Livingston Avenue Road Safety Audit

FINAL REPORT

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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

In the spring of 2011, a partnership was formed between the Rutgers Transportation Safety Resource Center (TSRC) and Middlesex County, New Jersey. Planners at Middlesex County were evaluating corridors with an over-represented number of pedestrian crashes on county roadways. Livingston Avenue, also known as County Route 691 (CR 691), located in New Brunswick, New Jersey, was identified by Rutgers TSRC using Plan4Safety (P4S), a crash data analysis tool. The corridor additionally appeared in a New Jersey Department of Transportation (NJDOT) Bureau of Safety Programs list of statewide pedestrian crash corridors. Within this corridor, the intersections with the highest number of severe crashes were selected for the audit, and the entire stretch of roadway in-between was selected for investigation. With the assistance of Rutgers TSRC, a Road Safety Audit (RSA) was performed. This report documents the findings and suggestions made by the audit team.

Background

Figure 1 – Map of study area (Google Earth)

The audit focused on Livingston Avenue or CR 691 beginning at Suydam Street to Sandford Street as shown in Figure 1 above. Livingston Avenue is an urban minor arterial with two lanes in each direction and spans approximately 3.5 miles from George Street in downtown New Brunswick to US 1 in North Brunswick. Sections of Livingston Avenue are under NJDOT jurisdiction – specifically NJ 26 within North Brunswick. Other sections comprise NJ 171 and CR 691 – both under Middlesex County jurisdiction.

In 2007, a 48-hour volume count was done by NJDOT on NJ 171, which is in part Livingston Avenue between Welton Street and Morris Streets just outside the audit area. The two-way AADT was 13,221.

The entirety of the RSA is within CR 691, which is an approximately one-mile stretch starting from Suydam Street in the southwest direction and ending with Nassau Street where Route 26 begins. The speed limit in the study area is 25 miles per hour (mph) and is fully under Middlesex County jurisdiction.

The land use around the corridor is a mix of commercial and residential. Commercial businesses with multiple access driveways are on both sides of the road. Law offices, medical offices, and tax services are in the immediate vicinity of the study area. Also, the Joseph Kohn Rehabilitation Center for the blind operates on the southwest side of Suydam Street as shown in Figure 2.

Figure 2 – Rehabilitation center

The NJ Transit Bus Route 814 (NJT #814), North Brunswick to Edison, serves this intersection with a bus stop located on either side of Livingston Avenue. It is also the direct route to Middlesex County College.

Middlesex County Department of Transportation additionally operates two routes along Livingston Avenue. The M5 serves as a shuttle bus to and from Commercial Avenue in New Brunswick. The M1 serves as a peak-hour shuttle between New Brunswick and Perth Amboy and the employment centers in the vicinity of Exit 8a of the New Jersey Turnpike in Monroe. Both routes have stops within the study corridor at Handy Street, Comstock Street, and Sandford Street along Livingston Avenue.

Somerset County also operates two Davidson Avenue Shuttles (DASH) routes along Livingston Avenue. The two DASH shuttles provide connecting service between New Brunswick as well as North Brunswick and Bound Brook Townships. DASH 1 has five stops including New Street, Suydam Street, Powers Street, Loretta Street, and 14th Street, while DASH 2 has two stops at New Street and Suydam Street along Livingston Avenue.

As shown in Figure 3, there is a public school in the vicinity of the study area. On the south side of Delevan Street, Livingston Elementary School has an enrollment of 554 students ranging from kindergarten to 8th grade, during the 2009–2010 school year. [1] Also, next to the school is the Anshe Emeth Memorial Temple.

[1] http://nces.ed.gov/

Road Safety Audit Process

The Livingston Avenue RSA followed a process that began with data collection, a crucial task that served as the backbone for recommendations for improvement. 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, collision diagrams, shown in appendix A, were produced that show crash types and locations.

Figure 4 – RSA team conducting site visit

The Road Safety Audit occurred on Monday, June 27, 2011. The day began with a pre-audit meeting that involved the definition of Road Safety Audit and an overview of the intersection. A presentation showing details of the crash analysis, aerial images of the site, and an overview of bus service in the area was shown. Following the presentation, a site visit was conducted where all participants were given a chance to inspect the site and utilize their various backgrounds to brainstorm recommended improvements. After the site visit, the team was brought back together to discuss the issues observed and recommendations to remedy the issues.

Information Sources

Several sources of information were used in the RSA process. For example, crash data from 2007–2009 was examined for trends and patterns. Specific resources used in the analysis include:

- NJDOT Crash Database (2007–2009)
- Plan4Safety Crash Data Analysis Tool
- NJDOT Straight Line Diagrams
- NJ Transit Bus Routes
- National Center for Education Statistics (NCES)
- Google Earth

RSA Team

The RSA team consisted of 22 members, including police officers, engineers, and planners from different agencies across the state.

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Crash Data

As of the date of this report, the crash data reported by the NJDOT shows a total of 113 crashes occurring during the three-year period from 2007-2009. The following tables show detail statistics of the crash data analyzed.

General Crashes

The intersections along Livingston Avenue that were selected for further analyses based on crash data are as follows:

- **Suydam Street**
- Seaman Street
- **Handy street**
- Baldwin Street
- Hale Street
- Comstock Street
- Delavan Street
- **Sandford Street**

Note: **Bolded** intersections are signalized.

Cross Street	Crashes	Common Crash Types
Suydam St	27	Same Direction - Rear End, Right Angle & Pedestrian
Seaman St	7	Right Angle & Pedestrian
Handy St	30	Same Direction - Rear End, Right Angle & Pedestrian
Baldwin St	15	Right Angle Pedestrian, & Pedalcyclist
Hale St	7	Same Direction - Rear End & Right Angle
Comstock St	8	Right Angle & Pedestrian
Delavan St	6	Right Angle & Pedestrian
Sandford St	13	Right Angle, Left Turn/U-Turn & Pedestrian

Table 1 – Common crash type data (2007–2009)

Type of Crash	Percentage of Total Number of Crashes
Right Angle	33
Left Turn/U-Turn	4
Pedestrian	17
Pedalcyclist	6
Fixed Object	3
Struck Parked Car	5
Same Direction - Rear End	20
Same Direction - Side Swipe	9
Backing	1
Opposite Direction - Head On/Angular	1
Encroachment	1

Table 2 – Types of crashes data (2007–2009)

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Lighting Condition	Percentage of Total Number of Crashes
Dark (Street Lights Off)	2
Dark (Street Lights On/ continuous)	34
Dark (Street Lights On/ spot)	2
Dawn	1
Daylight	58
Dusk	3
NULL	1

Table 2 – Crash lighting data (2007–2009)

Pedalcyclist Crashes

Cross Street	Date	Time	Light Condition
Suydam St	1/8/2007	5:34 PM	Dark (Street Lights On/ continuous)
Suydam St	10/5/2008	6:15 PM	Daylight
Handy St	2/2/2007	5:44 PM	Dark (Street Lights On/ continuous)
Baldwin St	10/22/2007	10:52 AM	Daylight
Baldwin St	4/17/2008	7:26 AM	Daylight
Baldwin St	8/20/2008	5:01 PM	Daylight
Sandford St	5/30/2009	4:17 PM	Daylight

Table 4 – Pedalcyclist crash data (2007–2009)

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Pedestrian Crashes

Nineteen pedestrian crashes were observed between 2007 and 2009 throughout the study corridor and are detailed in table 5. Note that sixty-eight percent of the pedestrian crashes occurred during night time.

Cross Street	Date	Time	Pavement & Light Condition
Suydam St	12/28/2007	7:50 PM	Dry, Dark (Street Lights On/Continuous)
Seaman St	5/11/2008	11:59 PM	Dry, Dark (Street Lights On/Continuous)
Seaman St	7/9/2009	12:21 AM	Dry, Dark (Street Lights On/Continuous)
Handy St	4/6/2007	8:28 PM	Dry, Dark (Street Lights On/Continuous)
Handy St	10/25/2009	7:25 PM	Dry, Dark (Street Lights On/Continuous)
Baldwin St	6/27/2008	10:17 PM	Dry, Dark (Street Lights On/Continuous)
Comstock St	6/1/2008	9:44 PM	Dry, Dark (Street Lights On/Continuous)
Delavan St	11/12/2008	5:22 PM	Dry, Dark (Street Lights On/Continuous)
Sandford St	8/9/2009	2:30 AM	Dry, Dark (Street Lights On/Continuous)
Suydam St	3/8/2007	7:22 AM	Dry, Daylight
Suydam St	9/3/2008	2:00 PM	Dry, Daylight
Handy St	7/29/2008	12:00 PM	Dry, Daylight
Baldwin St	4/23/2007	8:30 AM	Dry, Daylight
Sandford St	11/10/2008	8:12 AM	Dry, Daylight
Sandford St	1/30/2009	4:22 PM	Dry, Daylight
Suydam St	1/1/2007	2:04 AM	Wet, Dark (Street Lights On/Continuous)
Suydam St	11/5/2008	9:30 PM	Wet, Dark (Street Lights On/Continuous)
Suydam St	11/14/2008	6:23 PM	Wet, Dark (Street Lights On/Continuous)
Handy St	12/19/2007	8:51 PM	Wet, Dark (Street Lights On/Continuous)

Table 5 – Pedestrian crash data 2007–2010

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RSA Team Findings

The following represents the specific findings and recommendations made by the RSA team.

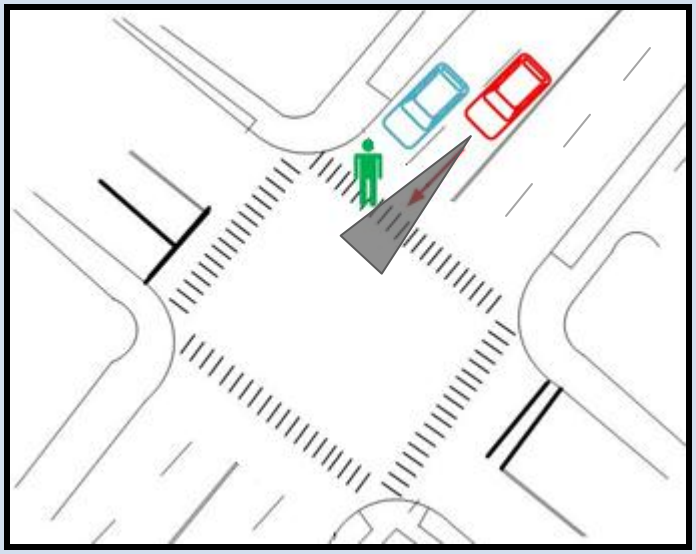
All recommendations and designs should be thoroughly evaluated with due diligence and designed as appropriate by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

General

Issue: General Lighting	Safety Risk	
Description: Sixty-eight percent of all pedestrian crashes and thirty-seven percent of all crashes throughout the study corridor occurred at night. This may correlate with substandard lighting conditions.	High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[1]An engineer should be consulted to review and perform a lighting study throughout the corridor. The lighting study should consider the needs of both the roadway users and pedestrians.	Medium/High	High

Issue: General Signage	Safety Risk	
Description: Signs throughout Livingston Avenue are old, faded, non-retroreflective, and non-breakaway.	Medium	
Too many signs cause driver confusion.	Low	
Street signs are missing at certain intersections.	Low	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[2]An engineer should conduct a full sign study throughout the corridor to update existing signs to meet current standards and replace missing sign.	Low	High
[3]A sign study should be conducted by professional engineering staff to upgrade the signage and reduce clutter throughout the corridor.	Low	Medium

Issue: Pedestrian Crashes	Safety Risk
Description: Twenty-three percent of all crashes involved pedestrians. Livingston Avenue has large amount of pedestrian traffic.	High
The police department noted crash experience with pedestrian shadow crashes due to multiple lanes. Pedestrian shadow crashes occur when a vehicle stops for a pedestrian to cross and blocks the ability for a passing vehicle and pedestrian to see each other. The stopping vehicle is noted in blue and the passing vehicle in red in the diagram below.	



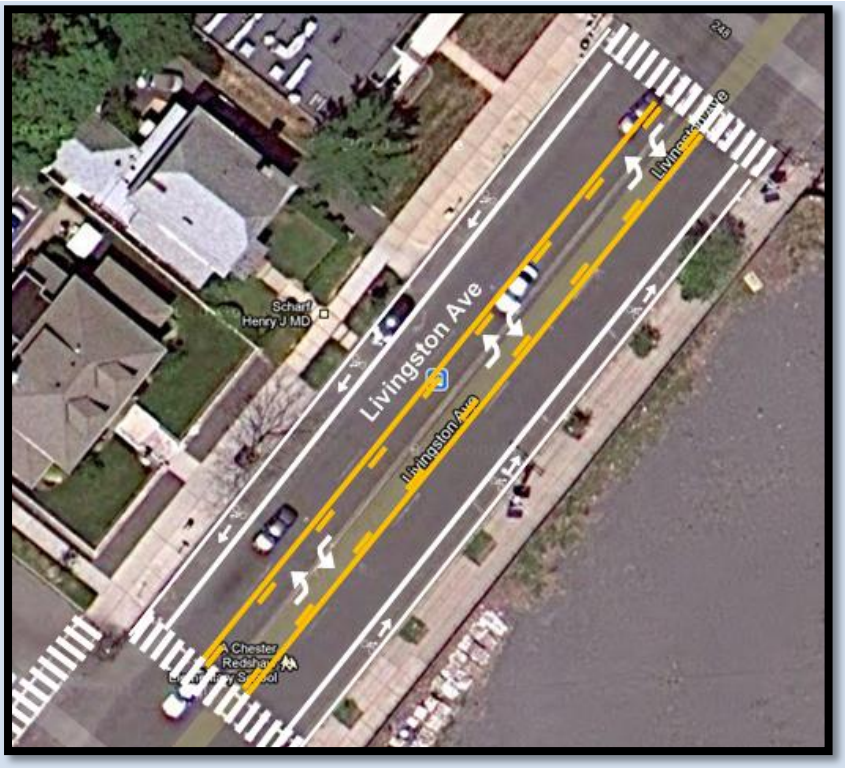
RSA Team's Recommendation	Cost	Potential Safety Benefit
[4]Investigate the feasibility of installation of bulb outs at corners of intersections that would lower the speed of turning vehicles and reduce crosswalk distance.	Medium/High	High
[5]Investigate the feasibility of a road diet, which can reduce speeding, create bike lanes for cyclists, and provide turn lanes to allow through traffic to continue without slowing or shifting lanes due to turning vehicles.	Low	High
[6]Sign no parking boundaries 25 feet from the crosswalk to designate no parking area to improve sight distance of both pedestrians and side-street traffic.	Low	High
[7]Trim tree limbs such to improve the sight distance of both pedestrians and side-street traffic from taller vehicles such as fire trucks, and to improve visibility of signal heads and signage.	Low	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
[8]Enhance visible enforcement of parking regulations and the Stop for Pedestrian Law.	Low	High
[9]Consider implementing education programs for both pedestrians and drivers.	Low	High
[36]Consider the adoption of a Complete Streets Policy	Low	High

Issue: Accessible Curb Ramps	Safety Risk
Description: Accessible curb ramps are missing or installed incorrectly. This makes it very difficult for pedestrians with disabilities to cross the street.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
[13]Install curb ramps compliant to ADAAG/PROWAG standards.	Medium	High

Issue: Speeding	Safety Risk
Description: Livingston Avenue has a posted speed limit of 25 mph while the experience of the police department and observed speeds of motor vehicles exceed that limit.	High



Note: Diagram not to scale.

RSA Team's Recommendation	Cost	Potential Safety Benefit
[5]Investigate the feasibility of a road diet, which can reduce speeding, create bike lanes for cyclists, and provide turn lanes to allow through traffic to continue without slowing or shifting lanes due to turning vehicles. See diagram above.	Low	High
[10]Investigate modifying the driver environment using pavement markings to reduce driver speed, potentially painting shoulders, narrowing lanes, or marking parking stalls.	Low	High
[11]Enhance visible enforcement of posted speed limits.	Low	High
[12]Install a VMS or Your Speed Is signage.	Low	High

Issue: Pedalcyclist	Safety Risk	
Description: Livingston Avenue has large amount of pedalcyclist activity. Currently, no bicyclist accommodations are present.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[14]Investigate the installation of signs and/or shared lane use markings to alert drivers of the presence of bicyclists.	Low	Low
[5]Investigate the feasibility of a road diet, which can reduce speeding, create bike lanes for cyclists, and provide turn lanes to allow through traffic to continue without slowing or shifting lanes due to turning vehicles.	Low	High
[15]Consider implementing education programs for pedalcyclist within the local community.	Low	High
[36]Consider the adoption of a Complete Streets Policy	Low	High

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Issue: Sight Distance	Safety Risk
Description: Many cars are parked extremely close to intersections and crosswalks throughout the Livingston Avenue Corridor, thereby limiting the sight distance for both motor vehicles trying to turn onto or cross Livingston Avenue as well as pedestrians. Also, tree branches and trees close to the curb reduce sight distance for large vehicles.	High

RSA Team's Recommendation	Cost	Potential Safety Benefit
[6]Sign no parking boundaries 25 feet from the crosswalk to designate no parking area to improve sight distance of both pedestrians and side-street traffic.	Low	High
[7]Trim tree limbs such to improve the sight distance of both pedestrians and side-street traffic from taller vehicles such as fire trucks, and to improve visibility of signal heads and signage.	Low	Medium
[8]Enhance visible enforcement of parking regulations and the Stop for Pedestrian Law.	Medium	High

Issue: Unmarked/Worn Crosswalk Striping	Safety Risk	
Description: Multiple intersections are missing or have faded crosswalks, thereby reducing the visibility of the pedestrian crossing to motor vehicles. Note: Crosswalks throughout the corridor were not of a uniform, consistent type. Some had zebra striping while others had international striping, etc.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[16]Replace worn and missing striping with pavement markings in conformance with the MUTCD while keeping style of crosswalk striping consistent throughout corridor.	Low	High

Issue: Bus Stop Signage	Safety Risk	
Description: Bus stop signage for the #814 bus line, which runs on Livingston Avenue, is not up to date. Some intersections along the corridor are missing bus line information, and existing signs are weathered.	Low	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[17]Install missing and/or replace signs.	Low	Low

Issue: Location of Litter Baskets	Safety Risk
Description: Litter baskets mounted at the base of the bus stop sign, where most people wait for a bus to arrive, prevents access to the bus door from concrete aprons of existing street walkways.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
[18]Relocate the litter baskets to make bus access more manageable.	Low	Low

Issue: Lack of Accommodations for the Disabled	Safety Risk
Description: It was noted that a Joseph Kohn Rehabilitation Center for the Blind operated on the southwest corner of Suydam Street. The pedestrian accommodations at the intersection, as well as throughout the corridor, are minimal.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
[34]Investigate the feasibility of the implementation of pedestrian signal enhancements such as audible signaling devices, Lead Pedestrian Intervals (LPIs), and exclusive pedestrian phases, if warranted, at all signals.	Low	High

Suydam Street

Issue: Worn Bus Shelter	Safety Risk
Description: Bus shelter is in poor condition. In addition, the uneven sinking of the concrete pad is a possible hazard for pedestrians and the disabled as shown below.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
[22]Replace bus shelter and fix concrete pad.	Medium	Medium

Issue: Pedestrian Accommodation at the Signal	Safety Risk
Description: Pedestrian pole in addition to push buttons in the northeast and northwest corner are located too far from the sidewalk and are obstructed by plants, making it inaccessible.	High
In the southwest corner, the pedestrian push button is broken.	High
Pedestrian push button signage on signals throughout the corridor is confusing to pedestrians as to which crosswalk they are for.	High

RSA Team's Recommendation	Cost	Potential Safety Benefit
[19A]Investigate pedestrian accommodation at Suydam Street for possible upgrade, including the installation of countdown pedestrian signal indications, Leading Pedestrian Intervals (LPIs), exclusive pedestrian phases, graphical push button signage, and relocating pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.	Medium	High
[20A]Replace broken pedestrian push button in southwest corner at Suydam Street.	Low	High
[21]Investigate accessible pedestrian accommodations including accessible pedestrian indications due to the proximity of the intersection to a rehabilitation center for the blind.	Medium	High
[35]Review signal timings, in conjunction with traffic counts, to ensure compliance with latest edition of MUTCD especially for pedestrian crossing time.	Low	Medium

Seaman Street

Issue: Minimal Pedestrian Accommodations	Safety Risk	
Description: Considering the large number of pedestrians observed in the vicinity and that 23 percent of all crashes involved pedestrian along the corridor, enhanced crosswalks should be considered.	High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[23]Conduct a formal engineering investigation to consider the instillation of painted high-visibility crosswalks and appropriate pedestrian signage.	Low	High

Issue: Missing Stop Bars	Safety Risk	
Description: Stop bars are faded or missing.	Low	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[24]Restripe the stop bars and roadway centerline as needed.	Low	Medium

Issue: Trip Hazard	Safety Risk	
Description: Trip hazard in northwest, as well as southeast, corner.	Low	

RSA Team's Recommendation	Cost	Potential Safety Benefit
[25]Remove the trip hazards.	Low	Medium

Handy Street

Issue: Bus Stop	Safety Risk	
Description: Bus stop is inconspicuous due to faded striping.	Low	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[27]Install additional striping to enhance bus stop in conformance to the MUTCD.	Low	High

Issue: Non-Bike Friendly Grate	Safety Risk	
Description: Some drainage grates are not bicycle safe.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[28]Replace with bicycle-safe grate	Low	Medium

Issue: Pedestrian Signal Accommodations	Safety Risk
Description: In the northeast corner of the intersection, the push buttons are improperly located.	Low
In the southeast corner, the push button is broken as shown below.	Low
The pedestrian push button signs instructing pedestrians how to cross the intersections at all four corners are worn, peeled, and/or covered by advertisement posted by residents.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
[19B]Investigate pedestrian accommodation at Handy Street for possible upgrade, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, graphical push button signage, and relocating pedestrian push buttons to be correctly oriented, as well as accessible, to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.	Medium	Medium
[20B]Replace non-functioning push button in southeast corner at Handy Street.	Low	High
[26]Install new MUTCD compliant pedestrian push button signage and remove all advertisement.	Low	Medium
[35]Review signal timings, in conjunction with traffic counts, to ensure compliance with latest edition of MUTCD especially for pedestrian crossing time.	Low	Medium

Issue: Traffic Signal Obstruction	Safety Risk
Description: Traffic signal in the south end approaching Livingston Avenue is obscured by trees.	High

RSA Team's Recommendation	Cost	Potential Safety Benefit
[7]Trim tree limbs such to improve the sight distance of both pedestrians and side-street traffic from taller vehicles such as fire trucks; and to improve visibility of signal heads and signage.	Low	High

Hale Street

Issue: School Zone Signs	Safety Risk	
Description: Hale Street intersects Livingston Avenue in between a school zone, however current school zone signage does not align with current practice.	Low	
School crossing zone sign, pedestrian crossing sign, and others are blocked by low tree branches.	Low	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[29]Install School Zone signage in conformance to the best practices as outlined in the MUTCD.	Low	Medium
[7]Trim tree limbs such to improve the sight distance of both pedestrians and side-street traffic from taller vehicles such as fire trucks, and to improve visibility of signal heads and signage.	Low	Medium
[30]Update current signs to confirm to best practices in the MUTCD, including new fluorescence yellow-green school signs.	Low	Medium

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Comstock Street

Issue: Stop Sign Obstruction	Safety Risk
Description: The visibility of the stop sign on the Northeast corner of Comstock Street is limited by a utility pole.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
[31]Relocate stop sign to a location in front of the utility pole.	Low	Medium

Issue: Missing Sidewalk	Safety Risk
Description: Sidewalk is missing along Comstock Street in the southeast corner.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
[32]Investigate the feasibility of installing proper width sidewalks confirming to ADAAG/PROWAG, including the removal of any trip hazards.	Low	Medium

Sandford Street

Issue: Pedestrian Signal Accommodation	Safety Risk	
Description: In the corners of the intersection, the push buttons are improperly placed and inaccessible to pedestrians.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
[19C]Investigate pedestrian accommodation at Sandford Street for possible upgrade, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, graphical push button signage, and relocating pedestrian push buttons to be correctly oriented, as well as accessible, to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.	Low	Medium
[35]Review signal timings, in conjunction with traffic counts, to ensure compliance with latest edition of MUTCD, especially for pedestrian crossing time.	Low	Medium

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Ownership

Below categorizes the recommendations according to the group responsible for the work order.

Middlesex County

1. An engineer should be consulted to review and perform a lighting study throughout the corridor. The lighting study should consider the needs of both the roadway users and pedestrians.
2. An engineer should conduct a full sign study throughout the corridor to update existing signs to meet current standards and replace missing signs.
3. A sign study should be conducted by professional engineering staff to upgrade the signage and reduce clutter throughout the corridor.
4. Investigate the installation of bulb outs at corners of intersection that would lower the speed of turning vehicles and reduce crosswalk distance.
5. Investigate the feasibility of a road diet, which can reduce speeding, create bike lanes for cyclists, and provide turn lanes to allow through traffic to continue without slowing or shifting lanes due to turning vehicles.
10. Investigate modifying the driver environment using pavement markings to reduce driver speed, potentially painting shoulders, narrowing lanes, or marking parking stalls.
12. Install a VMS or Your Speed Is signage.
13. Install curb ramps compliant to ADAAG/PROWAG standards.
14. Investigate the installation of signs and/or shared lane use markings to alert drivers of the presence of bicyclists.
15. Consider implementing education programs for pedalcyclist within the local community.
16. Replace worn and missing striping with pavement markings in conformance with the MUTCD, while keeping style of crosswalk striping consistent throughout corridor.

19A. Investigate pedestrian accommodation at Suydam Street for possible upgrade, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, graphical push button signage, and relocating pedestrian push buttons to be correctly oriented, as well as accessible, to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.

19B. Investigate pedestrian accommodation at Handy Street for possible upgrade, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, graphical push button signage, and relocating pedestrian push buttons to be correctly oriented, as well as accessible, to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.

19C. Investigate pedestrian accommodation at Sandford Street for possible upgrade, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, graphical push button signage, and relocating pedestrian push buttons to be correctly oriented, as well as accessible, to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.

20A. Replace broken pedestrian push button in southwest corner at Suydam Street.

20B. Replace non-functioning push button in southeast corner at Handy Street.

21. Investigate accessible pedestrian accommodations including Accessible Pedestrian Indications due to the proximity of the intersection to a rehabilitation center for the blind.
23. Conduct a formal engineering investigation to consider the instillation of painted high-visibility crosswalks and appropriate pedestrian signage.
24. Restripe the stop bars and roadway centerline as needed.
26. Install new MUTCD-compliant pedestrian push button signage and remove all advertisement.

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28. Replace with bicycle-safe grate.
29. Install School Zone signage in conformance to the best practices as outlined in the MUTCD.
30. Update current signs to confirm to best practices in the MUTCD, including new fluorescence yellow-green school signs.
33. Upgrade one-way signage to confirm to the proper size, location, and retroreflectivity as per the MUTCD.
34. Investigate the feasibility of the implementation of pedestrian signal enhancements such as audible signaling devices, Lead Pedestrian Intervals (LPIs), and exclusive pedestrian phases, if warranted, at all signals.
35. Review signal timings, in conjunction with traffic counts, to ensure compliance with latest edition of MUTCD especially for pedestrian crossing time.
36. Consider the adoption of a Complete Streets Policy

New Brunswick City

1. An engineer should be consulted to review and perform a lighting study throughout the corridor. The lighting study should consider the needs of both the roadway users and pedestrians.
6. Sign no parking boundaries 25 feet from the crosswalk to designate no parking area to improve sight distance of both pedestrians and side-street traffic.
7. Trim tree limbs such to improve the sight distance of both pedestrians and side-street traffic from taller vehicles such as fire trucks, and to improve visibility of signal heads and signage.
15. Consider implementing education programs for pedalcyclist within the local community.
16. Replace worn and missing striping with pavement markings in conformance with the MUTCD, while keeping style of crosswalk striping consistent throughout corridor.
18. Relocate the litter baskets to make bus access more manageable.
25. Remove the trip hazards.
27. Install additional striping to enhance bus stop in conformance to the MUTCD.
31. Relocate stop sign to a location in front of the utility pole.
32. Investigate the feasibility of installing proper width sidewalks confirming to ADAAG/PROWAG, including the removal of any trip hazards.
36. Consider the adoption of a Complete Streets Policy

New Brunswick City Police Department

8. Enhance visible enforcement of parking regulations and the Stop for Pedestrian Law.
11. Enhance visible enforcement of posted speed limits.
12. Install a VMS or Your Speed Is signage.

New Jersey Transit

17. Install missing and/or replace signs.
22. Replace bus shelter and fix concrete pad.

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9. Consider implementing education programs for both pedestrians and drivers.
15. Consider implementing education programs for pedalcyclist within the local community.

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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 intersection's 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 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:

Contact:

NJDOT Local Aid District 2 Office
153 Halsey Street - 5th floor
Newark, NJ 07102
Phone: 973-877-1500
Fax: 973-877-1556

Municipal Aid/Urban Aid Program (NJDOT Local Aid):
http://www.state.nj.us/transportation/business/localaid/municaid.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 that support walking and biking in their communities. NJDOT has set a goal to award up to 10 percent of the Municipal Aid Program funds to projects such as pedestrian safety improvements, bikeways, and streetscapes.[2].

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[3].

[2] Local Aid Letter Dated June 18, 2010, available publicly:
http://www.state.nj.us/transportation/business/localaid/documents/2011Letter.pdf
[3] NJDOT TTF State Aid Handbook available publicly:
http://www.state.nj.us/transportation/business/localaid/documents/StateAidHandbook-May272010.pdf

Safe Streets to Transit:
http://www.state.nj.us/transportation/business/localaid/safe.shtm

> The intent of this program is to encourage counties and municipalities to construct safe and accessible pedestrian linkages to transit facilities in order to promote increased usage of transit by all segments of the population.

NJDOT Centers of Place Program:
http://www.state.nj.us/transportation/business/localaid/safe.shtm

> The program provides a funding opportunity to municipalities that have been designated as a Center of Place by the New Jersey Department of Community Affairs to obtain funding for nontraditional transportation improvements that advance municipal smart growth management objectives. Eligible program projects include pedestrian and bicycle facilities, scenic or historic transportation programs, parking and circulation management, landscaping/beautification of transportation-related facilities, and rehabilitation of publicly owned transportation structures.

Contact:
New Jersey Business Action Center
Office for Planning Advocacy
Department of State
P.O. Box 204
Trenton, New Jersey 08625-0204
Barry Ableman
Phone: 609-292-3228
Email: bableman@dca.state.nj.us

Office of Smart Growth Downtown Business Improvement Zone Loan Fund
http://www.nj.gov/state/planning/docs/techassist071506.pdf

To provide loans up to $500,000 to make capital improvements within designated downtown business improvement zones
Contact:
New Jersey Department of Community Affairs
101 South Broad Street
PO Box 800
Trenton, NJ 08625-0800
Laura Julian
Phone: 609-633-6265
Email: ljulian@dca.state.nj.us

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Community Services Block Grant (CSBG)
http://www.state.nj.us/dca/divisions/dhcr/offices/comact.html

Awards funds to agencies for provision of health, education, employment housing, and other services to the low-income population of New Jersey. Ninety percent of the annual allocation must go to designated community action agencies (CAAs).

Federal Funding Sources via NJDOT Office of Local Aid:

Contact:
NJDOT Local Aid District 2 Office
153 Halsey Street - 5th floor
Newark, NJ 07102
Phone: 973-877-1500
Fax: 973-877-1556

Safe Routes to Schools (SRTS):
http://www.state.nj.us/transportation/business/localaid/srts.shtm

The federal-aid SRTS program provides federal-aid highway funds to state departments of transportation. The program targets schools for grades K–8 only. The main objectives 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; and
- 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 of schools.

Funds are available for a variety of both infrastructure and non-infrastructure projects that benefit elementary and middle school children in grades K–8 in both public and private schools. The infrastructure portion can fund design, construction, and planning of the proposed improvements, while the non-infrastructure portion would fund activities that encourage walking and bicycling to school.

Applicants to this program must submit separate applications for infrastructure and non-infrastructure projects.

Selection of SRTS projects involves the participation of civic, education, and environmental groups, the transportation community, and other government organizations such as the state's metropolitan planning organizations.

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Federal Funding Sources 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 have included 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), and
- 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/CMAQ/CMAQMobility.aspx

The federal Congestion Mitigation and Air Quality (CMAQ) program provides funds to reduce roadway congestion and reduce single occupancy auto usage in order to lessen the level of pollutants and greenhouse gases generated through the use of fossil fuels. The NJTPA has established the Local CMAQ Mobility Initiatives program to help meet these goals, including ridesharing, transit usage, travel demand management, and traffic mitigation projects. Proposals must implement strategies and policies in the Regional Transportation Plan, Plan 2035.

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RSA Team's Conclusion

The RSA team's recommendations suggested in this report should improve the safety of the Livingston Avenue corridor from Suydam Street to Sandford Street. Many of the recommendations can be implemented through routine maintenance, while others will take more time and investment. However, physical improvements alone will not eliminate the safety issues identified.

A combined effort of public education and police enforcement is necessary to make this intersection a safer place for all its users. Education about traffic safety in public schools, such as drivers' education courses in high school, and distributing informational pamphlets to pedestrians are just a sample of the different educational campaigns that can benefit road users. Enforcement, especially in the areas of parking and pedestrian right-of-way, can go a long way in reducing crashes and alerting drivers of the seriousness of being safety conscious. Officers may also hand out pamphlets during routine traffic stops to educate motorists of changes in traffic laws.

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Appendix A

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Raw Crash Data

Suydam Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
11/14/2008	6:23 PM	Pedestrian	Dark (Street Lights On/ continuous)	1	Injury	Wet	1	1	1
2/19/2009	9:10 AM	Same Direction - Rear End	Daylight	0	Property Damage	Wet	0	0	2
2/16/2009	5:10 PM	Same Direction - Side Swipe	Daylight	0	Property Damage	Dry	0	0	2
5/4/2009	12:16 PM	Left Turn / U Turn	Daylight	0	Property Damage	Wet	0	0	2
11/13/2009	5:03 PM	Same Direction - Rear End	Dark (Street Lights On/ continuous)	0	Property Damage	Wet	0	0	2
12/19/2009	4:57 PM	Struck Parked Vehicle	Dark (Street Lights On/ continuous)	0	Property Damage	Snowy	0	0	3

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CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
7/2/2007	9:35 AM	Same Direction - Rear End	Daylight	0	Injury	Dry	1	0	2
2/5/2007	7:49 AM	Right Angle	Daylight	0	Property Damage	Dry	0	0	2
3/8/2007	7:22 AM	Pedestrian	Daylight	1	Injury	Dry	1	1	1
1/8/2007	5:34 PM	Pedalcyclist	Dark (Street Lights On/ continuous)	0	Injury	Dry	1	1	1
4/12/2007	5:17 PM	Same Direction - Side Swipe	Daylight	0	Property Damage	Dry	0	0	2
4/22/2007	9:53 PM	Right Angle	Dark (Street Lights On/ continuous)	0	Property Damage	Dry	0	0	2
4/25/2007	4:54 PM	Same Direction - Rear End	Daylight	0	Property Damage	Wet	0	0	2
5/1/2007	3:02 PM	Right Angle	Daylight	0	Injury	Dry	2	0	3
5/12/2007	12:16 PM	Same Direction - Rear End	Daylight	0	Injury	Dry	1	0	2
1/1/2007	2:04 AM	Pedestrian	Dark (Street Lights On/ continuous)	1	Injury	Wet	1	2	1

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CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
8/6/2007	4:55 PM	Backing	Daylight	0	Property Damage	Dry	0	0	2
10/15/2007	5:07 PM	Same Direction - Side Swipe	Daylight	0	Property Damage	Dry	0	0	2
1/31/2007	9:05 AM	Same Direction - Rear End	Daylight	0	Property Damage	Wet	0	0	2
11/8/2007	2:40 PM	Left Turn / U Turn	Daylight	0	Injury	Dry	2	0	2
12/10/2007	12:48 PM	Same Direction - Rear End	Daylight	0	Property Damage	Dry	0	0	2
12/28/2007	7:50 PM	Pedestrian	Dark (Street Lights On/ continuous)	1	Injury	Dry	1	2	1
10/5/2008	6:15 PM	Pedalcyclist	Daylight	0	Injury	Dry	1	1	1
12/8/2008	9:04 PM	Right Angle	Dark (Street Lights Off)	0	Property Damage	Dry	0	0	2
9/3/2008	2:00 PM	Pedestrian	Daylight	1	Injury	Dry	1	1	1
11/5/2008	9:30 PM	Pedestrian	Dark (Street Lights On/ continuous)	1	Injury	Wet	1	1	1
10/15/2008	4:46 PM	Same Direction - Side Swipe	Daylight	0	Property Damage	Dry	0	0	2

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Seaman Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
8/15/2007	8:35 AM	Same Direction - Rear End	Daylight	0	Property Damage	Dry	0	0	2
12/30/2007	7:30 PM	Struck Parked Vehicle	Dusk	0	Property Damage	Wet	0	0	2
11/30/2008	2:50 AM	Right Angle	Dark (Street Lights On/	0	Property Damage	Dry	0	0	2
5/11/2008	11:59 PM	Pedestrian	Dark (Street Lights On/	1	Injury	Dry	1	1	1
9/19/2008	3:15 PM	Right Angle	Daylight	0	Property Damage	Dry	0	0	2
7/9/2009	12:21 AM	Pedestrian	Dark (Street Lights On/	1	Injury	Dry	1	2	1
7/25/2009	5:41 PM	Right Angle	Daylight	0	Property Damage	Dry	0	0	2

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Handy Street

ALCOHOL INVOLVED	CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	OTHER PROPERTY DAMAGE	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
No	4/29/2007	8:55 AM	Right Angle	Daylight	[null]	0	Injury	Dry	0	2
No	10/2/2007	4:55 PM	Same Direction - Side Swipe	Daylight	[null]	0	Property Damage	Dry	0	2
No	1/6/2007	6:05 PM	Right Angle	Dark (Street Lights On/ continuous)	NONE	0	Injury	Dry	0	2
No	3/18/2007	12:03 AM	Struck Parked Vehicle	Dark (Street LIghts On/ spot)	NONE	0	Property Damage	Dry	0	5
No	3/24/2007	1:39 AM	Fixed Object	Dark (Street Lights On/ continuous)	FENCE OF PARKING LOT	0	Property Damage	Dry	0	1
No	4/6/2007	8:28 PM	Pedestrian	Dark (Street Lights On/ continuous)	NONE	1	Injury	Dry	1	1
No	9/12/2007	8:30 PM	Same Direction - Rear End	Dark (Street Lights Off)	[null]	0	Property Damage	Dry	0	2
No	10/3/2007	8:07 PM	Right Angle	Dark (Street Lights On/ continuous)	NONE	0	Injury	Dry	0	2
No	10/13/2007	2:12 PM	Same Direction - Rear End	Daylight	[null]	0	Property Damage	Dry	0	2
No	11/20/2007	4:39 PM	Struck Parked Vehicle	Daylight	[null]	0	Property Damage	Dry	0	2
No	2/2/2007	5:44 PM	Pedalcyclist	Dark (Street Lights On/ continuous)	[null]	0	Injury	Wet	1	1
No	12/19/2007	8:51 PM	Pedestrian	Dark (Street Lights On/ continuous)	NONE	1	Injury	Wet	1	1
No	2/13/2007	7:00 PM	Same Direction - Side Swipe	Dark (Street Lights On/ continuous)	[null]	0	Property Damage	Snowy	0	2
No	6/1/2008	10:12 PM	Right Angle	Dark (Street Lights On/ continuous)	[null]	0	Property Damage	Dry	0	2
No	7/29/2008	12:00 PM	Pedestrian	Daylight	[null]	1	Injury	Dry	1	1
No	8/3/2008	11:45 AM	Right Angle	Daylight	[null]	0	Property Damage	Dry	0	2

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Baldwin Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	OTHER PROPERTY DAMAGE	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
4/23/2007	8:30 AM	Pedestrian	Daylight	NONE	1	Injury	Dry	1	1	1
9/6/2007	8:19 AM	Right Angle	Daylight	NONE	0	Property Damage	Dry	0	0	2
9/23/2007	3:16 PM	Fixed Object	Daylight	[null]	0	Property Damage	Dry	0	0	2
10/22/2007	10:52 AM	Pedalcyclist	Daylight	[null]	0	Injury	Dry	1	1	1
11/27/2007	10:25 AM	Right Angle	Daylight	STREET SIGN	0	Injury	Dry	1	0	2
1/5/2007	12:38 PM	Encroachment	Daylight	NONE	0	Injury	Wet	1	0	2
4/17/2008	7:26 AM	Pedalcyclist	Daylight	[null]	0	Injury	Dry	1	1	1
4/26/2008	9:23 PM	Right Angle	Dark (Street LIghts On/ spot)	[null]	0	Property Damage	Dry	0	0	2
6/27/2008	10:17 PM	Pedestrian	Dark (Street Lights On/ continuous)	NONE	1	Injury	Dry	1	1	1
8/20/2008	5:01 PM	Pedalcyclist	Daylight	[null]	0	Injury	Dry	1	1	1
1/30/2008	3:35 PM	Right Angle	Daylight	[null]	0	Property Damage	Dry	0	0	2
1/28/2009	5:59 PM	Right Angle	Dark (Street Lights On/ continuous)	[null]	0	Injury	Snowy	1	0	2
5/30/2009	6:19 PM	Right Angle	Daylight	[null]	0	Injury	Dry	1	0	2
7/16/2009	4:10 PM	Right Angle	Daylight	NONE	0	Injury	Dry	2	0	2
8/8/2009	6:53 AM	Right Angle	Daylight	[null]	0	Injury	Dry	1	0	2

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Hale Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL VEHICLES INVOLVED
9/15/2007	3:20 PM	Right Angle	Daylight	Injury	Dry	1	2
10/3/2007	11:38 AM	Right Angle	Daylight	Injury	Dry	1	3
10/20/2007	3:39 PM	Right Angle	Daylight	Property Damage	Dry	0	2
10/7/2008	6:50 PM	Same Direction - Rear End	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	2
2/17/2008	7:50 PM	Right Angle	Dark (Street Lights On/ continuous)	Property Damage	Wet	0	2
5/13/2008	5:23 PM	Same Direction - Rear End	Daylight	Injury	Dry	1	2
2/3/2008	2:00 PM	Same Direction -	Daylight	Property Damage	Dry	0	2

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Comstock Street

ALCOHOL INVOLVED	CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	OTHER PROPERTY DAMAGE	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL VEHICLES INVOLVED
No	7/3/2007	10:27 PM	Right Angle	Dark (Street Lights On/ continuous)	NONE	0	Injury	Dry	1	2
No	7/6/2007	7:26 PM	Right Angle	Daylight	[null]	0	Property Damage	Dry	0	2
No	9/3/2007	8:54 PM	Left Turn / U Turn	Dark (Street Lights On/ continuous)	[null]	0	Injury	Dry	1	2
No	4/18/2008	12:11 AM	Right Angle	Dark (Street Lights On/ continuous)	FIRE HYDRANT	0	Injury	Dry	1	2
No	5/9/2008	4:31 PM	Right Angle	Daylight	[null]	0	Injury	Wet	1	2
No	4/22/2008	2:02 PM	Same Direction - Rear End	Daylight	[null]	0	Property Damage	Dry	0	2
Yes	6/1/2008	9:44 PM	Pedestrian	Dark (Street Lights On/ continuous)	[null]	1	Injury	Dry	1	1
No	2/20/2009	12:46 PM	Right Angle	Daylight	[null]	0	Injury	Dry	2	2

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Delavan Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
5/19/2007	5:32 PM	Struck Parked	Daylight	Property Damage	Dry	0	0	2
12/31/2007	8:14 AM	Right Angle	Daylight	Property Damage	Wet	0	0	2
2/5/2007	3:32 PM	Right Angle	Daylight	Property Damage	Dry	0	0	2
5/3/2008	10:21 AM	Fixed Object	Daylight	Injury	Dry	1	0	2
11/12/2008	5:22 PM	Pedestrian	Dark (Street Lights On/	Injury	Dry	1	1	3
7/13/2009	11:04 AM	Same Direction - Rear End	Daylight	Property Damage	Dry	0	0	2

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Sandford Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	PEDESTRIANS INJURED	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED	TOTAL VEHICLES INVOLVED
4/17/2007	6:44 AM	Right Angle	Daylight	0	Property Damage	Wet	0	0	2
12/26/2007	5:08 PM	Right Angle	Dark (Street Lights On/ continuous)	0	Injury	Dry	1	0	2
7/13/2007	12:15 PM	Same Direction - Side Swipe	Daylight	0	Property Damage	Dry	0	0	2
2/2/2007	5:04 PM	Right Angle	Dusk	0	Property Damage	Wet	0	0	2
4/19/2008	8:39 PM	Left Turn / U Turn	Dark (Street Lights On/ continuous)	0	Property Damage	Dry	0	0	2
11/10/2008	8:12 AM	Pedestrian	Daylight	1	Injury	Dry	1	2	1
11/19/2008	7:08 PM	Right Angle	Dark (Street Lights On/ continuous)	0	Property Damage	Dry	0	0	2
10/30/2008	6:09 PM	Left Turn / U Turn	Dusk	0	Property Damage	Dry	0	0	2
1/27/2009	4:15 PM	Pedestrian	Daylight	1	Injury	Dry	1	1	1
1/30/2009	4:22 PM	Same Direction - Side Swipe	Daylight	0	Property Damage	Dry	0	0	2
5/30/2009	4:17 PM	Pedalcyclist	Daylight	0	Injury	Dry	1	1	2
7/30/2009	3:24 PM	Right Angle	Daylight	0	Injury	Dry	2	0	2
8/9/2009	2:30 AM	Pedestrian	Dark (Street Lights On/ continuous)	1	Injury	Dry	1	2	1

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Collision Diagrams

Suydam Street

(A) RIGHT ANGLE
- (1) 2/5/07- 7:49 am – Dry, Daylight
- (2) 4/22/07- 9:53 pm – Dry, Dark (Street Lights On/Continuous)
- * (3) 5/1/07- 3:02 pm – Dry, Daylight

(B) RIGHT ANGLE
- (4) 12/8/08- 9:04 pm – Dry, Dark (Street Lights Off)

(C) PEDESTRIAN
- * (5) 3/8/07- 7:22 am – Dry, Daylight

(D) PEDESTRIAN
- * (6) 1/1/07- 2:04 am – Wet, Dark (Street Lights On/Continuous)

(E) PEDESTRIAN
- * (7) 12/28/07- 7:50 pm – Dry, Dark (Street Lights On/Continuous)
- * (8) 11/5/08- 9:30 pm – Wet, Dark (Street Lights On/Continuous)

(F) PEDESTRIAN
- * (9) 9/3/08- 2:00 pm – Dry, Daylight

(G) PEDALCYCLIST
- * (10) 1/8/07- 5:34 pm – Dry, Dark (Street Lights On/Continuous)
- * (11) 10/5/08- 6:15 pm – Dry, Daylight

(H) SAME DIRECTION- SIDE SWIPE
- (12) 4/12/07- 5:17 pm – Dry, Daylight
- (13) 10/15/07- 5:07 pm – Dry, Daylight

(I) SAME DIRECTION- SIDE SWIPE
- (14) 10/15/08- 4:46 pm – Dry, Daylight

(J) SAME DIRECTION- SIDE SWIPE
- (15) 2/16/09- 5:10 pm – Dry, Daylight

(K) SAME DIRECTION - REAR END
- * (16) 5/12/07- 12:16 pm – Dry, Daylight

(L) SAME DIRECTION - REAR END
- (17) 1/31/07- 9:05 am – Wet, Daylight
- (18) 12/10/07- 12:48 pm – Dry, Daylight

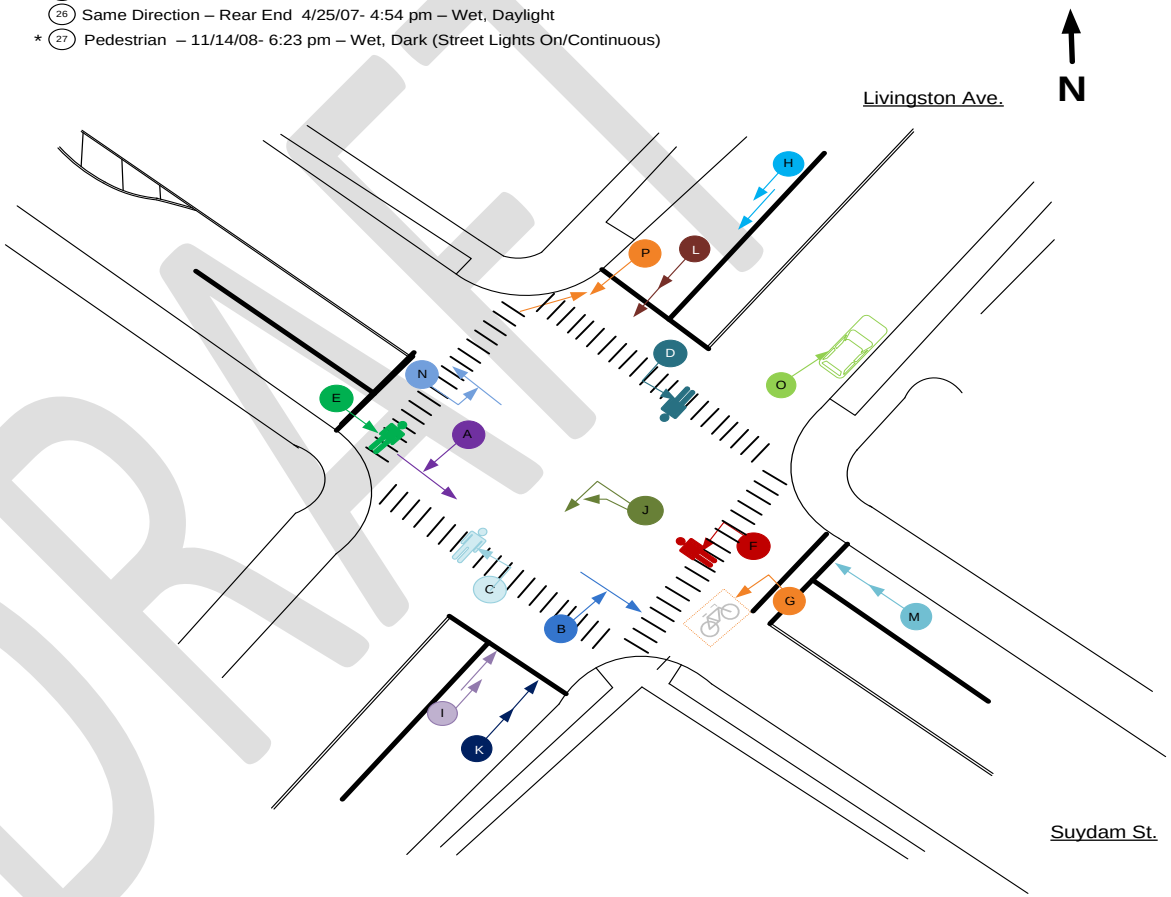
(M) SAME DIRECTION - REAR END
- (19) 2/19/09- 9:10 am – Wet, Daylight
- (20) 11/13/09- 5:03 pm – Wet, Dark (Street Lights On/Continuous)

(N) LEFT TURN/U TURN
- * (21) 11/8/07- 2:40 pm – Dry, Daylight
- (22) 5/4/09- 12:16 pm – Wet, Daylight

(O) STRUCK PARKED VEHICLE
- (23) 12/19/09- 4:57 pm – Snowy, Dark (Street Lights On/Continuous)

(P) BACKING
- (24) 8/6/07- 4:55 pm – Dry, Daylight

( ) OTHER CRASHES
- * (25) Same Direction – Rear End 7/2/07- 9:35 am – Dry, Daylight
- (26) Same Direction – Rear End 4/25/07- 4:54 pm – Wet, Daylight
- * (27) Pedestrian – 11/14/08- 6:23 pm – Wet, Dark (Street Lights On/Continuous)



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Seaman Street

Handy Street

(A) RIGHT ANGLE
- * (1) 4/29/07- 8:55 am – Dry, Daylight

(B) RIGHT ANGLE
- * (2) 10/3/07- 8:07 pm – Dry, Dark (Street Lights On/Continuous)
- (3) 8/3/08- 11:45 am – Dry, Daylight

(C) RIGHT ANGLE
- (4) 6/1/08- 10:12 pm – Dry, Dark (Street Lights On/Continuous)

(D) RIGHT ANGLE
- (5) 9/24/08- 1:05 pm – Dry, Daylight

(E) SAME DIRECTION - SIDE SWIPE
- (6) 10/2/07- 4:55 pm – Dry, Daylight

(F) SAME DIRECTION- SIDE SWIPE
- (7) 2/13/07- 7:00 pm – Snowy, Dark (Street Lights On/Continuous)

(G) SAME DIRECTION- SIDE SWIPE
- (8) 9/7/09- 2:45 pm – Wet
- (9) 9/16/09- 12:06 pm – Dry, Daylight

(H) STRUCK PARKED VEHICLE
- (10) 3/18/07- 12:03 am – Dry, Dark (Street Lights On/Continuous)

(I) STRUCK PARKED VEHICLE
- (11) 9/14/07- 10:01 pm – Dry, Dark (Street Lights On/Continuous)

(J) FIXED OBJECT
- (12) 3/24/07- 1:39 am – Dry, Dark (Street Lights On/Continuous)

(K) PEDESTRIAN
- * (13) 4/6/07- 8:28 pm – Dry, Dark (Street Lights On/Continuous)

(L) PEDESTRIAN
- * (14) 12/19/07- 8:51 pm – Wet, Dark (Street Lights On/Continuous)
- * (15) 7/29/08- 12:00 pm – Dry, Daylight
- * (16) 10/25/09- 7:25 pm – Dry, Dark (Street Lights On/Continuous)

(M) SAME DIRECTION - REAR END
- (17) 9/12/07- 8:30 pm – Dry, Dark (Street Lights Off/Continuous)
- (18) 2/3/08- 5:53 pm – Dry, Dark (Street Lights On/Continuous)
- * (19) 8/20/08- 7:55 pm – Dry, Daylight
- (20) 12/25/08- 3:06 am – Wet, Dark (Street Lights On/Continuous)

(N) SAME DIRECTION - REAR END
- (21) 10/13/07- 2:12 pm – Dry, Daylight

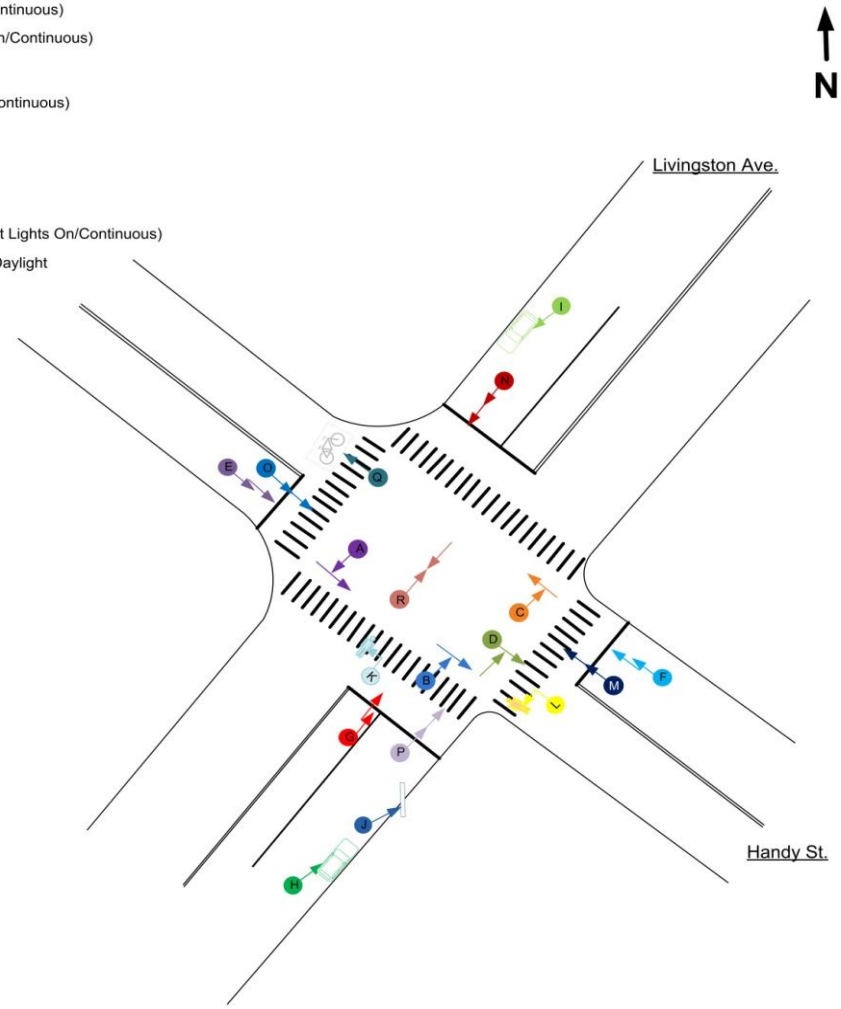
(O) SAME DIRECTION - REAR END
- * (22) 8/14/08- 4:55 pm – Dry, Daylight
- (23) 3/12/09- 6:42 am – Dry, Dawn
- (24) 3/20/09- 5:18 pm – Dry, Daylight

(P) SAME DIRECTION - REAR END
- * (25) 1/5/08- 6:33 pm – Dry, Dark (Street Lights On/Continuous)
- (26) 10/26/08- 12:16 am – Wet, Dark (Street Lights On/Continuous)

(Q) PEDALCYCLIST
- * (27) 2/2/07- 5:44 pm – Wet, Dark (Street Lights On/Continuous)

(R) OPPOSTITE DIRECTION – HEAD ON/ANGULAR
- (28) 8/15/08- 4:27 pm – Dry, Daylight

( ) OTHER CRASHES
- * (29) Right Angle – 1/6/07- 6:05 pm – Dry, Dark (Street Lights On/Continuous)
- (30) Struck Park Vehicle – 11/20/07- 4:39 pm – Dry, Daylight



Baldwin Street

(A) PEDESTRIAN
- (1) 4/23/07-8:30am-Dry, Daylight *INJURY

(B) RIGHT ANGLE
- (2) 9/6/07-8:19am-Dry, Daylight
- (3) 11/27/07-10:25am-Dry, Daylight *INJURY
- (4) 5/30/09-6:19pm-Dry, Daylight *INJURY

(C) FIXED OBJECT
- (5) 9/23/07-3:16p.m.-Dry, Daylight

(D) PEDALCYCLIST
- (6) 10/22/07-10:52am-Dry, Daylight *INJURY

(E) ENCROACHMENT
- (7) 1/5/07-12:38pm-Wet,Daylight *INJURY

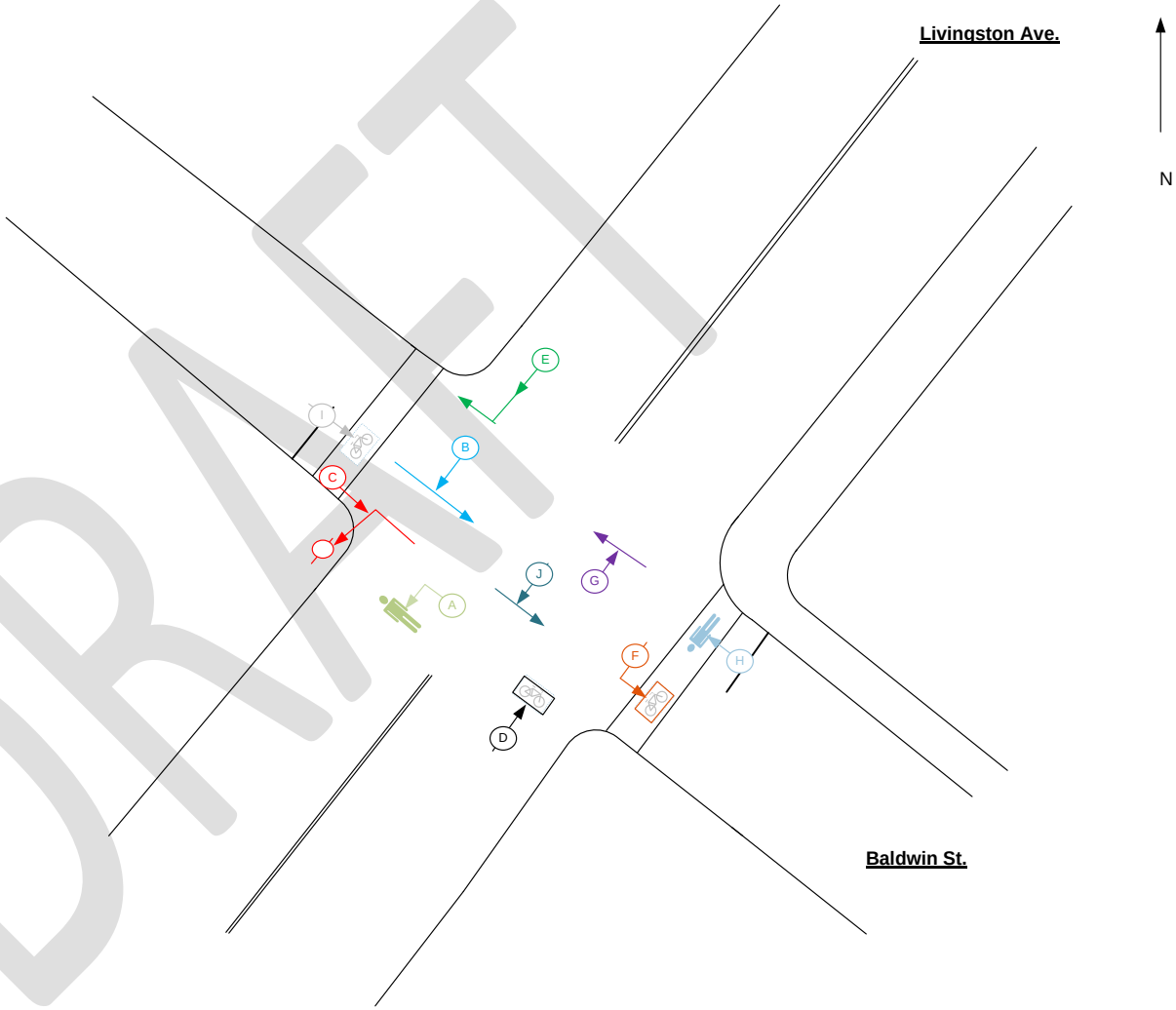
(F) PEDALCYCLIST
- (8) 4/17/08-7:26am-Dry, Daylight *INJURY

(G) RIGHT ANGLE
- (9) 4/26/08-9:23pm-Dry, Dark (Street lights on / continuous)
- (10) 7/16/09-4:10pm- Dry, Daylight *INJURY
- (11) 8/8/09-6:53am-Dry, Daylight *INJURY

(H) PEDESTRIAN
- (12) 6/27/08-10:17pm-Dry, Dark (Street lights on / continuous) *INJURY

(I) PEDALCYCLIST
- (13) 8/20/08-5:01pm-Dry, Daylight *INJURY

(J) RIGHT ANGLE
- (14) 1/30/08-3:35pm-Dry, Daylight
- (15) 1/28/09-5:59pm-Snowy, Dark (Street lights on / continuous) *INJURY



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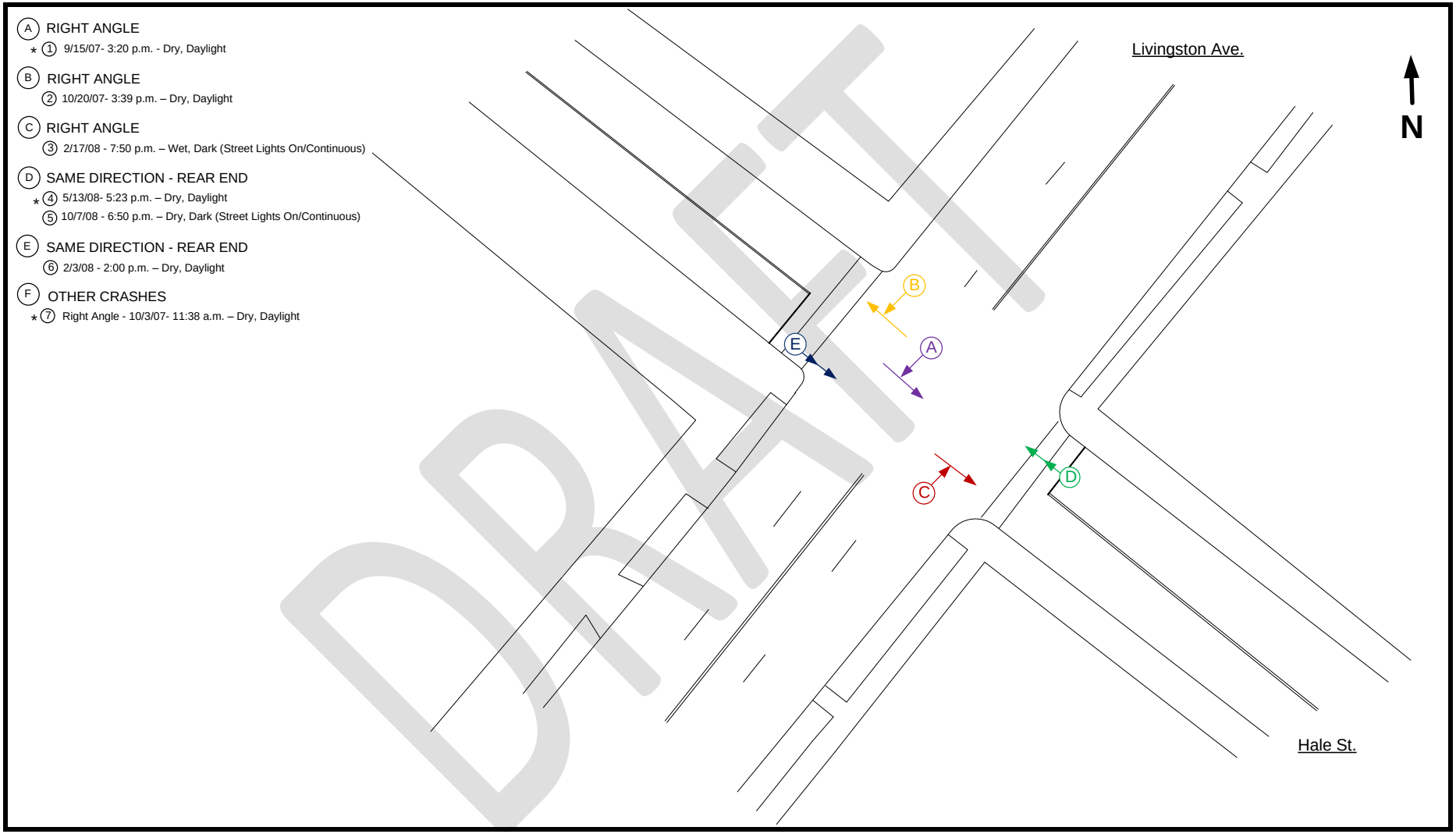
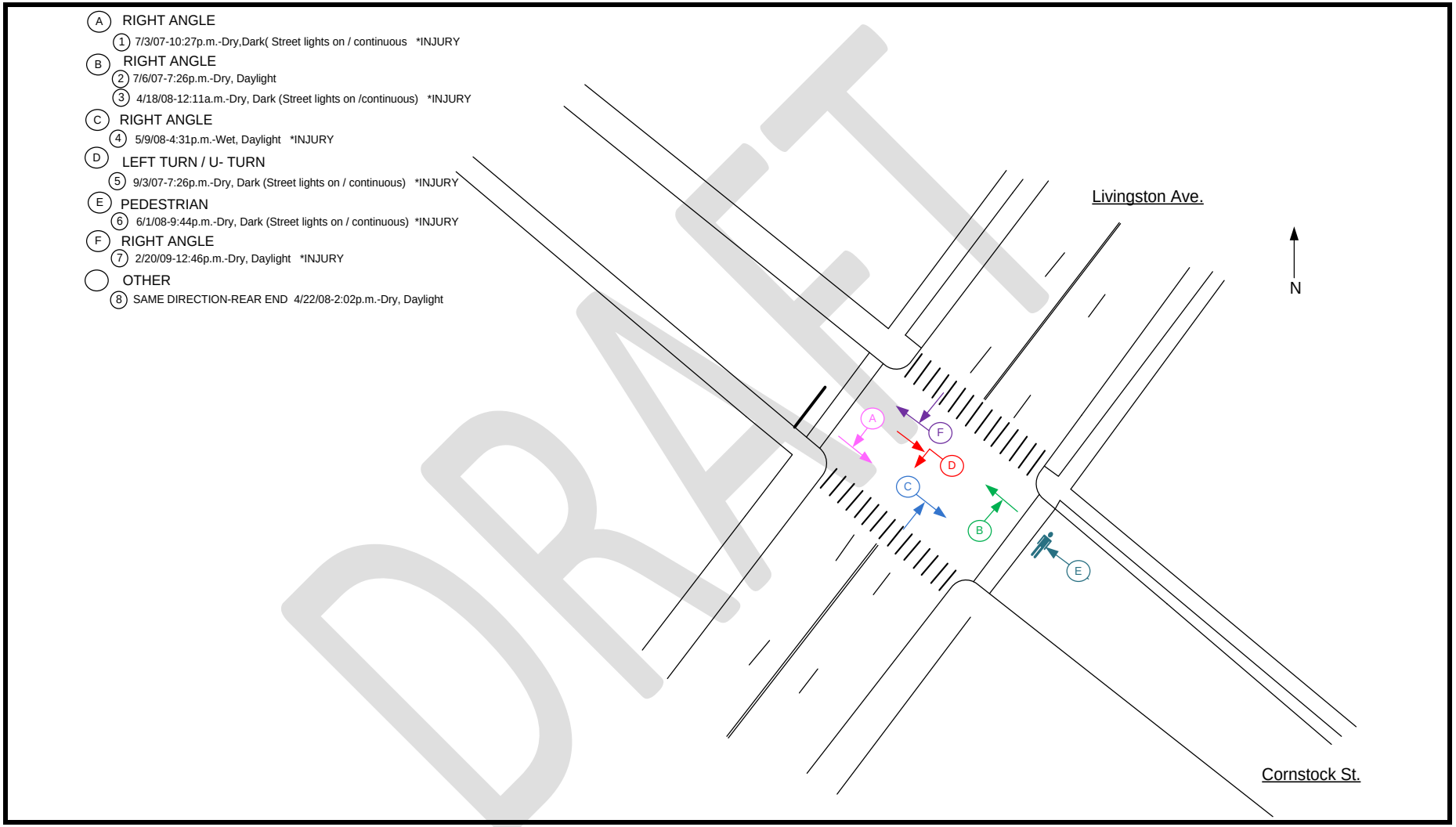
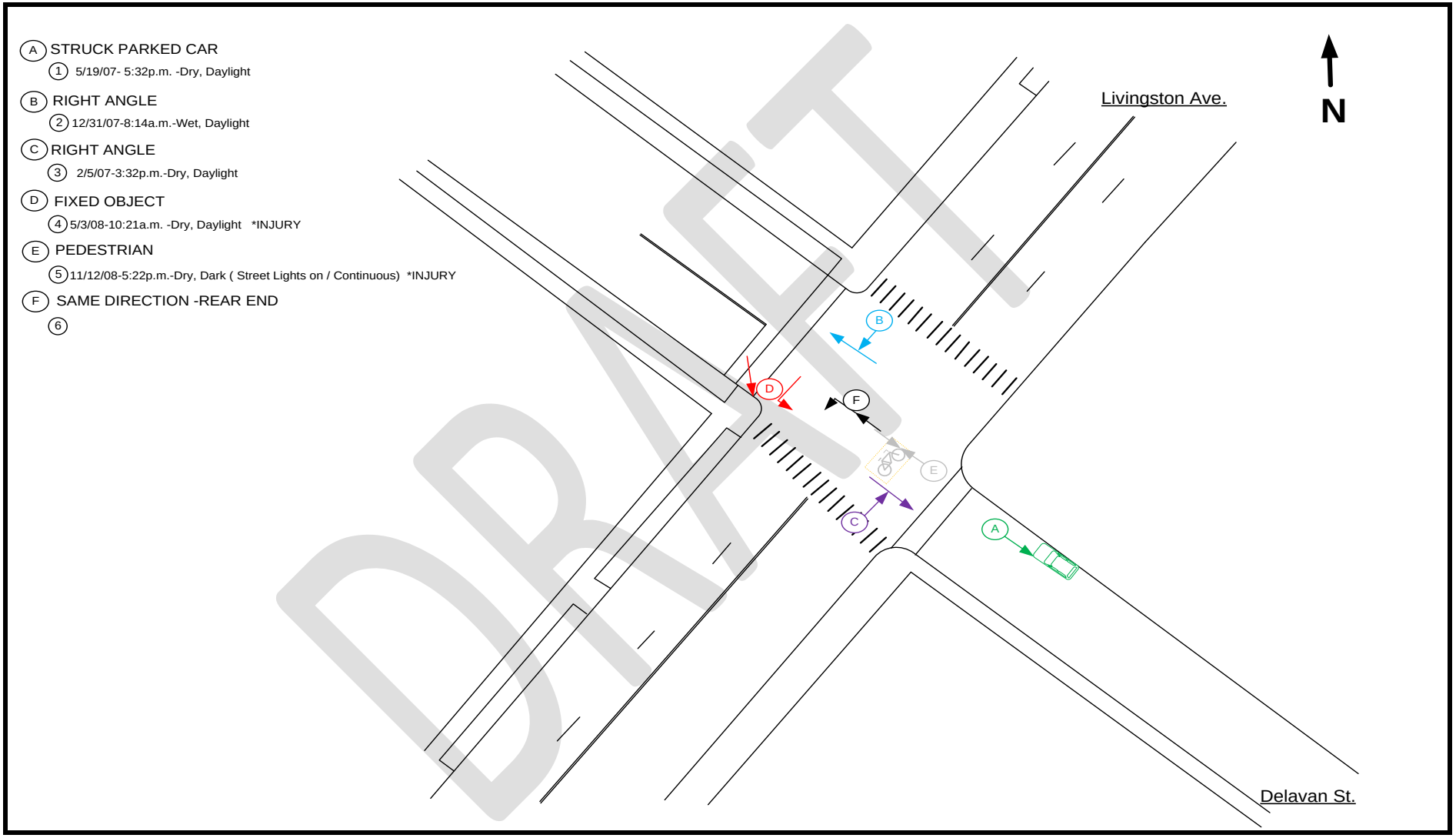
Hale Street


A RIGHT ANGLE
* 1 9/15/07- 3:20 p.m. - Dry, Daylight
B RIGHT ANGLE
2 10/20/07- 3:39 p.m. – Dry, Daylight
C RIGHT ANGLE
3 2/17/08 - 7:50 p.m. – Wet, Dark (Street Lights On/Continuous)
D SAME DIRECTION - REAR END
* 4 5/13/08- 5:23 p.m. – Dry, Daylight
5 10/7/08 - 6:50 p.m. – Dry, Dark (Street Lights On/Continuous)
E SAME DIRECTION - REAR END
6 2/3/08 - 2:00 p.m. – Dry, Daylight
F OTHER CRASHES
* 7 Right Angle - 10/3/07- 11:38 a.m. – Dry, Daylight
Livingston Ave.
N
B
A
E
C
D
Hale St.
DRAFT

Comstock Street



Delavan Street



Sandford Street

(A) RIGHT ANGLE
- (1) 4/17/07- 6:44a.m.-Wet, Daylight
- (2) 7/30/09-3:24p.m.- Dry, Daylight *INJURY

(B) RIGHT ANGLE
- (3) 12/26/07-5:08p.m.- Dry, Dark (Street Light on / continuous) *INJURY

(C) SAME DIRECTION-SIDE SWIPE
- (4) 7/13/07-12:15p.m.-Dry,Daylight

(D) RIGHT ANGLE
- (5) 2/2/07-5:04p.m.- Wet, Dusk

(E) LEFT TURN / U-TURN
- (6) 4/19/08-8:39p.m.-Dry,Dark (Street Light on / continuous)

(F) RIGHT ANGLE
- (7) 11/19/08-7:08p.m.-Dry, Dark (Street Lights on / continuous)

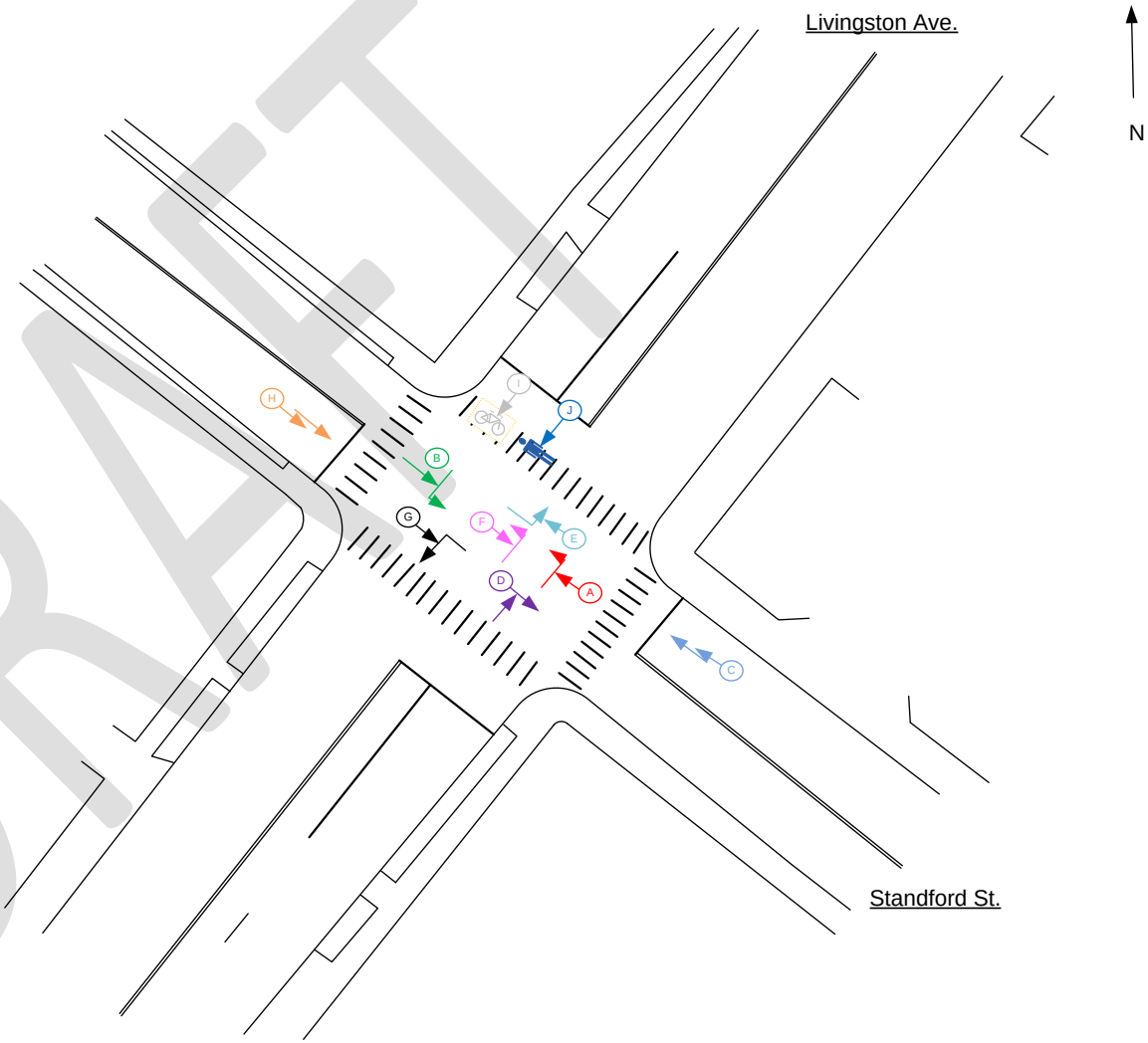
(G) LEFT TURN / U-TURN
- (8) 10/30/08-6:09p.m.-Dry,Dusk

(H) SAME DIRECTION-SIDE SWIPE
- (9) 1/30/09-4:22p.m.-Dry,Daylight

(I) PEDACYCLIST
- (10) 5/30/09-4:17p.m. -Dry, Daylight *INJURY

(J) PEDESTRIAN
- (11) 8/9/09-2:30a.m. -Dry, Dark (Street Lights on / continuous) *INJURY

( ) OTHER
- (12) PEDESTRIAN- 11/10/08-8:12a.m. -Dry, Daylight *INJURY
- (13) PEDESTRIAN- 1/30/09-4:22p.m. -Dry, Daylight *INJURY



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Appendix B

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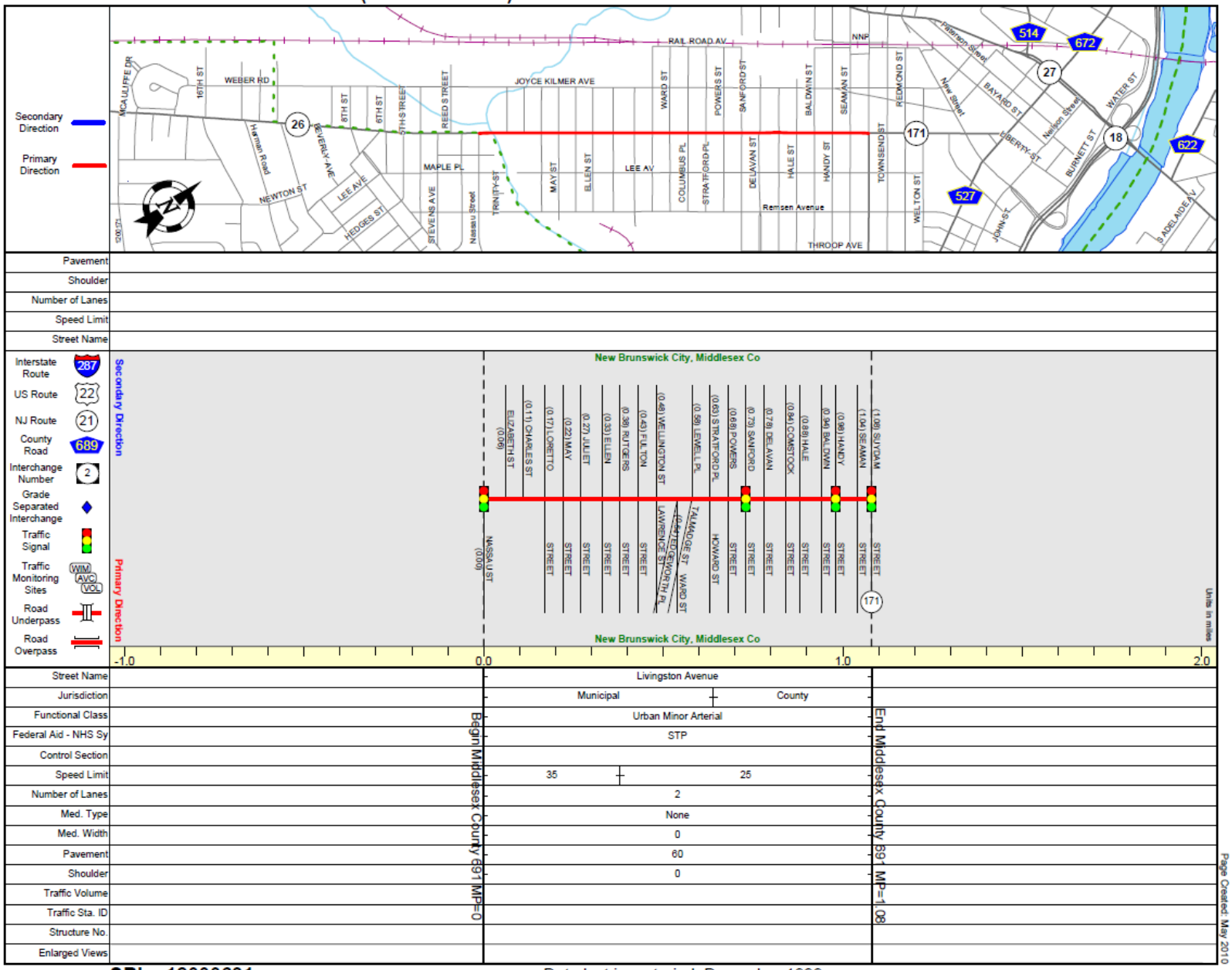
Straight Line Diagram

MIDDLESEX COUNTY 691 (South to North) **Mile Posts: 0.000 - 1.080**



SRI = 12000691__ Date last inventoried: December 1999

Volume Data

NEW JERSEY DEPARTMENT OF TRANSPORTATION
DIVISION OF TRAFFIC ENGINEERING AND SAFETY
Bureau of Transportation Data Development

Station ID : 4-4-357
SRI : 00000171__
Milepost : 2.37
Date : 9/18/2007
Latitude : 40.4915667
Longitude : -74.4460167

Street Name : LIVINGSTON AVE
Location: BET WELTON & MORRIS STS
Direction: North/South

County : Middlesex
Municipality : New Brunswick City
By : Baker

Date	9/18/2007		9/19/2007		9/20/2007		9/21/2007		9/22/2007		9/23/2007		9/24/2007		HOUR	Weekday Average	
Day	tuesday		wednesday		thursday		friday		saturday		sunday		monday				
direction	n	s	n	s	n	s	n	s	n	s	n	s	n	s		n	s
0AM - 1AM	-	-	75	86	94	90									0AM - 1AM	84	88
1 - 2	-	-	50	33	43	44									1 - 2	46	38
2 - 3	-	-	24	21	17	25									2 - 3	20	23
3 - 4	-	-	35	7	24	11									3 - 4	30	9
4 - 5	-	-	31	7	42	20									4 - 5	36	14
5 - 6	-	-	105	33	113	44									5 - 6	109	38
6 - 7	-	-	264	89	266	92									6 - 7	265	90
7 - 8	-	-	548	197	564	170									7 - 8	556	184
8 - 9	-	-	899	299	931	269									8 - 9	915	284
9 - 10	-	-	728	284	525	300									9 - 10	626	292
10 - 11	-	-	461	281	471	285									10 - 11	466	283
11 - 12	435	291	445	281											11 - 12	440	286
12 N - 1PM	552	332	509	345											12 N - 1PM	530	338
1 - 2	490	352	501	371											1 - 2	496	362
2 - 3	518	341	531	362											2 - 3	524	352
3 - 4	572	429	552	451											3 - 4	562	440
4 - 5	656	546	647	605											4 - 5	652	576
5 - 6	684	556	623	557											5 - 6	654	556
6 - 7	639	454	606	405											6 - 7	622	430
7 - 8	479	351	424	313											7 - 8	452	332
8 - 9	312	263	305	274											8 - 9	308	268
9 - 10	264	208	289	218											9 - 10	276	213
10 - 11	170	186	183	159											10 - 11	176	172
11 - 12	117	96	158	98											11 - 12	138	97
															24 hours	8983	5765
															Pattern Factor	0.93	0.93
															Axle Cor. Fact	0.964	0.964
															Est. AADT	8053	5168
															2 - way AADT	13221	
															k - factor	0.09	
															D - factor	0.53	

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Appendix C

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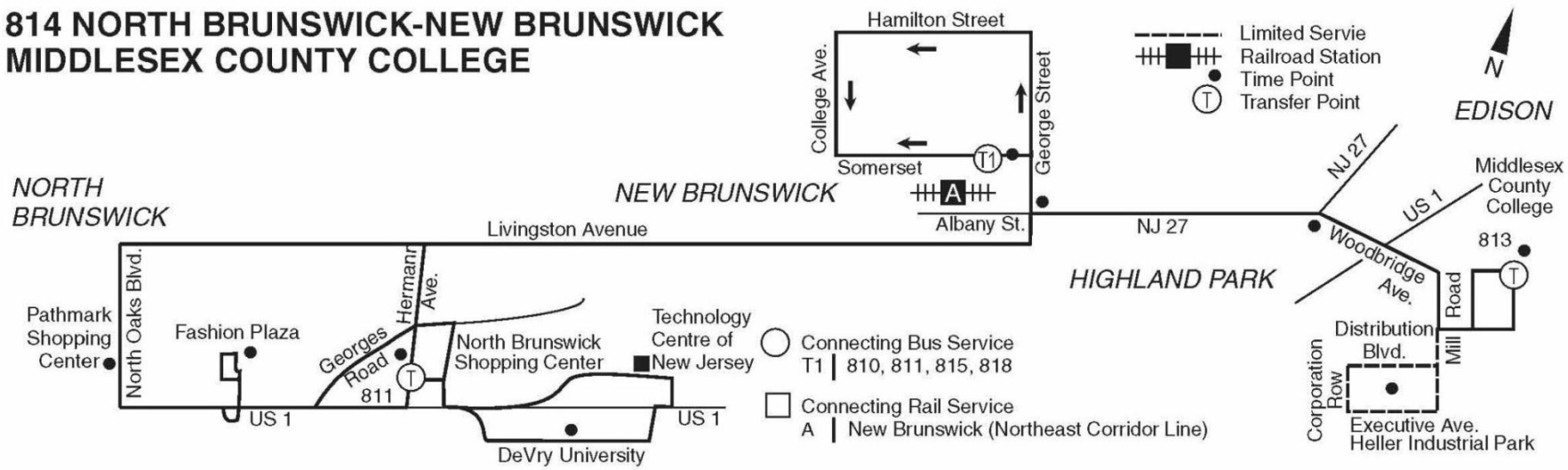
NJ Transit Bus #814



To Middlesex County College

Weekdays

NORTH BRUNSWICK Fashion Plaza	NORTH BRUNSWICK Pathmark Shopping Center	NORTH BRUNSWICK DeVry College of Technology	NORTH BRUNSWICK North Brunswick Shopping Center	NEW BRUNSWICK George St. at Albany St.	HIGHLAND PARK NJ 27 at Woodbridge Ave.	EDISON Heller Industrial Park	EDISON Middlesex County College
600	603	–	–	617	629	639	644
630	633	–	–	647	–	–	–
655	658	–	–	712	724	–	734
700	703	–	–	717	729	739	744
–	–	730	733	747	–	–	–
800	803	–	–	817	829	–	839
–	–	830	833	847	–	–	–
900	903	–	–	917	929	–	939
–	–	930	933	947	–	–	–
1000	1003	–	–	1017	1029	–	1039
–	–	1030	1033	1047	–	–	–
1100	1103	–	–	1117	1129	–	1139
–	–	1130	1133	1147	–	–	–
1200	1203	–	–	1217	1229	–	1239
–	–	1230	1233	1247	–	–	–
100	103	–	–	117	129	–	139
–	–	130	133	147	–	–	–
200	203	–	–	217	229	–	239
228	–	–	233	247	–	–	–
300	303	–	–	317	329	–	339
–	–	330	333	347	–	–	–
358	–	403	–	417	432	–	444
428	–	–	433	447	–	–	–
500	503	–	–	517	532	–	544
–	–	530	533	547	–	–	–
600	603	–	–	617	629	–	639
–	–	630	633	647	–	–	–
700	703	–	–	717	729	–	739
800	–	805	808	822	834	–	844
900	903	–	–	917	929	–	939
1000	–	1005	1008	1022	–	–	–

Saturdays

NORTH BRUNSWICK DeVry College of Technology	NORTH BRUNSWICK Fashion Plaza	NORTH BRUNSWICK Pathmark Shopping Center	NORTH BRUNSWICK North Brunswick Shopping Center	NEW BRUNSWICK George St. at Albany St.	HIGHLAND PARK NJ 27 at Woodbridge Ave.	EDISON Middlesex County College
–	730	733	–	747	759	809
–	830	–	835	849	901	911
–	930	933	–	947	959	1009
–	1030	–	1035	1049	1101	1111
–	1130	1133	–	1147	1159	1209
–	1230	–	1235	1249	–	–
–	130	133	–	147	–	–
–	230	–	235	249	–	–
–	330	333	–	347	–	–
–	430	–	435	449	–	–
530	535	538	–	552	–	–
–	630	–	635	649	–	–

To North Brunswick

Weekdays

EDISON Middlesex County College	EDISON Heller Industrial Park	HIGHLAND PARK NJ 27 at Woodbridge Ave.	NEW BRUNSWICK Somerset St. at George St.	NORTH BRUNSWICK North Brunswick Shopping Center	NORTH BRUNSWICK DeVry College of Technology	NORTH BRUNSWICK Pathmark Shopping Center	NORTH BRUNSWICK Fashion Plaza
–	–	–	630	–	647	–	654
–	–	–	700	717	720	–	–
706	–	716	725	–	–	742	747
–	–	–	800	817	820	–	–
806	–	816	825	–	–	842	847
–	–	–	900	917	920	–	–
906	–	916	925	–	–	942	947
–	–	–	1000	1017	1020	–	–
1006	–	1016	1025	–	–	1042	1047
–	–	–	1100	1117	1120	–	–
1106	–	1116	1125	–	–	1142	1147
–	–	–	1200	1217	1220	–	–
1206	–	1216	1225	–	–	1242	1247
–	–	–	100	117	120	–	–
106	–	116	125	–	–	142	147
–	–	–	200	217	–	–	220
206	–	216	225	–	–	242	247
–	–	–	300	317	320	–	–
306	–	316	325	–	–	342	347
–	–	–	400	417	–	–	420
400	405	417	429	–	–	446	451
–	–	–	500	517	520	–	–
500	505	517	529	–	–	546	551
–	–	–	600	617	620	–	–
600	605	615	624	–	–	641	646
706	–	716	725	–	–	742	747
806	–	816	825	–	–	842	847
906	–	916	925	–	–	942	947
1006	–	1016	1025	–	–	1042	1047

Saturdays

EDISON Middlesex County College	HIGHLAND PARK NJ 27 at Woodbridge Ave.	NEW BRUNSWICK Somerset St. at George St.	NORTH BRUNSWICK North Brunswick Shopping Center	NORTH BRUNSWICK DeVry College of Technology	NORTH BRUNSWICK Pathmark Shopping Center	NORTH BRUNSWICK Fashion Plaza
–	–	700	717	720	–	–
841	851	900	–	–	917	922
941	951	1000	1017	–	–	1020
1041	1051	1100	–	–	1117	1122
1141	1151	1200	1217	–	–	1220
1241	1251	100	–	–	117	122
–	–	200	217	–	–	220
–	–	300	–	–	317	322
–	–	400	417	–	–	420
–	–	500	–	–	517	522
–	–	600	617	–	–	620
–	–	700	–	–	717	722

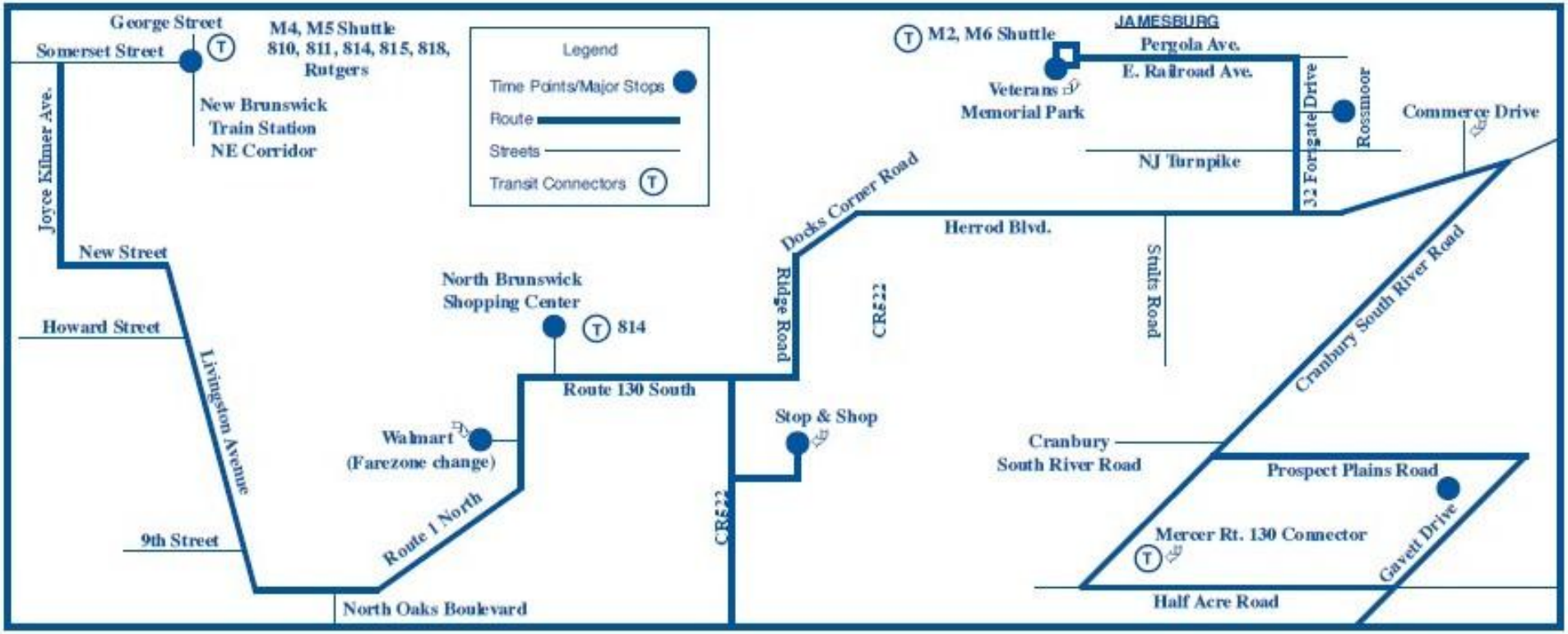
Holiday Service Guide

Holiday	Schedule In Effect
New Year's Day - Jan. 1**	No Service
Martin Luther King Jr. Day	Weekday
Presidents' Day	Weekday
Good Friday	Weekday
Easter	No Service
Memorial Day	No Service
Independence Day - July 4**	No Service
Labor Day	No Service
Columbus Day	Weekday
Veterans Day	Regular service
Wednesday Before Thanksgiving	See website for details
Thanksgiving Day	No Service
Friday After Thanksgiving	Weekday
Christmas Eve	See website for details
Christmas Day - Dec. 25**	No Service
New Year's Eve	See website for details

**Observed Holidays - When this holiday falls on a weekend a special schedule will be operated on the observed holiday.

Please check our website at www.njtransit.com to confirm the schedule in effect on holidays.

Middlesex County M1



NOTE: All Saturday trips stop at Wal-Mart.

New Brunswick – Jamesburg Shuttle
To Jamesburg

	NB Rail	New & Livingston	Walmart	NB SC	Stop & Shop CR522	Rt. 130/522	Rossmoor	Vet. Park/ Jamesburg	Gavett Dr.
W	645	650	---	---	---	710	---	---	730
W	655	700	---	---	---	720	---	755	745
	800	806	---	823	840	843	845	850	---
	900	906	920	923	940	943	945	950	---
	1000	1006	1020	1023	1040	1043	1045	1050	---
	1100	1106	1120	1123	1140	1143	1145	1150	---
	100	106	120	123	140	143	145	150	---
	200	206	220	223	240	243	245	250	---
	300	306	320	323	340	343	345	350	---
S	400	406	---	423	440	443	---	---	450

W - Operates on Monday through Friday Only S - Operates on Saturday via Veterans Park at 4pm departure

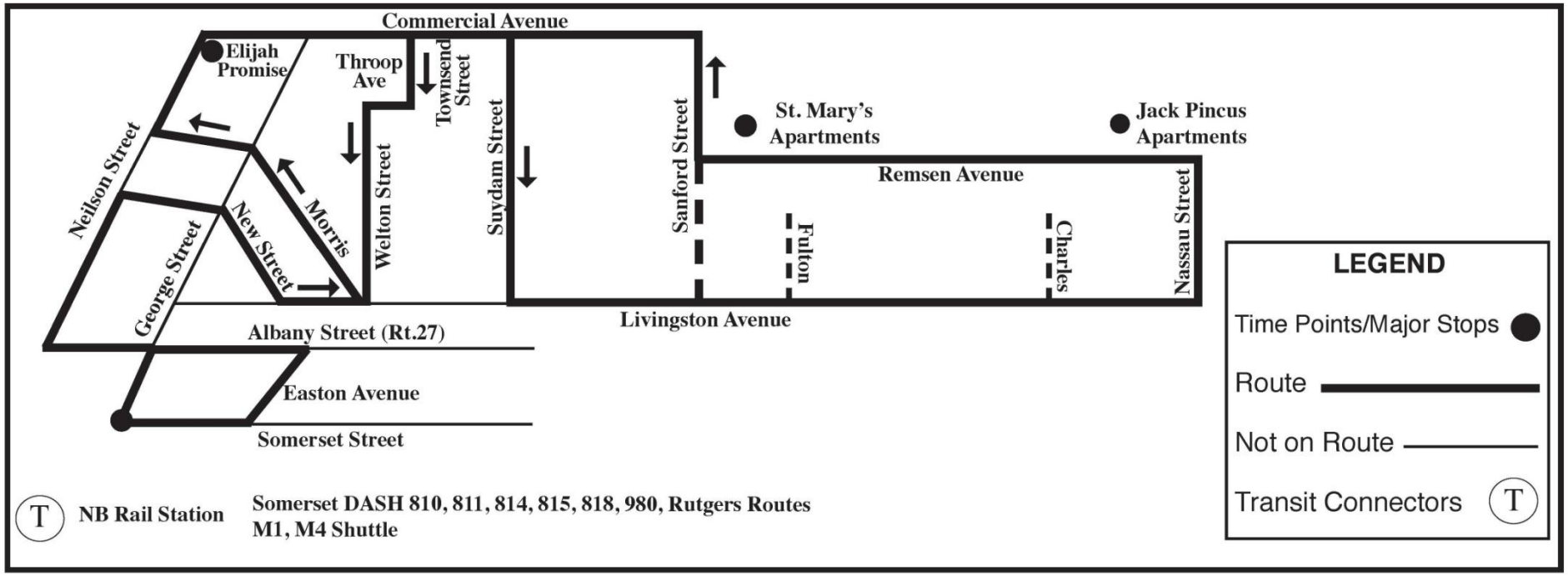
NOTE: All Saturday trips stop at Wal-Mart.

To New Brunswick

	Vet. Park/ Jamesburg	Gavett Dr.	Rossmoor	Rt. 130/522	Stop & Shop CR522	NB SC	Walmart	New & Livingston	NB Rail
	800	---	808	815	820	830	---	840	850
	900	---	908	915	920	930	935	940	950
	1000	---	1008	1015	1020	1030	1035	1040	1050
	1100	---	1108	1115	1120	1130	1135	1140	1150
	100	---	108	115	120	130	135	140	150
	200	---	208	215	220	230	235	240	250
	300	---	308	315	320	330	335	340	350
S	---	405	---	415	---	---	---	445	450
W	---	450	---	505	---	---	---	530	535

W - Operates on Monday through Friday Only S - Operates on Saturday via Veterans Park at 4pm departure

Middlesex County M5



Brunsquick-Commercial Avenue Shuttle

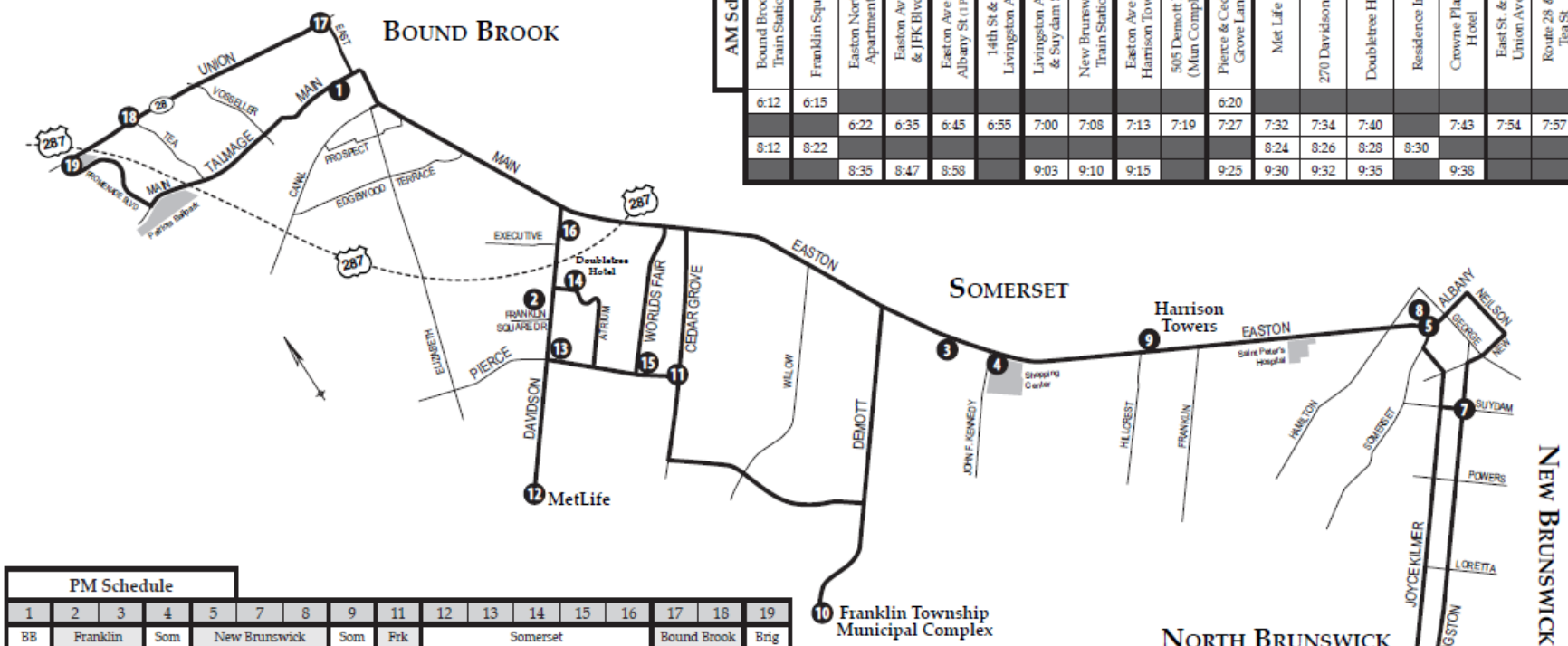
	George & Somerset	Morris & Neilson	Commercial & Suydam	Livingston & May St.	Jack Pincus Apartments	Commercial & Sandford	Commercial & Townsend	George & Somerset
W	545 AM	550	553	558	600	602	605	610
W	615	620	623	628	630	632	635	640
W	645	650	653	658	700	702	705	710
W	715	720	723	728	730	732	735	740
	745	750	753	758	800	802	805	810
	815	820	823	828	830	832	835	840
	845	850	853	858	900	902	905	910
	915	920	923	928	930	932	935	940
	945	950	953	958	1000	1002	1005	1010
	1015	1020	1023	1028	1030	1032	1035	1040
	1045	1050	1053	1058	1100	1102	1105	1110
W	1115	1120	1123	1128	1130	1132	1135	1140
W	1145	1150	1153	1158	1200	1202	1205	1210
	1215PM	1220	1223	1228	1230	1232	1235	1240
	1245	1250	1253	1258	100	102	105	110
	115	120	123	128	130	132	135	140
	145	150	153	158	200	202	205	210
	215	220	223	228	230	232	235	240
	300	305	308	313	315	317	320	325
	330	335	338	343	345	347	350	355
	400	405	408	413	415	417	420	425
W	430	435	438	443	445	447	450	455
W	500	505	508	513	515	517	520	525
W	530	535	538	543	545	547	550	555
W	600	605	608	613	615	617	620	625

W - No Saturday Service

SHUTTLE BUS STOPS

Livingston & Handy Street
Livingston & Comstock Street
Livingston & Sandford Street
Livingston & Stratford Place
Livingston & Wellington Place
Livingston & Ellen Street
Livingston & May Street
Livingston & Charles Street
Livingston & Elizabeth St. (Foodtown side)

Somerset County DASH 1



AM Schedule

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
BB	Franklin		Som	NwB	NoB	NwB		Somerset		Frk	Somerset					Bound Brook		Brig
Bound Brook Train Station	Franklin Square	Easton North Apartments	Easton Ave & JFK Blvd	Easton Ave & Albany St (1 Penn)	14th St & Livingston Ave	Livingston Ave & Suydam St	New Brunswick Train Station	Easton Ave & Harrison Towers	505 Demott Ln (Mun Complex)	Pierce & Cedar Grove Lane	Met Life	270 Davidson Ave	Doubletree Hotel	Residence Inn	Crowne Plaza Hotel	East St. & Union Ave	Route 28 & Tea St	Bridgewater Promenade
6:12	6:15									6:20								
		6:22	6:35	6:45	6:55	7:00	7:08	7:13	7:19	7:27	7:32	7:34	7:40		7:43	7:54	7:57	8:00
8:12	8:22										8:24	8:26	8:28	8:30				
		8:35	8:47	8:58		9:03	9:10	9:15		9:25	9:30	9:32	9:35		9:38			

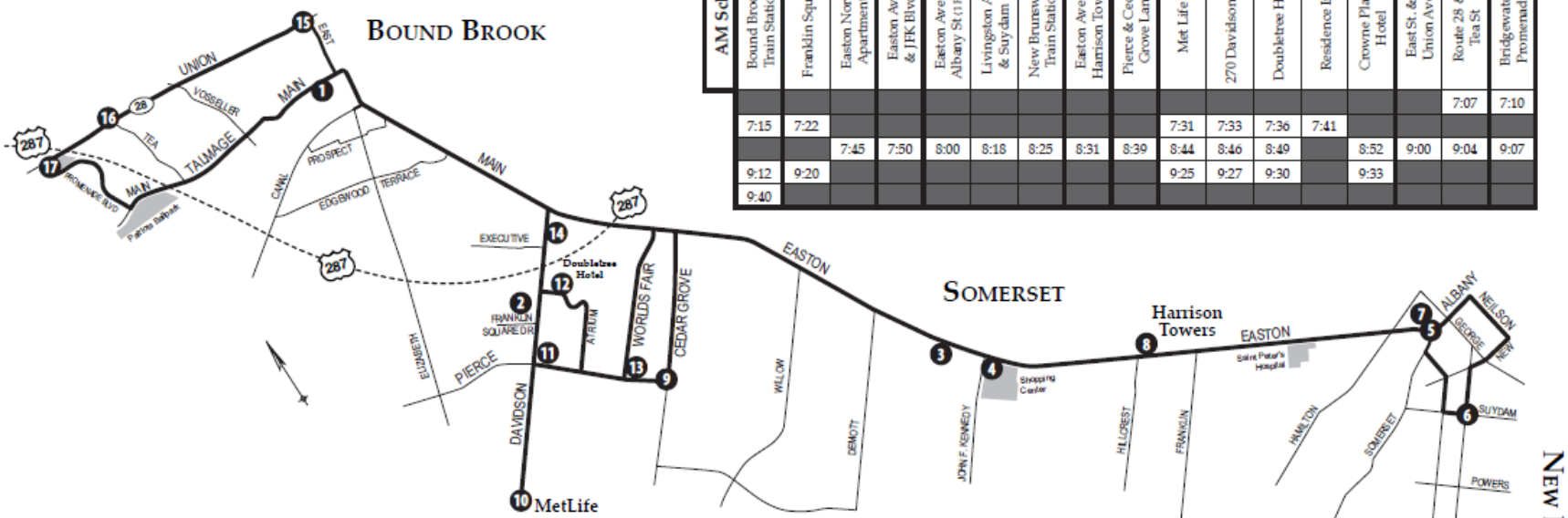
PM Schedule

1	2	3	4	5	7	8	9	11	12	13	14	15	16	17	18	19
BB	Franklin		Som	New Brunswick			Som	Frk	Somerset					Bound Brook		Brig
Bound Brook Train Station	Franklin Square	Easton North Apartments	Easton Ave & JFK Blvd	Easton Ave & Albany St (1 Penn)	Livingston Ave & Suydam St	New Brunswick Train Station	Easton Ave & Harrison Towers	Pierce & Cedar Grove Lane	Met Life	270 Davidson Ave	Doubletree Hotel	Residence Inn	Crowne Plaza Hotel	East St. & Union Ave	Route 28 & Tea St	Bridgewater Promenade
3:20	3:25								3:28	3:30	3:33	3:38				
		3:42	3:44	3:50	3:56	4:07	4:13	4:23	4:30	4:32	4:35		4:38	4:50	4:53	4:56
5:10	5:20								5:25	5:28	5:31	5:36				
		5:41	5:44	5:52	5:59	6:05	6:12	6:20								

TOWN KEY

BB =	Bound Brook
Brig =	Bridgewater
Frk =	Franklin
NwB =	New Brunswick
NoB =	North Brunswick
Som =	Somerset

Somerset County DASH 2



AM Schedule

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
BB	Franklin		Som	New Brunswick			Som	Frk	Somerset					Bound Brook		Brig
Bound Brook Train Station	Franklin Square	Easton North Apartments	Easton Ave & JFK Blvd	Easton Ave & Albany St (1 Penn)	Livingston Ave & Suydam St	New Brunswick Train Station	Easton Ave & Harrison Towers	Pierce & Cedar Grove Lane	Met Life	270 Davidson Ave	Doubletree Hotel	Residence Inn	Crowne Plaza Hotel	East St. & Union Ave	Route 28 & Tea St	Bridgewater Promenade
															7:07	7:10
7:15	7:22								7:31	7:33	7:36	7:41				
		7:45	7:50	8:00	8:18	8:25	8:31	8:39	8:44	8:46	8:49		8:52	9:00	9:04	9:07
9:12	9:20								9:25	9:27	9:30		9:33			
9:40																

PM Schedule

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
BB	Franklin		Som	New Brunswick			Som	Frk	Somerset					Bound Brook		Brig
Bound Brook Train Station	Franklin Square	Easton North Apartments	Easton Ave & JFK Blvd	Easton Ave & Albany St (1 Penn)	Livingston Ave & Suydam St	New Brunswick Train Station	Easton Ave & Harrison Towers	Pierce & Cedar Grove Lane	Met Life	270 Davidson Ave	Doubletree Hotel	Residence Inn	Crowne Plaza Hotel	East St. & Union Ave	Route 28 & Tea St	Bridgewater Promenade
									3:35	3:38	3:41		3:44	3:50	3:55	3:58
4:05	4:15								4:31	4:34	4:37	4:42				
		4:47	4:50	4:58	5:04	5:10	5:17	5:27	5:33	5:36	5:39		5:42	5:51	5:56	5:59
6:15	6:23								6:25	6:27	6:30	6:34				
		6:37	6:39			6:47	6:54									
7:03																7:09

TOWN KEY	
BB =	Bound Brook
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Som =	Somerset