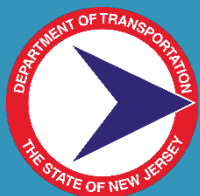




Road Safety Audit:

County Route 533 and County Route 527
Downtown Bound Brook Borough, Somerset County
(Tea Street to Railroad Avenue)



APRIL 2020
Issued September 2020

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Executive Summary

This document is the draft report of the County Route (CR) 533 and CR 527 Road Safety Audit (RSA). It was conducted along CR 533 (Talmage Avenue, Columbus Place and Main Street) Tea Street to Mountain Avenue and CR 527 (East Main Street) from Mountain Avenue to Railroad Avenue in Bound Brook Borough, Somerset County. Of note, during the field visit, the attendees also discussed the intersection of CR 533 and E. High Street, located east of the roundabout. 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.

Portions of this section of CR 533 and CR 527 were identified on NJTPA's Local Safety Program Network Screening list as high priority. According to the NJDOT crash database, 133 crashes occurred during the three-year period between January 1, 2015 and December 31, 2017, (excluding pedestrians/pedalcyclists) along the study area. Additionally, 15 pedestrian crashes occurred over the six-year period between January 1, 2012, and December 31, 2017.

This one-day RSA was conducted on Thursday, September 12, 2019, from 9:30 am to 3:30 pm. The pre- and post-audit meetings were held in the Bound Brook Borough Hall, located at 230 Hamilton Street, Bound Brook, NJ. Representatives from NJDOT, NJTPA, Somerset County and Bound Brook Borough were in attendance with NJDOT serving as the facilitator.

The RSA site and crash history are 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, delineate driveways, and improve the existing roundabout operation at Bolmer Boulevard/S Main Street.

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

Portions of this section of Talmage Avenue and Main Street, from Tea Street to Railroad Avenue, were identified on NJTPA's Local Safety Program Network Screening list as a high priority location, as shown in the below rankings. Of note, these rankings are based on 2014-2016 vehicular and 2012-2016 pedestrian crash data. Portions of CR 533 and CR 527 shown are outside the project limits.

Table 1 – Talmage Ave & Main St NJTPA LSP Ranking (Corridor)

Location	Ped Corridor	Regional Corridor
CR 527 (Main St)	#18 County (MP 52.86-53.86, Washington Pl, to Mountain Ave)	#27 County (MP 52.74-53.74, Maple St, to Mountain Ave)
CR 533 (Talmage Ave)	#13 County (MP 30.99-31.99, Main St to Van Keuren Ave)	#40 County (MP 31.36-32.36, Main St to Mountain Ave)

Table 2 – Talmage Ave & Main St NJTPA LSP Ranking (Intersection)

Location	Intersections	Pedestrian Intersections
CR 527 at Hamilton St	#61 County	#2 County
CR 533 Main St at Columbus Pl	#92 County	
CR 527 at Mountain Ave	#97 County	#39 County
CR 533 at Tea St	#98 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 FHWA's proven safety countermeasures, is shown in the figure below.



C. The CR 533 and CR 527 RSA Event

This one-day RSA was conducted on Thursday, September 12, 2019 from 9:30 am to 3:30 pm. The pre- and post-audit meetings were held in the Bound Brook Borough Hall, located at 230 Hamilton Street, Bound Brook, NJ. Representatives from NJDOT, NJTPA, Somerset County and Bound Brook Borough 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 1.3 miles of CR 533 and CR 527 within the aforementioned municipality. This stretch of Talmage Avenue and Main Street is a mix of commercial and residential properties. Commercial sites generally consist of retail, professional, and service establishments.

B. Roadway and Intersection Characteristics

Talmage Avenue and Main Street are classified as urban minor arterials with a 30 mph speed limit between Tea Street and Vosseller Avenue and a 25 mph speed limit from Vosseller Avenue to Railroad Avenue. The corridor study section is 2-lanes, undivided, with parking on both sides. Only the Tea Street intersection has a left turn lane, heading eastbound. Talmage Avenue runs west-east, turning northwest-southeast at Columbus Place, then continuing west-east on Main Street to the Roundabout, turning south onto South Main Street. There are 4 signalized intersections, 14 unsignalized intersections and 1 roundabout.

C. Existing Bicycle/Pedestrian Accommodations

Sidewalks are currently available along both sides of the roadway and range from 4-6 feet wide. Crosswalks in various styles (continental and standard) are provided throughout the corridor. Sidewalk and crosswalk conditions vary from newly installed to needing maintenance. There are no bicycle lanes or other bicycling infrastructure identified along the corridor.

D. Traffic Volumes

Based on available data, the 2016 ADT along Talmage Avenue is approximately 11,200 vehicles per day. Local stakeholders advised the roadway experiences significantly higher traffic on Friday afternoons during the summer than what the records show. A copy of the available data can be found in Appendix C.

E. Transit Service

NJ Transit train service is provided at the Bound Brook Station which is located on Main Street at the foot of Hamilton Street. Bound Brook Station is on the Raritan Valley Line which runs from High Bridge to Newark Penn Station.

F. Community Profile

Population and income characteristics from the American Community Survey (ACS), an update to the 2010 Census performed by the U.S. Census Bureau, were used to identify minority populations and low-income populations. The latest ACS for this study area is a five-year estimate from 2013 through 2017. A summary of the demographics is listed below. According to the ACS, for the Hispanic/Latino population, the predominant origins are Costa Rica and El Salvador.

Table 3 – Talmage Avenue & Main Street Area Demographics

Characteristic		CR 533/527 Average	County Average
Poverty		19.8%	4.8%
Race/ Ethnicity	White	33.9%	57.7%
	Hispanic/Latino	58.8%	14.4%
	Asian American	2.3%	17.0%
	Black or African American	4.4%	9.0%
	American Indian/Alaskan	0.0%	0.1%
Other ¹		0.8%	3.3%
Limited English Proficiency (LEP)		53.7%	18.9%

In addition, approximately 6.2% of the population uses public transportation compared to the Somerset County average of 5.1%. Roughly 10% of the area population walk or bike to work, which is slightly higher than the county average.

G. Redevelopment

Bound Brook Borough is currently under immense redevelopment. There are three (3) projects currently under construction with several more projects planned for the future. The first of such projects under construction consists of 105 apartment units with 5,740 square feet of retail space and is located at 507 East Main Street, on the northwest corner of the roundabout. The site will contain 130 parking spaces and access to the site will be from East Street. The second site under construction is located at 7-15 West Main Street and will contain 63 apartment units along with a 1,700 square foot restaurant on the first level. The site contains approximately 125 feet of frontage on West Main Street. The site will include 29 parking spaces located under the building and access will be provided via a full-movement driveway on West Main Street. The final site currently under construction is located at 14-16 West Main Street. The site will include 172 apartment units with 2,350 square feet of street-level retail space. Access will be provided via two (2) full-movement driveways along West Main Street which will provide access to a subterranean parking garage beneath the residential units. The site will contain 190 parking spaces and an additional 30 parking spaces will be available on an adjacent lot.

Future plans for the Borough include the conversion of Hamilton Street between Main Street and 2nd Street into a pedestrian plaza. The proposal includes converting a portion of the train station parking lot into a plaza with an amphitheater to connect the north and south sides of Main Street. Additional sites are also slated for mixed-use redevelopment. A summary of the aforementioned sites, as well

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'

as other future plans, that Somerset County received as of September 2019 can be found in Appendix K. Additional excerpts from Somerset County and Bound Brook Borough studies can be found in Appendices 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.

A. Temporal Trends

According to the NJDOT crash database, 133 crashes (excluding pedestrians/pedalcyclists) occurred during the three-year period between January 1, 2015 and December 31, 2017 along the study area of Talmage Avenue and Main Street. Total crashes varied from the county average the most in July and August, and on Friday.

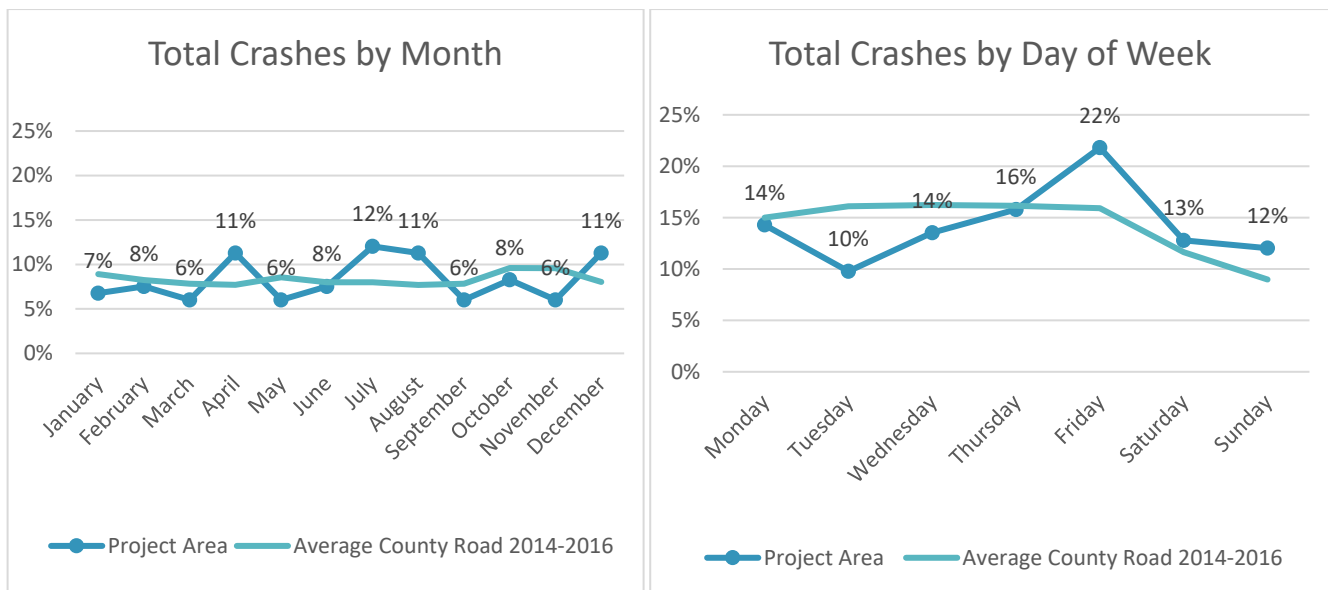


Figure 1 – Total Crashes by Month and Day of Week

Additionally, 15 pedestrian crashes occurred over the 6-year period from 2012 to 2017. The majority of these crashes included injury (one fatality), occurred at signalized intersections, and were almost evenly split between pedestrians and bicyclists. Nighttime crashes were overrepresented when compared to the county road average. Collisions with pedestrians trended similar to county road’s monthly and daily averages. It should be noted that the low number of crashes on any particular day compared to the county road system may be statistically insignificant since they could not be correlated with an identified or reoccurring event. Local stakeholders advised the roadway experiences significantly higher traffic on Friday afternoons during the summer due to higher volumes on I-287.

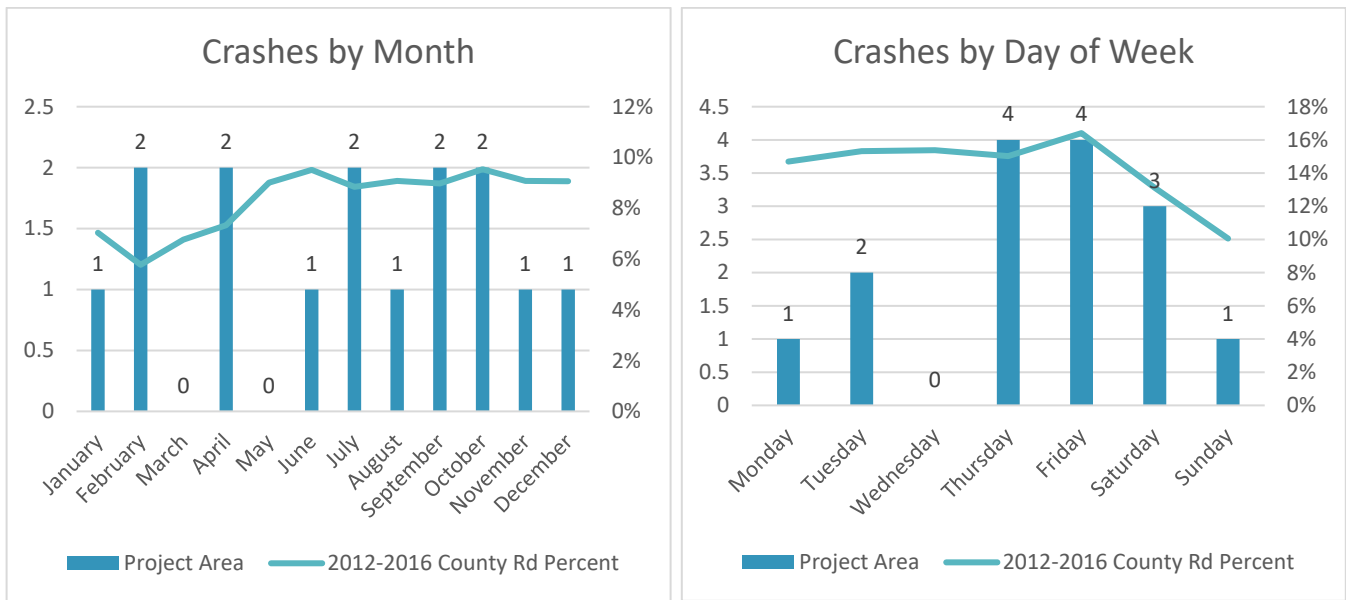


Figure 2 – Pedestrian/Bicyclist Crashes by Month and Day of Week

B. Collision Types

Overrepresented crash types over the three-year period from 2015 to 2017 included right angle, parked vehicle, backing, fixed object, and pedalcyclist. Of the 15 pedestrian/cyclist crashes over the six-year period from 2012 to 2017, eight were pedalcyclists (scooter, skateboard, or bicycle).

Table 4 – Overrepresented Crash Types (2015-2017)

Collision Type	Count	% of Total	2017 County Road System Average
Right Angle	34	23.0%	18%
Parked Vehicle	14	9.5%	4%
Backing	7	4.7%	0%
Fixed Object	24	16.2%	5%
Pedalcyclist	8	5.4%	0%

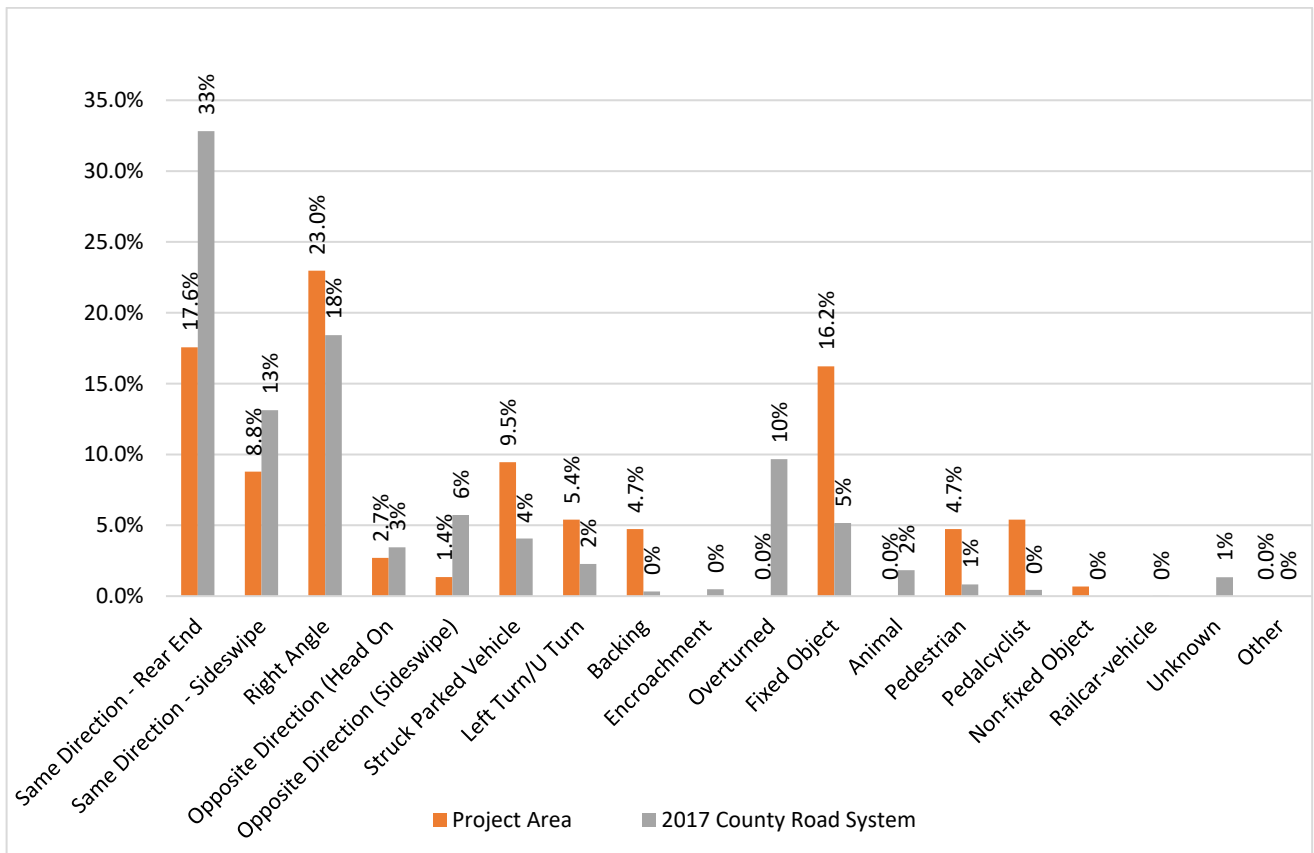


Figure 3 – Crash Type Breakdown

C. Severity

Pedestrian crashes resulting in minor and moderate injuries and fatalities were significantly overrepresented compared to the county road system from 2012 to 2017. One fatal crash involving a pedestrian occurred during the study period.

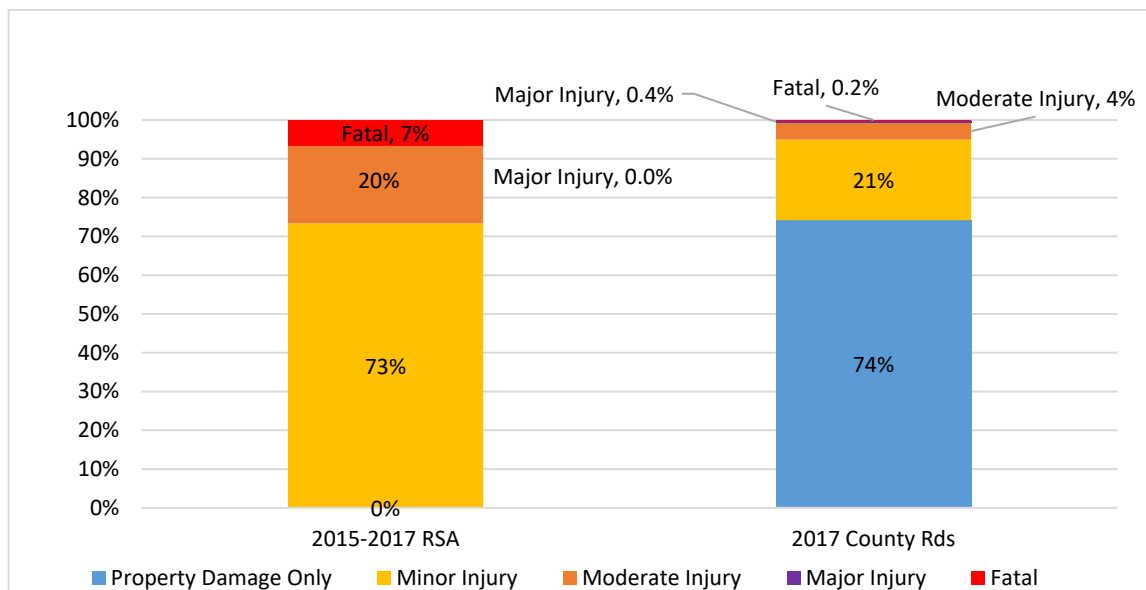


Figure 4 – Severity (Pedestrian/Bicycle Crashes)

D. Roadway Surface & Light Condition

Overrepresented crash types included dry surface and dawn/dusk light conditions. Dry surface conditions accounted for approximately 82% of total crashes. In addition, 31% of crashes occurred during dawn, dusk or at night.

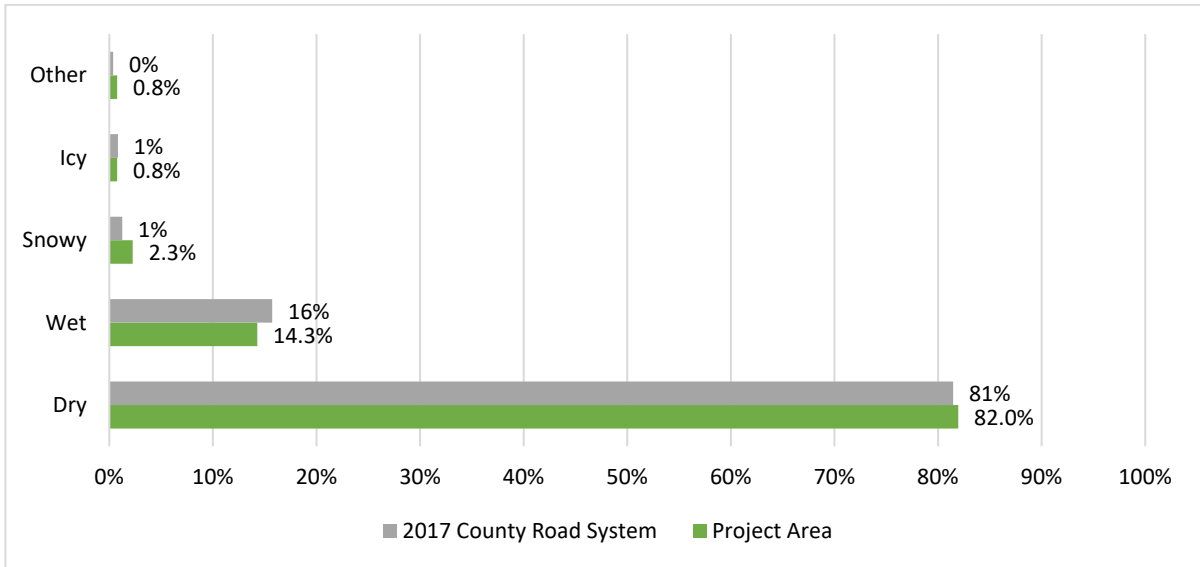


Figure 5 – Surface Conditions (All Crashes)

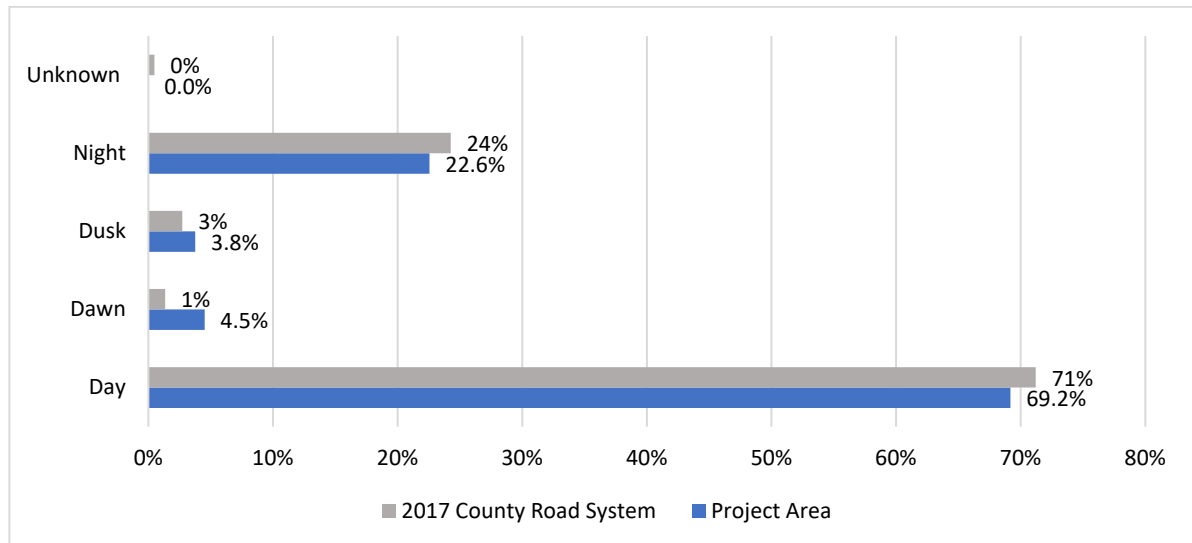


Figure 6 – Light Conditions (All Crashes)

Dry surface crashes involving pedestrians and bicyclists accounted for most of the crashes. In addition, six (6) or approximately 40% of pedestrian crashes occurred at night, which is higher than the county road statewide average of 24%.

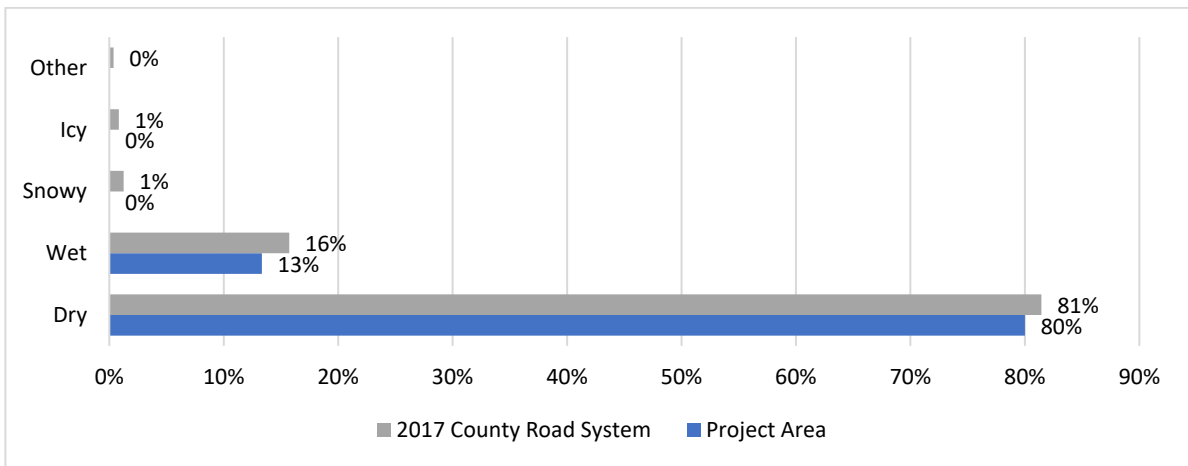


Figure 7 – Surface Conditions (Pedestrian/Bicycle Crashes)

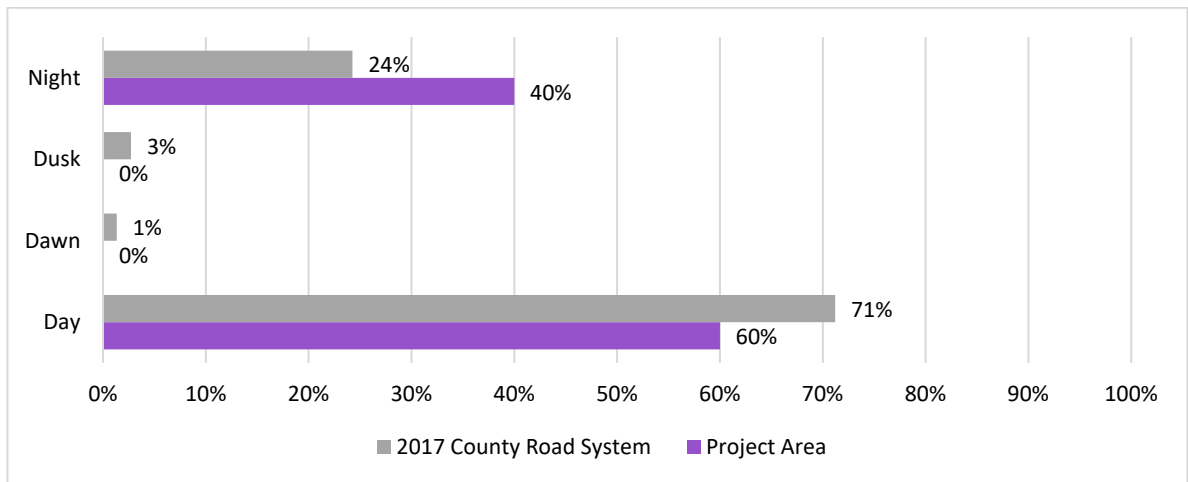


Figure 8 – Light Conditions (Pedestrian/Bicycle Crashes)

E. Location

Crashes at signalized and unsignalized intersections were overrepresented compared to the county road system average. Forty percent (40%) of crashes occurred at signalized intersections compared to 14% on all county roads. Thirty-three percent (33%) of crashed occurred at unsignalized intersections compared to 22% on county roads. Pedestrian/bicyclist crashes occurred more often at Vossler Avenue than at any other study intersection. Crash frequency, as shown in the following figures, shows the highest concentration of vehicular and pedestrian crashes. The histogram view is grouped by 0.1-mile segments.

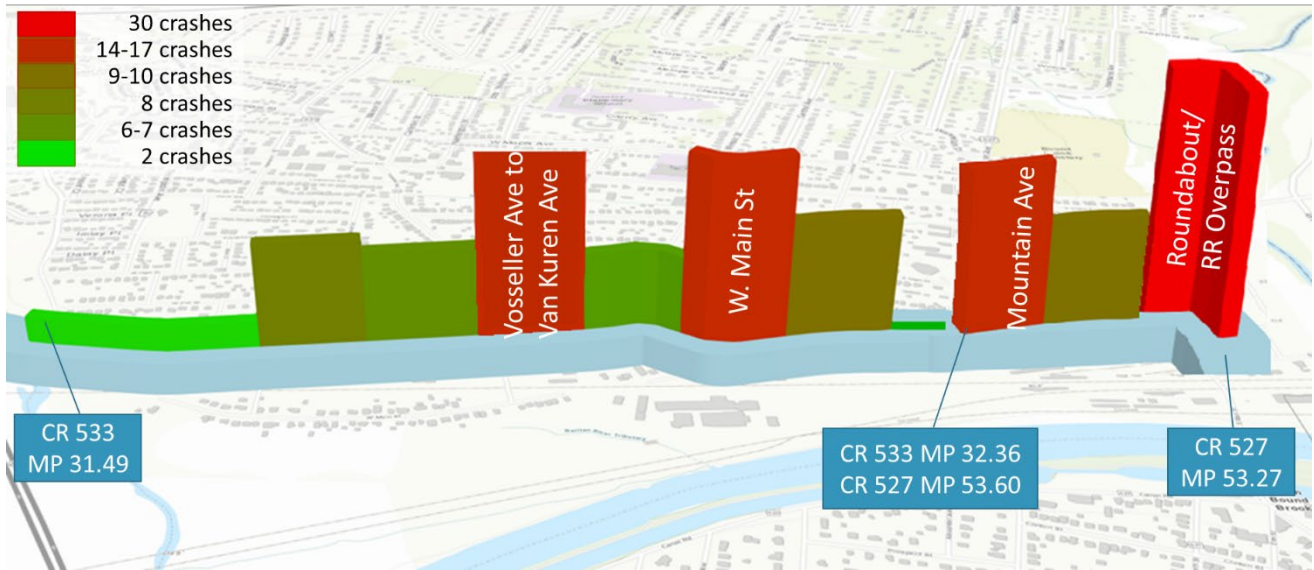


Figure 9 – Total Crash Locations (2015-2017)

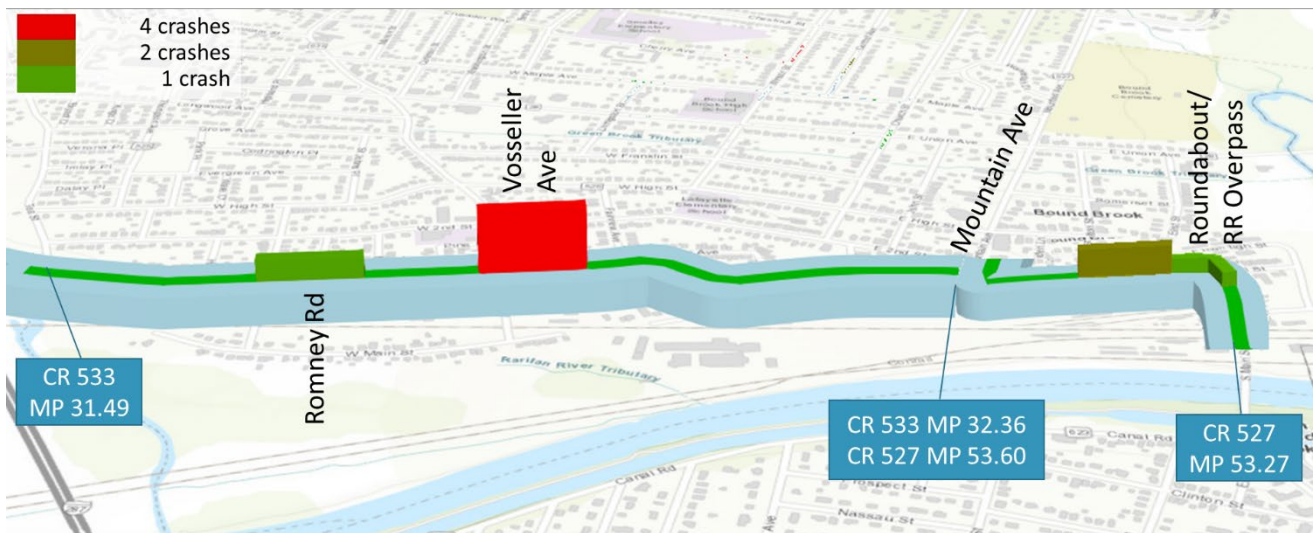


Figure 10 – Pedestrian Crash Locations (2012-2017)

IV. Identified Issues & Observations

This section summarizes the site-specific and corridor-wide safety issues identified during the RSA; it is not intended to be a detailed inventory. They are categorized into operations (including visibility), pedestrian, bicyclist, and maintenance. Additional issues and photographs can be found in Appendix F.

Pedestrian/Bicyclist	
 <p>1. Tree planting areas uneven and can create tripping hazards</p>	 <p>2. Ponding at ramp, missing DWS and ADA ramp</p>
 <p>3. No curb ramp or marked pedestrian crossing</p>	 <p>4. Curb ramp missing DWS and ADA ramp, crosswalk lines faded</p>
 <p>5. Sidewalk width varies along corridor</p>	 <p>6. Large utility poles and long step restrict pedestrian path</p>

Operations & Visibility



7. Visibility of roundabout sign impeded by trees

Maintenance



8. Shrubbery needs trimming



9. Signal heads can be upgraded to 12" and have backplates for better visibility



10. Fence needs replacement (along South Main Street)



11. Cars parked close to intersections reduce sight distance for pedestrians crossing



12. Sidewalk in poor condition

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	Inspect all ramps for ADA compliance	✓✓✓ ³	\$\$\$	🕒	County
2	Study development of an access management plan within the project limits (for vehicles and pedestrians)	✓	\$\$	🕒	County/ Borough
3	Investigate on-street parking requirements for conformance with Title 39 and to highlight public parking lots, such as wayfinding signs	✓ ³	\$\$	🕒	Borough

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
4	Explore 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
5	Study roadway and pedestrian scale lighting*	✓✓✓	\$\$	●	Borough
6	Review complete streets approach of limited parking, installation of bike lanes, wider lanes & sidewalks	✓	\$\$\$	●	County/ Borough
7	Investigate adding edge lines to reduce lane width*	✓	\$	●	Borough
Bicycle/Pedestrian					
8	Inspect, repair and construct sidewalks in compliance with ADA as needed, including driveway aprons*	✓✓✓	\$\$	●	Borough
9	Examine inlets and install bicycle-safe grates	✓ ⁴³	\$\$	●	County
10	Study corridor-wide implementation of curb extensions (bump outs) based on the site-specific recommendations to maintain consistency	✓✓ ³	\$\$	●	County
11	Examine crosswalks status: change to continental style, check placement and alignment*	✓✓	\$	●	County
12	Investigate designating E High St as a bicyclist corridor	✓	\$\$	●	County/ Borough
13	Explore restricting right turn on red at signalized intersections with high pedestrian crash rates	✓	\$	●	County
14	Investigate removing on street parking to provide bike lanes	✓	\$\$	●	County/ Borough
Maintenance					
15	Inspect existing striping for wear and restripe accordingly; add RPMs	✓✓	\$	●	County
16	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
17	Inspect drainage facilities; ensure they are free of debris and explore green infrastructure options*	✓ ³	\$\$	●	County
18	Inspect and trim foliage/vegetation to improve sign visibility and sidewalk paths	✓ ³	\$	●	County
Education					
19	Consider implementing sidewalk, crosswalk, multimodal education campaign and code enforcement	✓ ³	\$	●	Town/ County

* Recommendation also included in 2017 *Supporting Priority Investment in Somerset County Phase III Study*.

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.

The following site-specific recommendations are in addition to the corridor-wide improvements, except where noted otherwise. Of note, the improvements listed below were proposed by the County, Borough and/or private developer at the time of the RSA.

- New development as noted in Section II.G of this report.
- Bound Brook recently conducted a parking study, which indicated that on-street parking is underutilized. However, there may be a perceived deficit of spaces depending on location and proximity to businesses. A summary of the study is provided in the 2017 *Master Plan Reexamination Report* located in Appendix J.
- A walkability and bikeability assessment was conducted in 2018 as part of the *Bound Brook & South Bound Brook Pedestrian & Bicycle Travel Plan* prepared by Rutgers. Many of the findings were similar to those from the RSA. A copy of this report can be found in Appendix J.
- The County noted that the study limits should be extended along E. Main Street to the Meridia driveway/pedestrian crossing (see East of Roundabout recommendations below). Subsequent to the RSA, the County also noted that pedestrian improvements would be installed at the roundabout in 2021, some of which are included in the table below.

Table 6 – Site-Specific Recommendations

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
East of Roundabout					
20	Investigate redefining the Meridia driveway	✓	\$\$	🕒	County/ Borough
21	Explore installation of a pedestrian median island at E High St	✓✓✓	\$\$	🕒	County
22	Investigate corridor-wide recommendation 1, 8 and 11 regarding crosswalks, sidewalk and ADA compliance	✓✓✓ ³	\$\$\$	🕒	County/ Borough
23	Investigate corridor-wide recommendation 15 regarding improving sign visibility	✓ ³	\$	🕒	County/ Borough
Roundabout					
24	Investigate corridor-wide recommendation 1, 8 and 11 regarding crosswalks, sidewalk and ADA compliance	✓✓✓ ³	\$\$\$	🕒	County/ Borough
25	Investigate raising the splitter islands for pedestrian refuge	✓✓✓	\$\$	🕒	County
26	Explore adding Rectangular Rapid Flashing Beacon (RRFB) prior to roundabout for each pedestrian crossing	✓✓	\$	🕒	County
27	Consider educational campaign regarding roundabouts	✓ ³	\$	🕒	Borough/ County
28	Investigate shifting pedestrian crossings	✓✓	\$\$	🕒	County
29	Examine adding Do Not Cross Here sign (R9-3) on the southern side of the roundabout and extending the fence on either side	✓	\$	🕒	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
30	Investigate whether queue detection can be beneficial	✓	\$\$	⦿	County
31	Explore how to improve visibility and safety of pedalcyclists in and around the roundabout	✓	\$\$	⦿	Borough/ County
32	Investigate the benefit of relocating Fire Station on the SW corner of the roundabout to provide auxiliary lane for turning trucks and/or green infrastructure for pedestrians	✓✓✓	\$\$\$	●	Borough/ County
S. Main St/Railroad Ave					
33	Investigate corridor-wide recommendation 1, 8 and 11 regarding crosswalks, sidewalk and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
34	Examine adding flashing beacons to indicate low clearance of the railroad bridge	✓✓	\$	⦿	County
35	Explore adding Rectangular Rapid Flashing Beacon (RRFB) for proposed crosswalk near Railroad Ave*	✓✓	\$	⦿	County/ Borough
36	Investigate installing a pedestrian bridge	✓✓✓	\$\$\$	●	County
37	Examine adding advanced warning for at-grade railroad crossing	✓	\$	⦿	County
38	Investigate reopening NJ Transit stairs entrance towards South Bound Brook along CR 527	✓✓✓	\$\$\$	●	County/ NJ Transit
Hamilton St					
39	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
40	Investigate corridor-wide recommendation 4 regarding signal upgrades	✓✓	\$\$\$	●	County
41	Study raised intersection in conjunction with the Hamilton St pedestrian plaza*	✓✓	\$\$	●	Borough/ County
42	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
43	Study HAWK signal, RRFB, or all pedestrian phase	✓✓✓	\$\$\$	⦿	County
Maiden Ln					
44	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
45	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
46	Investigate corridor-wide recommendation 3 regarding parking	✓ ³	\$\$	⦿	Borough
Mountain Ave					
47	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough

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.

* Recommendation also included in 2017 *Supporting Priority Investment in Somerset County Phase III Study*.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
48	Investigate corridor-wide recommendation 4 regarding signal upgrades	✓✓	\$\$\$	●	County
49	Explore adding crosswalk on western leg*	✓✓	\$	○	County
50	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
51	Investigate corridor-wide recommendation 4 regarding signal upgrades	✓✓	\$\$\$	●	County
52	Investigate corridor-wide recommendation 13 regarding no right turn on red	✓	\$	○	County
53	Study adding a left turn lane in eastbound direction	✓✓ ³	\$\$	●	County
54	Investigate realigning the intersection for vehicles and pedestrians to reduce crossing distances and minimize curve radii	✓✓	\$	○	County
John St					
55	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
56	Explore adding a left turn lane in eastbound direction	✓✓ ³	\$\$	●	County
57	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
58	Investigate installing crosswalks for Main St and parking lot driveway*	✓✓	\$	○	County
Church St/Drake St					
59	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
60	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
61	Examine installing a crosswalk for Drake St*	✓✓	\$	○	County
62	Investigate corridor-wide recommendation 5 regarding corridor lighting	✓✓✓	\$\$	○	Borough
Main St/Columbus Pl					
63	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
64	Consider adding pavement markings: "Slow" with appropriate arrow	✓✓ ³	\$	○	County
65	Investigate adding a divisional island (right in, right out operation) for W Main St	✓✓✓ ³	\$\$	○	County
66	Investigate adding a pedestrian bridge or other pedestrian crossing	✓✓✓	\$\$\$	●	County
67	Consider one-way operation for W. Main St in conjunction with Talmage commons development	✓✓	\$\$	○	Borough

* Recommendation also included in 2017 *Supporting Priority Investment in Somerset County Phase III Study*.

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
68	Investigate prohibiting left turn movements when exiting W. Main St	✓✓✓	\$	☉	Borough
69	Explore adding advanced signing ahead of intersection	✓✓ ³	\$	☉	County
70	Examine revising the geometry to create a more 90° intersection (see Figure 18)	N/A	\$\$\$	●	County
71	Investigate adding a small roundabout at the current intersection (see Figure 19)	✓✓✓✓	\$\$\$	●	County
72	Consider adding High Friction Surface Treatment (HFST) to eliminate out of control crashes	✓	\$\$	●	County
73	Investigate adding a banana island or widening the centerline	✓✓✓	\$\$	●	County/ Borough
Columbus Pl/Talmage Ave					
74	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
75	Consider adding pavement markings: "Slow" with appropriate arrow	✓✓ ³	\$	☉	County
76	Examine revising the curve geometry	✓ ³	\$\$\$	●	County
77	Investigate adding a mini roundabout at the current intersection	✓✓✓✓	\$\$\$	●	County
78	Explore adding a divisional island (right in, right out operation)	✓✓✓ ³	\$\$	●	County
79	Study restricting left turns from eastern leg of Talmage Ave	✓✓✓	\$	☉	Borough
80	Consider corridor-wide recommendation 17 regarding green infrastructure	✓ ³	\$	☉	Borough
81	Investigate adding a banana island or widening the centerline	✓✓✓	\$\$	●	County/ Borough
Vosseller Ave					
82	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
83	Investigate corridor-wide recommendations 4 regarding signal upgrades	✓✓	\$\$\$	●	County
84	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
85	Investigate corridor-wide recommendations 14 regarding striping	✓✓	\$	☉	County
86	Examine adding a left turn lane	✓✓ ³	\$\$	●	County
Fisher Ave/North St/Romney Rd					
87	Explore installing a crosswalk to cross Talmage Ave at each intersection *	✓✓	\$	☉	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.

* Recommendation also included in 2017 *Supporting Priority Investment in Somerset County Phase III Study*.

No.	Recommendation	Safety Benefit	Cost	Time Frame	Jurisdiction
88	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
89	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
90	Investigate corridor-wide recommendation 17 regarding foliage	✓ ³	\$	●	Borough
La Monte Ave/Hardy Ave					
91	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
92	Investigate corridor-wide recommendation 10 regarding curb extensions	✓✓ ³	\$\$	●	County
Tea St					
93	Examine tightening the curb radius in the northeast corner, a pedestrian island on the eastern approach, or a Lead Pedestrian Interval	✓✓ ³	\$\$	●	County
94	Investigate corridor-wide recommendation 1, 8 and 11 regarding sidewalk, crosswalks, and ADA compliance	✓✓✓ ³	\$\$\$	●	County/ Borough
95	Study adding a protected only left turn phase	✓	\$	●	County
96	Investigate corridor-wide recommendation 4 regarding signal upgrades	✓✓	\$\$\$	●	County
97	Explore moving eastbound stop bar forward	✓	\$	●	County
98	Investigate adding advanced warning signs before the overpass on the western approach of the intersection ⁴	✓✓ ³	\$	●	County
99	Investigate installing track lines for the through movement or restriping gore area on eastern leg	✓	\$	●	County
100	Explore Levee Trail connectivity options to provide safe, accessible routes for pedestrians and pedalcyclists*	✓	\$\$	●	Borough/ 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. Somerset County delivered their response following the finalization of the findings and recommendations table, a copy of which can be found in Appendix L.

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 Advanced warning “Signal Ahead” sign exists west of I-287 overpass; investigate improving conspicuity and/or replace if missing.

* Recommendation also included in 2017 *Supporting Priority Investment in Somerset County Phase III Study*.

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)*, *Urban Bikeway Design Guide (NACTO-UB)* and *Urban Street Stormwater Guide (NACTO-GI)*, 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.

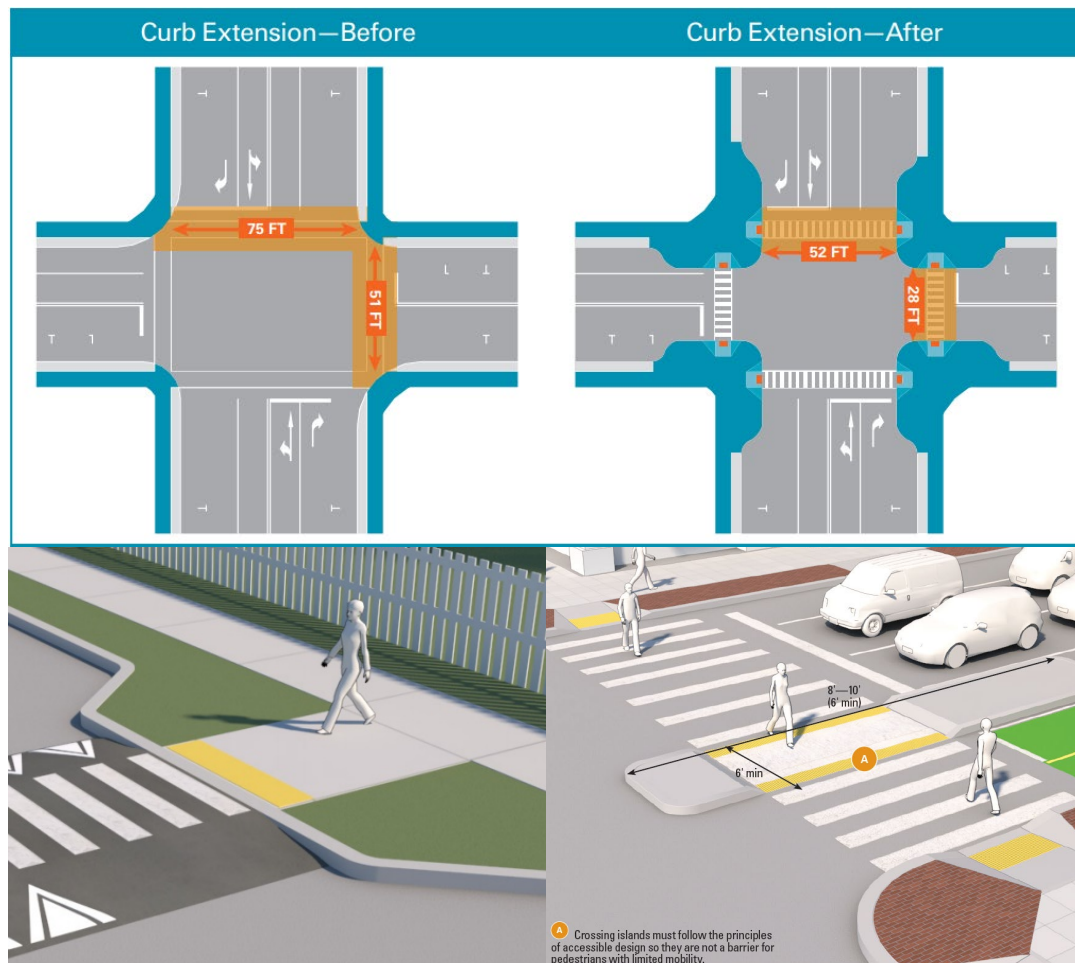


Figure 11 – Pedestrian Facility Examples

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

ADA standards specify a minimum 5-foot clear path width to accommodate two wheelchairs passing each other. In addition to providing a more accessible facility, this minimum width also creates a more comfortable environment for pedestrians to walk side-by-side and pass each other. Sidewalk width should support the surrounding street context, land uses, and current and future pedestrian demand. The design of driveways should provide a continuous and level pedestrian zone across the vehicular path, encouraging drivers to stop for pedestrians on the sidewalk. Driveways should not be designed where the sidewalk is interrupted by the driveway.

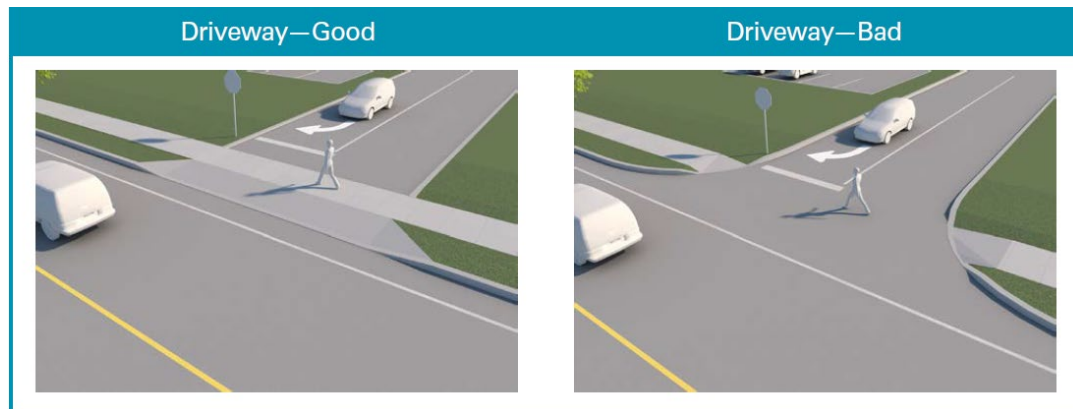


Figure 12 – Sidewalk and Driveways (Source: CSDG)

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 13 – 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. Mini-Roundabout

Mini-roundabout design, a type of roundabout characterized by a small diameter and traversable islands, was recommended at the intersection of CR 533 and Talmage Avenue. Mini-roundabouts offer most of the benefits of regular roundabouts, with the added benefit of a smaller footprint. It should create conditions that reduce vehicle speed (although not at the same level as its larger counterpart) 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. Of note, most research and experience focuses on single-lane mini-roundabouts.



Figure 14 – Single Lane Mini-Roundabout in Neighborhood Example (Source: NATCO-US)

4. Green Infrastructure

Bioswales are vegetated, shallow, landscaped depressions designed to capture, treat, and infiltrate stormwater runoff as it moves downstream. They are the most effective type of green infrastructure facility in slowing runoff velocity and cleansing water while recharging the underlying groundwater table. They have flexible siting requirements, allowing them to be integrated with medians, curb extensions, and other public space or traffic calming strategies.

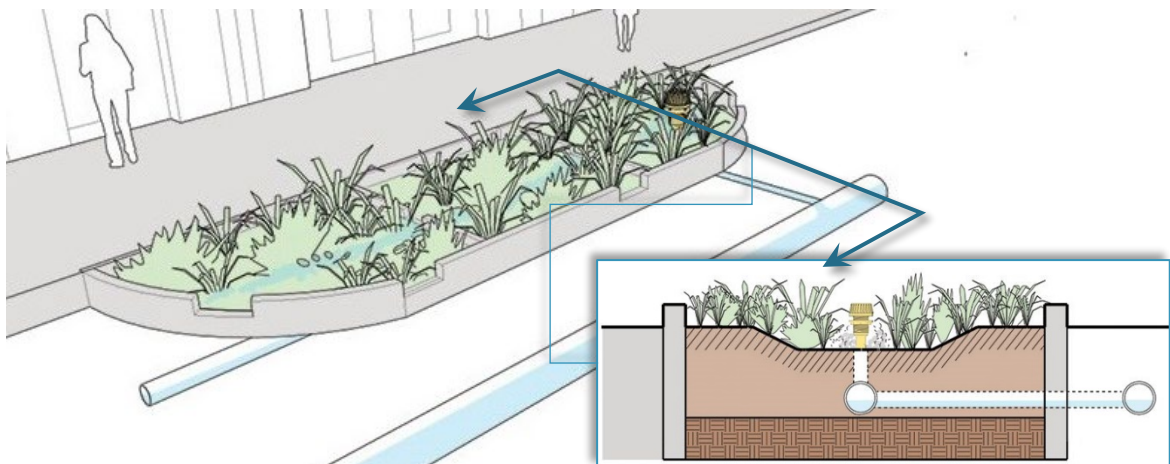


Figure 15 – Bioswale Example (Source: NACTO-US)

5. 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 below.



Figure 16 – Example of a Two-Lane Downtown Street Typology (Source: NACTO-US)

***Top:** 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.*

***Bottom:** 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.

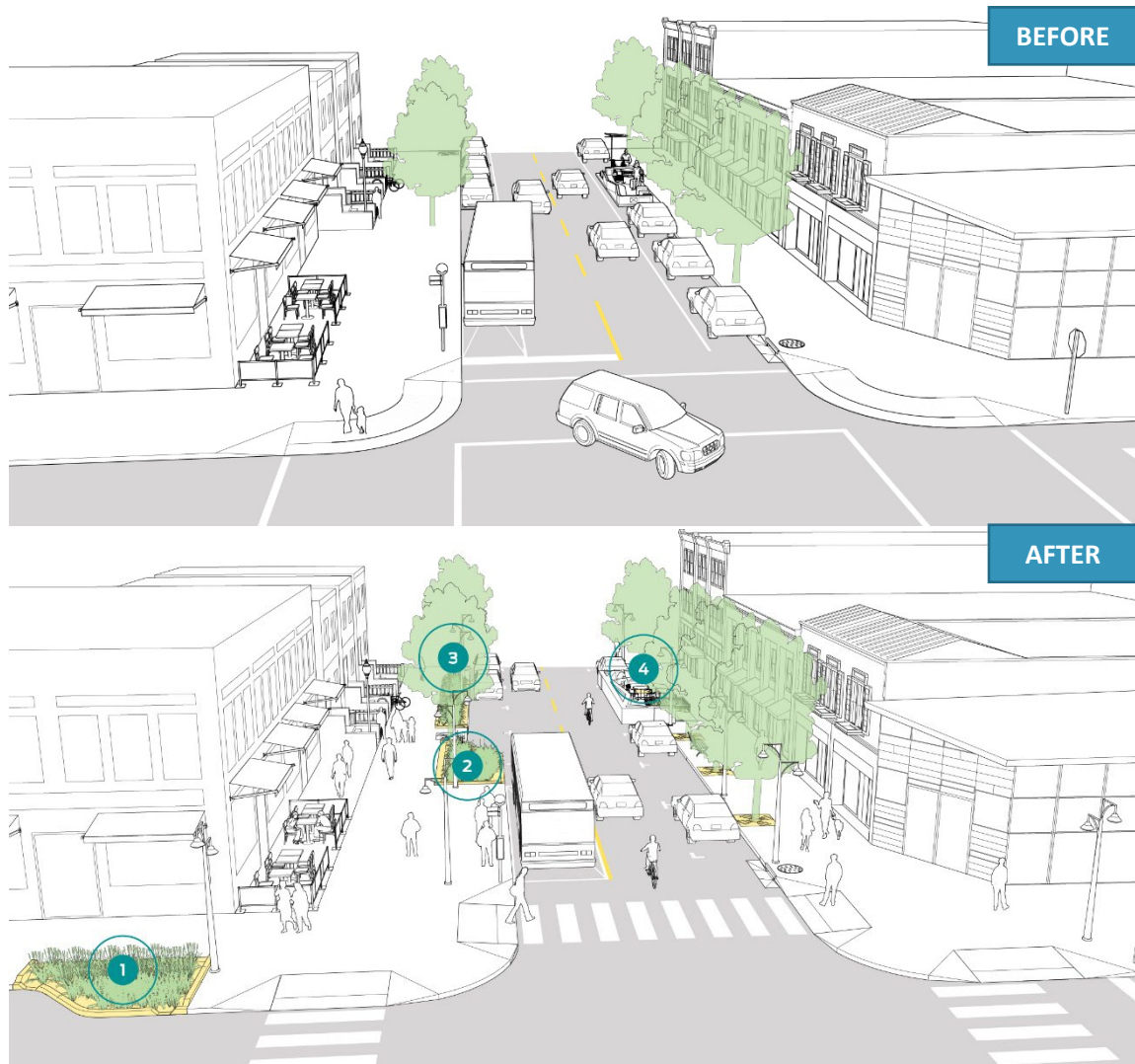


Figure 17 – Example of a Green Neighborhood Street Typology (Source: NACTO-GI)

Top: Less dense than downtowns, neighborhood main streets serve local business activity and civic life, and are characterized by high demand for a quality walking and bicycling environment, frequent parking turnover and freight access, and service by key transit routes.

Bottom: Green infrastructure enhances neighborhood main streets, creating more aesthetically pleasing public spaces even where the street is relatively narrow. (1) Curb extensions with bioretention facilities can be integrated at intersections and mid-block locations to improve pedestrian mobility and safety, shorten crossing distances, and calm vehicle traffic by narrowing the road; (2) transit boarding bulbs are an important opportunity to integrate green infrastructure, since sidewalk space is often not available and curbsides are at a premium; (3) Smaller green infrastructure treatments, such as bioretention planters, stormwater tree wells, or tree trenches, can be used on neighborhood main streets with space constraints and high foot traffic along the sidewalk and between the curb and storefronts; (4) the bioretention facility wall can incorporate

seating and placemaking elements in the planting or furnishing zone, especially on main streets with significant foot traffic and active storefronts.

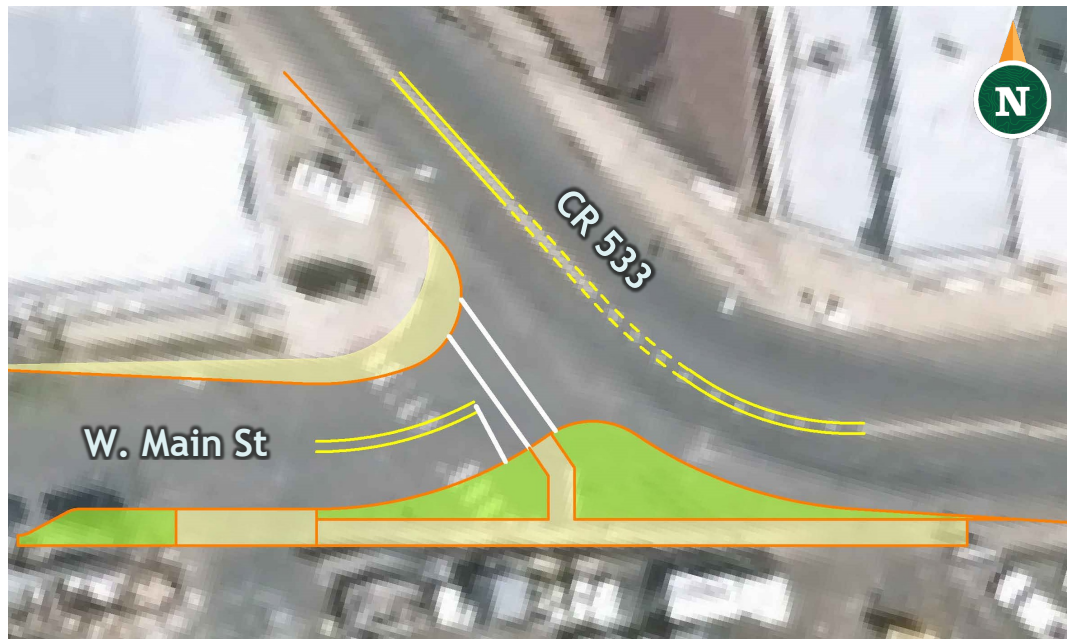


Figure 18 – Sketch of Recommendation #70, Realignment of W. Main St at CR 533

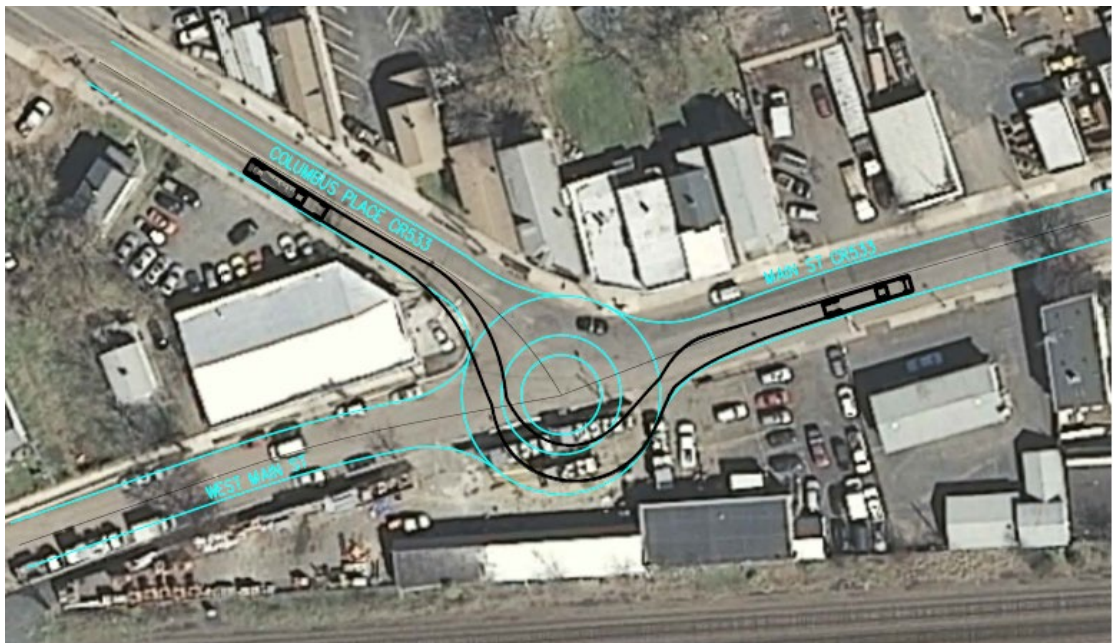


Figure 19 – Sketch of Recommendation #71, Roundabout W. Main St at CR 533 (by Somerset County)

VI. Conclusions

The CR 533 and CR 527 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 Talmage Avenue and Main Street. 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

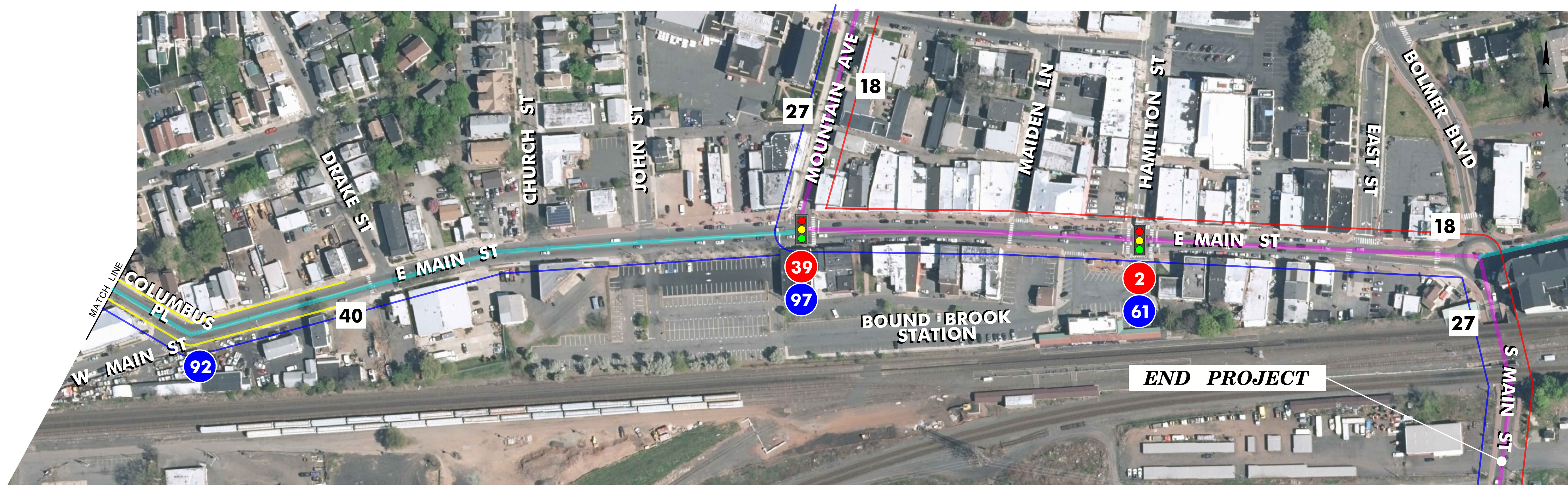
Audit Team

Name	Agency
Tricia Smith	Somerset County
Alicia Meyers	Somerset County
Victor Owusu	Somerset County
Pat Marotto	Somerset County
Walt Lane	Somerset County
Matt Loper	Somerset County Engineer
Thomas D'Amico	Somerset County Planning
Andras Holzmann	Somerset County Planning
Jeff Horn	Somerset County Traffic
Joe Costa	Bound Brook
Hector Herrera	Bound Brook
Carlos Rodrigues	Bound Brook
Jasmine Mathis	Bound Brook
Jon Dugan	Ride Wise
Christine Mittman	NJTPA
Aimee Jefferson	NJTPA
Patricia Newton	NJTPA
Reba Oduro	NJDOT
William Riviere	NJDOT
Angela Quevedo	NJDOT – Safety
M. Aminul Islam	NJDOT – Safety
Abbhirami Siddarthan	NJDOT – Safety
Keith Skilton	FHWA
Julia Steponanko	Greenman-Pedersen, Inc. (NJDOT Consultant)
Andrew Halloran	Greenman-Pedersen, Inc.
Mike Levan	Greenman-Pedersen, Inc.
Aidan Sheehan	Greenman-Pedersen, Inc.



APPENDIX B

AREA MAP



1
1

LEGEND

- # NJTPA LSP INTERSECTION RANK
- # NJTPA LSP PEDESTRIAN INTERSECTION RANK
- # NJTPA LSP CORRIDOR RANK
- # NJTPA LSP PEDESTRIAN CORRIDOR RANK
- SIGNALIZED INTERSECTION
- CR 533
- CR 527
- Per NJDOT 2019 SLD
- NO PARKING, ANY TIME
- PARKING AS PERMITTED
- Based on field observations

NJDOT HSIP ROAD SAFETY AUDIT CR 533 (Talmage Ave)/CR 527 (Main St)	
BOUND BROOK BOROUGH SOMERSET COUNTY	
PROJECT LOCATION	
	 Engineering Design Planning Construction Management
N.T.S.	

APPENDIX C

TRAFFIC DATA

Study Name 2 - Main St & Mountain Ave
Start Date Tuesday, April 17, 2018 5:00
End Date Saturday, April 21, 2018 17:00
Site Code

Report Summary

Time Period	Class.	Southbound					Westbound					Eastbound					Crosswalk				
		R	L	U	I	O	R	T	U	I	O	T	L	U	I	O	Total	Bikes	Peds	Total	
Peak 1	Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	2	30	32
Specified Period	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		6%	94%	
5:00 - 12:00	rs & Light Goc	80	108	0	188	96	52	296	0	348	336	228	44	0	272	376	808	E	1	4	5
One Hour Peak	%	99%	98%	0%	98%	91%	90%	94%	0%	93%	91%	88%	94%	0%	89%	95%	93%		20%	80%	
6:45 - 7:45	Buses	1	1	0	2	0	0	4	0	4	5	4	0	0	4	5	10	W	0	0	0
	%	1%	1%	0%	1%	0%	0%	1%	0%	1%	1%	2%	0%	0%	1%	1%	1%		0%	0%	
	ngle-Unit Truc	0	1	0	1	9	6	13	0	19	22	21	3	0	24	13	44		3	34	37
	%	0%	1%	0%	1%	9%	10%	4%	0%	5%	6%	8%	6%	0%	8%	3%	5%				
	ticulated Truc	0	0	0	0	0	0	1	0	1	6	6	0	0	6	1	7				
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	2%	0%	1%				
	icycles on Roa	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1				
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
	Total	81	110	0	191	105	58	315	0	373	369	259	47	0	306	396	870				
	PHF	0.7	0.76	0	0.73	0.69	0.85	0.78	0	0.79	0.91	0.84	0.56	0	0.94	0.76	0.87				
	Approach %				22%	12%				43%	42%				35%	46%					
Peak 2	Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	7	48	55
Specified Period	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		13%	87%	
12:00 - 19:00	rs & Light Goc	38	90	0	128	164	80	442	0	522	471	381	84	0	465	480	1115	E	0	8	8
One Hour Peak	%	95%	98%	0%	97%	99%	99%	98%	0%	98%	97%	97%	100%	0%	98%	98%	98%		0%	100%	
16:30 - 17:30	Buses	0	0	0	0	0	0	3	0	3	3	3	0	0	3	3	6	W	0	3	3
	%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	1%	0%	0%	1%	1%	1%		0%	100%	
	ngle-Unit Truc	2	2	0	4	1	1	7	0	8	9	7	0	0	7	9	19		7	59	66
	%	5%	2%	0%	3%	1%	1%	2%	0%	2%	2%	2%	0%	0%	1%	2%	2%				
	ticulated Truc	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1				
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
	icycles on Roa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
	Total	40	92	0	132	165	81	452	0	533	484	392	84	0	476	492	1141				
	PHF	0.83	0.88	0	0.97	0.79	0.75	0.9	0	0.95	0.92	0.89	0.66	0	0.97	0.92	0.96				
	Approach %				12%	14%				47%	42%				42%	43%					

Study Name 2 - Main St & Mountain Ave
Start Date Tuesday, April 17, 2018 5:00
End Date Saturday, April 21, 2018 17:00
Site Code

Report Summary

Time Period	Class.	Southbound					Westbound					Eastbound					Total	Crosswalk			
		R	L	U	I	O	R	T	U	I	O	T	L	U	I	O		Bikes	Peds	Total	
Peak 1	Motorcycles	0	1	0	1	0	0	2	0	2	3	2	0	0	2	2	5	N	6	61	67
Specified Period	%	0%	1%	0%	1%	0%	0%	1%	0%	0%	1%	0%	0%	1%	1%	1%	1%		9%	91%	
9:00 - 12:00	rs & Light Goc	41	85	0	126	101	61	333	0	394	409	324	40	0	364	374	884	E	0	2	2
One Hour Peak	%	98%	93%	0%	95%	94%	92%	96%	0%	96%	96%	97%	98%	0%	97%	96%	96%		0%	100%	
11:00 - 12:00	Buses	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	W	0	3	3
	%	0%	0%	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	100%	
	ngle-Unit Truc	0	1	0	1	4	3	11	0	14	9	8	1	0	9	11	24		6	66	72
	%	0%	1%	0%	1%	4%	5%	3%	0%	3%	2%	2%	2%	0%	2%	3%	3%				
	ticulated Truc	1	1	0	2	0	0	0	0	0	1	0	0	0	0	1	2				
	%	2%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
	icycles on Roa	0	3	0	3	1	1	0	0	1	4	1	0	0	1	0	5				
	%	0%	3%	0%	2%	1%	2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%				
	Total	42	91	0	133	107	66	346	0	412	426	335	41	0	376	388	921				
	PHF	0.81	0.78	0	0.88	0.72	0.66	0.87	0	0.87	0.88	0.81	0.85	0	0.84	0.9	0.94				
	Approach %				14%	12%				45%	46%				41%	42%					
Peak 2	Motorcycles	0	1	0	1	2	2	2	0	4	4	3	0	0	3	2	8	N	2	45	47
Specified Period	%	0%	1%	0%	1%	2%	3%	0%	0%	1%	1%	1%	0%	0%	1%	0%	1%		4%	96%	
12:00 - 17:00	rs & Light Goc	42	105	0	147	95	63	393	0	456	473	368	32	0	400	435	1003	E	1	13	14
One Hour Peak	%	93%	98%	0%	97%	97%	95%	97%	0%	96%	98%	98%	100%	0%	98%	96%	97%		7%	93%	
15:00 - 16:00	Buses	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	W	0	7	7
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	100%	
	ngle-Unit Truc	1	1	0	2	0	0	7	0	7	4	3	0	0	3	8	12		3	65	68
	%	2%	1%	0%	1%	0%	0%	2%	0%	1%	1%	1%	0%	0%	1%	2%	1%				
	ticulated Truc	2	0	0	2	1	1	1	0	2	0	0	0	0	0	3	4				
	%	4%	0%	0%	1%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%				
	icycles on Roa	0	0	0	0	0	0	4	0	4	1	1	0	0	1	4	5				
	%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	1%	0%				
	Total	45	107	0	152	98	66	407	0	473	483	376	32	0	408	452	1033				
	PHF	0.59	0.86	0	0.83	0.79	0.79	0.94	0	0.98	0.98	0.92	0.8	0	0.95	0.89	0.97				
	Approach %				15%	9%				46%	47%				39%	44%					

Study Name 3 - Bound Brook Rotary
Start Date Tuesday, April 17, 2018 5:00
End Date Saturday, April 21, 2018 17:00
Site Code

Report Summary

Time Period	Class.	Southbound				Westbound				Northbound				Eastbound				Crosswalk													
		R	T	L	U	I	O	R	T	L	U	I	O	R	T	L	U	I	O	Total	Bikes	Peds	Total								
Peak 1	Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	3	0	3						
Specified Period	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%							
5:00 - 12:00	rs & Light Goc	3	304	32	0	339	403	18	127	244	0	389	269	105	382	194	3	684	761	210	132	3	0	345	324	1757	E	0	4	4	
One Hour Peak	%	100%	99%	97%	0%	99%	97%	86%	92%	95%	0%	93%	91%	95%	98%	96%	100%	97%	97%	96%	88%	75%	0%	92%	94%	96%	0%	100%			
7:00 - 8:00	Buses	0	0	0	0	0	4	0	0	2	0	2	0	0	3	2	0	5	4	2	0	1	1	4	3	11	S	0	13	13	
	%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	1%	1%	0%	1%	1%	1%	0%	25%	100%	1%	1%	1%	0%	100%			
	ngle-Unit Truc	0	2	1	0	3	5	2	9	10	1	22	21	6	3	5	0	14	17	5	13	0	0	18	14	57	W	1	4	5	
	%	0%	1%	3%	0%	1%	1%	10%	7%	4%	100%	5%	7%	5%	1%	2%	0%	2%	2%	2%	9%	0%	0%	5%	4%	3%	20%	80%			
	ticulated Truc	0	0	0	0	0	2	1	2	1	0	4	5	0	1	2	0	3	3	2	5	0	0	7	4	14		4	21	25	
	%	0%	0%	0%	0%	0%	0%	5%	1%	0%	0%	1%	2%	0%	0%	1%	0%	0%	0%	1%	3%	0%	0%	2%	1%	1%					
	icycles on Roa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
	Total	3	306	33	0	342	414	21	138	257	1	417	295	111	389	203	3	706	785	219	150	4	1	374	345	1839					
	PHF	0.38	0.82	0.55	0	0.81	0.9	0.4	0.73	0.97	0.25	0.84	0.74	0.82	0.85	0.89	0.38	0.91	0.84	0.71	0.66	0.5	0.25	0.89	0.91	0.92					
	Approach %					19%	23%					23%	16%					38%	43%				20%	19%							
Peak 2	Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	0	1	1	
Specified Period	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%		
12:00 - 19:00	rs & Light Goc	0	346	50	0	396	370	54	312	156	2	524	541	284	298	176	5	763	739	232	205	18	4	459	492	2142	E	0	2	2	
One Hour Peak	%	0%	99%	100%	0%	99%	97%	93%	97%	99%	100%	97%	95%	98%	98%	99%	100%	98%	99%	98%	90%	100%	100%	94%	98%	97%	0%	100%			
16:30 - 17:30	Buses	0	3	0	0	3	2	0	2	0	0	2	0	0	2	1	0	3	5	2	0	0	0	2	3	10	S	0	3	3	
	%	0%	1%	0%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%	0%	0%	0%	1%	0%	0%	0%	100%		
	ngle-Unit Truc	0	1	0	0	1	7	3	7	1	0	11	27	5	4	1	0	10	5	3	22	0	0	25	8	47	W	1	8	9	
	%	0%	0%	0%	0%	0%	2%	5%	2%	1%	0%	2%	5%	2%	1%	1%	0%	1%	1%	1%	10%	0%	0%	5%	2%	2%	11%	89%			
	ticulated Truc	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		1	14	15	
	%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
	icycles on Roa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
	Total	0	350	50	0	400	380	58	321	157	2	538	568	289	304	178	5	776	749	237	227	18	4	486	503	2200					
	PHF	0	0.89	0.78	0	0.88	0.89	0.69	0.82	0.74	0.5	0.78	0.93	0.84	0.85	0.91	0.42	0.96	0.93	0.85	0.82	0.75	0.33	0.99	0.89	0.94					
	Approach %					18%	17%					24%	26%					35%	34%				22%	23%							

Study Name 3 - Bound Brook Rotary
Start Date Tuesday, April 17, 2018 5:00
End Date Saturday, April 21, 2018 17:00
Site Code

Report Summary

Time Period	Class.	Southbound				Westbound				Northbound				Eastbound				Crosswalk												
		R	T	L	U	I	O	R	T	L	U	I	O	R	T	L	U	I	O	Total	Bikes	Peds	Total							
Peak 1	Motorcycles	0	0	0	0	0	1	1	2	0	4	0	0	0	0	0	2	0	0	0	0	1	4	N	1	5	6			
Specified Period	%	0%	0%	0%	0%	0%	0%	2%	0%	2%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	83%				
9:00 - 12:00	rs & Light Goc	6	158	49	0	213	300	53	207	81	0	341	402	157	226	146	1	530	418	178	196	21	12	407	371	1491	E	0	0	0
One Hour Peak	%	86%	98%	98%	0%	97%	98%	96%	94%	94%	0%	94%	97%	98%	98%	96%	100%	97%	96%	96%	98%	100%	100%	97%	95%	96%	0%	0%		
10:30 - 11:30	Buses	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	0	2	S	0	2	2
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	100%		
	ngle-Unit Truc	1	1	1	0	3	1	1	9	1	1	12	10	4	0	6	0	10	6	4	4	0	0	8	16	33	W	1	4	5
	%	14%	1%	2%	0%	1%	0%	2%	4%	1%	100%	3%	2%	2%	0%	4%	0%	2%	1%	2%	2%	0%	0%	2%	4%	2%	20%	80%		
	ticulated Truc	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	0	2		2	11	13
	%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
	icycles on Roa	0	2	0	0	2	4	0	4	2	0	6	0	0	4	0	0	4	6	2	0	0	0	2	4	14				
	%	0%	1%	0%	0%	1%	1%	0%	2%	2%	0%	2%	0%	0%	2%	0%	0%	1%	1%	1%	0%	0%	0%	0%	1%	1%				
	Total	7	162	50	0	219	307	55	221	86	1	363	413	161	231	152	1	545	434	185	201	21	12	419	392	1546				
	PHF	0.58	0.84	0.5	0	0.88	0.91	0.62	0.89	0.86	0.25	0.82	0.83	0.84	0.92	0.86	0.25	0.93	0.91	0.92	0.95	0.52	0.5	0.93	0.92	0.97				
	Approach %					14%	20%					23%	27%					35%	28%				27%	25%						
Peak 2	Motorcycles	0	0	0	0	0	1	0	2	2	0	4	0	0	1	3	0	4	2	0	0	0	0	0	5	8	N	2	3	5
Specified Period	%	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	1%	0%	0%	0%	2%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	40%	60%	
12:00 - 17:00	rs & Light Goc	8	210	65	1	284	343	69	189	105	0	363	442	183	255	180	2	620	552	235	194	18	13	460	390	1727	E	0	0	0
One Hour Peak	%	100%	100%	98%	100%	99%	100%	100%	96%	98%	0%	97%	99%	98%	100%	98%	100%	99%	99%	100%	99%	100%	100%	100%	97%	99%	0%	0%		
16:00 - 17:00	Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	S	0	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	ngle-Unit Truc	0	1	1	0	2	0	0	6	0	0	6	5	3	0	0	0	3	1	0	1	0	0	1	6	12	W	0	3	3
	%	0%	0%	2%	0%	1%	0%	0%	3%	0%	0%	2%	1%	2%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	1%	0%	100%		
	ticulated Truc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2	6	8
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
	icycles on Roa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
	Total	8	211	66	1	286	344	69	197	107	0	373	447	186	256	183	2	627	556	236	195	18	13	462	401	1748				
	PHF	0.4	0.89	0.75	0.25	0.92	0.74	0.59	0.79	0.84	0	0.8	0.87	0.79	0.79	0.82	0.25	0.9	0.93	0.81	0.9	0.64	0.46	0.95	0.84	0.92				
	Approach %					16%	20%					21%	26%					36%	32%				26%	23%						

New Jersey Department of Transportation

Daily Volume from 05/12/2015 through 05/14/2015

Site Names: 4-5-608, , RT 527-53.59, 00000527__, Bound Brook Boro
 County: SOMERSET
 Funct: Urban Minor Arterial
 Location: Between Maiden Lane and RT 527 Mountain Avenue

Seasonal Factor Group: RG3_FC16
 Daily Factor Group: RG3_FC16
 Axle Factor Group: RG3_FC16
 Growth Factor Group: RG3_FC16

	Sun 05/10/2015			Mon 05/11/2015			Tue 05/12/2015			Wed 05/13/2015			Thu 05/14/2015			Fri 05/15/2015			Sat 05/16/2015		
	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N
00:00										86	48	38	119	63	56						
01:00										51	33	18	51	24	27						
02:00										24	15	9	36	16	20						
03:00										20	10	10	26	13	13						
04:00										77	41	36	66	33	33						
05:00										242	117	125	254	125	129						
06:00										630	334	296	588	319	269						
07:00										740	382	358	728	391	337						
08:00										793	400	393	833	438	395						
09:00										641	337	304	725	383	342						
10:00										589	279	310	579	292	287						
11:00							672	312	360	608	306	302									
12:00							697	346	351	734	353	381									
13:00							774	366	408	797	431	366									
14:00							862	412	450	841	367	474									
15:00							940	436	504	956	423	533									
16:00							1,050	521	529	1,001	496	505									
17:00							844	425	419	877	475	402									
18:00							798	408	390	808	444	364									
19:00							770	372	398	760	326	434									
20:00							650	304	346	669	286	383									
21:00							515	229	286	500	221	279									
22:00							369	185	184	331	153	178									
23:00							142	76	66	152	72	80									
Volume							9,083	4,392	4,691	12,927	6,349	6,578	4,005	2,097	1,908						
AM Peak Vol										793	418	398									
AM Peak Fct										0.94	0.95	0.95									
AM Peak Hr										8:00	7:30	8:15									
PM Peak Vol							1,050	529	535	1,023	512	533									
PM Peak Fct							0.99	0.93	0.92	0.93	0.91	0.91									
PM Peak Hr							16:00	15:45	15:15	15:45	15:45	15:00									
Seasonal Fct							0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972						
Daily Fct							0.954	0.954	0.954	0.946	0.946	0.946	0.955	0.955	0.955						
Axle Fct							0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490	0.490						
Pulse Fct							2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

New Jersey Department of Transportation

Daily Volume from 08/29/2016 through 09/01/2016

Site Names: 091813, , Talmage Avenue-32.03, 00000533 __, Bound Brook Boro
 County: SOMERSET
 Funct. Urban Minor Arterial
 Location: Bet Keuren Ave and Talmage Ave

Seasonal Factor Group: RG3_FC16
 Daily Factor Group: RG3_FC16
 Axle Factor Group: RG3_FC16
 Growth Factor Group: RG3_FC16

	Sun 08/28/2016			Mon 08/29/2016			Tue 08/30/2016			Wed 08/31/2016			Thu 09/01/2016			Fri 09/02/2016			Sat 09/03/2016		
	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N
00:00							55	27	28	73	35	38	69	36	33						
01:00							41	22	19	29	14	15	42	26	16						
02:00							29	11	18	31	18	13	19	11	8						
03:00							32	16	16	20	11	9	30	20	10						
04:00							80	45	35	98	47	51	87	43	44						
05:00							306	162	144	312	153	159	290	153	137						
06:00							578	285	293	571	289	282	545	281	264						
07:00							607	335	272	641	354	287	578	316	262						
08:00							594	340	254	561	323	238	577	323	254						
09:00							540	276	264	494	263	231	570	329	241						
10:00							582	253	329	560	280	280	535	250	285						
11:00							605	298	307	622	307	315									
12:00							656	321	335	669	316	353									
13:00				707	326	381	672	338	334	627	305	322									
14:00				805	375	430	700	319	381	696	320	376									
15:00				858	411	447	926	445	481	800	356	444									
16:00				921	457	464	925	459	466	900	437	463									
17:00				846	421	425	828	395	433	870	391	479									
18:00				706	338	368	820	407	413	758	359	399									
19:00				608	280	328	656	333	323	670	319	351									
20:00				454	215	239	469	189	280	468	235	233									
21:00				350	152	198	359	159	200	404	173	231									
22:00				200	100	100	189	94	95	197	88	109									
23:00				117	61	56	119	57	62	104	46	58									
Volume				6,572	3,136	3,436	11,368	5,586	5,782	11,175	5,439	5,736	3,342	1,788	1,554						
AM Peak Vol							607	340	329	641	354	315									
AM Peak Fct							1.00	1.00	1.00	1.00	1.00	1.00									
AM Peak Hr							7:00	8:00	10:00	7:00	7:00	11:00									
PM Peak Vol							926	459	481	900	437	479									
PM Peak Fct							1.00	1.00	1.00	1.00	1.00	1.00									
PM Peak Hr							15:00	16:00	15:00	16:00	16:00	17:00									
Seasonal Fct				0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.977	0.977	0.977						
Daily Fct				0.972	0.972	0.972	0.967	0.967	0.967	0.935	0.935	0.935	0.921	0.921	0.921						
Axle Fct				0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500						
Pulse Fct				2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

New Jersey Department of Transportation

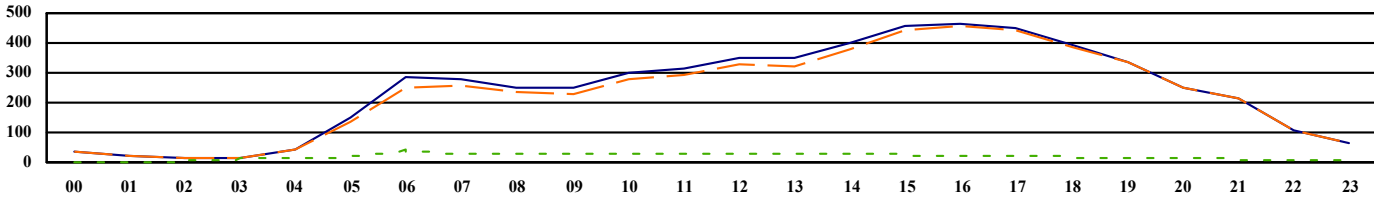
24 Hour Directional Summary, North Bound for Aug 29, 2016

091813, , Talmage Avenue-32.03, 00000533__, Bound Brook Boro
FC16 SOMERSET County

Bet Keuren Ave and Talmage Ave

	Total	Total	Peak	Peak
Private:	5,438.0	95.1	451.0	97.2
Single:	262.3	4.6	12.7	2.7
Combo:	8.5	0.1	0.0	0.0
Trucks:	270.8	4.7	12.7	2.7
Total:	5,717.8		464.0	

Peak Hour: 16
Axle Factor: 0.99



	VOL	MC	CAR	PU	BUS	2D	SU 3	SU 4+	ST 4-	ST 5	ST 6+	MT 5-	MT 6	MT 7+
0	33.0	0.3	30.7	2.0	0	0	0	0	0	0	0	0	0	0
1	16.7	0	14.0	2.0	0	0.3	0.3	0	0	0	0	0	0	0
2	13.0	0	11.3	1.0	0	0.7	0	0	0	0	0	0	0	0
3	11.7	0.7	8.0	1.3	0	0.3	1.3	0	0	0	0	0	0	0
4	43.3	1.7	31.3	6.7	0.3	1.0	2.3	0	0	0	0	0	0	0
5	146.7	1.7	96.7	33.7	0.3	11.3	2.3	0.3	0.3	0	0	0	0	0
6	279.7	3.0	190.3	53.3	1.3	27.0	4.0	0	0	0.7	0	0	0	0
7	273.7	1.3	188.0	64.0	1.0	15.7	3.0	0	0.7	0	0	0	0	0
8	248.7	0.7	171.3	57.7	1.3	15.3	2.0	0	0	0.3	0	0	0	0
9	245.3	1.3	169.7	54.7	0.7	15.7	2.7	0	0.7	0	0	0	0	0
10	298.0	2.0	209.7	63.0	1.3	16.7	3.7	0	0.7	1.0	0	0	0	0
11	310.5	3.5	228.5	59.0	1.0	16.5	2.0	0	0	0	0	0	0	0
12	344.0	2.5	254.0	67.5	0	14.0	5.5	0	0	0.5	0	0	0	0
13	345.7	0	257.0	64.0	0.3	19.0	4.7	0	0.3	0	0.3	0	0	0
14	395.3	3.3	303.0	67.0	0	16.0	3.7	0	1.3	1.0	0	0	0	0
15	457.0	0.3	369.3	69.7	1.0	13.7	2.3	0	0.7	0	0	0	0	0
16	464.0	1.0	366.7	83.3	0.3	12.7	0	0	0	0	0	0	0	0
17	445.7	4.3	365.7	66.3	0	9.0	0.3	0	0	0	0	0	0	0
18	392.7	4.0	326.3	53.3	0	8.0	1.0	0	0	0	0	0	0	0
19	333.3	6.0	282.3	41.3	0	3.3	0.3	0	0	0	0	0	0	0
20	250.7	0.7	216.7	31.0	0	2.3	0	0	0	0	0	0	0	0
21	209.3	0.7	180.7	26.7	0	1.3	0	0	0	0	0	0	0	0
22	101.3	1.0	87.0	13.0	0	0.3	0	0	0	0	0	0	0	0
23	58.7	1.0	53.7	3.7	0	0.3	0	0	0	0	0	0	0	0
Total	5,717.8	41.0	4,411.8	985.2	9.0	220.5	41.5	0.3	4.7	3.5	0.3	0	0	0
%	100.0	0.7	77.2	17.2	0.2	3.9	0.7	0	0.1	0.1	0	0	0	0

New Jersey Department of Transportation

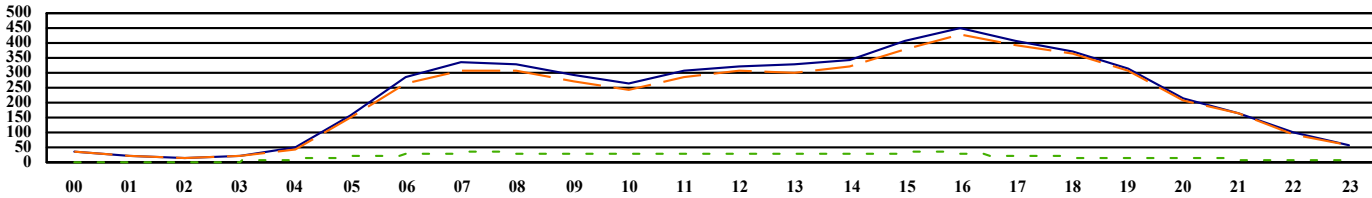
24 Hour Directional Summary, South Bound for Aug 29, 2016

091813, , Talmage Avenue-32.03, 00000533__, Bound Brook Boro
FC16 SOMERSET County

Bet Keuren Ave and Talmage Ave

	Total	Total	Peak	Peak
Private:	5,208.5	94.4	425.0	94.4
Single:	281.3	5.1	25.3	5.6
Combo:	11.2	0.2	0.0	0.0
Trucks:	292.5	5.3	25.3	5.6
Total:	5,515.8		450.3	

Peak Hour: 16
Axle Factor: 0.99

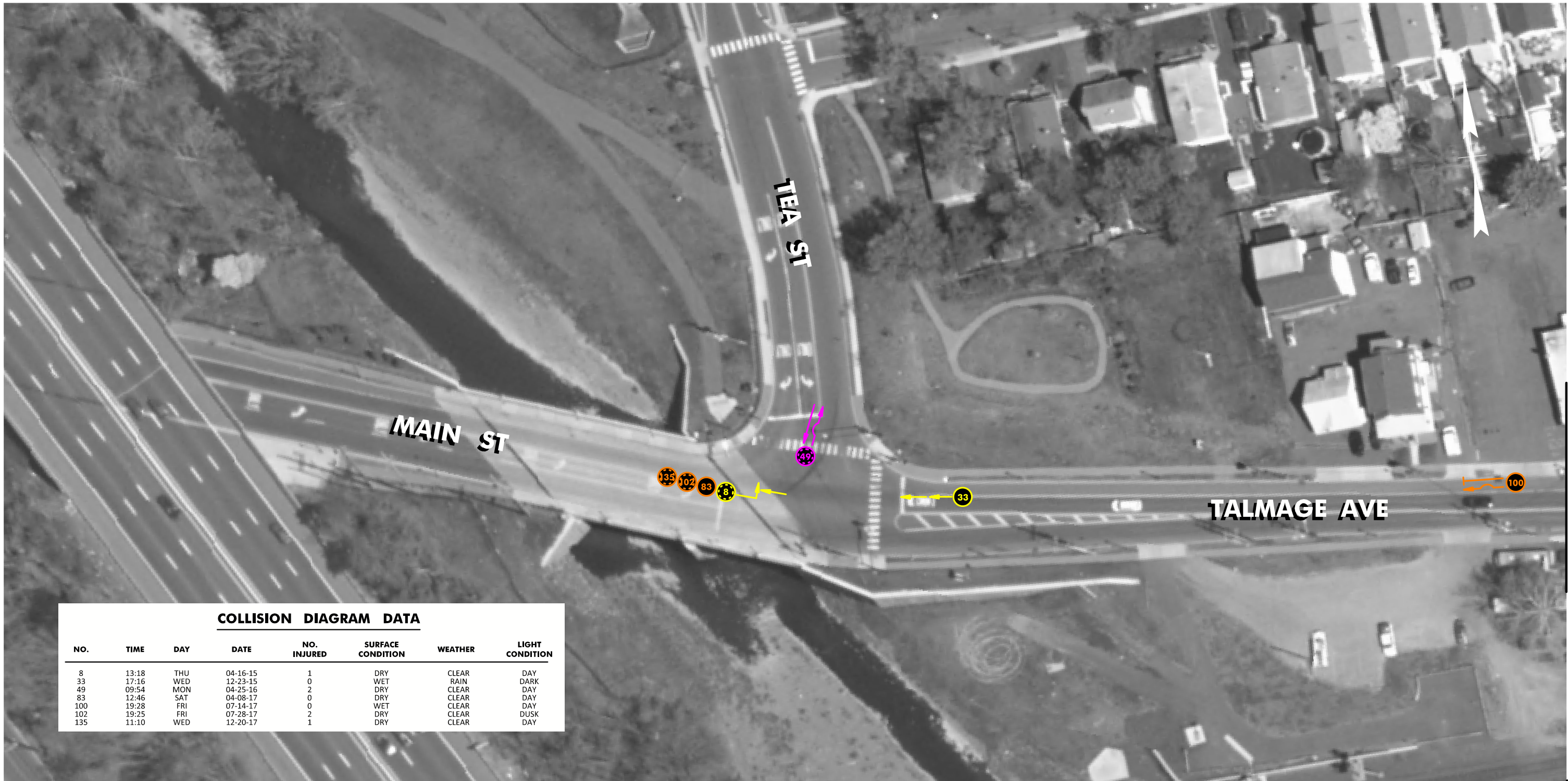


	VOL	MC	CAR	PU	BUS	2D	SU 3	SU 4+	ST 4-	ST 5	ST 6+	MT 5-	MT 6	MT 7+
0	32.7	0.3	29.3	2.7	0	0.3	0	0	0	0	0	0	0	0
1	20.3	0.3	17.3	2.3	0	0.3	0	0	0	0	0	0	0	0
2	13.3	0	9.7	3.0	0	0.3	0.3	0	0	0	0	0	0	0
3	15.7	0	14.7	1.0	0	0	0	0	0	0	0	0	0	0
4	45.0	0.3	31.7	9.0	0.3	1.3	2.3	0	0	0	0	0	0	0
5	156.0	0.3	116.3	30.7	0.3	5.7	2.3	0.3	0	0	0	0	0	0
6	284.3	1.3	204.7	54.3	1.7	18.3	2.7	0.3	0.3	0.7	0	0	0	0
7	335.0	1.0	242.0	64.7	1.7	22.0	2.3	0	0.7	0.7	0	0	0	0
8	328.3	1.0	240.0	61.0	1.0	19.0	3.3	0	0.7	2.0	0.3	0	0	0
9	289.0	2.0	205.0	59.0	1.0	20.3	1.0	0	0	0.7	0	0	0	0
10	261.0	0.7	184.7	51.7	1.7	19.3	3.0	0	0	0	0	0	0	0
11	302.0	0.5	218.0	63.0	2.0	15.5	2.5	0	0	0.5	0	0	0	0
12	318.5	2.0	227.0	72.0	1.5	12.5	2.5	0	0.5	0.5	0	0	0	0
13	323.0	2.0	229.3	68.0	1.3	19.3	2.0	0	0.7	0.3	0	0	0	0
14	337.3	1.3	246.7	69.3	1.0	16.7	1.3	0	0	1.0	0	0	0	0
15	403.0	3.0	303.0	73.0	0.3	21.7	1.3	0	0.3	0.3	0	0	0	0
16	450.3	2.3	337.0	85.7	0	24.7	0.7	0	0	0	0	0	0	0
17	402.0	4.3	316.7	70.7	0.3	9.3	0	0	0.7	0	0	0	0	0
18	368.0	3.7	300.7	54.3	0.3	8.7	0.3	0	0	0	0	0	0	0
19	308.3	4.0	247.0	49.7	0	7.7	0	0	0	0	0	0	0	0
20	212.7	2.7	169.3	35.0	0	5.7	0	0	0	0	0	0	0	0
21	161.3	2.0	135.0	21.3	0	3.0	0	0	0	0	0	0	0	0
22	94.0	1.3	81.7	10.0	0.3	0.7	0	0	0	0	0	0	0	0
23	54.7	1.0	45.3	7.7	0	0.3	0	0	0.3	0	0	0	0	0
Total	5,515.8	37.5	4,152.0	1,019.0	14.8	252.7	28.0	0.7	4.2	6.7	0.3	0	0	0
%	100.0	0.7	75.3	18.5	0.3	4.6	0.5	0	0.1	0.1	0	0	0	0

APPENDIX D

VEHICULAR CRASH DIAGRAMS

FILE: L:\2017659_HSP_Program_and_Project_Development_Support\NDOT_HSP_Year_2_Catchway01_Somerset_Crash_Diagram_Sheets\Vehicle_Sheet-01.dgn
 TIME: 4/18/43 PM
 DATE: 10/02/2020



COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
8	13:18	THU	04-16-15	1	DRY	CLEAR	DAY
33	17:16	WED	12-23-15	0	WET	RAIN	DARK
49	09:54	MON	04-25-16	2	DRY	CLEAR	DAY
83	12:46	SAT	04-08-17	0	DRY	CLEAR	DAY
100	19:28	FRI	07-14-17	0	WET	CLEAR	DAY
102	19:25	FRI	07-28-17	2	DRY	CLEAR	DUSK
135	11:10	WED	12-20-17	1	DRY	CLEAR	DAY

MATCH LINE A
 SEE SHEET NO. 2 OF 8

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	<u>3</u>
INJURIES	<u>4</u>
FATALITIES	<u>0</u>
TOTAL NO. OF CRASHES	<u>7</u>

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
	OVERTURNED
	STRUCK CIRCULATING VEHICLE
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS	
	2015 CRASHES
	2016 CRASHES
	2017 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2015 - 2017 COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE



SEE SHEET NO. 1 OF 8
 MATCH LINE A

MATCH LINE B
 SEE SHEET NO. 3 OF 8

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
6	06:44	MON	02-23-15	0	DRY	CLEAR	DAY
31	23:18	SAT	12-05-15	0	DRY	CLEAR	DARK
43	13:15	WED	03-30-16	0	DRY	CLEAR	DAY
82	08:38	SAT	04-08-17	0	DRY	CLEAR	DAY
96	21:05	FRI	07-07-17	0	DRY	CLEAR	DUSK
108	17:43	THU	08-17-17	0	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	6
INJURIES	0
FATALITIES	0
TOTAL NO. OF CRASHES	6

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
	STRUCK CIRCULATING VEHICLE
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS	
	2015 CRASHES
	2016 CRASHES
	2017 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2015 - 2017 COLLISION DIAGRAMS

Engineering Design Planning Construction Management	NOT TO SCALE
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FILE: L:\2017\659_HSP_Program_and_Project_Development\Support\NDOT_HSP_Year_2_Catchway01_Somerset_Crash_Diagram_Sheets\Vehicle_Sheet-03.dgn
 TIME: 4:20:38 PM
 DATE: 1/30/2020



SEE SHEET NO. 2 OF 8
 MATCH LINE B

MATCH LINE C
 SEE SHEET NO. 4 OF 8

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
35	07:58	SAT	01-09-16	0	DRY	CLEAR	DAY
51	11:51	FRI	05-13-16	0	DRY	CLEAR	DAY
78	17:15	MON	03-20-17	0	DRY	CLEAR	DAY
85	20:37	FRI	05-05-17	0	DRY	CLEAR	DARK
89	11:15	SUN	06-04-17	0	DRY	CLEAR	DAY
110	11:38	SUN	08-20-17	0	DRY	CLEAR	DAY
116	13:07	SAT	09-16-17	0	DRY	CLEAR	DAY
131	16:34	FRI	12-08-17	0	DRY	CLEAR	DARK

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	8
INJURIES	0
FATALITIES	0
TOTAL NO. OF CRASHES	8

SYMBOLS

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

TYPES OF CRASHES

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

COLORS

- 2015 CRASHES
- 2016 CRASHES
- 2017 CRASHES

3 / 8

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2015 - 2017 COLLISION DIAGRAMS

GPI Engineering
 Design
 Planning
 Construction Management

NOT TO SCALE

FILE: L:\2017659 HSP Program and Project Development\Support\N\DOT_HSP_Year 2\Cadd\HWY01_Somerset\Crash Diagram Sheets\VehicleSheet-04.dgn
 TIME: 4:21:05 PM
 DATE: 1/30/2020

SEE SHEET NO. 3 OF 8
 MATCH LINE C



COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
12	22:24	FRI	05-08-15	0	DRY	CLEAR	DARK
16	18:41	SUN	06-14-15	0	DRY	CLEAR	DAY
20	07:54	WED	07-29-15	0	DRY	CLEAR	DAY
36	23:25	THU	01-14-16	0	DRY	OVERCAST	DARK
50	15:21	FRI	04-29-16	0	DRY	CLEAR	DAY
72	10:58	FRI	02-03-17	0	DRY	CLEAR	DAY
95	14:54	SUN	07-02-17	1	DRY	CLEAR	DAY
111	09:58	WED	08-23-17	2	DRY	CLEAR	DAY
132	20:32	THU	12-14-17	0	DRY	CLEAR	DAY
134	21:26	FRI	12-15-17	0	WET	CLEAR	DARK

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	<u>8</u>
INJURIES	<u>2</u>
FATALITIES	<u>0</u>
TOTAL NO. OF CRASHES	<u>10</u>

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
	STRUCK CIRCULATING VEHICLE
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS	
	2015 CRASHES
	2016 CRASHES
	2017 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

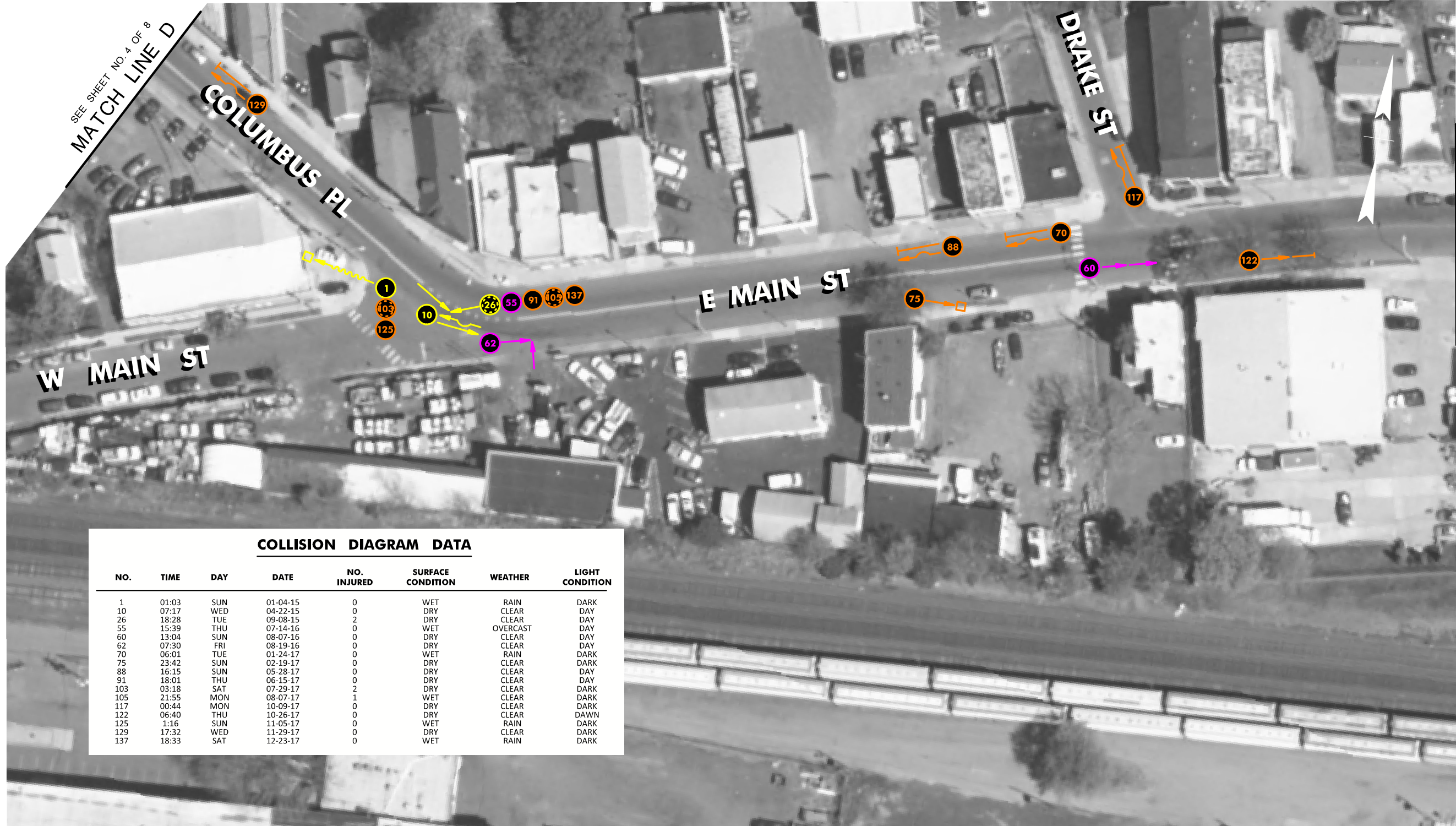
CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2015 - 2017 COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE

FILE: L:\2017\659_HSP_Program_and_Project_Development_Support\NDDOT_HSP_Year_2_Catchway01_Somerset_Crash_Diagram_Sheets\VehicleSheet-05.dgn
 DATE: 1/30/2020
 TIME: 4:21:39 PM



COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
1	01:03	SUN	01-04-15	0	WET	RAIN	DARK
10	07:17	WED	04-22-15	0	DRY	CLEAR	DAY
26	18:28	TUE	09-08-15	2	DRY	CLEAR	DAY
55	15:39	THU	07-14-16	0	WET	OVERCAST	DAY
60	13:04	SUN	08-07-16	0	DRY	CLEAR	DAY
62	07:30	FRI	08-19-16	0	DRY	CLEAR	DAY
70	06:01	TUE	01-24-17	0	WET	RAIN	DARK
75	23:42	SUN	02-19-17	0	DRY	CLEAR	DARK
88	16:15	SUN	05-28-17	0	DRY	CLEAR	DAY
91	18:01	THU	06-15-17	0	DRY	CLEAR	DAY
103	03:18	SAT	07-29-17	2	DRY	CLEAR	DARK
105	21:55	MON	08-07-17	1	WET	CLEAR	DARK
117	00:44	MON	10-09-17	0	DRY	CLEAR	DARK
122	06:40	THU	10-26-17	0	DRY	CLEAR	DAWN
125	1:16	SUN	11-05-17	0	WET	RAIN	DARK
129	17:32	WED	11-29-17	0	DRY	CLEAR	DARK
137	18:33	SAT	12-23-17	0	WET	RAIN	DARK

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	14
INJURIES	3
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
	STRUCK CIRCULATING VEHICLE
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS	
	2015 CRASHES
	2016 CRASHES
	2017 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

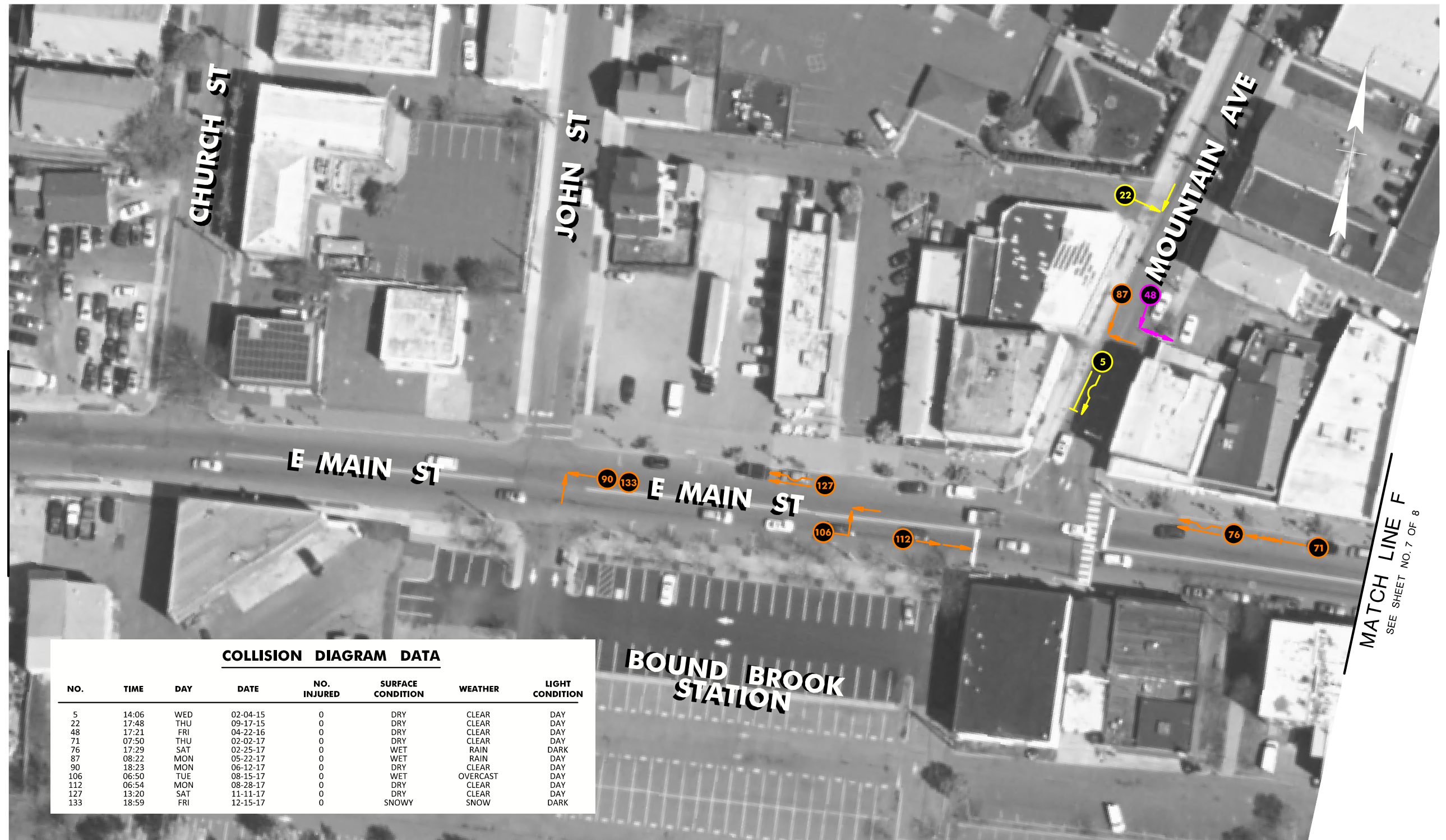
CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2015 - 2017 COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management	NOT TO SCALE
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FILE: L:\2017\659_HSP_Program_and_Project_Development_Support\NJDOT_HSP_Year_2_Catchway\01_Somerset_Crash_Diagram_Sheets\Vehicle_Sheet-06.dgn
 TIME: 4:22:08 PM
 DATE: 10/02/2020

SEE SHEET NO. 5 OF 8
 MATCH LINE E



MATCH LINE F
 SEE SHEET NO. 7 OF 8

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
5	14:06	WED	02-04-15	0	DRY	CLEAR	DAY
22	17:48	THU	09-17-15	0	DRY	CLEAR	DAY
48	17:21	FRI	04-22-16	0	DRY	CLEAR	DAY
71	07:50	THU	02-02-17	0	DRY	CLEAR	DAY
76	17:29	SAT	02-25-17	0	WET	RAIN	DARK
87	08:22	MON	05-22-17	0	WET	RAIN	DAY
90	18:23	MON	06-12-17	0	DRY	CLEAR	DAY
106	06:50	TUE	08-15-17	0	WET	OVERCAST	DAY
112	06:54	MON	08-28-17	0	DRY	CLEAR	DAY
127	13:20	SAT	11-11-17	0	DRY	CLEAR	DAY
133	18:59	FRI	12-15-17	0	SNOWY	SNOW	DARK

LEGEND

NUMBER OF CRASHES WITH

PROPERTY DAMAGE ONLY	<u>11</u>
INJURIES	<u>0</u>
FATALITIES	<u>0</u>
TOTAL NO. OF CRASHES	<u>11</u>

SYMBOLS

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

TYPES OF CRASHES

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

COLORS

- 2015 CRASHES
- 2016 CRASHES
- 2017 CRASHES

6/8

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2015 - 2017 COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE

SEE SHEET NO. 6 OF 8
MATCH LINE F



MATCH LINE G
SEE SHEET NO. 8 OF 8

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
3	07:42	MON	02-02-15	0	SNOWY	SLEET/HAIL/FREEZING RAIN	DAY
4	13:45	MON	02-02-15	0	SLUSH	SLEET/HAIL/FREEZING RAIN	DAY
19	12:54	FRI	07-10-15	0	DRY	CLEAR	DAY
24	09:32	FRI	09-04-15	0	DRY	CLEAR	DAY
27	09:14	FRI	10-02-15	0	WET	RAIN	DAY
30	16:12	SUN	10-31-15	0	DRY	CLEAR	DAY
38	15:50	MON	01-25-16	0	WET	CLEAR	DAY
41	17:57	SUN	03-13-16	0	DRY	CLEAR	DAY
47	14:32	FRI	04-22-16	0	DRY	OVERCAST	DAY
54	08:56	THU	06-30-16	0	DRY	CLEAR	DAY
56	18:31	FRI	07-15-16	0	DRY	CLEAR	DAY
63	07:27	FRI	09-23-16	0	DRY	CLEAR	DAY
64	12:54	THU	10-27-16	0	WET	RAIN	DAY
66	06:18	TUE	11-15-16	0	WET	RAIN	DAWN
97	07:57	SUN	07-09-17	0	DRY	CLEAR	DAY
101	17:31	WED	07-19-17	0	DRY	CLEAR	DAY
114	17:30	FRI	09-08-17	0	DRY	CLEAR	DAY
123	05:58	TUE	10-31-17	0	DRY	CLEAR	DAWN
124	07:19	WED	11-01-17	0	DRY	CLEAR	DAY
128	13:19	SUN	11-12-17	0	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	20
INJURIES	0
FATALITIES	0
TOTAL NO. OF CRASHES	20

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
	STRUCK CIRCULATING VEHICLE
	LEFT TURN
	RIGHT ANGLE
	STRUCK PARKED VEHICLE

COLORS	
	2015 CRASHES
	2016 CRASHES
	2017 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
FROM TEA ST TO RAILROAD AVE
BOUND BROOK BOROUGH, SOMERSET COUNTY

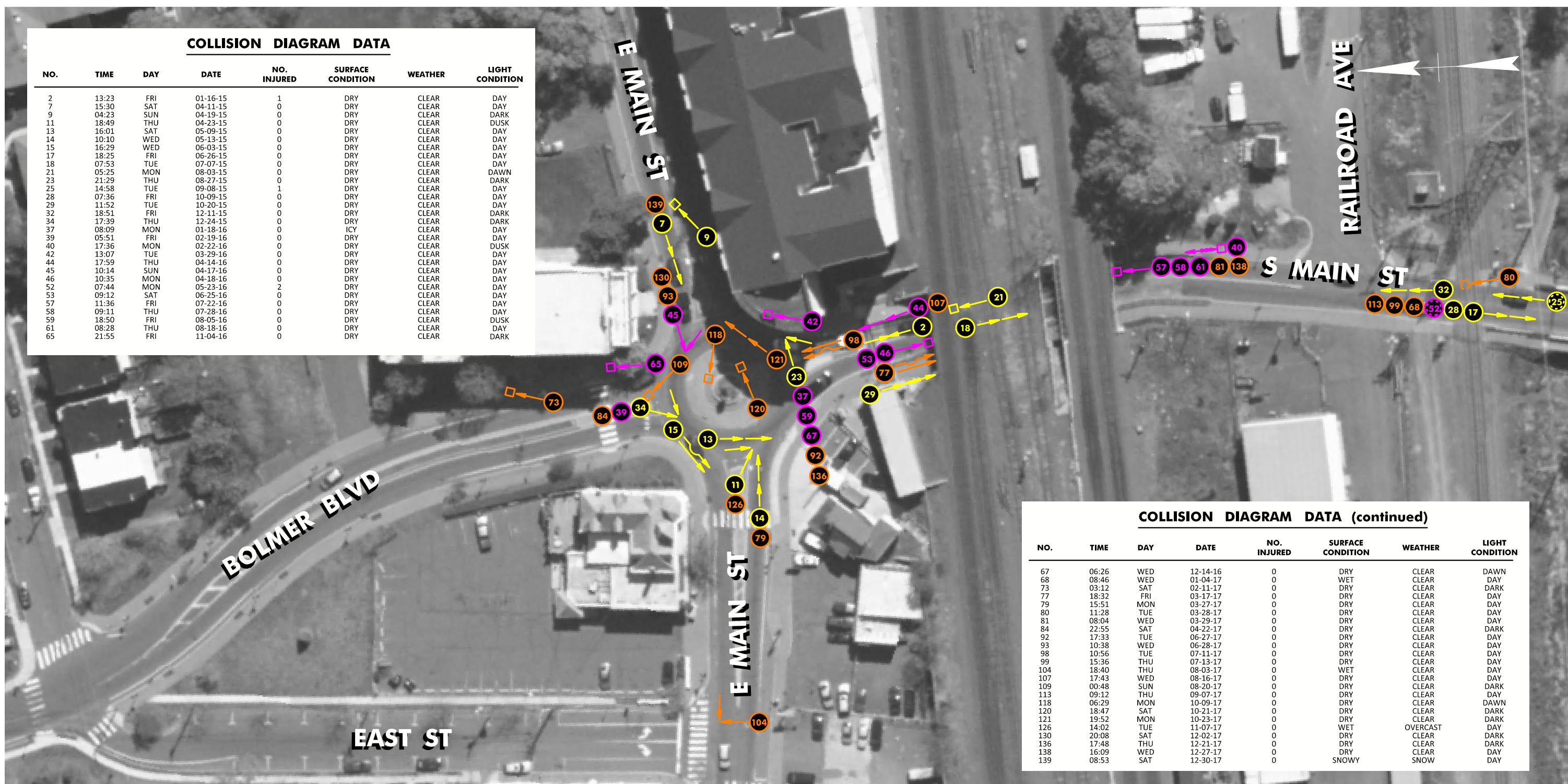
2015 - 2017 COLLISION DIAGRAMS

GPI Engineering
Design
Planning
Construction Management

NOT TO SCALE

FILE: L:\2017659_HSP_Program_and_Project_Development_Support\NDOT_HSP_Year_2_Catchway01_Somerset_Crash_Diagram_Sheets\VehicleSheet-08.dgn
 TIME: 4:28:42 PM
 DATE: 10/20/20

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
2	13:23	FRI	01-16-15	1	DRY	CLEAR	DAY
7	15:30	SAT	04-11-15	0	DRY	CLEAR	DAY
9	04:23	SUN	04-19-15	0	DRY	CLEAR	DARK
11	18:49	THU	04-23-15	0	DRY	CLEAR	DUSK
13	16:01	SAT	05-09-15	0	DRY	CLEAR	DAY
14	10:10	WED	05-13-15	0	DRY	CLEAR	DAY
15	16:29	WED	06-03-15	0	DRY	CLEAR	DAY
17	18:25	FRI	06-26-15	0	DRY	CLEAR	DAY
18	07:53	TUE	07-07-15	0	DRY	CLEAR	DAY
21	05:25	MON	08-03-15	0	DRY	CLEAR	DAWN
23	21:29	THU	08-27-15	0	DRY	CLEAR	DARK
25	14:58	TUE	09-08-15	1	DRY	CLEAR	DAY
28	07:36	FRI	10-09-15	0	DRY	CLEAR	DAY
29	11:52	TUE	10-20-15	0	DRY	CLEAR	DAY
32	18:51	FRI	12-11-15	0	DRY	CLEAR	DARK
34	17:39	THU	12-24-15	0	DRY	CLEAR	DARK
37	08:09	MON	01-18-16	0	ICY	CLEAR	DAY
39	05:51	FRI	02-19-16	0	DRY	CLEAR	DAY
40	17:36	MON	02-22-16	0	DRY	CLEAR	DUSK
42	13:07	TUE	03-29-16	0	DRY	CLEAR	DAY
44	17:59	THU	04-14-16	0	DRY	CLEAR	DAY
45	10:14	SUN	04-17-16	0	DRY	CLEAR	DAY
46	10:35	MON	04-18-16	0	DRY	CLEAR	DAY
52	07:44	MON	05-23-16	2	DRY	CLEAR	DAY
53	09:12	SAT	06-25-16	0	DRY	CLEAR	DAY
57	11:36	FRI	07-22-16	0	DRY	CLEAR	DAY
58	09:11	THU	07-28-16	0	DRY	CLEAR	DAY
59	18:50	FRI	08-05-16	0	DRY	CLEAR	DUSK
61	08:28	THU	08-18-16	0	DRY	CLEAR	DAY
65	21:55	FRI	11-04-16	0	DRY	CLEAR	DARK



COLLISION DIAGRAM DATA (continued)							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
67	06:26	WED	12-14-16	0	DRY	CLEAR	DAWN
68	08:46	WED	01-04-17	0	WET	CLEAR	DAY
73	03:12	SAT	02-11-17	0	DRY	CLEAR	DARK
77	18:32	FRI	03-17-17	0	DRY	CLEAR	DAY
79	15:51	MON	03-27-17	0	DRY	CLEAR	DAY
80	11:28	TUE	03-28-17	0	DRY	CLEAR	DAY
81	08:04	WED	03-29-17	0	DRY	CLEAR	DAY
84	22:55	SAT	04-22-17	0	DRY	CLEAR	DARK
92	17:33	TUE	06-27-17	0	DRY	CLEAR	DAY
93	10:38	WED	06-28-17	0	DRY	CLEAR	DAY
98	10:56	TUE	07-11-17	0	DRY	CLEAR	DAY
99	15:36	THU	07-13-17	0	DRY	CLEAR	DAY
104	18:40	THU	08-03-17	0	WET	CLEAR	DAY
107	17:43	WED	08-16-17	0	DRY	CLEAR	DAY
109	00:48	SUN	08-20-17	0	DRY	CLEAR	DARK
113	09:12	THU	09-07-17	0	DRY	CLEAR	DAY
118	06:29	MON	10-09-17	0	DRY	CLEAR	DAWN
120	18:47	SAT	10-21-17	0	DRY	CLEAR	DARK
121	19:52	MON	10-23-17	0	DRY	CLEAR	DARK
126	14:02	TUE	11-07-17	0	WET	OVERCAST	DAY
130	20:08	SAT	12-02-17	0	DRY	CLEAR	DARK
136	17:48	THU	12-21-17	0	DRY	CLEAR	DARK
138	16:09	WED	12-27-17	0	DRY	CLEAR	DAY
139	08:53	SAT	12-30-17	0	SNOWY	SNOW	DAY

MATCH LINE G
 SEE SHEET NO. 8 OF 8

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	51
INJURIES	3
FATALITIES	0
TOTAL NO. OF CRASHES	54

SYMBOLS	
→	MOVING VEHICLE
←	BACKING VEHICLE
- - -	NON-INVOLVED VEHICLE
x - - -	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
→ ↘	STRUCK CIRCULATING VEHICLE
→ ⊥	LEFT TURN
→ ⊥	RIGHT ANGLE
→ ⊥	STRUCK PARKED VEHICLE

COLORS	
○ (Yellow)	2015 CRASHES
○ (Purple)	2016 CRASHES
○ (Orange)	2017 CRASHES

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2015 - 2017 COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE

APPENDIX E

PEDESTRIAN CRASH DIAGRAMS

FILE: L:\2017659 HSP Program and Project Development Support\NDOT_HSP_Year 2_Catchway01 Somerset_Crash Diagram_Sheets\Pedestrian\Sheet-01.dgn
 TIME: 3:38:44 PM
 DATE: 10/02/2020
 GREENMAN-PEDERSEN, INC.



MATCH LINE A
 SEE SHEET NO. 2 OF 8

1
 8

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	<u>0</u>
INJURIES	<u>0</u>
FATALITIES	<u>0</u>
TOTAL NO. OF CRASHES	<u>0</u>

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

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2012-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE



SEE SHEET NO. 1 OF 8
MATCH LINE A

MATCH LINE B
SEE SHEET NO. 3 OF 8

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	<u>0</u>
INJURIES	<u>0</u>
FATALITIES	<u>0</u>
TOTAL NO. OF CRASHES	<u>0</u>

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

2 / 8

NEW JERSEY DEPARTMENT OF TRANSPORTATION	
CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST) FROM TEA ST TO RAILROAD AVE BOUND BROOK BOROUGH, SOMERSET COUNTY	
2012-2017 PEDESTRIAN COLLISION DIAGRAMS	
GPI Engineering Design Planning Construction Management	NOT TO SCALE

FILE: L:\2017659_HSP_Program_and_Project_Development\Support\NDOT_HSP_Year2_Catchway01_Somerset_Crash_Diagram_Sheets\Pedestrian_Sheet-03.dgn
 DATE: 1/30/2020
 TIME: 3:41:16 PM

SEE SHEET NO. 2 OF 8
 MATCH LINE B



MATCH LINE C
 SEE SHEET NO. 4 OF 8

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
10	18:41	THU	12-17-15	1	WET	RAIN	DARK

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

3/8

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2012-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE

FILE: L:\2017659 HSP Program and Project Development Support\NJDOT_HSP_Year 2\Cadd\HWY01_Somerset\Crash Diagram_Sheets\Pedestrian_Sheet-04.dgn
 TIME: 3:41:49 PM
 DATE: 1/30/2020

SEE SHEET NO. 3 OF 8
 MATCH LINE C



MATCH LINE D
 SEE SHEET NO. 5 OF 8

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
1	19:58	FRI	02-24-12	1	WET	OVERCAST	DARK
6	16:27	MON	09-15-14	1	DRY	CLEAR	DAY
9	23:54	SUN	10-04-15	1	DRY	CLEAR	DARK

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	
CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST) FROM TEA ST TO RAILROAD AVE BOUND BROOK BOROUGH, SOMERSET COUNTY	
2012-2017 PEDESTRIAN COLLISION DIAGRAMS	
GPI Engineering Design Planning Construction Management	NOT TO SCALE

FILE: L:\2017\659_HSP_Program_and_Project_Development_Support\NDOT_HSP_Year_2_Catchway01_Somerset_Crash_Diagram_Sheets\Pedestrian_Sheet-05.dgn
 DATE: 10/02/2020
 TIME: 3:42:16 PM



SEE SHEET NO. 4 OF 8
 MATCH LINE D

MATCH LINE E
 SEE SHEET NO. 6 OF 8

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
5	21:16	FRI	07-18-14	1	DRY	CLEAR	DARK

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

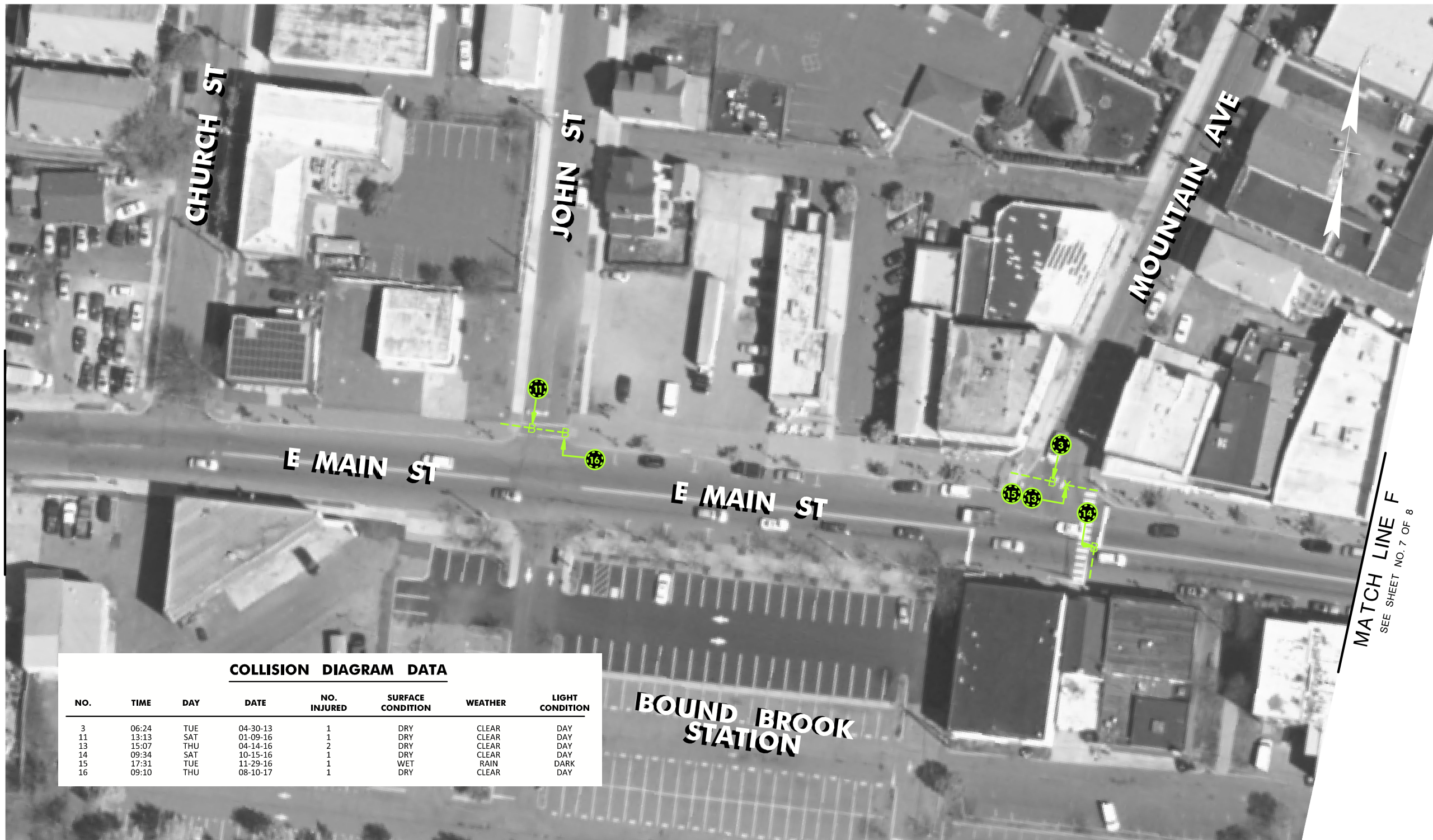
CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2012-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE

FILE: L:\2017659_HSP_Program_and_Project_Development_Support\NJDOT_HSP_Year_2_Catchway01_Somerset_Crash_Diagram_Sheets\Pedestrian_Sheet-06.dgn
 TIME: 3:45:14 PM
 DATE: 10/02/2020



SEE SHEET NO. 5 OF 8
 MATCH LINE E

MATCH LINE F
 SEE SHEET NO. 7 OF 8

COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
3	06:24	TUE	04-30-13	1	DRY	CLEAR	DAY
11	13:13	SAT	01-09-16	1	DRY	CLEAR	DAY
13	15:07	THU	04-14-16	2	DRY	CLEAR	DAY
14	09:34	SAT	10-15-16	1	DRY	CLEAR	DAY
15	17:31	TUE	11-29-16	1	WET	RAIN	DARK
16	09:10	THU	08-10-17	1	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH

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

SYMBOLS

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

TYPES OF CRASHES

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

COLORS

PEDESTRIAN CRASH

6
8

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2012-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI Engineering
 Design
 Planning
 Construction Management

NOT TO SCALE

FILE: L:\2017659_HSP_Program_and_Project_Development_Support\NJDOT_HSP_Year_2_Catchway01_Somerset_Crash_Clearam_Sheets\Pedestrian_Sheet-07.dgn
 TIME: 3:46:55 PM
 DATE: 10/20/20



SEE SHEET NO. 6 OF 8
 MATCH LINE F

MATCH LINE G
 SEE SHEET NO. 8 OF 8

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
2	20:47	FRI	06-29-12	1	DRY	CLEAR	DARK
4	07:51	SAT	07-20-13	1	DRY	CLEAR	DAY
12	15:54	FRI	02-26-16	1*	DRY	CLEAR	DAY

LEGEND

NUMBER OF CRASHES WITH	
PROPERTY DAMAGE ONLY	0
INJURIES	2
FATALITIES*	1
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

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2012-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE

FILE: L:\2017659_HSP_Program_and_Project_Development_Support\NDOT_HSP_Year_2_Catchway01_Somerset_Crash_Diagram_Sheets\Pedestrian_Sheet-08.dgn
 TIME: 3:46:40 PM
 DATE: 10/20/20

COLLISION DIAGRAM DATA							
NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
7	07:50	THU	09-03-15	1	DRY	CLEAR	DAY



MATCH LINE G
 SEE SHEET NO. 8 OF 8

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

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
 FROM TEA ST TO RAILROAD AVE
 BOUND BROOK BOROUGH, SOMERSET COUNTY

2012-2017 PEDESTRIAN COLLISION DIAGRAMS

GPI Engineering Design Planning Construction Management

NOT TO SCALE

APPENDIX F

SITE PHOTOGRAPHS

Visibility of signal traveling WB may be obstructed by structure



Lack of ADA ramps, worn striping and fence blocking visibility



Broken/uneven sidewalk in NW corner of North St; lacks ADA ramps



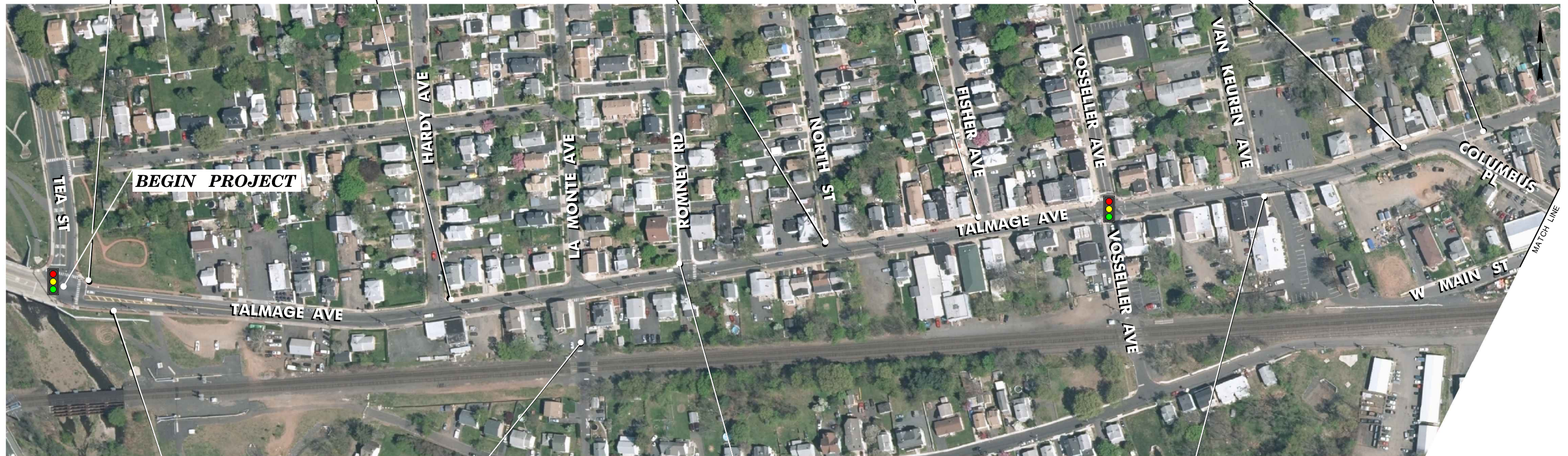
Uneven/damaged varying width sidewalk; steps protrude out; lacks ADA ramps



Roadway horizontal alignment limits sight distance along CR 533 and at Talmage Ave



Intersection lacks ADA ramps; driveway within intersection



Worn gore striping due to EB alignment through intersection



Only a few side streets cross over the rail tracks to access lower Bound Brook



Bicyclists do not have dedicated facilities



Collapsed/uneven sidewalk above inlets can be a tripping hazard

1
2

**NJDOT HSIP
ROAD SAFETY AUDIT
CR 533 (Talmage Ave)/CR 527 (Main St)**

**BOUND BROOK BOROUGH
SOMERSET COUNTY**

SITE PHOTOGRAPHS



N.T.S.

Sight distance limited by building; wide intersection with long pedestrian crossing



Landscaping overgrown onto sidewalk, reducing walking path



Detectable warning surfaces not contrasting color; worn crosswalk striping



Non-compliant ADA ramps and worn crosswalk striping



Low roundabout splitter islands do not provide sufficient definition or refuge and lack detectable warning surfaces



Long pedestrian crossing at Meridia parking deck difficult to see; wide driveway lacks clear definition



Roadway horizontal alignment limits sight distance along CR 533 and at W Main St; stop bar in front of crosswalk



Ponding at numerous curb ramps



8-inch signal heads difficult to see



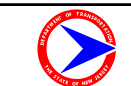
Wide driveway and lack of defined pedestrian crossing at Meridia storage/overflow lot

2
2

**NJDOT HSIP
ROAD SAFETY AUDIT
CR 533 (Talmage Ave)/CR 527 (Main St)**

**BOUND BROOK BOROUGH
SOMERSET COUNTY**

SITE PHOTOGRAPHS



N.T.S.

APPENDIX G

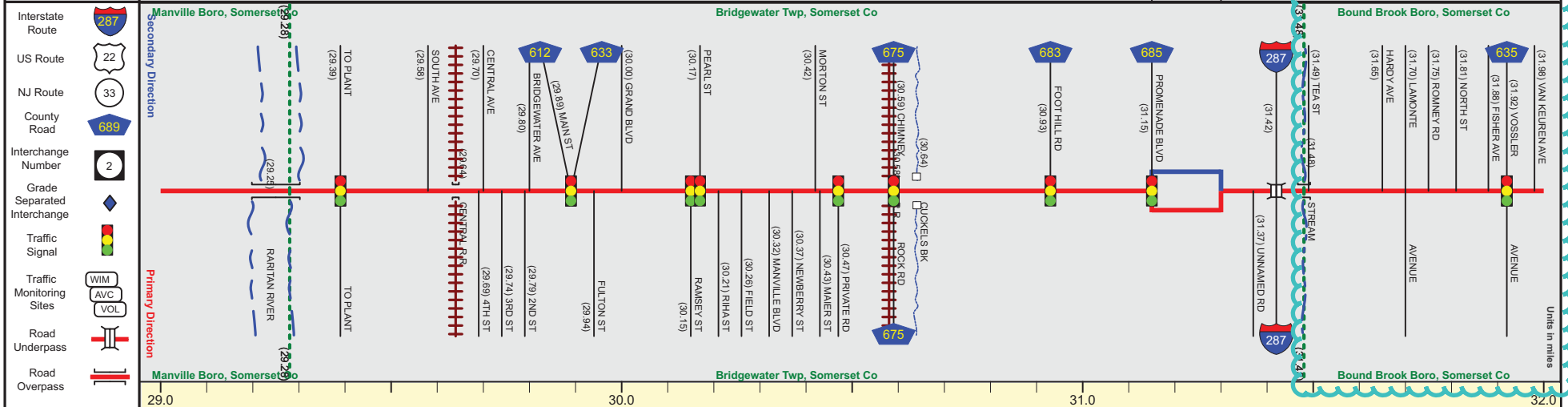
STRAIGHT LINE DIAGRAMS

ROUTE 533 (South to North)

Mile Posts: 29.000 - 32.000



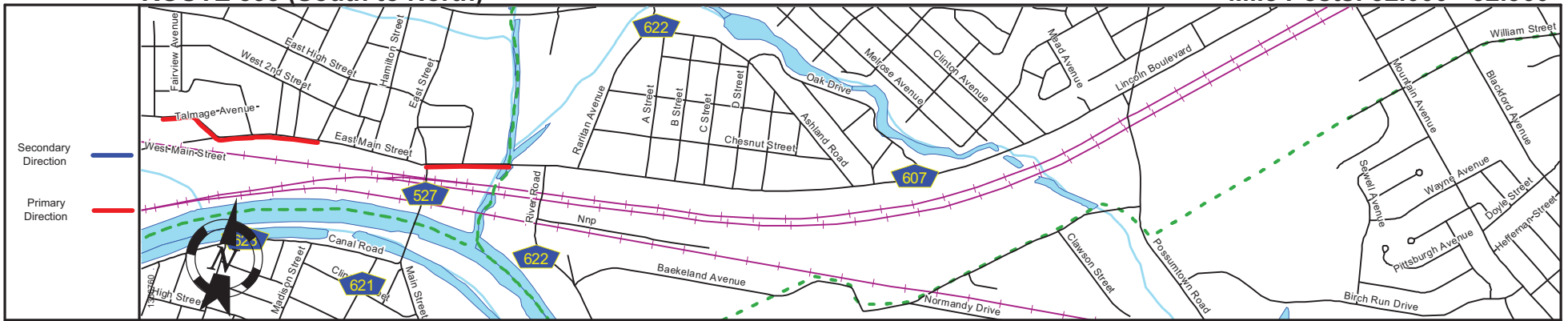
Pavement	24
Shoulder	0
Number of Lanes	2
Speed Limit	45 Begin RSA
Street Name	Main Street



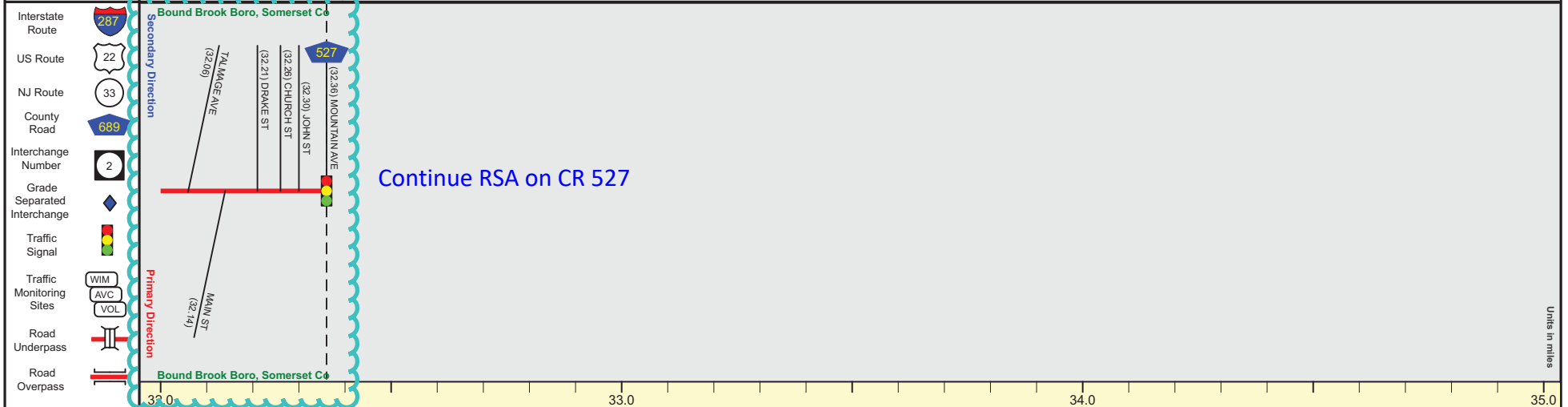
Street Name	North Main Street	Finderne Avenue	Main Street	Talmage Avenue
Jurisdiction	County			
Functional Class	Urban Minor Arterial			
Federal Aid - NHS Sy	STP			
Control Section				
Speed Limit	45		45	35 + 30
Number of Lanes		4		2
Med. Type		None		Curbed + None
Med. Width		0		6 + 0
Pavement	48		60	24 + 48 + 30
Shoulder	6		1	0
Traffic Volume			16,977 (2016)	10,644 (2016)
Traffic Sta. ID			91816	91813
Structure No.	18G0702	186Q159	18G0703	18H0705 + 1812160
Enlarged Views				

SRI = 0000533__

Date last inventoried: November 2012



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

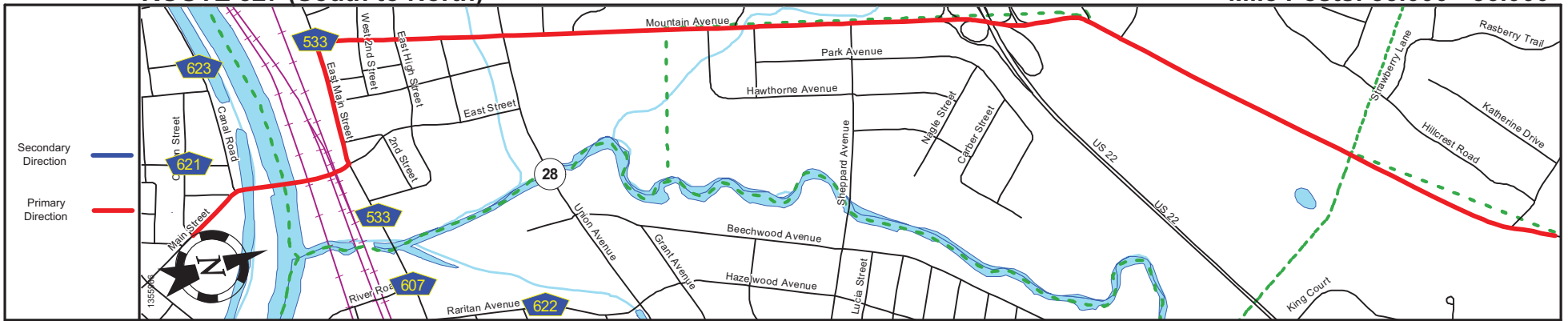


Street Name	Talmage Avenue	Columbus Place	Main Street
Jurisdiction	County		
Functional Class	Urban Minor Arterial		
Federal Aid - NHS Sy	STP		
Control Section			
Speed Limit	30	+	25
Number of Lanes	2		
Med. Type	None		
Med. Width	0		
Pavement	30	+	40
Shoulder	0		
Traffic Volume	10,644 (2016)		
Traffic Sta. ID	91813		
Structure No.			
Enlarged Views			

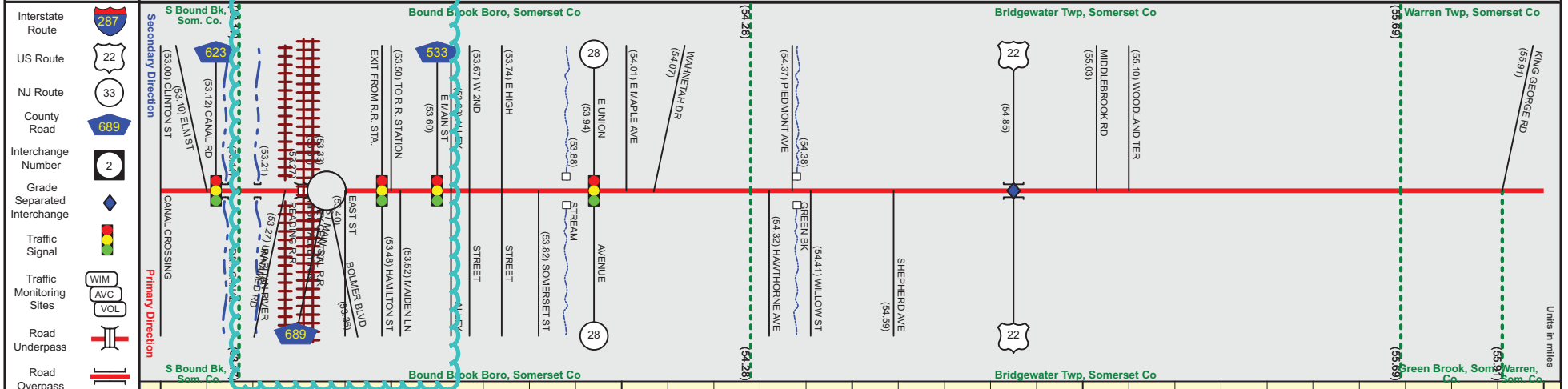
MP 32.36 = Begin Break

ROUTE 527 (South to North)

Mile Posts: 53.000 - 56.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	End RSA Continue from CR 533
Street Name	



Street Name	Main Street	East Main Street	Mountain Avenue		Morning Glory Road
Jurisdiction	County				
Functional Class	Urban Minor Arterial				
Federal Aid - NHS Sy	STP				
Control Section					
Speed Limit	25		35		
Number of Lanes	2				
Med. Type	None				
Med. Width	0				
Pavement	36	22	40	28	24
Shoulder	0	1	0	4	2
Traffic Volume	12,993 (2018)		9,842 (2017)		
Traffic Sta. ID	4-5-608		4-5-609		
Structure No.	18H0706 300Q168		1803152		
Enlarged Views					

SRI = 0000527__

Date last inventoried: November 2012

APPENDIX H

PRE-AUDIT PRESENTATION

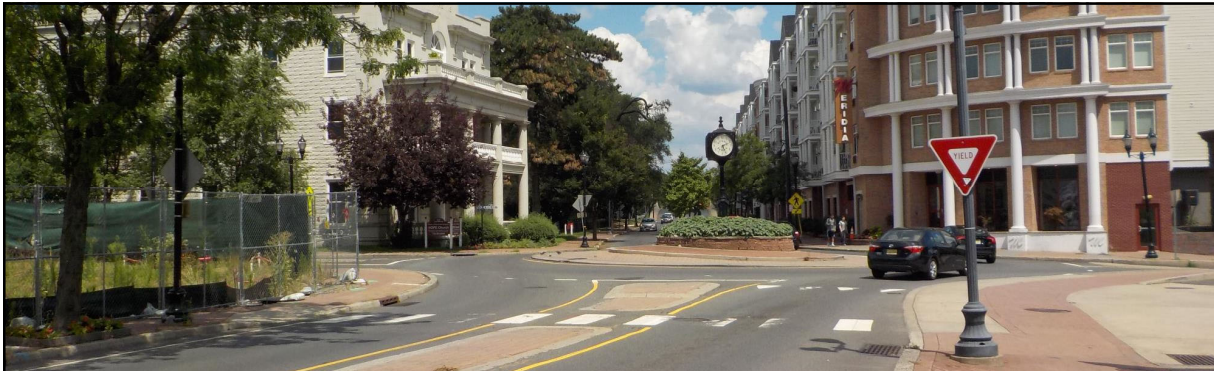


ROAD SAFETY AUDIT

CR 533 (TALMAGE AVE) AND CR 527 (MAIN ST)
BETWEEN TEA STREET AND RAILROAD AVE

BOUND BROOK BOROUGH
SOMERSET COUNTY

SEPTEMBER 12, 2019



AUDIT TEAM



NJDOT



NJTPA



Somerset County



Bound Brook Borough



FUNDED BY FEDERAL HIGHWAY ADMINISTRATION AND NJDOT

PRESENTED BY GREENMAN-PEDERSEN, INC., NJDOT CONSULTANT 2

Today's Schedule

- 9:30a
 - 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

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 about \$57M

Legend

- 1st Priority (>2,000 fatality and serious injury crashes)
- 2nd Priority (1,000 to 2,000 fatality and serious injury crashes)
- 3rd Priority (<1,000 fatality and serious injury crashes)

HSIP/LOCAL SAFETY PROGRAM

MAIN GOAL: Reduce serious injury and fatality (K+A) crashes on all of NJ's public roads

Program Goals

- Toward zero deaths on all public roads
- Performance-based goals consistent with SHSP
- Data-driven, strategic approach to improving highway safety

Local Safety Program (LSP)

- NJDOT support
 - Dedication of HSIP funds
 - Technical assistance
 - Screening lists for MPOs
 - **Road Safety Audits**
- MPOs support
 - Local Road Safety
 - High Risk Rural Roads
 - CD/PE/FD Assistance Program

5

FATAL & SERIOUS INJURIES BY ROADWAY SYSTEM (2008-2012)

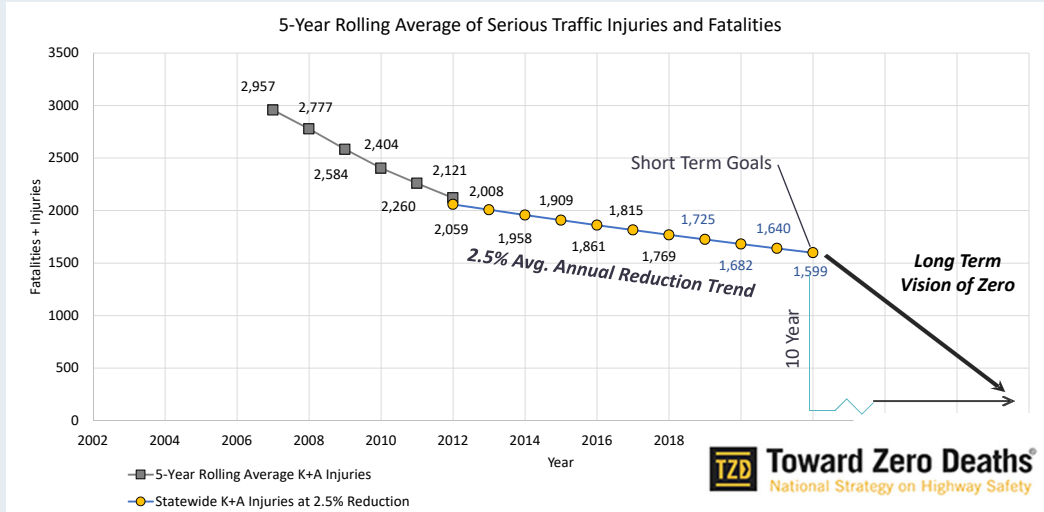
System	Total Fatal and Serious Injuries	Sub-categories
State	3,265	Interstate (413), Highway - Urban (2,284), Highway - Rural (282), Highway - Unknown (286)
Local	2,350	County (3,385), Municipal (2,350)

Roadway Jurisdiction

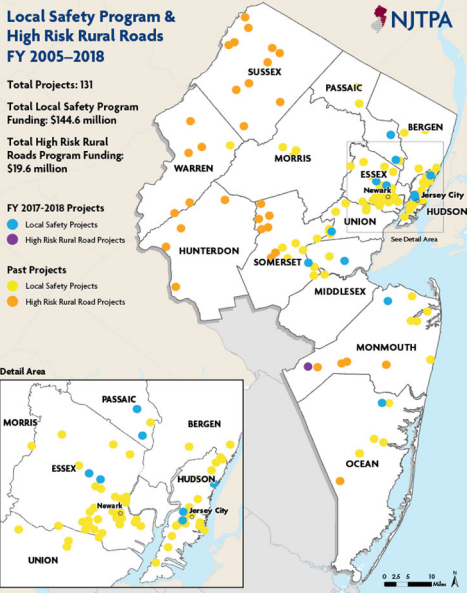
Jurisdiction	Miles	Percentage
NJDOT	2,800 mi	75%
County	6,800 mi	18%
Municipal	29,000 mi	7%

6

NATIONAL STRATEGY – TOWARD ZERO DEATHS



7



FEDERAL TRANSPORTATION FUNDING


- **Local Safety and High Risk Rural Roads Programs**
 - \$145+ million in funding 2005-18 on County / Local Roadways
 - Relatively quick-fix safety improvements
- **HSIP funds** – emphasizes 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 officials and stakeholders with opportunities to comment and ask questions

8

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RSA PURPOSE

Formal safety performance examination by an independent, multidisciplinary audit team that identifies safety improvement opportunities for all road users.



Benefits

- Pro-actively address safety; reduce crashes
- Identify low-cost/high-value improvements
- 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 meant to replace

- Design quality control
- Standard compliance
- Traffic or safety impact studies
- Safety conscious planning
- Road safety inventory programs
- Traffic safety modeling efforts

9



RSA PROCESS

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Responsibilities:

Steps 1-2 & 7-8: Design Team/Road Owner

Steps 3-6: RSA Team

10

FHWA PROVEN SAFETY COUNTERMEASURES

20 countermeasures
Descriptions provided in handouts

 Roadside Design Improvement at Curves	 Reduced Left-Turn Conflict Intersections	 Systemic Application of Multiple Low Cost Countermeasures at Stop-Controlled Intersections	 Leading Pedestrian Interval	 Local Road Safety Plan
 USLIMITS2	 Enhanced Delineation and Friction for Horizontal Curves	 Longitudinal Rumble Strips and Stripes on Two-Lane Roads	 Median Barrier	 Safety EdgeSM
 Backplates with Retroreflective Borders	 Corridor Access Management	 Dedicated Left- and Right-Turn Lanes at Intersections	 Roundabouts	 Yellow Change Intervals
 Medians and Pedestrian Crossing Islands in Urban and Suburban Areas	 Pedestrian Hybrid Beacon	 Road Diet	 Walkways	 Road Safety Audit

11

FHWA PROVEN SAFETY COUNTERMEASURES

- Clockwise from top:
 - Roundabout, Chesterfield Township, Burlington County
 - Backplates with Retroreflective Borders, Statewide
 - Road diet, Maplewood Township, Essex County
 - Pedestrian Hybrid Beacon (HAWK), Ocean City, Cape May County







12



ADDITIONAL CONSIDERATIONS

Curb Extensions
Hoboken City, Hudson County



Enhanced signing / pedestrian crossings
Bellevue City, WA



13

BEGIN PROJECT

- Urban Minor Arterial
- Undivided 2-lanes
- On-street parking
- Sidewalk both sides
- Various style crosswalks

SPEED LIMIT 25

END PROJECT

Proposed Meridia storage site →

PROJECT AREA


CAT, DASH & SCOOT Service

14

PROJECT AREA

- Clockwise from top:
 - Redevelopment along Main St between Drake St and Church St
 - CR 533 curve at W Main St
 - Low clearance for NJ Transit structures over S Main St (frequently hit)
- Not shown:
 - Meridia storage site on S Main St near Queen's bridge
 - Proposed kayak rental and pedestrian crossing with RRFB





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NETWORK SCREENING

NJTPA County Ranking – 2012-2016 Data

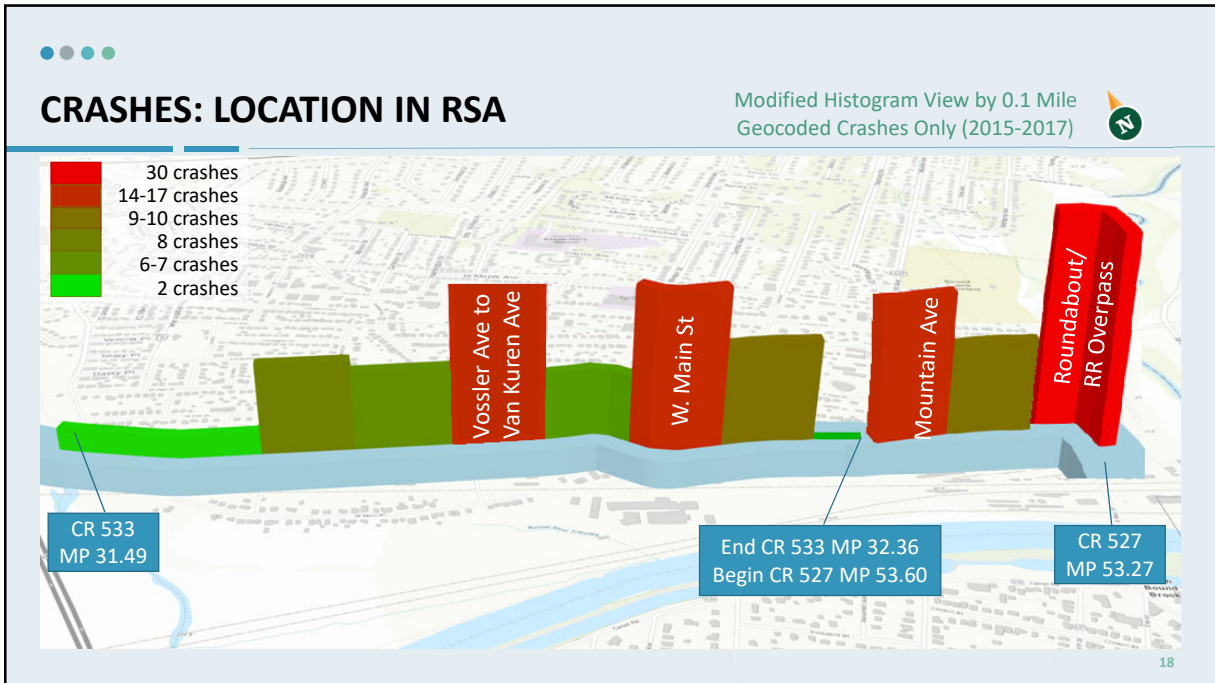
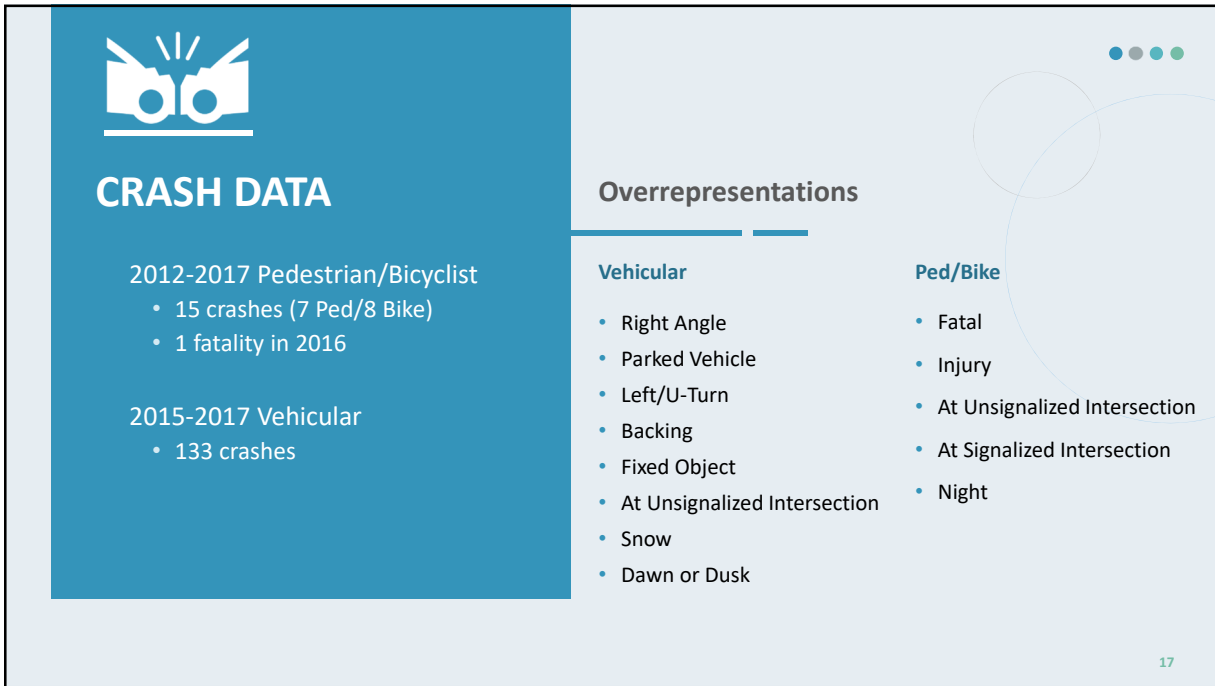
Top 100 Corridors

Route	Regional	Pedestrian
CR 527	#27: MP 52.74-53.74	#18: MP 52.86-53.86
CR 533	#40: MP 31.36-32.36	#13: MP 30.99-31.99

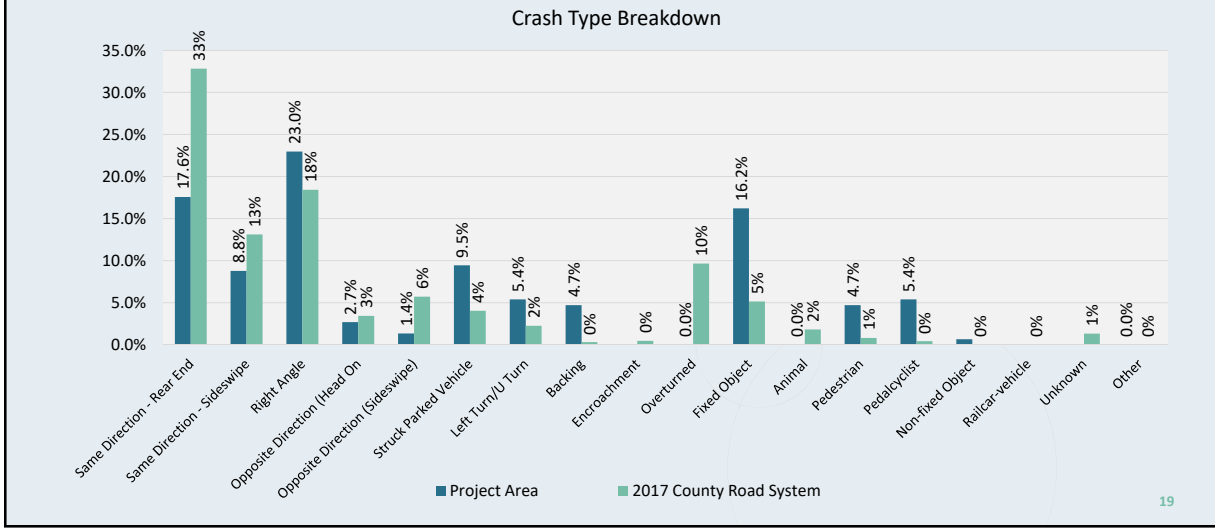
Top 100 Intersections

Location	All Crashes	Pedestrian	Bike/Ped
Hamilton St	#61	#2	#1
Main St	#92	--	--
Mountain Ave	#97	#39	#16
Tea St	#98	--	--
John St Drake St Voseller Ave	--	--	#82

16

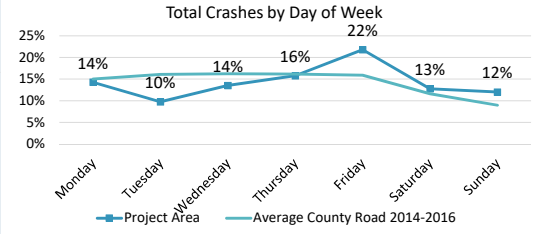
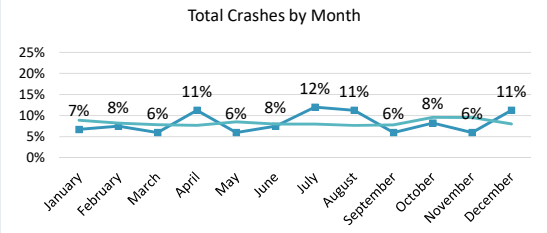
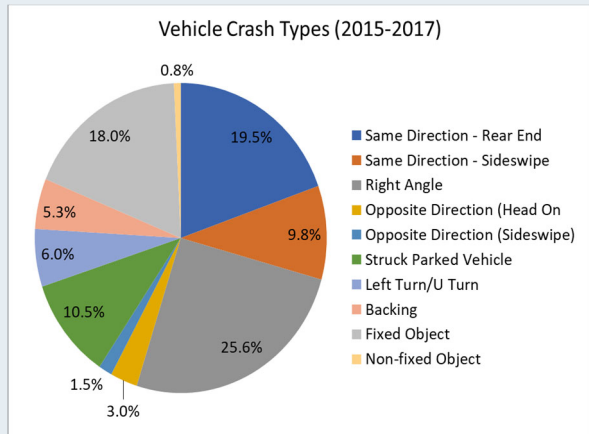


CRASHES: RSA AREA v. COUNTY ROAD SYSTEM



19

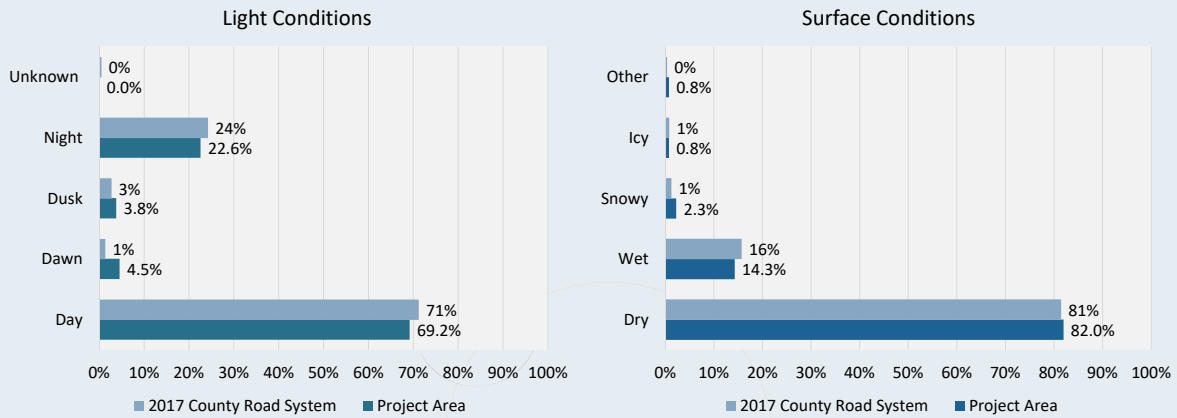
CRASHES: TYPE & TIMES



20



CRASHES: LIGHT & SURFACE CONDITIONS

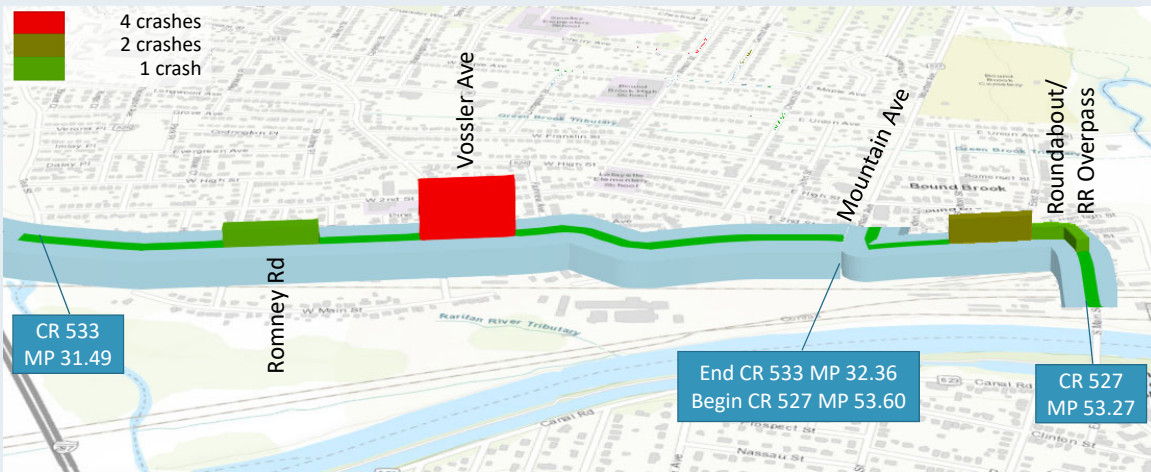


21



PED/BIKE CRASHES: LOCATION IN RSA

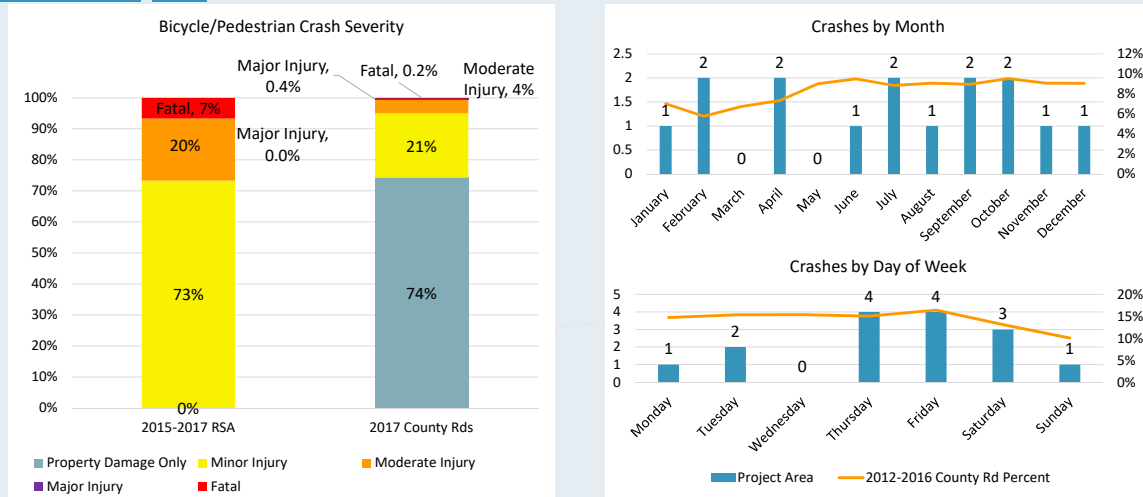
Modified Histogram View by 0.1 Mile
Geocoded Crashes Only (2012-2017)



22



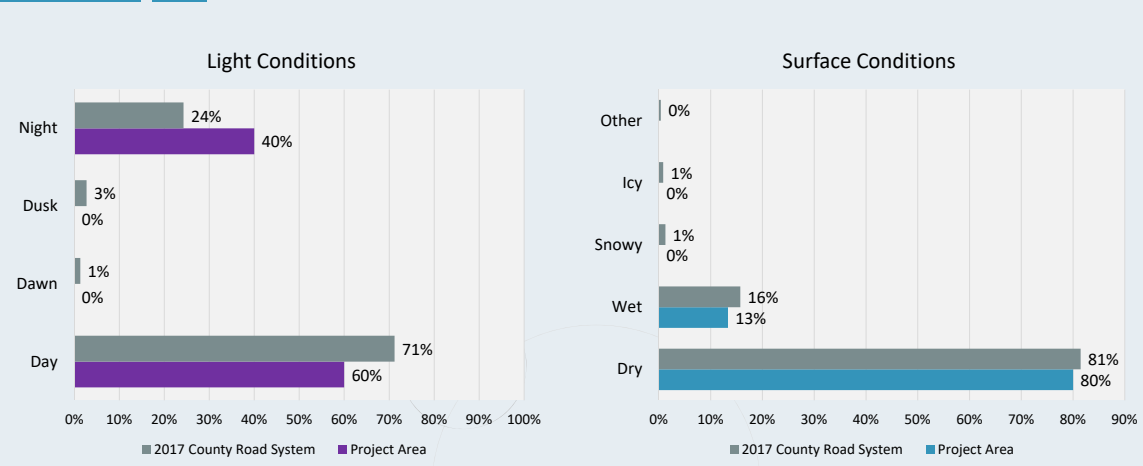
PED/BIKE CRASHES: SEVERITY & TIMES



23



PED/BIKE CRASHES: LIGHT & SURFACE CONDITIONS




24

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Today's Schedule

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- 3:30p
 - Adjourn

- ✓ Verify Identified Issues
- ✓ Observe Operations
- ✓ Note Other Safety Concerns
- ✓ Document Findings
- ✓ Safety First!




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FIELD VISIT | POST AUDIT


● ● ● ●
Pause | Resume
Presentation




Today's Schedule

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

✓ Welcome back!




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POST AUDIT

Discussion of Field Visit




Observations

- What elements of the road may present a safety concern?
- To what extent, to which road users, and under what circumstances?
- What corridor safety issues did you observe?
- What localized safety issues did you observe?



Recommendations

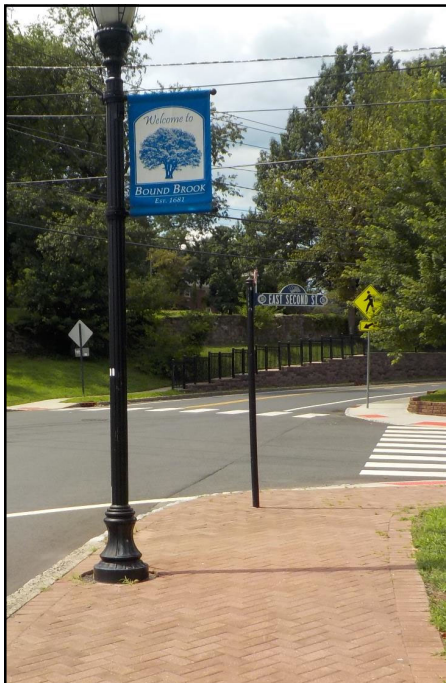
- What opportunities exist to eliminate or mitigate identified safety concerns?
- What improvements would you make?
- Are any of the FHWA countermeasures beneficial?



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NEXT STEPS

- Preparation of RSA Report
- Review/comments from RSA Team
- Preparation of Preliminary Final Report
- Road Owner Response
- Preparation of Final Report
- Approximate timeframe: 12 weeks



••••

THANK YOU

 <http://www.gpiprojects.com/HSIP/Somerset>

APPENDIX I

EXCERPTS FROM SOMERSET COUNTY SUPPORTING PRIORITY
INVESTMENT PHASE III STUDY

EXCERPTS FROM
SUPPORTING PRIORITY INVESTMENT
in Somerset County Phase III Study

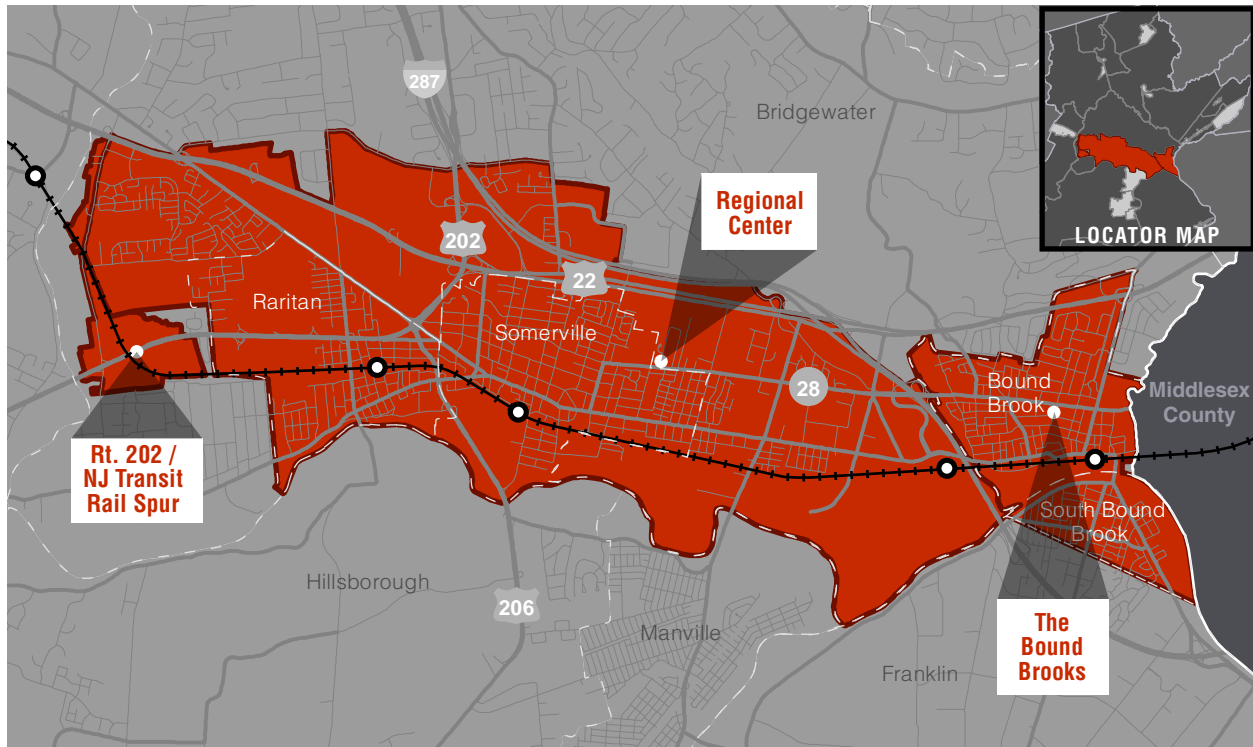


PREPARED BY: **wsp**

June 2017

PREPARED FOR:





Map 5: Regional Center investment areas

Regional Center

Investment areas in the regional center include several PGIAs with multimodal transportation access and traditional downtown businesses districts.

- **Route 202-NJ TRANSIT Rail Spur PGIA:** A narrow corridor in Bridgewater Township that lies between U.S. Route 22 and U.S. Route 202, the PGIA also contains preserved open space and industrial and residential properties. Bridgewater Town Center is located at the southeast corner of the PGIA.
- **Regional Center PGIA:** This large PGIA spans large portions of Bridgewater Township, Somerville Borough, and Raritan Borough. Planning for this PGIA focused on the portions in Raritan and Somerville, for which individual PGIA framework plans were developed.
- » **Raritan Borough:** While this portion of the PGIA encompasses the entire Borough of Raritan, particular focus is on areas surrounding the downtown commercial district, NJ TRANSIT station, a portion of U.S. Route 206, and connections to the regional greenways network.
- » **Somerville Borough:** Similar to Raritan, the PGIA covers the entire Borough of Somerville. The focus is on mobility improvements surrounding the downtown area.
- **The Bound Brooks PGIA:** Spanning the entirety of both Bound Brook and South Bound Brook, focus areas include a mix of commercial and residential uses along Talmage Avenue (CR 533) in Bound Brook and Main Street in South Bound Brook.

Description

Location / Bound Brook Borough

Principal Roadways / U.S. Route 22, NJ Route 28, CR-528, CR-635

Acreage / 1,568 (Bound Brook: 1,085)

Existing Uses / Residential, Commercial Corridors, Industrial Pockets

Current Zoning / Neighborhood Business/ Residential (NB/R), Redevelopment Plan (RDV)

Complete Streets Policy / Yes

PGIA Summary

The PGIA is comprised of the entirety of the Boroughs of Bound Brook and South Bound Brook. Within Bound Brook itself, assets include traditional mixed-use downtowns, the train station, and a waterfront location. The Borough of Bound Brook is seeking to enhance the gateways to the downtown area to encourage development, and create a framework to identify appropriate capital improvements and infrastructure connections to support future development and bridge barrier presented by the railroad.

PGIA Map



Multi-Modal Access Metrics

Transit Access



GOOD TRANSIT SERVICE

Network Walking Reach



SLIGHTLY WALKABLE

Access Summary

Review of mobility options and access metrics in downtown Bound Brook indicate a multimodal environment. There is NJ TRANSIT and Somerset County (CAT, DASH and SCOOT) bus service in the Borough. NJ TRANSIT's Bound Brook Train station is in the PGIA and is located within the Borough. While Bound Brook's downtown is walkable, the broader PGIA is only slightly walkable due to barriers created by the railroad and river and pockets of reduced street connectivity on the outskirts of the municipalities. A detailed analysis of the transportation infrastructure can be found in the Existing Conditions Technical Memorandum.

*PGIA-wide analysis

Investment Area Overview



Strengths

- Well served by multiple major corridors, including I-287, U.S. Route 22, and NJ-28
- Access to NJ TRANSIT trains and buses as well as Somerset County shuttles
- Dense, traditional downtown along Main Street
- Short, walkable blocks
- Bound Brook has a Complete Streets policy



Weaknesses

- Speeding as motorists enter into Bound Brook from Bridgewater
- Lack of crosswalks at cross-street intersections along Talmadge Avenue
- Lack of pedestrian-scale lighting
- Parcel assembly constrained by many small properties



Opportunities

- Presence of the East Coast Greenway along the D&R Canal is an opportunity to bring bicyclists/tourists into the community to support local businesses
- Integrate property between the Raritan River and D&R Canal towpath into a more publicly accessible park
- Demarcate gateways along principal access routes



Constraints

- Wide expanse of the Raritan River constrains the addition of a bicycle/pedestrian span proximate to the Bound Brook train station
- Only one roadway (CR 527) crosses the Raritan River within the PGIA and serves as the major connection between Bound Brook and South Bound Brook
- Railroad is a barrier to accessing the riverfront

Land Use and Zoning Scenarios

Recent planning efforts in Bound Brook have sought to leverage the Borough's traditional mixed-use downtown, train station, and waterfront location. As a result, downtown redevelopment in the vicinity of the train station has progressed. The recent completion of the Army Corps of Engineers' flood control project has significantly reduced the need for floodproofing, supporting increasingly favorable conditions for development. To further encourage development, the Borough is seeking to enhance the gateways to the downtown, create a framework to identify appropriate infrastructure and capital improvements, and enhance access to the riverfront.

Site Details

The focus area for this PGIA is the approximately 0.5-mile Talmadge Avenue corridor, which extends eastward from Tea Street (the Borough's western boundary with Bridgewater) to Columbus Place (the western edge of the traditional downtown area). The corridor is characterized by small lots (approximately 7,000 square feet on average) and a mix of land uses, with commercial uses clustered towards the eastern and western ends and residential throughout. Residential uses are generally two- to four-family homes, including some with first-floor commercial. The eastern portion is within a ten-minute walk of the train station.

The corridor is designated as Redevelopment Area 2 in the Borough's Amended Redevelopment Plan. The Redevelopment Plan imparts certain bulk, use, and design standards and exceptions from the underlying zoning of the area. The area of focus for this analysis is within the underlying NB/R zone, which permits neighborhood-scale retail and service uses with upper-floor residential, at a maximum height of 35 feet.

Talmadge Avenue presents opportunities for an enhanced streetscape, improved multimodal mobility, infill development (including affordable and/or workforce housing), green infrastructure, and improved aesthetics, all of which could support and enhance targeted development and redevelopment. Some existing uses and buildings are inconsistent with the overall character and future potential of the corridor. Two sub-areas are evaluated on the following pages.

Focus Area 1: Talmadge / Van Keuren Site

An assemblage of parcels on the north side of Talmadge Avenue adjacent to the Van Keuren Avenue intersection was identified as a potential gateway site, which would support a four-story residential development currently proposed for the Talmadge Commons site on the south side of the corridor. This area was also identified in the *Phase I Study* as commercial parcels with a low improvement to land value (ILV) ratio. The proposed assemblage consists of six lots (Block 5, Lots 1 and 37-41) totaling one acre. All lots except Lot 1 are located within Subdistrict 2.4 of Redevelopment Plan Area 2.



Focus Area 1: Talmadge / Van Keuren Site

Scenario 1

Existing Zoning

One- to three-family homes, townhouses, stacked flats, and live-work units are permitted in Subdistrict 2.4, with a maximum of 20 units per acre and 1.5 parking spaces per unit. Per these standards, 20 two-bedroom stacked flats could be built on the site with 25 first-floor garage spaces and five surface parking spaces. In order to create a visual transition between Talmadge Avenue and the residential streets to the rear, the building may be oriented towards Talmadge Avenue with substantial screening in the rear to shield the parking area. This scenario also allows for three stories along the Talmadge Avenue frontage and two stories towards the Van Keuren frontage. The total FAR of 0.70 and impervious coverage of less than 60 percent are within the Redevelopment Plan standards (1.0 and 65 percent, respectively.)

Scenario 1: Existing Zoning

- 30,450 sf residential, 20 residential units
- Parking req'd: 30 spaces / 9,800 sf (6,600 sf garage and 3,200 sf surface)
- 14,820 sf building footprint
- Maximum impervious coverage: 65%
- Site FAR: 0.70

Scenario 2

Mixed-Use Residential / Retail

A second scenario proposes the same residential density of 20 stacked flats, as well as a small amount (4,000 – 5,000 square feet) of ground floor retail along Talmadge Avenue and three-story building heights. Thirty residential garage spaces and approximately 10 retail surface spaces would be provided. The FAR of 0.80 and lot coverage of approximately 60 percent would still be within the ordinance standards and allow room for appropriate landscaping and buffering.

Scenario 2: Mixed-Use Residential / Retail

- 30,450 sf residential, 20 residential units
- 4,500 sf retail
- Parking req'd: 41 spaces / 10,200 sf
- 15,350 sf building footprint
- Maximum impervious coverage: 65%
- Site FAR: 0.80

Scenario 3

Residential with Density Bonus

A final scenario proposes a three-story residential-only apartment building with 40 smaller one- and two-bedroom units. Per the ordinance standards, one parking space is provided per unit in an enclosed street-level parking area, though apartments would be at street level along the frontages. Coverage would remain at approximately 65 percent and FAR approximately 0.95. The additional permitted density could be scaled up to 40 units from the permitted 20 units by incorporating workforce and/or affordable housing units and utilizing green building design techniques that would tie into the overall green vision for the corridor.

Scenario 3: Residential with Density Bonus

- 44,520 sf residential, 40 D.U.s
- Parking req'd: 50 spaces / 13,000 sf
- 18,589 sf building footprint
- Maximum impervious coverage: 75%
- Site FAR: 1.02

Focus Area 2: South Side of Talmadge Avenue, within Subdistrict 2.6

This subdistrict encompasses the western-most portion of the study area from Tea Street to La Monte Avenue, and functions as a western gateway into the Borough at the intersection of Tea Street and Talmadge Avenue. This location was previously one of the most flood-prone areas of the Borough and has benefitted from new landscaping, drainage, and open space facilities as part of the Army Corps project. The properties on the south side of Talmadge Avenue are heavily constrained by the railroad corridor. As a result, lots in this area are generally irregularly shaped and measure barely 50 feet deep at certain points. While these lots are larger than many in the corridor, the constraints have led to stagnated development, including vacant and underutilized commercial structures, limited streetscape appeal, and existing uses that appear to extend into the railroad right-of-way. Similar to Focus Area 1, several of the commercial parcels in Focus Area 2 were also identified in the *Phase I Study* as having a low improvement to land value (ILV) ratio.



Focus Area 2: South Side of Talmadge Avenue, within Subdistrict 2.6

Scenario 1

Existing Zoning

Development provisions for Subdistrict 2.6 permit certain commercial development and open space while specifically prohibiting several of the area's existing uses, including auto-related uses and warehouses. Due to a lack of redevelopment activity, these nonconforming uses remain in place. The minimum lot size is 15,000 square feet, minimum lot frontage is 150 feet, and 10- to 15-foot setbacks are required from the front, side, and rear property lines. There is also a maximum lot coverage requirement of 50 percent. The shallow lots represent a severe development constraint, particularly in conjunction with the existing bulk regulations, which would leave a minimal building envelope that would not be appropriate for modern commercial development.

Scenario 2

Green Infrastructure Corridor

Given this lack of new development potential, at least a portion of this area could be utilized as a dedicated green infrastructure corridor that would also serve as an attractive gateway to the Borough and serve as a reminder of the Borough's accomplishments related to flood control. It would further create a visual buffer between Talmadge Avenue and the railroad tracks. A variety of street trees, attractive bioswales, and a community-oriented rain garden would complement the Army Corps infrastructure and nearby Tea Street active open space, as well as reduce impervious coverage in an environmentally sensitive portion of the Borough. It may also be possible to associate the purchase, construction, and maintenance of a community open space site with development fees from future redevelopment along the corridor, either in lieu of providing open space on-site (which may be challenging given the overall small lot sizes along the corridor) or as part of a framework for funding capital improvements through development fees.

Scenario 3

Retail / Office Mixed use + Open Space

While the lack of lot depth and the irregular shaped lots would remain a challenge, there is potential for a small retail/office mixed-use development near the intersection of Talmadge and La Monte Avenues (in the vicinity of Block 3, Lots 2 through 6). This development would have a relatively small footprint (approx. 5,000 square feet) and be located close to the front yard property line, which would be a deviation from the Redevelopment Plan. Second floor office space over retail use is permitted in Subdistrict 2.6. An off-street parking area consisting of 20 to 25 spaces would be located to the west of the building and would be screened from view from Talmadge Avenue. The building would present the opportunity for a corner feature on either side that could serve as a minor gateway into the Borough. The remainder of the focus area (approximately one-half acre that is currently Block 3, Lots 1 and 1.01) would follow a green infrastructure and/or community open space scenario as detailed above.

Scenario 3: Mixed Use - Office / Retail

- 5,000 sf retail
- 5,000 sf residential
- Parking req'd: 25 spaces / 8,000 sf
- 5,000 sf building footprint
- Maximum impervious coverage: 65%
- Site FAR: 0.40

Multimodal Transportation Improvements

Mobility improvements focus on strategies to support green infrastructure and redevelopment investments. Several completed or planned initiatives, such as the Main Street streetscape improvements and planning for the Hamilton Street Pedestrian Plaza, are helping to revitalize the downtown and create a more attractive pedestrian realm for residents and visitors. Improvements for Talmadge Avenue, as outlined below and illustrated on the map on the following page, seek to integrate and tie into the downtown corridor improvements, enhance pedestrian mobility and safety, improve the streetscape, and create gateways that welcome people into the Borough and calm traffic.

Borough-wide Initiatives

- Introduce green infrastructure as a standard design, including curb extensions for stormwater collection and groundwater infiltration and recharge, as well as traffic calming and streetscape enhancements
- Use opportunities for sidewalk widening to mitigate utility pole impacts on Borough sidewalks

Talmadge Avenue Improvements


Through a comprehensive program of design, streetscape, and placemaking elements, the following strategies seek to enhance the Talmadge Avenue corridor in order to enhance safety, calm traffic, and improve multimodal mobility. The overall design of Talmadge Avenue, especially along the south side, should be compatible for a desired “Quiet Zone” to mitigate rail traffic noise impacts.


- Install crosswalks (striped or textured pavement) at all intersecting streets to better facilitate pedestrian accessibility along the corridor
- Repair sidewalk network where the surface has deteriorated or heaving occurs
- Investigate striping 11-foot travel lanes to visually narrow the roadway and encourage lower traffic speeds
- Upgrade the intersection at Tea Street to include a gateway treatment.
- Investigate converting the existing striped median to a raised pedestrian refuge island at the westbound approach to the intersection with Tea Street. This treatment would enhance pedestrian mobility and serve as a gateway feature, calming traffic entering the Borough
- Investigate reducing the speed limit to 25 mph and install shared-lane markings along Talmadge Avenue





Bound Brooks PGIA | Bound Brook Transportation Improvements





 Investigate reducing speed limit from 30mph to 25mph


 Install shared-lane markings along Talmage Avenue

 Investigate opportunities for a bike depot at the train station



 Improve streetscape by adding pedestrian scale lighting, seating, and wayfinding

 Install pedestrian midblock crossing with flashing beacon





 Investigate installation of a pedestrian refuge island and gateway treatment

 Enhance pedestrian connectivity between the Boroughs with bridge path, lighting, and wayfinding improvements

Legend

-  Focus Area
-  Transit Village Boundary

Potential Improvements

-  Shared Lane Markings
-  Streetscape Improvements
-  Speed Limit Reduction
-  Improved Pedestrian Crossing

- Install pedestrian-scale lighting, extending the existing pedestrian scale lighting near the Tea Street intersection and farther east on the Main Street segment of CR 533. Lighting could be installed either on existing utility poles or as freestanding fixtures. If the latter option is pursued, attachments for planters would add opportunities to incorporate seasonal vegetation
- Integrate public access, seating, and other streetscape amenities into any future green infrastructure improvements along Talmadge Avenue between Tea Street and La Monte Avenue
- Introduce new street trees along Talmadge Avenue to enhance the streetscape
- Identify opportunities to incorporate green spaces and green infrastructure on the westbound side of Talmadge Avenue, east of Tea Street
- Investigate wayfinding and directional signing elements at key approaches and decision points from the west to divert regional and heavy truck traffic to more appropriate routes
- Investigate additional street design elements to discourage through travel by heavy trucks

Main Street Pedestrian Improvements

Several strategies seek to improve pedestrian access and linkages between Bound Brook and South Bound Brook.

- Investigate installation of a speed table on Main Street at the intersection of Van Horne Plaza and Hamilton Street, improving pedestrian connectivity to the train station and calming traffic
- Investigate addition of a mid-block crossing of Main Street (CR 527) at Railroad Avenue, including continental striping and a rectangular rapid flashing beacon (RRFB) to improve visibility. The crossing would:
 - » Provide a more direct connection between the self-storage property and the Meridian Apartments, whose residents utilize the site for parking. Pedestrians traveling between the two locations are currently required to make three crossings around the Main Street/Bolmer Boulevard roundabout
 - » Link the self-storage site (future Borough kayak/canoe storage area) to the historic stone bridge site and future kayak/canoe put-in area under the Queen’s Bridge
- Collaborate with South Bound Brook Borough, Somerset County, NJDOT, the D&R Canal Commission, and other stakeholders to advance pedestrian improvements on the historic Queens Bridge and surrounding paths, better linking the downtowns of Bound Brook and South Bound Brook. Improvements include:
 - » New pedestrian path on the Canal Bridge
 - » New pedestrian lighting along the D&R Canal Towpath
 - » New historic signage and wayfinding
 - » Restoration of the historic Canal Bridge swing mechanism
 - » Pedestrian-activated rectangular rapid flashing (RRFB) beacon where the D&R Canal Towpath traverses Queens Bridge

Train Station Access

Bound Brook is one of the highest ridership stations on the Raritan Valley line. The proximity of the NJ TRANSIT rail service within the PGIA provides an opportunity to enhance multimodal access and mobility. Access to the existing station is limited to the East Main Street side of the station.

Transit Oriented Development Opportunities in Somerset County (2005) included an extensive assessment of Bound Brook Station and opportunities for station area development and enhancement. Findings and recommendations included three key objectives:

- Strengthen the downtown as a mixed-use transit village
- Reinforce the role of the station in the downtown through improved access, parking, and multimodal accommodations
- Take advantage of the waterfront, which currently has limited accessibility

Implementation recommendations include the following:

- Integrate future station options with planned NJ TRANSIT parking lot upgrades
- Rehabilitate the historic train station to serve rail commuters and serve as an anchor for transit oriented development in the downtown
- Address multimodal and ADA accessibility to the train station from both Bound Brook and neighboring South Bound Brook
- Investigate opportunities to implement a bike depot at the Bound Brook train station to enhance and encourage bicycle connections with transit, potentially as part of planned repaving of the station parking area. Work with potential partners, such as NJ TRANSIT and the New Jersey Bike and Walk Coalition
- Investigate potential for West Main Street access to the train station area, including a kiss-and-ride



Streetscape around Bound Brook Train Station



Bicycle Parking at Bound Brook Train Station

Improvement	Order of Magnitude Cost (Est.)	Time Frame	Potential Partners
The Bound Brooks PGIA Bound Brook Borough			
Talmadge Avenue Corridor			
Install crosswalks at all intersecting streets	Low	Med	Borough / County
Repair sidewalk network where the surface has deteriorated	Low	Med	Borough / County
Investigate striping 11' travel lanes	Low	Med	Borough / County
Investigate upgrading the intersection at Tea Street to include a gateway treatment, such as a raised pedestrian refuge island at the westbound approach	Low	Med	Borough / County
Investigate reducing the speed limit to 25 mph and the install shared-lane markings along Talmadge Avenue	Low	Med	Borough / County
Install pedestrian lighting	Low	Med	Borough / County
Integrate public access, seating, and other streetscape amenities into any future green infrastructure improvements	Low	Med	Borough / County
Investigate wayfinding and directional signing elements at key approaches and decision points from the west to divert regional and heavy truck traffic to more appropriate routes	Low	Med	Borough / County
Investigate additional street design elements to discourage through travel by heavy trucks on Talmadge Ave	Low	Med	Borough / County
Introduce new street trees to enhance the streetscape	Low	Long	Borough / County
Identify opportunities to incorporate green spaces and green infrastructure on the westbound side of Talmadge Avenue, east of Tea Street	Med	Long	Borough / County

Improvement	Order of Magnitude Cost (Est.)	Time Frame	Potential Partners
Main Street / Queens Bridge Improvements			
Investigate addition of a mid-block crossing of Main Street (CR 527) at the south side of Railroad Avenue, including continental striping and a rectangular rapid flashing beacon (RRFB)	Low	Med	Borough / County
Advance package of pedestrian improvements on the historic Queens Bridge and surrounding paths	High	Long	Borough / Bound Brook / Borough / County / NJDOT / D&R Canal Commission
Investigate installation of a speed table at the intersection of Main Street with Hamilton Street / Van Horne Plaza	Low	Long	Borough / County / NJ Transit
Train Station Access Improvements			
Address multimodal and ADA accessibility to train station from both Bound Brook and neighboring South Bound Brook	Low	Short	Borough / NJ TRANSIT
Investigate opportunities to implement a bike depot at the Bound Brook train station	Low	Short	Borough / NJ TRANSIT / NJ Bike and Walk Coalition
Integrate future station options with planned NJ Transit parking lot upgrades	High	Long	NJ TRANSIT / Borough
Rehabilitate the historic train station to serve rail commuters and serve as an anchor for transit oriented development in the downtown	High	Long	Borough / NJ TRANSIT / Developer
Investigate potential for West Main Street access to train station area including kiss-and-ride	Med	Long	Borough / NJ TRANSIT

NOTE:

Order of Magnitude Cost tiers:

- Low: <\$5M
- Medium: \$5M - \$25M
- High: >\$25M

Time Frame tiers:

- Short: <3 year
- Med: 3-8 years
- Long: >8 years

APPENDIX J

EXCERPTS FROM BOUND BROOK PLANS/REEXAMINATION REPORTS

EXCERPTS FROM
MASTER PLAN REEXAMINATION REPORT

Borough of Bound Brook
Somerset County, New Jersey



Prepared for the Borough of Bound Brook Planning Board in Accordance with the
New Jersey Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.)

Adopted by the Bound Brook Planning Board on _____, 2019

The original of this report was signed and sealed on July 24, 2019 in accordance with
Chapter 41 of Title 13 of the New Jersey State Board of Professional Planners

Carlos Rodrigues FAICP / PP
New Jersey Professional Planner #5107

2.4 Mixed-Use 4 Land Use Designation (MU-4)

The MU-4 land use designation applies to two parcels of 3.1 acres at the eastern end of East Union Avenue, next to the Bound Brook. This land is currently vacant. One parcel is occupied by a parking lot.

Billian Park is located immediately to the south, on the other side of a drainage ditch. It can be reached by way of a pedestrian bridge. Immediately to the west is Blair House, a garden apartment complex.

The area is regulated by the zoning adopted as part of the Redevelopment Plan for Sub-Area 1.5 (see also Section 3.1 – Redevelopment Area 1).

The intent of the MU-5 land use designation is to create a visually striking eastern gateway into the Borough and the Union Avenue corridor, and provide a suitable anchor to the eastern end of the corridor.

Other objectives include bringing new users and patrons to Billian Park; taking advantage of the unobstructed views of Billian Park, of the undeveloped lands to the north and of the stream corridor to the east; assisting the on-going downtown revitalization efforts by locating additional new patrons, and transit riders, within walking distance to downtown businesses, activities, and transit; facilitating any needed environmental remediation and/or infrastructure improvements to address any existing geo-technical constraints; pursuing high quality architectural and landscape design that creates iconic and memorable buildings and high quality places and outdoor spaces; creating opportunities for new, demographically-appropriate residential and high-skill employment space within walking distance of downtown's goods and services; improving pedestrian and bicycle connections between this area and the core of the downtown; and promoting pedestrian and bicycle activity through appropriate site design, including continuous sidewalks and walkways, buildings sited at the street line, clearly marked crosswalks, and bicycle storage.

The MU-4 land use designation anticipates a variety of uses, including residential; live-work; retail, including grocery stores; personal, professional and business services; hotel and hospitality (including extended stay facilities); conference center; restaurants and bars (ground level or rooftop only); sports, health and fitness facilities; offices, including medical offices; civic and governmental uses; museums; art galleries and artist studios.

The MU-4 land use designation anticipates the following building types: multi-story, single-use and mixed-use buildings; enclosed sports facilities; civic buildings and governmental buildings; and parking decks.

Given the gateway location and the surrounding, permanently preserved open space, a six-story building height is considered appropriate.

Parking in the front yard is not appropriate.

New structures in this land use designation should be sensitive to surrounding land uses, where such exist, and should be subject to bulk standards such that they do not encroach on appropriate standards of light and air affecting other properties.

The Redevelopment Plan for Sub-Area 1.5 contains extensive design standards to require high quality design of both buildings and open spaces.

It is recommended that the underlying Office-Business (O-B) zoning be replaced with this new MU-4 zoning.

2.5 Mixed-Use 5 Land Use Designation (MU-5)

The MU-5 land use designation applies to 145 parcels, with a combined area of 24 acres. The designation applies to the Historic Downtown neighborhood, and part of the West End neighborhood. This mixed-use area includes mixed-use buildings, with ground floor retail and services and upper level apartments, including recently developed projects; offices; and a variety of goods and services typically found in a downtown area. It also includes the NJ Transit Bound Brook train station, along with the commuter parking lots.

The area is subject to the Redevelopment Plan for Sub-district 1.4, as well as the B-R zoning (see also Section 3.1 – Redevelopment Area 1).

The intent of the MU-5 land use designation is as follows:

1. Implement the relevant recommendations of the Downtown Urban Design Plan.
2. Encourage creative design and development that promotes economic revitalization and a sense of place.
3. Protect architecturally-significant historic buildings.
4. Provide ample sidewalks that encourage pedestrian circulation and public interaction and provide space for active outdoor uses by businesses (cafes, displays, etc) and the public.
5. Create the active streets and vibrant public spaces envisioned in the Downtown Urban Design Plan.
6. Provide the high-quality pedestrian access to downtown amenities, services and transit required to achieve the vision of the Downtown Urban Design Plan.
7. Maintain a continuous or near continuous street wall along Main Street, Talmage Ave and Columbus Place, and expand it to fill any “gap” areas. A continuous or near continuous sequence of facades will enclose the street, define the downtown space, facilitate the creation of place, and create protected and uninterrupted pedestrian zones.
8. Encourage active ground floor uses, such as retail and services, in order to promote economic development, improve the pedestrian experience and encourage further residential growth downtown.
9. Promote economic development through a mix of new development, renovation and reuse of existing structures, and the preservation of historically and architecturally significant buildings.
10. Harmonize the design of new construction with that of existing buildings. This harmony is best accomplished through the control of design features, such as key facade elements, and will ensure that new development meets market demands while also reinforcing the existing place character of the Downtown. The result will be a Downtown with a stronger identity and new construction with greater marketplace value.
11. Strongly discourage surface parking lots that abut streets, which have negative visual impacts, detract from a pedestrian-friendly environment, reduce the overall market value of properties in the Downtown, and are generally inconsistent with the goals and objectives of the Urban Design Plan.
12. Pursue a parking strategy focused on encouraging shared-use parking agreements among private property owners and between the Borough and private property owners to create a strategically located downtown parking supply. At least 50% of new parking provided in residential buildings within easy walking distance (1/4 mile) of the train station should be open to the general public, for a fee, between 7 AM and 7 PM.

The MU-5 land use designation anticipates a wide variety of uses, including mixed-use buildings with active ground floor uses (cafes, restaurants, art galleries, bookshops, banks, retail, services) and upper-level residential; upper level office; and upper-level educational.

Anticipated building types in the MU-5 designation include mixed-use buildings, apartment buildings, live/work, offices, and parking decks with ground floor liner uses, such as retail or services. Civic, governmental and houses of worship are also anticipated building types.

Given the proximity to the train station and to downtown goods and services; the views to the Raritan River and Watchung Mountains; the proximity to the railroad tracks; and the limited dimensions of many Main Street parcels, building heights on the south side of Main Street are limited to six stories, but may rise to 16 stories, under certain conditions. Projects with taller buildings are required to make substantial contributions to needed infrastructure or public space projects, under the provisions of the Redevelopment Plan and parcel-specific redevelopment agreements.

The appropriate building height for the area on the north side of Main Street is six stories, and necessary adjustments should be made to the Arts District and Downtown Housing overlays in the B-R zoning.

The Redevelopment Plan for Sub-Area 1.4, as well as the underlying Business-Residential (B-R) zoning, contain extensive design standards to assure a high quality of design for both new buildings as well as for the public realm.

New structures in this land use designation should be sensitive to surrounding land uses, where such exist, and should be subject to bulk standards such that they do not encroach on appropriate standards of light and air affecting other properties.

Certain historic or iconic structures in Sub-Area 1.4 should be preserved, and the Redevelopment Plan should be revised accordingly.

2.6 Mixed-Use 6 Land Use Designation (MU-6)

The MU-6 designation applies to the Talmage Avenue corridor. It includes 111 parcels totaling 18.3 acres.

The area subject to this land use designation is regulated by the Redevelopment Plans for Sub-Areas 2.3, 2.4, 2.5 and 2.6. These sub-areas have distinct land use/occupancy characteristics and therefore require a different development strategy. (See also Section 3.2 – Redevelopment Area 2)

The underlying zoning district is currently the NB/R (Neighborhood Business / Residential).

New development on the north side of Talmage Avenue should be compatible with the nature and scale of the surrounding, established neighborhood. New development on the south side of Talmage is constrained by relatively shallow lots abutting the railroad right-of-way and possible soil contamination from many years of railroad use, but otherwise unconstrained by immediate residential neighbors.

The MU-6 land use designation seeks to transform this corridor from a derelict, stagnant and underutilized area to a thriving, stable and revived asset to the community and to the Borough as a whole.

The intent of the MU-6 land use designation is to encourage targeted new development and rehabilitation to improve the quality of life for current and future residents and business owners, as well as to enhance the corridor's currently gritty image. Specifically, this designation seeks to:

- Provide for viable, short-term (re)development opportunities as well as longer-term projects.
- Provide for a mix of residential, community-oriented commercial, civic, recreational and community activities.
- Significantly enhance the image and quality of architecture, the streetscape and the public realm along the Talmage Avenue corridor.
- Maintain a continuous, or near continuous building wall, uninterrupted by surface parking lots.
- Facilitate green infrastructure interventions to soften the corridor's gritty image.
- Improve the opportunities for walking and bicycling as alternatives to driving.
- Facilitate access to the south side of the railroad tracks and to the river.
- Provide functional, high-quality public and private open space, where appropriate.
- Create a new, visually striking gateway into town from the west.
- Functionally link new development with the neighborhoods to the north, the preserved lands to the south and the downtown, to the east.
- Encourage and facilitate the environmental cleanup, remediation and replacement of contaminated

3. Redevelopment Plans

The Borough has three redevelopment areas, each with its own Redevelopment Plan. For various reasons, updates to all three Plans are called for.

3.1 Redevelopment Area 1

Redevelopment Area 1 is an expansive redevelopment area that includes most of the Borough's downtown, as well as lands to the south of the downtown, between the NJ Transit Raritan Valley line right-of-way and the old Port Reading Secondary railroad right-of-way.

The Borough recently designated additional properties to the west of Redevelopment Sub-Area 1.2 as an "area in need of redevelopment – non-condemnation". Only one property is likely to be redeveloped in a conventional sense. The other properties are publicly owned – by either the Borough, the Middlesex County Utilities Authority or the US Army Corps of Engineers – and are used for recreational or infrastructure purposes. These properties are not developable in a conventional sense. In addition to their current functions, there may be opportunities for additional recreational uses, both active and passive, as well as landscape restoration and habitat restoration for those parcels subject to restrictive environmental limitations.

It is recommended that the Redevelopment Plan for Area 1, Sub-Area 1.2 be amended to include the recently designated properties.

Redevelopment Sub-Area 1.4 largely coincides with the Mixed-Use 5 (MU-5) land use designation, and with the Business-Residential (B-R) zoning designation. The zoning for Sub-Area 1.4 largely defers to the B-R zoning, with some important exceptions. The B-R district contains several zoning overlays, namely the Main Street overlay, the Arts District overlay and the Downtown Residential overlay.

There is considerable activity in the Main Street zoning overlay, with several large redevelopment projects under construction, and others in the pipeline.

There has been considerably less interest, on the other hand, in redeveloping properties in the areas covered by the Arts District and Downtown Residential overlays, and the incentives offered in the Arts District for redevelopment projects that include arts-related activities have not been effective.

While it is considered that the overall land use framework for these two overlay areas continues to be sound and appropriate, it is recommended that the bulk standards be reexamined and modified, as needed, in order to more effectively attract needed redevelopment initiatives.

In addition, it is recommended that the Borough undertake a Preliminary Investigation of the property immediately to the West of Sub-Area 1.5, on the southeast corner of East Union Avenue and East Street. This property is occupied by an aging multi-family rental housing project, known as Blair House. This parcel may be instrumental for the effective redevelopment of the existing Sub-Area 1.5, which is subject to limitations due to environmental regulations.

3.2 Redevelopment Area 2

The Redevelopment Plan for Area 2 was originally adopted in 2000, but it was substantially overhauled in 2009, when six Sub-Areas were created – Sub-Areas 2.1 through 2.6.

Since 2009, the Plans for Sub-Areas 2.1, 2.2, 2.3 and 2.4 have been amended a number of times. There is evidence of developer interest and a number of redevelopment projects are underway.

However, the Plans for Sub-Areas 2.5 and 2.6 have not been amended. There is little evidence of developer interest and only one, small redevelopment project pending.

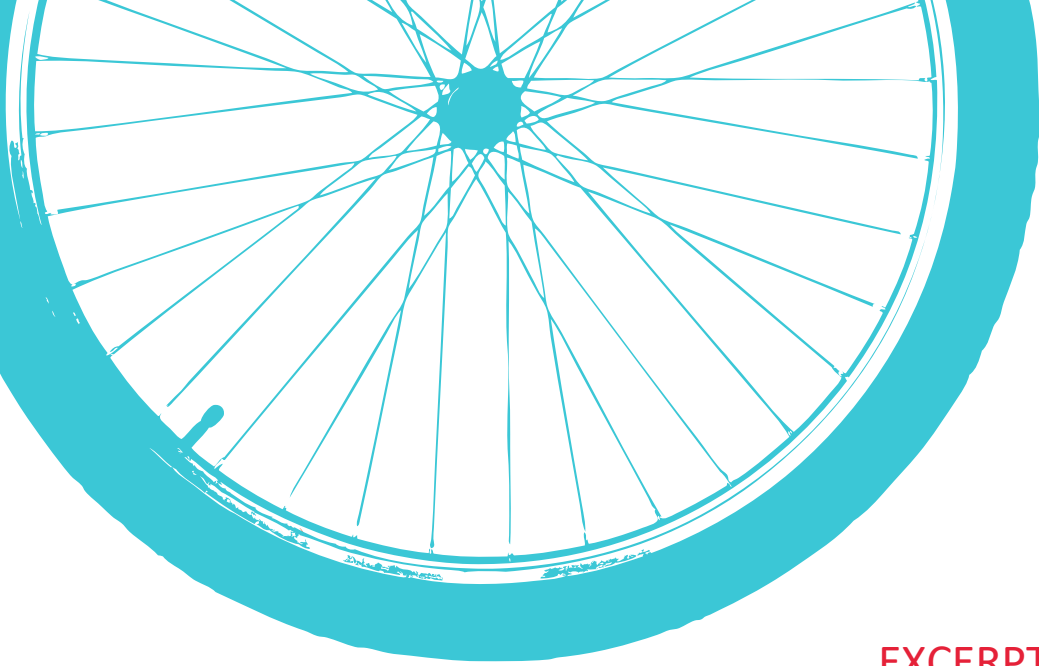
The land use framework outlined in the Plan for Sub-Area 2.6 calls for a variety of commercial and other non-residential uses that are likely not viable, given the limited size of the lots, and in any event would not be appropriate, from a land use perspective.

The land use framework outlined in the Plan for Sub-Area 2.5 calls for a variety of residential uses, which may be more viable, but may exclude other options that should be considered.

Therefore, it is recommended that the Plan for these two Sub-Areas be re-evaluated and possibly modified, as appropriate. The area's location as a gateway into the Borough, and a possible trail head for a future riverfront trail should be carefully considered.

3.3 Redevelopment Area 3

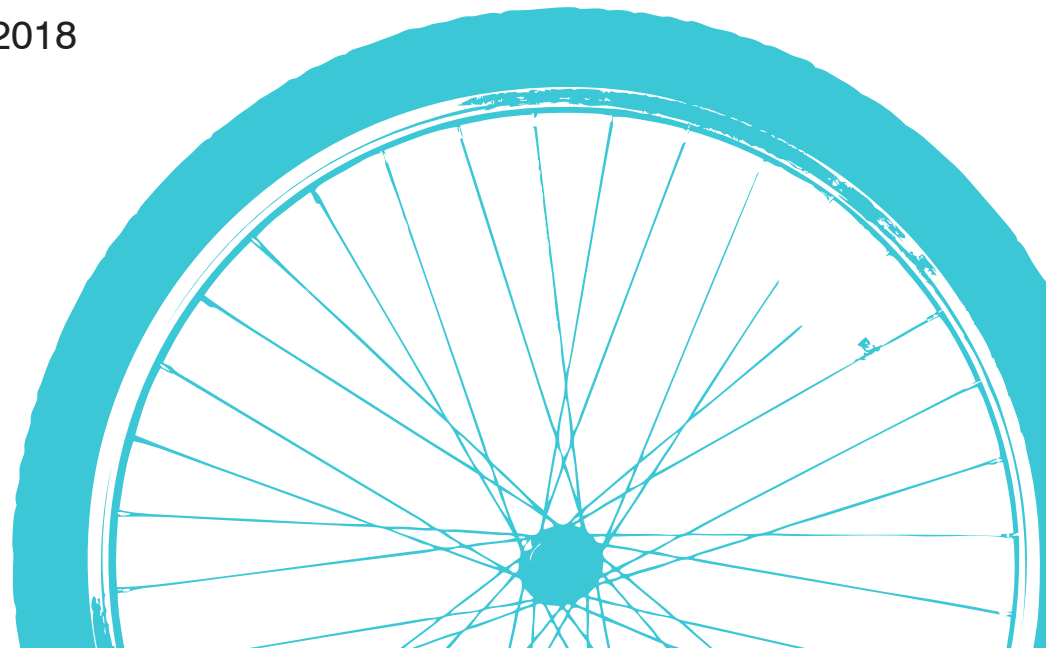
Redevelopment Area 3 is largely built out with an older commercial area, on the corner of West Union Avenue and Tea Street, and a more recent multi-family residential area located to the north of the commercial area, between Tea Street and the Middle Brook. The older commercial area is included in the Mixed-Use 1 (MU-1) designation. It is recommended that the Redevelopment Plan for this area be updated to reflect the intent of the MU-1 designation and the zoning for the area be updated accordingly.



EXCERPTS FROM

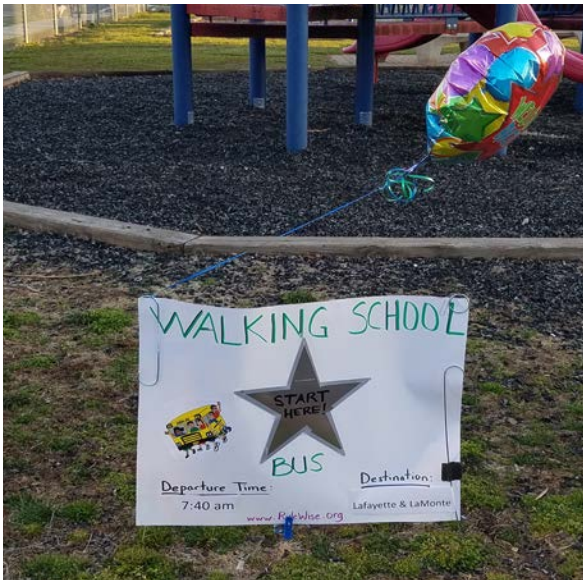
Bound Brook and South Bound Brook, New Jersey Pedestrian and Bicycle Travel Plan

May 2018



EXISTING SAFE ROUTES TO SCHOOL EFFORTS

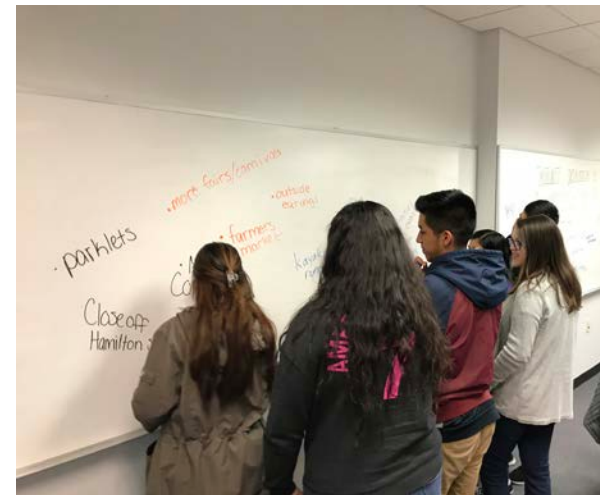
There are Safe Routes to School educational and encouragement programs in both the Bound Brook and South Bound Brook schools. In 2017, Bound Brook as a municipality and all of the elementary schools, Smalley School, Lafayette Elementary School and LaMonte/LaMonte Annex, received the silver designation for the NJ Safe Routes to School Recognition Program.⁴⁷ The Robert Morris School in South Bound Brook received “first step” designation through the Recognition Program. Municipalities and schools (public, private, or charter) are recognized for their commitment and support of the Safe Routes to School program by completing projects and programs that meet designation requirements. Certification is valid for three years.



Bound Brook Safe Routes to School Program

In Bound Brook, the program has been running for the past 5 years and involves students from LaMonte & LaMonte Annex, Lafayette, Smalley, and Community Middle School. The following are past and upcoming programs to encourage safe walking and bicycling:

- LaMonte, Smalley and Lafayette operate a monthly Walking School Bus on the first Thursday of September, October, April, May and June. Junior National Honor Society students at Community Middle School help escort younger students to schools.
- In the 2015-16 and 2016-17 school years, Lafayette School held a “Most Miles” contest every month to track how many miles students walked to and from school. Each classroom tracks number of miles for a combined classroom score which is tabulated and maintained on a scoreboard overseen by RideWise. The classroom with the most miles at the end of year receives a trophy that rotates between the winning classrooms and prizes.
- In 2016-2017 school year, Smalley School held a poster contest where students submitted artwork about safe walking and bicycling. Winners were selected by the school art department and RideWise.



Source: Ridewise, Inc.



Source: RideWise, Inc.

- The Safety Town pedestrian education program was taught to students attending the Middle Earth aftercare programs in all 4 elementary schools in Bound Brook. The program was offered in the spring and fall of 2017 and taught by RideWise staff.
- Each fall, RideWise staff teaches Community Middle School students pedestrian safety skills that includes a mile walk to Smalley School, which is the main site for aftercare programs.
- In May of 2018, RideWise and Middle Earth staff will teach safe cycling classes to students in aftercare. Lafayette School is allowing Middle Earth to store their bikes on site and has approved cycling on their school grounds.
- RideWise partners with the Bound Brook High School driver education program to teach pedestrian and cycling safety as part of the new NJ Motor Vehicle Commission license requirements.
- Future plans include organizing a bike train with Community Middle School students to ensure students learn bike safety, the importance of wearing a helmet, and how to properly lock bikes.

South Bound Brook Safe Routes to School Program

In South Bound Brook, Safe Routes to School programs are newer to the district. The Robert Morris School students have celebrated International Walk to School Day in October annually over the past several years. The once per year Walk to School Day event is very well attended and has support from the school superintendent and participation from the South Bound Brook police. The following are other past and upcoming programs to encourage safe walking and bicycling:

- The fall of 2017 was the first time the Safety Town pedestrian education program was taught to students in all grades at Robert Morris School. It is anticipated this program will be offered annually.
- There is interest in expanding the once per year Walk to School Day to more frequent events.
- There is interest in setting up a walking school bus.

Bound Brook Borough

Walkability & Bikeability Assessment Route



SIGNS

The purpose of road signs is to give instructions and provide information for users. In Bound Brook, the signs for speed and parking in school zones are provided to notify drivers of the laws. However, the effectiveness of these signs has room for improvement.

Findings

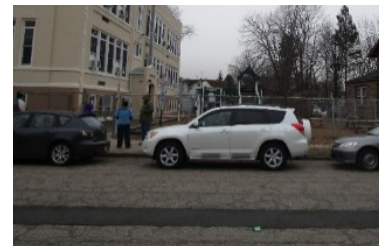
Speed Limit Signs

Bound Brook High School fronts a very busy state road, NJ-28. Many vehicles exceed the posted speed limit despite overhead flashing beacons warning of lower speed limits during school arrival and dismissal. School speed zone lights and signage (West Maple Ave) are limited and begin well within the school zone.



Ineffective No Parking Signs

Illegal parking around all schools is a common issue. At LaMonte School, a two-way street is converted into one-way during school hours which is an effective way to improve safety. However, parked vehicles line the road into the no parking zones up to and sometimes blocking the crosswalks. At Lafayette Elementary School, no parking signs did not stop parents from parking in front of the school causing the school buses to park further from the school. At both LaMonte and Lafayette, drivers without disability parking placards parked illegally in the spaces reserved for people with disabilities.



IDLING VEHICLES

Idling in front of all schools is a common issue. At both LaMonte and Lafayette schools, parents picking up students sat in idling vehicles for 10-20 minutes or more, far exceeding New Jersey's three-minute legal limit. Weather was above freezing with little if any need to run car heaters. Idling in school zones creates unhealthy air quality levels inside school buildings which has been shown to impact children's health, especially for children with asthma.



English Universal



Spanish Universal

No Idling Signs can be ordered from the NJ Department of Environmental Protection, but should also include an education component to parents and other residents.

<https://www.nj.gov/dep/stopthesoot/sts-no-idle-sign.htm>

SIDEWALKS

Sidewalks are the path for pedestrians. The conditions of sidewalks reveal the extent of friendliness to walkers. In Bound Brook, most streets include sidewalks which ensure a certain degree of safety. However, sidewalks are often uneven and heaved which may cause difficulty for users such as people with strollers, wheelchairs and the elderly.

Findings

Blocked Sidewalks

Residents should be reminded that even temporary sidewalk obstructions (garbage cans, snow, tree limbs and leaves) can be hazardous for pedestrians.



Uneven Pavement

The sidewalks in many areas were cracked or uneven. This creates a risk of tripping and falling, especially for children and the elderly. It also makes it very difficult to push strollers and wheelchairs over cracks or damaged sidewalks.



CURBS

Curbs are the edge of a sidewalk. Curb ramps should be designed to federal accessibility requirements that meet the Americans with Disabilities Act (ADA). Corner radii impact vehicle speeds and pedestrian crossing distance. Minimizing a corner radius to create safe turning speeds of 15 mph or less increases pedestrian safety.

Good Examples in Bound Brook

Truncated Domes

Truncated Domes are the bumpy pad placed right at the end of crosswalk to warn and guide users with sight impairments.



Incorrectly Placed Truncated Domes

Incorrectly placed truncated dome pad direct pedestrians into the middle of the street, not into crosswalks.



Painted Truncated Domes

Painted truncated domes are not in ADA compliance. Also, poor drainage around the curb is unfriendly to pedestrians, especially when frozen in winter.



Disconnected Cub Cut and Crosswalk

Curb cuts and crosswalks are disconnected forcing pedestrians with strollers or in wheelchairs to cross outside the crosswalk directly behind Lafayette School.



TURNING VEHICLE SPEEDS

Corner radii impact vehicle speeds and pedestrian crossing distance. Minimizing corner radii and defining driveway ingress and egress areas creates safer turning speeds of 15 mph or less which increases pedestrian safety.

Excessively Wide Driveways

Extremely wide driveways were found at some downtown blocks.



ROAD AND LANDSCAPE DESIGN

Road design is geometric positioning of the physical elements of roadway according to engineering standards. Road design directly impacts the efficiency and safety of traffic. Landscape design can create a cool vibe in a town and help increase foot-traffic. Landscape and road designs can be incorporated with each other to maintain traffic safety while providing a better aesthetic quality. In addition, landscape design can incorporate storm water management features, see Green Streets Chapter.

Findings

Uninviting Entrance

A dark and uninviting entrance to Bound Brook from South Bound Brook could be made friendlier with brighter, concrete sidewalks, better lighting and hanging planters.



Fast Traffic at the front of Bound Brook High School

There is speeding traffic at the intersection closest to Bound Brook High School (NJ-28 and Winsor St) with no traffic signals. Wide crossings along this straight, flat stretch could be safer with pedestrian refuge island(s) or other treatments that include plantings.



Intersection with Frequent Speeding

Frequent speeding along Vosseller Ave can be mitigated with traffic calming techniques such as a mini-roundabout which can include plantings and mountable curbs. Other options include curb extensions and/or narrowing travel lanes.



Source: NACTO Urban Street Design Guide



Project for Public Spaces also established a guideline for short-term experiments called, Lighter, Quicker, Cheaper (LQC).⁵³ LQC is a low-cost, high-impact incremental framework for improving public spaces in short order that capitalizes on the creative energy of the community to efficiently generate new uses and revenue for places in transition.⁵³ LQC experiments range in scale and impact, from small neighborhood amenities and art to large downtown temporary structures and events.⁵³ Before and after LQC experiments, planners need to work with community to create a vision around the places they view as important to community life and to their daily experience. While conducting short-term experiment and reevaluation, community may change their expectations of places. It may be necessary to go through the step of place vision again to redefine what is the true vision that a community desires. For information regarding materials for these projects, please visit the Tactical Urbanism Guide: <http://tacticalurbanismguide.com>.

To create better public places for both Bound Brook and South Bound Brook, we utilizes a placemaking model named **Power of 10+**. The process of Power of 10+ includes (1) initial survey for study areas, (2) vision planning regarding to safe route to school and towns, (3) public place evaluation in terms of current conditions and utilization, (4) identification of the best and most potential public spaces based on vibrancy and friendliness of infrastructure to users, (5) improvement strategies to one of the most potential space along with time frame and cost estimates.



POWER OF 10 FOR BOUND BROOK



Best Places

1. Main Street Corridor (by Dunkin Donuts)
2. Officer Sam Kriney Memorial Park
3. Queens Bridge
4. Codrington Park
5. Bound Brook Public Library / Adjacent Open Space

Places with most Potential

1. Train Station
2. Traffic Circle
3. Levy/Riverfront Access
4. Underpass underneath the railroad
5. Bound Brook High School

EXCERPTS FROM

Master Plan Reexamination Report

Borough of Bound Brook
Somerset County, New Jersey



Prepared for the Borough of Bound Brook Planning Board in accordance with the New Jersey Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.)

Adopted by the Bound Brook Planning Board on June 8, 2017.

The original of this report was signed and sealed on June 8, 2017 in accordance with Chapter 41 of Title 13 of the New Jersey State Board of Professional Planners

Carlos Rodrigues FAICP / PP
New Jersey Professional Planner #5107

INTRODUCTION

The population was projected to grow to 10,500, living in 3,500 dwelling units.

The plan called for a new civic center, to be built at the intersection of Mountain Avenue and East 2nd Street. It also called for the widening of several streets, to increase capacity, namely Tea Street, Vosseller Avenue and a new road through what is now Billian Park.

The plan was again updated in 1963; an update to the Land Use Element of the *Master Plan* was adopted in 1978, also prepared with the assistance of Robert Catlin. A *Re-examination Report* was adopted in May of 1983.

The most recent edition of the full *Master Plan* – addressing both the required master plan elements (goals and objectives, land use plan and housing plan) as well as the then optional elements (circulation plan, utility service plan, community facilities plan, recreation plan, conservation plan, economic development plan and historic preservation plan) was adopted in 1988.

In February of 1996, the Borough adopted the *Tea Street / Middle Brook Redevelopment Plan*, with an amendment to the Land Use Element of the *Master Plan*. This redevelopment plan was substantially amended in July of 2008. The ShopRite shopping center and the Queens Gate apartments were developed in accordance with this redevelopment plan.

Following the catastrophic flooding event caused by Hurricane Floyd in November of 1999, when flood waters reached a 42-foot elevation, the Borough designated extensive areas “in need of redevelopment” in the southern part of town. *Redevelopment Plans for Area 1 and 2* were adopted in 2000, substantially changing the planning framework in those areas. The plan for Area 2 was substantially amended in 2008, radically reducing the size of the area subject to the plan. The plan for Area 1 was partially amended in 2012, without changes to its boundaries; and more substantially amended in 2015. Additional, targeted amendments have been adopted for both redevelopment areas since then.

Bound Brook’s downtown was subject to many flooding events over the years. The entire southern part of the Borough, including the Main Street area, lies within the Raritan River flood plain and its tributaries, the Middle Brook and the Bound Brook, that comprise the western and eastern boundaries of the Borough.

The US Army Corps of Engineers (USACE) addressed these flooding problems through the *Green Brook Flood Control Project*, designed to provide protection from a 150-year flood event. Flood control protection is now in place on either side of the downtown, with a system of levees, flood walls, flood gates, pumping stations and designated “over topping” areas. In July of 2016, most privately-owned properties in the Borough’s low lying areas were removed from the floodplain and are no longer subject to flood proofing and flood insurance requirements. See Section 2.2.

The Borough was an active participant for many years in the State of New Jersey’s smart growth planning efforts,

INTRODUCTION

having received Center Designation (jointly with South Bound Brook) from the New Jersey State Planning Commission in 2000. These actions were intended to redirect State resources to the downtown area and, in turn attract private investment.

The Borough continues to be well positioned from a planning perspective with respect to current state and county strategic planning frameworks — the Borough’s planning and regulatory documents are closely aligned with the intent and goals of the county and state documents.

In March of 2003, the Planning Board adopted a *Master Plan Re-examination Report* containing a new historic preservation framework, as well as extensive proposed amendments to the Borough’s Land Use regulations.

A *Housing Plan Element and Fair Share Plan* was also adopted at the same time.

Also in 2003, the Borough successfully petitioned the NJ Department of Transportation and NJ Transit to be recognized with *Transit Village* designation. The *Transit Village* program recognizes communities that have adopted planning and zoning frameworks that support and further encourage transit ridership. Designated *Transit Village* communities are intended to have priority access to state funding and technical assistance for projects within the designated *Transit Village* areas.

New Jersey’s *Transit Village* program loosely defines a passenger rail-oriented transit village as the area encompassed within the ½ mile area around the train station. In the case of Bound Brook, this ½ mile radius encompasses the entire downtown area and the area north of the downtown, all the way up to the Union Avenue / NJ Route 28 corridor. It also encompasses the largely undeveloped area south of the tracks, all the way down to the Raritan River — an area that is both flood prone and encumbered by both passenger and freight railroad right-of-ways.

As such, and relative to other *Transit Villages*, Bound Brook is at a disadvantage, in the sense that conventional transit-oriented land development can occur only in roughly half the transit facility’s catchment area. That notwithstanding, Bound Brook’s transit-oriented redevelopment framework addresses the entirety of the transit village catchment area, albeit with different redevelopment strategies: a conservation, recreation and historic preservation-oriented strategy for the physically constrained and flood prone areas along the river; and a more conventional residential and commercial-oriented redevelopment strategy for the flood protected areas on higher ground.

In August of 2007, the Planning Board adopted a *Re-examination Report* and master plan amendment of the Land Use Element of the Borough’s *Master Plan*. This 18-page report deals almost exclusively with flood protection and stormwater runoff issues in the low-lying areas of the Borough, along with design guidelines for the downtown area.

More recently, in February of 2012, the Planning Board adopted the *Downtown Urban Design Plan* as an element of the *Master Plan*. This plan provides a detailed development framework for the entire downtown area, extending to the riverfront.

INTRODUCTION

In August of 2014, the Borough adopted extensive amendments to the Land Development Regulations for the B-R district in an effort to facilitate implementation of certain elements of the downtown plan.

In 2015, the Planning Board adopted a *Riverfront Access Plan* as an element of the Borough's *Master Plan*. This plan element provides a blueprint for enhancing public access to the Raritan riverfront and for improving pedestrian and bicycle connections along the riverfront, as well as between the downtown and the riverfront.

While considerable planning attention has been dedicated over the years to certain parts of the Borough — the low lying areas that were severely flooded in 1999, as well as the area between Tea Street and the Middle Brook, designated as Redevelopment Area 3 — no comprehensive reexamination of the Borough's overall planning framework and land development regulations has taken place since 1988.

The downtown area has benefitted from considerable planning analysis and scrutiny, and on-going downtown revitalization efforts enjoy state-of-the-art land development regulations. However, the rest of the Borough (outside the designated redevelopment areas) has not benefitted from a comparable level of attention, and is subject to aging and possibly counter-productive land use policies and development regulations that now require a thorough reexamination and reassessment.

1.2 Statutory Requirements

The MLUL requires consideration of the following five areas (N.J.S.A. 40:55D-89a-e) within the Reexamination Report:

- a. Identify major problems and objectives relating to land development in the municipality at the time of the adoption of the last reexamination report.
- b. The extent to which such problems and objectives have increased or been reduced subsequent to such date.



PHYSICAL FRAMEWORK

In census tract 512 (area west of Vosseller Avenue and south of Talmage Avenue), 20% of households do not own a car, and 32% own only one vehicle; and while 50% drove to work alone, 34% carpooled.

In census tract 511 (area east of Vosseller Avenue and south of Union Avenue), 15% of households have no vehicle and 49% have just one; and while 55% drove alone to work, 28% carpooled, 7% took transit and 5% walked or bicycled to work.

Table 13 — Journey to Work Characteristics by Census Tract, 2014

	Census Tract 511		Census Tract 512		Census Tract 513	
	Number	Percent	Number	Percent	Number	Percent
Workers 16 years and over	2,033		2,477		1,214	
MEANS OF TRANSPORTATION TO WORK						
Car, truck or van		83.5		84.3		87.5
Drove alone		55.0		50.1		79.2
Carpooled		28.5		34.2		8.2
Workers per car, truck or van	1.31		1.30		1.05	
Public transportation (excluding taxicab)		7.0		4.1		3.1
Walked		2.8		2.9		2.3
Bicycle		2.5		4.0		1.5
Taxicab, motorcycle or other means		3.6		1.0		2.1
Worked at home		0.6		3.6		3.5
VEHICLES AVAILABLE						
No vehicles available		15.4		16.3		2.0
1 vehicle available		48.8		26.0		16.2
2 vehicles available		19.9		29.1		52.1
3 or more vehicles available		15.9		28.7		29.8

Source: 2014 5-Year American Community Survey.

2.6.8 Parking

There is no Borough-wide parking analysis nor is it likely that there is a need for one. While there may be small, localized parking deficits, it would appear that parking is not a pressing issue in most parts of the Borough. Any localized deficits should be able to be addressed through small-scale interventions.

A parking study of the downtown area was conducted in 2011 as part of the *Downtown Urban Design Plan*. That study found no immediate need to increase the supply of downtown parking, but did anticipate the need to increase the supply in the future, as downtown redevelopment projects came on line. The study also offered a number of recommendations for making existing parking resources more efficient and better utilized.

The study was updated in October of 2016, prompted by the increased activity in downtown redevelopment efforts. The Borough has 122 on-street metered parking spaces and 377 spaces in parking lots. There are other on-street parking spaces that are time restricted but free, and others that are free and not time restricted.

A 2013 report by Fitzgerald & Hallaway indicates that there are 20 private parking lots with 455 parking spaces in the downtown. The largest is the 80-space Brook Arts Center lot.

The 2016 study found that there is *no shortage* of parking downtown. However, parking fees and regulations are uneven and there is a deficit of on-street transient parking for stays longer than two hours. The parking meters are functionally obsolete.

The study recommends recalibrating parking fees and time limits; updating the parking technology, with pay-by-cell phone or on-line options; recalibrating the distribution between monthly permits and daily permits in the commuter lots; dramatically increasing parking enforcement; and replacing the meter stock.

NJ Transit's efforts to redevelop the commuter parking lots next to the train station with additional residential, if carried out, will require the construction of a parking deck to replace the existing surface parking and service the new residential tenants.

It is likely that a second commuter parking facility located on the south side of the tracks on the parcel currently occupied by the self-storage facility — an idea anticipated in the *Downtown Urban Design Plan* and in the *Redevelopment Plan for Sub-Area 1.3* — will also be necessary to service primarily commuters originating on the south side of the Raritan River.

The parking standards in the Borough's Land Use Regulations are dated and should be re-assessed. They do not recognize New Jersey's Residential Site Improvement Standards (RSIS); and are not current with respect to parking requirements for mixed-use projects or for non-residential uses in a built-up environment such as the Borough.

The adopted *Redevelopment Plans for Area 1 and 2* contain lower residential parking standards than required by the RSIS — appropriately recognizing the transit opportunities and the pedestrian-friendly character of the area — and the Borough's Planning Board has routinely granted "de minimus" exceptions allowing residential redevelopment projects to proceed with reduced parking counts.

Recent overnight parking utilization data from the Meridia project validates the Borough's reduced residential parking requirements. The expectation is that per household residential parking demand in the downtown will further decline over time, as the supply of rental housing at reasonable price points increases elsewhere in the region, and rental housing near the train station captures a larger share of transit-oriented households, and a lesser share of the general population.

2.6.9 Conclusions and Recommendations

Largely as a result of the Borough's traditional pattern of development, internal circulation works relatively well for all modes of transportation: vehicular, pedestrian and bicycles. There is a high level of connectivity in the circulation

network, which means that all areas of the Borough — with two exceptions — are easily reachable.

The two exceptions are the small Middlebrook Road neighborhood, north of Route 22; and the small West Main Street neighborhood, south of the railroad tracks.

The high connectivity notwithstanding, there is clearly room for improvements to the circulation network, improvements that will facilitate mobility and reduce existing friction.

While improvements to the vehicular circulation system are likely to be localized and relatively modest, there is considerable potential for improvements to the pedestrian and bicycle circulation system, primarily through dedicated, off-street facilities, as well as new connections that expand the network and increase both its range and its performance.

There is also potential for improvements to the level of service provided by the various transit operators.

Additional recommendations:

New Pedestrian and Bicycle Crossing of the Raritan River

The Queens Bridge linking Bound Brook and South Bound Brook is the only crossing of the Raritan River for many miles in both directions. To the west, the closest crossing is the Manville Causeway in Manville; to the east, it is the Landing Lane Bridge in New Brunswick.

A new vehicular crossing of the Raritan River, while very desirable, will be an expensive project, well beyond the scope of a municipal master plan. No ideas for how, or where, to accomplish this are currently on the table.

New Pedestrian and Bicycle Crossing of the Middle Brook

This new link is already targeted in the Borough's adopted *Downtown Urban Design Plan* and *Riverfront Access Plan*. It envisions converting the existing, decommissioned freight rail bridge over the Middle Brook into a bicycle/pedestrian bridge, linking the Borough to Bridgewater and linking the Bound Brook riverfront with the future 400+ acres of parkland on the Wyeth property, currently under remediation. Ultimately, the goal is to create a Raritan riverfront greenway linking the Borough to Somerville and Raritan Boroughs.

New Pedestrian and Bicycle Crossing(s) of the Bound Brook

Opportunities may exist to create new pedestrian and bicycle connections between Bound Brook and the Borough of Middlesex. The substantial preserved lands in both towns, on both sides of the Bound Brook, constitute a sizable conservation area in the floodplain of the Bound Brook and Ambrose Brook. Billian Park (20 acres) and the adjacent Presbyterian cemetery (28+ acres) to the north, along with the floodplain conservation areas constitute a large chunk of land with limited circulation links. While new vehicular connections through these areas are unlikely, new pedestrian and bicycle connections would enhance the non-motorized circulation system, better link the existing

neighborhoods on either side of the stream corridor and provide better access to these preserved lands.

The responders to the community survey expressed strong support for this concept.

New Grade-Separated Access to South Side of Railroad Tracks

Arguably the most important improvement to the Borough's vehicular circulation system is providing grade-separated access from West Main Street to the area south of the tracks. This access would replace, or perhaps supplement, the two existing grade crossings, and would consist of either a tunnel, or an overpass. It is seen as an absolute pre-requisite for any higher-density redevelopment scenario of Redevelopment Sub-Area 1.3

The *Downtown Urban Design Plan* shows this new connection as an extension of Mountain Avenue, which would require close coordination with the possible future redevelopment of the NJ Transit commuter parking lots.

The possibility of this new grade-separated connection has been considered only at the most conceptual level. It will require a feasibility study at the appropriate time to more fully evaluate the various alternatives and assess the costs and benefits associated with pursuing this idea.

Circulation Plan Element

The Borough does not have a circulation plan element as part of the *Master Plan*. As such, there is no comprehensive, long-term vision for improving circulation and mobility. A circulation plan element that is synched with the land use plan element and the zoning is an indispensable tool for guiding municipal actions and investments in the circulation infrastructure.

Sidewalk Inventory

An essential component of both the circulation plan and the capital improvement plan (see following discussion of *Capital Improvement Plan*) is an inventory of all sidewalks and other pedestrian facilities that exist on the public right-of-way, as well as assessments of their existing conditions. The sidewalk inventory allows the Borough to identify important missing links, if such exist, as well as prioritize reconstruction or modification investments.

The sidewalk inventory would address existing handicap-compatible features, identify missing features and prioritize new investments in upgrading the sidewalk and walkway network, with a view towards achieving full accessibility.

Neighborhood Traffic Calming / Green Streets / Complete Streets

Another important component of the circulation plan is an assessment of the potential for various types of physical interventions in the design of the Borough's streets. Traffic calming interventions are aimed at reducing motor vehicle speed and enhancing pedestrian and bicycle safety. Traffic calming is often coupled with green infrastructure or green street interventions, where redundant pavement is replaced with pervious and planted surfaces that increase

the infiltration of stormwater runoff and improve water quality. Both traffic calming and green street interventions can be coupled with a “Complete Streets” approach, that seeks to provide a better balance between motor vehicles and other users of streets.

These types of interventions are very local and therefore require building a consensus among those most directly affected by them. This means involving neighborhood residents in the process of identifying the most compelling candidates for these approaches, and developing a consensus regarding what types of interventions to execute.

Capital Improvement Plan

The Borough’s engineers maintain a street evaluation, which is used for grant applications directed to streets requiring urgent intervention. However, the Borough does not have a formal capital improvement plan, which would provide the platform to implement new initiatives — specifically the items on the circulation plan element. As such, specific projects have not been developed and funding mechanisms have not been identified.

While a routine maintenance plan, funded by NJDOT’s Local Aid Program, may ensure periodic resurfacing or rebuilding of badly deteriorated streets and sidewalks, relying exclusively on this program essentially leaves the Borough on auto-pilot, as it does not question the design and features of the streets and other elements of the circulation system that are part of the program, nor does it address any investments in new or modified facilities.

A capital improvement plan tied directly to the circulation plan element would bring clarity and predictability in terms of capital investments in facilities for all modes of transportation, including new bike lanes or bike paths, upgrading of existing pedestrian facilities and location and characterization of new pedestrian facilities, street redesign and so forth. This would better position the Borough to compete for grant funding from programs such as Safe Routes to School, Safe Routes to Transit, Trail Improvements and others.

Quiet Zones

The Borough has been pursuing Quiet Zone designation from the NJDOT for the downtown area. This designation will require improvements to the two grade crossings at La Monte and Vosseller Avenues. NJDOT approval is required and has been requested. Quiet Zone designation will become increasingly urgent as the number of downtown residents, businesses and visitors continues to grow. The Borough is optimistic that the Quiet Zone request will be approved, and that the necessary funding to implement it will be found.

Improvements to Rail Station Access

Passenger access to the NJ Transit rail station is abysmal. Neither of the platforms is ADA accessible and the physical condition of the tunnels and stairs that provide access to the two platforms is seriously deteriorated. The stairs that provide access from South Main Street have been closed for years because of their deteriorated condition. But even if these were fixed and reopened, there is no walkway linking the stairs to the station platform.

As residential redevelopment in and around the downtown results in increased ridership, the pressure to dramatically improve access conditions for these passengers will substantially increase and will need to be addressed.

New Commuter Parking Facility South of the Rail Tracks

It is very important to preserve the option of creating a second commuter parking facility on the south side of the tracks, in particular if the NJ Transit parking lots are redeveloped, as is anticipated. As mentioned, this idea is anticipated in both the *Downtown Urban Design Plan* and in the *Redevelopment Plan for Sub-Area 1.3*. Future redevelopment of the parcel currently occupied by the self-storage facility should keep this option open.

Update Parking Requirements in Borough's Land Development Regulations

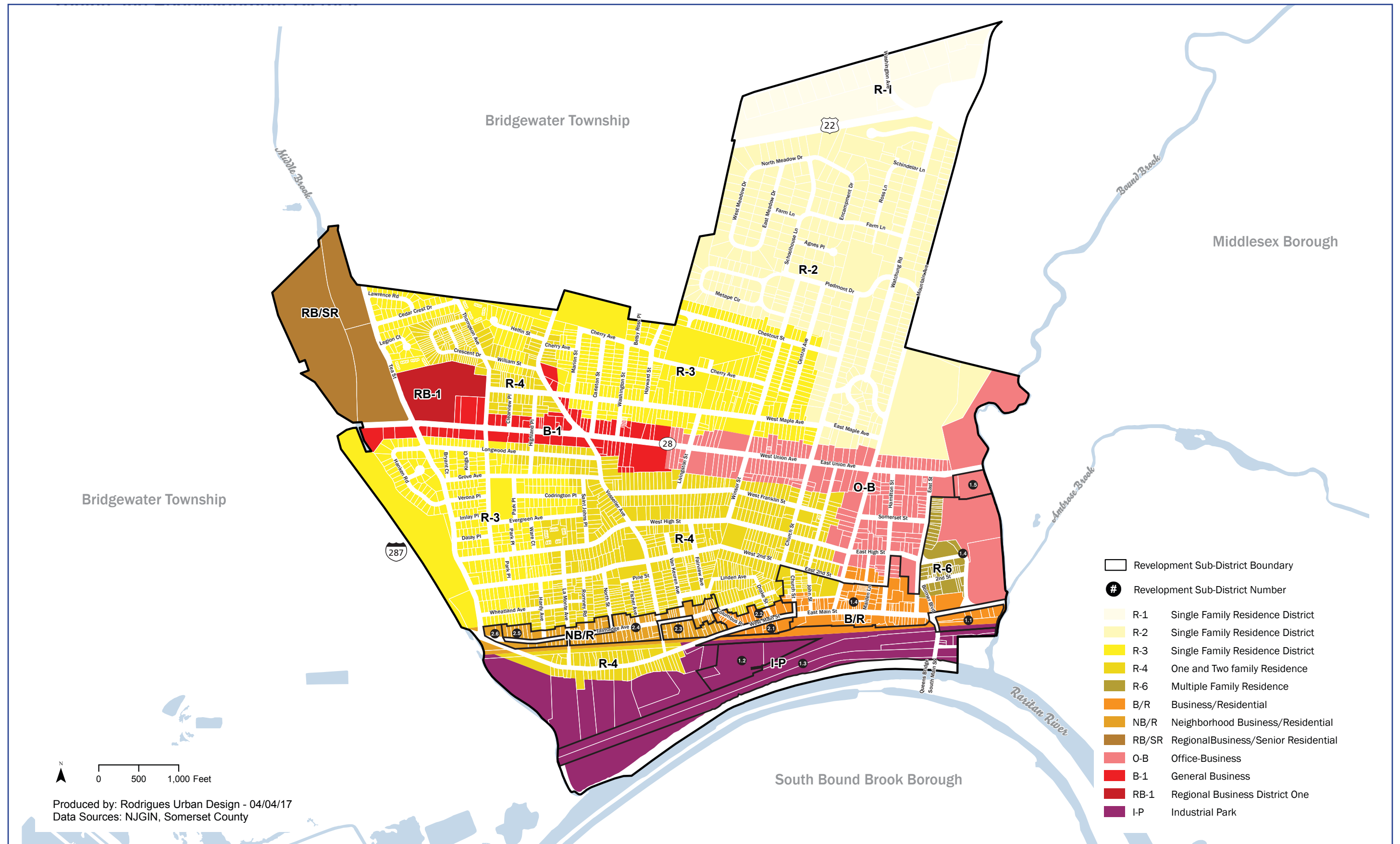
The parking requirements in the Borough's Land Development Regulations should be re-visited and updated as needed to better reflect current knowledge of parking demand in mixed-use developed areas such as the Borough. They should also reflect technological changes, such as the need for charging stations for electric and hybrid vehicles, changes in the dimensions of the average vehicle and other relevant developments.

2.7 Parks, Open Space and Recreation

The *Open Space and Community Facilities Map* shows the location of public parks, open space and recreational facilities in the Borough.

Table 14 lists the public parks and recreation facilities in Bound Brook. The Borough filed an updated Recreation and Open Space Inventory (ROSI) with the New Jersey Department of Environmental Protection Green Acres Program in February of 2017. All of these properties are now listed on the ROSI.

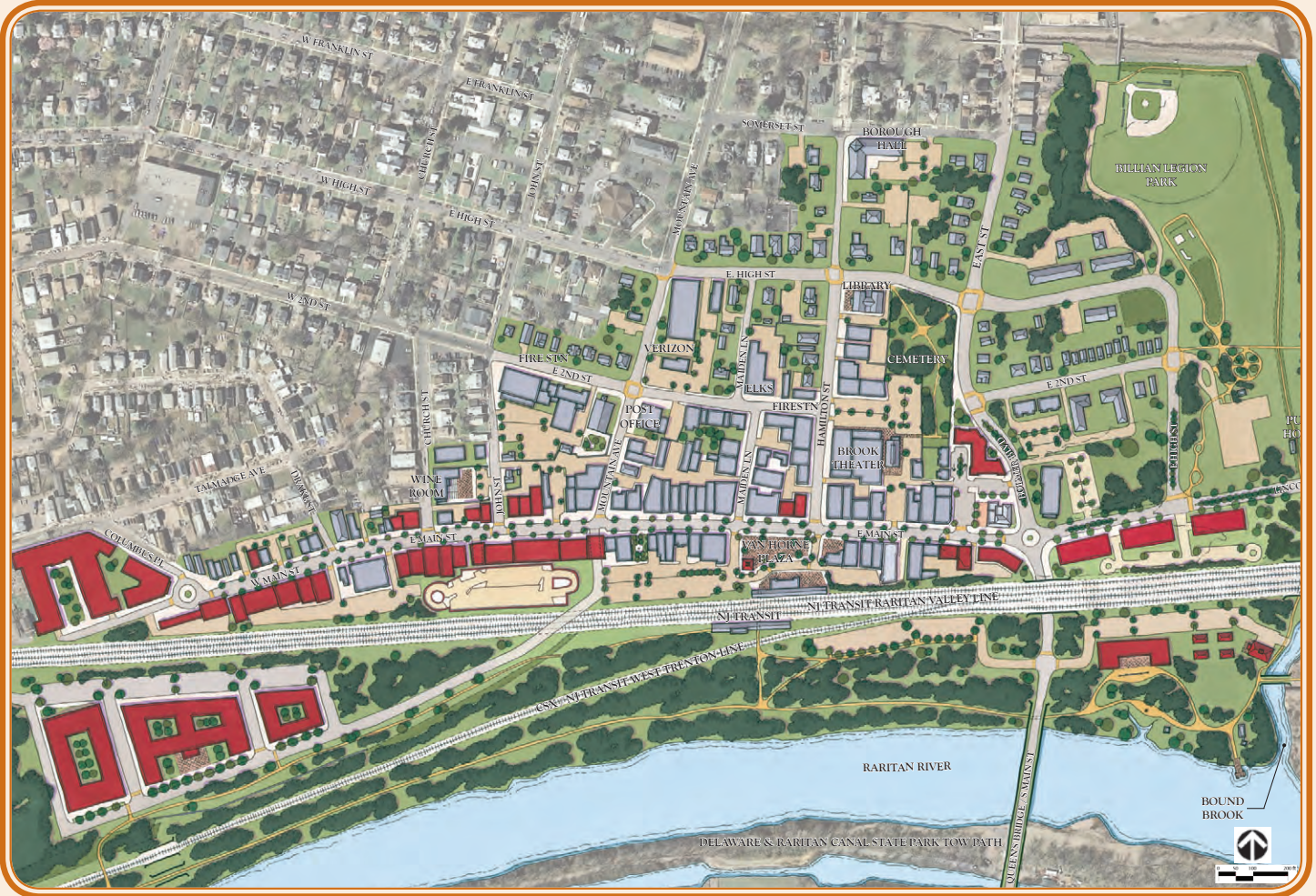
MAP 5: Current Zoning and Redevelopment Areas



EXCERPTS FROM

Bound Brook

Downtown Urban Design Plan



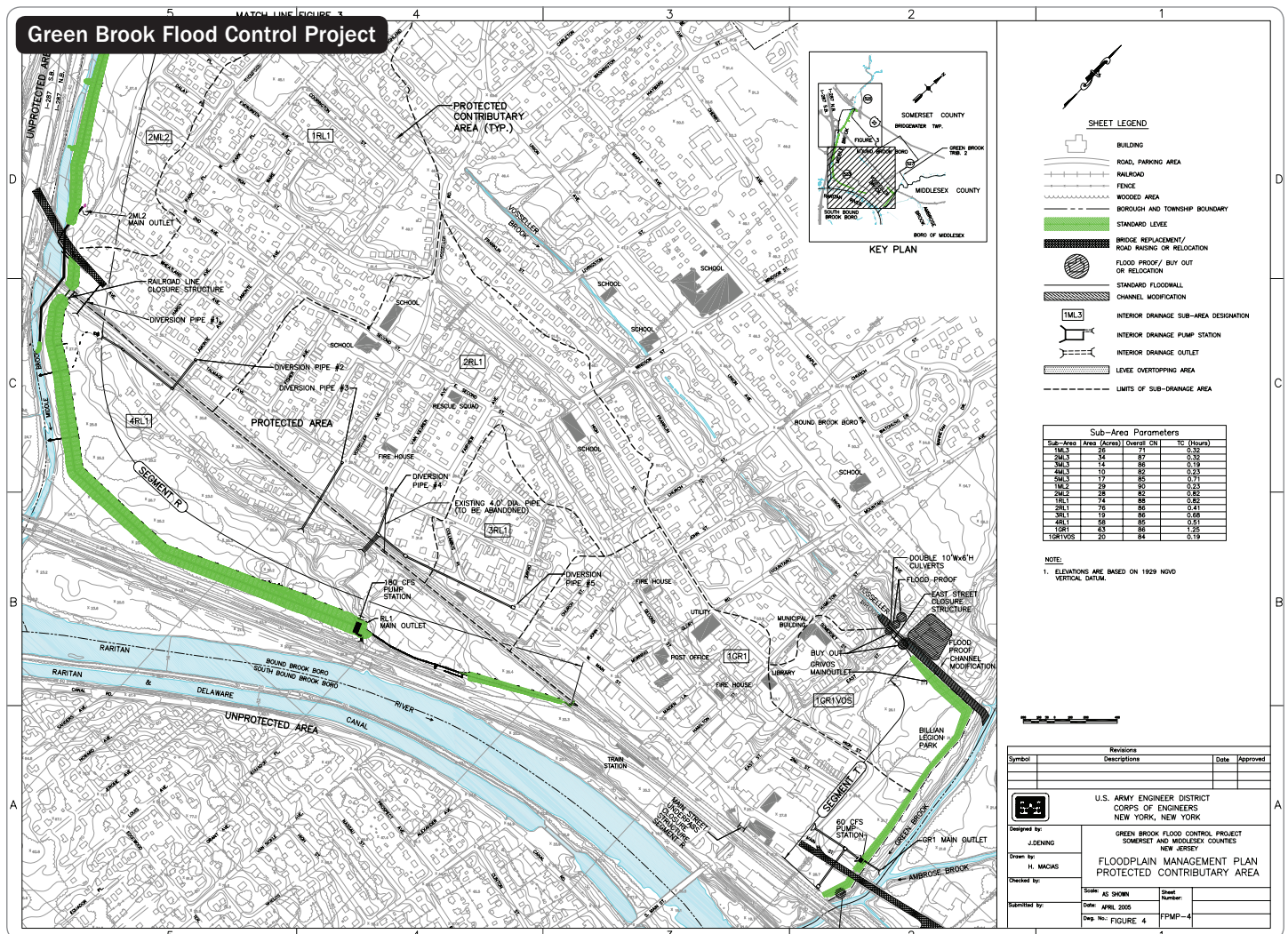
December, 2010

The Green Brook Flood Control Project

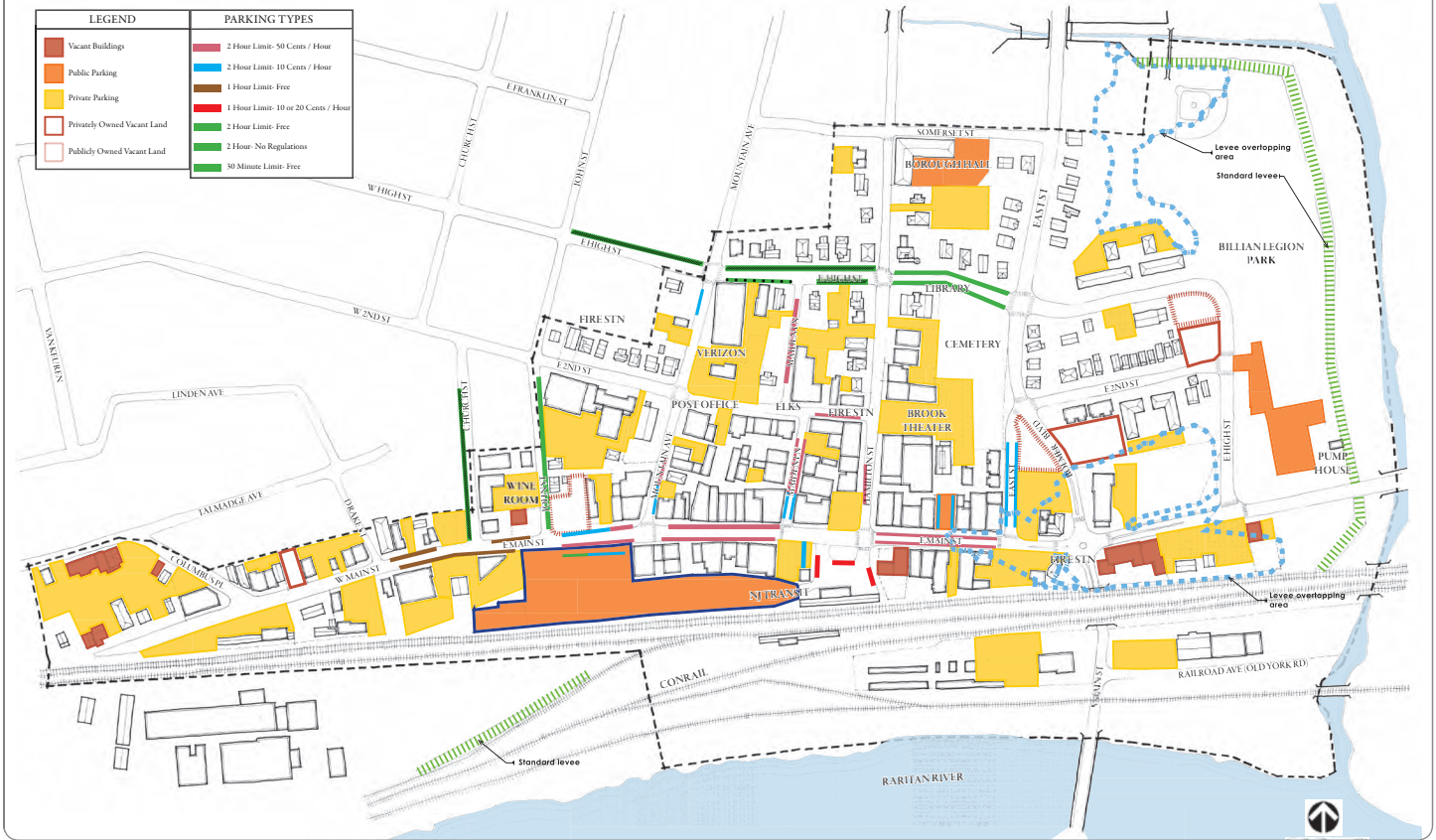
At elevation 43, Bound Brook – and in particular its downtown – has been subject to many flooding events over the years, some very serious. The entire southern part of the Borough, including the Main Street area, lies within the Raritan River flood plain which includes its tributaries, the Middle Brook and the Bound Brook, that comprise the western and eastern boundaries of the Borough. In 1999 the downtown was devastated by Hurricane Floyd, when flood waters reached a 42-foot elevation. In 2007 the river reached 38 feet. Flooding occurred again in 2010. The significant uncertainty associated with the downtown’s vulnerability to flooding has no doubt discouraged investment in many downtown buildings and businesses.

The Army Corps of Engineers is addressing these flooding problems through the Green Brook Flood Control Project, which is designed to provide protection from a 150-year flood event. Flood control protection is now in place on either side of the downtown, with a system of levees, flood walls, flood gates, pumping stations and designated “over topping” areas. The levee sections along the southern end (Main Street./Talmage Avenue.) of the borough are also in place. The entire project is expected to be completed in 2012. These flood control measures will re-establish a much needed level of public confidence with respect to flood control and create the right environment for forward-looking real estate investment decisions to be made. There is a need for current, accurate communication to the

public about status of flood improvements, because many of the levees are out of view. The levees also create new physical features in the area, and introduce new limitations in terms of building and development in the “over topping” areas. New development and redevelopment in areas not protected by the flood control measures will continue to be subject to State and local floodplain protection regulations.



Vacant Land and Parking Lots



Board (i.e.; application to the RSIS Advisory Board for a “special area standard”) justifying the differences. The Plan allows even lower parking ratios at the discretion of the Planning Board.

Parking Study

On Wednesday January 27, 2010 a field crew from Level G Associates conducted special parking surveys in downtown Bound Brook in order to ascertain current parking conditions and patterns. Each block or metered row of parking in the core area of the downtown was given a designated number and then every parked car in each numbered block or row was counted repeatedly throughout the day. In addition, license plate numbers of the parked cars were recorded on each pass in order to determine the length of stay, or “duration”, of each parking trip.

The tabular data derived from the parking duration study is presented in Appendix one.

The parking duration study map shows the number designations of each block and parking row included in the survey. The study area included all metered parking areas plus blocks located just outside the metered parking zone. The 311-space train station parking lot was not included in the duration analysis as we know that this lot is filled with “all day” commuter parkers and possibly some local downtown employees.

Attachment two in the Appendix summarizes the parking duration of each car that parked in the core area of the downtown during the survey. Also shown on this table are the number of spaces on each block; type of operation (free or fee); time limits; the “peak” number of cars parked on each block; and the time of the peak observation.

Key Findings:

- a. Most parking trips in downtown Bound Brook are “short term” (less than two hours). More than ¾ of all parkers (75.7%) had a parking duration of less than two hours and 41.5% of all parkers stayed for less than 30 minutes;

- b. Middle duration parkers (between two and four hours) accounted for 10.8% of all parking trips;
- c. Long duration parkers (over four hours) accounted for 13.5% of all parking trips.

Attachment three in the Appendix breaks down the duration data into five separate regulatory categories:

Category	No. Spaces	% of Total
On-Street / Free / Up to 2 Hr Limit	74	23.5%
On-Street / Free / No Time Limit	57	18.1%
On-Street / Metered / Main Street	60	19.0%
On-Street / Metered / Off Main Street	66	21.0%
Off-Street Spaces	58	18.4%

As indicated, the core area of Bound Brook’s downtown offers a fair and balanced variety of both paid and free parking options for local parkers and, for the most part, parking patterns follow the posted regulations. However, outside of the train station lot, the only public parking available for parking durations of greater than two hours are located in the 57 free curb spaces to the north and west of the downtown core and in 10 municipal “permit” spaces located in the 22-space public lot on the north side of Main Street between Hamilton and East Streets.

Key Finding:

Outside of the train station lot, the public parking supply consists of only 67 spaces that allow a parking duration of more than two hours. However, during our studies, it was determined that 94 parking trips exceeded two hours: 11% of all parking trips were between two and four hours, while 13.5% were greater than four hours. This indicates that demand exceeds supply for both mid-term (two to four hours) and long-term (over four hours) parking trips.

Attachment four in the Appendix shows the number of cars parked at each block side in the study area between 9AM and 2PM. This table and the graph below both indicate that the total curbside parking supply far exceeds the demand as only 122 of the 257 on-street parking spaces in the core downtown area (47.5%) were occupied during the peak condition.

Attachment five in the Appendix shows, in tabular and graphic format, the number of cars parked in each of the four separate on-street parking classification zones. These zones and the peak occupancy observed at each one are as follows:

Category	No. Spaces	Peak Count	Peak Occd.
On-Street / Free / Up to 2 Hr Limit	74	31	41.9%
On-Street / Free / No Time Limit	57	38	66.7%
On-Street / Metered / Main Street	60	33	55.0%
On-Street / Metered / Off Main Street	66	31	47.0%

As shown, during peak operating conditions the on-street parking supply for Bound Brook’s core downtown area operates in a 42 to 67% occupancy range.

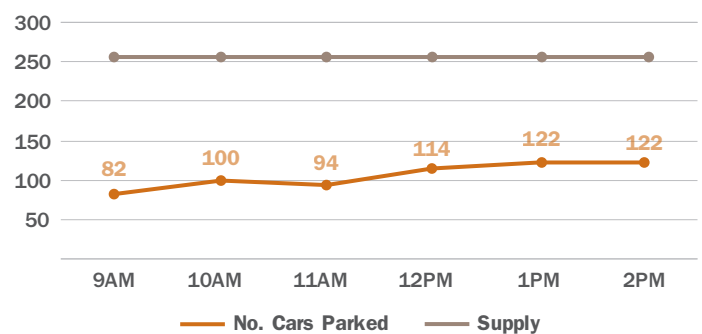
Key Finding:

It is generally accepted that parking deficiencies exist when peak parking space occupancies exceed 90% of capacity. Because Bound Brook’s occupancies are well below this threshold we find that the current parking supply is sufficient to meet the current parking demand.

Parking Enforcement / Compliance

Using the duration study data we are able to determine the number of cars parked beyond the posted time limit on all blocks and rows. Attachment two of the Appendix shows in red numbers those parking trips that were determined to be in violation of the posted time limit. As indicated, 55 parking trips out of the total of 388 recorded trips were time limit violations. This fairly high rate (14.2% of all parking trips) suggests a lack of aggressive enforcement along these blocks and a need for more mid- (two to four hour) and long-range (over four hours) time limits for parking serving the downtown.

A random sampling of metered spaces in the core area of the downtown revealed that 37% of occupied spaces were in violation for parking at an expired meter. Enforcement of parking regulations is an important and sometimes complicated issue and there is a fine balance involving municipal resources, revenue, perception, adjudication, etc. that is different for every city and town. If a municipality is going to set regulations and charge for parking these rules should be reasonably enforced to achieve the desired results.



Key Sites

Both previous studies and our current analysis indicate that there are a number of sites that can – and should – play key roles in the revitalization of the downtown. These properties have either historic significance or occupy key locations, or both. The key sites are the following:

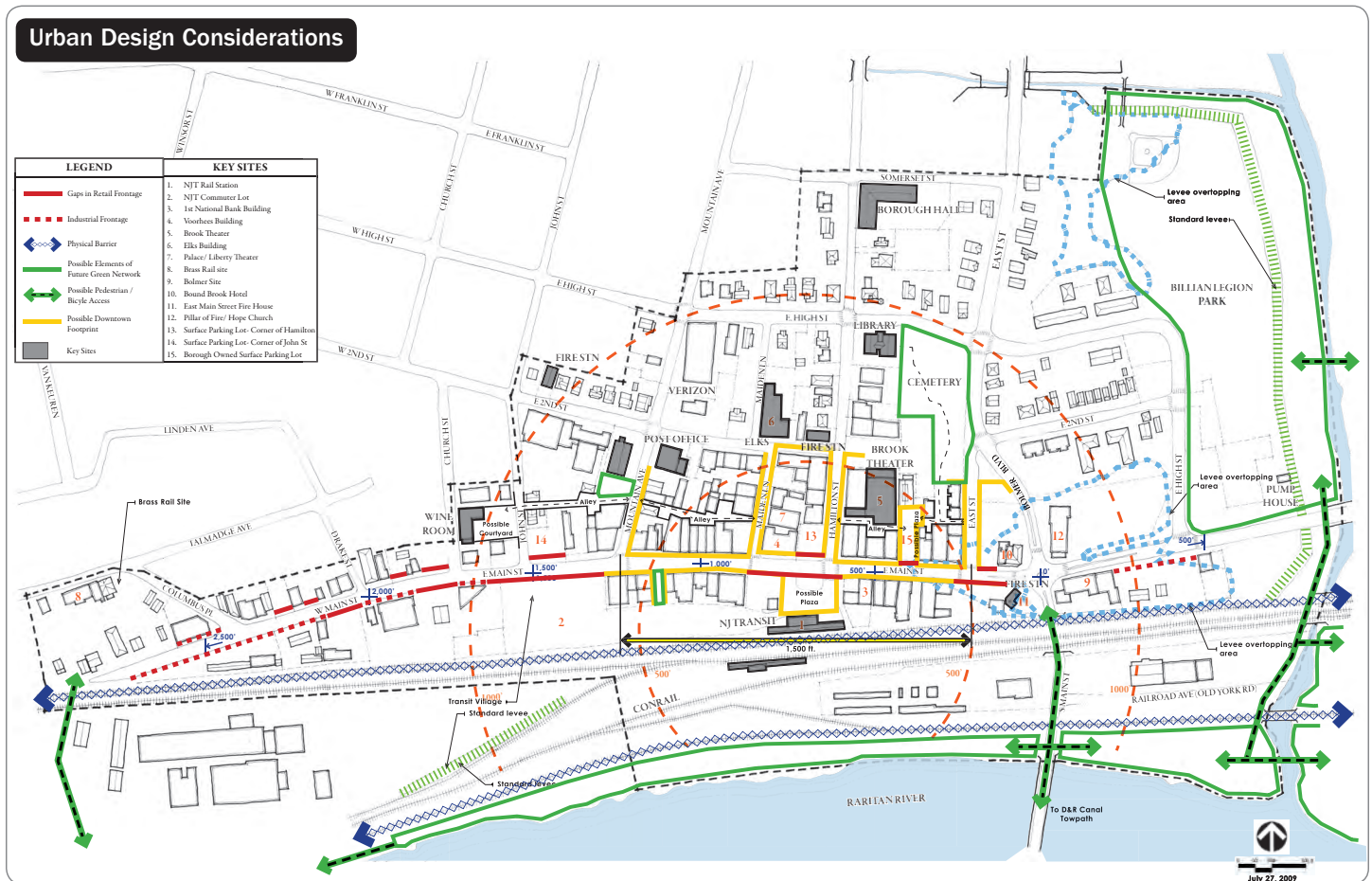
1. NJT rail station – The approximately 3,000 square foot station building is owned by NJ Transit, but controlled, through a long-term lease, by the Borough. It is currently used as a restaurant operated by a local restaurateur.
2. NJT commuter parking lot – A previous proposal for this 2.3-acre lot included 127 housing units, 19,000 square feet of retail, 53,500 square feet of services, 425 structured parking spaces and 68 surface parking spaces. The Borough is currently seeking proposals from developers.
3. 1st National Bank building – Facing Main Street and the train station plaza, this 9,000 square foot building was built in 1913 and expanded in 1950. It is unoccupied and has not been restored post Floyd. It had been slated for retail and office uses as part of the previous Transit Village redevelopment project.
4. Voorhees Building – Located across the street from the train station, this is a handsome mixed-use building with ground floor retail and some upper level housing.
5. Brook Theatre – This important civic institution was significantly damaged during the various recent flood events. The Somerset County Cultural Arts Center, the non-profit organization that owns the theater has restored its interior and reopened it. The theater has 900 seats. If successful, it has the potential to be one of downtown’s most important anchors. The best way to handle

parking for the theater is an important question that needs to be addressed.

6. Elks Building – This 1930 building (301-309 East second Street and Maiden Lane) is located at the visually prominent terminus of the first block of Maiden Lane. The building has not been fully-utilized as a place of assembly for many years.
7. Palace/Liberty Theater – Located at 12 Maiden Lane, just down from the Elks Building, this handsome 1913 building has suffered as a result of an inappropriate façade alteration. Known as “The Lyric” in 1937, it is currently used as the offices for a soccer-related business.
8. Brass Rail (Talmage Commons) site – located at the western gateway into the downtown, at the intersection of Talmage Avenue and Columbus Place, this 1.3 acre redevelopment site has undergone site clearance. The approved site plan, called Talmage Commons, consists of a U-shaped five-story building with ground floor parking, liner retail and services facing Talmage Avenue, and 152 upper-level residential units.

Four key sites – the Bolmer site, the Bound Brook Hotel, Fire House #1 and the Pillar of Fire/HOPE Church site – are prominently located facing the East Main Street roundabout, an important gateway into the downtown:

9. Bolmer site – This 1.2-acre site next to the roundabout housed a car dealer showroom for many years. The entire site is in the floodplain. The 12,000 square feet building, a 1,400 square feet shed and a 2,100 square feet garage formerly occupied by the Borough’s Public Works were recently demolished because they were considered structurally unsound. The Borough currently owns the property and is actively seeking a redeveloper. In the past, developers have expressed an interest in developing



residential uses over at-grade parking. A proposal for 87 rental housing units was discussed at one point.

10. Bound Brook Hotel and Tavern – This handsome but neglected 9,000 square foot building located at 507 East Main Street has a bar and is currently used as a very modest boarding house. It received an opinion of eligibility from the State Historic Preservation Office in 1996. There is a large parking lot adjacent to the building.
11. East Main Street Fire House – Prominently located facing the southwest quadrant of the Main Street roundabout, this tiny building houses the Bound Brook Fire Company #1. The building's exterior has been modified and its character compromised. Given its cramped location and limited size, it is hard to imagine it as a functional community facility in the future. Alternative uses have been discussed.
12. Pillar of Fire/HOPE Church site – This 22,500 square foot structure, dignified but in need of repairs, is located at 519-525 East Main Street. It was built as a house of worship for the Zarephath Christian Church and now houses the HOPE Church congregation. It also occupies a key location relative to the roundabout. It received an opinion of eligibility from the State Historic Preservation Office in 1996. There is a large, unpaved parking lot adjacent to the building. Significant exterior repairs and restoration were carried out during 2010 with the aid of a matching grant from the Borough's Façade Improvement Grant Program. In addition to the exterior renovations, the site also needs more activity. The parking lot is a good candidate for shared public/private use, which might perhaps create funding for needed shade tree plantings and landscaping improvements. Perhaps new uses can also be found for portions of the building that are currently underutilized. Given its size and strategic location this site will become a true asset to the downtown when fully utilized.

There are three other Main Street sites that can also play pivotal roles in downtown revitalization:

13. The surface parking lot across from the train station, on the corner of Hamilton.
14. The surface parking lot on the corner of John.
15. The Borough-owned surface parking lot, between East and Hamilton.

Assets and Challenges

In summary, the downtown has many assets, as follows:

- Rich history
- Pedestrian, small town scale
- Regional location
- Regional demographics
- Existing transit service and the promise of enhanced transit service once the new Trans-Hudson passenger rail tunnel is complete
- Potential re-activation of passenger rail service on the West Trenton line
- Proximity to Raritan riverfront
- Mixed-use character
- Affordable real estate
- Army Cops of Engineers flood control project
- Community spirit
- Diversity

The downtown faces an equally long list of challenges, and finding effective solutions for coping with these will be critical to downtown revitalization:

Raritan waterfront not visible or accessible from downtown

- No pedestrian / bicycle facilities along waterfront
- Downtown not centrally located relative to the rest of the community
- Competition from the nearby Rt 28 commercial strip
- Visible disinvestment in downtown buildings, businesses
- Discontinuities in retail frontage
- Some retail is marginal, undercapitalized
- Retail and upper level vacancies
- No downtown management entity
- Lack of people places / public spaces
- Perception of lack of parking
- NJT station and platforms in need of maintenance / upgrading (some work is anticipated soon on the eastbound station and canopy)

On balance, we believe the downtown is poised to benefit from two critical factors. First, the Army Corps of Engineers flood protection project will bring a much-needed measure of security from the devastating impacts of flood waters. And second the new rail tunnel under the Hudson will significantly increase capacity and improve service and as a result further increase the attractiveness of the downtown as a place to live. In spite of the current downturn in the real estate market, the long term trend towards more walkable, mixed-use communities is expected to continue, and the downtown will benefit from increased consumer demand. These very positive developments create significant opportunities for positive change.



Inappropriate building alterations should be removed, where possible, and the original building facades restored.

BOUND BROOK URBAN DESIGN PLAN

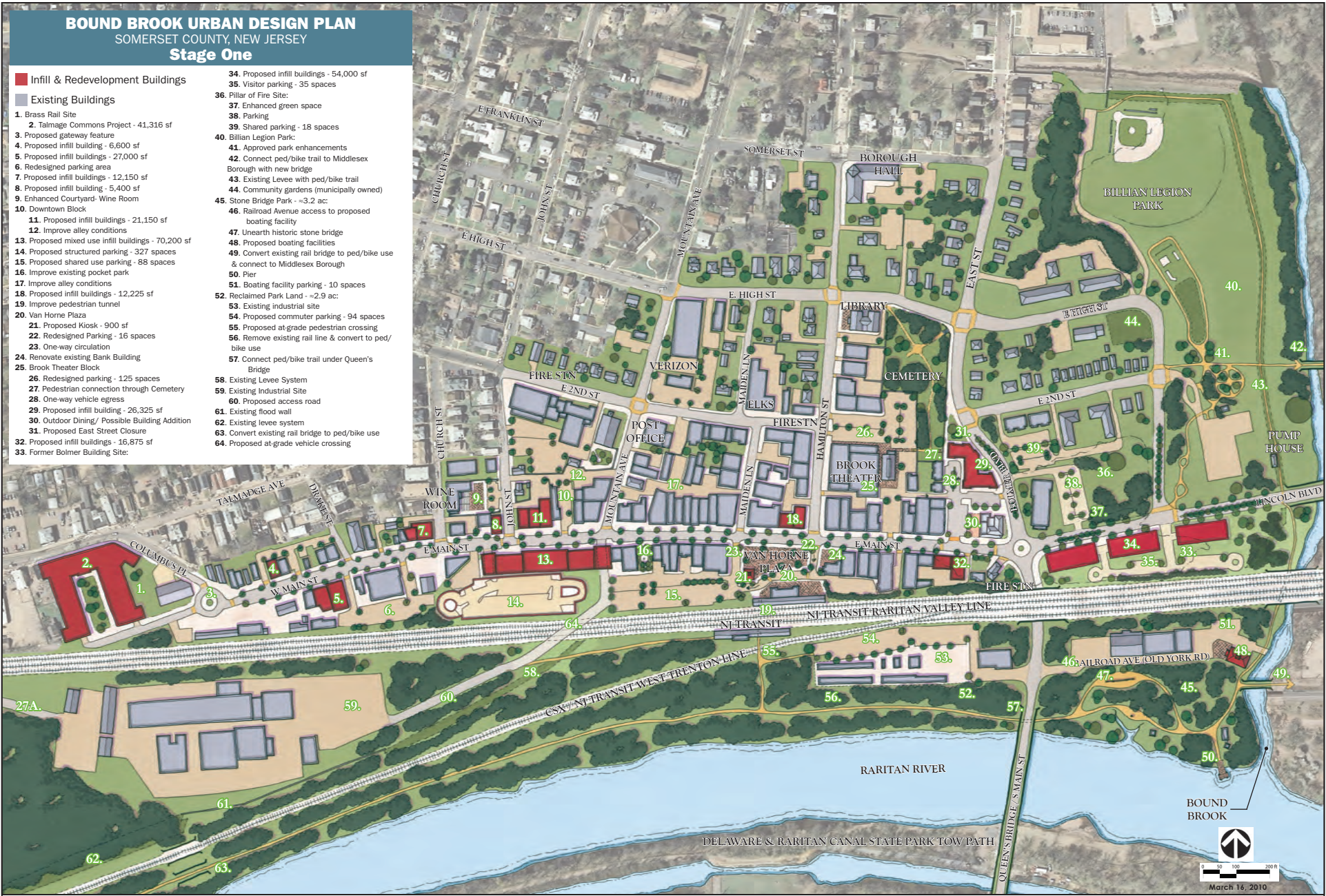
SOMERSET COUNTY, NEW JERSEY

Stage One

■ Infill & Redevelopment Buildings

■ Existing Buildings

1. Brass Rail Site
2. Talmage Commons Project - 41,316 sf
3. Proposed gateway feature
4. Proposed infill building - 6,600 sf
5. Proposed infill buildings - 27,000 sf
6. Redesigned parking area
7. Proposed infill buildings - 12,150 sf
8. Proposed infill building - 5,400 sf
9. Enhanced Courtyard- Wine Room
10. Downtown Block
11. Proposed infill buildings - 21,150 sf
12. Improve alley conditions
13. Proposed mixed use infill buildings - 70,200 sf
14. Proposed structured parking - 327 spaces
15. Proposed shared use parking - 88 spaces
16. Improve existing pocket park
17. Improve alley conditions
18. Proposed infill buildings - 12,225 sf
19. Improve pedestrian tunnel
20. Van Horne Plaza
21. Proposed Kiosk - 900 sf
22. Redesigned Parking - 16 spaces
23. One-way circulation
24. Renovate existing Bank Building
25. Brook Theater Block
26. Redesigned parking - 125 spaces
27. Pedestrian connection through Cemetery
28. One-way vehicle egress
29. Proposed infill building - 26,325 sf
30. Outdoor Dining/ Possible Building Addition
31. Proposed East Street Closure
32. Proposed infill buildings - 16,875 sf
33. Former Bolmer Building Site:
34. Proposed infill buildings - 54,000 sf
35. Visitor parking - 35 spaces
36. Pillar of Fire Site:
37. Enhanced green space
38. Parking
39. Shared parking - 18 spaces
40. Billian Legion Park:
41. Approved park enhancements
42. Connect ped/bike trail to Middlesex Borough with new bridge
43. Existing Levee with ped/bike trail
44. Community gardens (municipally owned)
45. Stone Bridge Park - ~3.2 ac:
46. Railroad Avenue access to proposed boating facility
47. Unearth historic stone bridge
48. Proposed boating facilities
49. Convert existing rail bridge to ped/bike use & connect to Middlesex Borough
50. Pier
51. Boating facility parking - 10 spaces
52. Reclaimed Park Land - ~2.9 ac:
53. Existing industrial site
54. Proposed commuter parking - 94 spaces
55. Proposed at-grade pedestrian crossing
56. Remove existing rail line & convert to ped/ bike use
57. Connect ped/bike trail under Queen's Bridge
58. Existing Levee System
59. Existing Industrial Site
60. Proposed access road
61. Existing flood wall
62. Existing levee system
63. Convert existing rail bridge to ped/bike use
64. Proposed at-grade vehicle crossing



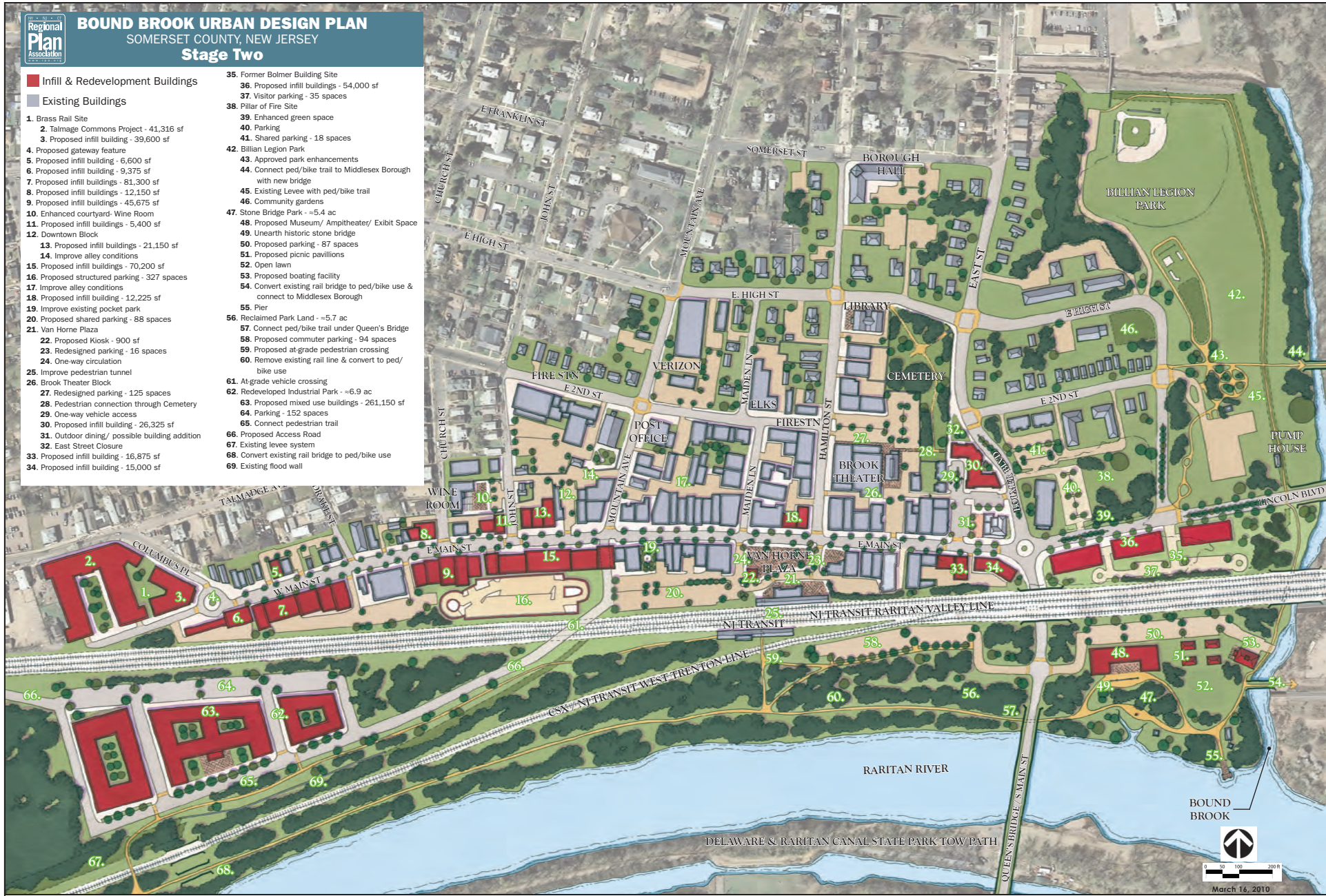
BOUND BROOK DOWNTOWN URBAN DESIGN PLAN

SOMERSET COUNTY, NEW JERSEY

Stage One

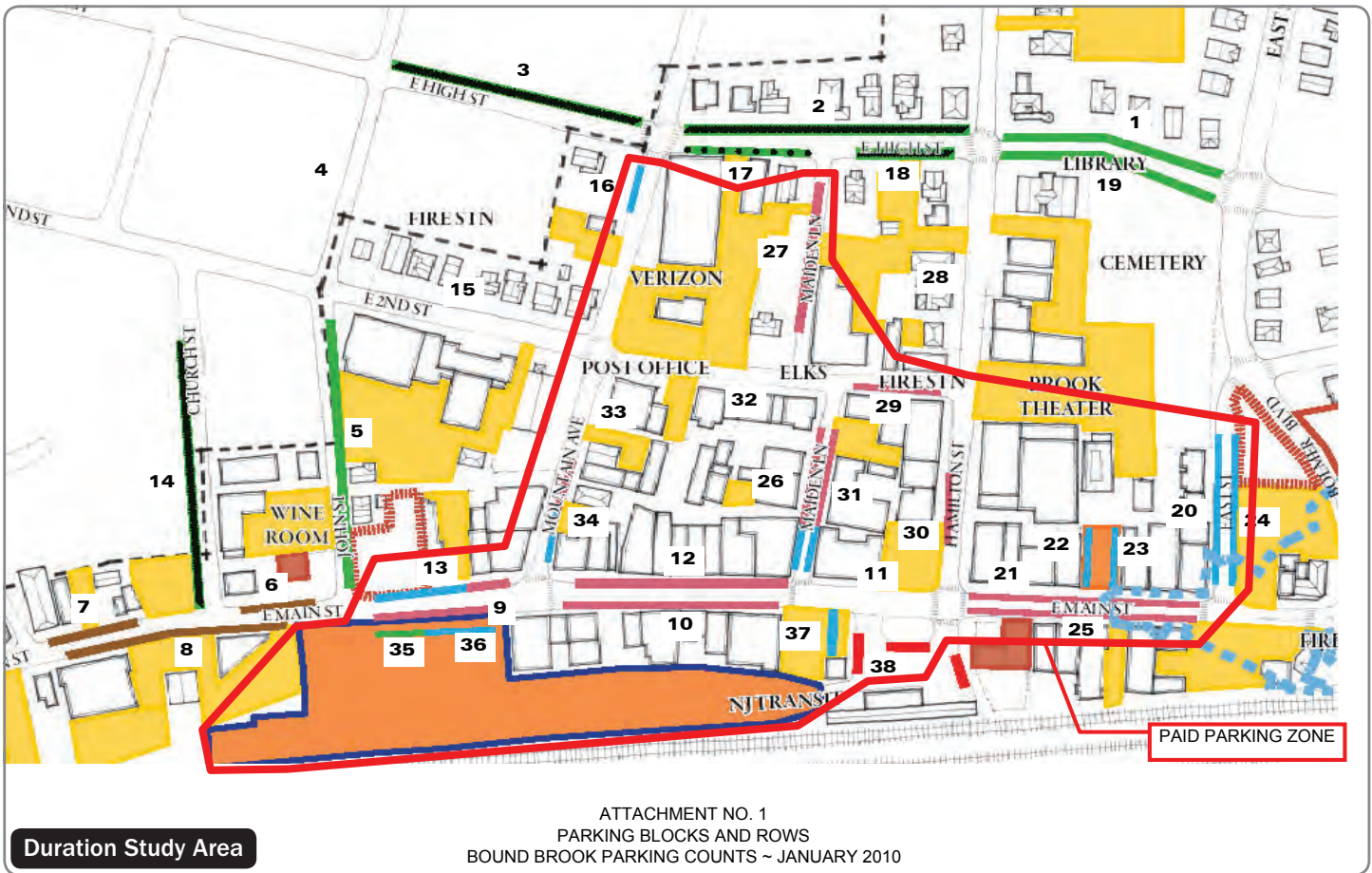
BOUND BROOK URBAN DESIGN PLAN
SOMERSET COUNTY, NEW JERSEY
Stage Two

- Infill & Redevelopment Buildings
 - Existing Buildings
1. Brass Rail Site
 2. Talmage Commons Project - 41,316 sf
 3. Proposed infill building - 39,600 sf
 4. Proposed gateway feature
 5. Proposed infill building - 6,600 sf
 6. Proposed infill building - 9,375 sf
 7. Proposed infill buildings - 81,300 sf
 8. Proposed infill buildings - 12,150 sf
 9. Proposed infill buildings - 45,675 sf
 10. Enhanced courtyard- Wine Room
 11. Proposed infill buildings - 5,400 sf
 12. Downtown Block
 13. Proposed infill buildings - 21,150 sf
 14. Improve alley conditions
 15. Proposed infill buildings - 70,200 sf
 16. Proposed structured parking - 327 spaces
 17. Improve alley conditions
 18. Proposed infill building - 12,225 sf
 19. Improve existing pocket park
 20. Proposed shared parking - 88 spaces
 21. Van Horne Plaza
 22. Proposed Kiosk - 900 sf
 23. Redesigned parking - 16 spaces
 24. One-way circulation
 25. Improve pedestrian tunnel
 26. Brook Theater Block
 27. Redesigned parking - 125 spaces
 28. Pedestrian connection through Cemetery
 29. One-way vehicle access
 30. Proposed infill building - 26,325 sf
 31. Outdoor dining/ possible building addition
 32. East Street Closure
 33. Proposed infill building - 16,875 sf
 34. Proposed infill building - 15,000 sf
 35. Former Bolmer Building Site
 36. Proposed infill buildings - 54,000 sf
 37. Visitor parking - 35 spaces
 38. Pillar of Fire Site
 39. Enhanced green space
 40. Parking
 41. Shared parking - 18 spaces
 42. Billian Legion Park
 43. Approved park enhancements
 44. Connect ped/bike trail to Middlesex Borough with new bridge
 45. Existing Levee with ped/bike trail
 46. Community gardens
 47. Stone Bridge Park - ~5.4 ac
 48. Proposed Museum/ Amphitheater/ Exhibit Space
 49. Unearth historic stone bridge
 50. Proposed parking - 87 spaces
 51. Proposed picnic pavilions
 52. Open lawn
 53. Proposed boating facility
 54. Convert existing rail bridge to ped/bike use & connect to Middlesex Borough
 55. Pier
 56. Reclaimed Park Land - ~5.7 ac
 57. Connect ped/bike trail under Queen's Bridge
 58. Proposed commuter parking - 94 spaces
 59. Proposed at-grade pedestrian crossing
 60. Remove existing rail line & convert to ped/bike use
 61. At-grade vehicle crossing
 62. Redeveloped Industrial Park - ~6.9 ac
 63. Proposed mixed use buildings - 261,150 sf
 64. Parking - 152 spaces
 65. Connect pedestrian trail
 66. Proposed Access Road
 67. Existing levee system
 68. Convert existing rail bridge to ped/bike use
 69. Existing flood wall



March 16, 2010
Possible Demolitions: 143,700 sf
Proposed Infill: 750,141 sf
Proposed Pedestrian / Bike Trail: 2.0 miles
Proposed Park Land Improvements: 19.2 ac
Proposed Parking: 845 additional spaces

BOUND BROOK DOWNTOWN URBAN DESIGN PLAN
SOMERSET COUNTY, NEW JERSEY
Stage Two



Parking

The downtown urban design plan's key parking strategy is to optimize existing public and private parking resources, by redesigning them with more functional layouts and creating seven shared public/private parking facilities providing a total of 771 spaces. The shared parking locations will be managed by the Borough, through the Parking Commission, with parking revenue shared by the Borough and the private property owners.

Some of these facilities already exist, some exist in separate public and private ownership and some need to be built, and will therefore require land acquisition and capital investment.

Some of these facilities are quite central to the core downtown area, while others are more remote. The plan suggests establishing a peripheral parking strategy for downtown employees, which might include providing free employee parking (with parking sticker or hang tag) at one of the parking lots located a few blocks from the downtown core. Prime downtown parking should be available to visitors, residents and commuters.

The downtown plan proposes the following shared parking facilities:

- 327 spaces in a parking deck associated with the "transit village" redevelopment project.
- 88 spaces in a redesigned NJ Transit surface commuter parking lot.
- 16 spaces in and around a redesigned Van Horne Plaza.
- 125 spaces behind The Brook Theatre, created by merging currently disconnected public and private parking lots.
- A new commuter parking lot with 94 spaces on the south side of the tracks and accessed from South Main Street.
- A new parking lot with 87 spaces for visitors to the Raritan River Park and Stone Bridge Park accessed from South Main Street.
- 18 spaces in a small lot to the north of Pillar of Fire building.

- 52 spaces at Billian Legion Park.

Our studies indicate that, overall, there are a sufficient number of parking spaces in the core area of Bound Brook's downtown to accommodate current levels of parking demand. However, the demand for mid- (two to four hours) and long-term (greater than four hours) parking in the downtown exceeds the current supply.



Kiosks animate public spaces and provide convenient shopping and services.

To address this, it is recommended that 30 to 35 parking spaces that are currently free or metered with a "two hour limit" be converted to "four hour limit" or "10 hour limit" to accommodate the measured demand in downtown Bound Brook created by both employers and employees of downtown businesses. The final number and location of these spaces should be developed with community input, but they should not displace prime customer parking. Commuters

generally require 12-hour parking, so the 10-hour limit should target downtown employers and employees, not additional commuters.

It is recommended that the Borough's enforcement program be revisited and that policy decisions be made regarding same including: who provides it; at what levels; where; amount (\$) of fines; etc.

The Borough should consider establishing a revised pricing policy, with recommendations on a comprehensive, consistent pricing and enforcement strategy for the downtown (i.e. standardize meter fees throughout portions of the downtown and provide guidelines for collecting consistent data that will help to evaluate pricing and enforcement policies).

The Borough may also wish to consider establishing a different management strategy for the NJ Transit lot, including overnight parking.

The Borough should undertake a comprehensive inventory of driveways and driveway easements in the downtown core, with a view towards indentifying opportunities for driveway consolidation. The Parking Authority should engage the relevant property owners and, working with legal counsel and engineering support, secure shared driveway agreements.

The Borough may consider in certain locations converting from the current system of individual parking meters, which are unsightly and constitute obstructions on the sidewalks, to a centralized system akin to the "muni-meter" system used in New York City and elsewhere. In this system, a centrally-located payment station collects fares for a finite number of parking spaces. The receipt is then displayed on the inside of the vehicle's windshield. This system can be designed to accept both credit cards and a pre-paid "smart card", freeing the users from the need to have change. A careful cost-benefit analysis should be conducted to assess the financial feasibility of this option, since "muni-meters" usually require a minimum of 75 cents or \$1 dollar per hour rates for the machines to "pay for themselves".



Redevelopment of the industrial area to the south of the rail tracks should seek to attract a high-quality, high-tech employment center that will put 1,000 high-skilled jobs within a short walk from the downtown.

APPENDIX K

REDEVELOPMENT PLANS



LEGEND	
	CPC/MERIDIA
	TO BE INCLUDED IN CPC / BOUND BROOK REDEVELOPMENT
	CPC / NJ TRANSIT / BOUND BROOK
	BOUND BROOK

- | | | | | |
|---|--|--|--|---|
| <p>1. MERIDIA MAIN STATION
240 UNITS WITH PARKING</p> | <p>4. ± 120 RESIDENTIAL UNITS + RETAIL. PHASE I</p> | <p>7. STATION PLAZA
± 24 PARKING</p> | <p>10. 4 STORY PARKING DECK - 180 PARKING PER LEVEL TOTAL OF 720 SPACES. DECK EXPANDABLE FOR FUTURE DEVELOPMENT.</p> | <p>13. 125 UNITS ON 6 STORIES RESIDENTIAL + RETAIL ON GROUND FLOOR</p> |
| <p>2. PUBLIC/ PRIVATE ENTERPRISE</p> | <p>5. NEW PEDESTRIAN PLAZA BY BOROUGH OF BOUND BROOK</p> | <p>8. SPORTS BAR AT THE RAILS</p> | <p>11. ± 200 UNITS ON 6 STORIES - RESIDENTIAL + RETAIL ON GROUND FLOOR. PHASE II</p> | <p>14. PROMENADE WITH OUTDOOR DINING. EGRESS AND INGRESS FROM PARKING STRUCTURE. TREATMENT TO PARKING STRUCTURE FACADE.</p> |
| <p>3. SELF STORAGE</p> | <p>6. ADAPTIVE REUSE OF BANK FOR RESTAURANT W/ ROOF-TOP DINING</p> | <p>9. 60 UNITS ON 6 STORIES - ROOF-DECK + RETAIL + WELWORK SPACE</p> | <p>12. ART WALL ALONG SOUTH ELEVATION OF THE PARKING STRUCTURE FACING THE TRAIN TRACKS</p> | <p>15. MERIDIA DOWNTOWN PROJECT
-172 UNITS
-223 PARKING SPACES [UNDER CONSTRUCTION]</p> |



DOWNTOWN RENAISSANCE





— Meridia —
Capodagli Property
"Since 1970"

DOWNTOWN RENAISSANCE

believe
build BELONG
BOUND
BROOK


BOUND
BROOK
TODAY'S PLACE TO BE

CPA
ARCHITECTURE



— Meridia —
Capodagli Property
"Since 1970"

DOWNTOWN RENAISSANCE

believe
build
BELONG
BOUND
BROOK


Downtown
BOUND
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ARCHITECTURE



— Meridia —
Capodagli Property
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DOWNTOWN RENAISSANCE

believe
build
BELONG
BOUND
BROOK

Downtown
BOUND
BROOK
TODAY'S PLACE TO BE

CPA
ARCHITECTURE

VAN HORNE PLAZA

Bound Brook's civic life is envisioned being centered around revitalized Hamilton Street and a remade Bound Brook Station/Van Horne Plaza. Together, they form a revitalized public realm that will be a focus for the everyday life of the town as well as for regular civic events.

The new civic Plaza greets travelers arriving at the Bound Brook Station and provides an enhanced setting for the existing restaurant. A new architectural feature, potentially with an illuminated clock together with a row of retail units with glass canopy for outdoor use, will help provide a new identity to the station. Trees provide shade and seasonal color while framing views from Hamilton Street to the new station entrance.



HAMILTON STREET

Using a flowing series of paving patterns and planters, arranged in a way that symbolically references the Raritan River, Hamilton Street will be a place full of activity.

With umbrellas, flexible seating, curving planters with benches, seasonally colorful plants and over-head low-energy strings of lights, Hamilton Street and the area outside the historic theater will become an everyday destination to meet, shop, dine, and congregate -- like a community hearth. The layout of planters in the center of the street maintains service access to the shops and affords ample space outside for retail displays to catch the eyes of free flowing pedestrians along the street.



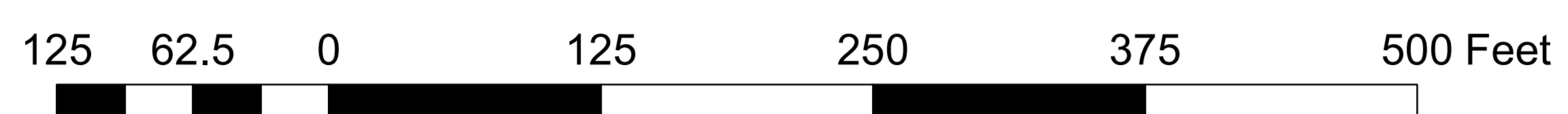
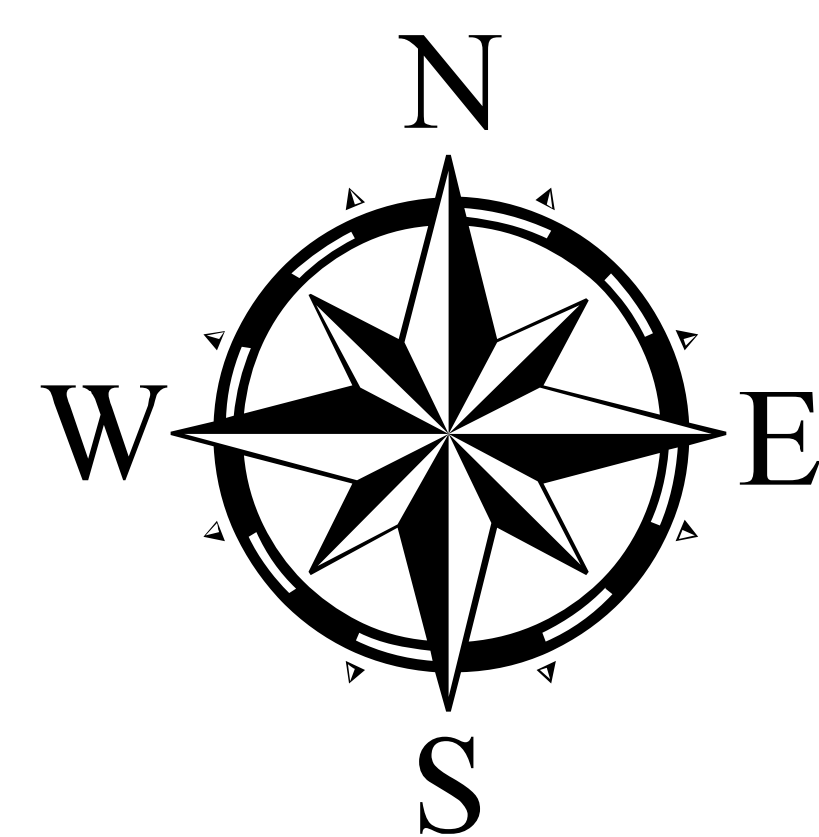


- 1 HAMILTON STREET PEDESTRIAN STREETSCAPE
- 2 FUTURE DEVELOPMENT PARCEL WITH STRUCTURED PARKING
- 3 FUTURE DEVELOPMENT PARCEL
- 4 PAVILION (SEASONAL CANOPY / CATENARY LIGHTS)
- 5 FLEXIBLE EVENT SPACE (VENDOR / FOOD TRUCK)
- 6 AWNING
- 7 TERRACED SEATING WITH CANOPY TREES
- 8 FLEXIBLE SEATING AREA / EVENTS
- 9 MAIN STREET CROSSING WITH SIGNAL
- 10 LOADING AREA
- 11 ACCESSIBLE ENTRANCE TO TUNNEL
- 12 FLEXIBLE SEATING AREA / EVENTS
- 13 CENTRAL GREEN
- 14 HISTORIC THEATER





East Main Street / West Main Street / Talmage Avenue Borough of Bound Brook Land Development Projects



**East Main Street / West Main Street / Talmage Avenue
Borough of Bound Brook
Land Development Projects**

PB Number	Project Name	Block	Lot	Project Description	Status
BB 137S	Herbie's	15	22	Proposed 1,500 SF restaurant with full movement access to Talmage Avenue.	Approved
BB 093S	Talmage Commons	5	14	Proposed 106 Multi-Family units with 6,537 SF retail/office space. Ingress only access proposed on Talmage.	Pending
BB 132S	7-15 West Main Street	7	28	Proposed 63 Multi-Family unites with 1,623 SF commerical space. Full movement access to Talmage Avenue.	Under Construction
BB 131S	Meridia Downtown Urban Renewal	1	42	Proposed 172 Multi-Family unites with 3,010 SF retail space. Two full movement access points to Talmage Avenue.	Under Construction
BB 128S	Frascella's Liquor Store	9	10	Proposed 3,500 SF liquor store. No access to Talmage Avenue.	Constructed
BB 071S	Revo Bound Brook	13	1	Proposed 105 Multi-Family units with 5,740 SF commercial space. Access to parking lot adjacent to Church on Bolmer Boulevard.	Under Construction

APPENDIX L

ROAD OWNER RESPONSE

From: [Adam Slutsky](#)
To: [Julia Steponanko](#)
Cc: [Bernard Boerchers](#); [Jefferson, Aimee](#); [Matthew Loper](#); [Walter Lane](#)
Subject: RE: CR 533 and CR 527, Tea Street to Railroad Ave, Downtown Bound Brook RSA - Revised Report
Date: Thursday, April 23, 2020 2:24:11 PM
Attachments: Somerset County Response to County Route 533 and County Route 527 Downstown Bound Brook Borough.docx

Julia:

Our owner's response is attached. Please let us know if you have any questions.

Thanks,

Adam

From: Julia Steponanko <jsteponanko@gpinet.com>
Sent: Thursday, March 12, 2020 1:38 PM
To: Adam Slutsky <Slutsky@co.somerset.nj.us>; Walter Lane <Lane@co.somerset.nj.us>
Cc: Bernard Boerchers <bboerchers@gpinet.com>; Jefferson, Aimee <ajefferson@njtpa.org>;
Matthew Loper <Loper@co.somerset.nj.us>
Subject: CR 533 and CR 527, Tea Street to Railroad Ave, Downtown Bound Brook RSA - Revised Report

Good Afternoon All,

The revised draft RSA report for the subject location is available on our project-specific SharePoint site (it was too big to email). My apologies on the delay; the 2020 Strategic Highway Safety Plan takes up most of my time. The zip file contains the revised report in PDF and Word, any revised appendices, and responses to County comments.

<http://www.gpiprojects.com/HSIP/Somerset>, subfolder "CR 533 and 527-Talmadge Ave and E Main St" (works best in Internet Explorer or Edge)

Username: somerset@gpiprojects.com

Password (Case Sensitive): **Somer456!**

[Of note is the following in the revised report:](#)

- The format/order was approved by NJDOT and is consistent with all other reports prepared under this contract. Therefore, there is no change.
- The roadway descriptions and Straight Line Diagram were updated to be more in line with Team discussions.
- Additional traffic data from the County was added to Appendix C.
- We are not scoped for some of the requested maps, so the information was incorporated into the location map found in Appendix B as feasible.
- The intent of the photos is to show common themes throughout the corridor – it is not meant to be an all-inclusive inventory, as that is beyond the RSA scope. We would be happy to provide all photos taken during the RSA for your use.
- We are not scoped to perform any design - only simple sketches for the purpose of clarity, so we included the roundabout design prepared by the County.
- Cross-reference was made between RSA recommendations and those found in the Phase 3 study. Green infrastructure is noted in #17; the Team did not discuss GI in great length at the RSA, so there are no sites identified in the recommendations.
- Recommendations were clarified to the extent feasible. Per FHWA direction, all recommendations are included and cannot be deleted. As with the last RSA, the road owner response can identify recommendations it plans to pursue and which it does not feel have merit. Or that it will explore all of them in the next phase.
- The corridor-wide and site-specific recommendations are as documented during the field review (unless they needed clarification). We do not have record of recommendations by the Team per segment context.
- At the direction of NJDOT, the word “consider” was changed in many of the recommendations to “explore”, “investigate”, etc. unless the revision did not make sense within the context of the recommendation.
- Many of the visualization figures were taken directly from the sources noted, so some wording cannot be changed. Also the NACTO street typologies presented in this section were the ones that most closely matched with the subject location. Not all elements shown can be incorporated.
- This RSA report does not constitute an engineering report.

We would be happy to arrange a conference call to discuss the revisions and the above once you review the same. We are currently available March 16, 18 and 19 AM, March 17 and 20 all day.

Kindly let me know the County’s availability at your earliest convenience.

Thanks, and I appreciate your patience on this matter.

Julia Steponanko, P.E.

Engineer

100 Corporate Drive, Suite 301, Lebanon, NJ 08833

o +1 (908) 236-9001 | d +1 (908) 287-2720

jsteponanko@gpinet.com | www.gpinet.com



Engineering | Design | Planning | Construction Management



Somerset County Response to County Route 533 and County Route 527 Downtown Bound Brook Borough (Tea Street to Railroad Avenue) Road Safety Audit (owner's response)

Somerset County agrees with the recommendations of the Road Safety Audit. The County strives to make our roads safer for all users and is willing to investigate any recommendations that can assist in achieving that goal. Our agreement with the assessment should in no way be perceived as a commitment to the implementation of such suggestions.

The following general points should be noted:

- Somerset County does not maintain or inspect sidewalks, street lighting, landscaping or parking facilities along county roadways. That responsibility lies with the municipality or property owner.
- Some recommendations may not be warranted or feasible due to engineering or fiscal constraints. Additional analysis is necessary.