	T	U	App	Ped*	T	L	U	App	Ped*	Int
2016-10-27 6:00AM	0	0	0	**0**	5	7	192	0	**199**	5	318	28	0	**346**	6	**545**
7:00AM	0	0	0	**0**	36	5	391	0	**396**	0	632	59	1	**692**	1	**1088**
8:00AM	0	0	0	**0**	63	20	509	0	**529**	12	607	94	3	**704**	19	**1233**
9:00AM	0	0	0	**0**	110	38	437	1	**476**	38	496	81	2	**579**	26	**1055**
10:00AM	0	0	0	**0**	112	42	401	1	**444**	38	419	81	2	**502**	38	**946**
11:00AM	0	0	0	**0**	148	35	389	0	**424**	38	445	84	0	**529**	31	**953**
12:00PM	0	0	0	**0**	140	46	462	0	**508**	59	457	76	0	**533**	37	**1041**
1:00PM	0	0	0	**0**	155	52	475	0	**527**	136	479	101	0	**580**	49	**1107**
2:00PM	0	0	0	**0**	154	42	500	0	**542**	43	513	90	2	**605**	45	**1147**
3:00PM	0	0	0	**0**	244	40	518	0	**558**	79	583	134	3	**720**	44	**1278**
4:00PM	0	0	0	**0**	207	49	538	0	**587**	52	570	152	1	**723**	31	**1310**
5:00PM	0	0	0	**0**	151	49	569	0	**618**	38	541	117	2	**660**	25	**1278**
6:00PM	1	0	0	**1**	138	46	499	1	**546**	30	493	99	2	**594**	26	**1141**
Total	1	0	0	**1**	1663	471	5880	3	**6354**	568	6553	1196	18	**7767**	378	**14122**
% Approach	100%	0%	0%	**-**	-	7.4%	92.5%	0%	**-**	-	84.4%	15.4%	0.2%	**-**	-	-
% Total	0%	0%	0%	**0%**	-	3.3%	41.6%	0%	**45.0%**	-	46.4%	8.5%	0.1%	**55.0%**	-	-
Motorcycles	0	0	0	**0**	-	0	1	0	**1**	-	0	0	0	**0**	-	1
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Cars	1	0	0	**1**	-	429	5054	3	**5486**	-	5729	1096	18	**6843**	-	12330
% Cars	100%	0%	0%	**100%**	-	91.1%	86.0%	100%	**86.3%**	-	87.4%	91.6%	100%	**88.1%**	-	87.3%
Light Goods Vehicles	0	0	0	**0**	-	32	379	0	**411**	-	409	86	0	**495**	-	906
% Light Goods Vehicles	0%	0%	0%	**0%**	-	6.8%	6.4%	0%	**6.5%**	-	6.2%	7.2%	0%	**6.4%**	-	6.4%
Single-Unit Trucks	0	0	0	**0**	-	10	90	0	**100**	-	111	8	0	**119**	-	219
% Single-Unit Trucks	0%	0%	0%	**0%**	-	2.1%	1.5%	0%	**1.6%**	-	1.7%	0.7%	0%	**1.5%**	-	1.6%
Articulated Trucks	0	0	0	**0**	-	0	10	0	**10**	-	14	0	0	**14**	-	24
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0.2%	0%	**0.2%**	-	0.2%	0%	0%	**0.2%**	-	0.2%
Buses	0	0	0	**0**	-	0	343	0	**343**	-	288	5	0	**293**	-	636
% Buses	0%	0%	0%	**0%**	-	0%	5.8%	0%	**5.4%**	-	4.4%	0.4%	0%	**3.8%**	-	4.5%
Bicycles on Road	0	0	0	**0**	-	0	3	0	**3**	-	2	1	0	**3**	-	6
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	0.1%	0%	**0%**	-	0%	0.1%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	1663	-	-	-	-	567	-	-	-	-	378	
% Pedestrians	-	-	-	-	100%	-	-	-	-	99.8%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0.2%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Springfield Ave (CR603) & Maple Ave - TMC
Thu Nov 2, 2017
Full Length (6AM-10AM, 2PM-7PM)
All Classes (Motorcycles, Cars, Light Goods Vehicles, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 467155, Location: 40.727899, -74.221862

Provided by: NV5 Inc.
7 Campus Drive, Suite 300,
Parsippany, NJ, 07054, US

Leg	North						East						South						West						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2017-11-02 6:00AM	45	71	215	0	**331**	50	0	289	10	0	**299**	23	0	0	0	0	**0**	30	15	304	0	0	**319**	79	**949**
7:00AM	41	145	428	0	**614**	65	0	526	18	0	**544**	41	0	0	0	0	**0**	94	24	607	0	0	**631**	165	**1789**
8:00AM	62	140	409	0	**611**	117	0	710	19	0	**729**	38	0	0	0	0	**0**	78	13	584	0	0	**597**	114	**1937**
9:00AM	66	92	279	0	**437**	134	0	566	22	0	**588**	40	0	0	1	0	**1**	74	14	442	0	0	**456**	118	**1482**
2:00PM	81	112	335	0	**528**	168	1	701	35	0	**737**	32	0	0	0	0	**0**	82	18	428	0	0	**446**	94	**1711**
3:00PM	76	130	389	0	**595**	269	0	772	43	0	**815**	69	0	0	0	0	**0**	151	32	491	0	1	**524**	151	**1934**
4:00PM	73	125	372	0	**570**	222	0	844	52	0	**896**	44	0	0	0	0	**0**	88	32	452	0	0	**484**	124	**1950**
5:00PM	69	151	380	0	**600**	225	0	826	36	0	**862**	23	0	0	0	0	**0**	94	24	472	0	0	**496**	121	**1958**
6:00PM	86	139	379	0	**604**	159	0	735	33	0	**768**	44	0	0	0	0	**0**	101	32	482	0	0	**514**	114	**1886**
Total	599	1105	3186	0	**4890**	1409	1	5969	268	0	**6238**	354	0	0	1	0	**1**	792	204	4262	0	1	**4467**	1080	**15596**
% Approach	12.2%	22.6%	65.2%	0%	**-**	-	0%	95.7%	4.3%	0%	**-**	-	0%	0%	100%	0%	**-**	-	4.6%	95.4%	0%	0%	**-**	-	-
% Total	3.8%	7.1%	20.4%	0%	**31.4%**	-	0%	38.3%	1.7%	0%	**40.0%**	-	0%	0%	0%	0%	**0%**	-	1.3%	27.3%	0%	0%	**28.6%**	-	-
Motorcycles	1	2	3	0	**6**	-	0	2	1	0	**3**	-	0	0	0	0	**0**	-	1	11	0	0	**12**	-	21
% Motorcycles	0.2%	0.2%	0.1%	0%	**0.1%**	-	0%	0%	0.4%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.5%	0.3%	0%	0%	**0.3%**	-	0.1%
Cars	553	1013	2978	0	**4544**	-	0	5354	253	0	**5607**	-	0	0	0	0	**0**	-	187	3751	0	1	**3939**	-	14090
% Cars	92.3%	91.7%	93.5%	0%	**92.9%**	-	0%	89.7%	94.4%	0%	**89.9%**	-	0%	0%	0%	0%	**0%**	-	91.7%	88.0%	0%	100%	**88.2%**	-	90.3%
Light Goods Vehicles	20	59	133	0	**212**	-	0	276	9	0	**285**	-	0	0	0	0	**0**	-	10	185	0	0	**195**	-	692
% Light Goods Vehicles	3.3%	5.3%	4.2%	0%	**4.3%**	-	0%	4.6%	3.4%	0%	**4.6%**	-	0%	0%	0%	0%	**0%**	-	4.9%	4.3%	0%	0%	**4.4%**	-	4.4%
Single-Unit Trucks	13	10	22	0	**45**	-	0	77	4	0	**81**	-	0	0	0	0	**0**	-	5	60	0	0	**65**	-	191
% Single-Unit Trucks	2.2%	0.9%	0.7%	0%	**0.9%**	-	0%	1.3%	1.5%	0%	**1.3%**	-	0%	0%	0%	0%	**0%**	-	2.5%	1.4%	0%	0%	**1.5%**	-	1.2%
Articulated Trucks	1	0	2	0	**3**	-	0	8	0	0	**8**	-	0	0	0	0	**0**	-	0	8	0	0	**8**	-	19
% Articulated Trucks	0.2%	0%	0.1%	0%	**0.1%**	-	0%	0.1%	0%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0%	0.2%	0%	0%	**0.2%**	-	0.1%
Buses	11	20	43	0	**74**	-	0	249	1	0	**250**	-	0	0	0	0	**0**	-	1	242	0	0	**243**	-	567
% Buses	1.8%	1.8%	1.3%	0%	**1.5%**	-	0%	4.2%	0.4%	0%	**4.0%**	-	0%	0%	0%	0%	**0%**	-	0.5%	5.7%	0%	0%	**5.4%**	-	3.6%
Bicycles on Road	0	1	5	0	**6**	-	1	3	0	0	**4**	-	0	0	1	0	**1**	-	0	5	0	0	**5**	-	16
% Bicycles on Road	0%	0.1%	0.2%	0%	**0.1%**	-	100%	0.1%	0%	0%	**0.1%**	-	0%	0%	100%	0%	**100%**	-	0%	0.1%	0%	0%	**0.1%**	-	0.1%
Pedestrians	-	-	-	-	-	1394	-	-	-	-	-	351	-	-	-	-	-	788	-	-	-	-	-	1066	
% Pedestrians	-	-	-	-	-	98.9%	-	-	-	-	-	99.2%	-	-	-	-	-	99.5%	-	-	-	-	-	98.7%	-
Bicycles on Crosswalk	-	-	-	-	-	15	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	14	
% Bicycles on Crosswalk	-	-	-	-	-	1.1%	-	-	-	-	-	0.8%	-	-	-	-	-	0.5%	-	-	-	-	-	1.3%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

APPENDIX D

VEHICULAR CRASH DIAGRAMS

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
1	09:08	Fri	01-03-14	0	SNOWY	SNOW	DARK
78	03:29	Sat	08-23-14	0	DRY	OVERCAST	DARK
98	22:22	Sat	11-01-14	0	WET	RAIN	DARK
142	12:10	Tue	02-17-15	0	SNOWY	CLEAR	DAY
167	16:23	Thu	05-07-15	2	DRY	CLEAR	DAY
386	14:39	Wed	09-07-16	0	DRY	CLEAR	DAY
425	18:47	Sat	12-10-16	0	DRY	CLEAR	DARK

MATCH LINE A
SEE SHEET NO. 2 OF 12

1/12

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	6
INJURIES	1
FATALITIES	0
TOTAL NO. OF CRASHES	7

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

GREENMAN-PEDERSEN, INC. DATE: 5/7/2018 TIME: 9:55:08 PM FILE: L:\2017659 HSIP Program and Project Development Support\NJDOT HSIP Year 1\Cadd\Hwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 1.dgn

MATCH LINE A
SEE SHEET NO. 1 OF 12

MATCH LINE B
SEE SHEET NO. 3 OF 12

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
21	16:18	Mon	03-03-14	0	DRY	CLEAR	DAY
28	02:33	Sun	03-30-14	1	WET	CLEAR	DARK
37	15:27	Mon	04-21-14	0	DRY	CLEAR	DAY
124	11:57	Sat	01-10-15	0	DRY	CLEAR	DAY
134	11:40	Wed	02-04-15	0	SLUSH	SNOW	DAY
154	02:33	Sun	03-22-15	0	DRY	CLEAR	DARK
155	17:56	Sun	03-22-15	0	DRY	CLEAR	DAY
156	06:56	Fri	03-27-15	0	DRY	RAIN	DAY
165	12:12	Mon	04-27-15	0	DRY	CLEAR	DAY
173	21:35	Mon	05-18-15	0	DRY	CLEAR	DARK
200	01:01	Sat	07-18-15	5	DRY	CLEAR	DARK
215	10:48	Tue	09-01-15	0	DRY	CLEAR	DAY
261	11:31	Sat	12-05-15	0	DRY	CLEAR	DAY
268	13:23	Mon	12-21-15	0	DRY	CLEAR	DAY
278	05:45	Sat	01-30-16	0	DRY	CLEAR	DARK
301	19:06	Fri	03-11-16	0	DRY	CLEAR	DARK
324	13:21	Sat	04-16-16	1	DRY	CLEAR	DAY
333	03:16	Sat	05-07-16	0	WET	RAIN	DARK
351	16:08	Tue	06-21-16	0	DRY	CLEAR	DAY
379	06:52	Fri	09-02-16	0	DRY	CLEAR	DAY
381	12:17	Sat	09-03-16	0	DRY	OVERCAST	DAY
391	23:21	Sun	09-11-16	0	DRY	CLEAR	DARK
392	08:05	Mon	09-12-16	0	DRY	CLEAR	DAY
394	14:41	Mon	09-19-16	0	WET	RAIN	DAY

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	21
INJURIES	3
FATALITIES	0
TOTAL NO. OF CRASHES	24

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
20	18:39	Sun	02-23-14	2	DRY	CLEAR	DARK
52	15:28	Sat	06-07-14	0	DRY	CLEAR	DAY
54	20:00	Wed	06-18-14	0	DRY	CLEAR	DAY
70	13:05	Wed	08-06-14	3	DRY	CLEAR	DAY
79	14:45	Sat	08-23-14	0	DRY	CLEAR	DAY
81	11:19	Tue	09-16-14	0	WET	CLEAR	DAY
96	15:13	Mon	10-27-14	0	DRY	CLEAR	DAY
101	18:15	Sun	11-09-14	0	DRY	CLEAR	DARK
118	18:00	Tue	12-23-14	0	WET	RAIN	DAY
130	16:31	Fri	01-23-15	0	DRY	CLEAR	DAY
151	18:41	Mon	03-09-15	0	DRY	CLEAR	DUSK
171	18:32	Sat	05-16-15	0	DRY	CLEAR	DAY
185	09:59	Sun	06-14-15	0	DRY	CLEAR	DAY
189	15:15	Sat	06-20-15	0	DRY	CLEAR	DAY
195	18:34	Sat	07-11-15	1	DRY	CLEAR	DAY
210	15:25	Wed	08-12-15	1	DRY	CLEAR	DAY
214	16:17	Wed	08-26-15	0	DRY	CLEAR	DAY
221	15:17	Wed	09-09-15	0	DRY	CLEAR	DAY
235	13:28	Tue	10-20-15	1	DRY	CLEAR	DAY
239	15:11	Wed	10-28-15	0	WET	RAIN	DAY
245	18:23	Wed	11-11-15	0	DRY	CLEAR	DUSK
250	22:00	Sat	11-21-15	0	DRY	CLEAR	DARK
296	18:36	Sat	02-27-16	0	DRY	CLEAR	DARK
309	17:19	Sat	03-26-16	0	DRY	CLEAR	DAY
319	15:31	Sun	04-10-16	0	DRY	CLEAR	DAY
321	08:25	Thu	04-14-16	2	DRY	CLEAR	DAY
335	12:18	Wed	05-11-16	0	DRY	CLEAR	DAY
344	18:27	Mon	06-13-16	0	DRY	CLEAR	DAWN
357	18:20	Fri	07-08-16	0	WET	RAIN	DAY
370	18:41	Tue	08-02-16	0	DRY	CLEAR	DUSK
408	17:58	Mon	10-31-16	0	DRY	CLEAR	DAY
432	09:35	Tue	12-20-16	0	DRY	CLEAR	DAY

MATCH LINE B
SEE SHEET NO. 2 OF 12

MATCH LINE C
SEE SHEET NO. 4 OF 12

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	27
INJURIES	5
FATALITIES	0
TOTAL NO. OF CRASHES	32

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc. Engineering and Construction Services

NOT TO SCALE

GREENMAN-PEDERSEN, INC. DATE: 5/7/2018 TIME: 3:10:32 PM FILE: L:\2017669 HSIP Program and Project Development Support\NJDOT HSIP Year 1\Cadd+Hwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 3.dgn

MATCH LINE C
SEE SHEET NO. 3 OF 12

MATCH LINE D
SEE SHEET NO. 5 OF 12

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
5	08:22	Sat	01-11-14	1	WET	RAIN	DAY
30	19:57	Sat	04-05-14	0	DRY	CLEAR	DUSK
33	11:40	Tue	04-15-14	0	WET	RAIN	DAY
36	13:05	Sun	04-20-14	0	DRY	CLEAR	DAY
38	17:34	Sun	04-27-14	0	DRY	CLEAR	DAY
51	20:39	Tue	06-03-14	0	WET	RAIN	DARK
82	08:06	Sun	09-21-14	0	DRY	OVERCAST	DAY
125	15:05	Thu	01-15-15	1	DRY	CLEAR	DAY
148	07:40	Wed	03-04-15	0	WET	RAIN	DAY
158	11:01	Fri	04-10-15	0	WET	RAIN	DAY
168	18:50	Fri	05-08-15	0	DRY	CLEAR	DAY
186	14:58	Sat	09-03-16	0	DRY	CLEAR	DAY
224	17:24	Sun	09-13-15	0	DRY	CLEAR	DAY
225	02:33	Mon	09-14-15	0	DRY	CLEAR	DARK
233	19:05	Tue	10-06-15	0	DRY	CLEAR	DUSK
249	07:14	Sat	11-21-15	0	DRY	CLEAR	DAY
262	08:00	Mon	12-07-15	0	DRY	CLEAR	DAY
282	14:53	Mon	02-01-16	0	DRY	CLEAR	DAY
326	17:40	Sun	04-17-16	0	DRY	CLEAR	DAY
338	19:15	Fri	05-13-16	0	DRY	CLEAR	DAWN
345	9:52	Sat	06-18-16	0	DRY	CLEAR	DAY
355	14:39	Sun	07-03-16	0	DRY	CLEAR	DAY
366	20:35	Wed	07-20-16	0	DRY	CLEAR	DARK
407	15:12	Thu	10-27-16	0	WET	RAIN	DAY
435	20:58	Thu	12-22-16	0	DRY	CLEAR	DARK

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	23
INJURIES	2
FATALITIES	0
TOTAL NO. OF CRASHES	25

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

DATE: 5/7/2018 TIME: 3:11:25 PM FILE: L:\2017659 HSIP Program and Project Development Support\NJDOT HSIP Year 1\Cadd+Hwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 4.dgn
GREENMAN-PEDERSEN, INC.

MATCH LINE D
SEE SHEET NO. 4 OF 12

MATCH LINE E
SEE SHEET NO. 6 OF 12

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
48	17:44	Tue	05-27-14	0	DRY	CLEAR	DAY
88	18:21	Wed	10-08-14	0	DRY	CLEAR	DUSK
90	09:35	Tue	10-14-14	0	DRY	CLEAR	DAY
104	13:50	Mon	11-17-14	0	WET	RAIN	DAY
143	07:15	Wed	02-18-15	0	DRY	CLEAR	DAY
160	16:55	Tue	04-14-15	0	DRY	CLEAR	DAY
196	19:36	Sat	07-11-15	0	DRY	CLEAR	DAY
201	16:57	Sat	07-18-15	0	DRY	CLEAR	DAY
254	09:39	Fri	11-27-15	0	DRY	CLEAR	DAY
260	16:21	Fri	12-04-15	0	DRY	CLEAR	DAY
269	15:45	Thu	12-24-15	0	DRY	OVERCAST	DAY
361	12:46	Tue	07-12-16	0	DRY	CLEAR	DAY
363	07:30	Fri	07-15-16	1	DRY	CLEAR	DAY
375	15:36	Thu	08-18-16	0	DRY	CLEAR	DAY
376	14:12	Mon	08-22-16	0	DRY	CLEAR	DAY
389	20:14	Fri	09-09-16	1	DRY	CLEAR	DARK
426	15:27	Wed	12-14-16	0	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	15
INJURIES	2
FATALITIES	0
TOTAL NO. OF CRASHES	17

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

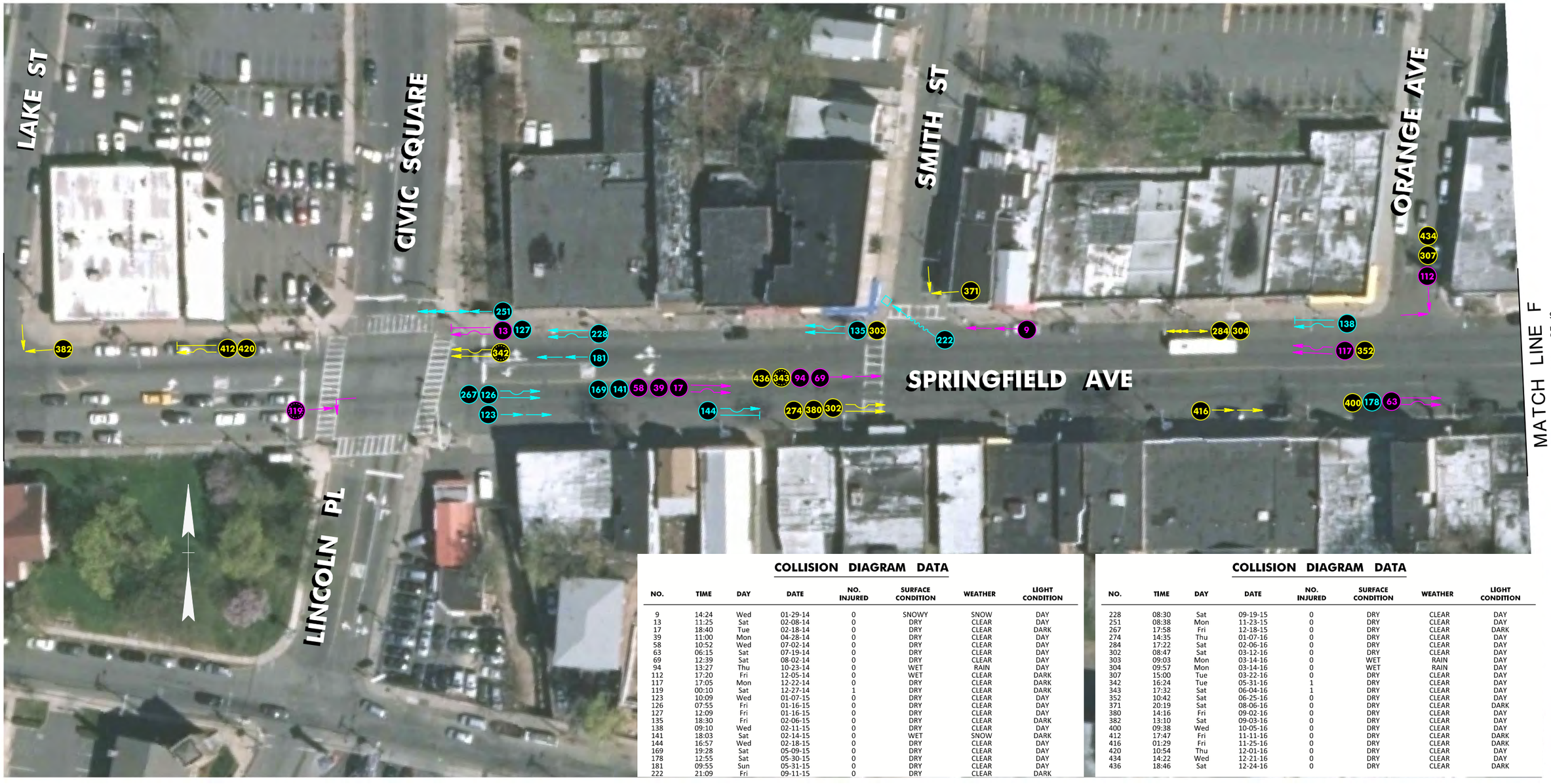
NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE



MATCH LINE E
SEE SHEET NO. 5 OF 12

MATCH LINE F
SEE SHEET NO. 7 OF 12

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
9	14:24	Wed	01-29-14	0	SNOWY	SNOW	DAY
13	11:25	Sat	02-08-14	0	DRY	CLEAR	DAY
17	18:40	Tue	02-18-14	0	DRY	CLEAR	DARK
39	11:00	Mon	04-28-14	0	DRY	CLEAR	DAY
58	10:52	Wed	07-02-14	0	DRY	CLEAR	DAY
63	06:15	Sat	07-19-14	0	DRY	CLEAR	DAY
69	12:39	Sat	08-02-14	0	DRY	CLEAR	DAY
94	13:27	Thu	10-23-14	0	WET	RAIN	DAY
112	17:20	Fri	12-05-14	0	WET	CLEAR	DARK
117	17:05	Mon	12-22-14	0	DRY	CLEAR	DARK
119	00:10	Sat	12-27-14	1	DRY	CLEAR	DARK
123	10:09	Wed	01-07-15	0	DRY	CLEAR	DAY
126	07:55	Fri	01-16-15	0	DRY	CLEAR	DAY
127	12:09	Fri	01-16-15	0	DRY	CLEAR	DAY
135	18:30	Fri	02-06-15	0	DRY	CLEAR	DARK
138	09:10	Wed	02-11-15	0	DRY	CLEAR	DAY
141	18:03	Sat	02-14-15	0	WET	SNOW	DARK
144	16:57	Wed	02-18-15	0	DRY	CLEAR	DAY
169	19:28	Sat	05-09-15	0	DRY	CLEAR	DAY
178	12:55	Sat	05-30-15	0	DRY	CLEAR	DAY
181	09:55	Sun	05-31-15	0	DRY	CLEAR	DAY
222	21:09	Fri	09-11-15	0	DRY	CLEAR	DARK

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
228	08:30	Sat	09-19-15	0	DRY	CLEAR	DAY
251	08:38	Mon	11-23-15	0	DRY	CLEAR	DAY
267	17:58	Fri	12-18-15	0	DRY	CLEAR	DARK
274	14:35	Thu	01-07-16	0	DRY	CLEAR	DAY
284	17:22	Sat	02-06-16	0	DRY	CLEAR	DAY
302	08:47	Sat	03-12-16	0	DRY	CLEAR	DAY
303	09:03	Mon	03-14-16	0	WET	RAIN	DAY
304	09:57	Mon	03-14-16	0	WET	RAIN	DAY
307	15:00	Tue	03-22-16	0	DRY	CLEAR	DAY
342	16:24	Tue	05-31-16	1	DRY	CLEAR	DAY
343	17:32	Sat	06-04-16	1	DRY	CLEAR	DAY
352	10:42	Sat	06-25-16	0	DRY	CLEAR	DAY
371	20:19	Sat	08-06-16	0	DRY	CLEAR	DARK
380	14:16	Fri	09-02-16	0	DRY	CLEAR	DAY
382	13:10	Sat	09-03-16	0	DRY	CLEAR	DAY
400	09:38	Wed	10-05-16	0	DRY	CLEAR	DAY
412	17:47	Fri	11-11-16	0	DRY	CLEAR	DARK
416	01:29	Fri	11-25-16	0	DRY	CLEAR	DARK
420	10:54	Thu	12-01-16	0	DRY	CLEAR	DAY
434	14:22	Wed	12-21-16	0	DRY	CLEAR	DAY
436	18:46	Sat	12-24-16	0	DRY	CLEAR	DARK

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	40
INJURIES	3
FATALITIES	0
TOTAL NO. OF CRASHES	43

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

GREENMAN-PEDERSEN, INC. DATE: 5/7/2018 TIME: 9:12:35 PM FILE: L:\2017659 HSIP Program and Project Development Support\NJDOT HSIP Year 1\Caddd+Hwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 6.dgn

MATCH LINE F
SEE SHEET NO. 6 OF 12

MATCH LINE G
SEE SHEET NO. 8 OF 12

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	83
INJURIES	16
FATALITIES	0
TOTAL NO. OF CRASHES	99

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NOTE: SEE SHEET 9 FOR DETAIL TABLES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

DATE: 1/8/2018 TIME: 3:11:57 PM FILE: L:\2017659 HSIP Program and Project Development Support\NJDOT HSIP Year 1\Cadd+Hwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 7.dgn
GREENMAN-PEDERSEN, INC.

MATCH LINE H
SEE SHEET NO. 10 OF 12

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	65
INJURIES	7
FATALITIES	0
TOTAL NO. OF CRASHES	72

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NOTE: SEE SHEET 9 FOR DETAIL TABLES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

SHEET 7 COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
3	15:07	Sat	01-04-14	0	DRY	CLEAR	DAY
4	01:54	Sun	01-05-14	0	SNOWY	CLEAR	DARK
12	07:54	Fri	02-07-14	0	ICY	CLEAR	DAY
16	18:32	Fri	02-14-14	0	SNOWY	CLEAR	DUSK
24	08:18	Wed	03-12-14	1	DRY	CLEAR	DAY
27	22:09	Thu	03-27-14	0	DRY	CLEAR	DARK
40	15:55	Tue	04-29-14	0	WET	RAIN	DAY
42	09:19	Thu	05-08-14	2	WET	RAIN	DAY
43	11:33	Sat	05-10-14	0	DRY	CLEAR	DAY
44	00:53	Sun	05-11-14	0	WET	RAIN	DARK
47	13:17	Sat	05-24-14	0	DRY	CLEAR	DAY
53	12:01	Tue	06-17-14	1	DRY	CLEAR	DAY
56	21:58	Tue	07-01-14	2	DRY	CLEAR	DARK
60	04:43	Sat	07-05-14	0	DRY	CLEAR	DARK
61	03:39	Sun	07-13-14	0	DRY	CLEAR	DARK
62	15:55	Tue	07-15-14	0	DRY	CLEAR	DAY
64	18:16	Sat	07-19-14	1	DRY	CLEAR	DAY
66	00:40	Fri	07-25-14	0	DRY	CLEAR	DARK
67	16:08	Sun	07-27-14	3	DRY	CLEAR	DAY
71	11:42	Sun	08-10-14	0	DRY	CLEAR	DAY
73	18:29	Sun	08-17-14	0	DRY	CLEAR	DAY
83	16:30	Mon	09-22-14	0	DRY	CLEAR	DAY
84	14:15	Thu	09-25-14	0	WET	RAIN	DAY
86	15:58	Sat	10-04-14	0	DRY	CLEAR	DAY
87	19:20	Tue	10-07-14	0	DRY	CLEAR	DARK
97	11:23	Thu	10-30-14	0	DRY	CLEAR	DAY
100	14:47	Sat	11-08-14	0	DRY	CLEAR	DAY
107	15:31	Fri	11-28-14	0	DRY	CLEAR	DAY
109	18:23	Sat	11-29-14	1	DRY	CLEAR	DARK
120	15:45	Sat	12-27-14	0	DRY	CLEAR	DAY
121	07:50	Mon	12-29-14	0	DRY	CLEAR	DAY
128	14:46	Sat	01-17-15	0	DRY	CLEAR	DAY
132	16:01	Sun	01-25-15	0	DRY	CLEAR	DAY
137	16:30	Mon	02-09-15	0	DRY	CLEAR	DAY
145	19:14	Wed	02-18-15	0	SNOWY	SNOW	DARK
146	00:44	Fri	02-27-15	0	ICY	SNOW	DARK
152	22:53	Thu	03-12-15	0	DRY	CLEAR	DARK
162	13:47	Tue	04-21-15	0	DRY	CLEAR	DAY
163	13:39	Fri	04-24-15	0	DRY	CLEAR	DAY
170	19:34	Tue	05-12-15	1	DRY	CLEAR	DAY
177	09:01	Wed	05-27-15	0	DRY	CLEAR	DAY
180	00:49	Sun	05-31-15	1	DRY	CLEAR	DARK
184	08:38	Wed	06-10-15	0	DRY	CLEAR	DAY
188	08:20	Thu	06-18-15	0	DRY	CLEAR	DAY
190	20:20	Sat	06-20-15	0	DRY	CLEAR	DARK
191	11:51	Sat	07-04-15	0	WET	RAIN	DAY
194	12:08	Fri	07-10-15	0	DRY	CLEAR	DAY
197	15:50	Fri	07-17-15	0	DRY	CLEAR	DAY
199	18:56	Fri	07-17-15	0	DRY	CLEAR	DAY
203	16:15	Mon	07-27-15	0	DRY	CLEAR	DAY
205	13:41	Fri	07-31-15	0	DRY	CLEAR	DAY
206	16:38	Sat	08-01-15	0	DRY	CLEAR	DAY
207	15:08	Tue	08-04-15	1	DRY	CLEAR	DAY
213	16:21	Sat	08-22-15	0	DRY	CLEAR	DAY
216	03:36	Thu	09-03-15	1	DRY	CLEAR	DARK
217	19:58	Thu	09-03-15	0	DRY	CLEAR	DUSK
218	15:56	Fri	09-04-15	0	DRY	CLEAR	DAY
220	07:57	Tue	09-08-15	0	DRY	CLEAR	DAY
231	07:59	Mon	10-05-15	0	DRY	CLEAR	DAY
232	20:10	Mon	10-05-15	0	DRY	CLEAR	DARK
238	07:52	Wed	10-28-15	0	DRY	OVERCAST	DAY
242	17:59	Fri	11-06-15	0	DRY	CLEAR	DAWN
247	07:38	Wed	11-18-15	0	DRY	CLEAR	DAY
248	16:30	Fri	11-20-15	0	DRY	CLEAR	DAY
252	14:14	Wed	11-25-15	0	DRY	CLEAR	DAY
257	08:01	Thu	12-03-15	0	DRY	CLEAR	DAY
263	17:21	Mon	12-07-15	0	DRY	CLEAR	DARK
264	15:07	Sat	12-12-15	0	DRY	CLEAR	DAY
266	16:20	Fri	12-18-15	1	DRY	CLEAR	DAY
275	21:29	Thu	01-07-16	0	DRY	CLEAR	DARK
277	16:03	Wed	01-27-16	0	DRY	CLEAR	DAY
283	10:08	Sat	02-06-16	0	DRY	CLEAR	DAY

SHEET 7 COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
287	18:47	Mon	02-15-16	0	SNOWY	SNOW	DARK
290	11:57	Sat	02-20-16	0	DRY	CLEAR	DAY
291	11:19	Wed	02-24-16	0	WET	RAIN	DAY
313	14:29	Fri	04-01-16	0	DRY	CLEAR	DAY
314	04:16	Thu	04-07-16	0	DRY	CLEAR	DARK
316	17:54	Sat	04-09-16	0	WET	RAIN	DAY
318	02:46	Sun	04-10-16	0	DRY	CLEAR	DARK
322	17:12	Fri	04-15-16	0	DRY	CLEAR	DAY
328	13:12	Sun	04-24-16	0	DRY	CLEAR	DAY
329	16:42	Mon	05-02-16	0	DRY	CLEAR	DAY
331	08:28	Thu	05-05-16	0	WET	OVERCAST	DAY
332	20:32	Thu	05-05-16	0	DRY	CLEAR	DARK
339	01:59	Sat	05-14-16	0	DRY	CLEAR	DARK
347	02:08	Sun	06-19-16	1	DRY	CLEAR	DARK
349	10:07	Mon	06-20-16	1	DRY	CLEAR	DAY
353	17:57	Sat	06-25-16	0	DRY	CLEAR	DAY
369	19:19	Sat	07-30-16	0	WET	RAIN	DUSK
385	16:36	Tue	09-06-16	0	DRY	CLEAR	DAY
388	14:12	Thu	09-08-16	0	DRY	CLEAR	DAY
393	13:18	Mon	09-19-16	0	DRY	CLEAR	DAY
399	23:32	Mon	10-03-16	1	WET	CLEAR	DARK
402	22:32	Sat	10-08-16	0	WET	RAIN	DARK
414	18:16	Sun	11-13-16	0	DRY	CLEAR	DARK
421	11:41	Sat	12-03-16	0	DRY	CLEAR	DAY
428	03:45	Sat	12-17-16	0	SNOWY	SNOW	DARK
429	07:38	Sat	12-17-16	0	SNOWY	SNOW	DAY
431	17:16	Mon	12-19-16	1	DRY	CLEAR	DARK
437	22:31	Sat	12-24-16	0	DRY	CLEAR	DARK

SHEET 8 COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
6	22:16	Thu	01-16-14	0	DRY	CLEAR	DARK
7	17:11	Tue	01-21-14	0	SNOWY	SNOW	DAY
10	15:15	Fri	01-31-14	0	DRY	CLEAR	DAY
18	19:50	Sat	02-22-14	0	DRY	CLEAR	DARK
26	18:50	Wed	03-19-14	0	WET	RAIN	DAY
29	20:00	Thu	04-03-14	1	DRY	CLEAR	DUSK
34	18:32	Sat	04-19-14	0	DRY	CLEAR	DAY
41	14:12	Tue	05-06-14	0	DRY	CLEAR	DAY
50	15:59	Wed	05-28-14	0	DRY	CLEAR	DAY
55	00:27	Sat	06-28-14	2	DRY	CLEAR	DARK
68	19:19	Mon	07-28-14	0	DRY	CLEAR	DAY
76	17:41	Wed	08-20-14	0	DRY	CLEAR	DAY
77	22:46	Fri	08-22-14	0	DRY	CLEAR	DARK
80	16:57	Mon	09-01-14	0	DRY	CLEAR	DAY
93	19:39	Wed	10-22-14	0	WET	CLEAR	DUSK
95	16:00	Fri	10-24-14	0	DRY	RAIN	DAY
103	22:46	Fri	11-14-14	0	DRY	CLEAR	DARK
105	09:36	Sat	11-22-14	0	DRY	CLEAR	DAY
106	21:30	Sun	11-23-14	1	DRY	CLEAR	DARK
113	20:38	Sat	12-13-14	0	DRY	CLEAR	DARK
122	11:50	Mon	01-05-15	0	DRY	CLEAR	DAY
129	08:00	Sun	01-18-15	4	ICY	RAIN	DAY
136	13:51	Sun	02-08-15	0	DRY	CLEAR	DAY
140	16:52	Fri	02-13-15	0	DRY	CLEAR	DAY
147	23:43	Mon	03-02-15	0	DRY	CLEAR	DARK
149	19:19	Fri	03-06-15	0	SNOWY	CLEAR	DUSK
150	14:14	Mon	03-09-15	0	DRY	CLEAR	DAY
166	22:23	Tue	04-28-15	1	DRY	CLEAR	DARK
172	07:26	Mon	05-18-15	0	DRY	OVERCAST	DAY
176	06:02	Sun	05-24-15	0	DRY	CLEAR	DAY
187	08:06	Tue	06-16-15	0	DRY	CLEAR	DAY
212	15:32	Sat	08-22-15	0	DRY	CLEAR	DAY

SHEET 8 COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
256	19:20	Wed	12-02-15	0	WET	RAIN	DARK
272	13:25	Thu	12-31-15	0	DRY	CLEAR	DAY
276	22:06	Sat	01-09-16	0	WET	RAIN	DARK
281	09:08	Mon	02-01-16	2	WET	CLEAR	DAY
288	13:00	Tue	02-16-16	2	WET	RAIN	DAY
289	11:44	Thu	02-18-16	0	DRY	CLEAR	DAY
292	07:19	Thu	02-25-16	0	WET	RAIN	DAY
294	23:09	Fri	02-26-16	0	DRY	CLEAR	DARK
297	13:56	Tue	03-01-16	0	DRY	CLEAR	DAY
305	22:23	Mon	03-14-16	0	WET	RAIN	DARK
306	12:28	Thu	03-17-16	0	DRY	CLEAR	DAY
308	15:37	Thu	03-24-16	0	DRY	CLEAR	DAY
310	10:16	Sun	03-27-16	0	DRY	CLEAR	DAY
311	13:23	Sun	03-27-16	0	DRY	CLEAR	DAY
312	22:52	Tue	03-29-16	0	DRY	CLEAR	DARK
317	18:57	Sat	04-09-16	0	WET	RAIN	DAY
320	21:34	Tue	04-12-16	0	DRY	CLEAR	DARK
323	18:44	Fri	04-15-16	0	DRY	CLEAR	DAY
327	14:39	Fri	04-22-16	0	DRY	CLEAR	DAY
330	16:51	Mon	05-02-16	0	DRY	CLEAR	DAY
336	01:49	Thu	05-12-16	0	DRY	CLEAR	DARK
337	18:06	Fri	05-13-16	0	WET	RAIN	DAY
362	17:49	Thu	07-14-16	0	DRY	CLEAR	DAY
364	00:50	Sat	07-16-16	0	DRY	CLEAR	DARK
368	11:17	Sat	07-30-16	0	DRY	CLEAR	DAY
372	16:31	Tue	08-09-16	0	DRY	CLEAR	DAY
383	22:37	Sun	09-04-16	0	DRY	CLEAR	DARK
390	12:00	Sun	09-11-16	0	DRY	CLEAR	DAY
396	21:39	Sat	09-24-16	0	DRY	CLEAR	DARK
397	13:25	Wed	09-28-16	0	DRY	CLEAR	DAY
406	17:23	Fri	10-21-16	0	DRY	CLEAR	DAY
409	22:26	Mon	10-31-16	0	DRY	CLEAR	DARK
410	15:28	Fri	11-04-16	0	DRY	CLEAR	DAY
411	16:43	Mon	11-07-16	0	DRY	CLEAR	DUSK
419	09:32	Wed	11-30-16	0	DRY	OVERCAST	DAY
422	00:05	Sun	12-04-16	0	DRY	CLEAR	DARK
423	05:26	Thu	12-08-16	0	DRY	CLEAR	DARK
429	07:38	Sat	12-17-16	0	SNOWY	SNOW	DAY
430	13:58	Sun	12-18-16	0	WET	RAIN	DAY
433	15:51	Tue	12-20-16	0	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY _____

INJURIES _____

FATALITIES _____

TOTAL NO. OF CRASHES _____

SYMBOLS

MOVING VEHICLE

BACKING VEHICLE

NON-INVOLVED VEHICLE

PEDESTRIAN

BICYCLIST

PROPERTY DAMAGE ONLY CRASH

INJURY IN CRASH

FATAL CRASH

FIXED OBJECT

ANIMAL

NON-FIXED OBJECT

POTHOLE

TYPES OF CRASHES

REAR END

HEAD ON

SIDE SWIPE

OUT OF CONTROL

OVERTURNED

LEFT TURN

RIGHT ANGLE

STRUCK PARKED VEHICLE

COLORS

2014 CRASHES

2015 CRASHES

2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

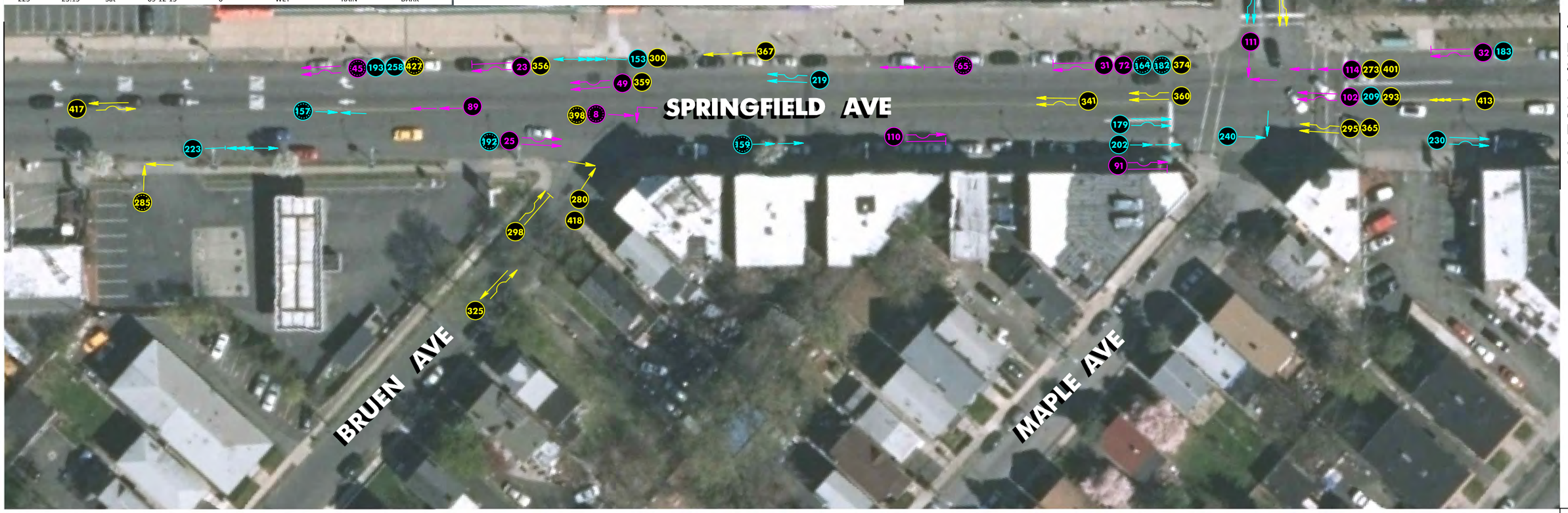
L:\Support\NJDOT HSIP Year 1\Cadd+Hwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 9.dgn
FILE:
TIME: 4:10:50 PM
DATE: 5/7/2018
GREENMAN-PEDERSEN, INC.

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
8	11:19	Sun	01-26-14	5	WET	CLEAR	DAY
23	18:13	Tue	03-11-14	0	DRY	CLEAR	DAY
25	14:41	Tue	03-18-14	0	DRY	CLEAR	DAY
31	17:00	Mon	04-07-14	0	WET	RAIN	DAY
32	10:50	Mon	04-14-14	0	DRY	CLEAR	DAY
45	18:07	Sat	05-17-14	2	DRY	CLEAR	DAY
49	13:00	Wed	05-28-14	0	DRY	CLEAR	DAY
65	11:44	Sun	07-20-14	1	DRY	CLEAR	DAY
72	13:38	Sun	08-17-14	0	DRY	CLEAR	DAY
89	20:08	Sun	10-12-14	0	DRY	CLEAR	DAY
91	22:02	Wed	10-15-14	0	WET	RAIN	DARK
102	10:30	Fri	11-14-14	0	DRY	CLEAR	DAY
110	11:07	Thu	12-04-14	0	DRY	CLEAR	DAY
111	05:03	Fri	12-05-14	0	DRY	CLEAR	DARK
114	15:31	Sun	12-14-14	0	DRY	CLEAR	DAY
153	19:56	Sat	03-14-15	0	WET	RAIN	DARK
157	05:44	Sat	04-04-15	2	WET	RAIN	DAWN
159	13:25	Sat	04-11-15	2	DRY	CLEAR	DAY
164	08:07	Mon	04-27-15	1	DRY	CLEAR	DAY
179	13:55	Sat	05-30-15	0	DRY	CLEAR	DAY
182	11:53	Fri	06-05-15	1	WET	RAIN	DAY
183	09:30	Sat	06-06-15	0	DRY	OVERCAST	DAY
192	10:48	Mon	07-06-15	5	DRY	CLEAR	DAY
193	09:49	Thu	07-09-15	0	WET	OVERCAST	DAY
202	22:28	Sat	07-25-15	0	DRY	CLEAR	DARK
209	13:37	Wed	08-05-15	0	DRY	CLEAR	DAY
219	16:41	Sat	09-12-15	0	DRY	CLEAR	DAY
223	23:15	Sat	09-12-15	0	WET	RAIN	DARK

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
230	14:12	Fri	10-02-15	0	WET	RAIN	DAY
240	18:03	Sat	10-31-15	0	DRY	CLEAR	DUSK
253	21:48	Thu	11-26-15	0	DRY	CLEAR	DARK
258	09:06	Fri	12-04-15	0	DRY	CLEAR	DAY
273	05:16	Fri	01-01-16	0	DRY	CLEAR	DAWN
280	19:30	Sun	01-31-16	0	DRY	CLEAR	DARK
285	17:44	Sat	02-06-16	2	DRY	CLEAR	DARK
293	18:50	Fri	02-26-16	0	DRY	CLEAR	DARK
295	15:56	Sat	02-27-16	0	DRY	CLEAR	DAY
298	13:44	Tue	03-08-16	0	DRY	CLEAR	DAY
300	11:10	Fri	03-11-16	0	DRY	CLEAR	DAY
325	21:21	Sat	04-16-16	0	DRY	CLEAR	DARK
341	16:21	Wed	05-18-16	0	DRY	CLEAR	DAY
356	06:43	Wed	07-06-16	0	DRY	CLEAR	DARK
359	12:55	Sat	07-09-16	0	DRY	CLEAR	DAY
360	23:47	Sun	07-10-16	0	DRY	CLEAR	DARK
365	16:44	Wed	07-20-16	0	DRY	CLEAR	DAY
367	22:20	Fri	07-22-16	0	DRY	CLEAR	DARK
374	04:22	Tue	08-16-16	0	DRY	CLEAR	DARK
377	12:20	Mon	08-29-16	0	DRY	CLEAR	DAY
398	18:37	Mon	10-03-16	1	DRY	CLEAR	DUSK
401	18:42	Wed	10-05-16	0	DRY	CLEAR	DAWN
413	17:58	Fri	11-11-16	0	DRY	CLEAR	DUSK
417	13:20	Tue	11-29-16	0	WET	RAIN	DAY
418	08:52	Wed	11-30-16	0	WET	RAIN	DAY
427	07:56	Fri	12-16-16	1	DRY	CLEAR	DAY



MATCH LINE H
SEE SHEET NO. 8 OF 12

MATCH LINE I
SEE SHEET NO. 11 OF 12

10
12

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	43
INJURIES	11
FATALITIES	0
TOTAL NO. OF CRASHES	54

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

GREENMAN-PEDERSEN, INC. DATE: 5/8/2018 TIME: 3:13:26 PM FILE: L:\2017669 HSIP Program and Project Development Support\NJDOT HSIP Year 1\Caddd\Hwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 10.dgn

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
2	23:18	Fri	01-03-14	1	SLUSH	SNOW	DARK
15	18:47	Wed	02-12-14	0	ICY	CLEAR	DARK
19	15:54	Sun	02-23-14	0	DRY	CLEAR	DAY
22	14:34	Fri	03-07-14	0	DRY	CLEAR	DAY
35	11:32	Sun	04-20-14	0	DRY	CLEAR	DAY
46	14:02	Wed	05-21-14	0	DRY	CLEAR	DAY
57	04:40	Wed	07-02-14	0	OIL	CLEAR	DARK
59	22:41	Wed	07-02-14	1	WET	RAIN	DUSK
74	10:37	Mon	08-18-14	0	DRY	CLEAR	DAY
75	12:39	Wed	08-20-14	0	DRY	CLEAR	DAY
85	22:40	Thu	10-02-14	0	DRY	CLEAR	DARK
99	14:11	Sat	11-08-14	0	DRY	CLEAR	DAY
108	15:41	Sat	11-29-14	0	DRY	CLEAR	DAY
116	07:51	Mon	12-22-14	0	DRY	CLEAR	DAY
139	17:00	Wed	02-11-15	0	DRY	SNOW	DAY
174	16:28	Tue	05-19-15	1	DRY	CLEAR	DAY
198	16:43	Fri	07-17-15	0	DRY	CLEAR	DAY
208	18:26	Tue	08-04-15	0	DRY	CLEAR	DAY
211	17:56	Thu	08-13-15	0	DRY	CLEAR	DAY

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
226	11:40	Wed	09-16-15	0	DRY	CLEAR	DAY
229	08:28	Fri	10-02-15	0	WET	RAIN	DAY
234	07:56	Wed	10-14-15	2	DRY	CLEAR	DAY
243	03:46	Sat	11-07-15	0	DRY	CLEAR	DARK
270	19:08	Thu	12-24-15	0	DRY	CLEAR	DARK
279	18:04	Sat	01-30-16	1	DRY	CLEAR	DARK
286	10:49	Sun	02-14-16	2	DRY	CLEAR	DAY
299	23:59	Tue	03-08-16	1	DRY	CLEAR	DUSK
315	02:50	Sat	04-09-16	0	DRY	CLEAR	DARK
334	08:37	Mon	05-09-16	0	DRY	CLEAR	DAY
340	16:47	Sun	05-15-16	0	DRY	CLEAR	DAY
350	10:32	Tue	06-21-16	0	DRY	CLEAR	DAY
354	14:13	Sun	07-03-16	2	DRY	CLEAR	DAY
387	07:08	Wed	09-07-16	0	DRY	CLEAR	DAY
395	00:07	Fri	09-23-16	0	DRY	CLEAR	DARK
403	08:16	Fri	10-14-16	0	DRY	CLEAR	DAY
404	10:11	Fri	10-14-16	0	DRY	CLEAR	DAY
415	19:10	Mon	11-21-16	0	DRY	CLEAR	DARK
424	23:36	Fri	12-09-16	2	DRY	CLEAR	DARK

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	29
INJURIES	9
FATALITIES	0
TOTAL NO. OF CRASHES	38

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

SEE SHEET NO. 11 OF 12
MATCH LINE J

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
11	08:50	Thu	02-06-14	2	ICY	SNOW	DAY
92	12:17	Tue	10-21-14	0	DRY	CLEAR	DAY
115	21:43	Fri	12-19-14	0	DRY	CLEAR	DARK
131	16:01	Sat	01-24-15	0	WET	CLEAR	DUSK
133	21:05	Wed	01-28-15	2	ICY	CLEAR	DARK
161	07:54	Tue	04-21-15	0	WET	RAIN	DAY
175	11:42	Thu	05-21-15	0	DRY	CLEAR	DAY
204	20:59	Tue	07-28-15	3	DRY	CLEAR	DARK
236	14:11	Sat	10-24-15	0	DRY	CLEAR	DAY
237	09:29	Tue	10-27-15	0	DRY	CLEAR	DAY
259	11:33	Fri	12-04-15	1	DRY	CLEAR	DAY
271	08:30	Thu	12-31-15	0	WET	RAIN	DAY
378	17:56	Thu	09-01-16	0	DRY	CLEAR	DAY

12
12

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	9
INJURIES	4
FATALITIES	0
TOTAL NO. OF CRASHES	13

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

- 2014 CRASHES
- 2015 CRASHES
- 2016 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2014 - 2016 COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

APPENDIX E

PEDESTRIAN CRASH DIAGRAMS

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
35	11:07	MON	11-25-13	1	DRY	CLEAR	DAY

MATCH LINE A
SEE SHEET NO. 2 OF 11

1
11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	0
INJURIES	1
FATALITIES	0
TOTAL NO. OF CRASHES	1

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

SEE SHEET NO. 1 OF 11
MATCH LINE A

MATCH LINE B
SEE SHEET NO. 3 OF 11

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
12	19:20	MON	07-09-12	1	DRY	CLEAR	DAY
31	09:35	SUN	06-30-13	0	DRY	CLEAR	DAY
34	17:35	SUN	09-22-13	1	DRY	CLEAR	DAY
57	18:49	SUN	10-25-15	1	DRY	CLEAR	DUSK

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	1
INJURIES	3
FATALITIES	0
TOTAL NO. OF CRASHES	4

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
23	18:30	MON	04-22-13	1	DRY	CLEAR	DAY
28	13:05	WED	06-12-13	1	DRY	CLEAR	DAY
40	18:05	MON	01-13-14	1	DRY	CLEAR	DARK
59	15:13	FRI	11-27-15	1	DRY	CLEAR	DAY

MATCH LINE B
SEE SHEET NO. 2 OF 11

MATCH LINE C
SEE SHEET NO. 4 OF 11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	0
INJURIES	4
FATALITIES	0
TOTAL NO. OF CRASHES	4

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
1	12:42	FRI	01-27-12	0	WET	RAIN	DAY
2	08:46	FRI	02-10-12	1	DRY	CLEAR	DAY
7	15:31	SUN	05-06-12	1	DRY	CLEAR	DAY
38	09:08	SAT	12-21-13	1	WET	CLEAR	DAY
76	22:46	SAT	06-25-16	1	DRY	CLEAR	DARK

MATCH LINE C
SEE SHEET NO. 3 OF 11

MATCH LINE D
SEE SHEET NO. 5 OF 11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	1
INJURIES	4
FATALITIES	0
TOTAL NO. OF CRASHES	5

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

SEE SHEET NO. 4 OF 11
MATCH LINE D

MATCH LINE E
SEE SHEET NO. 6 OF 11

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
21	12:22	WED	02-20-13	1	DRY	CLEAR	DAY
58	17:50	THU	11-19-15	1	WET	RAIN	DARK

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	0
INJURIES	2
FATALITIES	0
TOTAL NO. OF CRASHES	2

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
3	19:53	SAT	03-24-12	1	DRY	CLEAR	DARK
4	19:57	THU	04-26-12	1	WET	RAIN	DAY
15	17:35	SAT	11-17-12	2	DRY	CLEAR	DARK
18	13:46	TUE	01-08-13	1	DRY	CLEAR	DAY
19	12:50	FRI	02-15-13	1	DRY	CLEAR	DAY
33	11:35	WED	07-31-13	1	DRY	CLEAR	DAY
54	11:17	SUN	09-06-15	1	DRY	CLEAR	DAY
55	21:36	MON	09-21-15	1	DRY	CLEAR	DARK
71	16:00	THU	05-05-16	1	DRY	OVERCAST	DAY
78	13:44	TUE	08-09-16	1	DRY	CLEAR	DAY
80	11:02	FRI	09-09-16	1	DRY	CLEAR	DAY

MATCH LINE E
SEE SHEET NO. 5 OF 11

MATCH LINE F
SEE SHEET NO. 7 OF 11

6
11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	0
INJURIES	11
FATALITIES	0
TOTAL NO. OF CRASHES	11

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

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2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

GREENMAN-PEDERSEN, INC. DATE: 4/2/2018 TIME: 4:04:41 PM FILE: L:\2017659 HSIP Program and Project Development Support\NJDOT HSIP Year 11\CaddHwy\02 Essex\Springfield Ave\Crash Sheets\Crash Sheet 6.dgn

SEE SHEET NO. 6 OF 11
MATCH LINE F

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
5	06:24	MON	04-30-12	1*	DRY	CLEAR	DAY
6	18:44	TUE	05-01-12	1	DRY	CLEAR	DAY
11	16:59	MON	07-02-12	1	DRY	CLEAR	DAY
24	18:06	WED	05-01-13	1	DRY	CLEAR	DAY
29	19:38	SAT	06-15-13	1	DRY	CLEAR	DAY
32	16:52	SUN	07-28-13	1	DRY	CLEAR	DAY
44	14:02	SAT	05-17-14	2	DRY	CLEAR	DAY
45	01:08	SUN	06-08-14	1	DRY	CLEAR	DARK
48	17:49	FRI	12-05-14	2	WET	RAIN	DARK
68	14:01	WED	03-16-16	1	DRY	CLEAR	DAY
77	10:18	WED	06-29-16	1	DRY	CLEAR	DAY

MATCH LINE G
SEE SHEET NO. 8 OF 11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	0
INJURIES	10
FATALITIES*	1
TOTAL NO. OF CRASHES	11

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
20	00:01	WED	02-20-13	0	WET	RAIN	DARK
26	16:50	TUE	06-04-13	2	DRY	CLEAR	DAY
46	11:05	THU	07-24-14	1	DRY	CLEAR	DAY
53	08:50	THU	06-18-15	1	WET	RAIN	DAY
56	18:01	FRI	10-16-15	1	DRY	CLEAR	DUSK
62	11:32	THU	01-28-16	1	WET	CLEAR	DAY
64	18:40	SAT	02-13-16	1	DRY	CLEAR	DARK

SEE SHEET NO. 7 OF 11
MATCH LINE G

MATCH LINE H
SEE SHEET NO. 9 OF 11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	1
INJURIES	6
FATALITIES	0
TOTAL NO. OF CRASHES	7

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

MATCH LINE H
SEE SHEET NO. 8 OF 11

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
8	13:58	TUE	06-12-12	1	WET	RAIN	DAY
10	17:00	TUE	06-26-12	1	DRY	CLEAR	DAY
13	21:53	SAT	10-27-12	1	DRY	CLEAR	DARK
14	08:31	SAT	11-03-12	1	DRY	CLEAR	DAY
16	14:26	SUN	12-09-12	1	WET	RAIN	DAY
22	22:33	FRI	03-15-13	1	DRY	CLEAR	DARK
25	00:17	SAT	06-01-13	1	DRY	CLEAR	DARK
30	12:43	TUE	06-25-13	2	DRY	CLEAR	DAY
37	21:01	WED	12-18-13	1	ICY	CLEAR	DARK
39	08:33	MON	01-13-14	1	DRY	CLEAR	DAY
41	09:17	MON	03-17-14	1	DRY	CLEAR	DAY
42	21:27	TUE	04-29-14	1	WET	RAIN	DARK
43	16:03	FRI	05-16-14	1	WET	RAIN	DAY
47	18:05	THU	08-28-14	1	DRY	CLEAR	DAY
49	17:15	FRI	12-19-14	1	DRY	CLEAR	DARK

COLLISION DIAGRAM DATA (CONT.)

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
50	16:50	TUE	01-20-15	1	DRY	CLEAR	DAY
51	20:56	SAT	03-21-15	1	DRY	CLEAR	DARK
52	14:16	THU	05-07-15	1	DRY	CLEAR	DAY
60	20:59	TUE	12-01-15	1	WET	RAIN	DARK
61	13:42	TUE	12-15-15	1	DRY	CLEAR	DAY
63	18:30	THU	01-28-16	1	WET	SNOW	DARK
65	15:59	MON	02-22-16	1	DRY	CLEAR	DAY
66	12:27	FRI	02-26-16	1*	DRY	CLEAR	DAY
69	19:03	WED	04-13-16	1	DRY	CLEAR	DUSK
70	10:47	SUN	04-17-16	1	DRY	CLEAR	DAY
72	07:41	FRI	05-06-16	1	DRY	RAIN	DAY
73	12:34	MON	06-13-16	1	DRY	CLEAR	DAY
74	20:30	WED	06-15-16	1	DRY	CLEAR	DUSK
75	18:24	FRI	06-17-16	1	DRY	CLEAR	DAY
79	21:30	THU	08-18-16	1	DRY	CLEAR	DARK
82	06:58	TUE	09-27-16	1	WET	RAIN	DAY
83	07:56	WED	11-16-16	1	DRY	CLEAR	DAY
84	17:19	TUE	11-29-16	1	WET	RAIN	DARK

MATCH LINE I
SEE SHEET NO. 10 OF 11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	0
INJURIES	32
FATALITIES*	1
TOTAL NO. OF CRASHES	33

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc. Engineering and Construction Services

NOT TO SCALE

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
17	16:20	SUN	12-23-12	1	DRY	CLEAR	DAY
27	23:17	SUN	06-09-13	1	DRY	CLEAR	DARK
81	13:34	FRI	09-09-16	1	DRY	CLEAR	DAY

MATCH LINE I
SEE SHEET NO. 9 OF 11

MATCH LINE J
SEE SHEET NO. 11 OF 11

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	0
INJURIES	3
FATALITIES	0
TOTAL NO. OF CRASHES	3

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

SEE SHEET NO. 10 OF 11
MATCH LINE J

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
9	14:12	SUN	06-24-12	0	DRY	CLEAR	DAY
36	18:39	TUE	12-17-13	1	SLUSH	OVERCAST	DARK
67	13:32	TUE	03-01-16	1	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	1
INJURIES	2
FATALITIES	0
TOTAL NO. OF CRASHES	3

SYMBOLS

- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLIST
- PROPERTY DAMAGE ONLY CRASH
- INJURY IN CRASH
- FATAL CRASH
- FIXED OBJECT
- ANIMAL
- NON-FIXED OBJECT
- POTHOLE

TYPES OF CRASHES

- REAR END
- HEAD ON
- SIDE SWIPE
- OUT OF CONTROL
- OVERTURNED
- LEFT TURN
- RIGHT ANGLE
- STRUCK PARKED VEHICLE

COLORS

PEDESTRIAN CRASH

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Springfield Avenue (CR 603)
between Becker Terrace and Avon Avenue
Irvington Township, Essex County

2012-2016 PEDESTRIAN COLLISION DIAGRAMS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

APPENDIX F

SITE PHOTOGRAPHS

Vehicles park within intersection in no parking zone (also observed parked within designated bus stop)

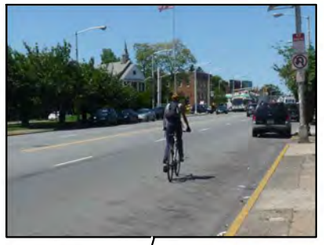
Sidewalk in poor condition in many areas; slope may be substandard

Some pedestrian signal heads not functioning properly

Traffic signal transformer bases have broken/missing covers and trash

Motorists use wrong side of road for left turns on 2-way street

Lack of marked bicycle facilities on Springfield Ave



Skewed approaches and buildings make turns difficult

Push button stickers worn/peeled away

Pedestrians cross midblock along the corridor

Vehicle and pedestrian conflicts at Lyons Ave western crosswalk

Wide pavement area not conducive to pedestrian crossing

Proximity of lighting to pole may impact illumination

NJDOT HSIP
ROAD SAFETY AUDIT
SPRINGFIELD AVENUE

IRVINGTON TOWNSHIP
ESSEX COUNTY

SITE PHOTOGRAPHS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

N.T.S.

Unsignalized pedestrian crossing where vehicles do not stop

Wide 5-leg intersection with Clinton Ave difficult and confusing for pedestrians and vehicles to traverse

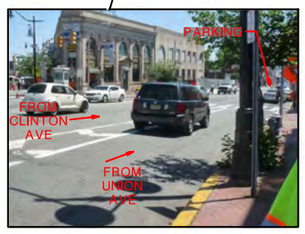
Location of southern crosswalk does not follow pedestrian path

Lane use change between closely spaced intersections confusing to motorists

Long pedestrian crossings at skewed intersection

Shared curb ramps not preferred design (2 per corner)

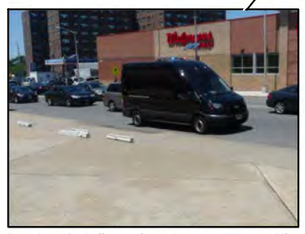
Vehicles partially block visibility of pedestrian signal heads



Lack of available merge distance on Clinton Ave southbound

Worn striping on structure

Major pedestrian crossing and bus stop lack high visibility crosswalks



Lack of delineation between parking and sidewalk may block pedestrian walkway

Parking within crosswalk (Title 39 violation)

NJDOT HSIP
ROAD SAFETY AUDIT
SPRINGFIELD AVENUE

IRVINGTON TOWNSHIP
ESSEX COUNTY

SITE PHOTOGRAPHS

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

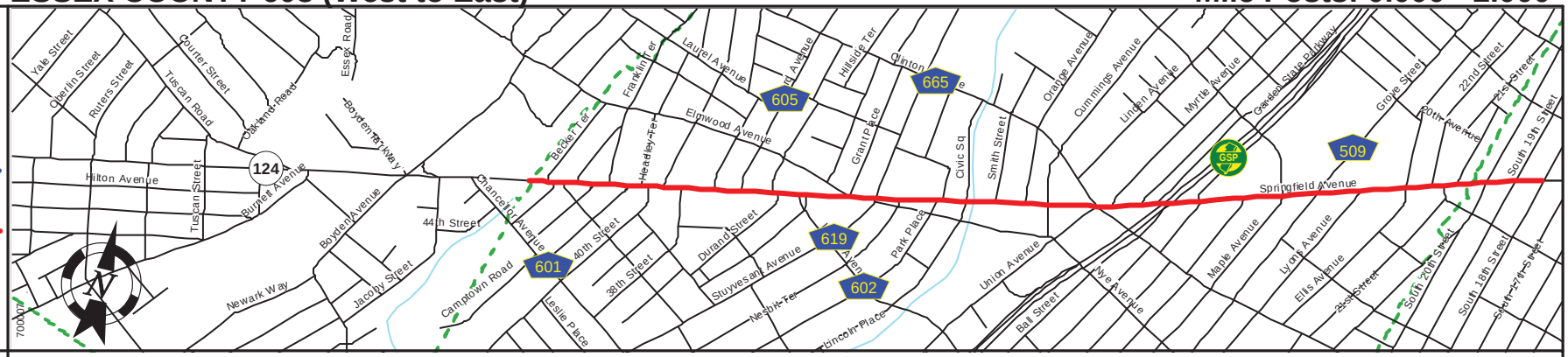
N.T.S.

APPENDIX G

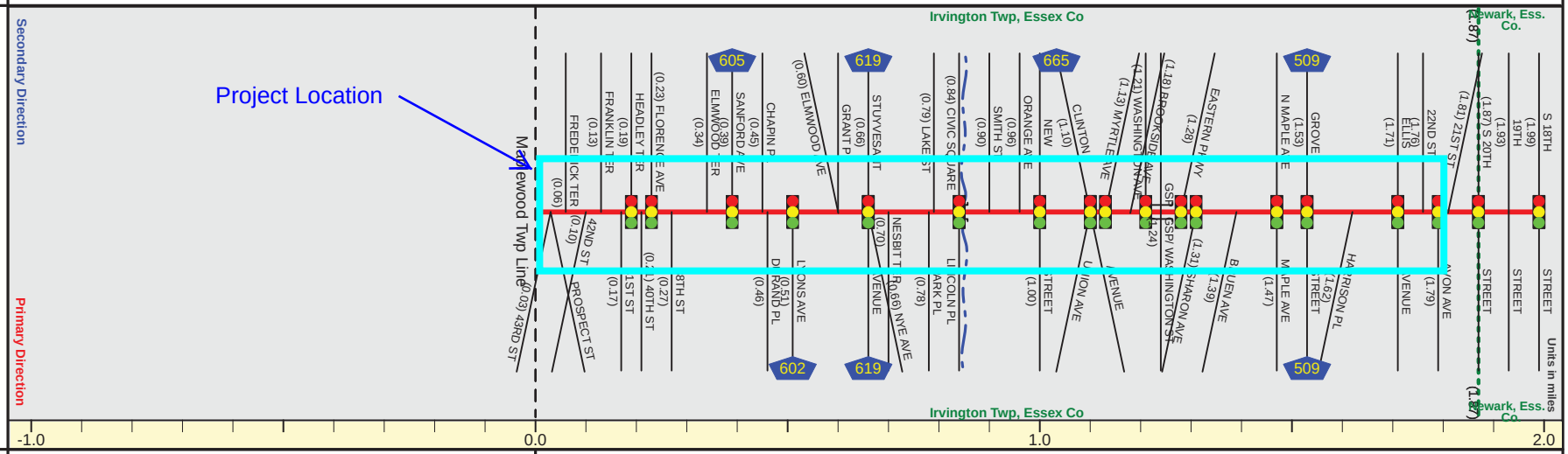
STRAIGHT LINE DIAGRAMS

ESSEX COUNTY 603 (West to East)

Mile Posts: 0.000 - 2.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Springfield Avenue
Jurisdiction	County
Functional Class	Urban Principal Arterial
Federal Aid - NHS Sy	NHS
Control Section	
Speed Limit	NOT POSTED
Number of Lanes	4
Med. Type	None
Med. Width	0
Pavement	60 | 48
Shoulder	0
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

Begin Essex County 603 MP=0.00

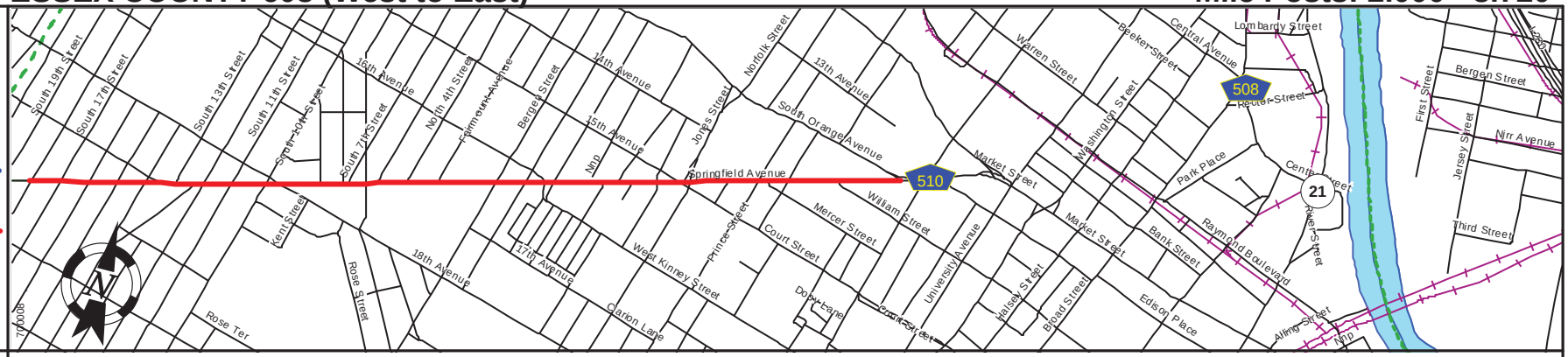
SRI = 07000603__

Date last inventoried: July 2011

Page Created: June, 2015

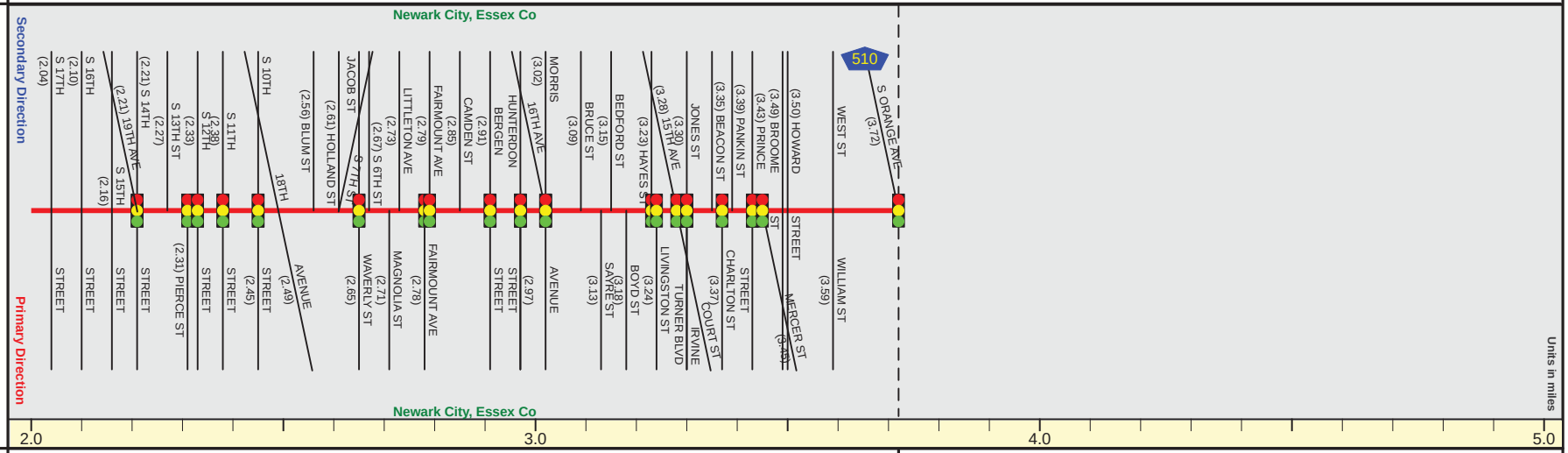
ESSEX COUNTY 603 (West to East)

Mile Posts: 2.000 - 3.720



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

Interstate Route 287 | US Route 22 | NJ Route 33 | County Road 689 | Interchange Number 2 | Grade Separated Interchange | Traffic Signal | Traffic Monitoring Sites WIM AVC VOL | Road Underpass | Road Overpass



Street Name	Springfield Avenue		
Jurisdiction	County		
Functional Class	Urban Principal Arterial		
Federal Aid - NHS Sy	NHS		
Control Section			
Speed Limit	NOT POSTED		
Number of Lanes	4	2	
Med. Type	None		
Med. Width	0		
Pavement	48	38	
Shoulder	0		
Traffic Volume			
Traffic Sta. ID			
Structure No.			
Enlarged Views			

End Essex County 603 MP=3.72

SRI = 07000603__

Date last inventoried: July 2011

Page Created: June, 2015

APPENDIX H

PRE-AUDIT PRESENTATION

Road Safety Audit:

Springfield Avenue (CR 603) between Becker Terrace and Avon Avenue

Irvington Township, Essex County

May 24, 2018

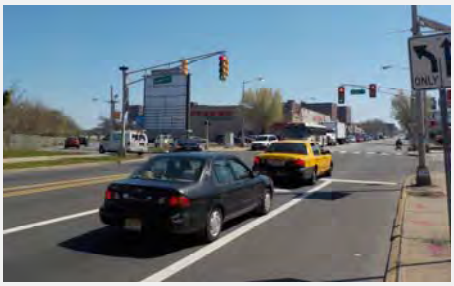
Audit Team Introductions

- *Funded by Federal Highway Administration and NJDOT*
- NJDOT, Bureau of Transportation Data & Safety
  - Bicycle & Pedestrian Programs
  - Local Aid
- NJTPA
- Essex County
- Irvington Township
- NJ Transit
- Greenman-Pedersen, Inc., NJDOT Consultant

2

Today's Schedule

9:00a	• **Welcome and Introductions** • **Project Overview Presentation**
10:30a	• Field Visit and Observations
12:30p	• Lunch and Regroup at Presentation Location
2:00p	• Discuss Observations • Make Recommendations
3:30p	• Adjourn

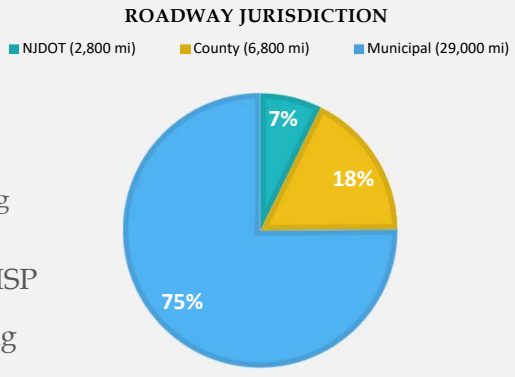


Springfield Ave EB at Eastern Pkwy

3

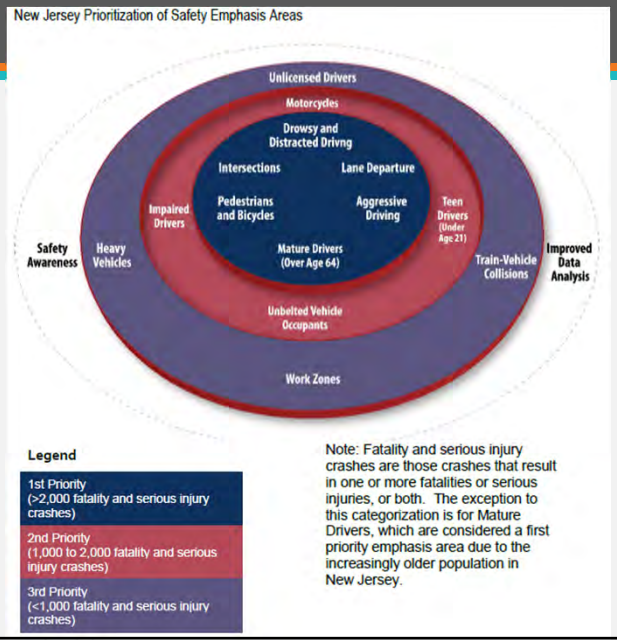
Highway Safety Improvement Program/ Local Safety Program

- GOAL: Reduce serious injury and fatality (K+A) crashes on all of NJ's public roads
  - 40,000 centerline miles of public roads
  - 33% K+A crashes occur on state highways
  - 57% K+A crashes occur on local roads
- Toward zero deaths on all public roads
  - Established 2.5%/year reduction in 5-year rolling average
- Performance-based goals consistent with SHSP
- Data-driven, strategic approach to improving highway safety



4

Highway Safety Improvement Program (HSIP)

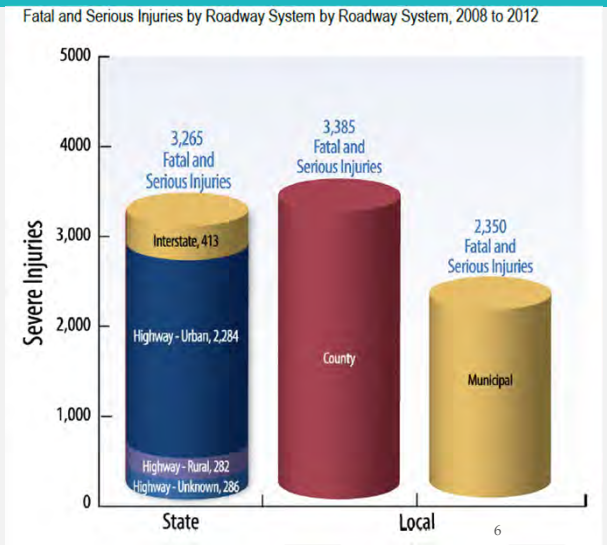


- 14 Emphasis Areas
- Pedestrian Safety and Intersection Focus State
- Top priority: lane departure, intersections, and pedestrians
- 7 sub-programs including Local Safety Program
- Core Federal Aid Program, NJ receives ~$57M

5

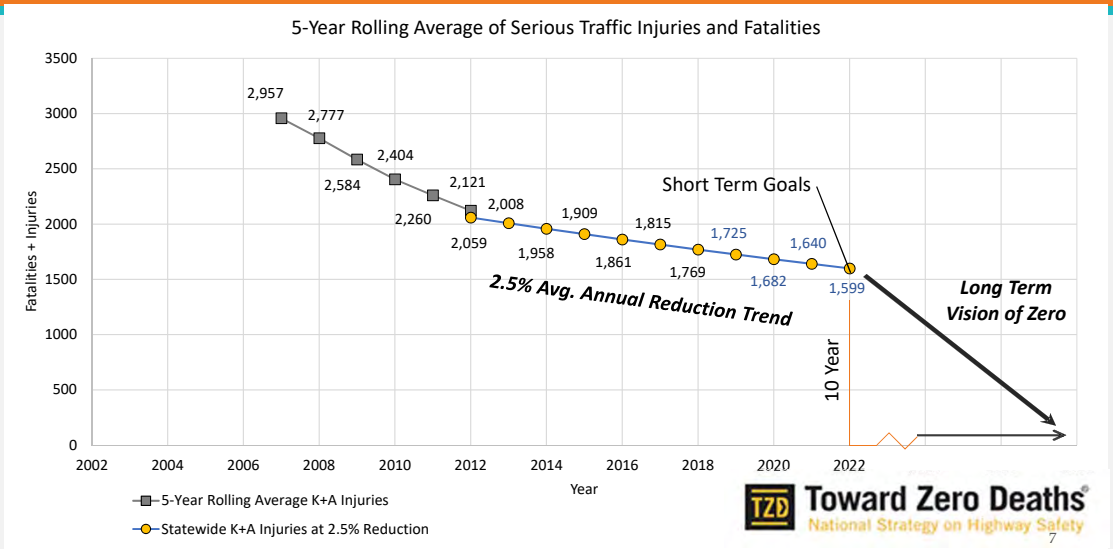
Local Safety Program (LSP)

- NJDOT supports LSP:
  - Dedication of HSIP funds
  - Technical assistance
  - Screening lists for MPOs
  - **Road Safety Audits**
- MPOs support LSP:
  - Local Road Safety/High Risk Rural Roads
  - PE/FD Assistance Program
- Focus annual HSIP funding:
  - 40% on state highways
  - 60% percent on county and municipal network



6

National Strategy – Toward Zero Deaths

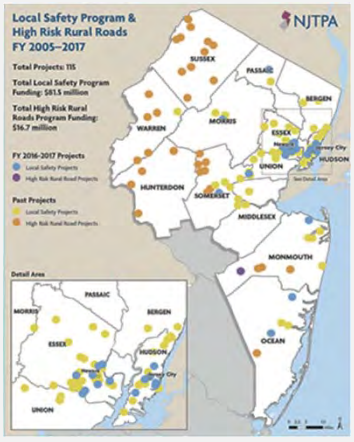


Federal Transportation Funding

through the

North Jersey Transportation Planning Authority

The Metropolitan Planning Organization for Northern New Jersey



Local Safety and High Risk Rural Roads Programs

Over $98 million in funding since 2005 on County and Local Roadways

Relatively quick-fix safety improvements

Highway Safety Improvement Program (HSIP) funds

Emphasizes a data-driven, strategic approach to improving highway safety

Network Screening

Identifies locations experiencing:

High crash frequencies

Severe crash injuries

Specific crash types such as right-angle or roadway departures

Community Outreach

Provides the public, local stakeholders and officials with an opportunities for provide comments and ask questions

Defining the Vision. Shaping the Future.

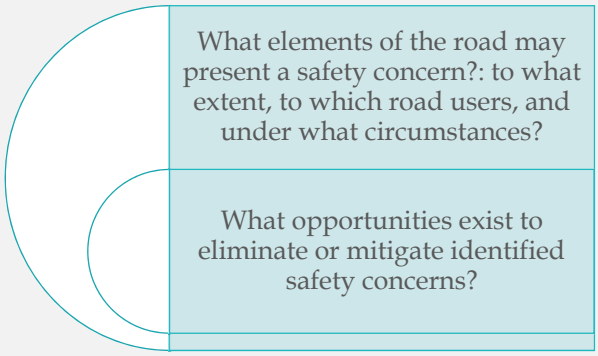
NJTPA

NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

RSA Purpose

- Formal safety performance examination
- Qualitatively estimates and reports on potential road safety issues
- Identifies safety improvement opportunities for all road users.
- Independent, multidisciplinary audit team

- Goals:



9

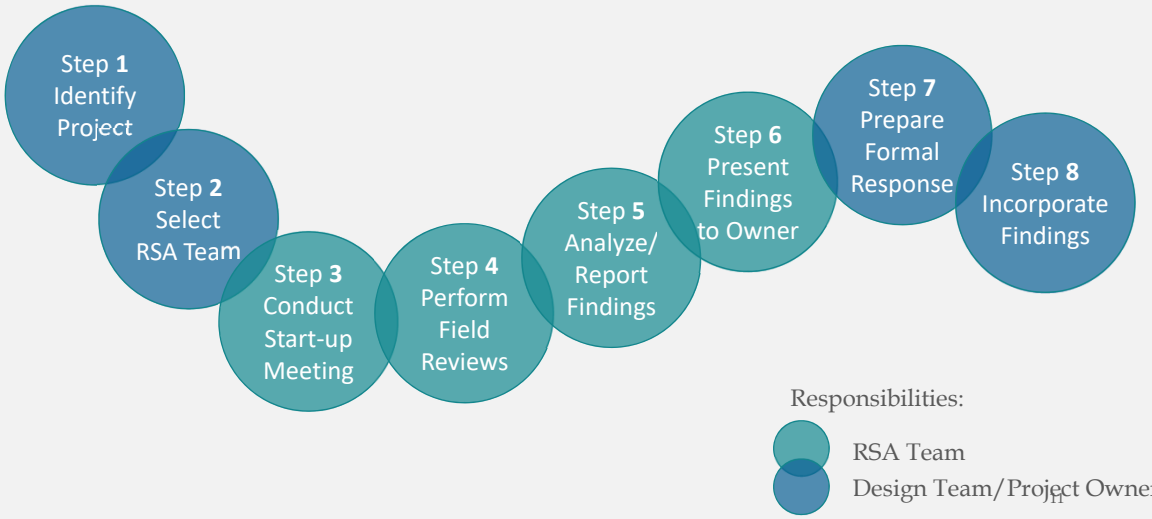
RSA Benefits

- Pro-actively address safety
- Audited designs should produce fewer, less severe crashes
- Identify low-cost/high-value improvements
- Enhance consistency in how safety is considered; promote "safety culture"
- Provide continuous advancement of safety skills and knowledge
- Contribute feedback on safety issues for future projects
- Support optimized savings of lives, money and time

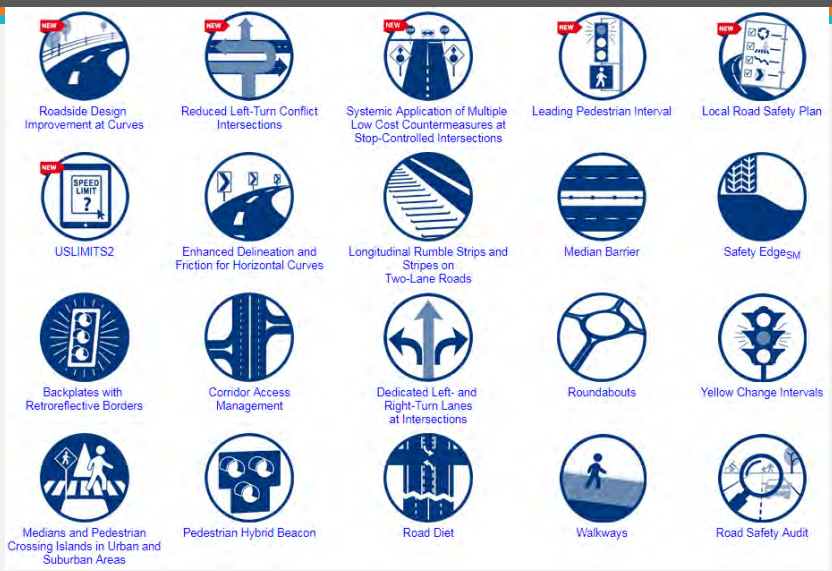
- Not a replacement for:
  - Design quality control
  - Standard compliance
  - Traffic or safety impact studies
  - Safety conscious planning
  - Road safety inventory programs
  - Traffic safety modeling efforts

10

RSA Process



FHWA Proven Safety Countermeasures



Descriptions provided in your handouts

12

FHWA Proven Safety Countermeasures

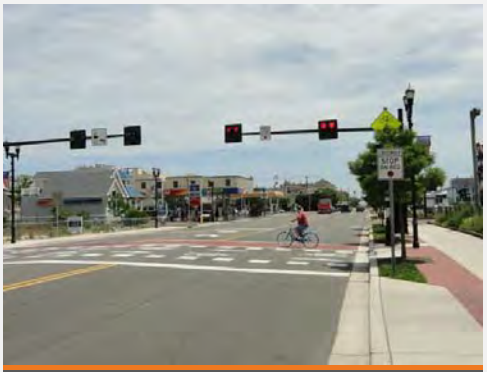
Road Diet
Maplewood Township, Essex County

Roundabout
Chesterfield Township, Burlington County

13

FHWA Proven Safety Countermeasures

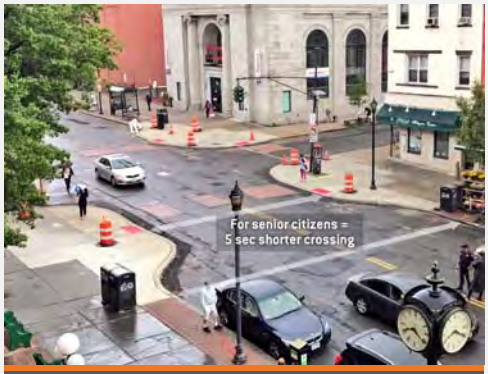
Backplates with Retroreflective Borders



Pedestrian Hybrid Beacon (HAWK)
Ocean City, Cape May County

14

Additional Considerations



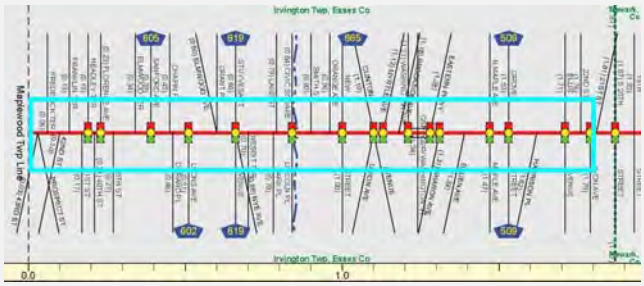
Curb Extensions
Hoboken City, Hudson County

Enhanced signing / pedestrian crossings

15

Project Area

- Urban Principal Collector, undivided 4-lanes
- Parking both sides
- 25 mph statutory (not posted)
- NJT Bus Service
- Sidewalk on both sides
- Various crosswalk markings
- Ergonomic crossings



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Area Map

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Project Area

Springfield Ave at New St

- Traffic Data (2016)
  - ADT: around 12,000 vpd
- Land Use
  - Commercial/retail
  - High density
  - Irvington Bus Terminal/GSP access
- Demographics (near Springfield Ave)
  - 82% Black/African American
  - 13% Hispanic/Latino
  - 25% below poverty level
  - 26% use public transportation
  - 5% walk or bike to work

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NJTPA's FY 2017-2018 LSP Network Screening List

Location	Ped Corridor	Regional Corridor
Springfield Ave	#1 County (MP 0.51-1.51)	#34 NJTPA (MP 1.46-2.46)

Location	Intersection (Top 200)	Ped Intersection (Top 200)
Elmwood Ave (MP 0.60)	#11 County	#27 County
Stuyvesant Ave (MP 0.66)		#123 County
Park Pl (MP 0.78)		#115 County
William S. Bull St (MP 0.82)	#47 County	#8 County
Smith St (MP 0.90)	#97 County	
Orange Ave (MP 0.96)	#49 County	#3 County
Clinton Ave (MP 1. 10)	#8 County	#23 County
N Maple Ave (MP 1.47)	#23 County	#9 County
Grove St (MP 1.53)	#75 County	#25 County

Lists use 2009-2013 crash data

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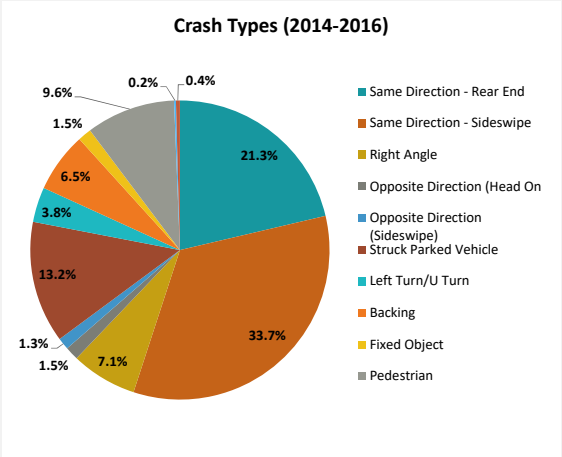
Crash Data

478 Crashes (2014-2016)

- Overrepresentations:
  - Sideswipe, Parked Vehicle
  - Pedestrian (46)
  - At Intersection
  - Snowy & At Night
- Hit & Run common

84 Pedestrian Crashes (2012-2016)

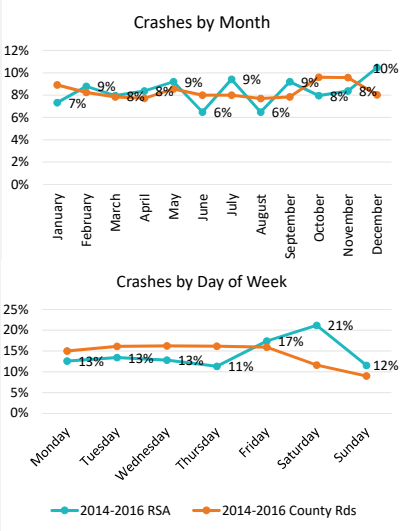
- Overrepresentations:
  - Min./Mod. Injury
  - At Intersection
  - At Night



20

Crash Data (2014-2016)

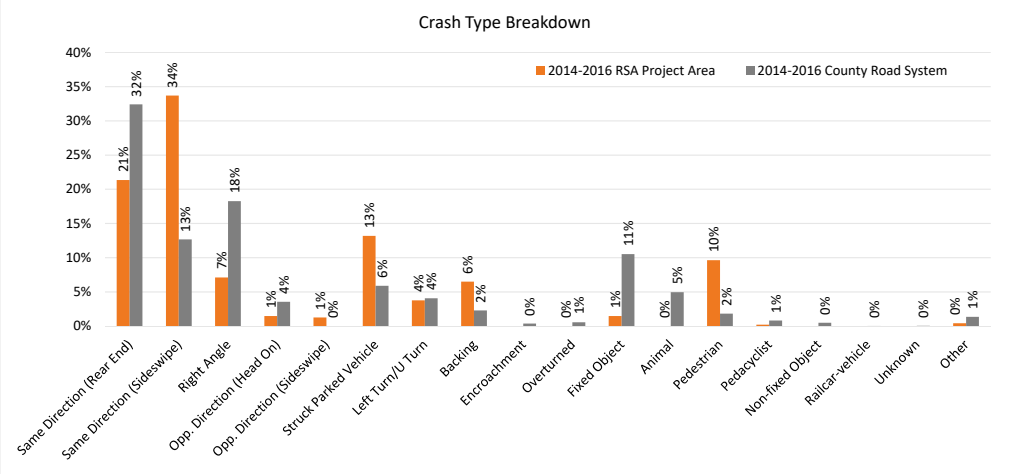
Histogram View by 0.1 Mile



Edited from original view

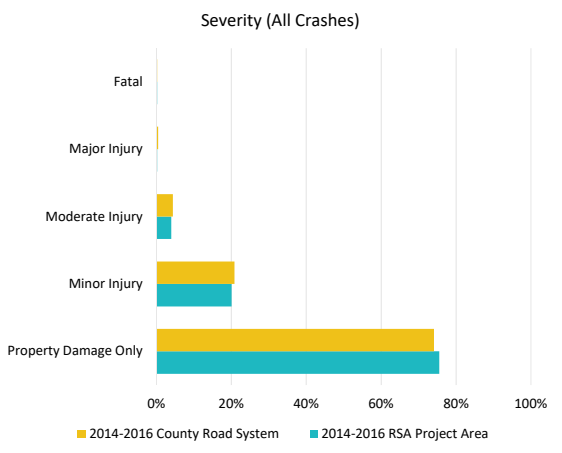
21

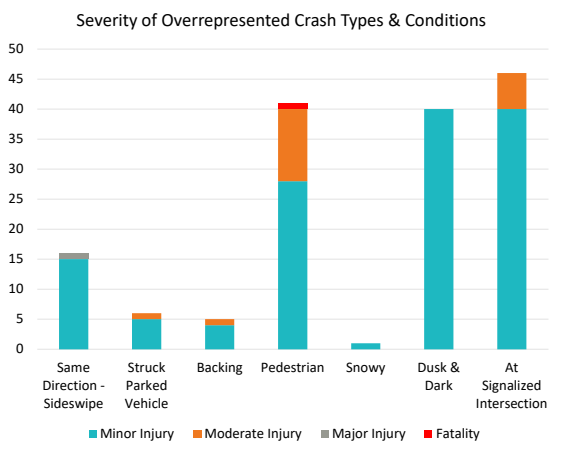
Crashes: RSA Project Area v. County Road System



22

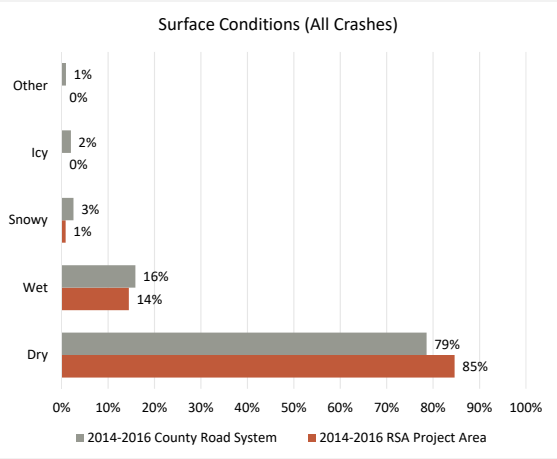
Crashes: Severity

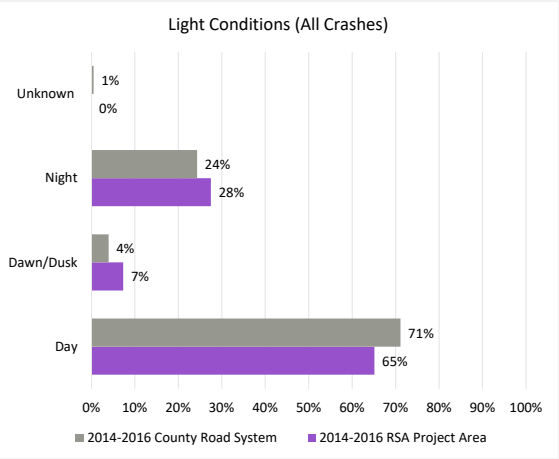




23

Crashes: Light & Surface Conditions



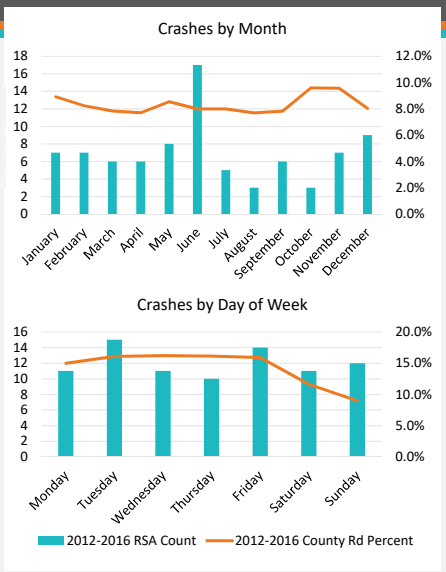


24

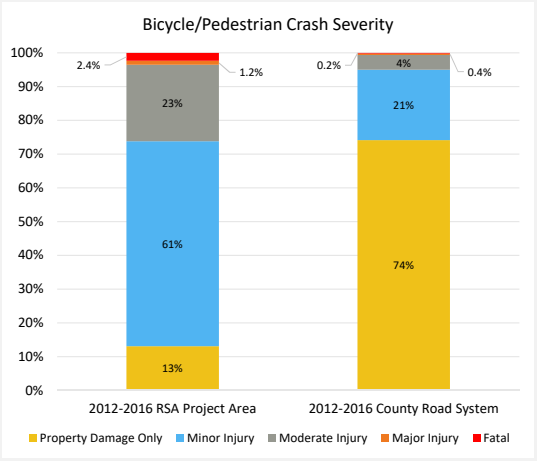
Pedestrian Crash Data (2012-2016)

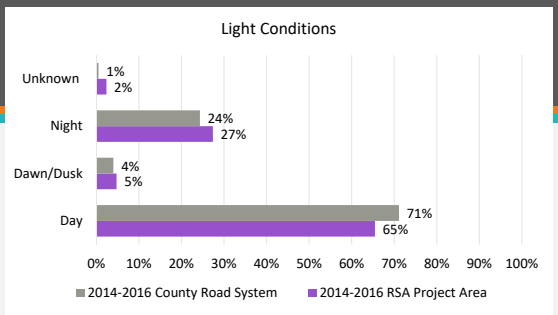
Histogram View by 0.1 Mile

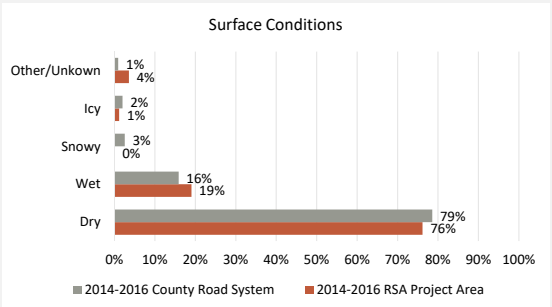
Edited from original view



Pedestrian Crashes







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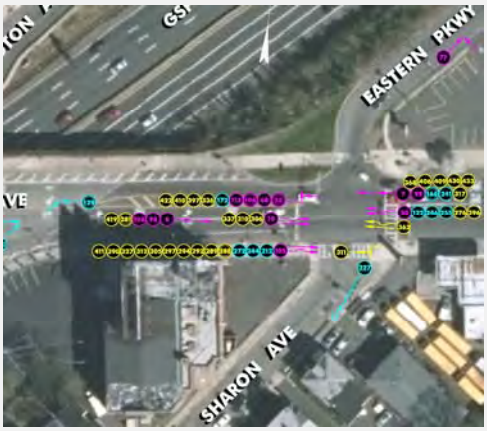
Crash Diagrams (Red Histogram Bar Location)

Vehicle (2014-2016)



Pedestrian (2012-2016)

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Field Visit Itinerary

9:00a	• Welcome and Introductions • Project Overview Presentation
10:30a	• **Field Visit and Observations**
12:30p	• Lunch and Regroup at Presentation Location
2:00p	• Discuss Observations • Make Recommendations
3:30p	• Adjourn

- ✓ Verify Identified Issues
- ✓ Observe Operations
- ✓ Note Other Safety Concerns
- ✓ Document Findings
  - Photographs
  - Checklist
- ✓ Safety First!
  - Use proper safety equipment
  - Stay alert to your surroundings

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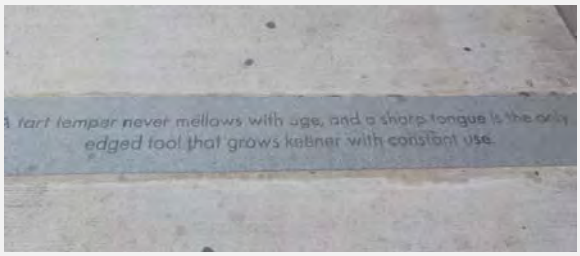


Field Visit & Observations

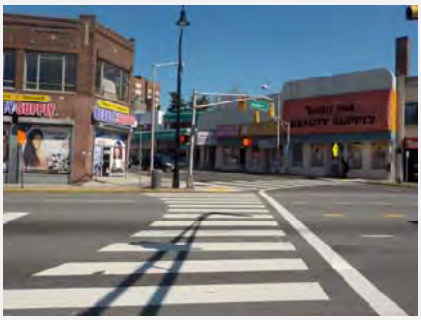
(pause presentation)

Post Audit Analysis

(resume presentation)

RSA Schedule

9:00a	• Welcome and Introductions • Project Overview Presentation
10:30a	• Field Visit and Observations
12:30p	• Lunch and Regroup at Presentation Location
2:00p	• **Discuss Observations** • **Make Recommendations**
3:30p	• Adjourn



Ergonomic crosswalks at Clinton Ave

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Post Audit Analysis

Observations

What elements of the road may present a safety concern?: to what extent, to which road users, and under what circumstances?

What opportunities exist to eliminate or mitigate identified safety concerns?

Recommendations

- What corridor safety issues did you observe?
- What localized safety issues did you observe?
- What improvements would you make?
- Are any of the FHWA countermeasures beneficial?

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Next Steps

- Preparation of RSA Report
- Review/comments from RSA Team
- Preparation of Preliminary Final Report
- NJDOT review
- Preparation of Final Report
- Approximate timeframe: 12 weeks

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Thank you!
Questions/Comments

APPENDIX I

EXCERPTS FROM ESSEX COUNTY REPORT

ESSEX COUNTY
COMPREHENSIVE TRANSPORTATION PLAN

FINAL PLAN
Chapters 1-6

June 2013

Prepared by:

Dewberry

In association with:
Maser Consulting, P.A.
Stump/Hausman Partnership

NJTPA
NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

Chapter 1: Executive Summary

The Plan

The Essex County Comprehensive Transportation Plan (hereinafter referred to as Plan) was developed to meet mobility and transportation safety needs across Essex County, New Jersey through the year 2035. The Plan is consistent with and supports the many goals and objectives of the North Jersey Transportation Planning Authority's (NJTPA) Plan 2035. It outlines a vision for a more comprehensive County-wide transportation system that maximizes investments, promotes efficiency and safety and promotes the use of travel mode alternatives to driving alone. Recommendations that were developed for this Plan reflect the priorities of local, state, and regional stakeholders to support economic development, environmental sustainability and mobility throughout the County.

This Plan takes into account the County's existing transportation network and services and land use characteristics. It then evaluates the adequacy of the transportation system to meet travel needs through 2035. The role and potential contribution to meet future needs by every mode of travel including pedestrians, bicyclists, motor vehicles, public transportation, and air travel access and freight movement were established.

Background

The current Essex County Transportation Plan has not been updated since 1984. Transportation planning changes have occurred at all levels of government and most assumptions of the 1984 plan have since become outdated.

Essex County is located in the northeast portion of New Jersey, bordered by Passaic County to the north; Bergen and Hudson County to the east, Union County to the south and Morris County to the west (see Figure 1). It is part of the New York metropolitan area and is the second densest county, behind Hudson County, in New Jersey. The City of Newark is the largest municipality within the state, in population. The Borough of Caldwell is the smallest municipality in terms of land area and Essex Fells has the lowest population in the County. Generally, the eastern portion of the county would generally be considered a mature urban area while the western portion is more suburban and rural. Newark Liberty International Airport is located in the southeast portion of the county and is one of the three New York metropolitan airports, LaGuardia and JFK International Airport, operated by the Port Authority of New York & New Jersey (the Port Authority). Additionally, the Port Authority operates the Port Newark-Elizabeth Marine Terminal in the county, the largest port facility on the East Coast and third largest nationally. The Port Newark-Elizabeth Marine Terminal is located on the Newark Bay and serves as the principal container ship facility for goods entering and leaving the New York-New Jersey metropolitan area.

The County-owned radial roads, including Bloomfield Avenue, Springfield Avenue, Clinton Avenue, and South Orange Avenue, serve both local and regional travel, including travel to and from NYC. It therefore is no surprise that intersections and segments on these road experience recurring congestion that will only worsen as the area grows over the years. Common points of congestion within many parts of the County often occur in areas of high pedestrian activity, with resulting effects on pedestrian mobility and safety and hazardous conditions for bicycle mobility. Part of the challenge to developing this Plan update is that limited opportunities exist to do any widening within County road rights-of-way (ROW) for additions of turn lanes to improve efficiencies for vehicle and bus travel or even bicycle lanes and sidewalk, in some cases. Invariably, these ROWs have long-established properties abutting them as well as a tangle of utilities that require special accommodations. The keys to a successful Plan therefore involve recognizing and managing the constraints that exist along the County ROWs and designing improvements that complement the particular travel characteristics of land uses in the area. Such improvement projects could include not only targeted physical changes to the roadway but also transit and non-motorized programs such as Bike Sharing as well as changes to Site Development regulations to promote site designs that call for less (or more efficient) motorized travel or more travel via other modes.

The Public Planning Process

The planning process for this Plan combined a comprehensive analysis of the transportation

network with an extensive public outreach program to promote dialogue on transportation needs and priorities. Technical findings, stakeholder and public input were integrated to produce a series of maps devoted to each mode of transportation. These maps evolved over the course of the planning process as new information was generated, forming a record of existing conditions and an inventory of the needs assessment. Other factors of technical work included review of the North Jersey Regional Transportation Model - Enhanced (NJRTM-E) travel demand model, municipal master plans and scenario analysis to gauge the impact of demographic shifts on the transportation system through 2035.

The Plan Vision and Goals

The plans vision statement was developed through discussions and meetings with members of the Steering Advisory Committee (SAC), as follows:

> ***Develop a safe coordinated and integrated multimodal transportation system that provides accessibility for all users while promoting connectivity, economic vitality and productivity, our communities' livability, and our ecosystem's viability.***

Five broad goals were developed to achieve the Plan vision, as follows:

1. Maintain a Safe & Efficient Roadway System
2. Increase the Use of Mass Transit
3. Increase and/or provide opportunities for walking & bicycling
4. Connectivity for all modes of Transportation
5. Foster and Support Development & Industrial Growth

The goals are based on analysis of the existing transportation system, modeling of future conditions, discussions with the Steering Advisory Committee (SAC) and Community Stakeholders members.

Key Elements

The framework of this plan was developed based on the following key elements:

1. Complete Streets Policy
2. Multi-modal Existing Inventory
3. Multi-modal Needs Assessment
4. Multi-modal Evaluation and Assessment

These elements were used to compile the existing inventory and needs assessment, as well as, organize the findings and recommendations presented in this plan.

The first key element, Complete Streets Policy, underscores the other elements of the Plan to ensure that all travel modes are sufficiently accounted for and incorporated into a new corridor classification system, according to a Transect Zone. Transect refers to a type of urban form or physical characteristics of an area, generally described as ranging from rural to an urban core. As applied in the ECCTP, a Transect Zone refers to the character of land uses through which a County road traverses. The corridor classification system will be developed as part of an update to the Essex County Land Development Standards, which this Plan supports.

As part of the remaining three key elements of this plan, the project team collected a multi-modal inventory of existing transportation facilities. This information was gathered from available data and through our public outreach program. In a similar fashion, we collected the multi-modal transportation needs. Through an evaluation and assessment criteria established as part of this Plan, the top nine intersections in the greatest need of improvement were analyzed for multimodal enhancements. Recommendations for the nine intersections have been provided as part of this Plan for immediate implementation by the County. Recommendations for all other projects and strategies have been divided into modes of travel and suggested timeframes of implementation.

Conclusion

The Essex County Comprehensive Transportation Plan provides a set of priorities and recommendations to build a comprehensive transportation network for the future of Essex County, which includes roadway, transit, bicycle pedestrian, freight and aviation projects as well as supportive policy recommendations. The key concepts focus potential investments in areas where they can positively impact the environment, economic development, efficiency

of the existing transportation system, and quality of life for all Essex County residents. The Complete Streets Policy sits at the center of all concepts and sets the precedent for safely accommodating opportunities for all users and reinforces the connection between land use and transportation.

Table 8: Summary of Transit Services

Municipality	Population (2010)[1]	Transit Trips (2011)[2]	Projected Transit Trips (2035)[3]	Light Rail Stations[4]	Rail Stations/ Jitney[4]	Newark Bus Routes[4]	New York Bus Routes[4]
Belleville	35,926	2,882	3,350	1		9	2
Bloomfield	47,315	6,444	7,608	1	2	7	5
Caldwell	7,822	674	785			2	3
Cedar Grove	12,411	916	1,151			2	1
City of Orange	30,134	6,050	7,193		2	10	2
East Orange	64,270	13,398	15,569		2	11	3
Essex Fells	2,113	122	162			1	
Fairfield	7,466	270	307			2	
Glen Ridge	7,527	2,084	2,310		1 / Jitney	4	
Irvington	53,926	10,396	12,122			8	1
Livingston	29,366	2,568	2,752		Jitney	5	1
Maplewood	23,867	6,196	6,291		1 / Jitney	5	1
Millburn	20,149	4,348	4,483		2	1	
Montclair	37,669	8,926	10,587		6	4	6
Newark	277,140	53,990	64,184	15	3[5]	28	4
North Caldwell	6,183	400	477			1	
Nutley	28,370	3,292	3,934		Jitney	5	5
Roseland	5,819	170	184			2	3
South Orange	16,198	4,326	4,940		2 / Jitney	1	1
Verona	13,332	1,116	1,385			3	3
West Caldwell	10,759	360	432			2	5
West Orange	46,207	6,750	7,620		Jitney	5	5
ESSEX COUNTY	783,969	122,678	157,826	17	20	28	16

Sources: 1. US Census; 2. American Community Survey 2007-2011; 3. NJRTM-E growth 2011 to 2035 applied to ACS 2011; 4. NJ TRANSIT; 5. Includes PATH & AMTRAK Service

Chapter 3: Public Outreach

The ECCTP planning process included an extensive series of efforts in public involvement and outreach. As part of this effort, the project team held Steering Advisory Committee (SAC) and Community Involvement Stakeholders (CIS) meetings. This allowed stakeholders on a regional and local level to participate as well as share ideas that could be incorporated into the development of various transportation projects. This chapter of the ECCTP chronicles the public involvement efforts and identifies the links between community input and development of the candidate project list. Meeting agendas, minutes, attendance sheets and presentation materials for all meetings have been included in Appendix C.

3.1 Early Coordination Efforts

The first major actions of the ECCTP process involved the formation of the guiding committees that were intended to help the project team. This effort began immediately after the project kick-off meeting held in May 2012. The Public Outreach Plan for the ECCTP was anchored by a set of two committees, the SAC and CIS which engaged local and regional government staff who are more directly involved in day-to-day operations to assess transportation issues and decisions.

3.2 Steering Advisory Committee Meetings

The project team built upon an existing list of the stakeholders provided by the Essex County Department of Public Works and identified others that have the desire or need to be involved in this process. The SAC member list was a living document that was updated periodically with approval from Essex County and the NJTPA. The SAC members were tasked with the following:

- Assist the County and the project team in developing the ECCTP's vision statement;
- Identify stakeholders, community groups and partners associated for public participation activities;
- Develop, guide and participate in community involvement activities;
- Guide the development of sections in the ECCTP;
- Review and provide feedback to the Core Team on draft and final ECCTP;
- Review the final report's short, medium and long term transportation projects and strategies, and;
- Ensure that the final report clearly identifies the implementation priorities along with agencies responsible for each project hand-off.

3.2.1 Defining a Vision, Goals & Objectives

The first SAC meeting was held on August 22, 2012 and included representatives from NJTPA, NJDOT, NJ TRANSIT, Essex County Transportation Advisory Board, Essex County Division of Senior Services, Essex County Planning Board, Essex County Environmental Commission, Newark Regional Business Partnership, Maplewood Township Engineer, Cedar Grove Deputy Mayor, and the South Orange/ Lackawanna Coalition. The project team used this meeting to introduce the project process of the ECCTP and gather input. Based on the first SAC meeting, the project team reviewed the minutes of meeting and compiled draft Vision, Goals and Objectives for discussion and consensus at the next SAC meeting. The Vision, Goals and Objectives developed are as follows:

Develop a safe coordinated and integrated multimodal transportation system that provides accessibility for all users while promoting connectivity, economic vitality and productivity, our communities' livability, and our ecosystem's viability.

Goal 1: Maintain a Safe & Efficient Roadway System

- Provide better inter- and intra-county mobility;
- Enhance connections between roadways and other transportation modes;
- Provide safe access and mobility for all roadway users;
- Reduce the negative impacts of vehicle use, and;
- Provide accommodations for freight mobility.

Goal 2: Increase the Use of Mass Transit

- Enhance bus stops and rail/light rail stations with infrastructure and amenities that will meet the needs of all users;
- Improve safe multimodal access to and from stops/stations;
- Market the benefits of transit use;
- Better integrate transit and land use through county subdivision and site plan regulations;
- Provide options for non-drivers, and;
- Reuse of existing abandoned rail lines.

Goal 3: Increase &/or provide opportunities for walking & bicycling

- Designate bicycle routes and/or bike lanes;
- Encourage bike and pedestrian friendly development through revisions to the county subdivision and site plan regulations;
- Promote the adopted complete streets policy;
- Promote the benefits of safe bicycling and walking through advocacy and education, and;
- Ensure a thought-out pedestrian (sidewalk) network.

Goal 4: Connectivity for all modes of Transportation

- Sidewalk connectivity at transit facilities;
- Inter-municipality and Inter-County connectivity of bicycling facilities, and;
- Coordination between bus and rail transit.

Goal 5: Foster and Support Development & Industrial Growth

- Provide for planning policy for development that will support multi-modal connectivity;
- Allow for the safe transport of goods within the County, and;
- Provide for efficient use of land within the County's industrial zone;

A second SAC meeting was held on October 11, 2012 to discuss the Vision, Goals and Objectives derived by the project team from discussions by the SAC at the first meeting, and review of the technical analysis. The SAC members identified intersections within the County that pose operational or safety problem that need to be reviewed as part of the ECCTP, they are as follows:

1. Mount Prospect Avenue and Bloomfield Avenue (Newark)
2. Pedestrian Safety along Bloomfield Avenue (Montclair)
3. Millburn Avenue and Main Street (Millburn)
4. South Orange Avenue between Prospect Street and Springfield Avenue (South Orange)
5. Bloomfield Avenue and Grove Street (Montclair)
6. Springfield Avenue between New Street and Grove Street (Irvington)
7. South Orange Avenue and Prospect Street three blocks towards Newark (South Orange)
8. East Bradford Avenue and Crestmont Road and Woodstone Drive (Cedar Grove)

Information gathered from the SAC meeting has been incorporated into Figure 9 – Needs Assessment – Public Outreach.

3.3 Community Involvement Stakeholder Meetings

The engineers, planners and mayors of each of the 22 municipalities were invited to participate as Community Involvement Stakeholders (CIS). A questionnaire was distributed via email to the attendees for completion prior to the meetings in order to help spur discussion on the transportation needs within their community.

Two meetings were held on December 5, 2012 with the western municipalities attending a morning session and the eastern municipalities attending the afternoon session. A meeting with the City of Newark and Port Authority of NY/NJ was held on December 17, 2012 and a meeting with Verona Township officials on January 11, 2013.

We received completed questionnaires from 10 of the 22 municipalities as follows: Bloomfield, Essex Fells, West Caldwell, Glen Ridge, Livingston, Maplewood, Newark, North

Table 20: Essex County Plan4Safety Crash Data		
Municipality	**Intersection**	**No. of Incidents**
Irvington	Springfield Avenue & Grove Street	38
Verona	Pompton Avenue & Bloomfield Avenue	38
Newark	McCarter Highway & Clay Street	34
Belleville	Franklin Avenue & Mill Street	34
Newark	Springfield Avenue & Bergen Street	33
Newark	Market Street & 1st Street	32
Bloomfield	Bloomfield Avenue & Grove Street	32
Belleville	Rutgers Avenue & Cortland Street	32
East Orange	Central Avenue & Steuben Street	32
East Orange	Springfield Avenue & Elmwood Avenue	31

Source: Essex County Plan4Safety Crash Records

4.1.3 SAC Candidate Projects

As part of the Essex County Comprehensive Plan, a Steering Advisory Committee (SAC) was established to assist in the development of the ECCTP goals and objectives. During the second SAC Meeting, held on October 11, 2012, the committee members were asked to identify potential candidate projects within the County to be investigated as part of the ECCTP. The locations identified by the SAC at this meeting are listed in Table 21 and shown on Figure 9.

Table 21: Deficient Intersections identified by SAC	
Intersection	**Municipality**
Mount Pleasant Avenue in proximity to Bloomfield Avenue	Newark
Pedestrian Safety along Bloomfield Avenue	Montclair
Millburn Avenue and Main Street	Millburn
South Orange Avenue between Prospect Street and Springfield Avenue	South Orange
Bloomfield Avenue and Grove Street	Montclair
Springfield Avenue from New Street and Grove Street	Irvington
South Orange Avenue and Prospect Street three blocks towards Newark	South Orange
Bradford Avenue and Tremont Street	Cedar Grove

Source: SAC Meeting October 11, 2013

4.1.4 Public Outreach Candidate Projects

To determine potential projects within the 22 municipalities in Essex County, a series of Community Involvement Stakeholders (CIS) meetings were held by the ECCTP team. The goal of these meetings was to present the ECCTP to the community representatives, discuss the goals and objectives of the plan and identify projects and implementation strategies that would address and enhance multi-modal connectivity within Essex County for incorporation into the ECCTP. These meetings developed multiple projects, goals and initiatives to be investigated as part of the ECCTP. In addition, questions were distributed to all the municipalities to determine local transportation needs. The questionnaires received, included in Appendix C, were reviewed for potential projects which have been included in this plan.

4.1.5 Regional Travel Demand Model-Derived Candidate Projects

The North Jersey Regional Transportation Model – Enhanced (NJRTM-E) was used to identify locations, or County road segments, that have or are expected to have operational and/or capacity issues based on an assessment of volume/capacity ratios (V/C). The NJRTM-E is the regional transportation model for Northern

TABLE 26: CANDIDATE PROJECT LIST AND PRIORITY

Region	Location No.	Candidate Project Location			No. of Intersections	Traffic Signal Control	ASSESMENT CATEGORIES									Total Identified Assement Categories[5]	Rank[6]
							Project Identification[1]		Operational Analysis[2]		Plan4Safety[3]			Mass Transit[4]			
		Municipality	Major Street	Minor Street			Essex County	Public Outreach	v/c > 0.80	Max v/c ratio	Crashes > 15	# of Crashes	Top 10	< 1/4 Mile	Type		
EASTERN MUNICIPALITIES	1	Belleville Township	Rutgers Street (CR 506)	Cortland Street	1	●					●	32	●	●	Bus Stop	3	10
	2	Belleville Township/ City of Newark	Franklin Avenue (CR 645)	Belleville Avenue (CR 506)	3	●		●		0.57	●	26		●	Bus Stop	4	3
				Mill Street				●		0.37	●	34	●				
				Clara Maas Drive				●		N/A		8					
	3	Bloomfield Township	Bloomfield Avenue (CR 506)	Grove Street (CR 509)	1	●		●	●	1.02	●	32	●	●	Light Rail	5	**2**
	4	Bloomfield Township	Broad Street/Franklin Street (CR 509)	CR 663/Broad Street/ Liberty Street	1	●	●	●	●	0.96				●	Rail	4	9
	5	Bloomfield Township	Franklin Street (CR 509)	Watsessing Avenue (CR 509)	1	●	●	●	●	0.94		7		●	Bus Stop	4	8
	6	Nutley Township	West Passaic Avenue/ Darling Avenue (CR 622)	Kingsland Street (CR 644)	1	●	●		●	1.07		9		●	Bus Stop	3	12
	7	City of Orange	Central Avenue (CR 508)	Scotland Road (CR 658)	2	●		●		0.66		11		●	Rail	2	15
				South Central Street				●		N/A							
	8	East Orange City	Central Avenue (CR 508)	Stueben Street/18th Street	1	●			●	0.95	●	32	●	●	Bus Stop	4	5
	9	Irvington Township	Coit Street (CR 509)	Chancellor Avenue (CR 601)	2	●	●		●	0.93	●	28		●	Bus Stop	4	6
				Lyons Avenue (602)			●		●	1.02							
	10	Irvington Township	Grove Street (CR 509)	Coit Street (CR 509)	2	●	●		●	0.98	●	17		●	Bus Stop	4	4
				Lyons Avenue (602)			●		●	0.90	●	20					
	11	Irvington Township	Springfield Avenue (CR 603)	Clinton Road (CR 665)	2	●		●	●	0.97	●	30		●	Bus Stop	5	**1**
				Grove Street (CR 509)				●	●	0.88	●	38	●				
	12	Irvington Township	Springfield Avenue (CR 603)	Elmwood Avenue	1	●					●	31	●	●	Bus Stop	3	11
	13	Montclair Township	Watchung Avenue (CR 655)	Valley Road (CR 621)	2	●		●		0.69		12		●	Bus Stop	2	13
				Grove Street (CR 623)				●		0.68		13					
	14	Montclair Township/ Glen Ridge Borough	Watchung Avenue (CR 655)	Ridgewood Avenue (653)	2	●		●	●	1.08		6				2	14
				Grove Street (CR 623)				●	●	0.82		12					
	15	South Orange Village Township	South Orange Avenue (CR 510)	Scotland Rd/Valley St (CR 658)	1	●		●	●	0.90	●	25		●	Rail	4	7
WESTERN MUNICIPALITIES	16	Cedar Grove Township	Bradford Avenue (CR 640)	Cresmont Street	2			●		N/A						1	13
				Woodstone Drvie				●		N/A							
	17	Essex Fells Township	Roseland Avenue (CR 527)	Runnymede Road (CR 633)	2			●	●	1.02				●	Bus Stop	3	11
				Borough Place				●		N/A							
	18	Livingston Township	Passaic Avenue (CR 607)	South Orange Avenue (CR 510)	2	●		●	●	0.89	●	15		●	Bus Stop	4	5
				Parsonage Hill Road (CR 606)				●		0.70							
	19	Livingston Township	South Orange Avenue (CR 510)	Eisenhower Pkwy (CR 609)	1	●	●			0.72	●	19		●	Bus Stop	3	7
	20	Millburn Township	Main Street (CR 527)	Millburn Avenue (CR 577)	2	●		●	●	1.04	●	26		●	Rail	4	**2**
				Essex Street				●	●	1.04							

This information will be combined with the operational data analysis to develop future improvements and recommendations at each location. The following sections detail the assessment of the existing conditions.

A. Existing Deficiencies

The project team reviewed the existing conditions at the nine intersections to determine deficiencies related to safety, operations and capacity. Members of the team visited each of the intersections and evaluated site conditions, existing plans, traffic signal timing directives, capacity analysis and crash records to identify the issues at each location.

Bloomfield Avenue (CR 506) and Grove Street (CR 509) in Bloomfield Township

- Missing advance lane assignment signs on the westbound approach to Grove Street;
- Faded and worn pavement markings on Grove Street approaches, missing double yellow center roadway striping;
- An insufficient number of three (3) pedestrian push buttons provided for Bloomfield Avenue crossing;
- Driveway overlapping along with bus stop locations on Grove Street westbound approach causing congestion, and;
- 8-inch traffic signal indications on some approaches which is a MUTCD Violation.

Springfield Avenue (CR 603) and Clinton Road (CR 665) in Irvington Township

- Faded and worn pavement markings throughout intersection including crosswalks;
- No pedestrian push buttons;
- High pedestrian traffic, jaywalking prevalent throughout this intersection;
- Traffic signal transformer base is not the correct breakaway type;
- Double parking prevalent throughout intersection;
- Signal phasing causes conflict between Clinton Road eastbound and Nye Avenue eastbound approaches;
- Congestion due to bus terminal;
- Vehicles making prohibited turning movement, and;
- Bus stops at corners causing congestion.

Springfield Avenue (CR 603) and Grove Street (CR 509) in Irvington Township

- MUTCD sign violations for sizes and types;
- Faded and worn pavement markings throughout intersection, including crosswalks;
- Broken mast arm street name sign, Grove Street;
- No pedestrian push buttons, and;
- NJ TRANSIT bus stop on southwest corner causing congestion.

Main Street (CR 527) and Millburn Avenue (CR 577) in Millburn Township

- Faded and worn pavement markings throughout intersection, including crosswalks;
- No pedestrian push buttons;
- High pedestrian traffic;
- Police presence at intersection to help with school traffic, causes congestion;
- No vehicle detection, and;
- Pedestrian indication far from crosswalk on northwest corner of intersection.

Main Street (CR 527) and Essex Street, in Millburn Township

- Faded and worn pavement markings throughout intersection, including crosswalks;
- No pedestrian push buttons;

Figure M

Location No. 11: Springfield Avenue (CR 603) and Grove Street (CR 509)
Municipality: Irvington Township
County: Essex

[CRASH.CRASH_YEAR in (2009, 2010, 2011) AND [[CRASH.SRI = 07000603 AND CRASH.MILEPOST between 1.52 AND 1.54] OR [CRASH.SRI = 00000509 AND CRASH.MILEPOST between 10.32 AND 10.34]]]

Crash Type	Frequency	Cum. Freq.	Percentage	Cum. Percent.
Same Direction - Rear End	14	14	23.33	23.33
Same Direction - Side Swipe	11	25	18.33	41.67
Right Angle	5	30	8.33	50
Opposite Direction - Head On/Angular	1	31	1.67	51.67
Opposite Direction - Side Swipe	3	34	5	56.67
Struck Parked Vehicle	3	37	5	61.67
Left Turn / U Turn	12	49	20	81.67
Backing	2	51	3.33	85
Fixed Object	1	52	1.67	86.67
Pedestrian	8	60	13.33	100

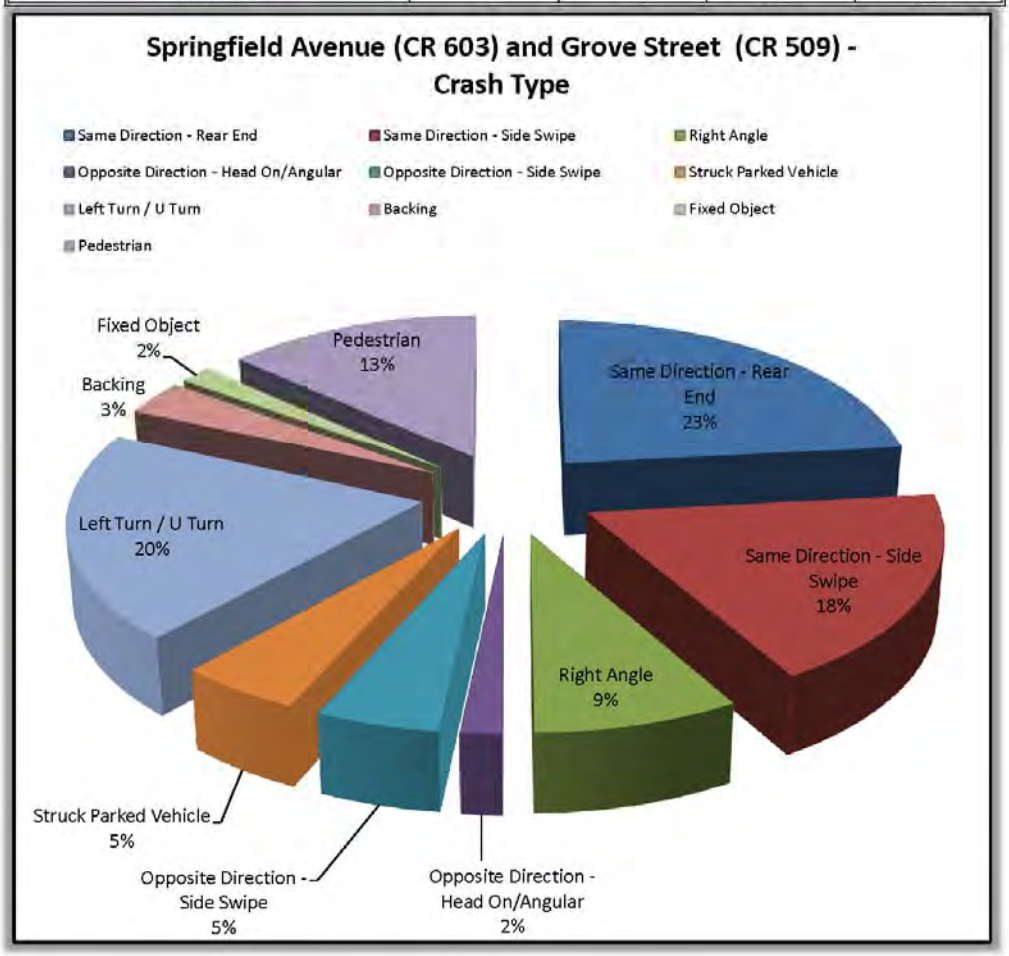

Figure N

Location No. 11: Springfield Avenue (CR 603) and Clinton Avenue
Municipality: Irvington Township
County: Essex

[CRASH.CRASH_YEAR in (2009, 2010, 2011) AND [[CRASH.SRI = 07000603 AND CRASH.MILEPOST between 1.10 AND 1.12] OR [CRASH.SRI = 07000665 AND CRASH.MILEPOST between 2.21 AND 2.23] OR [CRASH.SRI = 07091822 AND CRASH.MILEPOST between 1.74 AND 1.76]]]

Crash Type	Frequency	Cum. Freq.	Percentage	Cum. Percent.
Same Direction - Rear End	14	14	41.18	41.18
Same Direction - Side Swipe	5	19	14.71	55.88
Right Angle	7	26	20.59	76.47
Opposite Direction - Head On/Angular	1	27	2.94	79.41
Struck Parked Vehicle	2	29	5.88	85.29
Fixed Object	1	30	2.94	88.24
Pedestrian	4	34	11.76	100

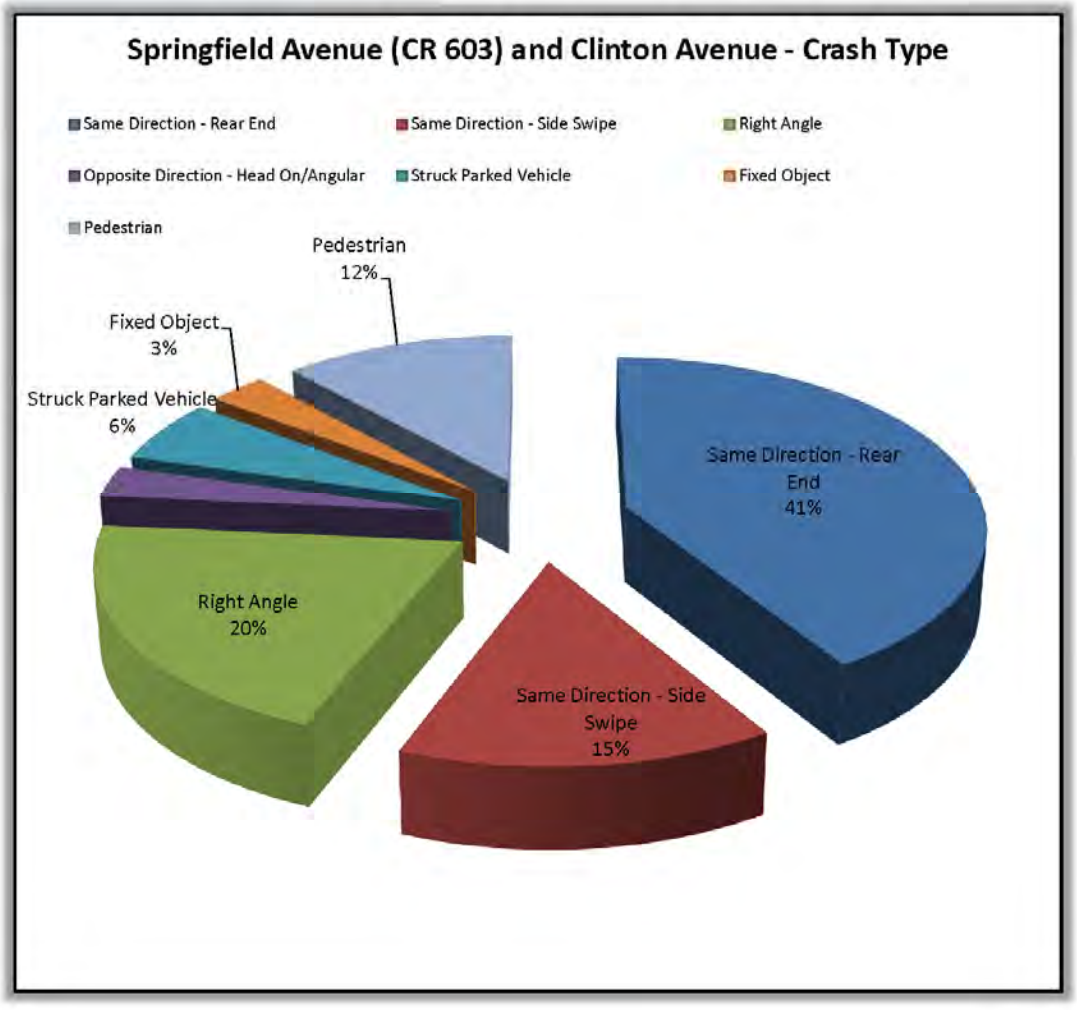

Table 36 – Technical Projects Multi-Modal Assessment						
Region	**Location No.**	**Municipality**	**Major Street**	**No. of Bus Lines**	**Rail Walking Distance**	**Bus-to-Rail Connection**
Eastern	3	Bloomfield Twp.	CR 506	7	0.1 (Light)	Yes (90)*
	11	Irvington Twp.	CR 603	3	3.7 (Rail)	Yes (25)*
Western	20	Millburn Twp.	CR 527	4	0.2 (Rail)	Yes (25)*
	24	Verona Twp.	CR 506	1	0.3 (Rail)	No
	28	West Orange Twp.	CR 508	1	0.2 (Rail)	No
Newark	31	City of Newark	CR 506S	1	1.3 (Rail)	Yes (29)*

**NJ Transit Bus Number.*

It should be noted that for the weighing of mass transit, LEED uses ¼ mile walking distance to a bus stop served by two or more bus lines or two bus stops served by at least one bus line; ¼ mile walk to light rail; and ½ mile walking distance to rail, BRT or ferry. This criterion is an important aspect of the existing assessment and future improvements.

5.4.5 Summary and Recommendations

The following section summarizes the Technical Evaluation of the Candidate Project List with respect to existing deficiencies, crash data and operational analysis.

A. Location No. 3: Bloomfield Township

Existing Deficiencies

- Substandard signing, striping and signal equipment present on multiple approaches.

Crash Occurrence

- The most prevalent crash types reported were same direction – rear end (15), and same direction – sideswipe (10), which accounted for 60% of crashes.
- The left-turn/U-turn (7) and right angle (5) crash types accounted for an additional 29%.

Traffic Operations

- There is an existing failing condition (LOS "F") on the Northbound and Southbound approaches of Grove Street (CR 509).

Multi-Modal/Mass Transit Assessment

Qualifies for LEED Credit (located within ¼ mile walking distance of light rail and ¼ mile walking distance of bus stops serving two lines).

B. Location No. 11: Irvington Township

Existing Deficiencies

- A high volume of illegal/jaywalking pedestrian movements reported during field investigation.
- Bus stop locations, double-parked vehicles and terminal location results in congestion.
- Signal Phasing Conflicts between Clinton Road and Nye Avenue.
- Sign types and sizes are non-compliant with MUTCD at Grove Street.

Crash Occurrence

- The most prevalent crash types reported at Springfield Avenue and Grove Street was in the same direction – rear end (14), left-turn/U-turn (12) and same direction – sideswipe (10), which accounted for 62% of crashes.
- Eight pedestrian crashes were recorded at the intersection of Springfield Avenue and Grove Street, accounting for 13.33%of crashes.
- Same direction – rear end (14) crashes were the most prevalent crash type reported at Springfield Avenue and Clinton Road (41.18% of crashes).
- Right-Angle Crashes (7, or 20.59%) were the second-most occurring crash type.

Traffic Operations

- The existing traffic operations of Springfield Avenue and Grove Street are acceptable, with the highest delay (LOS "D"/37.2 sec/veh) experienced on the eastbound approach of Springfield Avenue (603) during the PM Peak Hour.
- The Eastbound approach of Springfield Avenue at Clinton Road experiences the highest delay (LOS "D") during both the AM and PM Peak Hour.

Multi-Modal/Mass Transit Assessment

Qualifies for LEED Credit (located within ¼ mile walking distance to a bus stop served by two or more bus lines or two bus stops served by at least one bus line).

C. Location No. 20: Millburn Township

Existing Deficiencies

- Pre-timed signals with high pedestrian traffic and no push-button actuation.
- No vehicle detection and police presence result in traffic congestion during school hours.

Crash Occurrence

- Same direction – rear end (18) and same direction – sideswipe (21) crashes accounted for 67% of crash types.
- Four pedestrian crashes were recorded at the intersection of Main Street and Millburn Avenue.
- There were five crashes which included parked vehicles.

Traffic Operations

- The northbound approach of Main Street and Millburn Avenue operates at LOS "D" with a delay of 39.8 sec/veh in the AM Peak Hour.
- There is a significant southbound traffic volume along Main Street during the PM Peak Hour, which results in LOS "D" operating conditions at both intersections of Main Street.

Multi-Modal/Mass Transit Assessment

Qualifies for LEED credit (located within ½ mile walking distance of rail and ¼ mile walking distance of bus stops serving two lines).

D. Location No. 24: Verona Township

Existing Deficiencies

- MUTCD sign and signal non-compliance.

Crash Occurrence

- Same direction – rear end (29) and same direction – sideswipe (29) crashes accounted for 70% of crash types.
- Seven right-angle and six left-turn/U-turn crashes were reported at this intersection.

Traffic Operations

- The Northbound approach of Pompton Avenue operates with the highest delay and lowest LOS, LOS "E" during the AM Peak Hour and with failing conditions (LOS "F") during the PM Peak Hour.

Multi-Modal/Mass Transit Assessment

Qualifies for LEED credit (located within ½ mile walking distance of rail).

Appendix D: Essex County Complete Streets Policy

www.dewberry.com

COUNTY OF ESSEX, NEW JERSEY
BOARD OF CHOSEN FREEHOLDERS

State of New Jersey,}
County of Essex } ss

I Deborah Davis Ford Clerk of the Board of Chosen Freeholders of the County of Essex in the State of New Jersey Do Hereby Certify, the foregoing to be a true copy of a resolution adopted at a meeting of said Board on Wednesday the 25th day of April 2012, together with the certification, signatures and endorsements thereon.

RESOLUTION NO: R-2012-00392

IN Testimony WHEREOF, I have hereunto set my hand and affixed the official seal of said County at Newark this 17th day of December A.D. 2012

Clerk

PLEASE NOTE: Resolution Nos. R-12-0392, become R-2012-00392, as per Ordinance No. O-2011-00010, adopted August 17, 2011.

42

RESOLUTION OF THE BOARD OF CHOSEN FREEHOLDERS
COUNTY OF ESSEX

RESOLUTION NO. R-12-0392
PROPOSED BY: FREEHOLDER GILL

AUTHORITY FOR RESOLUTION N.J.S.A. 40:41A-38(q)
AUTHORITY FOR ACTION C.C.E. 3:2-29(B)

SUBJECT:

RESOLUTION ESTABLISHING AND ADOPTING AN ESSEX COUNTY COMPLETE STREETS POLICY

WHEREAS, a Complete Street is defined as a means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options; and

WHEREAS, the benefits of Complete Streets include improving safety for pedestrians, bicyclists, children, older citizens, non-drivers and the mobility challenged as well as those that cannot afford a car or choose to live car free; providing connections to bicycling and walking trip generators such as employment, education, residential, recreation, retail centers and public facilities; promoting healthy lifestyles; creating more livable communities; reducing traffic congestion and reliance on carbon fuels thereby reducing greenhouse gas emissions; and saving money by incorporating sidewalks, bike lanes, safe crossings and transit amenities into the initial design of a project, thus sparing the expense of retrofits later; and

WHEREAS, the Essex County Board of Chosen Freeholders wishes to establish a Complete Streets policy though the planning, design, construction, maintenance and operation of new and retrofit transportation facilities, enabling safe access and mobility; and

WHEREAS, it is the intent of the Board of Chosen Freeholders that to the extent practicable, the Essex County Complete Streets policy shall include all road, bridge, and building projects.

NOW, THEREFORE, be it resolved that the Essex County Board of Chosen Freeholders establish the following Complete Streets Policy with the following goals and objectives:

1. Provide safe and accessible accommodations for existing and future pedestrian, bicycle and transit facilities.
2. Establish a checklist of pedestrian, bicycle and transit accommodations such as accessible sidewalks curb ramps, crosswalks, countdown pedestrian signals, signs, curb extensions, pedestrian scale lighting, bike lanes, and shoulders for consideration in each project where county jurisdiction applies.
3. Additionally, in rural areas, paved shoulders or a multi-use path shall be in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders provide safety and operational advantages for all road users. Exemptions shall be considered for County and State designated routes such as Scenic Roads, and Historic or Cultural Byways. If there is evidence of heavy pedestrian usage then sidewalks shall be considered in the project.
4. Establishment of a procedure to evaluate resurfacing projects for Complete Streets inclusion according to length of project, local support, environmental constraints, right-of-way limitations, funding resources, and bicycle and/or pedestrian compatibility.
5. Transportation facilities constructed for long-term use shall anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements.
6. Designs shall address the need for bicyclists and pedestrians to cross corridors, as well as travel along them, in a safe, accessible and convenient manner.
7. Bicycle and pedestrian facilities shall be designed and constructed to the best currently available standards and practices including the New Jersey Roadway Design Manual, the AASHTO Guide for the Development of Bicycle Facilities, AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities, the Manual of Uniform Traffic ControlDevices and others as related.

8. Provisions shall be made for pedestrians and bicyclists when closing roads, bridges or sidewalks for construction projects as outlined in NJDOT Policy #705 -Accommodating Pedestrian and Bicycle Traffic During Construction.

9. Improvements shall also consider connections for Safe Routes to Schools, Safe Routes to Transit, Transit Villages, trail crossings and areas or population groups with limited transportation options.

10. Improvements shall comply with Title Vll Environmental Justice, Americans with Disabilities Act (ADA) and complement the context of the surrounding community.

11. Exemptions to the Complete Streets policy shall be presented for final decision to the County Engineer in writing and documented with supporting data that indicates the reason for the decision and are limited to the following:

a) Non-motorized users are prohibited on the roadway.

b) Scarcity of population, travel and attractors, both existing and future, indicate an absence of need for such accommodations.

c) Detrimental environmental or social impacts outweigh the need for these accommodations.

d) Cost of accommodations is excessively disproportionate to cost of project.

e) The safety or timing of a project is compromised by the inclusion of Complete Streets.

f) An exemption other than those listed above must be documented with supporting data and must be approved by the County Engineer.

BE IT FURTHER RESOLVED, that a certified copy of this Resolution shall be sent to the Office of the County Administrator, Office of County Counsel and Department of Public Works.

Approved as to form and legality Michael J. Parkinson

RECORD OF VOTE (X=Vote N.V.=Absention ABS=Absent)

Moved by Freeholder Sebold
Second by Freeholder Beasley

Freeholder	Yes	No	N.V.	ABS	Freeholder	Yes	No.	N.V.	ABS
BEASLEY	✓				LUCIANO	✓			
BOBADILLA	✓				PAYNE, JR				X
CLARK	✓				SEBOLD, VICE PRES.	✓			
GILL	✓								
JOHNSON	✓				WATSON, PRES.	✓			

It is hereby certified that the foregoing Resolution was (X) adopted ( ) defeated ( ) tabled by roll call vote at a Regular meeting of the Board of Chosen Freeholders of the County of Essex, New Jersey held on April 25, 2012.

Is Publication Required ( ) Yes ( ) No

Date Published _____

Blonnie R. Watson

Blonnie R. Watson, President

APPENDIX J

EXCERPTS FROM IRVINGTON TOWNSHIP MASTER PLAN

Adopted

Township of Irvington
Master Plan

PREPARED BY

THE IRVINGTON PLANNING BOARD

~ in consultation with ~

The Irvington Master Plan Task Force

The Irvington Master Plan Advisory Committee

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants
434 Sixth Avenue, Fifth Floor
New York, NY 10011
(212) 475-3030

APRIL 2002

Reprinted December 2002

1 Introduction

In the year 2001, the Township of Irvington is poised for a rebound, after nearly thirty years of hardship. Since the completion of the 1979 Master Plan, Irvington suffered from the effects of crime, poverty, abandonment, and disinvestment, not only within its own borders, but in the surrounding area. The City of Newark, adjacent to Irvington, experienced a long period of decline between the 1960's and the late 1990's, partly as a result of the shrinking of the manufacturing sector.

Then, with the economic boom of the late 1990's, the Newark region was attracting renewed interest from developers for the first time in many years. The construction of the NJ Performing Arts Center and the minor league ballpark, the clearing and reconstruction of dilapidated public housing, and new office renovations in downtown all contributed to the "Newark renaissance". Newark, when compared to Irvington, qualifies for many more state and federal dollars — particularly economic development and housing funds.

The Township has been making a concerted effort to take advantage of the upswing in the Newark economy to bolster Irvington's business climate, attract entrepreneurs, stabilize the real estate market, and build a better quality of life for residents. To this end, the actions of the Urban Enterprise Zone (UEZ) have been invaluable. The UEZ established the Springfield Avenue Corridor and Camptown Street Special Improvement Districts (SACSID and CBID) and has been working to attract new investment in the Coit Street and Olympic Park Industrial Areas. The UEZ has also provided business and property owners with technical assistance. In addition, the UEZ secured the grant funding that was used to prepare this comprehensive update of the Master Plan, and the recommendations in this Plan were closely coordinated with the revitalization efforts of the UEZ.

The completion of the new Master Plan will help the Township secure additional funding from State, federal, and foundation sources. It will also provide the Township with an up-to-date policy document that reflects needs and trends as of 2000, responds to the current concerns of residents, and provides a coordinated vision and direction for Township administration. Most significantly, this plan includes a new zone map for the Township that is intended to strengthen residential neighborhoods and business districts, while providing a framework for the revitalization of ailing areas of town.

The Township prepared the Master Plan update in 1999-2001, through the oversight of a Master Plan Task Force comprised of Township department directors and an Advisory Committee comprised of elected officials, appointed officials, and community members, and with the assistance of the consulting firm of Abeles Phillips Preiss & Shapiro. In preparing the Master Plan, the consultants collected demographic and other background information, and conducted two public meetings in summer 2000. The background information and the public comments from the meetings were used to identify problems, issues, and other areas of concern and to begin to identify potential future solutions. The resulting Master Plan is comprised of a series of goals and objectives, followed by eight elements:

- The Land Use Plan element lays out the future zoning framework for the Township and explains the major changes from the 1979 Master Plan.
- The Housing element summarizes the current condition of the housing stock and instructs the Township to develop a "fair share" plan for affordable housing that meets State requirements.
- The Economic Plan element discusses the major economic development initiatives being pursued by the UEZ.
- The Utilities, Circulation, Community Facilities, and Parks elements discuss the major needs for maintenance and new investment in water, sewer, roads, schools, police facilities, firefighting facilities, and parks.
- The Historic Preservation element identifies strategies for protecting the historic buildings and neighborhoods in the Township.

2 Goals

The goals of the Irvington Master Plan are as follows:

- Change land use patterns to promote economic and population growth and improve the overall quality of life.
- Encourage the creation of new zoning designations to maintain a better balance of land uses and densities.
- Protect residential areas from inappropriate densities and from industrial and commercial land use encroachment.
- Increase employment opportunities and the tax base by diversifying and strengthening the Township's commercial and industrial zones.
- Provide adequate affordable housing opportunities to retain existing residents and attract new residents.
- Encourage homeownership through new construction, rehabilitation, and homeowner assistance programs.
- Encourage the redevelopment of vacant land, abandoned property, buildings in poor condition, and brownfield sites.
- Establish new resources, such as a planning office with a geographic information system, to better manage planning, growth, and development.
- Ensure that the various types of infrastructure meet the needs of residents and businesses.
- Improve transportation access and circulation patterns.
- Ensure community and public facilities, such as schools, parks, fire and police services, meet the needs of the population.
- Improve the overall appearance of the Township.
- Improve and increase the amount and quality of parks and open space, especially near schools and higher density residential areas.
- Strengthen schools as neighborhood centers that serve the educational, recreational, social, and cultural needs of each community.
- Identify and increase cultural and historic resources.

FOREIGN TRADE ZONE

The business community within the Coit Street Industrial Area and members of the CBID started to discuss the feasibility of having the industrial area designated a Foreign Trade Zone, which are zones designated by the U.S. Department of Commerce and operated under the supervision of the U.S. Customs Service. Foreign Trade Zones are treated as though they are located outside U.S. Customs Territory. Import duties on merchandise, while in these zones, can be deferred, reduced, or in some cases eliminated. Therefore, there is substantial savings to be realized through zone usage. Irvington's proximity to Newark International Airport, the Ports of Newark Elizabeth, and I-78 makes the Coit Street Industrial Area an excellent location for a Foreign Trade Zone.

5.3 IRVINGTON CENTER AND SPRINGFIELD AVENUE

In addition to designating Irvington Center and Springfield Avenue as UEZ areas, the Township and the UEZ have put forth numerous proposals for improving the business climate in Irvington Center and along Springfield Avenue. The improvements are intended to improve the accessibility and attractiveness of the center and corridor as shopping destinations. Recommendations include improving facades and landscaping and systematizing circulation patterns, access, and parking.

SPRINGFIELD AVENUE CORRIDOR BUSINESS IMPROVEMENT DISTRICT

The Springfield Avenue Corridor Business Improvement District (SACBID) was established in 1997 and includes businesses fronting on Springfield Avenue, Clinton Ave, Nye Ave, and nearby side streets in the downtown area. Properties included in the SACBID are shown on Figure 5-3. The SACBID was established in order to bring business owners together to join forces with the Township in improvements to the Springfield Avenue corridor.

The SACBID is playing a critical role in the physical redevelopment of downtown. It has the authority to fund the rehabilitation of commercial properties in the SACBID and to accept, purchase, rehabilitate, sell, lease, or manage property in the SACBID. The SACBID can also undertake physical improvements to landscaping, parking, and recreational facilities. The SACBID is able to manage the downtown area as if it were a shopping mall, developing the business climate, marketing the stores and their products, and providing a safe, convenient, and attractive shopping experience for customers. More specifically, the SACBID can provide supplemental security, sanitation, and other services; coordinate publicity; recruit new businesses; and organize special events.

DESIGNATED AREAS IN NEED OF REDEVELOPMENT

As of October 2001, two areas were designated "Areas in Need of Redevelopment" under State law, as shown in Figure 5-4. The first one is in the Coit Street Industrial Area (Blocks 183-186 and 195-197), which was designated in February 2001. The second one is in the East Ward (Blocks 142-143; the east and west sides of 21st Street) and was designated in August 2001. The Township intends to expand both areas subject to the outcome of current studies.The Township Council has authorized three additional areas to be investigated to determine if they are in need of redevelopment: Mill Road, portions of the East Ward, and the entire Coit Street Industrial Area.

- In March 2001, the Township authorized the Planning Board to undertake a redevelopment investigation of the area along Springfield Avenue, between the Garden State Parkway and the Newark City Line
- In March 2001, the Planning Board was authorized to investigate the commercial sites near the Mill Road/Stuyvesant Avenue intersection, including the Getty Gas Station, Village Diner and C-Town Market (Block 38, Lots 24, 25 and 26).
- In June 2001, the Township authorized the Planning Board to undertake an investigation of the entire area between Springfield Avenue and 18th Avenue and between South Grove Street and the Newark City Line (Blocks 135-141, Blocks 144-145).
- In July 2001, the Township authorized the Planning Board to undertake a redevelopment investigation of the Coit Street Industrial Area (Blocks 187-190, 172-177, 178-182, 222-223, and 199-203), which served as an expansion to the "Area in Need of Redevelopment" that was approved by the Council in February 2001.

The results of the investigation for expanded East Ward and the Coit Industrial area investigation are scheduled to be brought before the Planning Board in early 2002 and before the Township Council in mid 2002.

Aside from the Pabst Brewery site, which is described in more detail below, other redevelopment sites that should be studied further include 18th Avenue between Myrtle Avenue and Vermont Avenue and Chancellor Avenue between Rutgers and Temple Place.

BUSINESS DISTRICTS

Businesses along the Township's commercial corridors (Springfield Avenue, Clinton Avenue, Lyons Avenue, Chancellor Avenue, and 18th Avenue) are dependent on pass-by traffic for patronage. Whereas downtown has a compact, clustered form of development that is conducive to pedestrian activity, the commercial corridors are long and linear in nature, favoring automobile access. Because they are already oriented towards cars, the proposed zoning is a mix of B-3 and B-4, which allows auto-oriented commercial development. Off-street parking is critical to maintaining the commercial vitality of these zones.

However, in the case of B-1 Neighborhood Business districts, the residents from the surrounding neighborhood are envisioned as the primary market, and walking is envisioned as the primary mode of access. These small districts have been mapped in areas with traditional corner stores or rows of pedestrian-oriented shops, which are the remnants of streetcar-oriented retail nodes from the early 20th century. In these locations, off-street parking would not be required, and on-street parking would be adequate, because very little business would be expected to come from pass-by traffic.

7.3 TRANSIT

RAIL SERVICE

Irvington is not currently served by passenger rail service. A spur of the Lehigh Valley/Conrail railroad line runs through the Coit Street Industrial Area, but it is used for freight traffic only. Although passenger service was briefly provided in 1915 along the line, it was quickly discontinued due to low patronage. Because of the branch line's circuitous route and short spur configuration, passenger service to Irvington would not offer a significant time savings for most commuters and would not provide a direct or convenient connection to most places of employment. Therefore, ridership and revenue expectations would be low, while the cost of service would be relatively high. It is no surprise that Conrail has expressed no interest in implementing commuter service along the line.

Because of these factors, it is not likely that passenger rail service will come to Irvington in the near future. Bus service is less expensive to provide and is more convenient for most people, because buses can reach many different destinations on local streets and because the downtown Bus Terminal is centrally located. It does not make sense to pursue passenger rail service at the current time.

BUS SERVICE

Several NJ Transit bus routes serve Irvington. Routes run all throughout the Township, but Irvington Center and Springfield Avenue have the most concentrated and frequent bus service. Bus routes that serve Irvington are listed in Table 7-3. Nine bus routes serve the Bus Terminal,

with about 900 bus arrivals and departures and approximately 13,500 passengers each weekday. In addition, two routes serve Springfield Avenue, with about 600 arrivals and departures daily.[13]

The number of bus trips and riders at the Terminal and along Springfield Avenue are extremely high relative to the Township's population of 60,000 residents, and they suggest that buses serve as a critical mode of transportation for residents. Buses provide connections to downtown Newark (including Newark Penn Station), midtown Manhattan (Port Authority Bus Terminal), Newark Airport, Irvington General Hospital, and other local and regional destinations.

Irvington is served by one of the most heavily traveled bus routes in the NJ Transit system — the #13. It provides a direct connection into downtown Newark via Clinton Avenue and Broad Street. For Irvington residents who work in downtown Newark, the #13 is direct and convenient. The connection to the Port Authority Bus Terminal in Manhattan is also a heavily traveled bus route. For Irvington residents, the #107 is the most direct connection into Manhattan. In addition, some residents of the adjacent towns make use of the #107. Although residents of Maplewood, South Orange, and Newark typically prefer the train (NJ Transit or PATH), the #107 is a good alternative for many people. Between 6:30 and 10:00 a.m., Exclusive Bus Lanes are provided through the Lincoln Tunnel, shaving some time off of the bus trip into Manhattan during the morning commute. The bus is also a less expensive option, as compared to the train.

By connecting people to job centers, major institutions, shopping centers, and major transportation hubs, the bus system plays a critical role in the economic and social life of the community. In addition, because many of Irvington's low-income residents do not own cars, the bus system provides the only means of transportation for some people. Seniors, teenagers, and young adults consistently patronize the bus system as well, again because many people in those groups have no car.

Planned Improvements

According to NJ Transit, there were no plans for re-routing or service changes in Irvington as of May 2001. The only recent service change in Irvington was that the # 94 service was provided to the south side of the Township on weekends, where there was previously a lack of weekend service. In general, NJ Transit recognizes that Irvington has a heavily-utilized bus network, so it is not a target for service cuts (unless the State requires uniform service cuts statewide).[14]

Table 7-3: Major NJ Transit Bus Routes Serving Irvington

Routes Serving Bus Terminal	*Major Destinations*	*Median Weekday Riders along Entire Route, April 2001*

[13] Irvington UEZ, *Irvington Center Transit Gateway Project*, March 23, 1999.

[14] Telephone conversation with Steve Lax, NJTransit, May 16, 2001.

hours. Because of these two factors, the Township may eventually have to provide longer bus stops, potentially eliminating metered on-street parking spaces in Irvington Center.[16]

Some, but not all, of the bus stops have shelters. In general, shelters should be provided at heavily-used bus stops, and the Township should monitor bus stops to determine shelter needs. NJ Transit owns the bus shelters, but the Township is responsible for maintenance. Some bus stops are in poor condition, covered with graffiti, scratch-"iti", and adhesive stickers, or they are otherwise damaged. Severely damaged shelters should be either replaced or repaired. In particular, new bus shelters should be considered in the downtown area, as part of the downtown revitalization effort.

7.4 PEDESTRIAN CIRCULATION

DOWNTOWN

Downtown Irvington is the most pedestrian-intensive part of the Township. The compact building pattern, the mix of land uses, the pedestrian-oriented shops, the sidewalk amenities, and the transit activity are the components that make downtown a strong pedestrian realm. Downtown businesses rely on pedestrian activity. Most downtown buildings were erected between 1880 and 1930, and most of them were built without any on-site private parking lots. Thus, for the customer base, businesses rely on people who walk over from the adjacent neighborhoods, park in one of the public lots, or walk to or from a bus stop.

For the continued health of downtown business, it is critical that downtown remain a safe, comfortable, and convenient environment for pedestrians. Infill development should be encouraged on empty lots, "filling in" the gaps in the compact building pattern. Pedestrians tend to feel less safe in areas with vacant lots and buildings, so infill development helps promote walking. Moreover, new development needs to fit in with the traditional building pattern and design. These measures would increase the size and extent of the pedestrian realm, creating additional business opportunities.

In the late 1990s, the State Department of Transportation determined that the Springfield-Clinton intersection was one of the worst locations for pedestrian-related accidents in the State. The Springfield-Grove intersection was also identified as being prone to pedestrian accidents. In early 2000, the Township received a grant from the New Jersey Department of Transportation to develop and implement improvement plans for the two intersections. Of the total grant money, $300,000 was earmarked for the Springfield-Clinton intersection, and $100,000 was set aside for the Springfield-Grove intersection.[17] Sidewalk and crosswalk improvements may also be undertaken as part of the Transit Gateway project around the Bus Terminal.

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[16] Telephone conversation with Steve Lax, NJTransit, May 16, 2001.

[17] Letter from Commissioner James Weinstein, New Jersey Department of Transportation, to Mayor Sara Bost, Township of Irvington, January 31, 2000.

BUSINESS DISTRICTS

As discussed in Section 7.2 above, most business districts outside downtown have a primary orientation to the automobile, with the exception of the B-1 Neighborhood Business districts. The B-1 districts, like downtown, have a compact building form, mixed use, and other design features that are conducive to pedestrian activity. Future development and roadway and sidewalk improvements should maintain and enhance the pedestrian-orientation.

PARKS AND COMMUNITY FACILITIES

Having good pedestrian access to parks is critical, since most people reach their local parks on foot. Parks without large-scale recreational facilities do not attract much car traffic, and on-street parking is generally adequate for those few people who may drive.

Many of Irvington's parks and community facilities have good pedestrian access already. Irvington Park, for example, has a pedestrian entrance opposite each street that dead-ends into the park, allowing the residents in the adjacent neighborhoods to walk into and through the park easily. Such pedestrian-oriented features can increase the use and enjoyment of local parks.

Parks with large-scale recreational facilities — particularly those where large numbers of spectators are anticipated — need to have good auto access and parking in addition to good pedestrian circulation for large crowds. During high school games, many people drive to the high school playing fields, creating a sudden and sharp demand for parking in that location. For such events, drivers make use of the high school parking lot and the adjacent on-street parking area in Civic Square.

7.5 BICYCLE CIRCULATION

Irvington does not currently have a system of bicycle paths or lanes. To the extent that residents (particularly children) use bicycles to travel around town, they have to share local streets with cars and are required to follow traffic rules. Many local residential streets have low levels of traffic, and bikes can easily share the right-of-way. However, on arterial and collector roads, heavier levels of traffic, higher speeds, trucks, and buses may create safety hazards for bicyclists. Bicycle lanes and designated bike routes can improve safety. By providing dedicated space for bicyclists in the right-of way, bike lanes separate cars and bicycle traffic and prevent bicyclists from being squeezed into the parked cars alongside the road.

Creating a bicycle lane on an existing street in Irvington would require a change in the roadway configuration. A bicycle lane is typically four to six feet wide. To accommodate a bike lane, therefore, either one of the existing traffic lanes or some of the on-street parking would have to be eliminated. Such a change may be difficult to implement from a practical perspective, and it may be unpopular with residents or business owners. The location and design of any new bicycle lanes should create the least possible disruption to traffic and parking patterns and business activity. Because many children ride bikes, and because children have special safety needs, bike lanes should be concentrated in areas where children tend to ride their bikes — around elementary schools and public parks.

7.6 RECOMMENDATIONS

7-1: Develop a Capital Improvement Program for roads and sidewalks, which identifies needed improvements, repairs, and maintenance activities and itemizes the costs of those needs.

7-2: Implement sidewalk, crosswalk, and streetscape improvements (decorative paving, decorative lighting, trees and landscaping, undergrounding of overhead wires, installation of benches and new bus shelters, etc.) in Irvington Center, in order to enhance pedestrian circulation and attract more customers.

7-3: Increase nighttime surveillance of metered parking lots, metered streets in Irvington Center, and the Nye Avenue Parking Garage, through increased police patrols, SACBID-sponsored security, and/or neighborhood watch programs.

7-4: Continue efforts to establish a direct pedestrian linkage between the Nye Avenue Parking Garage and the Bus Terminal.

7-5: Improve pedestrian entrances into the Nye Avenue Parking Garage, as well as pedestrian circulation and visibility within the garage.

7-6: Explore the feasibility of establishing a vehicular entrance to the Nye Avenue Garage from Clinton Avenue.

7-7: Install parking meters for on-street parking spaces in B-1 Business Districts.

7-8: Encourage NJ Transit to increase bus service, as needed, to keep up with demand.

7-9: Continue working with NJ Transit and the New Jersey Highway Authority to revitalize the Irvington Bus Terminal and to improve pedestrian linkages between the terminal, the Nye Avenue Parking Garage, and the commercial areas along Springfield Avenue and Clinton Avenue.

7-10: Work with NJ Transit to repair or replace damaged bus shelters and to install new bus shelters in locations where they are needed.

7-11: Encourage "infill" development of vacant and underutilized lots in Irvington Center and in B-1 Business Districts. Through the provisions of the zoning code, require "infill" development to be sidewalk-oriented, like traditional buildings in those areas.

7-12: In conjunction with planning for new parks and the upgrading of existing parks, establish convenient and well-designed pedestrian linkages and signage from adjacent streets into the parks.

7-13: Develop a bicycle circulation plan that identifies potential locations for bicycle paths (off-road) and bicycle lanes (on-road).

7-14: As part of the zoning code, include requirements for installation of permanent bicycle racks in conjunction with normal parking requirements for commercial uses.

7-15: Work with NJ Transit to provide bicycle racks and lockers at the Bus Terminal.

7-16: Provide and/or improve bicycle racks at Township facilities, including Township Hall, the Library, and the Gatling Recreation Center.

7-17: Work with the School District to provide and/or improve bicycle racks at the public schools in the Township.

IRVINGTON TOWNSHIP MASTER PLAN
2009 RE-EXAMINATION REPORT

February 2009

Prepared by:
Wayne Bradley, P.P- LI#2409; AICP- LI# 062397
Township of Irvington
Department of Administration

Irvington Township Planning Board
Adopted February 26, 2009

Irvington Township, NJ
Master Plan Reexamination Report
February 2009

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entrance. Irvington is well served by transit busses, taxi-cabs and is a very walkable center. This makes the Irvington center (the cross roads of Springfield and Clinton avenues) well-used by pedestrians.

The Plan reported that this use by pedestrians in an automobile oriented creates conflicts that have to be avoided. The Plan said:

> *"For the continued health of downtown business, it is critical that downtown remain a safe, comfortable, and convenient environment for pedestrians. Infill development should be encouraged on empty lots, "filling in" the gaps in the compact building pattern. Pedestrians tend to feel less safe in areas with vacant lots and buildings, so infill development helps promote walking. Moreover, new development needs to fit in with the traditional building pattern and design. These measures would increase the size and extent of the pedestrian realm, creating additional business opportunities.*
>
> *In the late 1990s, the State Department of Transportation determined that the Springfield-Clinton intersection was one of the worst locations for pedestrian-related accidents in the State. The Springfield-Grove intersection was also identified as being prone to pedestrian accidents. In early 2000, the Township received a grant from the New Jersey Department of Transportation to develop and implement improvement plans for the two intersections. Of the total grant money, $300,000 was earmarked for the Springfield-Clinton intersection, and $100,000 was set aside for the Springfield-Grove intersection."*

Specific circulation goals in the 2002 Master Plan addressing land development included:

- ***Develop a Capital Improvement Program for roads and sidewalks, which identifies needed improvements, repairs, and maintenance activities and itemizes the costs of those needs.***
- ***Implement sidewalk, crosswalk, and streetscape improvements (decorative paving, decorative lighting, trees and landscaping, undergrounding of overhead wires, installation of benches and new bus shelters, etc.) in Irvington Center, in order to enhance pedestrian circulation and attract more customers.***
- ***Continue efforts to establish a direct pedestrian linkage between the Nye Avenue Parking Garage and the Bus Terminal.***
- ***Improve pedestrian entrances into the Nye Avenue Parking Garage, as well as pedestrian circulation and visibility within the garage.***
- ***Explore the feasibility of establishing a vehicular entrance to the Nye Avenue Garage from Clinton Avenue.***
- ***Encourage NJ Transit to increase bus service, as needed, to keep up with demand.***

- ***Continue working with NJ Transit and the New Jersey Highway Authority to revitalize the Irvington Bus Terminal and to improve pedestrian linkages between the terminal, the Nye Avenue Parking Garage, and the commercial areas along Springfield Avenue and Clinton Avenue.***

- ***Encourage "infill" development of vacant and underutilized lots in Irvington Center and in Business Districts. Through the provisions of the zoning code, require "infill" development to be sidewalk-oriented, like traditional buildings in those areas.***

- ***In conjunction with planning for new parks and the upgrading of existing parks, establish convenient and well-designed pedestrian linkages and signage from adjacent streets into the parks.***

- ***Develop a bicycle circulation plan that identifies potential locations for bicycle paths (offroad) and bicycle lanes (on-road).***

- ***As part of the zoning code, include requirements for installation of permanent bicycle racks in conjunction with normal parking requirements for commercial uses.***

- ***Work with NJ Transit to provide bicycle racks and lockers at the Bus Terminal.***

- ***Provide and/or improve bicycle racks at Township facilities, including Township Hall, the Library, and the Gatling Recreation Center.***

Recreation and Open Space - The protection and acquisition of open spaces was a major goal in the 2002 Master Plan. Techniques to preserve open space were discussed in the open space/recreation and parks elements of the Master Plan. Providing a stable source of funding for open space acquisitions was a major objective.

The Master Plan open space/recreation and parks land development goals include:

- ***Work with residents, merchants, property owners, the Board of Education, the Police Department, and the Township Recreation Department to develop a security and maintenance plan for each park site. Consider creating a conservancy to help maintain parks.***

- ***The plan should be a multi-faceted strategy, addressing police surveillance, capital improvements, maintenance, funding, lighting, fencing, and landscaping design in a coordinated fashion.***
- ***Continue to seek out grants and low-interest loans that the Township can use to make improvements and expansions to recreational facilities.***

- ***Identify at least three half- or quarter-acre sites in each ward that can be potentially used as the location of future pocket parks. Seek community groups or faith-based institutions to serve as caretakers of the pocket parks.***

- ***Identify at least one five- to ten-acre site or a series of sites that total five to ten acres in each ward that can be potentially used as the location of future active recreational facilities, such as a soccer field.***

Housing and Neighborhood Revitalization

Irvington has made significant strides in rebuilding its housing stock and improving neighborhoods particularly in the East Ward. Increasing its stock of affordable housing and preserving the diversity of housing in Irvington remains an important objective, and both communities have undertaken major efforts to preserve and expand their affordable housing stock.

A total of 172 new and rehabilitated housing units (52 were affordable) were planned or constructed in the Township since the 2002 Master Plan adoption through this report. In the East Ward alone about 30 new homeowners and tenants are now Township residents. The Township is seeking to secure 11 parcels in the East Ward from the New Jersey Education Development Administration, taken by eminent domain in 2005 for the construction of a new Middle School in the East Ward. The shift downward of middle school aged children has prompted the Board of Education to not advocate for building a new Middle School. The Township would like to see this land sold to qualified developers to build needed affordable and market rate housing in the East Ward.

Protecting existing neighborhoods from incompatible development continues to be a concern. Pressure on the scale and integrity of residential neighborhoods has increased in recent years. Irvington has received proposals for residential density increases as developers plan to subdivide regulation lots are planned into substandard lots with consequent yard and parking issues. These development plans are brought to the Board of Adjustment because the Planning Board does not review density cases and tend to get approved on a case-by-case basis. The challenge for staff is to address such issues as Master Plan concerns and help Board of Adjustment members see the broader context within which developers are attempting to divide lots when they can build on existing lots within zoning requirements. Such development applications for in-fill development have increased, and to establish new development that is harmonious with existing neighborhoods remains a Master Plan objective.

Traffic Circulation

Due to Irvington's location, the community continues to benefit by great local and regional access. A cooperative effort between Irvington, neighboring communities, the county, state, and regional authorities is essential to take appropriate advantage of the concentration of transit and automobile systems.

With respect to local traffic, volumes are congested in some areas of the Township: Lyons Avenue from Lincoln Place to Newark and to a lesser extent, portions of Union Avenue, Chancellor Avenue, and Springfield Avenue as they direct traffic into Irvington Center. Expansion of transit opportunities are a solution to expected growth in traffic volumes as development proceeds in the Township over the next half-decade[2]. NJ Transit has funded a free bus shuttle serving Irvington

[2] Large projects on the horizon: 179 square foot mixed use Township Center plan; development of mixed uses at the 6-acre Irvington General Hospital; 2.5 acre commercial development at Mill Road and Stuyvesant Avenue; 80,000 square foot Pabst site commercial development

Center and a new express GO Bus service is operating along Springfield Avenue, which with growth to threshold patronage could support an upgrade to light rail transit service.

Irvington is taking steps to channel automobile traffic away from Irvington Center by strategically enhancing peripheral parking supply, such as the Nye Avenue Municipal Parking Garage and fostering pedestrian and transit-only use where appropriate to create auto-free zones. The Township is also working with Essex County to implement a number of traffic calming strategies to slow vehicle speed on Springfield Avenue and its approach roads. The feasibility of peripheral parking for central business district employees is an as yet, unmet objective of the Master Plan and must be investigated.

Developing alternative means of transportation remains an achievable objective. A comprehensive bikeway study is required, and a committee consisting of local officials and the business community will be formed to discuss enhancing non-motorized access to Irvington Center. NJ Transit has provided a free journey to work bus that in the off peak hours will operate as a free jitney bus service between residential neighborhoods and the shopping districts in Irvington.

The Township, working with NJDOT funds and Essex County support is continuing an examination of key Township Center intersections and examine ways to reduce traffic bottlenecks and ease traffic congestion.

A few remaining Master Plan objectives to be met in transportation are:

- Complete a study on the design and financial feasibility of improving access to and expanding Township owned surface parking lots.

- Develop a business attraction plan to encourage uses to locate near the bus terminal that complement the transportation node.

- The Township should explore links to parking facilities (i.e., the Nye Avenue Municipal Parking Garage or another location that could serve as a park and ride for commuters.

Economic Development

The Township has a central business district and retail corridors along major roads that reach into residential neighborhoods. The Township's central business district remains economically healthy. These areas have seen recent renovations to existing stores and infrastructure. Efforts to facilitate the provision of adequate parking in the Township's business district remain a high priority. The Township has recently taken steps to study the strategic use or peripheral parking surrounding the Township Center, looking for ways to intercept automobiles and create a safe pedestrian-transit oriented CBD.

Since the Plan’s adoption in 2002, widespread Township-sponsored redevelopment and private land development activity has occurred within the Township’s residential neighborhoods, as well as the commercial and industrial districts.

SECTION 4

The specific changes recommended for the master plan or development regulations, if any, including underlying objectives, policies and standards, or whether a new plan or regulations should be prepared.

Throughout this re-examination report we have discussed changes that have occurred in the Irvington Township. Some of these changes are readily apparent, others less apparent, and some are just beginning to be felt. While there have been changes, many issues continue to be in the forefront of our planning. The community continues to wrestle with the following issues:

- A shortage of sizable tracts of vacant developable land to meet the growth needs in the Township.
- Maintaining a balance of market and affordable housing.
- Meeting the housing needs of a growing senior population.
- Maintaining a range of housing opportunities to ensure a diverse population at all age and economic levels.
- Providing adequate recreation and open space.
- Ensuring an economically healthy downtown and shopping districts.
- Balancing institutional needs with neighborhood protection.
- Limiting traffic impacts in the Irvington Center.

This re-examination report recommends that the Irvington Township Master Plan be updated to address the above issues, and incorporate the following items, along with any other issues that come to light upon detailed review and public comment.

A. Land Use

1. The zoning for the Irvington Center should be reviewed, with a eye towards developing it as a mixed-use zone. This zone could permit age restricted and affordable housing, and market rate housing, as well as additional nonresidential development.

2. A study/survey of existing land uses throughout the Township especially along the main corridors: Springfield Avenue, Clinton Avenue, Chancellor Avenue, Lyons Avenue, Stuyvesant Avenue and Sanford Avenue. This review should include capacity analysis, density measurement, development of design standards, and traffic circulation.

3. Service zones as an emerging commercial activity should be explored along the same roads listed in bullet #2 above.

4. The areas around existing mixed-use zones and nonresidential zones in Irvington Center and along commercial corridors that course through residential neighborhoods should be examined to determine if these areas need additional protection, have changed and require rezoning, or should be considered for mixed-use development. In the Township the Office-Residence zone along Sanford and Stuyvesant avenues should be reviewed first.

5. The strategic designation of parking in Irvington Center will have an impact on land uses in this area. It will also support the planned 180 million dollar Irvington Center Mixed Use Project at the NJ Transit Bus Terminal and help influence upscale business development of Clinton Avenue between Ball Street and the Newark border. The Planning Board should review its objectives, policies and zoning for the CBD zone to determine if any changes are warranted based upon the anticipated impacts from enhancing parking at the Nye Avenue Municipal Parking Garage.

B. Housing

1. The housing element should be revised to include innovative ways to meet the needs of a growing senior population.
2. Maintaining housing that is affordable to all income levels continues to warrant further study and action.
3. Maintaining the existing character of Township neighborhoods should be ensured through the development of additional zoning controls on the height, setback, and bulk of homes. Building 2 and 3 family homes on small lots designed to accommodate single family houses that are out of scale with their neighborhood should be discouraged.

C. Circulation

1. A revision to the existing pedestrian and bicycle section of the circulation element is necessary. Upon completion of this plan it should be adopted as part of the Irvington Township Master Plan.
2. Regional express transit opportunities continues to be a primary goal for Irvington Township. The Township should continue to monitor NJ Transit's study of regional bus service and seek to upgrade express service as the Irvington Center grows transit-supporting threshold employment levels over the next half decade. The circulation element should be amended when more is known about the Greater Newark Bus Study.
3. Develop a vision for discouraging automobile use of Irvington Center through local solutions to local traffic issues.

SECTION 5

The recommendations of the planning board concerning the incorporation of redevelopment plans adopted pursuant to the "local redevelopment and housing law," P.L. 1992, C. 79 (C.40A:12a-1 et al.) into the land use plan element of the municipal master plan, and recommend changes, if any, in the local development regulations necessary to effectuate the redevelopment plans of the municipality.

.

Since 2002 the Township has declared the following five areas of redevelopment in the Township:

- East Ward Redevelopment Area
- Mill Road Redevelopment Area
- Urban Enterprise Zone (UEZ) Rehabilitation Area
- Scattered Sites Redevelopment Areas (77 properties)
- Coit Street Redevelopment Area

With the adoption of this Re-examination report the Planning Board is incorporating these redevelopment plans into the Irvington Master Plan Land Use Element.

Some key development concepts and actual development that are occurring in established redevelopment areas since 2002 are listed below:

1. 53 units of new housing in the East Ward
2. $140 million Center City mixed use concept in the UEZ Rehabilitation Area
3. $20 commercial development in the Mill Road Redevelopment Area
4. Opening of the International House of Pancakes in UEZ Rehabilitation Area
5. New Advanced Auto building on Lyons Avenue
6. 19-Unit fully rehabilitation apartment building on Lyons Avenue
7. Opening of Plaza Suites a fully rehabilitated commercial building on Springfield Avenue in the UEZ Rehabilitation Area
8. Rehabilitation of the former Board of Education into a health clinic, and Cerebral Palsy service in the UEZ Rehabilitation Area
9. 20 acres of planned and actual development in the Coit Street Redevelopment Area
10. A new car wash/detailing center, the Spotless Car Wash on Lyons Avenue
11. New building constructed as an Autozone in the Coit Street Redevelopment Area
12. Several residential properties rehabilitated and newly constructed as an implementation of the Scattered Sites Redevelopment areas.

APPENDIX K

ROAD OWNER RESPONSE

COUNTY OF ESSEX
DEPARTMENT OF PUBLIC WORKS
900 BLOOMFIELD AVENUE
VERONA, NEW JERSEY 07044-1393
☎ (973) 226-8500
🖷 (973) 226-7469

JOSEPH N. DiVINCENZO, JR.
COUNTY EXECUTIVE

Sanjeev Varghese, P.E., P.P.
Director & County Engineer

Dennis R. Sedaille
Assistant County Engineer

August 30, 2018

Julia Steponanko, P.E, *Project Manager*
Greenman-Pedersen, Inc.
Engineering and Construction Services
100 Corporate Drive, Suite 301,
Lebanon, NJ 08833

Re: Road Owner Response to RSA Springfield Avenue (CR 603) Recommendations
Irvington Township, Essex County

Dear Ms. Steponanko:

The County of Essex County appreciates the Road Safety Audit team for their participation in this important effort to improve traffic safety along Springfield Avenue and make this critical arterial more accommodating to all roadway users. We have reviewed the recommendations within the Draft Report dated August 2018 and generally agree with many of the findings and recommendations with few exceptions, which are detailed below.

Corridor-Wide Recommendations

15. Consider installing a bicycle lane and/or sharrow striping per NJ Complete Streets Design Guide
    a. *The County prefers not to install bicycle lanes on County Roads due to the high volume of vehicular traffic and potential for conflicts with bicyclists.*

20. Explore ways to deter vehicles from speeding along Springfield Avenue
    a. *The County will post speed limit signs along Springfield Avenue as needed to help discourage speeding. A statutory speed limit of 25 mph is assumed based on the urban setting.*

Site-Specific Recommendations

The County has no site-specific recommendations.

Should you have any questions concerning the above, please contact Rick Valderrama, Principal Engineer at (973) 226-8500, extension 4014.

Sincerely,

Sanjeev Varghese, PE, PP,
Director & County Engineer