

Memorial Drive – CR 40A Road Safety Audit

FINAL REPORT

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In cooperation with

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and

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CAIT's Transportation Safety Resource Center (TSRC) and New Jersey Local Technical Assistance Program (NJ LTAP) offer a statewide Road Safety Audit (RSA) service at no charge to New Jersey towns and counties. Interested parties can request road surveys conducted by a team of engineers, planners, and law-enforcement officers to help municipalities and counties make cost-effective safety improvements.

A multidisciplinary team of professionals offers assessments on roadway issues such as pedestrian and bicycle safety, intersection analyses, rural roads, human factors, speed management, and sign visibility and retroreflectivity standards.

RSAs include data-driven considerations and analysis of crashes. To determine the best safety solutions, RSA professionals perform incisive crash data evaluations on the target area using Plan4Safety, TSRC's award-winning crash database and software.

The RSA team provides a final report that includes long- and short-term countermeasure recommendations that fit within the requestor's budget. Furthermore, RSAs pay off. According to the Federal Highway Administration (FHWA), countermeasures applied after RSAs can reduce crashes by about 60 percent.

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Introduction

The Rutgers' Transportation Safety Resource Center (TSRC) at the Rutgers' Center for Advanced Infrastructure and Transportation (CAIT) and the North Jersey Transportation Planning Authority (NJTPA) have partnered to provide NJTPA's subregions with facilitated Road Safety Audits at locations identified by the subregions as having safety concerns.

Monmouth County submitted an application to the NJTPA Local Safety Program (LSP) for funding of a road diet for CR 40A (Memorial Drive) between NJ 33 and Monroe Avenue in the City of Asbury Park and Township of Neptune.

(From the application of May 15, 2013)

The proposed improvements will include resurfacing, new striping and new signage to accommodate the road diet in order to provide traffic calming, separation of turning vehicles from through traffic and selected pedestrian improvements in order to reduce the number and severity of right angle and same direction – rear end vehicle crashes that occur along this corridor. [See [Appendix H](#) for full application]

The NJTPA LSP review committee overwhelmingly supported the application and selected it for FY 2014 funding. However the review committee felt that additional enhancements beyond the basic road diet proposed may be beneficial to improving safety at this site. The application committee suggested this site be incorporated into the TSRC Road Safety Audit program to refine the project concept and include additional complimentary countermeasures to those identified by the application.

Background

The audit focused on the corridor of Memorial Drive (CR 40A), as shown in Figure 1 below, located within Monmouth County. The corridor straddles two municipalities; Asbury Park in the north and Neptune Township in the south, divided at Boston Way.

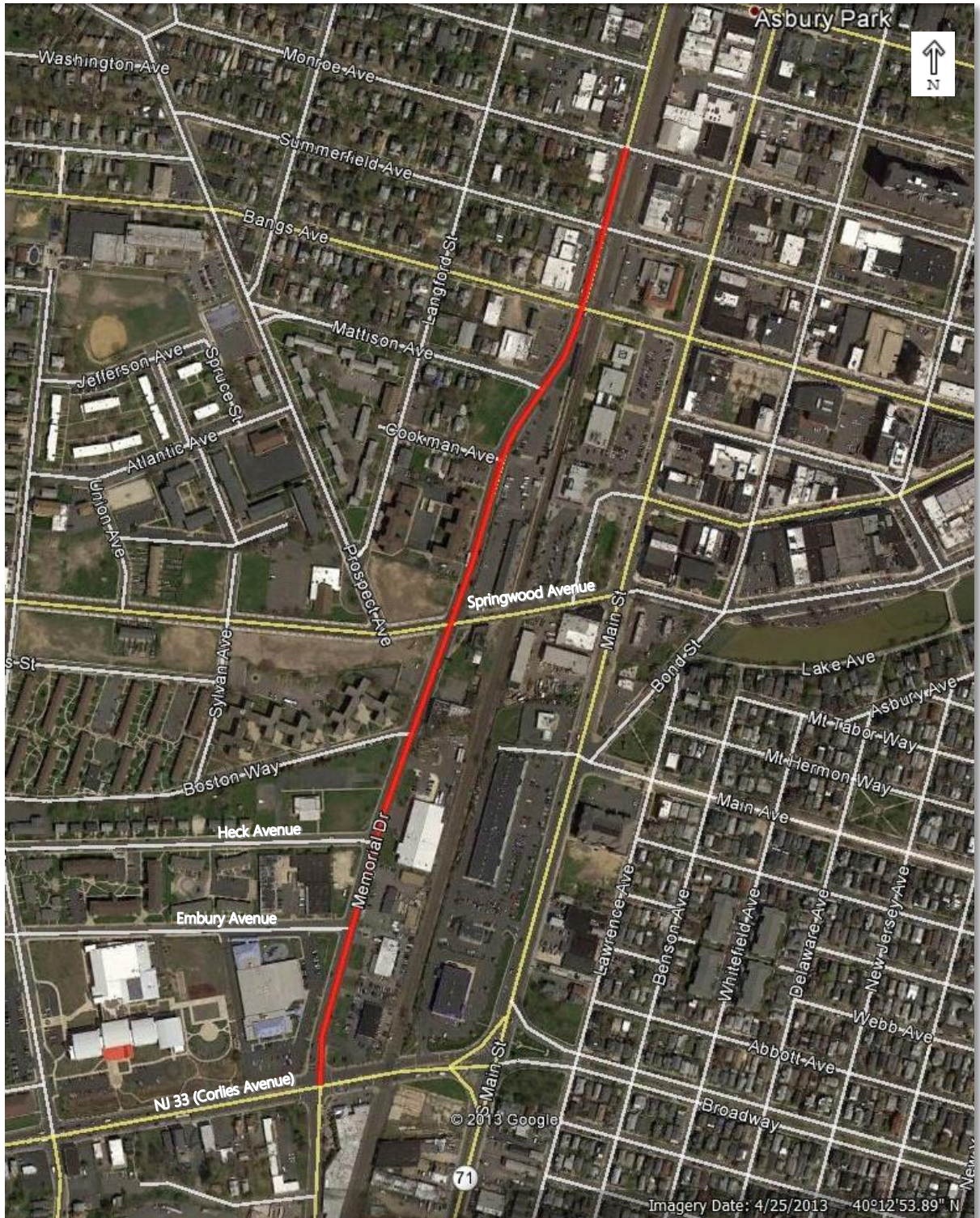


Figure 1 – Memorial Drive Road Safety Audit Corridor

Memorial Drive is an important north-south route in Asbury Park and Neptune Township that provides an alternative to Main Street (NJ 71), located one block to the east and parallel to Memorial Drive. Memorial Drive extends from NJ 35 in the south at Avon by the Sea, crossing Neptune Township, Neptune City Borough and crossing Asbury Park, terminating at 6th Avenue, south of Deal Lake. There are two main connectors to the west, NJ 33 (Corlies Avenue) directly south of the RSA corridor and Asbury Avenue to the north of the RSA corridor. Both east-west roadways connect to NJ 35 and NJ 18.

The area of the road safety audit (RSA) is a 0.6-mile corridor in an urban environment. The roadway provides an alternative to Main Street (NJ 71), which runs through the downtown of Asbury Park and has signalized intersections almost every block. NJ 71 extends approximately 16 miles through numerous municipalities.

The area of Memorial Drive where the RSA was conducted has mixed land use. There are two schools at the southern end and another school to the east at Monroe Avenue. The Asbury Park Train Station is located between Memorial Drive and Main Street with the train tracks to the east of Memorial Drive. In the northern section of the RSA, the train tracks are adjacent to the roadway. There is a sidewalk all along the western side of the roadway. A few of the segments are challenging with non-compliant accessible pedestrian ramps causing some users to walk in the roadway (see photo on page 14). The sidewalk is significantly lacking on the eastern side of the roadway, and it was noted that pedestrian demand does exist. The ADA accommodations for pedestrians are not consistent. In addition to the schools and train station, there are a few residences on the west side of Memorial Drive. There are a few small strip malls, a post office, and commercial properties adjoining the roadway.

There are two signalized intersections along the corridor: at Bangs Avenue and at Springwood Avenue; the signal equipment was recently upgraded at both signalized intersections. The non-signalized intersections are all stop controlled on the minor roadways (Memorial Ave has right-of-way).

The roadway section has two lanes in each direction with no shoulder. The road is classified as an "Urban Collector" with a speed limit of 30 mph. The speed increases to 40 mph south of Corlies Avenue (NJ 33). There is a significant amount of truck traffic. Memorial Drive is under the jurisdiction of Monmouth County in the area of the RSA. North of Monroe Avenue, the northernmost intersection in the RSA, the jurisdiction transfers to the City of Asbury Park. Additionally, the cross section narrows to one lane in each direction with parking on the west side only, and with wide hatched shoulder on the east side.

The intersection of **Monroe Avenue and Memorial Drive (CR 40A)** is a four-legged, non-signalized intersection. Memorial Drive, as the major roadway, is free-flowing, with stop-control on Monroe Avenue. There are two lanes in each direction south of the intersection. North of the intersection, the cross section decreases to one lane in each direction. Monroe is one lane in each direction. The proximity of the railroad tracks to the east of the roadway allows for a maximum one car to idle between the tracks and the roadway. The stop bar is located behind the tracks and doesn't allow sufficient view of traffic. There is an auto shop on the northwest corner with a significant number of cars parked both on the street and in their small parking lot. A small furniture store is located on the southwest corner and warehouse/businesses along the eastern side. A crossing guard is located at this intersection in the morning and afternoon to facilitate students crossing Memorial Drive towards the Thurgood Marshall Elementary School on Monroe Avenue, three blocks to the east.

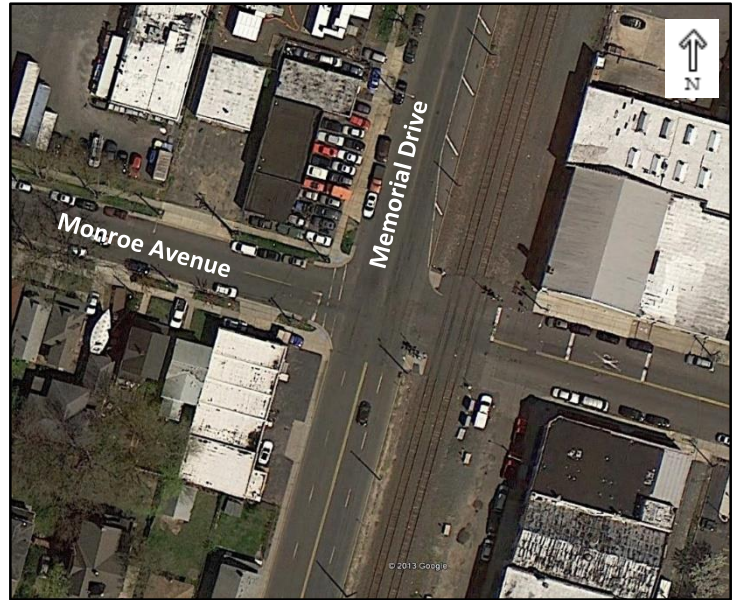


Figure 2 – Intersection of Monroe Avenue & Memorial Drive

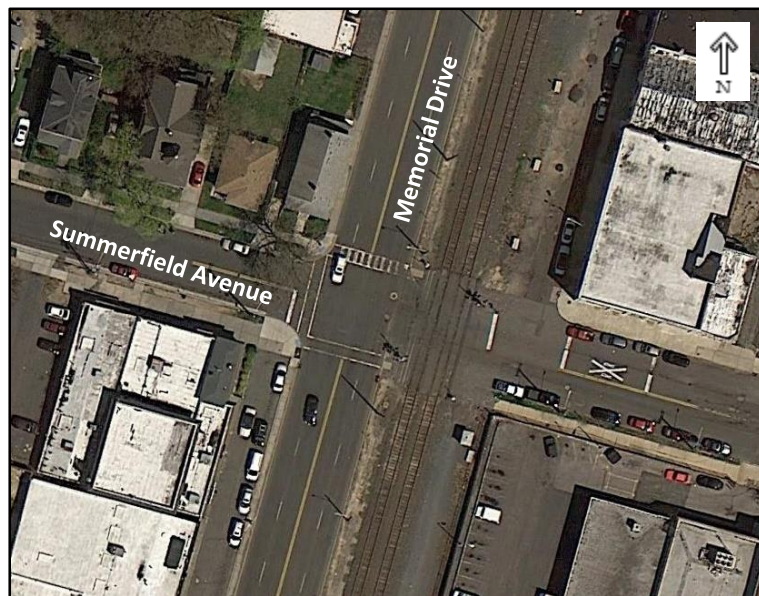


Figure 3 – Intersection of Summerfield Avenue & Memorial Drive

The intersection of **Summerfield Avenue and Memorial Drive (CR 40A)** is similar to Monroe Avenue, described above. There is a small strip mall on the southwest corner, a private residence on the northwest corner, and warehouse and post office parking lot on the eastern side. The residence on the northwest corner significantly limits sight distance on southbound vehicles. A similar condition for westbound vehicles stopping near the railroad tracks exists as described at Monroe Avenue.

The intersection of **Bangs Avenue and Memorial Drive CR 40A** is a four-legged signalized intersection. Bangs Avenue is one lane in each direction. The eastern crosswalk across Bangs Avenue is significantly set back from the intersection on the eastern side of the railroad tracks. The southern pedestrian crossing across Memorial Drive is not accommodated. The Asbury Park Train Station is located in the southeastern corner with pedestrian access to the train station at Bangs Avenue limited to crossing the railroad tracks from the east at the signal. On the northeast corner is small strip mall. A fenced-in parking lot is on the southwest corner, and the municipal building is set back on the southeast corner. The post office property is in the northeast corner. There is sidewalk along the eastern side of Memorial Drive in conjunction with the station, with adjacent guide rail and fencing adjacent to the railroad tracks.



Figure 4 – Intersection of Bangs Avenue & Memorial Drive

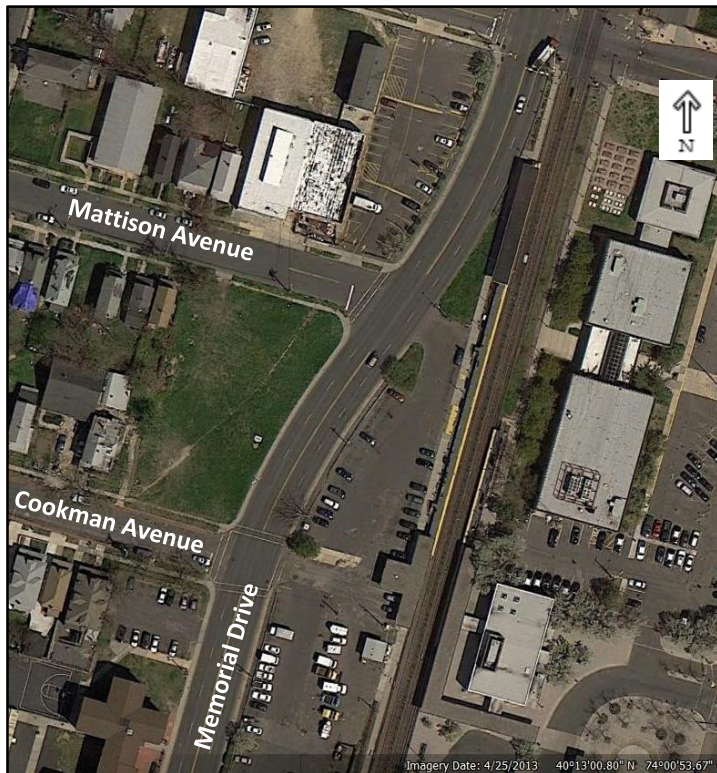


Figure 5 – Intersections of Mattison Avenue & Cookman Avenue

The intersection of **Mattison Avenue and Memorial Drive CR 40A** is a stop controlled T- intersection, with an opposing exit from the train station parking lot. On the northwest corner is small strip mall with a fenced-in parking lot. This fencing, in addition to the horizontal geometry of a reverse S-curve, creates limited sight distance for eastbound vehicles. An empty lot is on the southwest. There is sidewalk on both sides of Memorial Drive at this intersection.

The intersection of **Cookman Avenue and Memorial Drive CR 40A** is similar to the above intersection also with access to the train station parking lot. On the southwest corner is parking for an apartment building; the northwest corner has an empty grassy lot.

The intersection of **Springwood Avenue and Memorial Drive CR 40A** is a four-way signalized intersection with a skewed angle. The signal equipment is relatively new, and there are pedestrian heads. Three of the four crosswalks are very visibly marked. There are empty lots on both western corners, but there is future planned development. The northeast corner has a small strip mall, and the southeast corner has a small warehouse set back from the intersection. There is sidewalk on both sides of Memorial Drive at this intersection.



Figure 6 – Intersection of Springwood Avenue & Memorial Drive



Figure 7 – Intersections of Boston Way, Heck Avenue & Embury Avenue

The intersection of **Boston Way and Memorial Drive CR 40A** is a skewed T-intersection and functions more as a driveway to the apartment complex. It is one-way from Memorial Drive with angled parking on the south side of Boston Way. There is no regulatory signage indicating the one-way restriction. Pedestrian accommodations are not fully ADA compliant, as there are no curb cuts. From Boston Way and to the south, including Heck Avenue and Embury Avenue, the area is in Neptune Township.

The intersection of **Heck Avenue and Memorial Drive CR 40A** is a stop controlled T-intersection with a slightly skewed angle. Although there is sidewalk, the desire lines¹ show the actual use is along the fence on both western corners, and the ADA accommodations are lacking. No sidewalk exists on the east side of Memorial Drive.

The intersection of **Embury Avenue and Memorial Drive CR 40A** is also a stop controlled T-intersection with a slightly skewed angle. The Early Childhood Center on the southwest corner and the Neptune Township Midtown Community Elementary School is further down Embury Avenue. There is no signage indicating a school zone. There is a crossing guard at this intersection, during the morning and afternoon. There are no ADA accommodations, and there is no sidewalk on the eastern side of Memorial Drive.

¹ The path usually represents the shortest or most easily navigated route between an origin and destination. For more information see: http://en.wikipedia.org/wiki/Desire_path

Road Safety Audit Process

The Memorial Drive RSA followed a process that began with data collection, a crucial task that served as the backbone for recommendations for improvement. At the selected sites, crash data was collected using Plan4Safety, a crash data analysis tool, and consisted of crash types, locations, years, road conditions, and contributing circumstances. Using the crash data, diagrams were created, as shown in [Appendix A](#), showing the crash types, direction of travel, and frequency.



Figure 8 – Road Safety Audit team members on day of RSA

The Road Safety Audit occurred on Wednesday, October 30, 2013. The day began with a pre-audit meeting that involved the definition of a road safety audit and an overview of the intersections. A presentation was shown detailing the crash analysis and aerial images of the different sites. Following the presentation, site visits were conducted where all participants were given a chance to inspect the sites and utilize their various backgrounds to identify issues and brainstorm recommended improvements. After the site visits, the team was brought back together to discuss the issues observed and suggested recommendations to remedy the issues.

Crash Summary

Several sources of information were used in the RSA process. For example, crash data from 2010 to 2012 was examined for trends and patterns. Specific resources used in the analysis include:

- NJDOT Crash Database (2010 – 2012)
- Plan4Safety Crash Data Analysis Tool
- Highway Safety Manual
- NJTR-1 Crash Reports
- NJDOT Straight Line Diagrams
- Google Earth

Crashes by Intersection

As of the date of road safety audit, the crash data reported by the NJDOT shows a total of 89 crashes occurring during the three-year period from 2010 to 2012. This section gives a brief summary of the crash types occurring at each intersection. The tables in [Appendix A](#) show more detailed information of the crash data.

Monroe Avenue (25 crashes)

The Monroe Avenue intersection is marked by a significant number of right-angle crashes. Many of the drivers fail to stop completely at the stop sign on Monroe Avenue westbound, just before the railroad tracks. Almost 60 percent of these right angle crashes resulted in injury.

Summerfield Avenue (12 crashes)

This intersection is very similar to Monroe Avenue as described above. Half of the crashes were right-angle crashes, and two-thirds of those were injury crashes. Half of all crash types resulted in injury, and half of all crash types occurred in wet conditions.

Bangs Avenue (13 crashes)

More than 60 percent of the crashes were same direction crashes, both rear end and sideswipe. More than a third of the crashes were injury crashes.

Cookman & Mattison Avenues (8 crashes)

The majority of the crashes were same direction crashes, most of them occurring on Memorial Drive. Half of the crashes resulted in injury.

Springwood Avenue (24 crashes)

A third of the crashes were right angle crashes, 25 percent were same direction crashes with the remainder of the crashes of various crash types. Twenty-five percent of the crashes resulted in injury.

Boston Way, Heck Avenue & Embury Avenue (7 crashes)

Four out of the seven crashes were same direction crashes with 70 percent resulting in injuries.

There doesn't appear to be a significant overrepresentation of crashes during wet conditions or dark lighting conditions.

RSA Team Findings

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 codes, standards, and best practices.

CRASH DATA		Corridor	Monroe Avenue	Summerfield Avenue	Bangs Avenue	Mattison Avenue	Cookman Avenue	Springwood Avenue	Boston Way	Heck Avenue	Embury Avenue
Crash History											
1	Overrepresentation of right angle crashes.		✓	✓				✓			
2	Overrepresentation of same direction, rear end and sideswipe crashes.				✓	✓	✓				

RSA Team – Field Observations		Corridor	Monroe Avenue	Summerfield Avenue	Bangs Avenue	Mattison Avenue	Cookman Avenue	Springwood Avenue	Boston Way	Heck Avenue	Embury Avenue
Pedestrians											
3	The RSA team observed significant amount of pedestrians crossing midblock.	✓									
4	Unsignalized crosswalks across Memorial Drive are not clearly designated through markings and signage.		✓	✓			✓				✓
5	Crosswalks are utilized as school crossings but not marked as such.		✓	✓						✓	✓

RSA Team – Field Observations		Corridor	Monroe Avenue	Summerfield Avenue	Bangs Avenue	Mattison Avenue	Cookman Avenue	Springwood Avenue	Boston Way	Heck Avenue	Embury Avenue
6	SCHOOL ZONE signage was limited.									✓	✓
7	Only three of the four pedestrian crosswalks are accommodated by the traffic signal.				✓			✓			
8	There are not fully compliant ADA ramp accommodations along all crosswalks.		✓	✓		✓	✓		✓	✓	✓
9	There is no sidewalk on the east side of Memorial Drive; however there are paths worn from pedestrian use.		✓	✓	✓				✓	✓	✓
10	The existing sidewalks, especially on the west side of the street are in poor condition, not ADA compliant, and may provide a tripping hazard.	✓									
Pedalcyclists											
11	There are no designated facilities for pedalcyclists.	✓									
12	Some of the inlet grates are not bicycle safe.	✓									
Unsignalized Intersections											
13	STOP signs (R1-1) are old and have limited retroreflectivity, and may not be optimally located.		✓	✓		✓	✓			✓	✓
14	Stop signs (R1-1) and one-way signage (R6-1) are missing at the train station parking lot.					✓	✓				
15	The one-way sign (R6-1) at Boston Way is missing, and theft of the sign is a recurring problem.								✓		

RSA Team – Field Observations		Corridor	Monroe Avenue	Summerfield Avenue	Bangs Avenue	Mattison Avenue	Cookman Avenue	Springwood Avenue	Boston Way	Heck Avenue	Embury Avenue
16	Many vehicles do not fully stop at the STOP signs located in advance of the railroad crossing as intersection sight distance is limited from that location. Vehicles advance past the STOP sign for adequate sight distance of approaching vehicles; however, this often results in vehicles stopped while encroaching on the railroad tracks.		✓	✓	NA ²			NA ²			
17	Some roadways approaching Memorial Drive have white centerlines.									✓	✓
18	Many of the pavement markings, especially marked crosswalks, are worn or faded.	✓							✓	✓	✓
Roadway Geometry											
19	The four-lane roadway cross section encourages speeding, passing, and conflicts with turning vehicles (rear end and sideswipe crashes).	✓									
20	Lighting was limited and may be insufficient.	✓	✓								
21	The horizontal curve and the presence of a fence create a sight distance problem for vehicles turning from Mattison Avenue.					✓					

² NA – These are signalized intersections

RSA-Team Impacts to Road Diet Design		Corridor	Monroe Avenue	Summerfield Avenue	Bangs Avenue	Mattison Avenue	Cookman Avenue	Springwood Avenue	Boston Way	Heck Avenue	Embury Avenue
Project Scope											
22	Vehicles are illegally parked up to the intersection blocking sight distance of the intersection. The RSA team observed many of these parked vehicles were associated with the auto repair shop on the northwest corner of the intersection.		✓								
Railroad Crossings											
23	Roadway railroad crossings do not clearly designate center lines, shoulder lines, and pedestrian crossing areas.		✓	✓	✓						
24	Westbound vehicles encroach through lanes of Memorial Drive in order to not stop on the railroad tracks.		✓	✓							
25	Westbound vehicles often stop on the railroad tracks.		✓	✓							
26	Stop control along Memorial Drive under municipal jurisdiction is the reverse of the audited corridor under county jurisdiction. The inconsistent stop control may impact driver expectation and stopping behavior at these intersection.	✓									
27	Crashes and observed issues within the existing project limits (county jurisdiction) continue throughout the adjacent municipally-owned roadway segment of Memorial Drive.	✓									

RSA-Team Impacts to Road Diet Design		Corridor	Monroe Avenue	Summerfield Avenue	Bangs Avenue	Mattison Avenue	Cookman Avenue	Springwood Avenue	Boston Way	Heck Avenue	Embury Avenue
Road Diet Design											
28	The guide rail between Bangs and Mattison Avenues is of a substandard design. After the implementation of a road diet, it is not clear if the guide rail will be warranted.				✓						
29	With implementation of the road diet, a conflict would exist for northbound through traffic; with railroad preemption, the right-turning vehicles would prevent flow of traffic through the intersection.				✓		✓				
Future Development Impacts											
30	There is development planned for the west side of the intersection, which will increase parking demand.							✓			

Photos Illustrating Issues from RSA Team Findings



Figure 9 – Midblock crossing



Figure 10 – Lack of ADA accommodations



Figure 11 – Pedestrians on east side of Memorial Drive



Figure 12 – Pedestrian on east side of Memorial Drive



Figure 13 – Demand for pedestrian accommodations on east side of Memorial Drive



Figure 14 – Limited sight distance for southbound vehicles turning from Mattison Avenue



Figure 15 – Faded pavement markings



Figure 116 – Limited sight distance of southbound vehicles from Mattison Avenue



Figure 17 – Limited sight distance for southbound vehicles from Monroe Avenue



Figure 18 – Lack of pavement markings on railroad crossings



Figure 19 – Encroachment of westbound vehicles on Monroe and Summerfield Avenues between railroad tracks and edge of travelway



Figure 20 – Guide rail end treatment damaged

Implementing Recommendations

The RSA Team's recommendations suggested in this report should improve the safety of the RSA's study intersections on Memorial Drive in Asbury Park and Neptune Township in Monmouth County. Most of the recommendations fall under Monmouth County jurisdiction and a few would be the responsibility of the municipalities.

The following are recommendations for the issues that are detailed in the [RSA Team Findings](#) section. The recommendations are divided up by general corridorwide recommendations and then by intersection from north to south. The cost and safety benefit is subjective.

Many of the issues of this corridor will be improved with implementation of the road diet. Reducing the lanes to one in each direction with a left-turn lane will help to reduce speeding and channelize left-turning movements. The shoulder will provide for bicycle travel and pedestrians not accommodated by the sidewalk. Various enhancements to pedestrian accommodations will greatly improve conditions for the many pedestrians in the area.

In addition, many of the recommendations contained within this report are relatively easy and can be implemented in the short term, such as adding supplemental signage or conducting a lighting study. Others will take more time and investment. Some of the recommendations may require sizable capital investment to obtain a long term safety benefit. It is understood that larger projects may require funding assistance from non-county funds. NJTPA's 2014 LSP funded project along this corridor can be amended and expanded if cost estimates are increased based on an expansion of scope during the design phase. A list of potential funding sources can be found in [Appendix F](#) for recommendations that may not be part of the currently funded LSP project.

Recognizing limited resources and developing partnerships can help to extend the impact of safety efforts. Rutgers' TSRC can provide support to municipalities and counties in identifying partnership opportunities. North Jersey Transportation Planning Authority (NJTPA) staff also provides a great partnership to assist with analysis with respect to crash data, capacity analysis, or any other related assistance. Meadowlink additionally administers the Safe Routes to School program for this region and can assist with school safety plans and designation of school crossings.

In addition to physical improvements, a combined effort of public education and police enforcement is necessary to make these intersections a safer place for all its users. Enforcement to address compliance with fully stopping at stop signs and reduction in speeding can help to reduce crashes and alert drivers of the importance of being safety conscious. Officers may also hand out pamphlets during routine motor-vehicle traffic stops to educate roadway users about traffic safety laws.

Key:

\$ = Low cost

\$\$ = Medium cost

\$\$\$ = High cost

CMF = Crash modification factor

A – Corridorwide

Ref #	Recommendation Type	CMF	Cost	Safety Benefit	Roadway Owner
Road Diet					
A-1	Implementation of a road diet on Memorial Drive including one lane in each direction, a center left-turn lane and two five-foot shoulders. Consideration should be given to the various roadway users: parking, bicycles and pedestrians.	0.71 ³	\$\$	High	Monmouth County
A-2	Consider extending the road diet to include the municipal jurisdiction north of Monroe Avenue.		\$\$	High	City of Asbury Park
A-3	Maximize easterly shoulder width north of Bangs Avenue by shifting the centerline towards the west by reducing the width of the western shoulder in order to provide additional space between the railroad tracks and the edge of travelway for vehicles between Summerfield and Monroe Avenues. (See diagram on page 64.)		\$	High	Monmouth County
A-4	Consideration to be given for accommodation of turning vehicle queues during railroad signal preemption. (See Bangs and Springwood Avenues.)		\$	Low	Monmouth County
Traffic Control & Operations					
A-5	Professional engineering staff should conduct a formalized scoping study to identify feasibility of long-range concepts, including ⁴ :				
a)	Some corridor intersections (such as Summerfield Avenue) could be modified to a right-in/right-out only.			High	Monmouth County
b)	Some roadways could be modified into one-way pairs.	0.53 ⁵		High	Monmouth County
c)	Consideration of reducing NJ Transit rail-grade crossings.			High	Monmouth County
d)	Consider addressing duel road diets and analyze network traffic patterns (as opposed to isolated corridors such as Main Street (NJ 71 - NJDOT) and Memorial Drive (CR 40A – Monmouth County).			High	Monmouth County
e)	Considerations should be given to large event traffic control plans.			Medium	Monmouth County
A-6	Investigate stop-control along northern, municipal section of Monroe Avenue by doing a warrant analysis to evaluate through movement along Memorial Drive with stop control on the minor streets.		\$	High	City of Asbury Park
A-7	Coordination with recommendations of Together North Jersey study. http://togethernorthjersey.com/?grid-portfolio=pilot-project-monmouth-county		\$	Medium	Monmouth County
A-8	Ensure coordination of construction impacts with NJDOT road diet project along Main Street (NJ 71).		\$	Low	Monmouth County (in coordination with NJDOT)

³ **Countermeasure:** Converting four-lane roadways to three-lane roadways with center turn lane (road diet) – Urban, All Crash Types; http://www.cmfclearinghouse.org/study_detail.cfm?stid=23

⁴ Consider NJTPA Local Concept Development Program: <http://www.nitpa.org/Project-Programs/Project-Development/Local-Capital-Project-Delivery-Process/Local-Concept-Development.aspx>

⁵ **Countermeasure:** Convert from two-way to one-way traffic – Urban, All Crash Types; http://www.cmfclearinghouse.org/study_detail.cfm?stid=327

Pedestrians					
A-9	Considerations should be given to fully accommodate pedestrians along the easterly side (track-side) of Memorial Drive especially north of Bangs Avenue and away from railroad conflicts.		\$\$\$	High	City of Asbury Park & NJ Transit
A-11	Plan for full ADA compliance by scheduling upgrades of existing ramps and curbs at crosswalks and installing accommodations where they don't exist.		\$\$	Medium	Monmouth County
A-10	Consider improvement of the condition of the existing sidewalk along the west side of Memorial Drive.		\$\$	Medium/High	City of Asbury Park & Neptune Township
Pedalcyclists					
A-12	Bicycle-safe grates should be installed at all locations that don't currently have them.		\$	High	Monmouth County
A-13	The five-foot shoulders in the proposed road diet cross section should help accommodate bicyclists along Memorial Drive.		\$	High	Monmouth County
Lighting					
A-14	Professional engineering staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced.	0.62 ⁶	\$\$	High	Monmouth County
General					
A-15	Update pavement markings along Memorial Drive and approaching minor streets, including upgrading pavement markings to retro-reflectivity and ensuring roadway markings are according to the MUTCD.		\$	Medium/High	Monmouth County
A-16	Ensure that the stop bars are of standard design.		\$	Medium	Monmouth County
A-17	Ensure that the minor approach center lines, if marked, are double yellow as per MUTCD.		\$	Low	Monmouth County

⁶ Countermeasure: Provide intersection illumination – Area not specified, Nighttime crashes;
http://www.cmfclearinghouse.org/study_detail.cfm?stid=14

Concerns Addressed:	
3	The RSA team observed significant amount of pedestrians' midblock crossing. [Pedestrians] ⁷
8	There are not fully compliant ADA ramp accommodations along all crosswalks. [Pedestrians]
9	There is no sidewalk on the east side of Memorial Drive; however, there are paths worn from pedestrian use. [Pedestrians]
10	The existing sidewalks, especially on the west side of the street are in poor condition, not ADA compliant, and may provide a tripping hazard.[Pedestrians]
11	There are no designated facilities for pedalcyclists. [Pedalcyclists]
12	Some of the inlet grates are not bicycle safe. [Pedalcyclists]
17	Some roadways approaching Memorial Ave have white centerlines. [Unsignalized Intersections]
18	Many of the pavement markings, especially marked crosswalks, are worn or faded. [Unsignalized Intersections]
19	The four-lane roadway cross section encourages speeding, passing, and conflicts with turning vehicles (rear end and sideswipe crashes). [Roadway Geometry]
20	Lighting was limited and may be insufficient. [Geometry]
24	Westbound vehicles encroach through lanes of Memorial Drive in order to not stop on the railroad tracks. [Railroad Crossing]
26	Stop control along Memorial Drive under municipal jurisdiction is the reverse of the audited corridor under county jurisdiction. The inconsistent stop control may impact driver expectation and stopping behavior at these intersection. [Project Scope]
29	With implementation of the road diet, a conflict would exist for northbound through traffic; with railroad preemption, the right-turning vehicles would prevent flow of traffic through the intersection. [Road Diet Design]

⁷ Bracketed labels refer to the section in [RSA Team Findings](#)

B – Monroe Avenue

Ref #	Recommendation Type	CMF	Cost	Safety Benefit	Roadway Owner
Pedestrians					
B-1	Add high-visibility marked crosswalks and signage at all crosswalks (marked crosswalks all four legs, except at identified school crossing, install W11-2 signage assemblies at non-stop controlled approach).	0.63 ⁸	\$	Medium/High	Monmouth County
B-2	At school crossings, install high-visibility marked crosswalks and S1-1 signage assemblies at non-stop controlled approaches.		\$	Medium/High	Monmouth County
B-3	Asbury Park and Meadowlink SRTS will work to formally establish this school crossing plans to potentially identify and establish this location as a school crosswalk.	0.839 ⁹	\$	High	Meadowlink & City of Asbury Park
Signage					
B-4	Suggestions to upgrade STOP signs (R1-1):				
a)	Upgrade to high retroreflective sheeting.		\$	High	Monmouth County
b)	Consider installing oversize sign.	0.33 ¹⁰	\$	High	Monmouth County
c)	Install supplemental left-side STOP signs.		\$	High	Monmouth County
d)	The addition of "bright sticks" would increase visibility of STOP sign.		\$	High	Monmouth County
Pavement Markings					
B-5	The addition of a painted STOP before STOP bar would increase visibility.		\$	Medium	Monmouth County
B-6	Provide pavement markings along Monroe Avenue across railroad tracks to delineate pedestrian areas, shoulder line, and center line.		\$	Medium/High	NJ Transit
B-7	Install dotted lane line extensions to delineate edge of travel lane, especially along the proposed easterly shoulder line of Memorial Drive.		\$	High	Monmouth County
Traffic Operations					
B-8	If <i>After adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency</i> (MUTCD, 2009, p. 445), consider conducting a traffic signal warrant analysis. Consideration should be given to Warrant 7 (Crash Experience, quoted above) and Warrant 9 (Intersection Near a Grade Crossing).		\$\$\$	High	Monmouth County
Enforcement					
B-9	Code and parking enforcement along northwest corner would provide additional sight distance for vehicles on Monroe Avenue eastbound. (The addition of a marked crosswalk across Memorial Drive, near the body shop, would give impetus for enforcement of NO PARKING within 25 feet of the intersection).		\$	High	Asbury Park Police Department

⁸ **Countermeasure:** Install high-visibility yellow, continental type crosswalks at schools – Urban, Vehicle/Pedestrian crash type; http://www.cmfclearinghouse.org/study_detail.cfm?stid=172

⁹ **Countermeasure:** Implement Safe Routes to School Program – Urban, Vehicle/Bicycle, Vehicle/Pedestrian crash type; http://www.cmfclearinghouse.org/study_detail.cfm?stid=128

¹⁰ **Countermeasure:** Add centerline and STOP bar, replace 24-inch with 30-inch STOP signs – Urban, Angle crashes; http://www.cmfclearinghouse.org/study_detail.cfm?stid=81

Concerns Addressed:	
4	Unsignalized crosswalks across Memorial Drive are not clearly designated through markings and signage. [Pedestrians]
5	Crosswalks are utilized as school crossings but not marked as such. [Pedestrians]
13	STOP signs (R1-1) are old and have limited retroreflectivity, and may not be optimally located. [Unsignalized Intersections]
16	Many vehicles do not fully stop at the STOP signs located in advance of the railroad crossing as intersection sight distance is limited from that location. Vehicles advance past the STOP sign for adequate sight distance of approaching vehicles; however, this often results in vehicles stopped while encroaching on the railroad tracks. [Unsignalized Intersections]
18	Many of the pavement markings, especially marked crosswalks, are worn or faded. [Unsignalized Intersections]
19	The four-lane roadway cross section encourages speeding, passing and conflicts with turning vehicles (rear end and sideswipe crashes). [Roadway Geometry]
22	Vehicles are illegally parked up to the intersection (Monroe Avenue) blocking sight distance of the intersection. The RSA team observed many of these vehicles were associated with the auto repair shop on the northwest corner of the intersection. [Roadway Geometry]
23	Roadway railroad crossings do not clearly designate center lines, shoulder lines, and pedestrian areas. [Railroad Crossing]
24	Westbound vehicles encroach through lanes of Memorial Drive in order to not stop on the railroad tracks. [Railroad Crossing]

C – Summerfield Avenue

Ref #	Recommendation Type	CMF	Cost	Safety Benefit	Roadway Owner
Pedestrians					
C-1	Add high-visibility marked crosswalks and signage at all crosswalks (marked crosswalks all four legs, except at identified school crossing, install W11-2 signage assemblies at non-stop controlled approach).	0.63 ¹¹	\$	Medium/High	Monmouth County
C-2	At school crossings, install high-visibility marked crosswalks and S1-1 signage assemblies at non-stop controlled approaches.		\$	Medium/High	Monmouth County
C-3	Asbury Park and Meadowlink SRTS will work to formally establish this school crossing plans to potentially identify and establish this location as a school crosswalk.	0.839 ¹²	\$	High	Meadowlink & City of Asbury Park
Signage					
C-4	Suggestions for upgrading the STOP sign R1-1:				
a)	Upgrade to high retroreflectivity.		\$	High	Monmouth County
b)	Consider installing oversize sign		\$	High	Monmouth County
c)	Install supplemental left-side STOP signs.	0.33 ¹³	\$	High	Monmouth County
d)	The addition of "bright sticks" would increase visibility of STOP sign.	0.45 ¹⁴	\$	High	Monmouth County
Pavement Markings					
C-5	The addition of a painted STOP before STOP bar would increase visibility.		\$	Medium	Monmouth County
C-6	Provide pavement markings along Summerfield Avenue across railroad tracks to delineate pedestrian areas, shoulder line and center line.		\$	Medium/High	NJ Transit
C-7	Install dotted lane line extensions to delineate edge of travel lane, especially along the proposed easterly shoulder line of Memorial Drive.		\$	High	Monmouth County

¹¹ **Countermeasure:** Install high-visibility yellow, continental type crosswalks at schools – Urban, Vehicle/Pedestrian crash type; http://www.cmfclearinghouse.org/study_detail.cfm?stid=172

¹² **Countermeasure:** Implement Safe Routes to School Program – Urban, Vehicle/Bicycle, Vehicle/Pedestrian crash types; http://www.cmfclearinghouse.org/study_detail.cfm?stid=128

¹³ **Countermeasure:** Add centerline and STOP bar, replace 24-inch with 30-inch stop signs – Urban, Angle crashes; http://www.cmfclearinghouse.org/study_detail.cfm?stid=81

¹⁴ **Countermeasure:** Install double stop signs – Urban, Angle crashes; http://www.cmfclearinghouse.org/study_detail.cfm?stid=81

Concerns Addressed:	
1	The predominant crash type was right angle. [Crash History]
4	Unsignalized crosswalks across Memorial Drive are not clearly designated through markings and signage. [Pedestrians]
5	Crosswalks are utilized as school crossings but not marked as such. [Pedestrians]
13	STOP signs (R1-1) are old and have limited retroreflectivity, and may not be optimally located. [Unsignalized Intersections]
16	Many vehicles do not fully stop at the STOP signs located in advance of the railroad crossing as intersection sight distance is limited from that location. Vehicles advance past the STOP sign for adequate sight distance of approaching vehicles; however, this often results in vehicles stopped while encroaching on the railroad tracks. [Unsignalized Intersections]
18	Many of the pavement markings, especially marked crosswalks, are worn or faded. [Unsignalized Intersections]
19	The four-lane roadway cross section encourages speeding, passing and conflicts with turning vehicles (rear end and sideswipe crashes). [Roadway Geometry]
23	Roadway railroad crossings do not clearly designate center lines, shoulder lines, and pedestrian areas. [Railroad Crossings]
24	Westbound vehicles encroach through lanes of Memorial Drive in order to not stop on the Railroad tracks. [Railroad Crossings]
25	Westbound vehicles often stop on the railroad tracks. [Railroad Crossings]

D – Bangs Avenue

Ref #	Recommendation Type	CMF	Cost	Safety Benefit	Roadway Owner
Traffic Operations					
D-1	During times of railroad preemption, the signal at Bangs Avenue and Memorial Drive will rest with a green for Memorial Drive, with illuminated blank-out turning movement restrictions. Therefore during the preemption sequence, right-turning vehicles will queue in front of the green-ball and illuminated NO TURN sign. As the road diet will reduce the travel lane to one, space should be provided for vehicle queuing during this phase such that stopped vehicles do not fully block the northbound through traffic. Consideration to inclusion of a full right-turning lane on the northbound approach should be considered. (see concept diagramed on page 61.)		\$\$	Medium/High	Monmouth County
D-2	Special design consideration should be given to mitigate the bicycle and right-turning lane conflict, potentially including use of shared lane pavement markings. http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd_bike.cfm		\$	High	Monmouth County
Pedestrians					
D-3	Investigate the addition of a fence adjacent to the railroad tracks to enhance pedestrian safety.		\$\$	Medium/High	Monmouth County
D-4	Due to large set-back from intersection, mark easterly crosswalk (located on the eastern side of the railroad tracks) using high-visibility markings		\$	Medium/High	Monmouth County
D-5	Install omitted crosswalk (southerly crossing of Memorial Drive, west of the railroad tracks).		\$	Medium/High	Monmouth County
D-6	Provide pavement markings along Bangs Avenue across railroad tracks to delineate pedestrian areas, shoulder line, and center line.		\$	Medium/High	NJ Transit
Guiderail					
D-7	Determine if existing guiderail is warranted (along the east side of roadway, between Bangs Avenue and Mattison Avenue) or should be removed when the roadway is reconfigured with the road diet. If the guiderail is warranted, upgrade to current standards with appropriate end treatment.		\$\$	Medium/High	Monmouth County

Concerns Addressed:	
2	The predominant crash type was same direction, rear end, and sideswipe. [Crash History]
7	Only three of the four pedestrian crossings are accommodated by the traffic signal. [Pedestrians]
9	There is no sidewalk on the east side of Memorial Drive; however, there are paths worn from pedestrian use. [Pedestrians]
23	Roadway railroad crossings do not clearly designate center lines, shoulder lines, and pedestrian areas. [Railroad Crossings]
28	The guiderail between Bangs and Mattison Avenues is of a substandard design. After the implementation of a road diet, it is not clear if the guiderail will be warranted. [Road Diet Design]
29	With implementation of the road diet, a conflict would exist for northbound through traffic; with railroad preemption, the right-turning vehicles would prevent flow of traffic through the intersection. [Road Diet Design]

E – Mattison Avenue and Cookman Avenue

Ref #	Recommendation Type	CMF	Cost	Safety Benefit	Roadway Owner
Traffic Operations					
E-1	Consider the prohibition of left turns from Mattison Avenue due to limited sight distance. Sign using positive guidance R3-5R (RIGHT TURN ONLY).		\$	High	Monmouth County
Signage					
E-2	Install signage at intersection with train station parking lot:				
a)	Install R5-1 (DO NOT ENTER) and R6-1 (ONE WAY) signs at the entrance to the train station parking lot.	0.85 ¹⁵	\$	Medium	Monmouth County
b)	Install R1-1 (STOP) signs for vehicles exiting the parking lot.	0.85 ¹¹	\$	Medium	Monmouth County

Concerns Addressed:	
2	The predominant crash type was same direction, rear end, and sideswipe. [Crash History]
4	Unsignalized crosswalks across Memorial Drive are not clearly designated through markings and signage. [Pedestrians]
8	There are not fully compliant ADA ramp accommodations along all crosswalks. [Pedestrians]
13	STOP signs (R1-1) are old and have limited retroreflectivity, and may not be optimally located. [Pedestrians]
14	STOP signs (R1-1) and ONE WAY signage (R6-1) are missing at the train station parking lot. [Pedestrians]
21	The horizontal curve and the presence of a fence create a sight distance problem for vehicles turning from Mattison Avenue. [Roadway Geometry]

¹⁵ **Countermeasure:** Install signs to conform to MUTCD – Urban, All crash types;
http://www.cmfclearinghouse.org/study_detail.cfm?stid=14

F – Springwood Avenue

Ref #	Recommendation Type	CMF	Cost	Safety Benefit	Roadway Owner
Traffic Operations					
F-1	During times of railroad preemption, the signal at Springwood Avenue and Memorial Drive will rest with a green for Memorial Drive, with illuminated blank-out turning movement restrictions. Therefore during the preemption sequence, right-turning vehicles will queue in front of the green-ball and illuminated NO TURN sign. As the road diet will reduce the travel lane to one, space should be provided for vehicle queuing during this phase such that stopped vehicles do not fully block the northbound through traffic. Consideration to inclusion of a full right-turning lane on the northbound approach should be considered. [See concept diagramed on page 57.]		\$\$	Medium/High	Monmouth County
F-2	Special design consideration should be given to mitigate the bicycle and right-turning lane conflict, potentially including use of shared lane pavement markings. http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd_bike.cfm		\$	High	Monmouth County
Pedestrians					
F-3	Install marked crosswalk on easterly crossing of Springwood Avenue.	0.6 ¹⁶	\$	Medium/High	Monmouth County
F-4	Install ADA accommodations associated with added crosswalks.		\$\$	Medium	Monmouth County
Future Development					
F-5	Coordination is required to accommodate future parking needs at the proposed residential and mixed use commercial development on west side of Memorial Drive.		\$	Low	Monmouth County

Concerns Addressed:	
7	Only three of the four pedestrian crossings are accommodated by the traffic signal. [Pedestrian]
29	With implementation of the road diet, a conflict would exist for northbound through traffic; with railroad preemption, the right-turning vehicles would prevent flow of traffic through the intersection. [Road Diet Design]
30	There is development planned for the west side of the intersection, which will increase parking demand. [Future Development Impacts]

¹⁶ **Countermeasure:** Install high-visibility crosswalk – Urban, Vehicle/Pedestrian crash types;
http://www.cmfclearinghouse.org/study_detail.cfm?stid=280

G – Boston Way, Heck Avenue & Embury Avenue

Ref #	Recommendation Type	CMF	Cost	Safety Benefit	Roadway Owner
Pedestrians					
G-1	At school crossings, install high-visibility marked crosswalks.	0.6 ¹⁷	\$	Medium/High	Monmouth County
G-2	Install appropriate school zone signage (S1-1) to identify the presence of the Neptune Elementary School and preschool.		\$	Medium/High	Monmouth County
G-3	Install ADA accommodations and refresh crosswalk markings at existing marked crosswalks across Boston Way, Heck Avenue, and Embury Avenue.		\$	Medium/High	Monmouth County
G-4	Neptune Township and Meadowlink SRTS will work to formally establish school crossing plans for Embury Avenue to potentially identify and establish this location as a school crosswalk.	0.63 ¹⁸	\$	High	Meadowlink & Neptune Township
Signage					
G-5	Replace R6-1 (ONE WAY) sign at Boston Way.	0.85 ¹⁹	\$	Medium	Monmouth County

Concerns Addressed:	
4	Unsignalized crosswalks across Memorial Drive are not clearly designated through markings and signage. [Pedestrians]
5	Crosswalks are utilized as school crossings but not marked as such. [Pedestrians]
6	SCHOOL ZONE signage was limited. [Pedestrians]
8	There are not fully compliant ADA ramp accommodations along all crosswalks. [Pedestrians]
9	There is no sidewalk on the east side of Memorial Drive; however, there are paths worn from pedestrian use. [Pedestrians]
13	STOP signs (R1-1) are old and have limited retroreflectivity, and may not be optimally located. [Unsignalized Intersections]
15	The ONE WAY sign (R6-1) at Boston Way is missing, and theft of the sign is a recurring problem. [Unsignalized Intersections]
17	Some roadways approaching Memorial Drive have white centerlines. [Unsignalized Intersections]
18	Many of the pavement markings, especially marked crosswalks, are worn or faded. [Unsignalized Intersections]

¹⁷ **Countermeasure:** Install high-visibility crosswalk – Urban, Vehicle/Pedestrian crash type;
http://www.cmfclearinghouse.org/study_detail.cfm?stid=280

¹⁸ **Countermeasure:** Install high-visibility yellow, continental type crosswalks at schools – Urban, Vehicle/Pedestrian crash type;
http://www.cmfclearinghouse.org/study_detail.cfm?stid=172

¹⁹ **Countermeasure:** Install signs to conform to MUTCD – Urban, All crash types;
http://www.cmfclearinghouse.org/study_detail.cfm?stid=14

Appendix A – Crash Data

Raw Crash Data

Monroe Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INCAPACITATED	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
5/4/2010	11:14 PM	Right Angle	Dark (Street Lights On/Continuous)	Injury	Dry	0	1	0	2
6/9/2010	10:09 PM	Right Angle	Dark (Street Lights On/Continuous)	Injury	Wet	0	3	0	2
6/15/2010	2:42 PM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	0	2
3/11/2010	8:37 PM	Right Angle	Dark (Street Lights On/Spot)	Property Damage	Wet	0	0	0	2
3/24/2010	8:42 AM	Right Angle	Daylight	Injury	Dry	0	1	0	2
8/4/2010	9:13 AM	Right Angle	Daylight	Property Damage	Dry	0	0	0	2
10/18/2010	11:36 AM	Right Angle	Daylight	Injury	Dry	0	1	0	2
11/20/2010	4:26 AM	Right Angle	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	0	2
12/26/2010	11:05 AM	Right Angle	Daylight	Injury	Snowy	0	1	0	2
2/10/2011	9:49 PM	Fixed Object	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	0	1
5/19/2011	10:14 PM	Right Angle	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	0	2
5/24/2011	11:34 AM	Encroachment	Daylight	Property Damage	Dry	0	0	0	2
6/4/2011	5:40 PM	Opposite Direction - Sideswipe	Daylight	Injury	Dry	0	2	0	3

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INCAPACITATED	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
6/19/2011	6:56 PM	Right Angle	Daylight	Injury	Dry	0	2	0	2
9/24/2011	8:20 PM	Left Turn / U-Turn	Dark (No Street Lights)	Property Damage	Dry	0	0	0	2
9/23/2011	5:41 PM	Right Angle	Dusk	Property Damage	Wet	0	0	0	2
12/18/2011	2:39 PM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	0	2
5/28/2012	2:45 AM	Right Angle	Dark (Street Lights On/Continuous)	Injury	Dry	0	2	0	2
7/16/2012	5:22 PM	Opposite Direction - Head On/Angular	Daylight	Injury	Dry	0	2	0	3
7/12/2012	10:03 PM	Right Angle	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	0	2
8/13/2012	6:05 PM	Right Angle	Daylight	Injury	Dry	0	1	0	2
9/2/2012	6:40 PM	Right Angle	Daylight	Injury	Wet	0	3	0	3
9/6/2012	9:51 PM	Right Angle	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	0	2
10/15/2012	2:42 PM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	0	2
10/26/2012	5:25 PM	Right Angle	Daylight	Injury	Dry	0	4	0	3

Summerfield Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
1/20/2010	5:21 PM	Opposite Direction - Head On/Angular	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	2
7/2/2010	9:52 AM	Same Direction - Sideswipe	Daylight	Property Damage	Dry	0	0	2
3/13/2010	11:55 AM	Right Angle	Daylight	Property Damage	Wet	0	0	2
3/29/2010	1:52 PM	Right Angle	Daylight	Injury	Wet	1	0	2
7/4/2011	11:09 PM	Same Direction - Sideswipe	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	2
9/6/2011	10:18 AM	Right Angle	Daylight	Injury	Wet	3	0	2
12/8/2011	3:47 PM	Right Angle	Daylight	Property Damage	Dry	0	0	2
2/6/2012	5:47 PM	Right Angle	Dark (No Street Lights)	Injury	Dry	3	0	2
2/29/2012	3:32 PM	Same Direction - Rear End	Daylight	Property Damage	Wet	0	0	2
4/1/2012	7:21 PM	Right Angle	Dark (Street Lights Off)	Injury	Wet	1	0	2
5/8/2012	11:23 AM	Encroachment	Daylight	Property Damage	Dry	0	0	2
12/9/2012	2:48 AM	Same Direction - Sideswipe	Dark (Street Lights On/Continuous)	Property Damage	Wet	0	0	2

Bangs Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
3/5/2010	4:35 PM	Same Direction - Sideswipe	Daylight	Property Damage	Dry	0	0	2
3/19/2010	7:29 PM	Same Direction - Sideswipe	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	2
4/8/2010	12:26 PM	Backing	Daylight	Property Damage	Dry	0	0	2
8/19/2010	7:44 AM	Pedalcyclist	Daylight	Injury	Dry	1	0	1
8/21/2010	11:46 PM	Right Angle	Dark (Street Lights On/Continuous)	Injury	Dry	3	0	2
10/6/2010	5:07 PM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	2
10/20/2010	9:47 AM	Same Direction - Rear End	Daylight	Injury	Dry	2	0	2
12/13/2010	6:01 PM	Same Direction - Sideswipe	Dark (Street Lights Off)	Property Damage	Dry	0	0	2
2/12/2011	3:17 PM	Same Direction - Sideswipe	Daylight	Property Damage	Dry	0	0	2
7/4/2011	1:10 PM	Other	Daylight	Injury	Dry	4	0	3
7/7/2012	6:55 PM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	2
7/26/2012	6:17 PM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	2
10/31/2012	12:50 PM	Right Angle	Daylight	Injury	Dry	1	0	2

Mattison Avenue & Cookman Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	CROSS STREET NAME	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
5/11/2010	3:25 PM	Right Angle	MATTISON AVENUE	Daylight	Injury	Dry	2	0	2
3/21/2010	2:21 AM	Same Direction - Sideswipe	MATTISON AVENUE	Dark (Street Lights On/Continuous)	Injury	Dry	1	0	2
1/18/2010	2:26 PM	Same Direction - Rear End	MATTISON AVENUE	Daylight	Property Damage	Dry	0	0	2
8/25/2010	10:52 AM	Same Direction - Sideswipe	MATTISON AVE	Daylight	Property Damage	Wet	0	0	2
7/3/2011	1:08 AM	Same Direction - Rear End	COOKMAN AVE	Dark (Street Lights On/Continuous)	Injury	Dry	4	0	2
9/16/2011	10:57 AM	Same Direction - Sideswipe	COOKMAN AVE	Daylight	Property Damage	Dry	0	0	2
7/5/2012	9:34 AM	Left Turn / U-Turn	COOKMAN AVE	Daylight	Injury	Dry	1	0	3
12/3/2012	4:26 PM	Left Turn / U-Turn	MATTISON AVE	Daylight	Property Damage	Dry	0	0	2

Springwood Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
5/3/2010	6:48 PM	Pedestrian	Daylight	Property Damage	Dry	0	0	1
7/2/2010	9:52 AM	Same Direction - Sideswipe	Daylight	Property Damage	Dry	0	0	2
6/14/2010	4:46 PM	Opposite Direction - Sideswipe	Daylight	Property Damage	Dry	0	0	2
5/1/2010	9:01 PM	Same Direction - Sideswipe	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	2
7/17/2010	4:19 PM	Fixed Object	Daylight	Property Damage	Dry	0	0	2
11/18/2010	5:40 PM	Right Angle	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	2
12/20/2010	12:17 PM	Encroachment	Daylight	Property Damage	Dry	0	0	2
2/4/2011	3:52 PM	Right Angle	Daylight	Injury	Dry	1	0	2
5/11/2011	7:30 AM	Encroachment	Daylight	Property Damage	Dry	0	0	2
6/7/2011	2:49 PM	Right Angle	Daylight	Property Damage	Dry	0	0	2
6/22/2011	12:11 PM	Backing	Daylight	Property Damage	Dry	0	0	2
8/19/2011	8:46 PM	Opposite Direction - Head On/Angular	Dark (Street Lights On/Continuous)	Injury	Dry	2	0	2
9/1/2011	10:00 PM	Same Direction - Sideswipe	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	2
9/23/2011	5:59 PM	Same Direction - Sideswipe	Daylight	Property Damage	Wet	0	0	2
12/28/2011	4:04 PM	Right Angle	Daylight	Property Damage	Dry	0	0	2

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
2/15/2012	6:57 PM	Same Direction - Rear End	Dark (Street Lights On/Continuous)	Injury	Dry	1	0	2
3/17/2012	5:11 PM	Right Angle	Daylight	Property Damage	Dry	0	0	2
4/2/2012	6:47 PM	Right Angle	Daylight	Property Damage	Dry	0	0	3
4/26/2012	9:00 AM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	2
7/25/2012	4:09 PM	Pedalcyclist	Daylight	Property Damage	Dry	0	0	1
10/31/2012	1:27 PM	Right Angle	Daylight	Injury	Dry	1	0	2
11/6/2012	11:43 AM	Encroachment	Daylight	Injury	Dry	4	0	3
11/5/2012	6:45 PM	Right Angle	Dark (Street Lights On/Continuous)	Property Damage	Dry	0	0	2
11/28/2012	3:30 PM	Fixed Object	Daylight	Injury	Dry	1	0	1

Boston Way, Heck Avenue & Embury Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	CROSS STREET NAME	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
5/25/2010	1:19 PM	Same Direction - Sideswipe	BOSTONWAY	Daylight	Injury	Dry	1	0	2
6/8/2010	2:32 PM	Right Angle	HECK AVENUE	Daylight	Injury	Dry	2	0	2
8/9/2010	2:13 PM	Same Direction - Sideswipe	HECK AVE	Daylight	Injury	Dry	1	0	2
5/10/2011	8:46 AM	Same Direction - Sideswipe	EMBURY AVE	Daylight	Property Damage	Dry	0	0	2
3/2/2012	8:03 AM	Left Turn / U-Turn	HECK AVE	Daylight	Injury	Dry	2	0	2
4/9/2012	3:51 PM	Same Direction - Rear End	EMBURY ST	Daylight	Injury	Dry	5	0	3
11/27/2012	12:58 PM	Struck Parked Vehicle	HECK AVE	Daylight	Property Damage	Dry	0	0	2

Crash Data Tables

Monroe Avenue

Monroe Avenue		CRASH TYPE							
		Same Direction - Rear End	Right Angle	Opposite Direction - Head On/Angular	Opposite Direction - Sideswipe	Left Turn / U-Turn	Encroachment	Fixed Object	TOTAL
SEVERITY	Property Damage	3	7			1	1	1	13
	Injury		10	1	1				12
	TOTAL	3	17	1	1	1	1	1	25

Table 1 – Crash Type vs. Severity

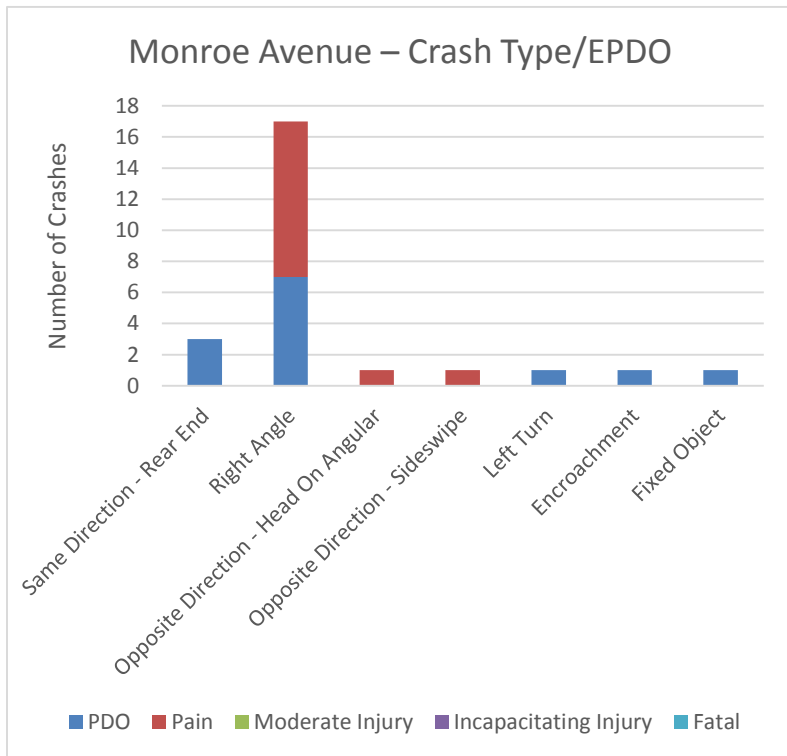


Figure 21

Monroe Avenue		SURFACE CONDITIONS			TOTAL
		Dry	Wet	Snowy	
LIGHT CONDITIONS	Daylight	12	1	1	14
	Dusk		1		1
	Dark (No Street Lights)	1			1
	Dark (Street Lights On/Continuous)	7	1		8
	Dark (Street Lights On/Spot)		1		1
	TOTAL	20	4	1	25

Table 2 – Light Conditions vs. Surface Conditions

Summerfield Avenue

Summerfield Avenue		CRASH TYPE					TOTAL
		Same Direction - Rear End	Same Direction - Sideswipe	Right Angle	Opposite Direction - Head On/Angular	Encroachment	
SEVERITY	Property Damage	1	3	2	1	1	8
	Injury			4			4
TOTAL		1	3	6	1	1	12

Table 3 – Crash Type vs. Severity

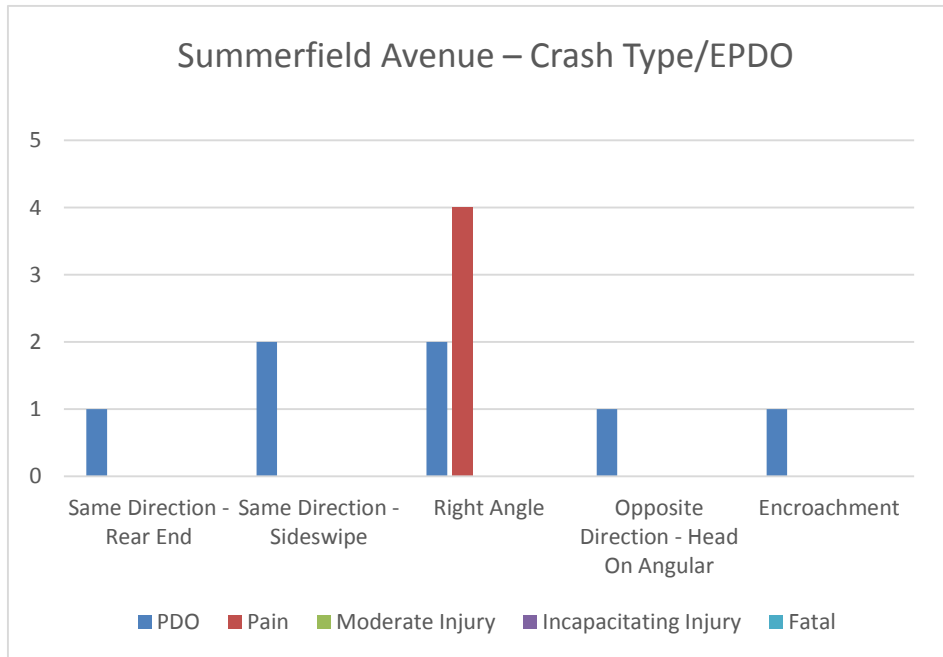


Figure 22

Summerfield Avenue		SURFACE CONDITIONS		
		Dry	Wet	TOTAL
LIGHT CONDITIONS	Daylight	3	4	7
	Dark (Street Lights Off)		1	1
	Dark (No Street Lights)	1		1
	Dark (Street Lights On/Continuous)	2	1	3
	TOTAL	6	6	12

Table 4 – Light Conditions vs. Surface Conditions

Bangs Avenue

Bangs Avenue		CRASH TYPE						
		Same Direction - Rear End	Same Direction - Sideswipe	Right Angle	Backing	Pedalcyclist	Other	TOTAL
SEVERITY	Property Damage	3	4		1			8
	Injury	1		2		1	1	5
	TOTAL	4	4	2	1	1	1	13

Table 5 – Crash Type vs. Severity

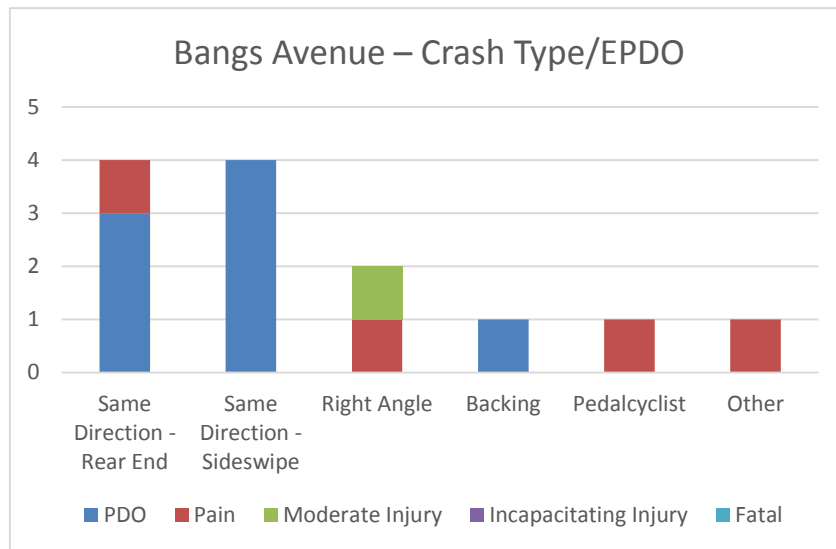


Figure 23

Bangs Avenue		SURFACE CONDITIONS		
		Dry	Wet	TOTAL
LIGHT CONDITIONS	Daylight	10		10
	Dark (Street Lights Off)	1		1
	Dark (Street Lights On/Continuous)	2		2
	TOTAL	13	0	13

Table 6 – Light Conditions vs. Surface Conditions

Mattison Avenue & Cookman Avenue

Mattison Avenue - Cookman Avenue		CRASH TYPE				
		Same Direction - Rear End	Same Direction - Sideswipe	Right Angle	Left Turn / U- Turn	TOTAL
SEVERITY	Property Damage	1	2		1	4
	Injury	1	1	1	1	4
	TOTAL	2	3	1	2	8

Table 7 – Crash Type vs. Severity

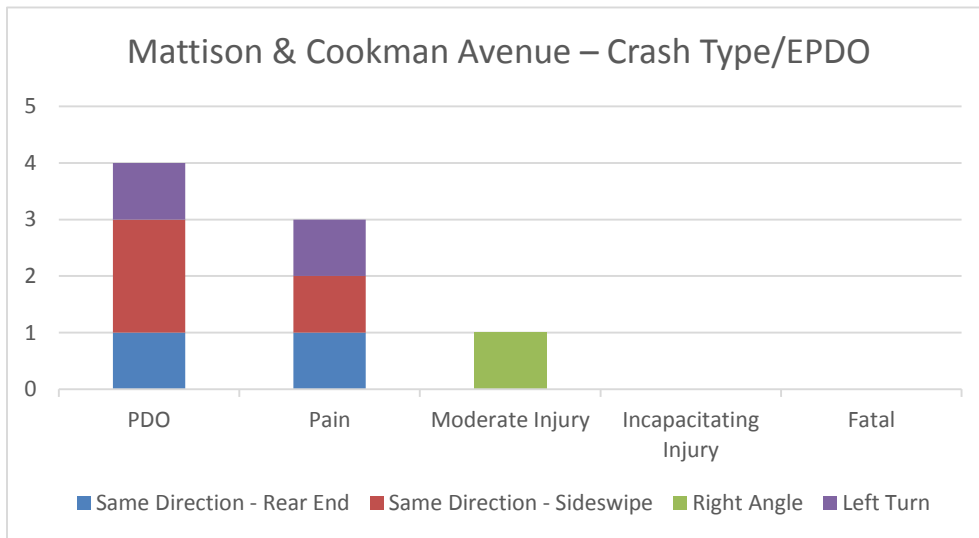


Figure 24

Mattison & Cookman Avenues		SURFACE CONDITIONS		
		Dry	Wet	TOTAL
LIGHT CONDITIONS	Daylight	5	1	6
	Dark (Street Lights On/Continuous)	2	0	2
	TOTAL	7	1	8

Table 8 – Light Conditions vs. Surface Conditions

Springwood Avenue

Springwood Avenue		CRASH TYPE										
		Same Direction - Rear End	Same Direction - Sideswipe	Right Angle	Opposite Direction - Head On/Angular	Opposite Direction - Sideswipe	Backing	Encroachment	Fixed Object	Pedestrian	Pedalcyclist	TOTAL
SEVERITY	Property Damage	1	4	6		1	1	2	1	1	1	18
	Injury	1		2	1			1	1			6
	TOTAL	2	4	8	1	1	1	3	2	1	1	24

Table 9 – Crash Type vs. Severity

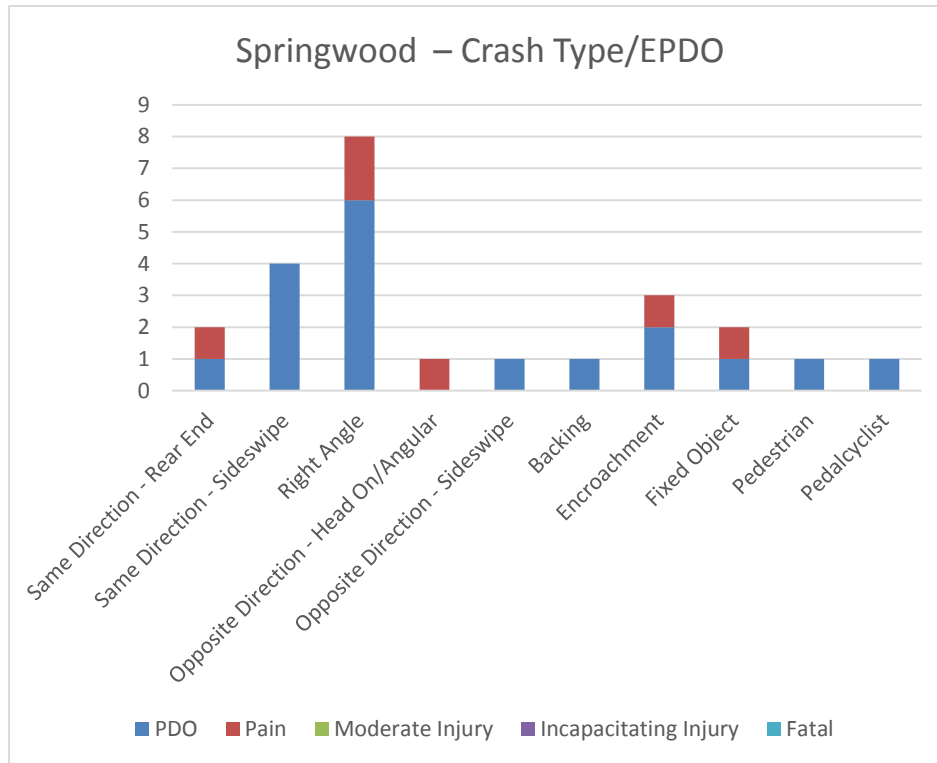


Figure 25

Springwood Avenue		SURFACE CONDITIONS		
		Dry	Wet	TOTAL
LIGHT CONDITIONS	Daylight	17	1	18
	Dark (Street Lights On/Continuous)	6	0	6
	TOTAL	23	1	24

Table 10 – Light Conditions vs. Surface Conditions

Boston Way, Heck Avenue & Embury Avenue

Boston Way to Embury Avenue		CRASH TYPE					TOTAL
		Same Direction - Rear End	Same Direction - Sideswipe	Right Angle	Struck Parked Vehicle	Left Turn / U-Turn	
SEVERITY	Property Damage		1		1		2
	Injury	1	2	1		1	5
	TOTAL	1	3	1	1	1	7

Table 11 – Crash Type vs. Severity

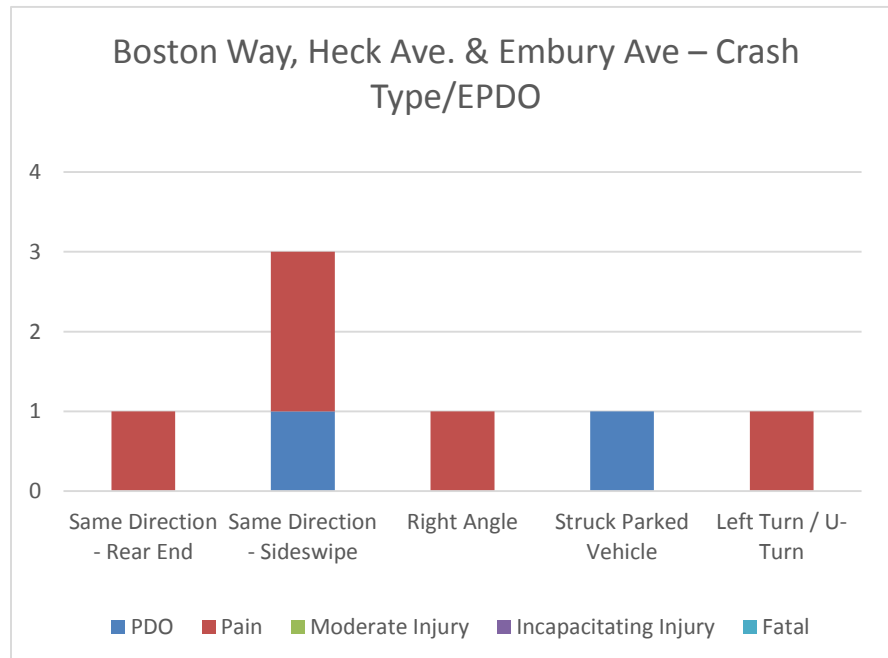


Figure 26

Boston Way, Heck Avenue & Embury Avenue		SURFACE CONDITIONS		
		Dry	Wet	TOTAL
LIGHT CONDITIONS	Daylight	7		7
	Dark (Street Lights Off)			
	Dark (No Street Lights)			
	Dark (Street Lights On/Continuous)			
	Dark (Street Lights On/Spot)			
	TOTAL	7		7

Table 12 – Light Conditions vs. Surface Conditions

Appendix B – Crash Diagrams

Monroe Avenue

Encroachment

- A** 5/24/2011 11:34 AM O Appears to be right angle crash.

Fixed Object

- B** 2/10/2011 9:49 PM O Swerved to avoid pedestrians; stuck on train tracks.

Left Turn / U Turn

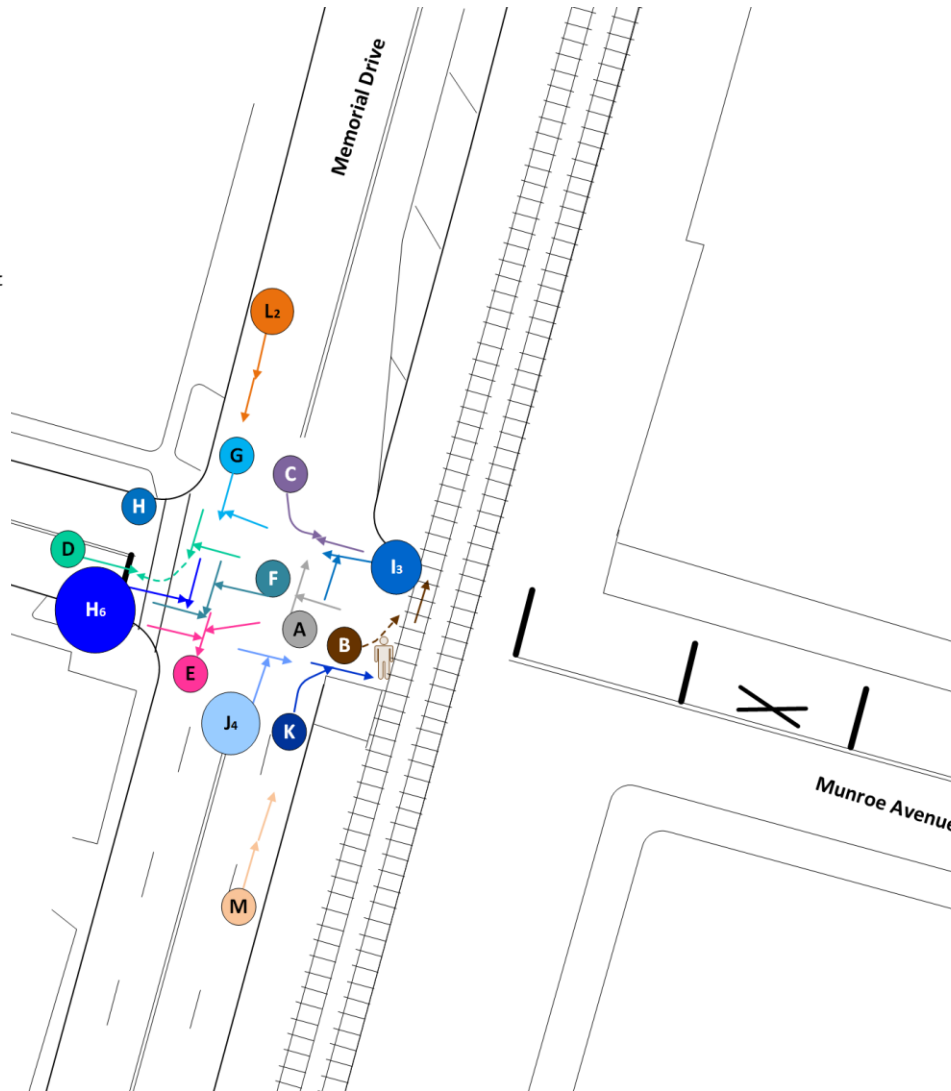
- C** 9/24/2011 8:20 PM O Failed to stop at stop sign

Opposite Direction - Head On/Angular

- D** 7/16/2012 5:22 PM C 3 vehicles; westbound vehicle failed to stop at stop sign

Opposite Direction - Side Swipe

- E** 6/4/2011 5:40 PM C 3 vehicles; westbound vehicle failed to stop at stop sign



Note: Crash Severity uses KABCO scale: K=Fatal, A=Incapacitating, B=Non-incapacitating injury, C=Pain, O=Property damage only

Right Angle

- F** 9/2/2012 6:40 PM C 3 vehicles; westbound vehicle failed to stop at stop sign
- G** 5/19/2011 10:14 PM O Westbound vehicle failed to stop at stop sign
- H** 9/6/2012 9:51 PM O

- H** 10/26/2012 5:25 PM C Failed to stop at stop sign; eastbound vehicle overturned.
- H** 5/28/2012 2:45 AM C Failed to stop at stop sign
- H** 9/23/2011 5:41 PM O Failed to stop at stop sign

- H** 6/9/2010 10:09 PM C Failed to stop at stop sign
- H** 7/12/2012 10:03 PM O Swerved to avoid bicyclists

- I** 8/13/2012 6:05 PM C Failed to stop at stop sign
- I** 10/18/2010 11:36 AM C Failed to stop at stop sign

- I** 3/11/2010 8:37 PM O Failed to stop at stop sign
- J** 6/19/2011 6:56 PM C Failed to stop at stop sign

- J** 11/20/2010 4:26 AM O
- J** 8/4/2010 9:13 AM O Failed to stop at stop sign

- J** 3/24/2010 8:42 AM C Failed to stop at stop sign
- J** 5/4/2013 11:14 PM C Failed to stop at stop sign

- K** 12/26/2010 11:05 AM C
- L** 6/15/2010 2:42 PM O Driver Inattention

- L** 10/15/2012 2:42 PM O Stopped for crossing guard allowing peds to cross.

- M** 12/18/2011 2:39 PM O

Same Direction - Rear End

Summerfield Avenue

Encroachment

A 5/8/2012 11:23 AM O

Opposite Direction - Head On/Angular

B 1/20/2010 5:21 PM O

Right Angle

C 3/13/2010 11:55 AM O

C 4/1/2012 7:21 PM C EB vehicle didn't stop at stop sign

D 12/8/2011 3:47 PM O

E 3/29/2010 1:52 PM C WB vehicle didn't stop at stop sign?

F 2/6/2012 5:47 PM C EB vehicle failed to stop at stop sign

G 9/6/2011 10:18 AM C Unable to diagram crash, directions unknown

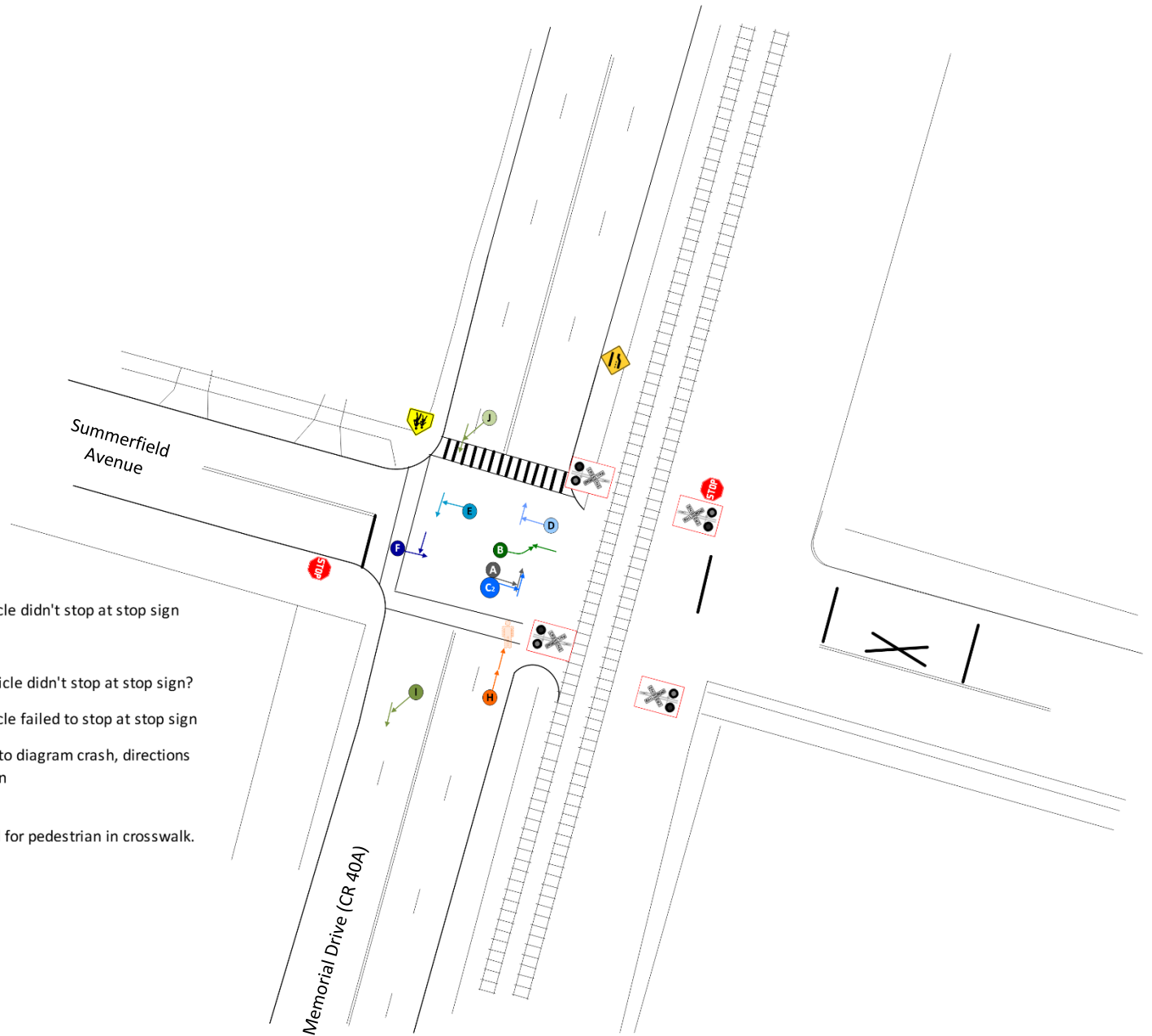
Same Direction - Rear End

H 2/29/2012 3:32 PM O Stopped for pedestrian in crosswalk.

Same Direction - Side Swipe

I 7/4/2011 11:09 PM O

J 12/9/2012 2:48 AM O



Bangs Avenue

Backing

A 4/8/2010 12:26 PM O Backed into parked car

Other

B 7/4/2011 1:10 PM C 3 vehicles involved

Pedalcyclist

C 8/19/2010 7:44 AM C Vehicle had green light.

Right Angle

D 10/31/2012 12:50 PM C Traffic signal not operational due to power outage
 E 8/21/2010 11:46 PM B SB vehicle went through red light.

Same Direction - Rear End

F 10/20/2010 9:47 AM C

F 7/7/2012 6:55 PM O

G 10/6/2010 5:07 PM O

G 7/26/2012 6:17 PM O

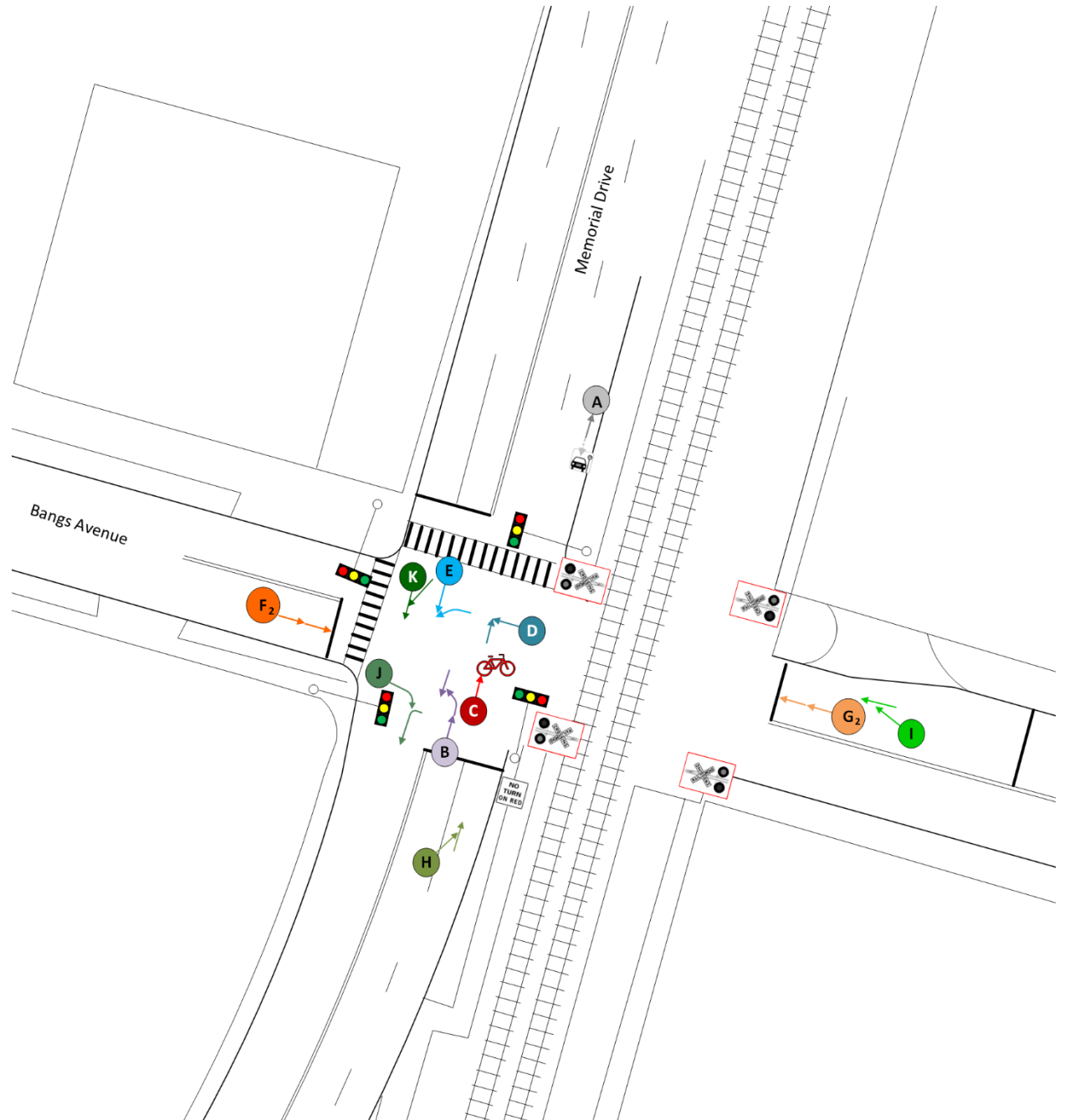
Same Direction - Side Swipe

H 3/5/2010 4:35 PM O

I 3/19/2010 7:29 PM O

J 12/13/2010 6:01 PM O

K 2/12/2011 3:17 PM O



Mattison Avenue & Cookman Avenue

MATTISON Avenue

Left Turn / U Turn

A 12/3/2012 4:26 PM O NB vehicle failure to yield

Right Angle

B 5/11/2010 3:25 PM B

Same Direction - Rear End

C 1/18/2010 2:26 PM O

Same Direction - Side Swipe

D 3/21/2010 2:21 AM C

D 8/25/2010 10:52 AM O

COOKMAN Avenue

Left Turn / U Turn

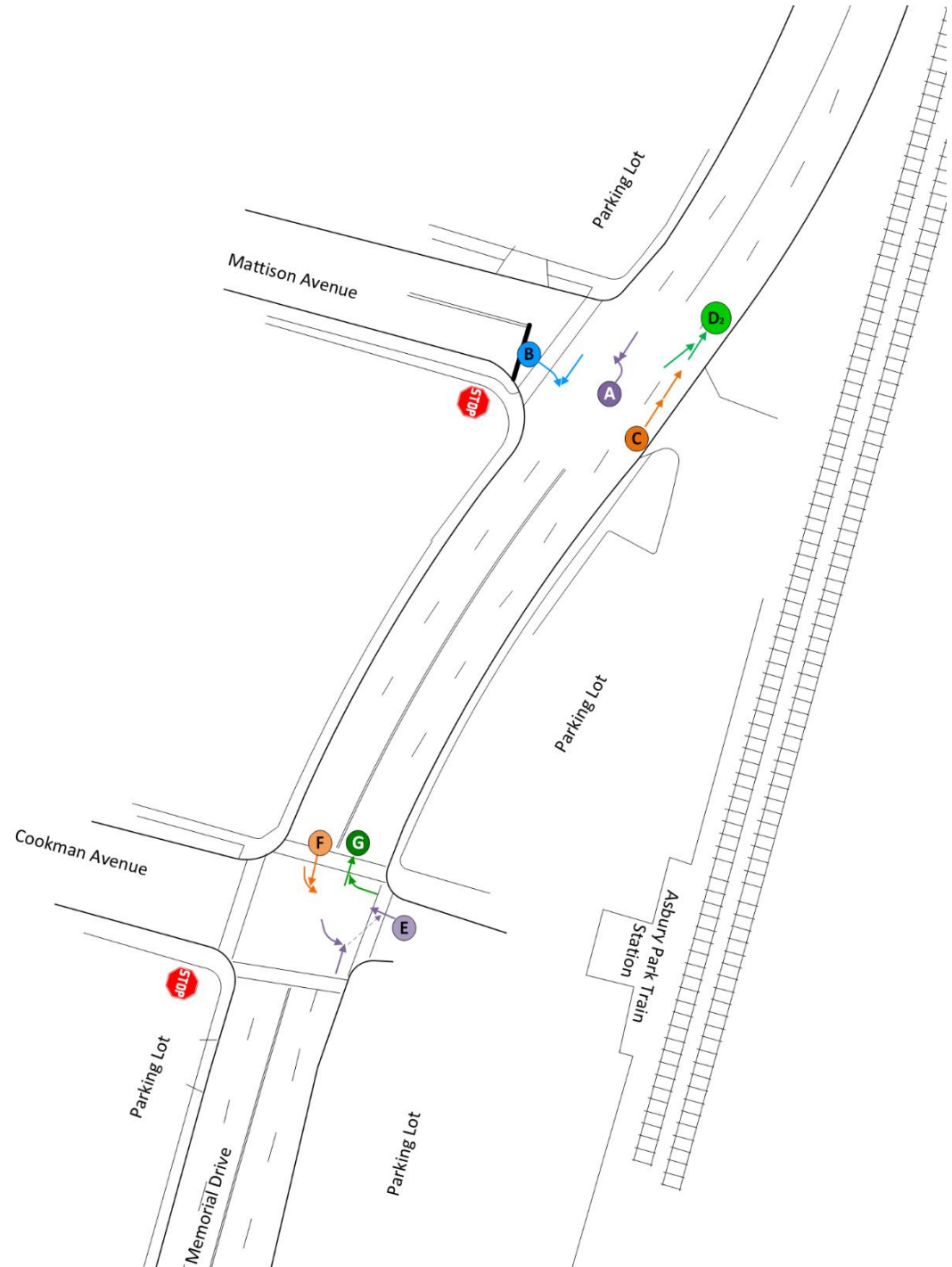
E 7/5/2012 9:34 AM C Three vehicles involved

Same Direction - Rear End

F 7/3/2011 1:08 AM C LT turning vehicle overtaken

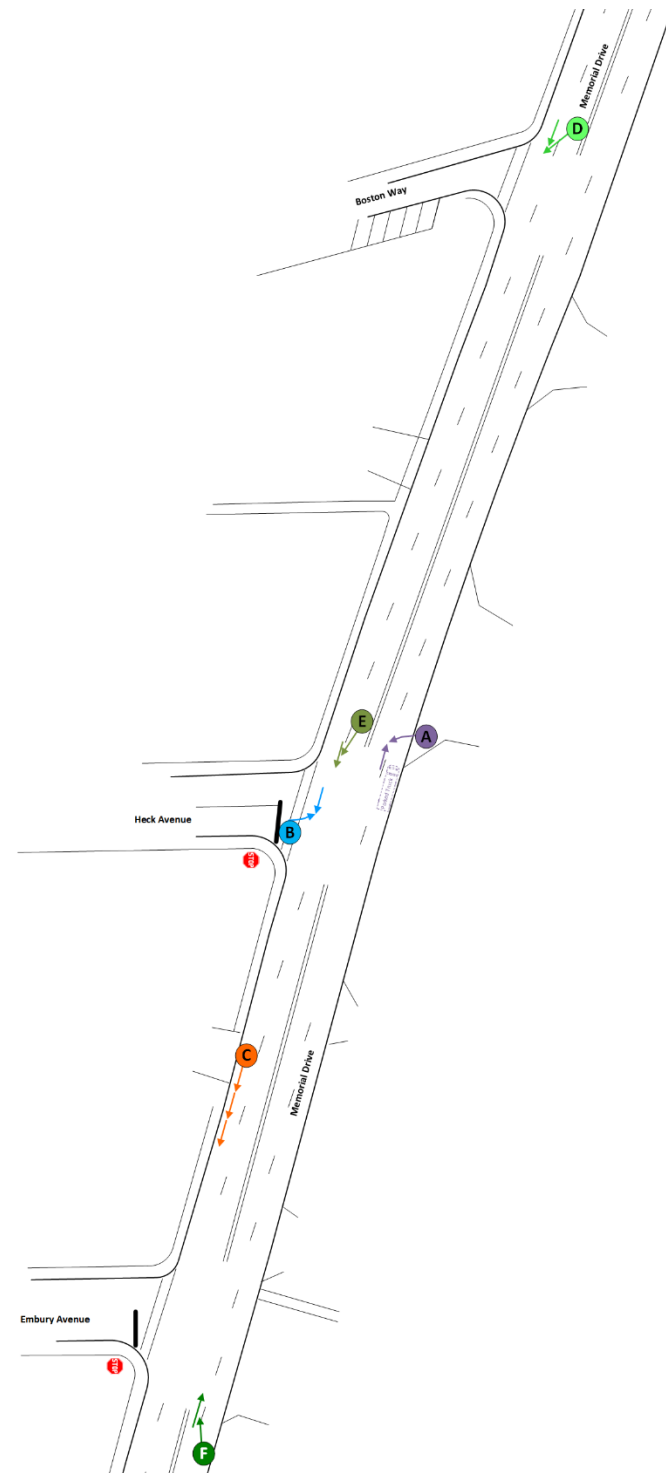
Same Direction - Side Swipe

G 9/16/2011 10:57 AM O

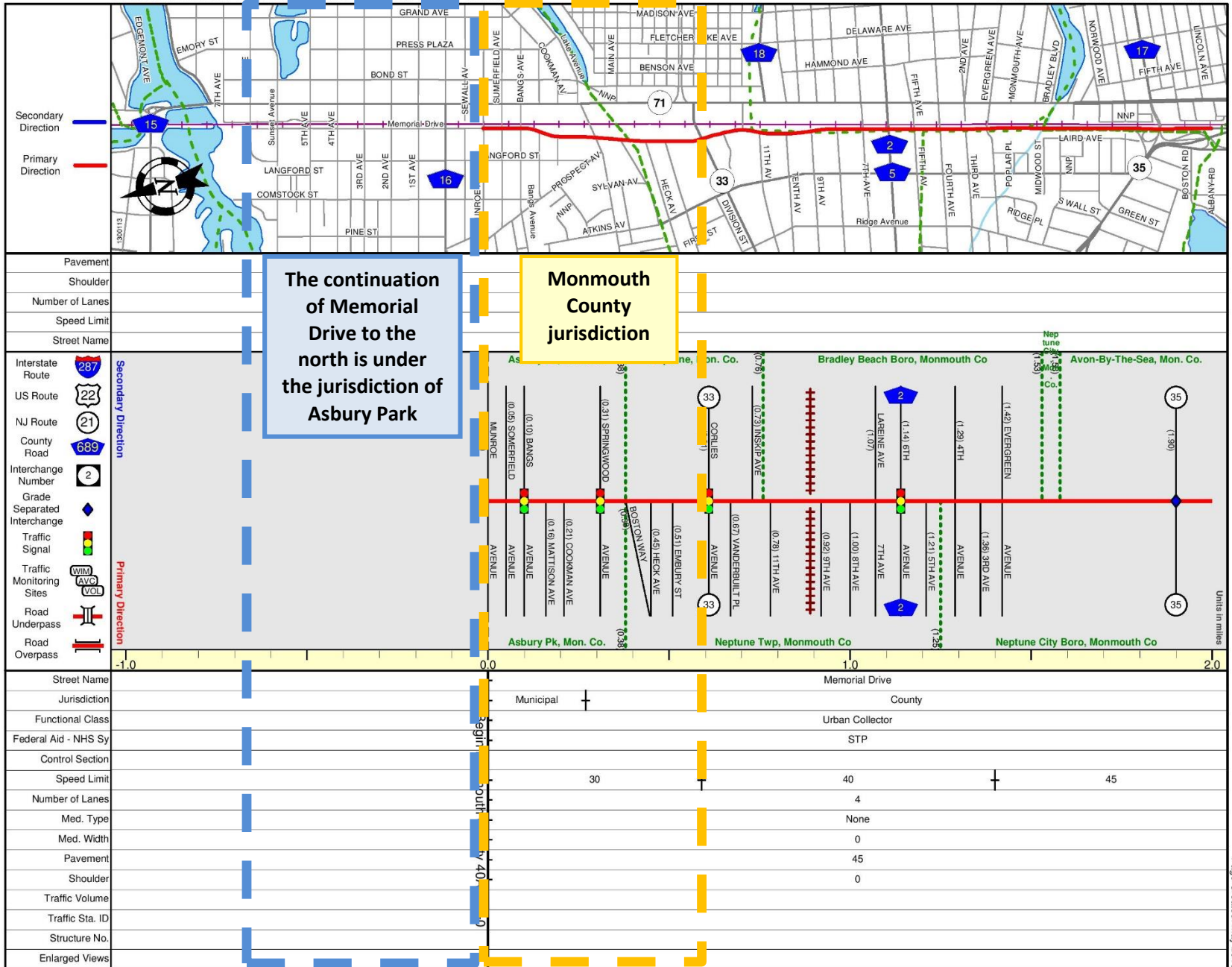


Boston Way, Heck Avenue & Embury Avenue

A	3/2/2012	8:03 AM	Left Turn / U Turn	C	Sight distance blocked by parked
B	6/8/2010	2:32 PM	Right Angle	C	
C	4/9/2012	3:51 PM	Same Direction - Rear End	C	Unloading passenger
D	5/25/2010	1:19 PM	Same Direction - Side Swipe	C	Springwood Ave. closed due to
E	8/9/2010	2:13 PM	Same Direction - Side Swipe	C	
F	5/10/2011	8:46 AM	Same Direction - Side Swipe	O	
G	11/27/2012	12:58 PM	Struck Parked Vehicle	O	Can't diagram crash (Heck Ave.)



Appendix C – Straight Line Diagram



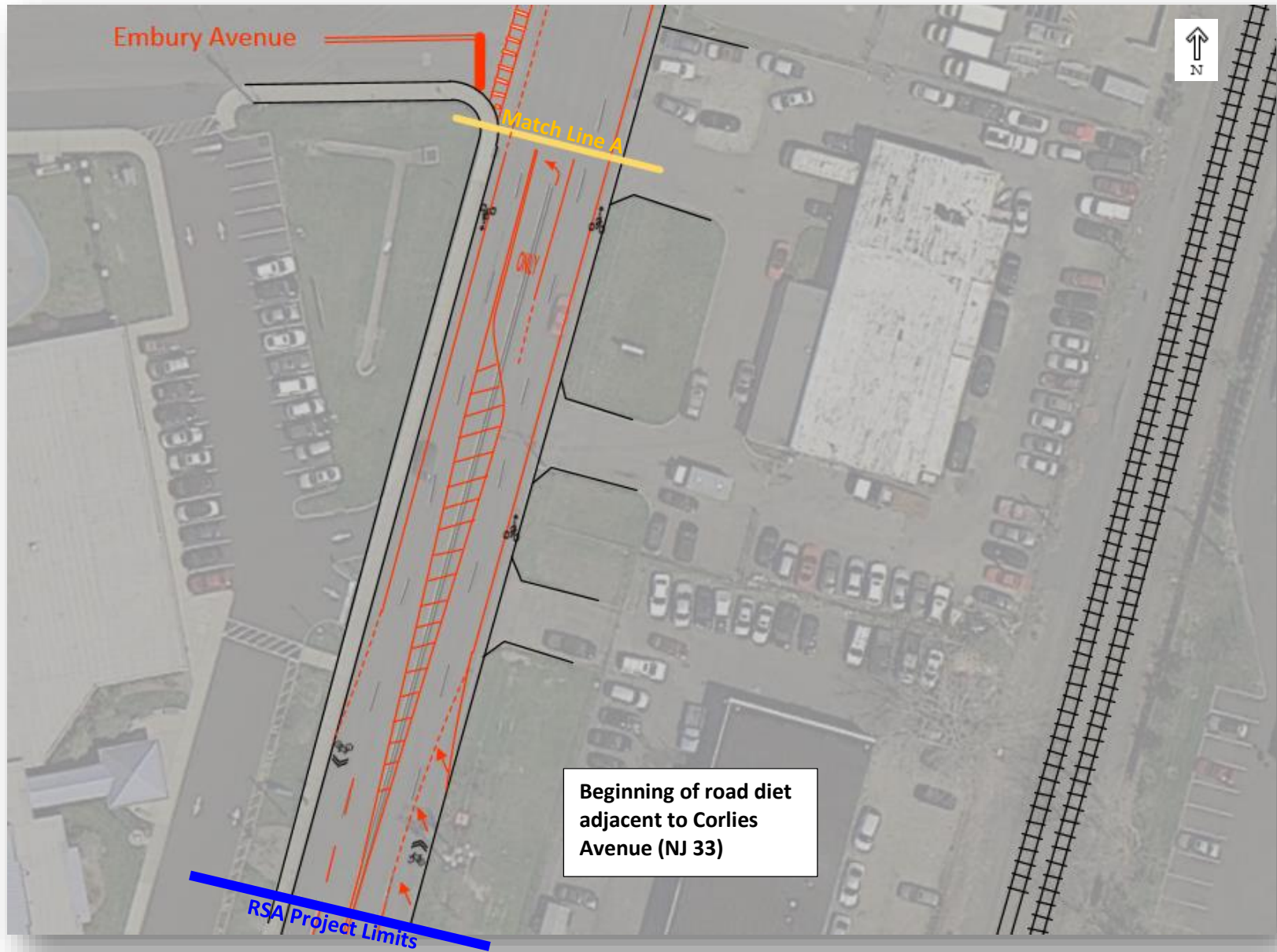
SRI = 1300040A

Date last inventoried: June 2000

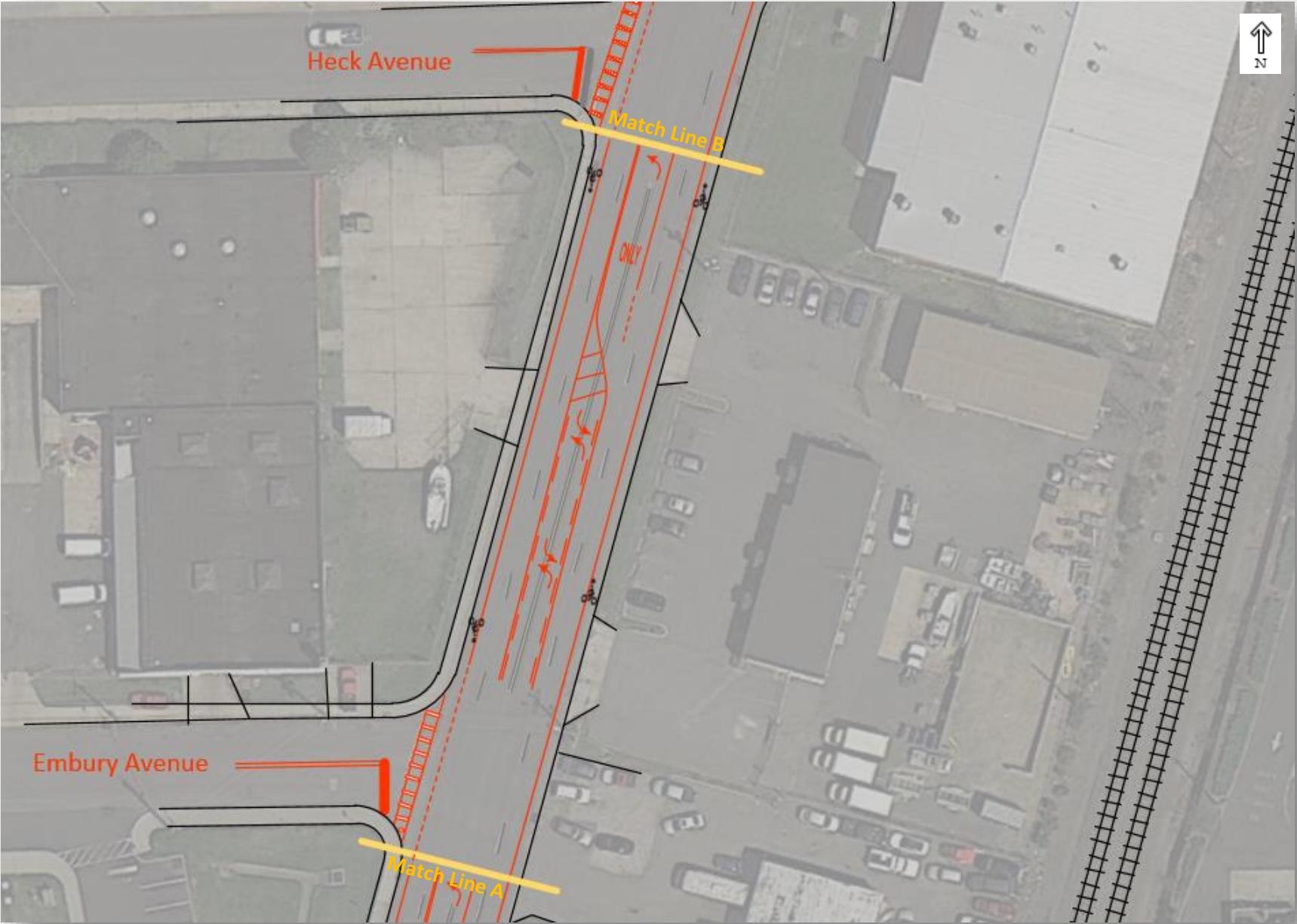
Appendix D – Concept Diagrams

Proposed Road Diet

Panel 1



Panel 2



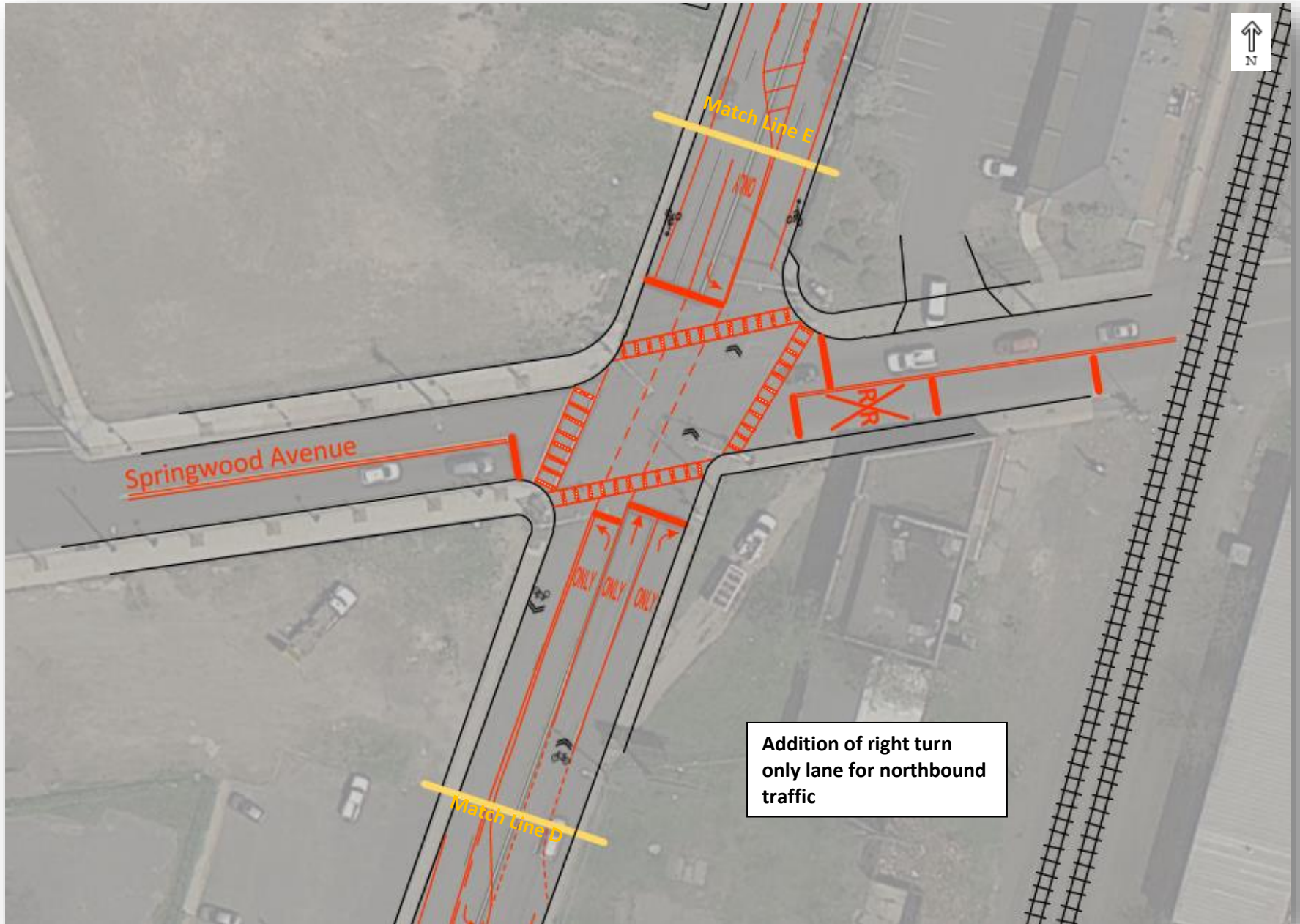
Panel 3



Panel 4



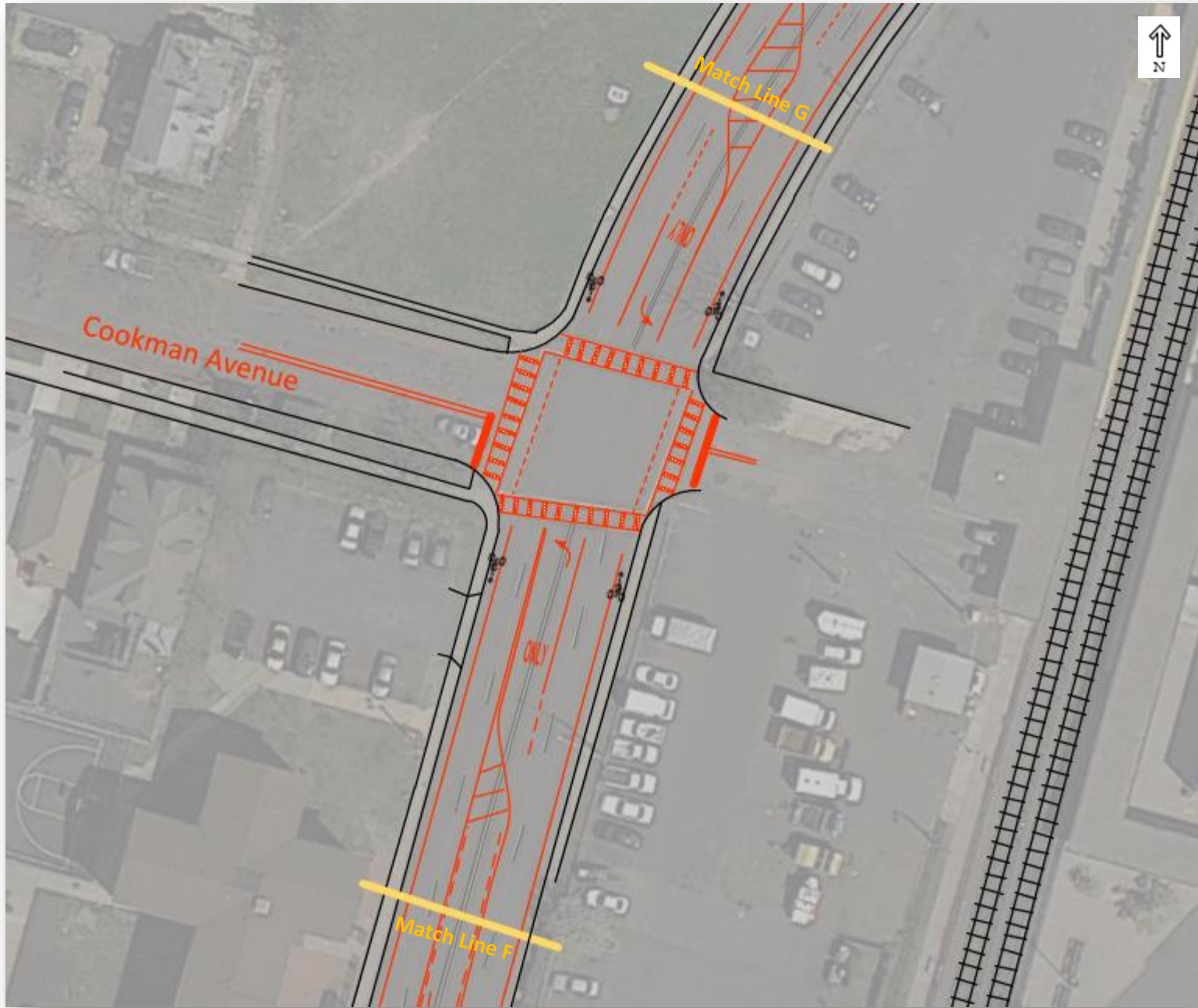
Panel 5



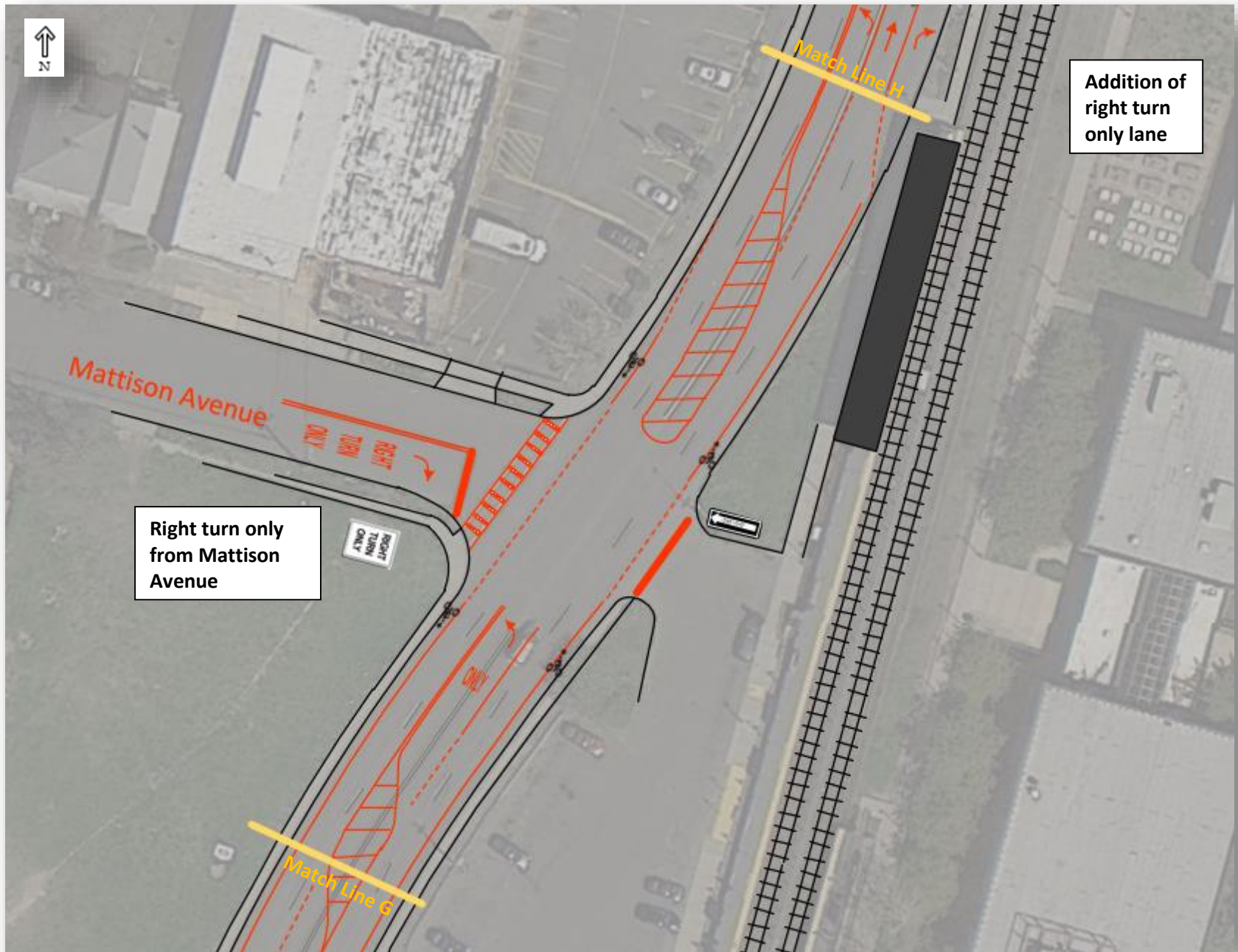
Panel 6



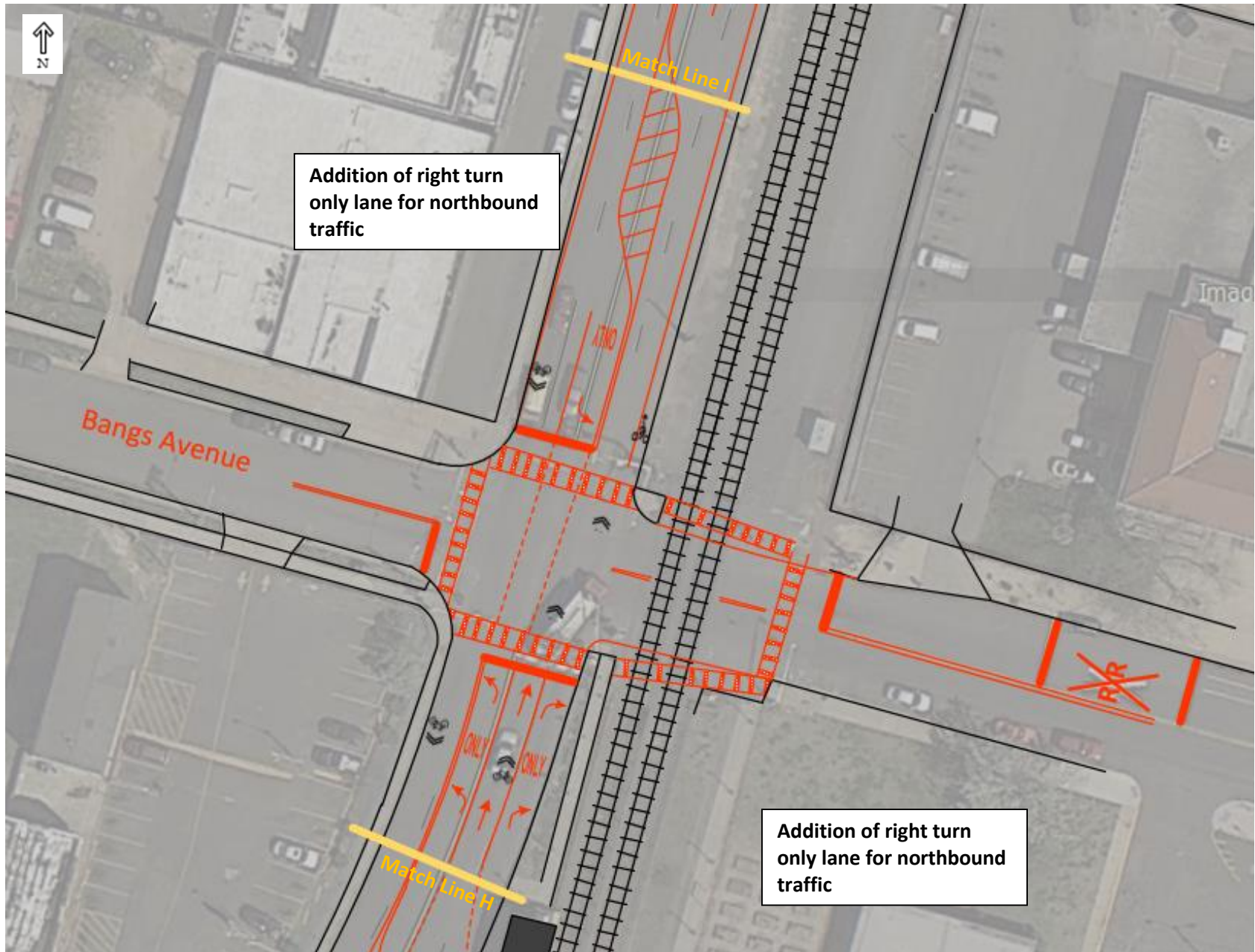
Panel 7



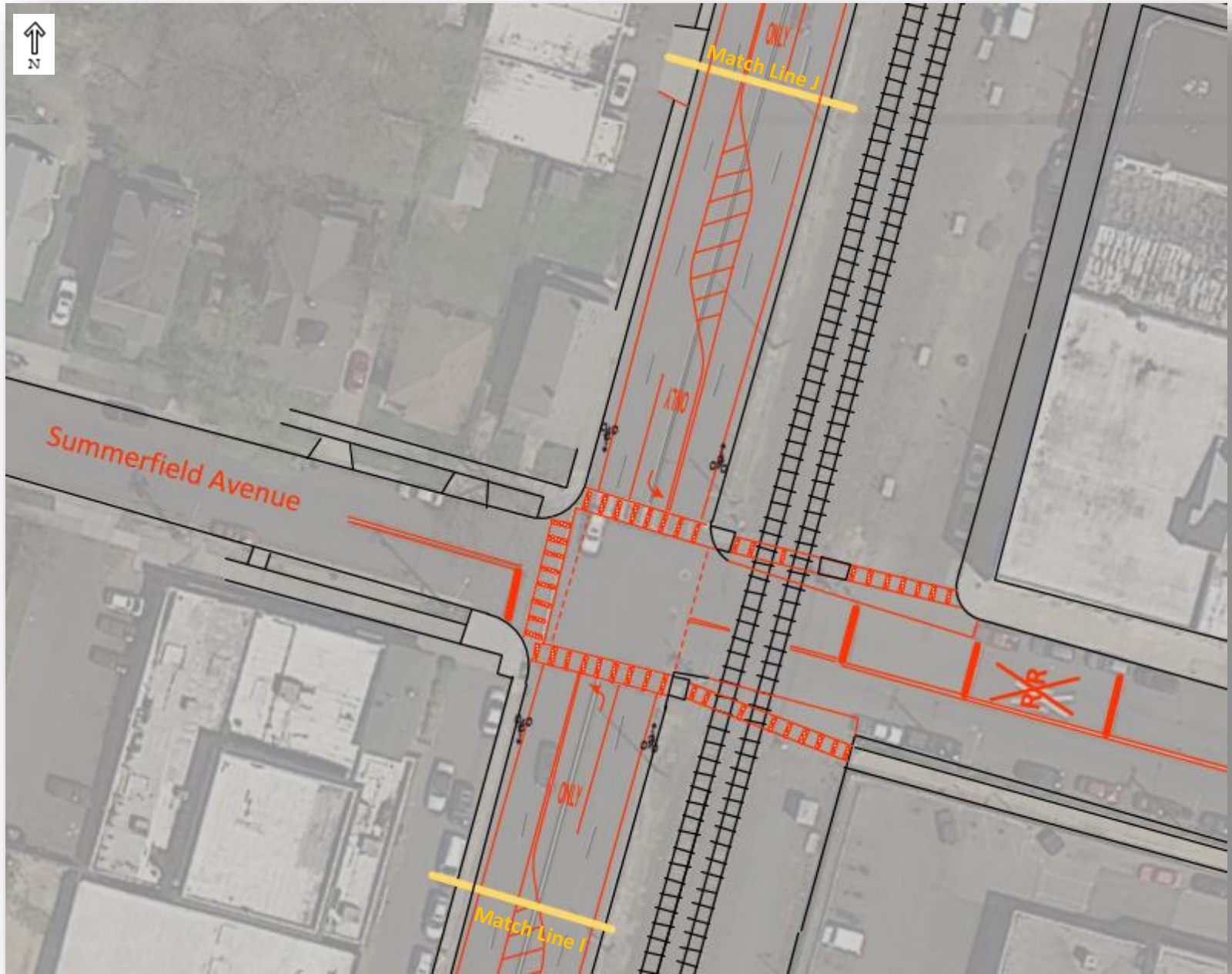
Panel 8



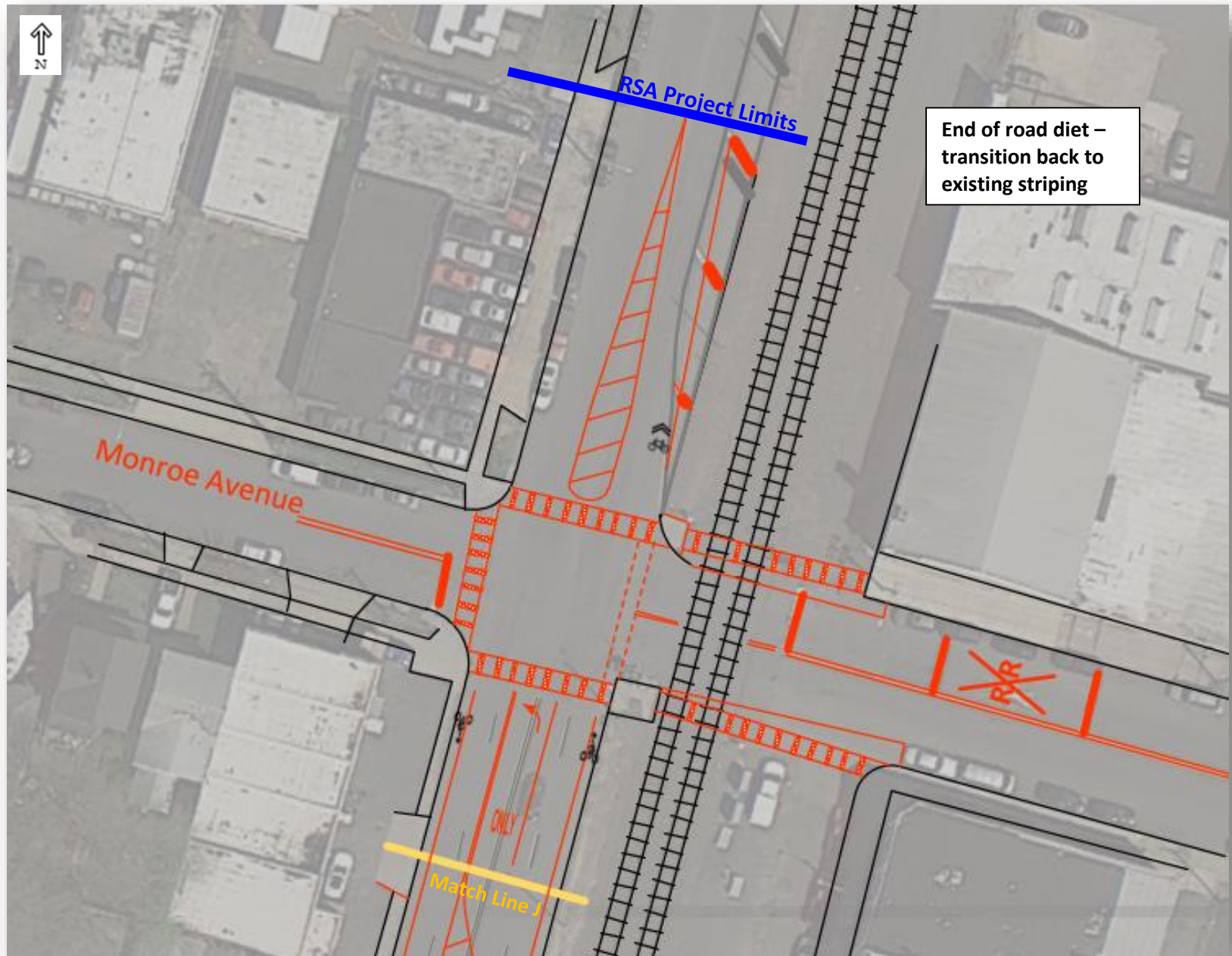
Panel 9



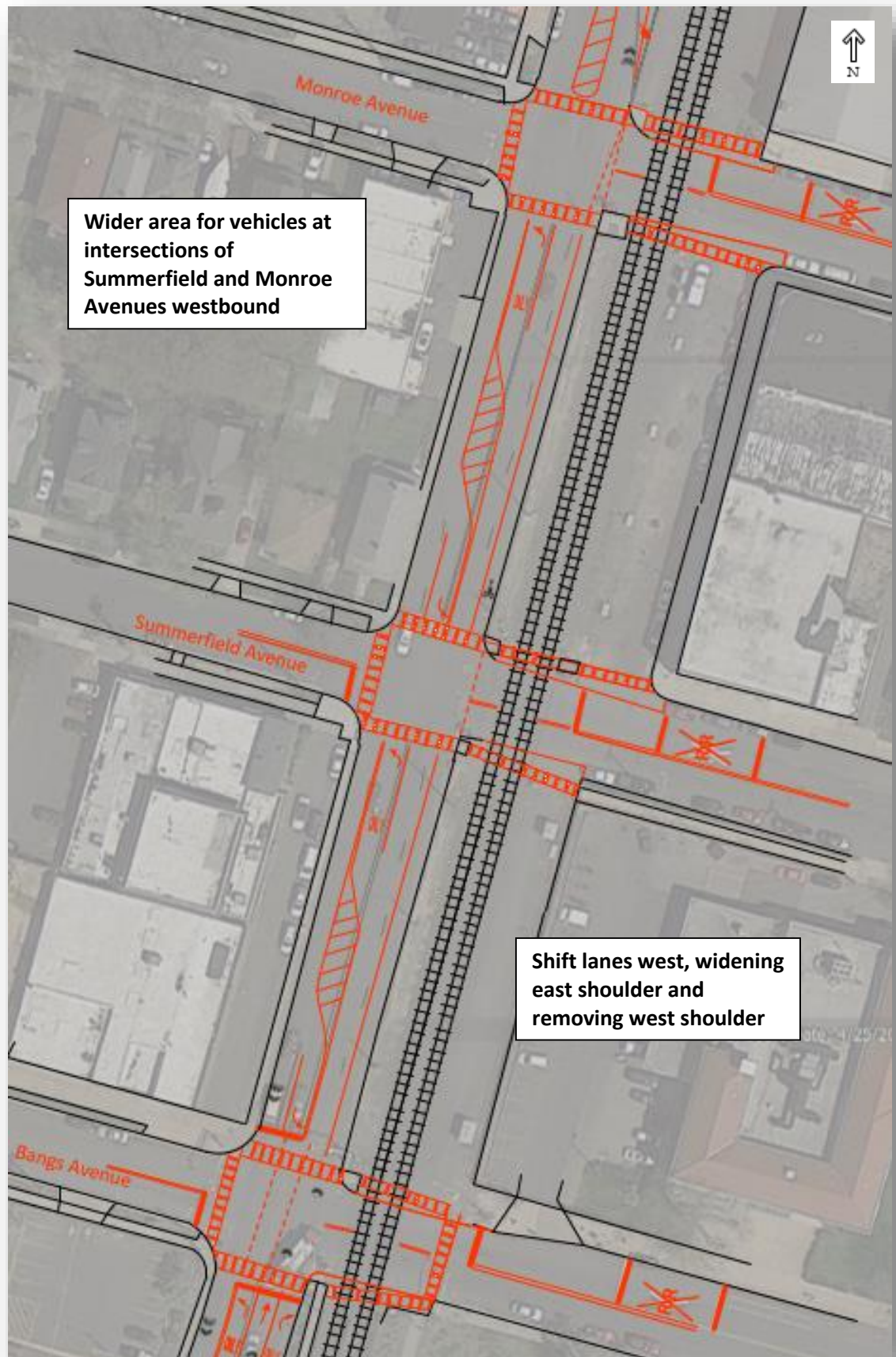
Panel 10



Panel 11



Alternative Striping for Memorial Drive at Monroe Avenue & Summerfield Avenue



Appendix E – Adjacent Traffic Volumes

Traffic Volumes Memorial Drive – CR 40A

County of Monmouth Division of Engineering

Hall of Records Annex
Freehold, NJ 07728

Location: CR 40A (Memorial Avenue)
At Fourth Avenue.
Municipality: Neptune City Borough
Counted By: Patrick T Barrett

File Name : CR 40 A (Memorial Avenue) At Fourth Avenue
Site Code : 40719011
Start Date : 7/19/2011
Page No : 1

Groups Printed- Passenger Cars - Single Unit Trucks - Heavy Vehicles

Start Time	CR 40A (Memorial Avenue) From North					Fourth Avenue From East					CR 40A (Memorial Avenue) From South					Fourth Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	2	70	2	1	75	8	6	3	0	17	1	65	5	0	71	1	1	1	1	4	167
07:15 AM	0	60	1	0	61	6	4	2	0	12	0	106	4	0	110	3	3	1	0	7	190
07:30 AM	3	73	2	0	78	10	8	2	0	20	2	102	6	0	110	1	3	1	0	5	213
07:45 AM	5	104	0	0	109	4	17	5	0	26	0	118	11	0	129	3	13	4	1	21	285
Total	10	307	5	1	323	28	35	12	0	75	3	391	26	0	420	8	20	7	2	37	855
08:00 AM	3	86	3	0	92	3	8	8	0	19	2	119	2	0	123	3	4	0	0	7	241
08:15 AM	3	103	4	0	110	8	12	5	0	25	1	114	3	0	118	1	8	0	0	9	262
08:30 AM	2	91	1	0	94	9	10	3	0	22	1	107	9	0	117	5	8	3	0	16	249
08:45 AM	7	83	5	1	96	3	9	5	0	17	1	132	2	0	135	5	7	2	1	15	263
Total	15	363	13	1	392	23	39	21	0	83	5	472	16	0	493	14	27	5	1	47	1015
**** BREAK ****																					
11:00 AM	1	83	2	0	86	8	14	3	1	26	1	96	7	4	108	2	7	2	0	11	231
11:15 AM	6	97	5	0	108	4	20	3	0	27	2	85	7	0	94	2	8	3	0	13	242
11:30 AM	6	90	3	0	99	4	9	4	0	17	4	96	9	0	109	2	8	3	0	13	238
11:45 AM	4	84	0	0	88	9	13	10	0	32	2	110	9	0	121	3	14	2	0	19	260
Total	17	354	10	0	381	25	56	20	1	102	9	387	32	4	432	9	37	10	0	56	971
12:00 PM	10	96	4	1	111	3	11	5	0	19	0	119	4	0	123	1	18	2	0	21	274
12:15 PM	8	104	2	1	115	3	13	2	0	18	0	89	5	0	94	5	12	1	0	18	245
12:30 PM	7	73	9	0	89	4	12	3	2	21	3	107	10	0	120	0	9	4	1	14	244
12:45 PM	6	102	5	1	114	4	10	6	0	20	0	91	12	0	103	3	17	2	0	22	259
Total	31	375	20	3	429	14	46	16	2	78	3	406	31	0	440	9	56	9	1	75	1022
01:00 PM	4	97	4	3	108	3	7	3	1	14	2	91	16	0	109	4	11	3	1	19	250
01:15 PM	5	98	2	0	105	16	11	5	0	32	0	96	2	0	98	5	12	3	1	21	256
01:30 PM	7	100	2	3	112	6	12	3	3	24	1	94	6	0	101	1	20	0	0	21	258
01:45 PM	6	110	5	1	122	6	12	4	0	22	1	89	3	0	93	4	16	1	0	21	258
Total	22	405	13	7	447	31	42	15	4	92	4	370	27	0	401	14	59	7	2	82	1022
**** BREAK ****																					
04:00 PM	4	174	10	2	190	2	12	6	0	20	5	104	11	0	120	4	21	1	1	27	357
04:15 PM	10	127	3	0	140	3	8	10	0	21	3	135	5	0	143	4	12	4	1	21	325
04:30 PM	2	158	2	0	162	11	15	8	0	34	4	115	10	0	129	3	15	3	2	23	348
04:45 PM	5	130	1	4	140	9	16	3	5	33	2	101	6	0	109	4	18	4	2	28	310
Total	21	589	16	6	632	25	51	27	5	108	14	455	32	0	501	15	66	12	6	99	1340
05:00 PM	5	146	5	1	157	7	16	3	0	26	2	95	10	0	107	4	11	3	3	21	311
05:15 PM	8	115	6	1	130	8	6	5	0	19	1	124	12	0	137	3	18	4	0	25	311
05:30 PM	8	123	10	0	141	13	20	5	0	38	2	121	13	3	139	6	16	2	0	24	342
05:45 PM	7	108	3	0	118	4	10	4	0	18	0	99	7	0	106	1	9	5	2	17	259
Total	28	492	24	2	546	32	52	17	0	101	5	439	42	3	489	14	54	14	5	87	1223
06:00 PM	5	102	5	2	114	8	13	4	1	26	2	90	10	1	103	2	13	2	0	17	260
06:15 PM	12	98	3	4	117	4	14	4	1	23	2	147	12	0	161	2	12	2	1	17	318
06:30 PM	3	99	2	1	105	6	10	4	0	20	2	102	14	0	118	2	13	3	0	18	261
06:45 PM	7	84	4	0	95	8	8	1	0	17	1	109	7	1	118	4	18	1	2	25	255
Total	27	383	14	7	431	26	45	13	2	86	7	448	43	2	500	10	56	8	3	77	1094
Grand Total	171	3268	115	27	3581	204	366	141	14	725	50	3368	249	9	3676	93	375	72	20	560	8542
Apprch %	4.8	91.3	3.2	0.8		28.1	50.5	19.4	1.9		1.4	91.6	6.8	0.2		16.6	67	12.9	3.6		
Total %	2	38.3	1.3	0.3	41.9	2.4	4.3	1.7	0.2	8.5	0.6	39.4	2.9	0.1	43	1.1	4.4	0.8	0.2	6.6	
Passenger Cars	¹⁶⁹ 3155	107	27	3458	199	360	135	14	708	46	3249	244	9	3548	90	363	68	20	541	8255	
% Passenger Cars	98.8	96.5	93	100	96.6	97.5	98.4	95.7	100	97.7	92	96.5	98	100	96.5	96.8	96.8	94.4	100	96.6	96.6
Single Unit Trucks	2	69	4	0	75	4	6	4	0	14	4	64	2	0	70	3	8	1	0	12	171
% Single Unit Trucks	1.2	2.1	3.5	0	2.1	2	1.6	2.8	0	1.9	8	1.9	0.8	0	1.9	3.2	2.1	1.4	0	2.1	2
Heavy Vehicles	0	44	4	0	48	1	0	2	0	3	0	55	3	0	58	0	4	3	0	7	116
% Heavy Vehicles	0	1.3	3.5	0	1.3	0.5	0	1.4	0	0.4	0	1.6	1.2	0	1.6	0	1.1	4.2	0	1.2	1.4

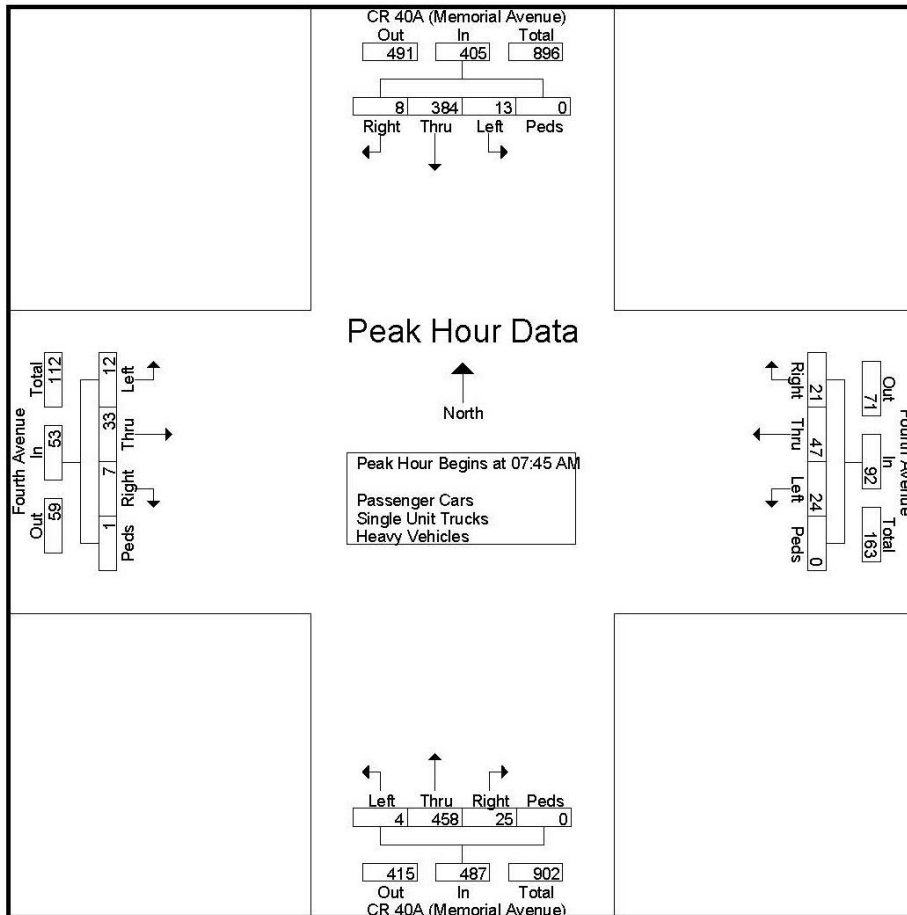
County of Monmouth Division of Engineering

Hall of Records Annex
Freehold, NJ 07728

Location: CR 40A (Memorial Avenue)
At Fourth Avenue.
Municipality: Neptune City Borough
Counted By: Patrick T Barrett

File Name : CR 40 A (Memorial Avenue) At Fourth Avenue
Site Code : 40719011
Start Date : 7/19/2011
Page No : 2

Start Time	CR 40A (Memorial Avenue) From North					Fourth Avenue From East					CR 40A (Memorial Avenue) From South					Fourth Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	5	104	0	0	109	4	17	5	0	26	0	118	11	0	129	3	13	4	1	21	285
08:00 AM	3	86	3	0	92	3	8	8	0	19	2	119	2	0	123	3	4	0	0	7	241
08:15 AM	3	103	4	0	110	8	12	5	0	25	1	114	3	0	118	1	8	0	0	9	262
08:30 AM	2	91	1	0	94	9	10	3	0	22	1	107	9	0	117	5	8	3	0	16	249
Total Volume	13	384	8	0	405	24	47	21	0	92	4	458	25	0	487	12	33	7	1	53	1037
% App. Total	3.2	94.8	2	0		26.1	51.1	22.8	0		0.8	94	5.1	0		22.6	62.3	13.2	1.9		
PHF	.650	.923	.500	.000	.920	.667	.691	.656	.000	.885	.500	.962	.568	.000	.944	.600	.635	.438	.250	.631	.910



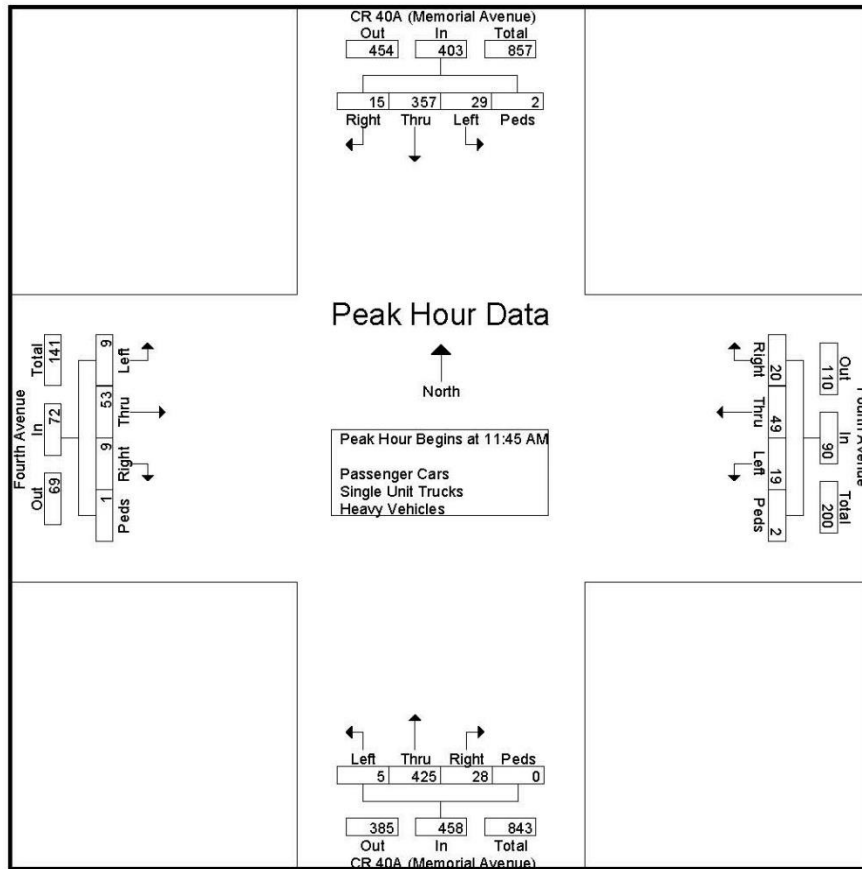
County of Monmouth Division of Engineering

Hall of Records Annex
Freehold, NJ 07728

Location: CR 40A (Memorial Avenue)
At Fourth Avenue.
Municipality: Neptune City Borough
Counted By: Patrick T Barrett

File Name : CR 40 A (Memorial Avenue) At Fourth Avenue
Site Code : 40719011
Start Date : 7/19/2011
Page No : 3

Start Time	CR 40A (Memorial Avenue) From North					Fourth Avenue From East					CR 40A (Memorial Avenue) From South					Fourth Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	4	84	0	0	88	9	13	10	0	32	2	110	9	0	121	3	14	2	0	19	260
12:00 PM	10	96	4	1	111	3	11	5	0	19	0	119	4	0	123	1	18	2	0	21	274
12:15 PM	8	104	2	1	115	3	13	2	0	18	0	89	5	0	94	5	12	1	0	18	245
12:30 PM	7	73	9	0	89	4	12	3	2	21	3	107	10	0	120	0	9	4	1	14	244
Total Volume	29	357	15	2	403	19	49	20	2	90	5	425	28	0	458	9	53	9	1	72	1023
% App. Total	7.2	88.6	3.7	0.5		21.1	54.4	22.2	2.2		1.1	92.8	6.1	0		12.5	73.6	12.5	1.4		
PHF	.725	.858	.417	.500	.876	.528	.942	.500	.250	.703	.417	.893	.700	.000	.931	.450	.736	.563	.250	.857	.933



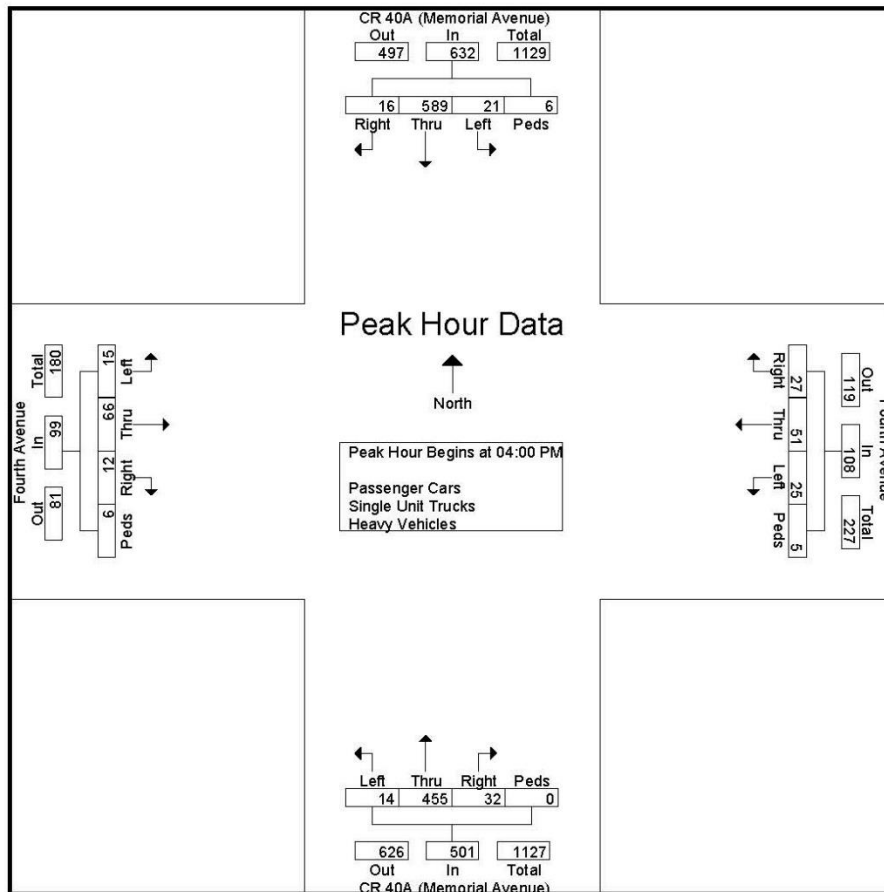
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Location: CR 40A (Memorial Avenue)
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File Name : CR 40 A (Memorial Avenue) At Fourth Avenue
Site Code : 40719011
Start Date : 7/19/2011
Page No : 4

Start Time	CR 40A (Memorial Avenue) From North					Fourth Avenue From East					CR 40A (Memorial Avenue) From South					Fourth Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	4	174	10	2	190	2	12	6	0	20	5	104	11	0	120	4	21	1	1	27	357
04:15 PM	10	127	3	0	140	3	8	10	0	21	3	135	5	0	143	4	12	4	1	21	325
04:30 PM	2	158	2	0	162	11	15	8	0	34	4	115	10	0	129	3	15	3	2	23	348
04:45 PM	5	130	1	4	140	9	16	3	5	33	2	101	6	0	109	4	18	4	2	28	310
Total Volume	21	589	16	6	632	25	51	27	5	108	14	455	32	0	501	15	66	12	6	99	1340
% App. Total	3.3	93.2	2.5	0.9		23.1	47.2	25	4.6		2.8	90.8	6.4	0		15.2	66.7	12.1	6.1		
PHF	.525	.846	.400	.375	.832	.568	.797	.675	.250	.794	.700	.843	.727	.000	.876	.938	.786	.750	.750	.884	.938



Appendix F – Potential Funding Sources

Potential Funding Sources

In this economy, budget constraints may hamper the implementation of some of these recommendations. Finding alternative funding sources is critical to ensuring the investment in the safety of the intersections' users.

Local Funding Sources:

Roadway Owner's Maintenance and Operation Budget:

Existing funds from local and county sources, as appropriate, which are allocated for investment in maintenance and operational activity, can be used to implement the above suggestions. Many of the above countermeasures may be eligible for the appropriate use of these existing funds. The manager of these funds who understands the full budget picture should be consulted.

State Funding Sources:

LOCAL AID

Contact:

NJDOT Local Aid District 3 (Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset)
District 3, Bureau of Local Aid
PO Box 600
Trenton, NJ 08625-0600
Phone: 732-625-4290
Fax: 732-625-4292

MUNICIPAL AID/URBAN AID PROGRAM (NJDOT Local Aid):

<http://www.state.nj.us/transportation/business/localaid/municipaid.shtm>

This program has been a significant resource for municipalities in funding local transportation projects. All municipalities are eligible. The department continues to encourage municipalities to consider using the Municipal Aid Program to fund projects such as resurfacing, rehabilitation, or reconstruction and signalization.

LOCAL AID INFRASTRUCTURE FUND (Discretionary Aid):

<http://www.state.nj.us/transportation/business/localaid/descrfunding.shtm>

Subject to funding appropriation, a discretionary fund is established to address emergencies and regional needs throughout the state. Any county or municipality may apply at any time. These projects are approved at the discretion of the commissioner. Payment of project costs is the same as the Municipal Aid Program. Under this program a county or municipality may also apply for funding for local pedestrian safety and bikeway projects.

SAFE STREETS TO TRANSIT:

<http://www.state.nj.us/transportation/business/localaid/safe.shtm>

This program provides funding to counties and municipalities in improving access to transit facilities and all modes of public transportation. The objectives of the SSTT program are:

- To improve the overall safety and accessibility for mass transit riders walking to transit facilities.
- To encourage mass transit users to walk to transit stations.
- To facilitate the implementation of projects and activities that will improve safety in the vicinity of transit facilities (approximately one-half mile for pedestrian improvements).

BIKEWAY:

<http://www.state.nj.us/transportation/business/localaid/bikewaysf.shtm>

The NJDOT Bikeway Grant Program provides funds to counties and municipalities to promote bicycling as an alternate mode of transportation in New Jersey. A primary objective of the Bikeway Grant Program is to support the state's goal of constructing 1,000 new miles of dedicated bike paths. This program is available to every municipality and county throughout New Jersey.

TRANSIT VILLAGES:

<http://www.state.nj.us/transportation/business/localaid/transitvillagef.shtm>

The Transit Village Grant Program is designed to assist municipalities who have been formally designated as Transit Villages. These are municipalities which have made a commitment to grow in the area surrounding a transit facility. The facility can service commuter rail, bus, ferry, or light rail. It funds projects within a half mile radius of major transit facilities.

NEW JERSEY DEPARTMENT OF COMMUNITY AFFAIRS**MAIN STREET NEW JERSEY**

<http://www.nj.gov/dca/divisions/dhcr/offices/msnj.html>

Main Street New Jersey provides selected communities with technical assistance and training of proven value in revitalizing historic downtowns. The program helps municipalities improve the economy, appearance and image of their central business districts through the organization of local citizens and resources.

Contact:

Main Street New Jersey
NJ Department of Community Affairs - Office of Smart Growth
P.O. Box 204
Trenton, NJ 08625-0204
Jef Buehler
Phone: 609-633-9769
Email: jef.buehler@dca.state.nj.us

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

<http://www.nj.gov/dca/divisions/dhcr/offices/cdbg.html>

The Community Development Block Grant provides funds for economic development, housing rehabilitation, community revitalization, and public facilities designated to benefit people of low- and moderate-income, or prevent or eliminate slums and blight, or to address recent local needs for which no other source of funding is available.

Contact:

New Jersey Department of Community Affairs
101 South Broad Street
PO Box 811, 5TH Floor
Trenton, NJ 08625-0800
Terry Schrider
Phone: 609-633-6283
Email: terence.schrider@dca.state.nj.us

Federal Funding Sources – via NJDOT Office of Local Aid:

Contact (see details under State Funding section):

NJDOT Local Aid District 3 (Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset)

SAFE ROUTES TO SCHOOLS (SRTS):

<http://www.state.nj.us/transportation/business/localaid/srts.shtm>

The Safe Routes to Schools Program (SRTS) is a federally funded program and is administered by the State Departments of Transportation. This program provides funds to substantially improve the ability of primary and middle school students to walk and bicycle to school safely.

The purposes of the program are:

- to enable and encourage children, including those with disabilities, to walk and bicycle to school;

- to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age;
- to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately two miles) of primary and middle schools (grades K through 8).

The program establishes two distinct types of funding opportunities: infrastructure projects (the planning, design, and construction of engineering improvements) and non-infrastructure related activities (such as education, enforcement, and encouragement programs).

Contact:

Elise M Bremer-Nei
 Supervising Planner Transportation, NJDOT
 Statewide Planning
 Phone: 609-530-2765
 Email: Elise.Bremer-Nei@dot.state.nj.us

via North Jersey Transportation Planning Authority (NJTPA):

Contact:

North Jersey Transportation Planning Authority
 One Newark Center, 17th Floor
 Newark, NJ 07102
 Phone: 973-639-8400
 Fax: 973-639-1953

LOCAL SAFETY PROGRAM:

http://www.njtpa.org/Project/Devel/local_safety/default.aspx

The federally funded Local Safety Program (LSP) is a component of wider safety planning at the NJTPA, supporting construction of quick-fix, high-impact safety improvements on county and local roadway facilities in the NJTPA region. Projects supported by this program include new and upgraded traffic signals, signage, pedestrian indications, crosswalks, curb ramps, pavement markings, and other improvements to increase the safety of drivers, bicyclists, and pedestrians.

The Local Safety Program:

- typically addresses NJTPA and/or NJDOT derived high priority crash locations on county or local roadways;
- supports quick-fix projects, backed with detailed crash data, with minimal or no environmental or cultural resource impacts (eligible for programmatic categorical exclusion from FHWA);
- funds the construction phase of work only—planning, design, and right-of-way acquisition are the responsibility of the sponsor.

LOCAL CMAQ MOBILITY INITIATIVES:

<http://www.njtpa.org/Project/Mobility/Default.aspx>

The NJTPA has established the CMAQ Local Mobility Initiatives Program to promote a variety of initiatives to lessen the level of pollutants and greenhouse gases generated through the use of fossil fuels including ridesharing, transit usage, travel demand management, and traffic mitigation projects. Proposals must implement strategies and policies in the Regional Transportation Plan, Plan 2040.

THE HIGH RISK RURAL ROADS PROGRAM

http://www.njtpa.org/Project/Devel/local_safety/default.aspx

High Risk Rural Roads Program (HRRRP) provides federal funds for construction improvements to address safety problems only on roadways that are functionally classified as rural major collector, rural minor collector, or rural local roads **and** have a crash rate that exceeds the statewide average for those functional classes of roadways. Projects supported by this program have included skid-resistant surface treatments, guiderails, reflective pavement markings, rumbles strips and rumble stripes, safety edge, enhanced and advanced warning signs.

This program funds the construction phase of work only, and therefore planning, design and right-of-way acquisition are the responsibility of the sponsor.

LOCAL CONCEPT DEVELOPMENT PHASE of the LOCAL CAPITAL PROJECT DELIVERY PROGRAM

http://www.njtpa.org/Project/Devel/local_capital_program/local_concept/default.aspx

The Local Capital Project Delivery Program (LCPD) provides federal funding for priority local projects. The LCD Phase involves drafting a well-defined and well-justified Purpose and Need Statement focusing on the primary transportation need to be addressed. The LCD Phase elements include, but are not limited to: data collection, coordination, development of a reasonable number of prudent and feasible conceptual alternatives and investigation of all aspects of a project: environmental, right-of-way (ROW), access, utilities, design, community involvement, constructability, etc. at a “planning level of effort”, and addressing requirements of the NJTPA congestion management process (CMP).

SUBREGIONAL STUDIES PROGRAM

http://www.njtpa.org/Plan/Subregion/subregional_studies/default.aspx

This is a competitive program that provides two-year grants to individual subregions or subregional teams. The program is designed to assist subregions in refining and developing transportation improvement strategies rooted in the NJTPA’s Regional Transportation Plan (RTP). Ultimately, the program aims to generate project concepts ready for further development or implementation consistent with the RTP and/or other transportation planning activities in the region.

TRANSPORTATION ALTERNATIVES PROGRAM

This is new under MAP-21 and is currently under development at the NJDOT.

<http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm>

The Transportation Alternatives Program (TAP) provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for the planning, design, or construction of boulevards and other roadways largely in the right-of-way of former interstate system routes or other divided highways.

Federal Funding Sources – Division of Highway Traffic Safety:

<http://www.nj.gov/oag/hts/grants/index.html>

The NJ Division of Highway Traffic Safety offers, on an annual basis, federal grant funding to agencies that wish to undertake programs designed to reduce motor vehicle crashes, injuries, and fatalities on the roads of New Jersey. Municipal, county, state government and law enforcement agencies, as well as nonprofit organizations, are encouraged to apply for NJDHTS grant funding to address specific, local traffic safety issues.

Contact:

Ed O'Connor, Central Region Supervisor
(Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset, Union)

609-633-9048

Edward.O'Connor@lps.state.nj.us

Appendix G – RSA Team

RSA Team

The RSA team consisted of 18 members, including police officers, engineers, and planners from different agencies across the state.

Name	Agency	Email
Robert Bianchini	Director of Public Works Asbury Park	robert.bianchini@cityofasburypark.com
Anthony Butler	Asbury Park Police Department	anthony.butler@cityofasburypark.com
Kevin Conover	NJDOT	kevin.conover@dot.state.nj.us
Anthony Gamallo	Monmouth Co Engineering Division	Anthony.Gamallo@co.monmouth.nj.us
Leanne Hoffmann	Neptune Township	lhoffmann@neptunetownship.org
Daria Jakimowska	Monmouth Co Engineering Division	Daria.Jakimowska@co.monmouth.nj.us
Aimee Jefferson	Rutgers - Transportation Safety Resource Center	aimee.jefferson@rutgers.edu
Andy Kaplan	Rutgers - Transportation Safety Resource Center	akaplan1@rutgers.edu
Sally Karasov	Rutgers - Transportation Safety Resource Center	sally.karasov@rutgers.edu
Dave Maruca	NJ LTAP - CAIT	dem200@rci.rutgers.edu
Christine Mittman	NJTPA	cmittman@njtpa.org
Ed O'Connor	New Jersey Division of Highway Traffic Safety	Edward.O'Connor@lps.state.nj.us
Fred Passeggio	Monmouth Co Engineering Division	Fred.Passeggio@co.monmouth.nj.us
William Riviere	Office of Bicycle & Pedestrian Programs-NJDOT	william.riviere@dot.state.nj.us
Christopher Rodriguez	Meadowlink	crodriguez@ezride.org
Donald B. Sammet	Planning & Redevelopment Asbury Park	donald.sammet@cityofasburypark.com
Wendy Smith	District 3, Bureau of Local Aid NJDOT	wendy.smith@dot.state.nj.us
Paul Zawadzki	Monmouth Co Engineering Division	paul.zawadzki@co.monmouth.nj.us

Appendix H – LSP Application

The Board of Chosen Freeholders
of the County of Monmouth

DEPARTMENT OF PUBLIC WORKS & ENGINEERING

JOHN W. TOBIA

Director of Public Works & Engineering
Email: jwtobia@co.monmouth.nj.us



JOSEPH M. ETTORE

County Engineer
Email: engineer@co.monmouth.nj.us

**DIVISION OF ENGINEERING
& TRAFFIC SAFETY**

Hall of Records Annex
Freehold, New Jersey 07728
Telephone: (732) 431-7760
Fax: (732) 431-7765

May 15, 2013

Ms. Christine Mittman
NJTPA Local Safety Program /
High Risk Rural Roads Program
North Jersey Transportation Planning Authority
1 Newark Center, 17th Floor
Newark, NJ 07102

Re: NJTPA FY 2014 Local Safety Program
for CR 40A (Memorial Drive) Road Diet
between SH 33 and Munroe Avenue, in
the City of Asbury Park and Township of
Neptune
Sponsor: Monmouth County

Dear Ms. Mittman:

Enclosed please find Monmouth County's application for construction funding under NJTPA's FY 2014 Local Safety Program for safety improvements along CR 40A (Memorial Drive) Road Diet between SH 33 and Munroe Avenue, in the City of Asbury Park and Township of Neptune, Monmouth County.

Kindly note that, a PDF version of the above project application has been emailed to you at cmittman@njtpa.org.

This application is for a project being advanced by the County of Monmouth. The design of improvements is being performed by the County's in-house staff. The project include conversion of the existing four(4) lane county roadway to three (3) lane roadway with (two) 2 shoulders. The proposed improvements will include resurfacing, new striping and new signage to accommodate the road diet in order to provide traffic calming, separation of turning vehicles from the through traffic and selected pedestrian safety improvements in order to reduce the number and severity of right angle and same direction rear-end vehicle crashes which occur along this corridor.

To: C. Mittman
Re: NJTPA FY 2014

May 15, 2013
Page 2

We trust that we have included all the required supporting documentation with our application; however, please do not hesitate to contact Daria Jakimowska, P.E. Chief Engineer, Traffic Design at (732) 431-7760 ext. 7768 or via email at Daria.Jakimowska@co.monmouth.nj.us should you have any questions or require additional information.

Thank you for your consideration.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Joseph M. Ettore', with a long horizontal stroke extending to the right.

Joseph M. Ettore, P.E.
County Engineer

JME:mc

cc: John W. Tobia, Director, Public Works & Engineering
Ming Y. Kao, Assistant County Engineer
Daria Jakimowska, Chief Engineer, Traffic Design
Inkyung Englehart, Principal Engineer
Paul Zawadzki, Senior Engineer, Traffic

**NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY
LOCAL SAFETY AND HIGH RISK RURAL ROADS PROGRAMS
FY 2014 APPLICATION**

This is a combined application for the FY 2014 NJTPA Local Safety Program and High Risk Rural Roads Programs.

The **Local Safety (LS) Program** provides federal funding for construction of quick-fix safety improvements on county and local roadways. The **High Risk Rural Roads (HRRR) Program** provides federal funds for construction improvements to address safety problems and opportunities only on rural collector or rural local roads that meet program eligibility standards. See the Program Guidelines for more details on eligibility for both programs, including changes for the FY 2014 solicitation.

APPLICATION DEADLINE: Thursday, May 16, 2013 at 5 PM

SECTION 1: DESCRIPTION OF THE PROJECT

Project Name:	C.R. 40A (Memorial Drive) Road Diet
Project Location:	C.R. 40A (Memorial Drive) bet Munroe Avenue & SH 33
Route/Street Name:	C.R. 40A (Memorial Drive)
Mileposts <i>(required if eligible for High Risk Rural Roads Funding)</i> :	Milepost 0 to 0.6
Limits (Cross-streets):	Munroe Avenue and State Highway 33
County or Counties:	Monmouth County
Municipality(s):	City of Asbury Park, Township of Neptune

SECTION 2: SPONSORING AGENCY

Project Sponsor: *Municipalities* other than Jersey City or the City of Newark must complete SECTION 4 of this application and apply through their respective County. The County must be the sponsor of the application.

County of Monmouth

Project Manager's Name and Title:

Daria Jakimowska, P.E., Chief Engineer, Traffic Design
--

Agency and Agency Address:

Monmouth County Division of Engineering and Traffic Safety
Hall of Records Annex
1. E. Main Street
Freehold, NJ 07728

Telephone Number:

(732) 431-7760

Fax Number:

(732) 431-7765

E-Mail:

Daria.Jakimowska@co.monmouth.nj.us

Is the project eligible for High Risk Rural Roads Program funding (See **ATTACHMENT B**)?

Yes No

If submitting more than one proposal, what is the sponsor's priority of **this** proposal?
Priority # _____ of 2 proposals

SECTION 3: PROJECT ELIGIBILITY

Indicate if the project is located within the limits of the segments identified in either Attachments A or B:

	Identify Segment
Attachment A (NJTPA Crash Prone Locations 2008-2010)	Ranked #8
Attachment B (NJTPA HRRR Segments 2009-2011):	

If the project is not identified as a priority in Attachments A or B, please demonstrate one of the following and attach the supporting crash data:

- The proposed location meets NJDOT three-year crash criteria for one of eight crash types (**ATTACHMENT C**) or
- The proposed location meets NJTPA criteria for centerline crossover crashes (**ATTACHMENT D**)

If applicable, please provide a justification for selecting a project location that does not fall within the top 10 most severe locations as determined by EPDO ranking identified in **Attachment A or B**:

The selected corridor falls within a segment of Memorial Drive (Ranked #8 on Attachment A: Crash Prone Locations within the NJTPA Region 2008 -2010 Monmouth County) and is located in the City of Asbury Park and Township of Neptune, Monmouth County.

Provide a brief description of the proposed safety improvement. Be specific. Sponsors are urged to attach a crash diagram where relevant (see sample diagram in **ATTACHMENT G**):

The proposed safety improvements include conversion of an existing four lane cross section of the roadway to a three lane cross section via introduction of a "road diet" concept. The road diet along CR 40A corridor will provide one lane in each direction along with combination of dedicated left turn lanes, two-way left turn lanes, and shoulders along both sides. In fact, shoulders could be utilized as bike lanes to further separate bicycle traffic from vehicular traffic, currently there are no shoulders along CR 40A corridor. Other safety upgrades include high visibility crosswalks, warning and regulatory signage upgrades, roadway resurfacing to allow for new pavement marking installation and ADA compatible ramps at selected intersections along CR 40A corridor.

The key safety enhancements resulting from implementation of the road diet along CR 40A corridor will include lower vehicular operating speeds, reduced crash rates through separation of turning vehicles from through traffic via dedicated left turn lanes, improved pedestrian and bicyclist's safety.

A detailed crash data review has been performed utilizing Plan4Safety crash data analysis too, the spreadsheet summary is attached at the end of the application.

Explain the safety issue(s) at the specific location(s) in question and how this project will improve these safety conditions. Specify the different travel modes that will benefit. Cite quantifiable expected benefits, if available. *(For instance, a strong proposal for a dedicated left turn signal would document recent left turn crashes at the intersection in question and explain how the proposed improvement would reduce the number and/or severity of these types of crashes).*

County Route 40A (Memorial Drive) is one of the key north-south arteries in the City of Asbury Park, Neptune Township, specifically within the project limits; it runs parallel to State Highway 71. The posted speed limit along CR 40A within the project limits is 30mph; the roadway is classified as urban collector. The roadway carries total of four lanes of traffic, two lanes in each direction with no shoulders. The existing configuration presents the following operational safety concerns; vehicle shadowing one another creating safety concerns for cross traffic, numerous driveways and closely spaced intersections, poor compliance with the posted speed limit due to 4 lane cross section, lack of shoulders, lack of dedicated left turn lanes to separate turning vehicles from through traffic.

A review of the crash history shows that between January 2003 to December 2012 there were 292 crashes along the 0.6mi segment of CR 40A corridor. The majority of crashes were right angle type (115 crashes), followed by 50 same direction – rear end crashes, 39 same direction – side swipe crashes, 19 left turn crashes, and 13 opposite direction crashes. There were 8 crashes involving pedestrians and 5 crashes involving bicyclists. There were total of 198 injured and 1 fatality involving a pedestrian.

The intent of this project is to introduce a “Road Diet” concept which would reduce a number of traveling lanes from two in each direction to one lane in each direction with a shoulder and middle two way left turn lane, and dedicated left turn lanes at the intersections. A road diet has been identified by FHWA as one of the proven safety countermeasures which should greatly benefit this particular segment of CR40A. A reduction of lanes will not only benefit the vehicular traffic but it will also have a positive impact on the bicyclists and pedestrians traversing CR 40A.

SECTION 4: MUNICIPAL SPONSORS

Although municipalities in the NJTPA region are eligible to apply for LSP and HRRRP funding, there are some important restrictions to follow (please refer to guidelines).

All municipal sponsors (except the cities of Jersey City and Newark) must complete the section below in addition to all other sections of this application. As only NJTPA member subregions are eligible to submit applications directly, any municipal sponsor must submit their application through their respective county government.

Attach a staffing plan that the sponsor will utilize for implementing this proposal if funded. This plan should include a list of all project management and staffing roles (e.g., relevant municipal staff as well as consultant activities, if applicable) and resume of the project manager.

List other federal transportation programs the municipality has utilized in the past two years (e.g., Safe Routes to School) including project name, location & amount awarded

List other current federal grants being utilized by the municipality and amount awarded

SECTION 5: IMPLEMENTATION PLAN

Identify the jurisdiction(s) of the roadway (as well as sidewalks if applicable) within the project's limits. If jurisdiction changes (e.g., county to municipality) within the project's limits list each roadway section individually by milepost and cross streets, as well as the overall project limits.

CR 40A (Memorial Drive) is under the jurisdiction of Monmouth County. Intersection with State Highway 33 is under the jurisdiction of NJDOT. (Outside of project limits) Memorial Drive north of Munroe Avenue is under the jurisdiction of City of Asbury Park.

Total Amount Requested \$ 422,000 (Please attach line item cost estimate)

Will the funds requested cover all project costs? If not, list additional funding sources.

The requested funds will cover construction costs. Survey, engineering, and other miscellaneous work will be performed in-house.

Have the designs of the proposed improvement been certified and approved by the local engineer?

Yes

No

If yes, please attach certified designs.

If design plans for the proposed improvement have not been certified, please attach the preliminary design plans or a concept plan and identify the date by when you expect these design plans to be finalized.

A conceptual plans outlining typical sections of CR 40A corridor are attached at the end of the application (SEE "ROAD DIET CONCEPTUAL PLAN, CR 40A(MEMORIAL DRIVE), CITY OF ASBURY PARK AND TOWNSHIP OF NEPTUNE, DATED MAY 14, 2013). It is anticipated that the design plans will be finalized by April 2014.

Please list below all permits and approvals that may be required for this project. For each permit and approval, please identify whether it has been received or not. For those permits and approvals not received, please identify the date when it is expected be received.

No permits are anticipated for this project.

SECTION 6: ENVIRONMENTAL SCREENING

Please answer Yes or No to the following questions. A “List of Useful Websites for Environmental Screening” is included for your reference at the conclusion of this section. NO field testing or sampling of any kind is needed in order to answer the following questions.

ADDITIONAL PROJECT INFORMATION

YES

NO

- Is this project one of the activities that qualify for a Programmatic Categorical Exclusion in the NEPA process? (See **Attachment E** for list of these project types)

 X

If Yes, Project Type: Installation of signs, pavement markings, where no substantial land acquisition or traffic disruption will occur.

- Will right-of-way be acquired?
 - Acquisition
 - Easement

 X

- Will the project result in residential or business displacement?

 X

If yes, approximately how many?
 Residential Business

- Will public facilities, schools, churches, emergency services, be affected by the project? (If yes list in comment section)

 X

- Will new drainage facilities be installed/extended?

 X

- Will retention/detention basins be constructed?

 X

- Have any environmental studies (Cultural Resource, Hazardous Waste, Air, Noise, Soil borings studies etc.) been undertaken previously within or adjacent to the project area? (If yes list in comment section)

 X

- Is there any potential impact for federal and state rare, threatened or endangered species or their habitat within the project study area? (If yes list in comment section)

 X

- Describe the land use/ecology of the project study area.

<input type="checkbox"/> Urban	<input type="checkbox"/> Residential	<input type="checkbox"/> School
<input type="checkbox"/> Rural	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Forested
<input type="checkbox"/> Grassland/Field	<input type="checkbox"/> Coastal	<input type="checkbox"/> Open Waters (lake, stream, river)
- Are there any of the following in the project study area?

<input type="checkbox"/> Wetlands	<input type="checkbox"/> Floodplains	<input type="checkbox"/> Sole source Aquifers
<input type="checkbox"/> Stream crossings	<input type="checkbox"/> Vernal Pools	<input type="checkbox"/> Wildlife Habitat

CULTURAL RESOURCES

YES

NO

- Are there known buildings or structures listed on, or eligible for listing on, the NJ and/or National Registers of Historic Places in the project study area? (If yes list in comments section)

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Are any properties included in a local county/ municipal listing of historic properties? (If yes list in comment section)

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Is the project located in a known or potential Historic District(s)? (If yes list in comments section)

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Are there any 50+ year old buildings in the project area? (If yes list in comments section)

	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------
- Will the project impact a 50+ year old bridge or culvert? (If yes list in comment section)

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Will the project impact a 50+ year old railroad line? (If yes list in comment section)

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------

SECTION 4(f) PROPERTIES

YES

NO

- Will there be any use of land from the following (If yes list in comment section)

	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------
- Historic Sites

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Publicly owned Parkland

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Publicly owned recreation areas

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Publicly owned wildlife or waterfowl refuges

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------
- Federal Lands

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	-------------------------------------

HAZARDOUS WASTE

YES

NO

- Are there any known or suspected hazardous waste sites (underground storage tank (UST), landfills, known NJDEP Case, Environment Cleanup Responsibility Act (ECRA Case) within the project study area? _____ X _____

- Are there active or abandoned industries, service stations or repair shops within the project study area? _____ X _____

- Is there evidence of potential contamination (monitoring wells, stained soils, etc.)? _____ X _____

- Are railroads or railyards located in the project study area? _____ X _____

Please attach a USGS MAP showing the project location, limits, and all environmental parameters (e.g., wetlands, historic properties) relevant to your project, based on the checklist above. Please also include route/street names and mileposts. (NJDEP maps are acceptable; please refer to the “List of Useful Websites for Environmental Screening” in ATTACHMENT F for the website link to NJDEP GIS and NJDEP I-MapNJ.)

ADDITIONAL COMMENTS:

Attachments:
 (1) NJDOT STRAIGHT LINE DIAGRAM (CR40A)
 (2) CRASH DATA SPREADSHEET
 (3) ENGINEER’S ESTIMATE
 (4) USGS AERIAL MAP OF THE PROJECT
 (5) CONCEPTUAL PLANS

INSTRUCTIONS FOR SUBMITTING APPLICATION:

Submit seven (7) hard copies to:

NJTPA Local Safety Program/ High Risk Rural Roads Program
North Jersey Transportation Planning Authority
1 Newark Center, 17th floor
Newark, NJ 07102
Attention: Christine Mittman

Also, submit an electronic copy of the completed application via email to: cmittman@nitpa.org

Municipal Sponsors:

Submit seven (7) hard copies to your county government (planning or engineering department) for their submission to either program. *You may NOT apply directly to the NJTPA for these programs.*

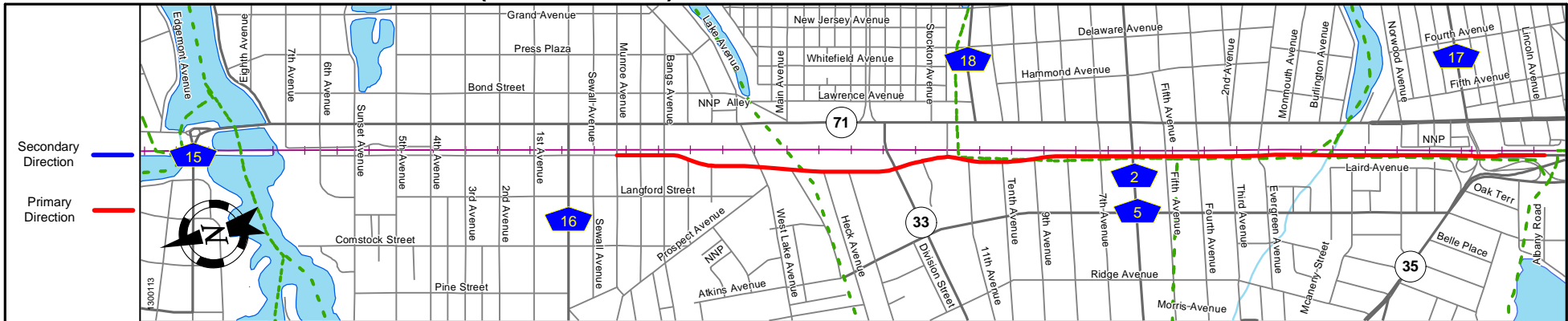
This application, program guidelines, and attachments are also available on the Local Safety Program & High Risk Rural Roads Program page of the *NJTPA Website* at:

http://www.njtpa.org/Project/Devel/local_safety/default.aspx

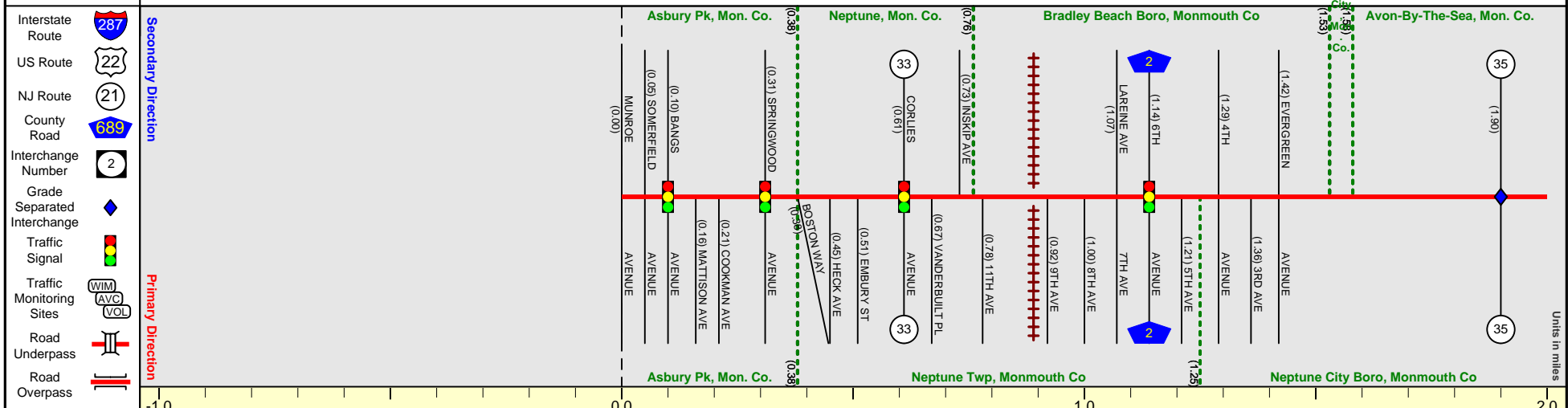
APPLICATION DEADLINE: Thursday, May 16, 2013 at 5 PM

MONMOUTH COUNTY 40 A (North to South)

Mile Posts: 0.000 - 2.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	
Jurisdiction	Municipal + County
Functional Class	Urban Collector
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	30 + 40 + 45
Number of Lanes	4
Med. Type	None
Med. Width	0
Pavement	45
Shoulder	0
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

SRI = 1300040A_

Date last inventoried: June 2000

CRASH DATE	CRASH TIME	CRASH TYPE	CROSS STREET NAME	DISTANCE TO CR	ENVIRON	EPDO	INTERSECTION	LIGHT CONDITION	MILEPOST	MPO	MUNICIPALITY	PEDESTRIANS INJURED	POSTED SPEED	ROAD CHARACTER	ROAD DIVIDE	ROAD SURF	ROAD SY	ROUTE	ROUTE	SEVERITY	SURFACE	TOTAL INCAPACITATED	TOTAL INJURED	TOTAL KILLED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
11/18/2010	5:40 PM	Right Angle	SPRINGWOOD AVE		Clear	PDO	At Intersection	Dark (Street Lights On/ continuous)	0.310	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
11/20/2010	4:26 AM	Right Angle	MONROE AVE		Clear	PDO	At Intersection	Dark (Street Lights On/ continuous)	0.000	NJTPA		0	30	Straight and Level	None	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
12/20/2010	12:17 PM	Encroachment	SPRINGWOOD AVE		Clear	PDO	At Intersection	Daylight	0.310	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
12/26/2010	11:05 AM	Right Angle	MONROE AVE		Snow	Moderate Injury	At Intersection	Daylight	0.000	NJTPA	Asbury Park city	0	30	Straight and Level	None	Blacktop	Municipal	A	40	Injury	Snowy	0	0	0	0	2
2/4/2011	3:52 PM	Right Angle	SPRINGWOOD AVE	50	Clear	Moderate Injury	Not At Intersection	Daylight	0.320	NJTPA	Asbury Park city	0	30	Straight and Level	NULL	Blacktop	County	A	40	Injury	Dry	0	10	0	0	2
2/10/2011	9:49 PM	Fixed Object	MONROE AVE	40	Clear	PDO	Not At Intersection	Dark (Street Lights On/ continuous)	0.010	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	1
2/12/2011	3:17 PM	Same Direction - Side Swipe	BANGS AVE		Clear	PDO	At Intersection	Daylight	0.100	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
5/19/2011	10:14 PM	Right Angle	MONROE AVE		Clear	PDO	At Intersection	Dark (Street Lights On/ continuous)	0.000	NJTPA		0	30	Straight and Grade	None	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
5/11/2011	7:30 AM	Encroachment	SPRINGWOOD AVE		Clear	PDO	At Intersection	Daylight	0.310	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
5/10/2011	8:46 AM	Same Direction - Side Swipe	EMBURY AVE		Clear	PDO	At Intersection	Daylight	0.510	NJTPA	Neptune township	0	30	Straight and Level	None	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
5/24/2011	11:34 AM	Encroachment	MONROE AVE		Clear	PDO	At Intersection	Daylight	0.000	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
6/7/2011	2:49 PM	Right Angle	SPRINGWOOD AVE		Clear	PDO	At Intersection	Daylight	0.310	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
6/4/2011	5:40 PM	Opposite Direction - Side Swipe	MONROE AVE		Clear	Moderate Injury	At Intersection	Daylight	0.000	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Injury	Dry	0	20	0	0	3
6/19/2011	6:56 PM	Right Angle	MONROE AVE		Clear	Moderate Injury	At Intersection	Daylight	0.000	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Injury	Dry	0	20	0	0	2
7/4/2011	1:10 PM	Other	BANGS AVE		Clear	Moderate Injury	At Intersection	Daylight	0.100	NJTPA		0	25	Straight and Level	Painted Median	Concrete	Municipal	A	40	Injury	Dry	0	40	0	0	3
7/4/2011	11:09 PM	Same Direction - Side Swipe	SUMMERFIELD AVE	25	Clear	PDO	Not At Intersection	Dark (Street Lights On/ continuous)	0.050	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
7/3/2011	1:08 AM	Same Direction - Rear End	COOKMAN AVE		Overcast	Moderate Injury	At Intersection	Dark (Street Lights On/ continuous)	0.210	NJTPA	Asbury Park city	0	30	Curve and Level	None	Blacktop	Municipal	A	40	Injury	Dry	0	40	0	0	2
8/19/2011	8:46 PM	Opposite Direction - Head On/Angular	SPRINGWOOD AVE		Clear	Moderate Injury	At Intersection	Dark (Street Lights On/ continuous)	0.310	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Injury	Dry	0	20	0	0	2
9/6/2011	10:18 AM	Right Angle	SUMMERFIELD AVE		Rain	Moderate Injury	At Intersection	Daylight	0.050	NJTPA	Asbury Park city	0	30	Straight and Level	None	Blacktop	Municipal	A	40	Injury	Wet	0	30	0	0	2
9/1/2011	10:00 PM	Same Direction - Side Swipe	SPRINGWOOD AVE		Clear	PDO	At Intersection	Dark (Street Lights On/ continuous)	0.310	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
9/24/2011	8:20 PM	Left Turn / U Turn	MONROE AVE		Clear	PDO	At Intersection	Dark (No Street Lights)	0.000	NJTPA		0	35	Straight and Level	None	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
9/16/2011	10:57 AM	Same Direction - Side Swipe	COOKMAN AVE		Clear	PDO	At Intersection	Daylight	0.210	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
9/23/2011	5:41 PM	Right Angle	MONROE AVE		Rain	PDO	At Intersection	Dusk	0.000	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Wet	0	0	0	0	2
9/23/2011	5:59 PM	Same Direction - Side Swipe	SPRINGWOOD AVE	25	Rain	PDO	Not At Intersection	Daylight	0.310	NJTPA		0	30	Straight and Level	None	Blacktop	County	A	40	Property Damage	Wet	0	0	0	0	2
12/8/2011	3:47 PM	Right Angle	SUMMERFIELD AVE		Clear	PDO	At Intersection	Daylight	0.050	NJTPA	Asbury Park city	0	30	Straight and Level	NULL	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
12/18/2011	2:39 PM	Same Direction - Rear End	MONROE AVE		Clear	PDO	At Intersection	Daylight	0.000	NJTPA		0	30	Straight and Grade	None	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
12/28/2011	4:04 PM	Right Angle	SPRINGWOOD AVE		Clear	PDO	At Intersection	Daylight	0.310	NJTPA		0	30	Straight and Level	None	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
2/15/2012	6:57 PM	Same Direction - Rear End	SPRINGWOOD AVE	100	Clear	Moderate Injury	Not At Intersection	Dark (Street Lights On/ continuous)	0.330	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Injury	Dry	0	10	0	0	2
2/6/2012	5:47 PM	Right Angle	SOMERFIELD AVE		Clear	Moderate Injury	At Intersection	Dark (No Street Lights)	0.050	NJTPA	Asbury Park city	0	25	Straight and Level	Painted Median	Concrete	Municipal	A	40	Injury	Dry	0	30	0	0	2
2/29/2012	3:32 PM	Same Direction - Rear End	SOMERFIELD AVE		Rain	PDO	At Intersection	Daylight	0.050	NJTPA		0	30	Straight and Level	None	Blacktop	Municipal	A	40	Property Damage	Wet	0	0	0	0	2
3/17/2012	8:03 AM	Left Turn / U Turn	HECK AVE	50	Clear	Moderate Injury	Not At Intersection	Daylight	0.460	NJTPA	Neptune township	0	30	Straight and Level	None	Blacktop	County	A	40	Injury	Dry	0	20	0	0	2
3/17/2012	5:11 PM	Right Angle	SPRINGWOOD AVE		Clear	PDO	At Intersection	Daylight	0.310	NJTPA		0	25	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
4/1/2012	7:21 PM	Right Angle	SOMERFIELD AVE		Rain	Moderate Injury	At Intersection	Dark (Street Lights Off)	0.050	NJTPA		0	30	Straight and Level	Painted Median	Concrete	Municipal	A	40	Injury	Wet	0	10	0	0	2
4/2/2012	6:47 PM	Right Angle	SPRINGWOOD AVE		Clear	PDO	At Intersection	Daylight	0.310	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Concrete	County	A	40	Property Damage	Dry	0	0	0	0	3
4/9/2012	3:51 PM	Same Direction - Rear End	EMBURY ST	50	Clear	Moderate Injury	Not At Intersection	Daylight	0.520	NJTPA	Neptune township	0	30	Straight and Level	None	Blacktop	County	A	40	Injury	Dry	0	50	0	0	3
4/26/2012	9:00 AM	Same Direction - Rear End	SPRINGWOOD AVE	175	Clear	PDO	Not At Intersection	Daylight	0.310	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
5/8/2012	11:23 AM	Encroachment	SOMERFIELD AVE		Clear	PDO	At Intersection	Daylight	0.050	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
5/28/2012	2:45 AM	Right Angle	MONROE AVE		Clear	Moderate Injury	At Intersection	Dark (Street Lights On/ continuous)	0.000	NJTPA	Asbury Park city	0	30	Straight and Level	None	Blacktop	Municipal	A	40	Injury	Dry	0	20	0	0	2
7/5/2012	9:34 AM	Left Turn / U Turn	COOKMAN AVE		Clear	Moderate Injury	At Intersection	Daylight	0.210	NJTPA		0	30	Curve and Level	Painted Median	Blacktop	Municipal	A	40	Injury	Dry	0	10	0	0	3
7/12/2012	10:03 PM	Right Angle	MUNROE AVE		Clear	PDO	At Intersection	Dark (Street Lights On/ continuous)	0.000	NJTPA		0	30	Straight and Level	None	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
7/25/2012	4:09 PM	Pedalcyclist	SPRINGWOOD AVE		Clear	PDO	At Intersection	Daylight	0.310	NJTPA		0	30	Straight and Level	None	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	1
8/13/2012	6:05 PM	Right Angle	MUNROE AVE		Clear	Moderate Injury	At Intersection	Daylight	0.000	NJTPA		0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Injury	Dry	0	10	0	0	2
9/2/2012	6:40 PM	Right Angle	MUNROE AVE		Clear	Moderate Injury	At Intersection	Daylight	0.000	NJTPA		0	35	Straight and Level	None	Blacktop	Municipal	A	40	Injury	Wet	0	30	0	0	3
10/26/2012	5:25 PM	Right Angle	MUNROE AVE		Clear	Moderate Injury	At Intersection	Daylight	0.000	NJTPA		0	25	Straight and Level	None	Concrete	Municipal	A	40	Injury	Dry	0	40	0	0	3
10/31/2012	12:50 PM	Right Angle	BANGS AVE		Clear	Moderate Injury	At Intersection	Daylight	0.100	NJTPA	Asbury Park city	0	30	Straight and Grade	None	Blacktop	Municipal	A	40	Injury	Dry	0	10	0	0	2
10/31/2012	1:27 PM	Right Angle	SPRINGWOOD AVE		Clear	Moderate Injury	At Intersection	Daylight	0.310	NJTPA	Asbury Park city	0	30	Straight and Level	None	Blacktop	County	A	40	Injury	Dry	0	10	0	0	2
11/6/2012	11:43 AM	Encroachment	SPRINGWOOD AVE		Clear	Moderate Injury	At Intersection	Daylight	0.310	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	County	A	40	Injury	Dry	0	40	0	0	3
11/5/2012	6:45 PM	Right Angle	SPRINGWOOD AVE		Clear	PDO	At Intersection	Dark (Street Lights On/ continuous)	0.310	NJTPA	Asbury Park city	0	25	Straight and Level	Painted Median	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2
11/28/2012	3:30 PM	Fixed Object	SPRINGWOOD AVE		Clear	Moderate Injury	At Intersection	Daylight	0.310	NJTPA	Asbury Park city	0	30	Straight at Hillcrest	None	Blacktop	County	A	40	Injury	Dry	0	10	0	0	1
12/3/2012	4:26 PM	Left Turn / U Turn	MATTISON AVE		Clear	PDO	At Intersection	Daylight	0.160	NJTPA	Asbury Park city	0	30	Straight and Grade	None	Blacktop	Municipal	A	40	Property Damage	Dry	0	0	0	0	2
12/9/2012	2:48 AM	Same Direction - Side Swipe	SOMERFIELD AVE		Clear	PDO	At Intersection	Dark (Street Lights On/ continuous)	0.050	NJTPA	Asbury Park city	0	30	Straight and Level	Painted Median	Blacktop	Municipal	A	40	Property Damage	Wet	0	0	0	0	2
11/27/2012	12:58 PM	Struck Parked Vehicle	HECK AVE	50	Clear	PDO	Not At Intersection	Daylight	0.440	NJTPA	Neptune township	0	30	Straight and Level	None	Blacktop	County	A	40	Property Damage	Dry	0	0	0	0	2

Crash Summary (1/2003 to 12/2012)		
Right Angle Crashes	115	39%
Same Direction - Rear End	50	17%
Same Direction - Side Swipe	39	13%
Left Turn / U Turn	19	7%
Opposite Direction	13	4%
Fixed Object	10	3%
Encroachment	10	3%
Pedestrian	8	3%
Parked Vehicle	6	2%
Bicyclist	5	2%
Other	17	6%
Total Crashes	292	

Total Injured	198
Killed	1
Pedestrians Involved	15

Severity	
Property Damage	172
Injury	119
Fatal	1

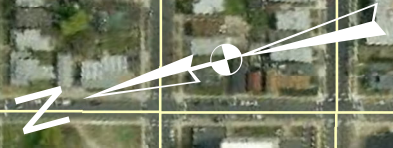
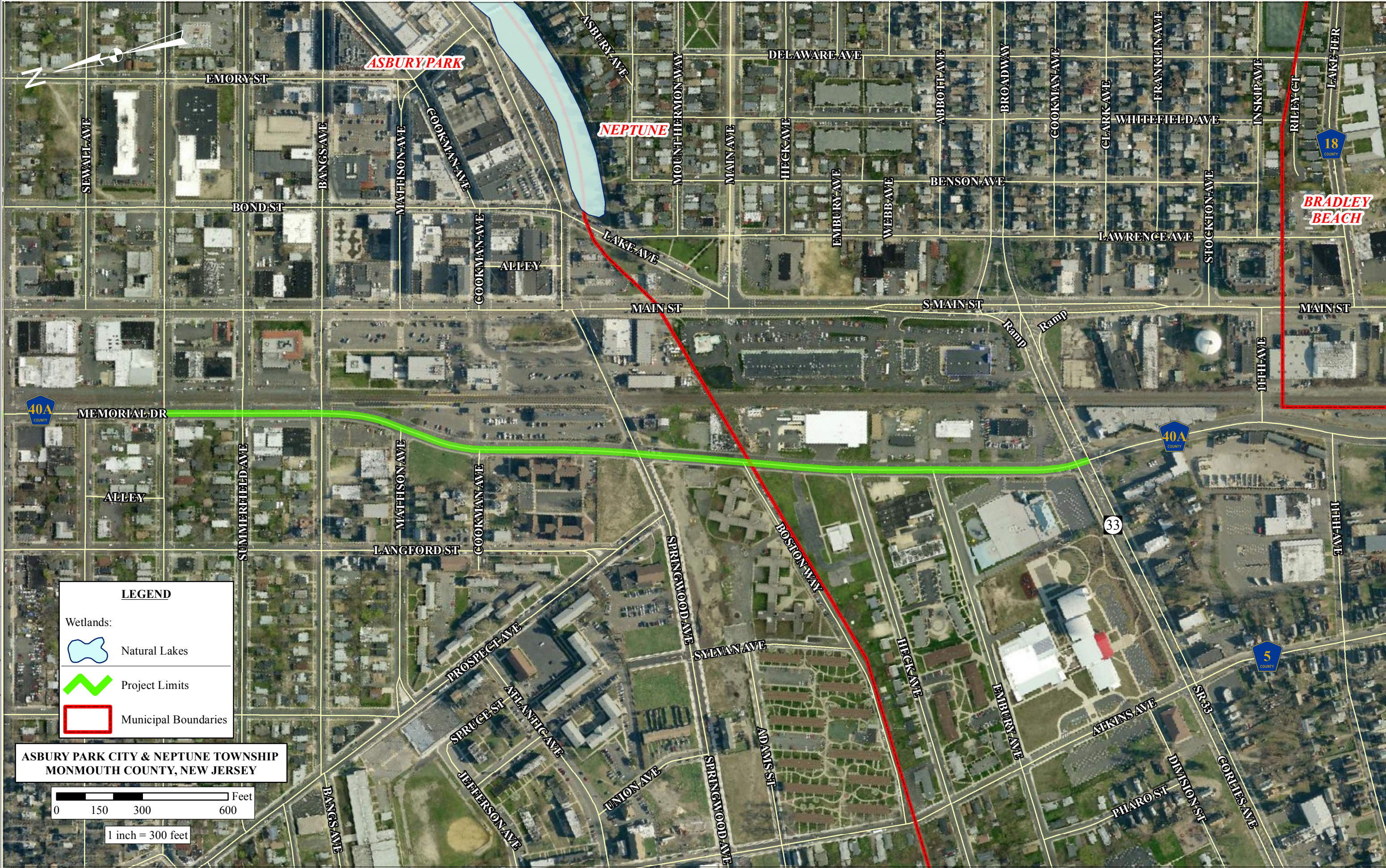
Pedestrians Injured	11
----------------------------	----

Surface	
Wet	63
Dry	219
Snowy	6
Icy	4





**Engineer's Estimate for the Roadway Improvements
along County Route 40A (Memorial Drive)
from Munroe Avenue to State Highway 33
in the City of Asbury Park and Neptune Township
Monmouth County, New Jersey**

ITEM No.	ESTIMATED QUANTITIES	ITEM	ENGINEER'S ESTIMATE	
			UNIT PRICE	AMOUNT
1	Lump Sum	Mobilization	\$15,000.00	\$15,000.00
2	Lump Sum	Clearing Site	\$5,000.00	\$5,000.00
3	Lump Sum	Asphalt Price Adjustment	\$6,000.00	\$6,000.00
4	Lump Sum	Fuel Price Adjustment	\$5,000.00	\$5,000.00
5	16,700 S.Y.	Hot Mix Asphalt Milling, 3" or less	\$3.00	\$50,100.00
6	2,200 Tons	Hot Mix Asphalt 12.5 M64 Surface Course	\$90.00	\$198,000.00
7	250 L.F.	6" x 8" x 20" Concrete Vertical Curb	\$35.00	\$8,750.00
8	3 S.Y.	Detectable Warning Surface	\$250.00	\$750.00
9	140 S.Y.	Concrete Sidewalk, 4" Thick	\$90.00	\$12,600.00
10	35,500 L.F.	Traffic Stripes, Thermoplastic, 4"	\$0.60	\$21,300.00
11	460 S.F.	Traffic Markings, Thermoplastic	\$8.00	\$3,680.00
12	245 S.F.	Signs	\$40.00	\$9,800.00
13	120 Units	RPM	\$35.00	\$4,200.00
14	500 L.F.	Loop Detector (if and where directed)	\$20.00	\$10,000.00
15	Lump Sum	Maintenance and Protection of Traffic	\$70,000.00	\$70,000.00
16	120 S.Y.	Topsoiling, 4" Thick	\$4.00	\$480.00
17	120 S.Y.	Fertilizing and Seeding, Type A-3	\$2.00	\$240.00
18	120 S.Y.	Straw Mulching	\$1.00	\$120.00
TOTAL LUMP SUM BID ALL ITEMS:			\$421,020.00	
SAY: \$422,000				

Path: Z:\DRAFTING\SECTION\JAG\ArcMap\Municipalities\Asbury Park\Memorial Dr from Corlies to Monroe.mxd Date Saved: 5/14/2013 3:24:17 PM



LEGEND

-  Wetlands:
-  Natural Lakes
-  Project Limits
-  Municipal Boundaries

**ASBURY PARK CITY & NEPTUNE TOWNSHIP
MONMOUTH COUNTY, NEW JERSEY**



1 inch = 300 feet

STATE ROUTE 33

PROJECT LIMITS

C.R. 40A (MEMORIAL DRIVE)

EMORY STREET

HECK AVENUE

5ft (Shoulder) TYP

12ft (Lane) TYP

12ft (Lane) TYP

5ft (Shoulder) TYP

NORTH JERSEY COAST LINE (R.R.)

ROAD DIET CONCEPTUAL PLAN

SOUTHERN PROJECT LIMITS
C.R. 40A (MEMORIAL DRIVE)
CITY OF ASBURY PARK AND
TOWNSHIP OF NEPTUNE
1"=30'± PAGE 1 of 3 MAY 14, 2013



BOSTON WAY

SPRINGMOD AVE

C.R. 40A (MEMORIAL DRIVE)

12ft (Lane) TYP

5ft (Shoulder) TYP

12ft (Lane) TYP

5ft (Shoulder) TYP

TRAFFIC SIGNAL

NORTH JERSEY COAST LINE (R.R.)

ROAD DIET CONCEPTUAL PLAN
TYPICAL SECTION
C.R. 40A (MEMORIAL DRIVE)
CITY OF ASBURY PARK AND
TOWNSHIP OF NEPTUNE
1"=30'± PAGE 2 of 3 MAY 14, 2013



ROAD DIET CONCEPTUAL PLAN
 NORTHERN PROJECT LIMITS
 C.R. 40A (MEMORIAL DRIVE)
 CITY OF ASBURY PARK AND
 TOWNSHIP OF NEPTUNE
 1"=30'± PAGE 3 of 3 MAY 14, 2013

Appendix I – NJDOT RE: Highway Rail Grade Crossing Corridor Review of Asbury Park



State of New Jersey

DEPARTMENT OF TRANSPORTATION
P.O. Box 600
Trenton, NJ 08625-0600

JAMES S. SIMPSON
Commissioner

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

November 13, 2013

Joe Cunha, PE
Asbury Park City Engineer
One Municipal Plaza
Asbury Park, New Jersey 07712

RE: Highway-Rail Grade Crossing Corridor Review City of Asbury Park

Dear Mr. Cunha:

The Department of Transportation's Bureau of Railroad Engineering Services thanks you and Robert Bianchini for last week's meeting and field review in regards to the request from New Jersey Transit to review the condition and need of the highway-rail at-grade crossings across their North Jersey Coast Line track in the City of Asbury Park.

As part of this request, the Railroad has asked for several crossings to be removed and crossing by pedestrians and vehicles prohibited. Under the Department's guidelines for a crossing removal, several other crossings near the removed crossing would be upgraded. The removal of a crossing would make the City eligible for \$7,500 from the Department (paid through New Jersey Transit) and a \$7,500 match from New Jersey Transit for any City improvements in vicinity of the removed crossing.

Based on our meeting, the following railroad corridor proposal was put forth for consideration:

1. Summerfield Avenue would be closed to vehicular and pedestrian crossing.
2. Springwood Avenue would receive a new crossing surface.
3. 1st Avenue would be closed to vehicular and pedestrian crossing.
4. 3rd Avenue would receive a new crossing surface.
5. Sunset Avenue would receive new railroad warning devices.
6. 4th Avenue would receive a new crossing surface.
7. 6th Avenue closure to vehicles and pedestrian(?) crossing.

The Removals and warning device improvements will be subject to the Diagnostic Team process.

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Page Two
Asbury Park Corridor Review

New Jersey Transit will cover all costs for #1 & #3 above and the Department will cover the costs of #2, 4 - #7 as part of our railroad grade crossing removal/improvement program. All improvements would be completed prior to any closure.

During the Diagnostic Team process the City will have input into the closure and other influences on the crossings. There may be jurisdictional devices, such as signage and pavement markings, that are installed by the Railroad or Department that will be the responsibility of the City to maintain moving forward.

Thank you for your consideration in this matter. The Department is willing to meet with City Officials to answer any questions regarding the proposed railroad corridor improvements. We will consider all or any part of the proposal.

If you or any City Official has any questions, please feel free to call me at (609) 530-4944 or email me at todd.hirt@dot.state.nj.us

Sincerely,



Todd Hirt
Supervising Engineer
Bureau of Railroad Engineering Services

C: Eli Charchar, Director ROW, NJ Transit
Robert Bianchini, Assistant City Engineer, Asbury Park