New Brunswick Train Station – Road Safety Audit

FINAL REPORT

October 2013

Submitted by

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In cooperation with

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Supplementary Notes

Abstract

This report documents findings and recommendations made by the RSA team on November 30, 2012.

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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 retro-reflectivity 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 approximately 60 percent.

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Introduction

In 2011, Rutgers' CAIT (Center for Advanced Infrastructure and Transportation) and Dr. Eric Gonzalez , of Rutgers' Department of Civil and Environmental Engineering, successfully partnered with the City of New Brunswick to receive *a Community-University Research Partnership* grant from the Rutgers University Office of Community Affairs. This grant provided funding to analyze traffic and safety in downtown New Brunswick in the vicinity of the train station. The objective of the project was to:

> analyze traffic congestion and safety effects of pedestrians and drivers in the vicinity of the New Brunswick train station. The research results will identify low-cost, implementable solutions for the community and Middlesex County in managing multiple modal users, while simultaneously contributing ideas to the transportation engineering field. This project will be led in partnership with the City of New Brunswick's director of planning, community, and economic development. Outcomes will be shared with the City of New Brunswick, County of Middlesex, New Jersey Department of Transportation, the Federal Highway Administration, and Rutgers University

The complex multimodal operations of the surface transportation in the vicinity of the train station were of specific concern to the city. The train station area is adjacent to Johnson and Johnson's headquarters, Rutgers University's College Avenue Campus, and Robert Wood Johnson University Hospital. All of these generate a significant number of vehicles, pedestrians, and bicycles. Additionally, the train station provides access to the cities of New York, Newark, and Trenton, and—through Amtrak—Washington, D.C., and Boston. In addition to the train, there exists significant intra- and inter-county public bus transportation, in addition to the bus system operated by Rutgers University. More so, as Robert Wood Johnson University Hospital is the regional trauma center, there are a significant number of ambulance and paramedic emergency vehicles navigating the city streets. Additionally, both Albany and George Streets and Easton Avenue serve as critical regional arterials connecting western New Brunswick and Franklin Township with the regional highway network. As such, regional and local truck traffic is significant through the corridor.

For the many complexities noted above, this area has a significant amount of multimodal traffic. The city is looking to further capitalize on the activity of the areas, and has designated the train station as the central focus point for transit-oriented development, which is a critical component of New Brunswick's comprehensive economic development plan. The city is interested in identifying ways to improve safety at these locations for vehicles, pedestrians, and bicyclists. This Road Safety Audit will bring together various stakeholders, experts, and roadway/facility owners for improvements that facilitate the safe movement of all roadway users at the intersections around the New Brunswick train station.

Background

The audit focused on seven intersections surrounding the New Brunswick train station, as shown in Figure 1 below, located within Middlesex County, in the City of New Brunswick:

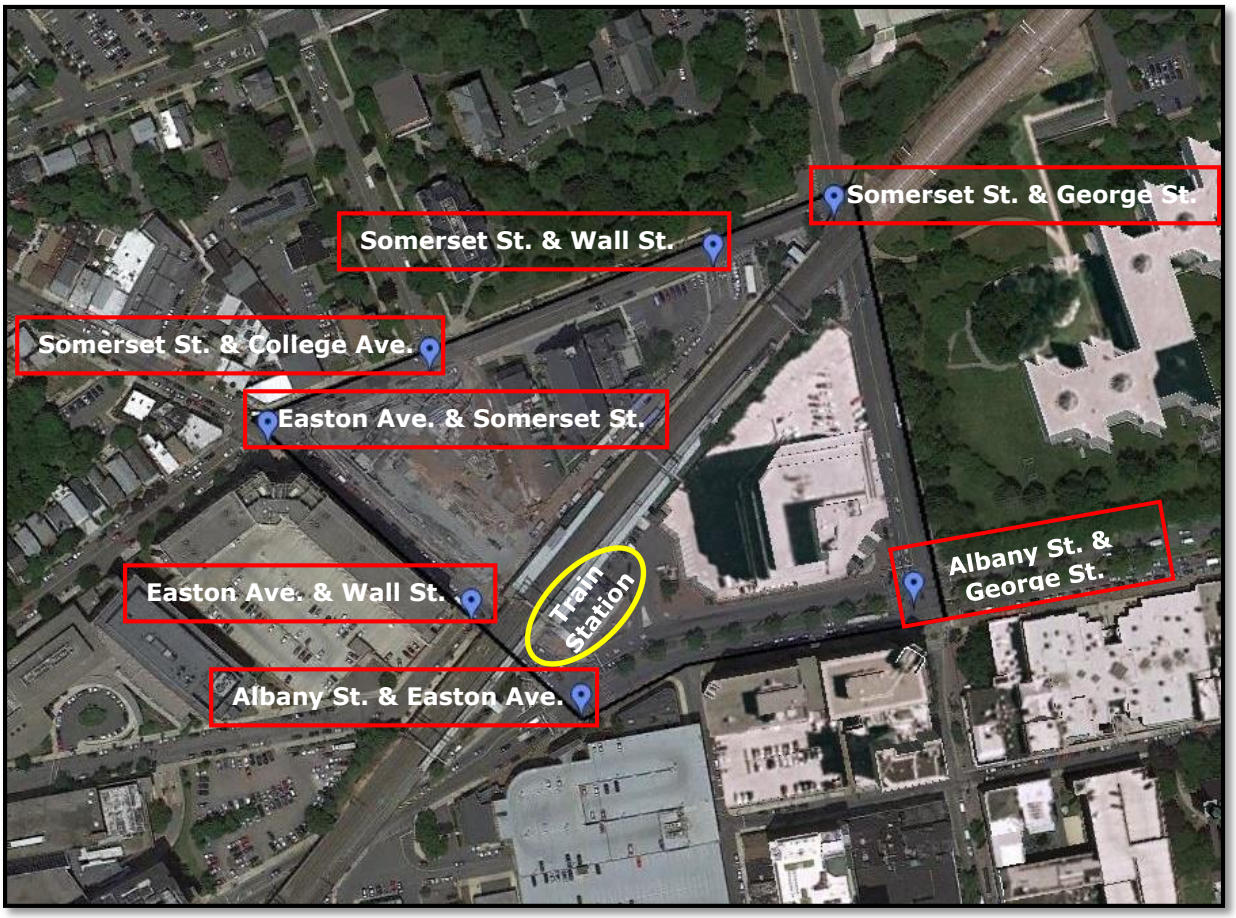

Figure 1 – Map of intersections in RSA study

- Albany Street (Route 27) & Easton Avenue (CR 514)
- Easton Avenue (CR 514) & Wall Street
- Easton Avenue (CR 514) & Somerset Street
- Somerset Street & College Avenue
- Somerset Street & Wall Street
- Somerset Street & George Street (CR 672)
- Albany Street (Route 27) & George Street (CR 672/171)

All of the studied intersections are in an area surrounding the New Brunswick train station. It is bordered by Albany Street (Route 27), George Street, Easton Avenue, and Somerset Street. Albany Street (Route 27), runs 38 miles from southwest to northeast connecting Princeton in Mercer County to Newark in Essex County. Easton Avenue is a major east-west roadway, running south of the Raritan River, connecting U.S. Route 287 near South Bound Brook to Albany Street (Route 27) in the RSA area. George Street and Somerset Street primarily service the New Brunswick area, and both George Street and Albany Street (Route 27) provide access to U.S. Route 18.

The area is urban, a major transportation hub, and abounds with vehicle and pedestrian activity. There are more than eight bus lines that operate within this area, five NJ Transit buses and three New Brunswick shuttles, as well as a significant number of emergency vehicles, as it is adjacent to Robert Wood Johnson University Hospital. The four intersections on the corners are signalized, and the other three (Wall Street at Easton Avenue, College Avenue at Somerset Street , and Wall Street at Somerset Street) are stop controlled.

Somerset Street, College Avenue, Albany Street, and Wall Street/Little Albany Street are under the jurisdiction of the City of New Brunswick, while George Street and Easton Avenue are under the jurisdiction of Middlesex County. Albany Street (Route 27) and Easton Avenue (CR 514), in the vicinity of the RSA, are designated “Urban Principal Arterials.” College Avenue and Somerset Street in the area of the RSA are designated “Urban Collectors,” and George Street is designated an “Urban Minor Arterial.”

The intersection of **Albany Street (Route 27) and Easton Avenue (CR 514)** is a signalized T-intersection with Easton Avenue abutting Albany Street. The train station is in the northeast corner of the intersection. There are two lanes of through traffic on Albany Street northbound and one lane southbound. There is a dedicated left-turn lane from Albany Street northbound to Easton Avenue northbound. There are two dedicated left-turn lanes from Easton Avenue southbound to Albany Street northbound. Immediately north of the intersection is the railroad bridge underpass. There is a significant amount of vehicle and pedestrian activity to and from the train station.

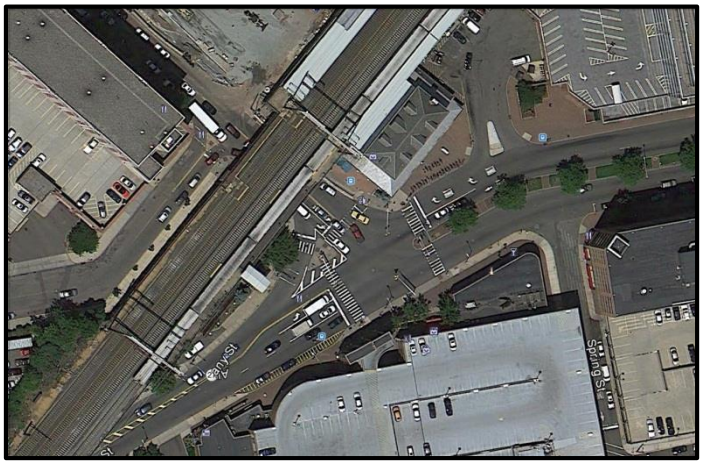

Figure 2 – Albany Street (Route 27) and Easton Avenue (CR 514)

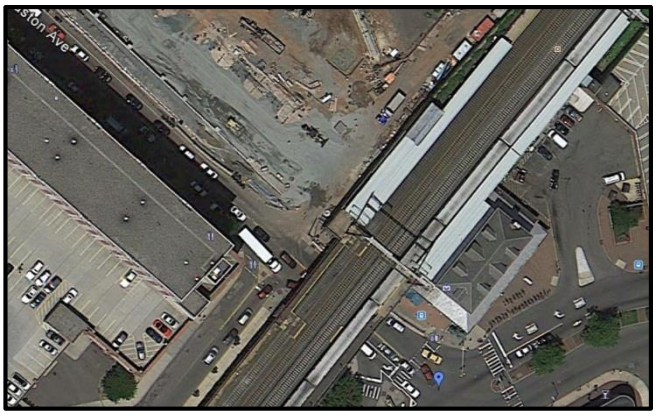

Figure 3 – Easton Ave (CR 514) and Wall Street/Little Albany Street (the northeast corner of the intersection has been significantly revised due to construction)

The intersection of **Easton Avenue (CR 514) and Wall Street** is only 150 feet north of the intersection of Easton Avenue and Albany Street. This is one of the locations where passengers exit the train station to access taxis and waiting cars. Across Easton Avenue from Wall Street is Little Albany Street, which provides access to the emergency entrance to Robert Wood Johnson University Hospital. Both Wall Street and Little Albany Street prohibit left turns and are stop controlled. Easton Avenue is two lanes north of the intersection with parking on both sides. South of the intersection, Easton Avenue has two southbound lanes; one is a dedicated left-turn lane.

The signalized intersection at **Easton Avenue (CR 514) and Somerset Street** is primarily characterized by its highly skewed angle. The crosswalks are long due to this configuration. There is one lane in each direction with parking on both sides of the street. There are three bus routes that pass through the intersection.

Figure 4 – Easton Avenue (CR 514) and Somerset Street

Figure 5 – Somerset Street and College Avenue

Somerset Street and College Avenue is a T-intersection with stop-control on College Avenue. Both College Avenue and Somerset Street are two-lane roads with parking on both sides of the street. College Avenue has designated right- and left-turn lanes. There is a walkway (the Gateway) to the train station from this intersection that generates significant pedestrian activity.

The intersection of **Somerset Street and Wall Street,** which is 200 feet west of the intersection with George Street, primarily serves as a taxi stand. There is an active bus stop to the east of the intersection. It is a two-lane road with only right turns permitted.

Figure 6 – Somerset Street and Wall Street

Figure 7 – Somerset Street and George Street

The intersection of **Somerset Street and George Street (CR 672)** is a T-intersection with a sharp angle for the right turn movement from Somerset Street to George Street. There is stop control on Somerset Street. The bus stop on the south side of Somerset Street west of the intersection serves eight routes and is therefore very active. The main entrance to Rutgers' Old Queens building (an historic entrance gate) sits on the northwest corner of the intersection. There is a train underpass on George Street.

Albany Street (Route 27) and George Street (CR 672/171) is a right-angle signalized intersection. George Street is a two-lane road with dedicated right, left, and straight ahead lanes in the southbound direction, and dedicated straight ahead and right-turn lanes in the northbound direction with no left turn allowed. Albany Street (Route 27) has two lanes in each direction with parking on the south side of the roadway. There are no left turn or right-turn-on-red movements allowed. The roadway is divided by a grassy median with a pedestrian refuge.

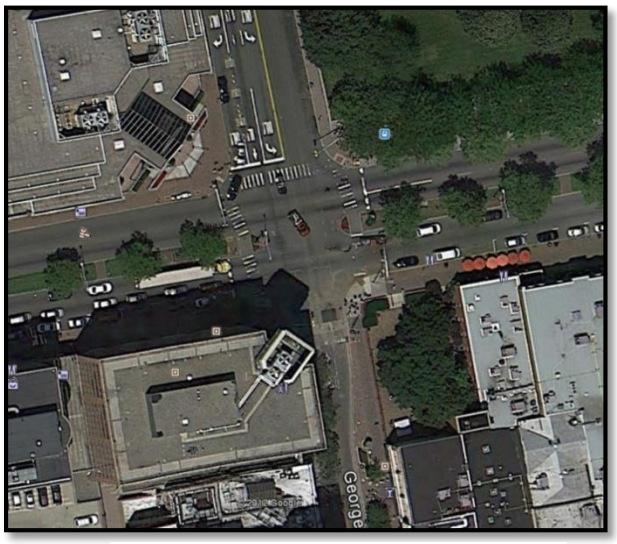

Figure 8 – Albany Street and George Street

Road Safety Audit Process

The New Brunswick train station 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 and analyzed using the Plan4Safety crash data analysis tool. The analysis examined crash types, locations, years, road conditions, and contributing circumstances. Using the crash data, crash diagrams, as shown in Appendix B, were produced that showed crash types and locations.

Figure 9 – RSA team conducting site visit

The Road Safety Audit occurred on Friday, November 30, 2012. 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, all participants were given the opportunity to inspect the sites and utilize their various backgrounds to brainstorm recommended improvements. Immediately following the site visit, the team reconvened to discuss what they observed and to offer suggested recommendations to remedy safety deficiencies.

Information Sources

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

- NJDOT Crash Database (2007–2009) *
- Plan4Safety Crash Data Analysis Tool
- NJTR-1 Crash Reports
- NJDOT Straight Line Diagrams
- Google Earth

* The crash data from 2007 to 2009 was chosen for analysis because a significant number of crash reports for the years 2009 to 2011 had not yet been recorded in the Plan4Safety database. The conditions during 2007 to 2009 were sufficiently similar to 2009 to 2011.

RSA Team

The RSA team consisted of 31 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 190 crashes occurring during the three-year period from 2007 to 2009. The crash data from 2007 to 2009 was chosen for analysis because a significant number of crash reports for the period 2009 to 2011 had not yet been recorded in the Plan4Safety database. The conditions during 2007 to 2009 were sufficiently similar to 2009 to 2011 to warrant using the earlier data.

RSA Crash Locations

The intersections around the New Brunswick train station, which were selected for further analyses based on crash data, included:

- Easton Avenue (CR 514) & Albany Street (Route 27)
- Easton Avenue (CR 514) & Wall Street/Little Albany Street
- Easton Avenue (CR 514) & Somerset Street
- Somerset Street & College Avenue
- Somerset Street & Wall Street
- Somerset Street & George Street (CR 672)
- George Street (CR 672/171) & Albany Street (Route 27)

The following tables show detailed statistics of the crash data analyzed for each of the seven intersections studied in the RSA.

Easton Avenue (CR 514) & Albany Street (Route 27)

As seen from the tables below, approximately 60 percent of the crashes were “Same Direction” crashes, (consisting of “Rear End” and “Side Swipe”) with the remainder a variety of other crash types. Most of the crashes were property damage only. In addition, two-thirds of the crashes occurred during daylight hours and in dry conditions.

Table 3 shows that almost half of the contributing circumstances were “Driver Inattention.” A quarter of the vehicles involved in the crashes were “Making Left Turns” and more than one-third of the vehicles involved in the crashes were either “Going Straight Ahead” or “Stopped in Traffic.”

Easton & Albany		CRASH TYPE									
		Same Direction – Rear End	Same Direction – Side Swipe	Right Angle	Struck Parked Vehicle	Left Turn / U-Turn	Backing	Fixed Object	Pedestrian	Pedal-cyclist	TOTAL
SEVERITY	Property Damage	10	11	2	3	1	1	3			**31**
	Injury			1					4	1	**6**
	TOTAL	**10**	**11**	**3**	**3**	**1**	**1**	**3**	**4**	**1**	**37**

Table 1 – Crash Type vs. Severity

Easton & Albany		LIGHT CONDITION				
		Daylight	Dusk	Dark (Street Lights On / Continuous)	Dark (Street Lights On / Spot)	TOTAL
SURFACE CONDITION	Dry	17	1	8		**26**
	Wet	6		2	1	**9**
	Snowy	1				**1**
	Unknown	1				**1**
TOTAL		**25**	**1**	**10**	**1**	**37**

Table 2 – Light Condition vs. Surface Condition

Easton & Albany		CONTRIBUTING CIRCUMSTANCES									
		Unsafe Speed	Driver Inatten-tion	Failed to Obey Traffic Control Device (Driver / Pedcycle)	Improper Passing	Backing Unsafely	Improper Parking	Failure To Keep Right	None (Driver / Pedcycle)	NULL	TOTAL
PRE-CRASH VEHICLE ACTION	Going Straight Ahead	1	9						3	1	**14**
	Making Right Turn (not turn on red)		5		1				2		**8**
	Making Left Turn		11					1	5		**17**
	Starting in Traffic								1		**1**
	Slowing or Stopping		2						2		**4**
	Stopped in Traffic								11		**11**
	Parked						2		1		**3**
	Changing Lanes		3								**3**
	Merging / Entering Lane		2	1					1		**4**
	Backing					1					**1**
	Passing		1								**1**
	NULL									1	**1**
TOTAL		**1**	**33**	**1**	**1**	**1**	**2**	**1**	**26**	**2**	

Table 3 – Contributing Circumstances vs. Pre-Crash Vehicle Action

Easton Avenue (CR 514) & Wall Street/Little Albany Street

Easton & Wall		CRASH TYPE								
		Same Direction – Rear End	Same Direction – Side Swipe	Right Angle	Struck Parked Vehicle	Left Turn / U-Turn	Fixed Object	Pedes-trian	Pedal-cyclist	TOTAL
SEVERITY	Property Damage	3	2	4	3	1	1			**14**
	Injury	2		1				1	1	**5**
	TOTAL	**5**	**2**	**5**	**3**	**1**	**1**	**1**	**1**	**19**

Table 4 – Crash Type vs. Severity

Easton & Wall		LIGHT CONDITION		
		Daylight	Dark (Street Lights On / continuous)	TOTAL
SURFACE CONDITION	Dry	13		**13**
	Wet	3		**3**
	Snowy		2	**2**
	Icy	1		**1**
	TOTAL	**17**	**2**	**19**

Table 5 – Light Condition vs. Surface Condition

As can be seen in the tables above, the predominant crash types were “Same Direction – Rear End” and “Right Angle.” Approximately one-third of the crashes occurred in wet, snowy, or icy conditions, and most of the crashes took place during daylight hours. The table below also shows that more than half of the vehicles involved in the crashes were either “Going Straight Ahead” or “Making a Right Turn (not turn on red).” “Driver Inattention” was the most prominent contributing circumstance.

Easton & Wall		CONTRIBUTING CIRCUMSTANCES									
		Driver Inattention	Failed to Yield Right of Way to Vehicle / Pedestrian	Improper Turning	Following Too Closely	Improper Parking	None (Driver / Pedcycle)	Other Driver / Pedal-cyclist Action	Road Surface Condition	NULL	TOTAL
PRE CRASH VEHICLE ACTION	**Going Straight Ahead**	2			1		4		2	1	**10**
	Making Right Turn (not turn on red)	5	1				3		1		**10**
	Making Left Turn	1		1							**2**
	Slowing or Stopping	1					2		2		**5**
	Stopped in Traffic						2	1			**3**
	Parked					3				1	**4**
	Merging / Entering Lane						1				**1**
	Passing	1									**1**
TOTAL		**10**	**1**	**1**	**1**	**3**	**12**	**1**	**5**	**2**	

Table 6 – Contributing Circumstances vs. Pre-Crash Vehicle Action

Easton Avenue (CR 514) & Somerset Street

Easton & Somerset		CRASH TYPE								
		Same Direction – Rear End	Same Direction – Side Swipe	Right Angle	Opposite Direction – Side Swipe	Struck Parked Vehicle	Left Turn / U-Turn	Backing	Pedes-trian	TOTAL
SEVERITY	Property Damage	7	11	5	1	7	2	6	1	**40**
	Injury	1					1		4	**6**
	TOTAL	**8**	**11**	**5**	**1**	**7**	**3**	**6**	**5**	**46**

Table 7 – Crash Type vs. Severity

Easton & Somerset		LIGHT CONDITION						
		Daylight	Dawn	Dusk	Dark (Street Lights Off)	Dark (Street Lights On / Continuous)	Dark (Street Lights On / Spot)	TOTAL
SURFACE CONDITION	Dry	23	1	2	1	10	1	**38**
	Wet	3	1			4		**8**
	TOTAL	**26**	**2**	**2**	**1**	**14**	**1**	**46**

Table 8 – Light Condition vs. Surface Condition

As can be seen in the tables above, the highest number of crashes by crash type was “Same Direction“(both “Rear End” and “Side Swipe”). But “Right Angle,” “Struck Parked Vehicle,” “Backing,” and “Pedestrian” crashes were also significant. Most of the crashes resulted in property damage only. Only a few of the crashes occurred in wet conditions, and more than 40 percent occurred after dark, or at dawn or dusk. The table below shows that one-third of the vehicles involved in the crashes were partly due to “Driver Inattention” with a wide variation in “Pre-Crash Vehicle Action.”

Easton & Somerset		CONTRIBUTING CIRCUMSTANCES											
		Un-known	Unsafe Speed	Driver Inatten-tion	Improper Passing	Improper Turning	Follow-ing Too Closely	Backing Unsafely	Improper Parking	None (Driver/ Ped-cycle)	Other Driver / Pedal-cyclist Action	NULL	TOTAL
PRE-CRASH VEHICLE ACTION	**Unknown**			1									**1**
	Going Straight Ahead		2	12	1		1			16	1	1	**34**
	Making Right Turn (not turn on red)	2		3						1			**6**
	Making Left Turn		1	4		1				4			**10**
	Starting From Parking			2						2			**4**
	Slowing or Stopping			1						2			**3**
	Stopped in Traffic									9		1	**10**
	Parking			1									**1**
	Parked			1					1	8			**10**
	Merging / Entering Lane			1									**1**
	Backing			2				3				1	**6**
	Passing			1	1					1			**3**
	Other Veh / Cyclist Action			1									**1**
TOTAL		**2**	**3**	**30**	**2**	**1**	**1**	**3**	**1**	**43**	**1**	**3**	

Table 9 – Contributing Circumstances vs. Pre-Crash Vehicle Action

Somerset Street & College Avenue

Somerset & College		CRASH TYPE						
		Same Direction – Rear End	Same Direction – Side Swipe	Right Angle	Struck Parked Vehicle	Pedestrian	NULL	TOTAL
SEVERITY	Property Damage	2	1	4	1		1	9
	Injury					1		1
	TOTAL	2	1	4	1	1	1	10

Table 10 – Crash Type vs. Severity

Somerset & College		LIGHT CONDITIONS			
		Daylight	Dusk	Dark (Street Lights On / Continuous)	TOTAL
SURFACE CONDITIONS	Dry	4	1	2	7
	Wet			3	3
	TOTAL	4	1	5	10

Table 11 – Light Condition vs. Surface Condition

Somerset & College		CONTRIBUTING CIRCUMSTANCES								
		Unknown	Unsafe Speed	Driver Inattention	Failed to Yield Right of Way to Vehicle/ Pedestrian	None (Driver / Pedcycle)	Other Driver / Pedal-cyclist Action	Other Vehicle Factor	Other	TOTAL
PRE-CRASH VEHICLE ACTION	Going Straight Ahead	1				4			1	**6**
	Making Right Turn (not turn on red)						1			**1**
	Making Left Turn	1	1		2		1			**5**
	Starting in Traffic		1							**1**
	Slowing or Stopping		1	1		1				**3**
	Stopped in Traffic			1						**1**
	Parked							1		**1**
	Merging / Entering Lane			1						**1**
	Driverless / Moving							1		**1**
TOTAL		**2**	**3**	**3**	**2**	**5**	**2**	**2**	**1**	

Table 12 – Contributing Circumstances vs. Pre-Crash Vehicle Action

Somerset Street & Wall Street

Somerset & Wall		CRASH TYPE				
		Same Direction – Rear End	Same Direction – Side Swipe	Right Angle	Struck Parked Vehicle	TOTAL
SEVERITY	Property Damage	1	1	1	2	**5**
	Injury	1				**1**
	TOTAL	**2**	**1**	**1**	**2**	**6**

Table 13 – Crash Type vs. Severity

Somerset & Wall		LIGHT CONDITIONS		
		Daylight	Dark (Street Lights On / Continuous)	TOTAL
SURFACE CONDITIONS	Dry	4	1	**5**
	Wet	1		**1**
	TOTAL	**5**	**1**	**6**

Table 14 – Light Condition vs. Surface Condition

As can be seen from the tables above, there were a variety of crash types but no particular type was dominant. Most of the crashes occurred during daylight hours and in dry conditions.

Somerset Street & George Street (CR 672)

Somerset & George		CRASH TYPE							
		Same Direction – Rear End	Same Direction – Side Swipe	Right Angle	Struck Parked Vehicle	Backing	Fixed Object	Pedes-trian	TOTAL
SEVERITY	Property Damage	5	6	2	1	1	2	1	**18**
	Injury							2	**2**
	TOTAL	**5**	**6**	**2**	**1**	**1**	**2**	**3**	**20**

Table 15 – Crash Type vs. Severity

Somerset & George		LIGHT CONDITION			
		Daylight	Dark (Street Lights On / Continuous)	Dark (Street Lights On / Spot)	TOTAL
SURFACE CONDITION	Dry	7	7	1	**15**
	Wet	1	3		**4**
	Icy	1			**1**
	TOTAL	**9**	**10**	**1**	**20**

Table 16 – Light Condition vs. Surface Condition

Tables 15 and 16 above show that more than half of the crashes are “Same Direction,” both “Rear End” and “Side Swipe.” Most of the crashes were property damage only. More than half of the crashes occurred in dark conditions and one-quarter of the crashes occurred in wet or icy conditions.

In Table 17, below, the most common “Pre-Crash Vehicle Action” was “Making Right Turn,” which involved slightly less than one-third of all of the crashes. The most common contributing circumstance was “Driver Inattention.”

Somerset & George		CONTRIBUTING CIRCUMSTANCES								
		Driver Inattention	Failed to Yield Right of Way to Vehicle / Pedestrian	Improper Passing	Improper Use / Failed to Use Turn Signal	Improper Turning	None (Driver / Pedcycle)	Other Driver / Pedalcyclist Action	NULL	TOTAL
PRE-CRASH VEHICLE ACTION	Going Straight Ahead	3					1		2	**6**
	Making Right Turn (not turn on red)	3		1	1		5			**10**
	Making Left Turn	3	1				2			**6**
	Making U-Turn					1				**1**
	Slowing or Stopping						2			**2**
	Stopped in Traffic	2					3			**5**
	Parking						1			**1**
	Parked							1		**1**
	Backing	2								**2**
	Passing			1						**1**
TOTAL		**13**	**1**	**2**	**1**	**1**	**14**	**1**	**2**	

Table 17 – Contributing Circumstances vs. Pre-Crash Vehicle Action

George Street (CR 672/171) & Albany Street (Route 27)

George & Albany		CRASH TYPE								
		Same Direction – Rear End	Same Direction – Side Swipe	Right Angle	Struck Parked Vehicle	Left Turn / U-Turn	Backing	Pedestrian	Other	TOTAL
SEVERITY	Property Damage	14	13	7	1	1	1	1	2	**40**
	Injury	5		1	1			5		**12**
	TOTAL	**19**	**13**	**8**	**2**	**1**	**1**	**6**	**2**	**52**

Table 18 – Crash Type vs. Severity

George & Albany		LIGHT CONDITIONS				
		Daylight	Dusk	Dark (No Street Lights)	Dark (Street Lights On / continuous)	TOTAL
SURFACE CONDITIONS	Dry	34		1	7	**42**
	Wet	3			4	**7**
	Snowy		1			**1**
	NULL	1				**1**
	Unknown	1				**1**
TOTAL		**39**	**1**	**1**	**11**	**52**

Table 19 – Light Condition vs. Surface Condition

Tables 18 and 19 above show that approximately 60 percent of the crashes are “Same Direction” both “Rear End” and “Side Swipe.” More than 75 percent of the crashes were “Property Damage” only, and more than 75 percent of the crashes occurred in dark conditions. Only a small number of the crashes occurred in wet or snowy conditions.

In Table 20 below, 40 percent of the crashes listed “Driver Inattention” as a contributing circumstance. More than half of the vehicles involved in the crashes were “Going Straight Ahead,” which correlates with “Same Direction” crashes.

George & Albany		CONTRIBUTING CIRCUMSTANCES														
		Un-known	Unsafe Speed	Driver Inatten-tion	Failed to Obey Traffic Control Device (Driver / Ped-cycle)	Failed to Yield Right of Way to Vehicle / Pedes-trian	Im-proper Lane Chan ge	Im-proper Passing	Im-proper Turning	Follow-ing Too Closely	Backing Unsafely	Im-proper Parking	None (Driver / Ped-cycle)	NULL	Other	TOTAL
PRE-CRASH VEHICLE ACTION	Going Straight Ahead	3	2	24	1	1				2			21			**54**
	Making Right Turn (not turn on red)			3					1				6			**10**
	Making Left Turn	1		1					1				1			**4**
	Starting From Parking			1												**1**
	Slowing or Stopping			4									2		1	**7**
	Stopped in Traffic			1									10			**11**
	Parked			1								1				**2**
	Changing Lanes			4												**4**
	Merging/Entering Lane						1									**1**
	Backing										1					**1**
	Passing							1								**1**
	NULL			1									1	1		**3**
TOTAL		**4**	**2**	**40**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**41**	**1**	**1**	

Table 20 – Contributing Circumstances vs. Pre-Crash Vehicle Action

Corridorwide

RSA Team Findings

The following section details the specific findings of and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

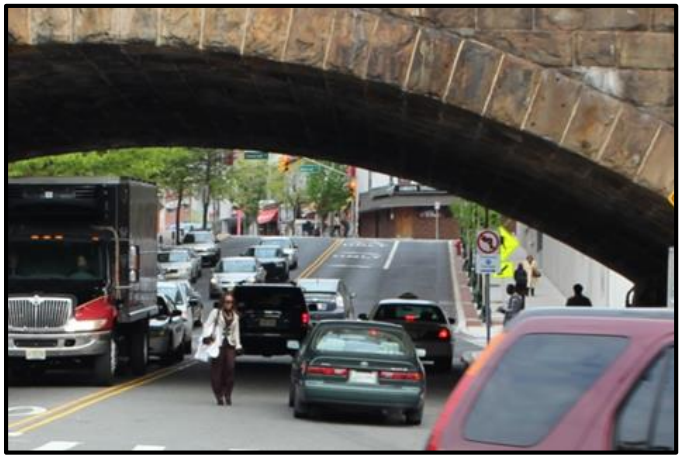
Issue: Roadway Markings	Safety Risk
Description: Many of the roadway markings are either faded or weren't replaced when pavement repair was made.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Regular maintenance should ensure that the roadway markings are clearly visible to pedestrians and vehicles. (1)	Low	Medium/High
Installation of retro-reflective pavement markings would significantly increase visibility. (2)	Low	Medium/High

Issue: ADA Compliance	Safety Risk
Description: Pedestrian accommodations, such as ramps and detectable warning surfaces, are not fully ADA compliant.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
Plan for full ADA compliance by scheduling upgrades of existing ramps and curbs at crosswalks. (3)	Medium	Medium

Issue: Pedestrian Behavior	Safety Risk
Description: Pedestrians were observed not using the pedestrian facilities, sidewalks, and crosswalks.	High



RSA Team's Recommendation	Cost	Potential Safety Benefit
Improve pedestrian crossings to encourage pedestrians to cross in marked crosswalks. (4)	Medium/Low	Medium

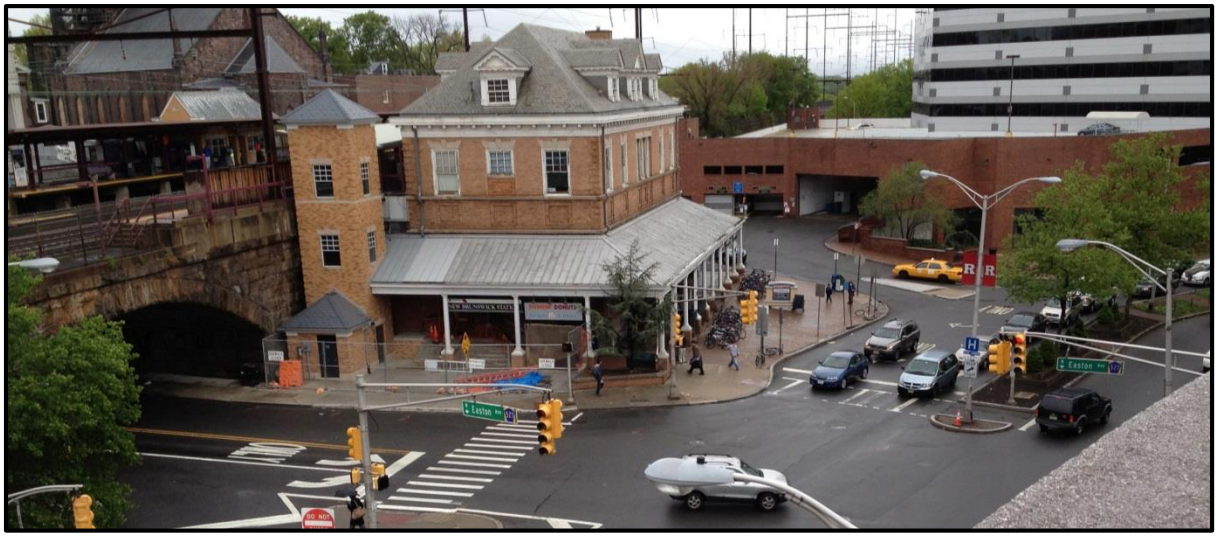
Issue: Lighting	Safety Risk
Description: Lighting was inconsistent, not uniform, and may not address the nighttime visibility needs of both pedestrians and vehicles.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. (5)	Medium	Medium/High

Issue: Signs	Safety Risk
Description: The abundance of signs creates confusion for drivers and pedestrians.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional engineering staff should conduct a thorough evaluation of existing and required signage to reduce the amount of signage in the intersection and decrease sign clutter. (6)	Low	Medium/High

Issue: Train Station Drop-off and Pick-up	Safety Risk
Description: There are a few unofficial "Kiss-and-Ride" drop-off/pick-up areas in the vicinity of the train station, under the bridge on Easton Avenue and in front of the station on Albany Street. None of these locations have signage or roadway markings to officially designate them for this purpose.	Medium
Description: The area in front of the train station on Albany Street has a "NO STOPPING" sign, yet it is unofficially being used as a pick-up and drop-off area.	Medium



RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional engineering staff should conduct a thorough evaluation of the train station traffic, including passenger pick-up and drop-off points and locations for taxi stands and private passenger vehicles. (7)	Low	Medium
Evaluate creating a dedicated taxi stand and installing signage in the area under the bridge at northbound Easton Avenue. (10)	Low	Medium

Issue: Bicycles	Safety Risk
Description: There are no designated accommodations for bicycle travel in the area around the train station.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional engineering staff should do a full evaluation of bicycle travel in the area around the train station to complement the New Brunswick Bike Lane project. (8) **See bikeway map:** http://thecityofnewbrunswick.org/planninganddevelopment/files/Bike-Lanes-2012-20131.pdf	Low	Medium/High

Easton Avenue (CR 514) & Albany Street (Route 27)

RSA Team Findings

The following section details the specific findings of and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

Issue: Lighting (Easton/Albany)	Safety Risk
Description: Lighting is inconsistent and not uniform under the railroad bridge, and may not address the nighttime visibility needs of both pedestrians and vehicles.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. (5)	Medium	Medium/High

Issue: Signage (Easton/Albany)	Safety Risk
Description: The abundance of signs in front of the train station creates confusion for drivers and pedestrians.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional engineering staff should conduct a thorough evaluation of existing and required signage to reduce the amount of signage in the intersection and decrease sign clutter. (6)	Low	Medium/High

Issue: Pole (Easton/Albany)	Safety Risk
Description: An unused broken pole is located in the island curb ramp (on right turn from Easton Avenue to southbound Albany Street).	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
Consider removing the unused broken pole in the island curb ramp (from Easton Avenue to southbound Albany Street). (9)	Low	Low

Issue: Pavement (Easton/Albany)	Safety Risk	
Description: Some drivers were observed swerving around raised manhole covers to avoid hitting them.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Identify locations of raised manhole covers and consider resetting the manhole covers to be flush with the pavement. (11)	Medium/High	Medium

Issue: Crosswalk (Easton/Albany)	Safety Risk	
Description: There are many pedestrians crossing the "Kiss-and-Ride" driveway, on Albany Street southbound to and from the train station, but there is no marked crosswalk at that location.	Medium/High	
		
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Consider installation of a marked crosswalk across the "Kiss-and-Ride" driveway on southbound Albany Street. (12)	Low	Medium/High

Issue: Roadway Markings (Easton/Albany)	Safety Risk
Description: Many of the roadway markings and striped crosswalks on Albany Street and Easton Avenue are faded and not clearly visible to vehicles and pedestrians.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Regular maintenance will ensure that the roadway markings are clearly visible to pedestrians and vehicles. (1)	Low	Medium/High
Installation of retro-reflective pavement markings would significantly increase visibility. (2)	Low	Medium/High

Issue: Midblock Crossing (Easton/Albany)	Safety Risk
Description: Pedestrians were observed not using the pedestrian facilities, sidewalks, and crosswalks on both Albany Street and Easton Avenue.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Improve pedestrian crossings to encourage pedestrians to cross in marked crosswalks. (4)	Medium/Low	Medium/High
Evaluate unofficial crossing locations in the median on Albany Street and consolidate or eliminate them, if possible.(13)	Low	Medium/High

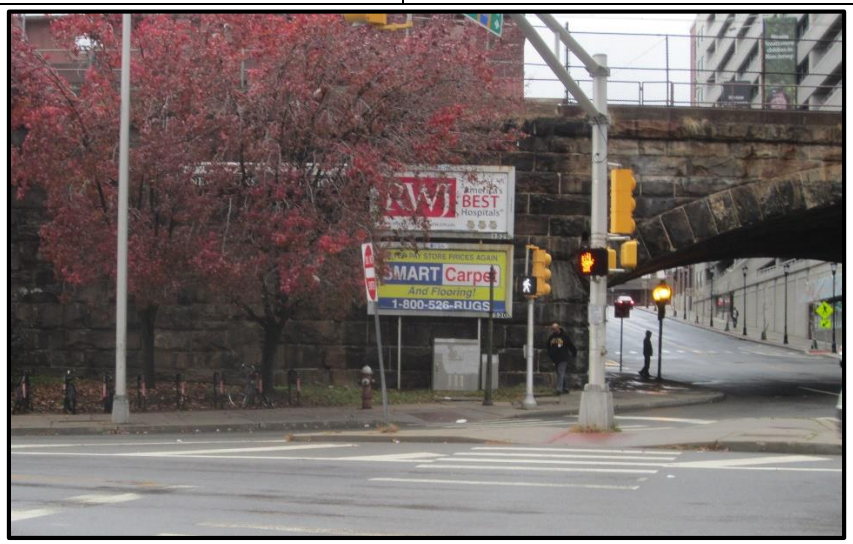
Issue: Pedestrian Accommodations (Easton/Albany)	Safety Risk
Description: Pedestrian accommodations, such as ramps and detectable warning surfaces, are not fully ADA compliant.	Medium
Description: There is a raised junction box in the northwest corner, adjacent to the ramp that poses a tripping hazard.	Medium/Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
Plan for full ADA compliance by scheduling upgrades of existing ramps and curbs at crosswalks. (3)	Medium	Medium
Consider resetting or relocating the junction box. (14)	Low	Medium

Issue: Pedestrian Buttons (Easton/Albany)	Safety Risk
Description: Pedestrians are required to press a button to activate a walk signal to cross Albany Street.	Medium/High
Description: There is a high volume of pedestrians at this intersection and many were not utilizing the buttons.	Medium/High
Description: Pedestrian buttons are not properly aligned in accordance with ADA requirements.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
To accommodate the high pedestrian volume, consider operating the signal in fixed time or utilizing pedestrian recall and removing pedestrian buttons. (19)	Low	Medium
Schedule realignment of the pedestrian buttons to conform to the 2009 MUTCD requirements. (20)	Low	Medium/Low

Issue: Pedestrian Heads (Easton/Albany)	Safety Risk
Description: Pedestrians crossing Albany Street from the southwest corner, see a walk signal adjacent to the ramp, although the pedestrian head for their crosswalk displays "DON'T WALK."	Medium/High
Description: Pedestrian heads are not located in the direct line of sight of pedestrians using the crosswalks.	Medium

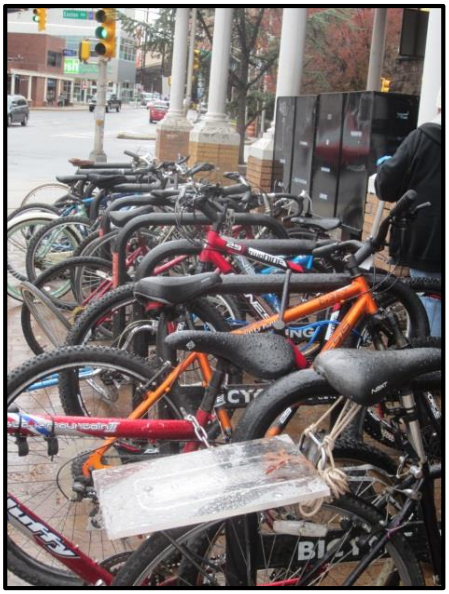


RSA Team's Recommendation	Cost	Potential Safety Benefit
Plan to realign and/or limit visibility of the walk signal so pedestrians do not receive conflicting information. (18)	Low	Medium/High
Review the alignment of the pedestrian heads with the crosswalks and sidewalks. (21)	Low	Medium/Low

Issue: Pedestrian Timing/Phasing (Easton/Albany)	Safety Risk
Description: Crossing times may be inadequate under the 2009 edition of the MUTCD.	Medium/High
Description: The signal phasing for pedestrians crossing Albany Street is not intuitive and consequently, pedestrians frequently cross illegally against the left turning traffic from Easton Avenue to Albany Street northbound.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Ensure crossing times are compliant with the 2009 edition of the MUTCD. (15)	Low	Medium/High
Consider rephasing signal timing so that the walk signal across the easterly Albany Street crosswalk comes before the left turn from Easton Avenue southbound to Albany Street northbound. (16)	Low	High
Evaluate adding an all-red, all-way pedestrian crossing at the intersection. (17)	Low	High
To accommodate pedestrian volume, consider operating the signal in fixed time or utilizing pedestrian recall and remove pedestrian buttons. (19)	Low	Medium

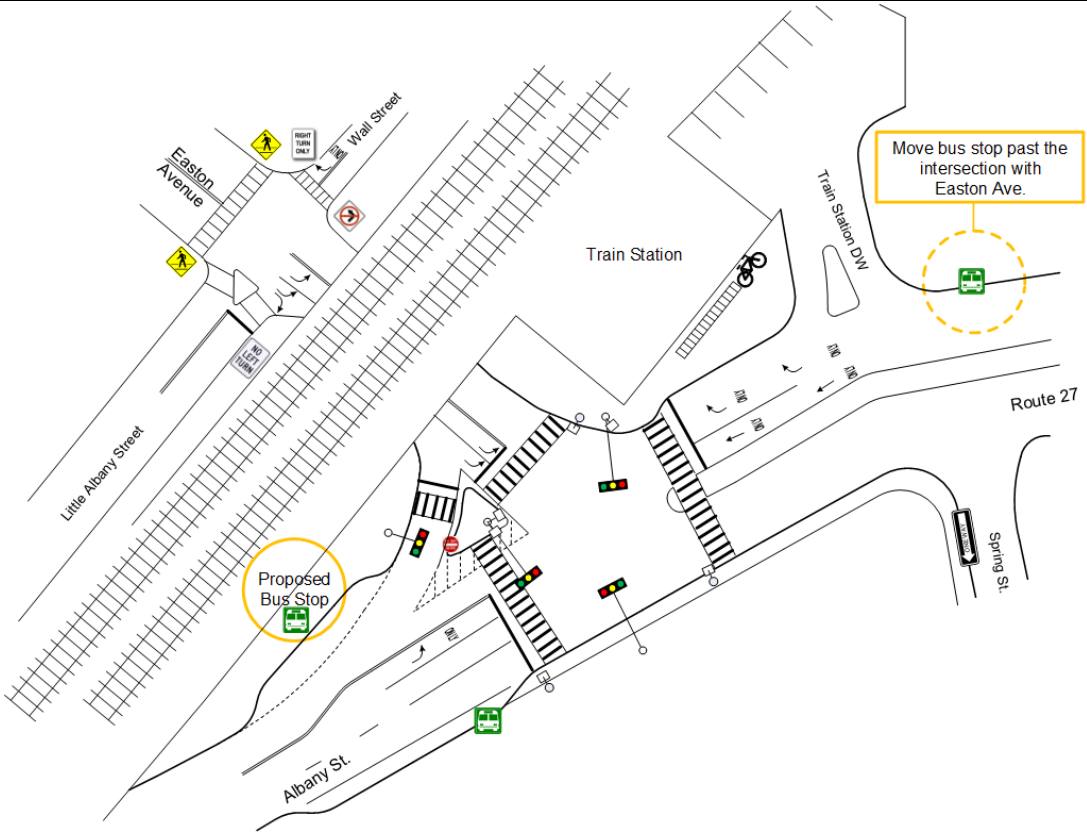
Issue: Bicycles (Easton/Albany)	Safety Risk
Description: There are no designated accommodations for bicycle travel in the area around the train station.	Medium/High
Description: There are insufficient accommodations for bicycle parking adjacent to the train station.	Low/Medium



RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional engineering staff should do a full evaluation of bicycle travel in the area around the train station to complement the New Brunswick Bike Lane project.(8) **See bikeway map:** http://thecityofnewbrunswick.org/planninganddevelopment/files/Bike-Lanes-2012-20131.pdf	Low	Medium/High
Consider the installation of additional bicycle parking. (22)	Low	Low/Medium

Issue: Merging Buses (Easton/Albany)	Safety Risk
Description: Buses have difficulty merging back into traffic from the bus stop just prior to the "Kiss-and-Ride" driveway on Albany Street southbound.	Medium/Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
Evaluate an alternative to the existing bus stop by revising (as conceptualized below) the striping on Albany Street northbound to increase the width on Albany Street southbound and allow the relocation of the bus stop just past the intersection, after the ramp from Easton Avenue southbound. (24) [See the diagram below.]	Low	Medium/High



Issue: Left-Turn Crashes (Easton/Albany)	Safety Risk
Description: Crash history indicates a significant number of left-turn crashes.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Consider the addition of dotted lane line extension pavement markings, delineating the duel left-turning movement from Easton Avenue southbound to Albany Street northbound. (25)	Low	Medium/High

Issue: Drainage (Easton/Albany)	Safety Risk	
Description: Water drips onto Easton Avenue from the Amtrak bridge creating icy conditions on the sidewalk and roadway in cold weather.	High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Request that Amtrak make appropriate repairs to the bridge to alleviate the dripping water. (26)	High	High

Easton Avenue (CR 514) & Wall Street/Little Albany Street

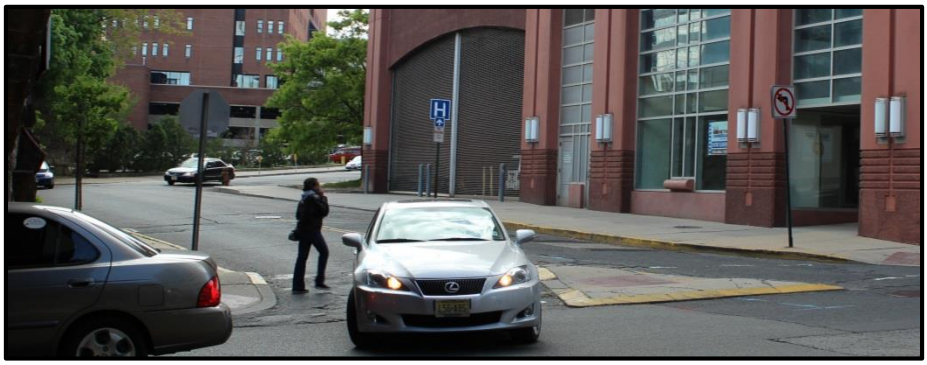
RSA Team Findings

The following section details the specific findings and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

Issue: Drainage (Easton/Wall)	Safety Risk	
Description: Water drips onto Easton Avenue from the Amtrak bridge creating icy conditions on the sidewalk and roadway in cold weather.	High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Request that Amtrak make appropriate repairs to the bridge to alleviate the dripping water. (26)	High	High

Issue: Lighting (Easton/Wall)	Safety Risk	
Description: Lighting was inconsistent and not uniform under the railroad bridge and may not address the nighttime visibility needs of both pedestrians and vehicles.	Medium/High	
		
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicles and pedestrian level lighting can be enhanced. (5)	Medium	Medium/High

Issue: Roadway Markings (Easton/Wall)	Safety Risk
Description: The crosswalk across Little Albany Street is faded and barely visible.	Medium

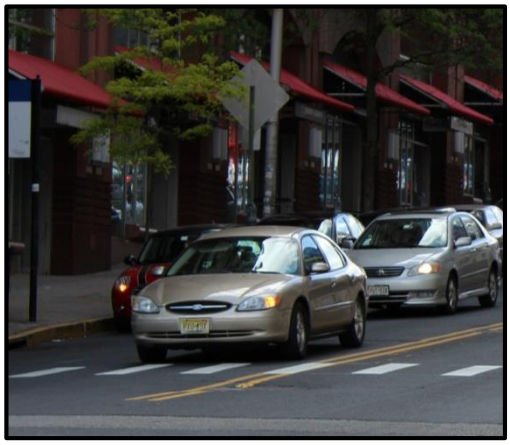


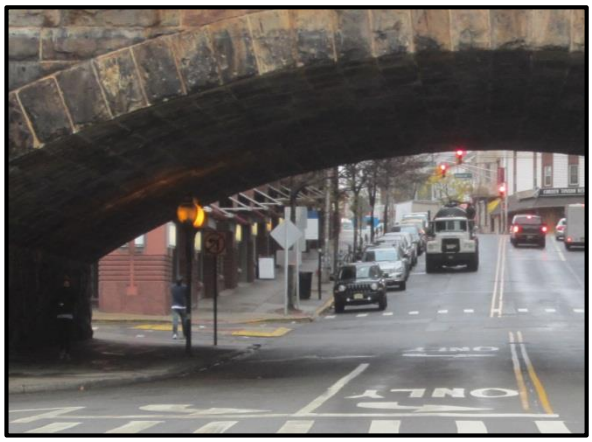
RSA Team's Recommendation	Cost	Potential Safety Benefit
Regular maintenance should ensure that the roadway markings are clearly visible to pedestrians and vehicles. (1)	Low	Medium/High
Ensure that the missing crosswalk at Little Albany Street is clearly marked. (27)	Low	Medium

Issue: Pedestrians (Easton/Wall)	Safety Risk
Description: Pedestrian accommodations, such as ramps and detectable warning surfaces, are not fully ADA compliant.	Medium
Description: After exiting the stairs from the train station, many pedestrians cross Easton Avenue at that location despite there being no marked crosswalk.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
Plan for full ADA compliance by scheduling upgrades of existing ramps and curbs at crosswalks. (3)	Medium	Medium
Installation of a marked crosswalk across Easton Avenue south of the intersection would increase the safety of pedestrians who are crossing at this location as well as alert motorists to a pedestrian crossing. (28)	Low	Medium

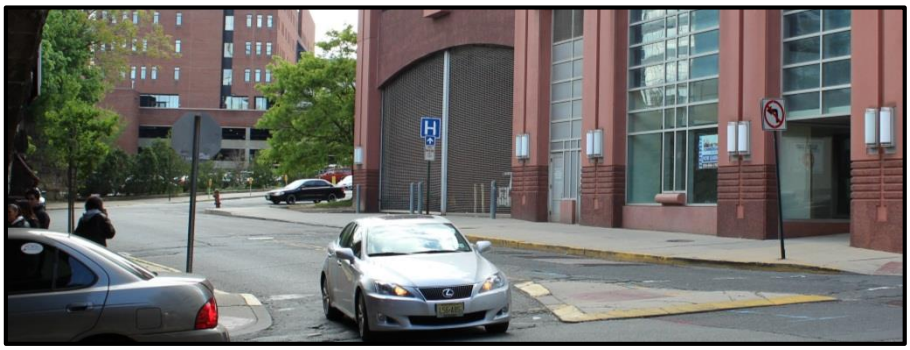
Issue: Parking (Easton/Wall)	Safety Risk
Description: There is Illegal parking on southbound Easton Avenue, just north of Little Albany Street, restricting visibility.	Medium





RSA Team's Recommendation	Cost	Potential Safety Benefit
Pavement markings would more clearly delineate the "NO PARKING" zone. (29)	Low	Medium
Consider installation of bulb-outs (painted, curbed, or stanchions), which would shorten the crosswalk and help delineate the allowed parking. (30)	Low-Painted or Stanchions; Medium-Curbed	Medium/High

Issue: Signage (Easton/Wall)	Safety Risk
Description: There is no “NO LEFT TURN” sign on far-left side when exiting from Wall Street onto Easton Avenue southbound.	Medium
Description: There is an unused broken pole on Easton Avenue, just north of Little Albany Street.	Low



RSA Team’s Recommendation	Cost	Potential Safety Benefit
Consider installing a “NO LEFT TURN” sign in the far-left corner (for traffic exiting Wall Street onto Easton Avenue southbound) in conformance with the MUTCD. (31)	Low	Low
The broken pole on southbound Easton Avenue, north of Little Albany Street, should be removed. (32)	Low	Low

Issue: Taxi Stand (Easton/Wall)	Safety Risk	
Description: The area under the bridge on northbound Easton Avenue, south of Wall Street and adjacent to the train station stairway, is being used as an unmarked taxi stand for passengers disembarking from the train.	Medium	
Description: There is an unofficial passenger drop-off and pick-up area along Little Albany Street west of the intersection.	Low/Medium	
		
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Professional engineering staff should conduct a thorough evaluation of the train station traffic, including passenger pick-up and drop-off points and locations for taxi stands. (7)	Low	Medium
Evaluate creating a dedicated taxi stand and installing signage in the area under the bridge at northbound Easton Avenue. (10)	Low	Medium

Easton Avenue (CR 514) & Somerset Street

RSA Team Findings

The following section details the specific findings and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

Issue: Right Turns (Easton/Somerset)	Safety Risk
Description: Right turning vehicles from Easton Avenue, in both directions, may have difficulty making the maneuver due to the tight radius.	Medium/Low

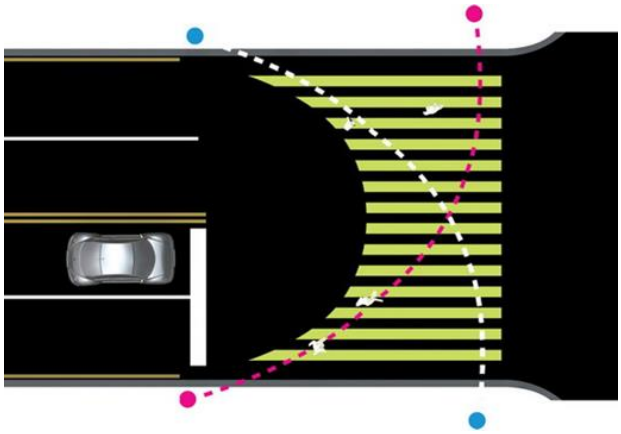
RSA Team's Recommendation	Cost	Potential Safety Benefit
Conduct a turning analysis to evaluate turning movements and potentially revise intersection striping to include head-to-head left-turn lanes.(33)	Low	Medium

Issue: No Right Turn on Red (Easton/Somerset)	Safety Risk	
Description: Crash history indicates a significant number of crashes involving pedestrians.	Medium/High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Consider prohibiting right turns on red and place MUTCD compliant signage on all four corners. (34)	Low	Medium/High

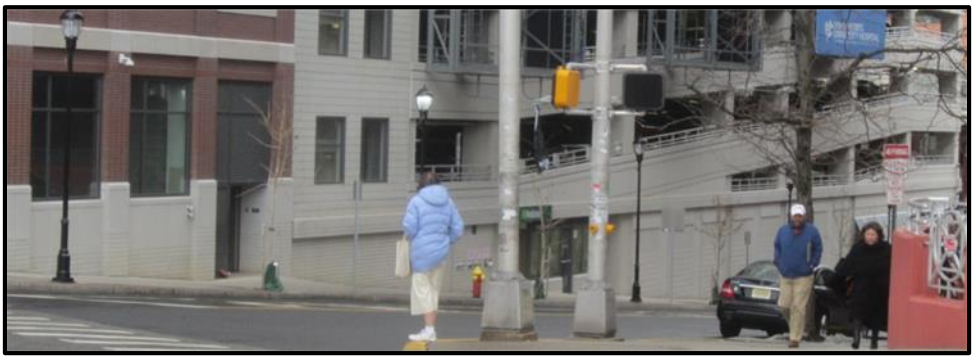
Issue: Left Turns (Easton/Somerset)	Safety Risk	
Description: Left-turning vehicles from Somerset Street limit visibility of opposing vehicles.	Medium/High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Consider installing left-turn arrows from Somerset Street to Easton Avenue north and south. (35)	Low	Medium/High
Consider installing lane reconfiguration with head-to-head left turns. (36)	Low	Medium/High
Conduct turning analysis to evaluate turning movements and potentially revise intersection striping to include head-to-head left-turn lanes.(33)	Low	Medium/High

Issue: Crosswalks (Easton/Somerset)	Safety Risk
Description: The crosswalks do not accommodate pedestrian desire lines.	Medium/Low
Description: Pedestrian accommodations, such as ramps and detectable warning surfaces, are not fully ADA compliant.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
Plan for full ADA compliance by scheduling upgrades of existing ramps and curbs at crosswalks. (3)	Medium	Medium
Consider the installation of ergonomic crosswalks, to provide for natural pedestrian movements. (38) [See diagram below.]	Low	Medium



Issue: Pedestrian Accommodations (Easton/Somerset)	Safety Risk
Description: Pedestrian buttons are not properly aligned in accordance with ADA requirements.	Medium
Description: Pedestrian heads are not located in the direct line of sight of pedestrians using the crosswalks.	Low/Medium
Description: There is a high pedestrian volume at this intersection and it was observed that pedestrians aren't utilizing buttons but crossing with the green light.	Medium/High
Description: Pedestrian push signage is confusing.	Medium



RSA Team's Recommendation	Cost	Potential Safety Benefit
Schedule realignment of the pedestrian buttons to conform to 2009 MUTCD requirements. (20)	Low	Medium/Low
Review the alignment of the pedestrian heads with the crosswalks and sidewalks. (21)	Low	Medium/Low
Evaluate the benefit of revising signal timing to operate on fixed time or pedestrian recall, and adjust as feasible. (39)	Low	Medium/High
Push button signage should be upgraded to conform to the 2009 MUTCD. (37)	Low	Medium

Issue: Signage (Easton/Somerset)	Safety Risk	
Description: The "NO TURN ON RED" sign on westbound Somerset Street is not visible from the stop bar.	Medium/High	
Description: The "NO TURN ON RED" sign on northbound Easton Avenue is missing.	Medium/High	
Description: There are missing stop bars in the intersection.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Ensure that the "NO TURN ON RED" sign is properly aligned with the stop bar in the northeast corner on Somerset Street; add a supplemental sign on the far side of the intersection. (40)	Low	Medium/High
If appropriate, replace the "NO TURN ON RED" sign. (41)	Low	Medium
Ensure that the missing stop bar and other roadway markings are replaced. (42)	Low	Medium

Issue: Lighting (Easton/Somerset)	Safety Risk	
Description: Lighting is inconsistent and not uniform at Easton Avenue and Somerset Street, and may not address the nighttime visibility needs of both pedestrians and vehicles.	Medium/High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. (5)	Medium	Medium/High

Issue: Sight Distance (Easton/Somerset)	Safety Risk
Description: Cars were parked close to the intersection, obstructing the sight distance of pedestrians in the intersection.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Consider installing a "NO PARKING" sign, roadway markings, and/or stanchions to delineate parking/no parking areas. (43)	Low	Medium/High

Somerset Street & College Avenue

RSA Team Findings

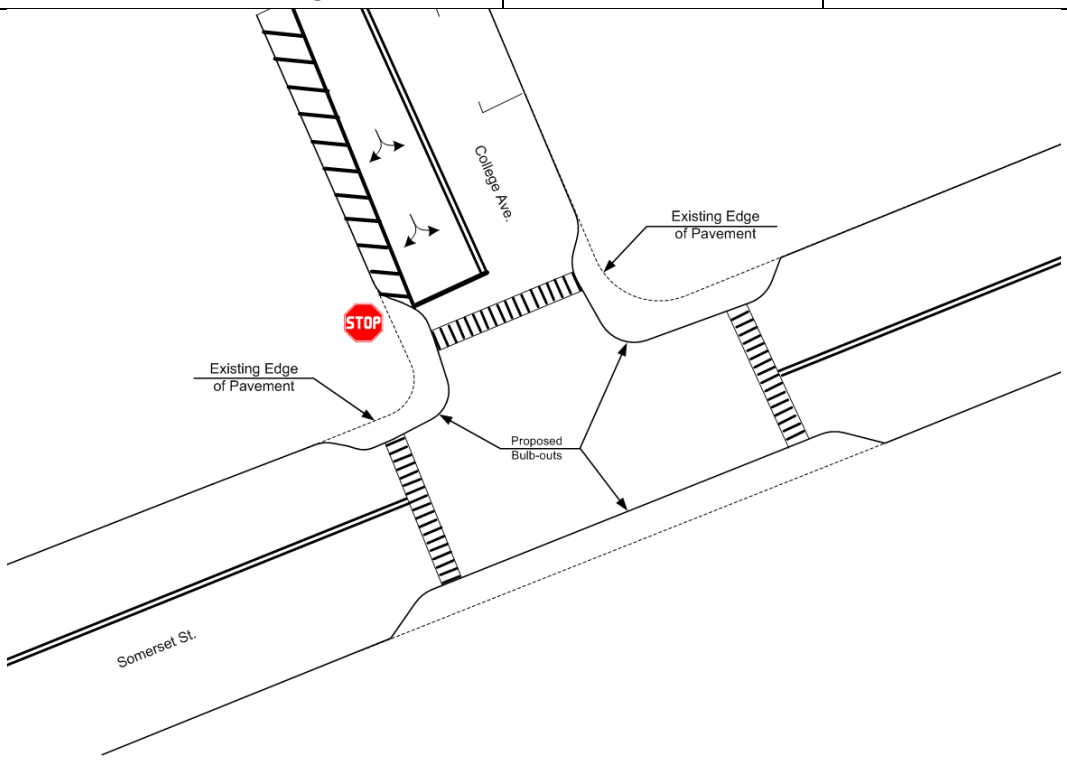
The following section details the specific findings and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

Issue: Lighting (Somerset/College)	Safety Risk	
Description: Lighting was inconsistent and not uniform at Somerset Street and College Avenue and may not address the nighttime visibility needs of both pedestrians and vehicles.	Medium/High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. (5)	Medium	Medium/High

Issue: Pedestrians (Somerset/College)	Safety Risk	
Description: The eastern crosswalk across Somerset Street at College Avenue, which is the main access from Rutgers University to the train station, is too narrow for the volume of pedestrians.	Low	
Description: The visibility of the crosswalk from College Avenue across Somerset Street is limited.	Medium/High	
Description: The crosswalk is long and could be made more pedestrian friendly.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Widening the crosswalk could more easily accommodate the pedestrian volume. (44)	Low	Low
Consider the installation of a pedestrian crossing sign. (45)	Low	Medium/High
Consider the installation of (curbed or painted) bulb-outs at both corners of College Avenue and on Somerset Street. (46) [See drawing on following page.]	Low-Painted; Medium-Curbed	Medium/High

Issue: Traffic Operations (Somerset/College)	Safety Risk
Description: Buses making a left turn from College Avenue onto Somerset Street are forced into the "Right Turn Only" lane on College Avenue	Medium/Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
Removing the lane striping and providing a single lane allowing for both right and left turns would accommodate the wide left turns. (47) [See drawing below.]	Low	Medium
Consider the installation of (curbed or painted) bulb-outs at both corners of College Avenue and on Somerset Street (46) [See drawing below.]	Low-Painted; Medium-Curbed	Medium/High



Issue: Passenger Drop-Off (Somerset/College)	Safety Risk	
Description: The unofficial drop-off and pick-up area on Somerset Street is congested.	Medium/Low	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Evaluate installing an official "Kiss-and-Ride" drop-off/pick-up zone on Somerset Street at the Gateway sidewalk (to the train station) with appropriate signage and roadway markings. (48)	Low	Medium/Low

Issue: Pavement (Somerset/College)	Safety Risk	
Description: The pavement is in poor condition throughout the intersection.	Low	
		
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Consider repaving the intersection. (49)	Medium	Medium/Low

Somerset Street & Wall Street

RSA Team Findings

The following section details the specific findings and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards and best practices.

Issue: Bus Stop (Somerset/Wall)	Safety Risk
Description: Because this is a bus stop for numerous routes for NJ Transit, Rutgers, County buses, and city shuttles, there is significant passenger confusion.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
Consider adding signage that includes maps of the various bus routes bus schedule. (50)	Low	Low

Issue: Pedestrian Accommodations (Somerset/Wall)	Safety Risk	
Description: Pedestrian accommodations, such as ramps and detectable warning surfaces, are not fully ADA compliant at Somerset and Wall Streets.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Plan for full ADA compliance by scheduling upgrades to existing ramps and curbs at the crosswalks. (3)	Medium	Medium

Somerset Street & George Street (CR 672)

RSA Team Findings

The following section details the specific findings and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

Issue: Turning Angle (Somerset/George)	Safety Risk
Description: Some buses making a right turn from Somerset Street to George Street have difficulty, due to the sharp intersection between the two roadways.	High
Vehicles use the bus stop area on Somerset Street as a right turn lane.	Medium

RSA Team's Recommendation	Cost	Potential Safety Benefit
Conduct a thorough evaluation to improve the geometry of the intersection, realigning Somerset Street so that it makes a right angle with George Street. (51)	High	High
Evaluate if installation of a traffic signal is warranted to better accommodate turning buses and vehicles into the parking deck. (52)	High	High
Consider hatching the bus stop area to prohibit vehicles from turning right at the same time that a bus is making a wide right turn. (53) [See diagram on page 62.]	Low	Medium/High
Consider installing a blinking yellow light on northbound George Street, prior to the intersection, alerting motorists to use caution. (54)	High	High

Issue: Sight Distance (Somerset/George)	Safety Risk
Description: Parked vehicles on southbound George Street limit the sight distance of oncoming traffic from Somerset Street.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
Consider limiting parking on George Street, north of the intersection. (55)	Low	Medium/High

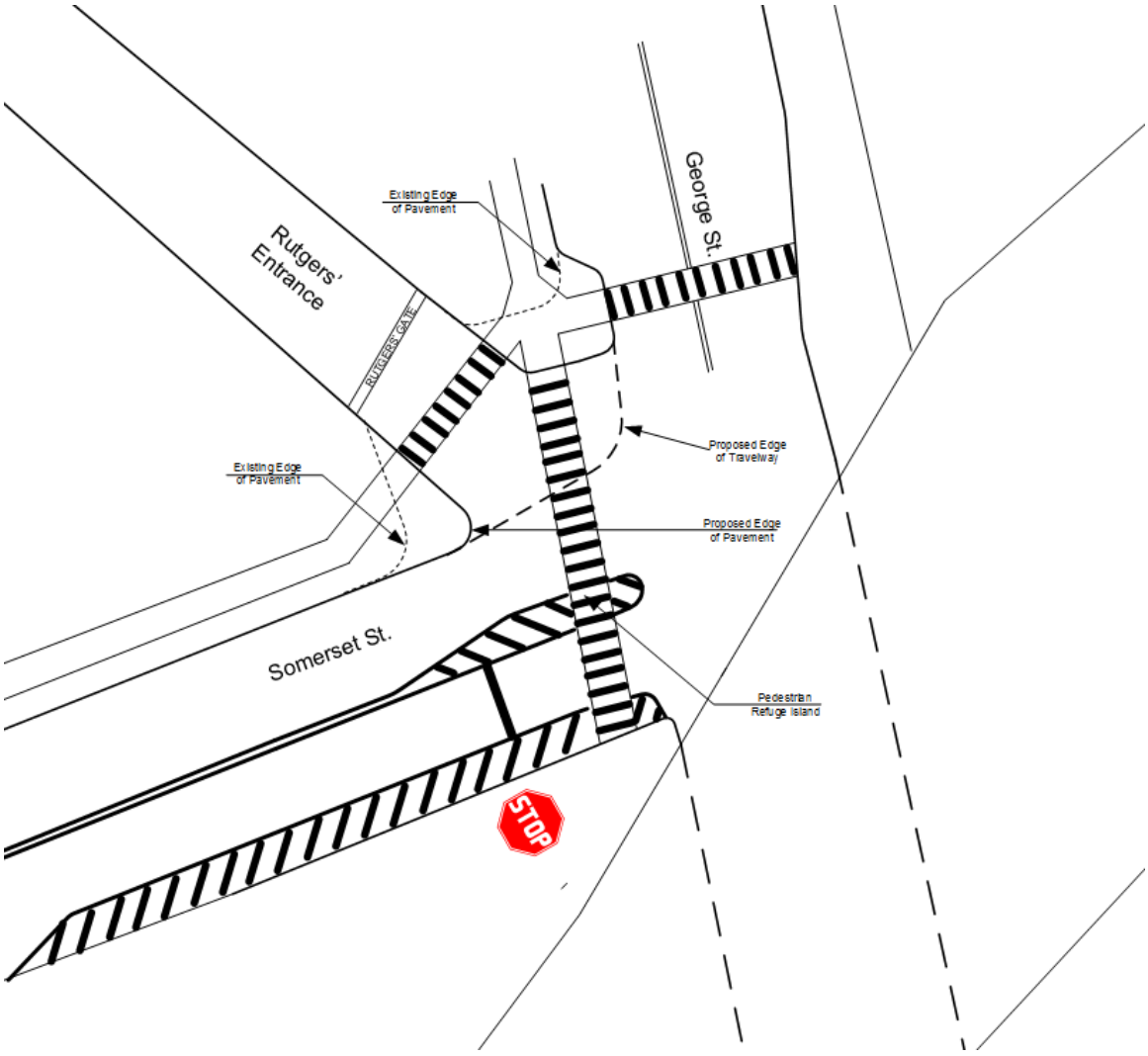
Issue: Parking Deck (Somerset/George)	Safety Risk
Description: Some drivers have difficulty making a left turn into the J & J parking deck at 410 George Street.	Medium-Low
Description: The existing crosswalk across George Street (south of the intersection and bridge) is very long.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
Evaluate if installation of a traffic signal is warranted to better accommodate turning buses and vehicles turning into the parking deck. (52)	High	High
Consider adding a left-turn lane on George Street northbound (for the parking deck). (56)	Low	Medium
Northbound George Street (south of the railroad bridge) narrows to no shoulder just past the crosswalk. Consider revising the narrowing to a location prior to the crosswalk to shorten the crosswalk length. (63)	High	Low/Medium

Issue: Crosswalk (Somerset/George)	Safety Risk
Description: The crosswalk in the northwest corner is not clearly delineated because of the wide driveway entrance to Rutgers University, nor is it ADA compliant.	Medium-Low
Description: Pedestrian accommodations, such as ramps and detectable warning surfaces, are not fully ADA compliant at the intersection of Somerset and George Streets.	Medium
Description: There is no marked crosswalk across George Street north of the intersection.	Medium
Description: The crosswalk across Somerset Street is very long.	Medium/High

RSA Team's Recommendation	Cost	Potential Safety Benefit
The northwest corner could be improved for pedestrians, possibly with additional striping and continuation of the sidewalk from Somerset Street across the Rutgers driveway. (58) [See diagram on page 62.]	Low	Medium
Plan for full ADA compliance by scheduling upgrades to existing ramps and curbs at crosswalks. (3)	Medium	Medium
Consider the installation of bulb-outs (curbed or painted) at the intersection in addition to a crosswalk across the Rutgers driveway. (59) [See diagram on page 62.]	Low-Painted; Medium-Curbed	Medium/High
The addition of a marked crosswalk at George Street north of the intersection would alert drivers to possible pedestrian activity. (60) [See diagram on page 62.]	Low	Medium/High

Consider the installation of bulb-outs (curbed or painted) at a proposed crosswalk across George Street. (61) [See diagram below.]	Low-Painted; Medium-Curbed	Medium/High
Consider the installation of a visibly differentiated mountable refuge island across Somerset Street. (62) [See diagram below.]	Low-Painted; Medium-Mountable	Medium/High



Proposed Intersection Improvements

Issue: Lighting (Somerset/George)	Safety Risk	
Description: Lighting at the intersection was inconsistent and not uniform, especially under the railroad bridge, and may not address the nighttime visibility needs of both pedestrians and vehicles.	Medium/High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. (5)	Medium	Medium/High

Issue: Signage (Somerset/George)	Safety Risk	
Description: The stop sign lacks retro-reflectivity.	Medium	
		
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Plan on replacing the stop sign to conform to MUTCD standards. (64)	Low	Medium/High

George Street (CR 672/171) & Albany Street (Route 27)

RSA Team Findings

The following section details the specific findings and recommendations made by the RSA team. All recommendations and designs should be thoroughly evaluated by the roadway owner and/or a professional engineer for conformance to codes, standards, and best practices.

Issue: Pedestrian Heads (George/Albany)	Safety Risk	
Description: Pedestrian heads are not located in the direct line of sight of pedestrians using the crosswalks.	Low	
Description: Right-turning vehicles obstruct clear sight of pedestrian signal heads.	Medium	
Description: Some of the pedestrian heads are not functioning.	High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Review and adjust the alignment of the pedestrian heads with the crosswalks and sidewalks. (21)	Medium/Low	Medium/Low
Consider installing countdown pedestrian heads in the median refuge. (65)	High	High
Repair the pedestrian heads. (66)	Low	Medium/High

Issue: Pedestrian Accommodations (George/Albany)	Safety Risk
Description: Pedestrians were observed crossing George Street in line with the sidewalk, which is not aligned with the crosswalk.	Low
Description: Pedestrian accommodations, such as ramps and detectable warning surfaces, are not fully ADA compliant.	Medium/Low
Description: Some of the bricks in the sidewalk have settled and may cause a tripping hazard.	Medium/Low
Description: A significant number of people utilize the bus stops.	Medium

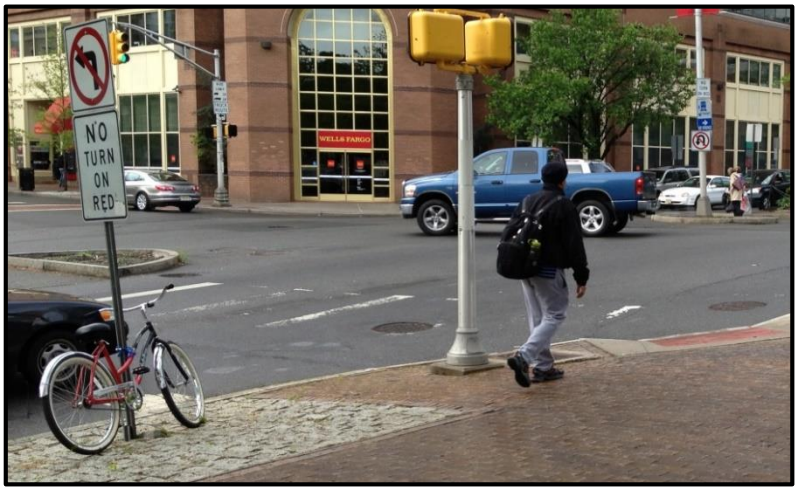
RSA Team's Recommendation	Cost	Potential Safety Benefit
Pedestrians could be better accommodated by aligning the crosswalks with the sidewalks. (67)	Low	Medium
Plan for full ADA compliance by scheduling upgrades to existing ramps and curbs at crosswalks. (3)	Medium/Low	Medium
Regular maintenance should include repairing the bricks where they have settled. (68)	Low	Medium/High
Consider the installation of bus shelters. (69)	**Note:** NJ Transit will install bus shelters at no cost, conditional with the city maintenance and J&J easement.	Medium

Issue: Signage (George/Albany)	Safety Risk
Description: Left-turn prohibition is not clear to drivers because of missing and faded signage.	Medium/High
Description: There is an unused broken pole in the southeast corner of the intersection.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
Replace all "NO LEFT TURN" signage where necessary. (70)	Low	High
Remove the unused broken pole at the southeast corner. (71)	Low	Low/Medium

Issue: Traffic Operations (George/Albany)	Safety Risk	
Description: Cars often drive over the curb at the southwest corner.	Low	
Description: There is excessive queuing from left-turn volume on southbound George Street to eastbound Albany Street.	Medium	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Investigate why vehicles are striking the curb in the southwest corner and consider revising geometry. (72)	High	Low
Evaluate the installation of signage diverting traffic from George Street to Johnson Drive for the left turn onto Albany Street. (73)	Low	Medium/High
Consider the installation of lead– or lag–left signal phasing. (74)	Medium/High	Medium/High

Issue: Bicycles (George/Albany)	Safety Risk
Description: There are no accommodations for bicycle travel in the area around the George and Albany Streets intersection.	Medium/High



RSA Team's Recommendation	Cost	Potential Safety Benefit
Professional engineering staff should do a full evaluation of bicycle travel in the area around the train station. (8)	Low	Medium/High
Support improvements to the proposed New Brunswick Bike Lane project within the intersection. (76) See bikeway map: http://thecityofnewbrunswick.org/planninganddevelopment/files/Bike-Lanes-2012-20131.pdf	Low	Medium

Issue: Sight Distance (George/Albany)	Safety Risk	
Description: When the loading area on the southeast corner is full, trucks extend past the designated area, sometimes blocking the crosswalk and creating a traffic hazard due to impaired sight distance.	Medium/High	
RSA Team's Recommendation	**Cost**	**Potential Safety Benefit**
Consider providing additional loading zone areas for trucks. (75)	Low	Medium/High

Implementing Recommendations

The RSA team's recommendations detailed in this report should improve the safety of the seven intersections in the vicinity of the New Brunswick train station. Most of the roadway recommendations fall under Middlesex County's jurisdiction. The intersections of Easton Avenue & Wall Street and Somerset & Wall Streets are under the jurisdiction of the City of New Brunswick. Any potential improvements generated as a result of this report would be led by either the County of Middlesex or the City of New Brunswick.

Many of the recommendations contained within this report—such as maintaining signs, pavement conditions and roadway markings—can be implemented through routine maintenance, while others will take more time and investment. Maximizing 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. The North Jersey Transportation Planning Authority (NJTPA) can also assist by providing crash data and/or capacity analysis.

Some of the recommendations may require sizable capital investment to ensure a long-term safety benefit. It is understood that larger projects may require funding assistance from non-county and non-municipal sources. Potential funding sources are provided in the section following the summary of recommendations.

In addition to physical improvements, a combined effort of public education and enforcement is necessary to make these intersections safer for all roadway users. The New Jersey Division of Highway Traffic Safety and its community partners—including the Transportation Management Associations, police agencies, and nonprofits—fund and/or provide educational programs addressing pedestrian and bicycle safety and safe driving practices. A variety of outreach programs conducted in school and community-based settings, as well as informational materials, are available and can be tapped to address safety in the area addressed by this RSA.

Enforcement of no-parking zones, posted speed limits, and pedestrian right-of-way and jaywalking, are proven to reduce crashes and help improve the safety practices of all roadway users. Officers may also hand out pamphlets during routine traffic stops to educate motorists about traffic laws as well as conduct pedestrian decoy enforcement activities (Cops in the Crosswalk program) to engage both motorists and pedestrians.

Recommendations

The following section summarizes the recommendations detailed in the RSA team finding section. They are listed by jurisdiction as well as by the cost and effort (Long, Medium, and Short Term) required for implementation. (It should be noted that these designations are both subjective and fluid.

The following intersections are under the jurisdiction of Middlesex County:
(Recommendations related to parking and signage are under the jurisdiction of the City of New Brunswick.)

- Easton Avenue (CR 514) & Albany Street (Route 27)
- Easton Avenue (CR 514) & Wall /Little Albany Street
- Easton Avenue (CR 514) & Somerset Street
- Somerset & George Streets (CR 672)
- George (CR 672/171) & Albany Streets (Route 27)

The following intersections are under the jurisdiction of the City of New Brunswick:

- Somerset Street & College Avenue
- Somerset & Wall Streets

Middlesex County

Long Term

Traffic Signals

52 **Somerset & George:** Evaluate if the installation of a traffic signal is warranted to better accommodate buses and vehicles turning into the J & J parking deck.

54 **Somerset & George:** Consider installing a blinking yellow light on northbound George Street prior to the intersection, alerting motorists to use caution.

65 **George & Albany:** Consider installing a countdown pedestrian head in the median refuge.

74 **George & Albany:** Consider the installation of lead– or lag–left signal phasing.

Geometry

51 **Somerset & George:** Conduct a thorough evaluation to improve the geometry of the intersection, realigning Somerset Street so that it makes a right angle with George Street.

63 **Somerset & George:** Northbound George Street (south of the railroad bridge) narrows to no shoulder just past the crosswalk. Consider revising the narrowing to a location prior to the crosswalk to shorten the crosswalk length.

72 **George & Albany:** Investigate why vehicles are striking the curb in the southwest corner and consider revising the geometry.

Medium Term

Pedestrians

3 **Corridorwide:** Plan for full ADA compliance by scheduling upgrades of existing ramps and curbs at crosswalks.

4 **Corridorwide:** Improve appearance of pedestrian crossings by shortening them to encourage pedestrians to cross at marked crosswalks.

30 **Easton & Wall:** Consider installation of bulb-outs (painted, curbed, or stanchions), which would shorten the crosswalk.

58 **Somerset & George:** The northwest corner could be improved for pedestrians, possibly with additional striping and by delineating the continuation of the sidewalk from Somerset Street across the Rutgers driveway.

59 **Somerset & George:** Consider the installation of bulb-outs (curbed or painted) at the intersection in addition to a crosswalk across the Rutgers driveway.

61 **Somerset & George:** Consider the installation of bulb-outs (curbed or painted) at a proposed crosswalk at George Street.

62 **Somerset & George:** Consider the installation of a visibly differentiated mountable refuge island at Somerset Street.

Traffic Operations

35 **Easton & Somerset:** Consider installing left-turn arrows from Somerset Street to Easton Avenue north and south.

Bridge Conditions

26 **Easton & Albany, Easton & Wall:** Request that Amtrak make appropriate repairs to the bridge to alleviate the dripping water.

Pavement Conditions

11 **Easton & Albany:** Identify locations of raised manhole covers and consider resetting the manhole covers to be flush with pavement.

Traffic Signals

16 **Albany & Easton:** Consider rephasing signal timing so that the walk signal across easterly Albany Street comes before the left turn from southbound Easton Avenue to northbound Albany Street.

Short Term

Roadway Markings

1 **Corridorwide:** Regular maintenance should ensure that the roadway markings are clearly visible to pedestrians and vehicles.

2 **Corridorwide:** Installation of retro-reflective pavement markings would significantly increase visibility.

25 **Easton & Albany:** Consider the addition of dotted lane line extension pavement markings, delineating the duel left-turning movement from southbound Easton Avenue to northbound Albany Street.

27 **Easton & Wall:** Ensure that the missing crosswalk at Little Albany Street is clearly marked.

33 **Easton & Somerset:** Conduct a turning analysis to evaluate turning movements and potentially revise intersection striping to include head-to-head left-turn lanes.

42 **Easton & Somerset:** Ensure that the missing stop bar and other roadway markings are replaced.

Traffic Signal

16 **Albany & Easton:** Consider rephasing signal timing so that the walk signal across easterly Albany Street comes before the left turn from southbound Easton Avenue to northbound Albany Street.

39 **Easton & Somerset:** Evaluate the benefit of revising signal timing to operate on fixed time or pedestrian recall, and adjust as feasible.

Signage

6 **Corridorwide:** Professional engineering staff should conduct a thorough evaluation of existing and required signage to reduce the amount of signage in the intersection and decrease sign clutter.

31 **Easton & Wall:** Consider installing a “NO LEFT TURN” sign in the far-left corner (for traffic exiting Wall Street onto Easton Avenue southbound) in conformance to the MUTCD.

34 **Easton & Somerset:** Consider prohibiting right turns on red and place MUTCD signage on all four corners.

40 **Easton & Somerset:** Ensure that the "NO TURN ON RED" sign is properly aligned with the stop bar in the northeast corner on Somerset Street; add a supplemental sign on the far side of the intersection.

41 **Easton & Somerset:** If appropriate, replace the "NO TURN ON RED" sign.

70 **George & Albany:** Replace all "NO LEFT TURN" signage, where necessary.

71 **George & Albany:** Remove the unused broken pole at the southeast corner.

Traffic Operations

8 **Corridorwide:** Professional engineering staff should do a full evaluation of bicycle travel in the area around the train station.

24 **Easton & Albany:** Evaluate an alternative to the existing bus stop by revising the striping on northbound Albany Street to increase the width on southbound Albany Street and allow the relocation of the bus stop just past the intersection, after the ramp from southbound Easton Avenue.

34 **Easton & Somerset:** Consider the installation of a right-turn-on-red prohibition with a "NO TURN ON RED" sign in all four corners.

36 **Easton & Somerset:** Consider installing lane reconfiguration with head-to-head left turns.

73 **George & Albany:** Evaluate the installation of signage diverting traffic from George Street to Johnson Drive for the left turn onto Albany Street.

Pedestrians

9 **Easton & Albany:** Consider removing the unused broken pole in the island curb ramp (from southbound Easton Avenue to Albany Street).

12 **Easton & Albany:** Consider installation of a marked crosswalk across the "Kiss-and–Ride" driveway on southbound Albany Street.

13 **Easton & Albany:** Evaluate unofficial crossing locations in the median on Albany Street and consolidate or eliminate them, if possible.

14 **Easton & Albany:** Consider resetting or relocating the junction box

15 **Easton & Albany:** Ensure crossing times are compliant with the 2009 edition of the MUTCD.

17 **Easton & Albany:** Evaluate adding an all-red, all-way pedestrian crossing at the intersection.

18 **Easton & Albany:** Plan to realign and/or limit visibility of the walk signal so pedestrians do not receive conflicting information.

19 **Easton & Albany:** To accommodate the high pedestrian volume, consider operating the signal in fixed time or utilizing pedestrian recall.

20 **Easton & Albany, Easton & Somerset:** Schedule realignment of the pedestrian buttons to conform to the 2009 edition of the MUTCD.

21 **Easton & Albany, Easton & Somerset, George & Albany:** Review and adjust the alignment of the pedestrian heads with the crosswalks and sidewalks.

28 **Easton & Wall:** Installation of a marked crosswalk across Easton Avenue south of the intersection would increase the safety of pedestrians who are crossing at this location and alert motorists to a pedestrian crossing.

30 **Easton & Wall:** Consider installation of bulb-outs (painted, curbed, or stanchions) to shorten the crosswalk.

32 **Easton & Wall:** The broken pole on southbound Easton Avenue, north of Little Albany Street, should be removed.

38 **Easton & Somerset:** Consider the installation of ergonomic crosswalks to provide for the natural pedestrians movements.

59 **Somerset & George:** Consider the installation of bulb-outs (painted) at the intersection in addition to a crosswalk at the Rutgers driveway.

60 **Somerset & George:** The addition of a marked crosswalk at George Street north of the intersection would alert drivers for possible pedestrian activity. (See drawing in Appendix E.)

61 **Somerset & George:** Consider the installation of bulb-outs (curbed or painted) at a proposed crosswalk at George Street.

62 **Somerset & George:** Consider the installation of a visibly differentiated mountable refuge island at Somerset Street.

66 **George & Albany:** Schedule repair of the pedestrian heads.

67 **George & Albany:** Pedestrians could be better accommodated by aligning the crosswalks with the sidewalks.

Long Term

Bus

69 George & Albany: Consider the installation of bus shelters.

Medium Term

Pedestrians

3 **Corridorwide:** Plan for full ADA compliance by scheduling upgrades to existing ramps and curbs at the crosswalks.

4 **Corridorwide:** Improve pedestrian crossings to encourage pedestrians to cross in marked crosswalks.

46 **Somerset & College:** Consider the installation of (curbed or painted) bulb-outs at both corners of College Avenue and on Somerset Street.

Lighting

5 **Corridor Wide:** Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced.

Bridge Conditions

26 **Easton & Albany, Easton & Wall:** Request that Amtrak make appropriate repairs to the bridge to alleviate the dripping water.

Pavement Conditions

49 **Somerset & College:** Consider repaving the intersection.

Short Term

Roadway Markings

1 **Corridorwide:** Regular maintenance should keep the roadway markings clearly visible to pedestrians and vehicles.

2 **Corridorwide:** Installation of retro-reflective pavement markings would significantly increase visibility.

29 **Easton & Wall:** Pavement markings would more clearly delineate the “NO PARKING” zone.

42 **Easton & Somerset:** Ensure that the missing stop bar and other roadway markings are replaced.

43 **Easton & Somerset:** Consider installing a “NO PARKING” sign, roadway markings, and/or stanchions to delineate parking/no parking areas.

47 **Somerset & College:** Removing the lane striping and providing a single lane allowing for both right and left turns would accommodate the wide left turns.

53 **Somerset & George:** Consider hatching the bus stop area to prohibit vehicles from turning right at the same time that a bus is making a wide right turn.

Signage

6 **Corridorwide:** Professional engineering staff should conduct a thorough evaluation of existing and required signage to reduce the amount of signage in the intersection and decrease sign clutter.

10 **Easton & Albany, Easton & Wall:** Evaluate creating a dedicated taxi stand and installing signage in the area under the bridge at northbound Easton Avenue.

43 **Easton & Somerset:** Consider installing a "NO PARKING" sign, roadway markings, and/or stanchions to delineate parking/no parking areas.

45 **Somerset & College:** Consider the installation of a pedestrian crossing sign.

50 **Somerset & Wall:** Consider adding signage that includes maps of the various bus routes and bus schedules.

64 **Somerset & George:** Replace the stop sign so that it conforms to MUTCD standards.

Traffic Operations

7 **Corridorwide:** Professional engineering staff should conduct a thorough evaluation of the train station traffic, including passenger pick-up and drop-off points and locations for taxi stands.

8 **Corridorwide:** Professional engineering staff should do a full evaluation of bicycle travel in the area around the train station to complement the New Brunswick Bike Lane project.

10 **Easton & Albany, Easton & Wall:** Evaluate creating a dedicated taxi stand and installing signage in the area under the bridge at northbound Easton Avenue.

47 **Somerset & College:** Removing the lane striping and providing a single lane allowing for both right and left turns would accommodate the wide left turns.

48 **Somerset & College:** Evaluate installing an official "Kiss-and-Ride" drop-off/pick-up zone on Somerset Street at the Gateway sidewalk (to the train station) with appropriate signage and roadway markings.

55 **Somerset & George:** Consider limiting parking on George Street, north of the intersection.

56 **Somerset & George:** Consider adding a left-turn lane on northbound George Street (for the parking deck).

75 **George & Albany:** Consider providing additional loading zone areas for trucks.

Pedestrians

37 **Easton & Somerset:** Push button signage should be upgraded to conform to the 2009 edition of the MUTCD.

44 **Somerset & College:** Widening the crosswalk could more easily accommodate the pedestrian volume.

46 **Somerset & College:** Consider the installation of (curbed or painted) bulb-outs at both corners of College Avenue and on Somerset Street.

68 **George & Albany:** Regular maintenance should include repairing the bricks where they have settled.

Bicycles

22 **Easton & Albany:** Consider the installation of additional bicycle parking.

76 **George & Albany:** Support improvements to the proposed New Brunswick Bike Lane project within the intersection.

Potential Funding Sources

In this economy, budget constraints may hamper the implementation of some of these recommendations. Finding alternative funding sources is critical for ensuring investment in safety improvements that would benefit all roadway 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 recommendations outlined in this report. 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/municaid.shtm

This program has been a significant resource for municipalities in funding local transportation projects. All municipalities are eligible. NJDOT 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 NJDOT 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 (SSTT):

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

This program provides funding to counties and municipalities to improve 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)

HIGHWAY SAFETY FUND (Safe Corridors):

The Safe Corridors grant program targets resources to segments of highways that have a history of high crash rates. Grants are supported by fines that are doubled in designated Safe Corridors for a variety of moving violations, including speeding. FY12 Safe Corridors funding is being allocated based on crash data, with higher amounts of funding going to areas demonstrating the greatest need for continued enhanced enforcement measures. The link to a website is still in development.

Contact:

Shukri Abuhuzeima
Supervising Engineer
NJDOT Local Aid
Phone: 609-530-4680
Email: Shukri.Abuhuzeima@dot.state.nj.us

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. 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.

TRANSIT VILLAGES:

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

The Transit Village Grant program is designed to assist municipalities that have been formally designated as Transit Villages. These are municipalities that 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 one-half mile radius of major transit facilities.

Contact:

Leroy Gould
Transit Village Coordinator
Phone: 609-530-3864
Email: Leroy.gould@dot.state.nj.us

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 for 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 program provides funds for economic development, housing rehabilitation, community revitalization, and public facilities designated to benefit people of low and moderate income, to 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 is a federally funded program administered by the State Department of Transportation. It 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;
- make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age;
- 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–8).

The program establishes two distinct types of funding opportunities: infrastructure projects (the planning, design, and construction of engineering improvements) and noninfrastructure 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 (LSP):

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

The federally funded Local Safety Program is a component of wider safety planning at the North Jersey Transportation Planning Authority (NJTAPA), supporting construction of quick-fix, high-impact safety improvements on county and local roadway facilities in the MPO's 13-county 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—including ridesharing, transit usage, travel demand management, and traffic mitigation projects—to lessen the level of pollutants and greenhouse gases generated through the use of fossil fuels. Proposals must implement strategies and policies in the Regional Transportation Plan, Plan 2040.

THE HIGH RISK RURAL ROADS PROGRAM (HRRRP)

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

High Risk Rural Roads Program 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, and enhanced and advanced warning signs.

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

LOCAL CONCEPT DEVELOPMENT (LCD) PHASE of the LOCAL CAPITAL PROJECT DELIVERY PROGRAM (LCPD)

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

The Local Capital Project Delivery Program 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. Some of the issues may include environmental, right-of-way, access, utilities, design, community involvement, constructability issues at a "planning level of effort," and address 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 (counties) or subregional teams. The program is designed to assist subregions in refining and developing transportation improvement strategies included 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 – via NJ 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 behavioral safety programs through education and enforcement activities designed to reduce motor vehicle crashes, injuries, and fatalities on the roadways of New Jersey. Municipal, county, state government, and law enforcement agencies, as well as nonprofit organizations, are encouraged to apply for grant funding to address specific, local traffic safety issues.

Contact:
Ed O'Connor, Central Region Supervisor
Phone: 609-633-9048
Email: Edward.O'Connor@lps.state.nj.us

Appendix A – Raw Crash Data

Easton Avenue (CR 514) & Albany Street (Route 27)

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED
2/2/2007	11:01 AM	Struck Parked Vehicle	Daylight	Property Damage	Dry	0	0
2/6/2007	5:20 PM	Left Turn / U-Turn	Dusk	Property Damage	Dry	0	0
2/7/2007	3:31 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	1	0
2/24/2007	9:22 AM	Same Direction – Side Swipe	Dark (Street Lights On /On /Continuous)	Property Damage	Dry	0	0
4/23/2007	9:53 PM	Pedalcyclist	Dark (Street Lights On /Continuous)	Injury	Dry	0	0
4/23/2007	10:08 PM	Fixed Object	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
5/23/2007	8:45 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
6/28/2007	7:17 PM	Same Direction – Side Swipe	Daylight	Property Damage	Wet	0	0
7/8/2007	6:16 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
8/12/2007	1:10 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
9/11/2007	8:06 PM	Same Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
9/11/2007	4:46 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
10/26/2007	4:31 PM	Same Direction – Side Swipe	Daylight	Property Damage	Wet	0	0
11/2/2007	7:50 AM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
11/26/2007	8:25 PM	Right Angle	Dark (Street Lights On /Spot)	Property Damage	Wet	0	0
12/26/2007	2:06 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
2/12/2008	3:45 PM	Same Direction – Rear End	Daylight	Property Damage	Snowy	0	0
3/8/2008	11:17 AM	Fixed Object	Daylight	Property Damage	Wet	0	0
4/18/2008	4:39 PM	Struck Parked Vehicle	Daylight	Property Damage	Dry	1	0
4/24/2008	10:28 AM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED
5/13/2008	12:01 PM	Backing	Daylight	Property Damage	Dry	0	0
7/15/2008	5:51 PM	Same Direction – Side Swipe	Daylight		Dry	0	0
7/20/2008	5:58 PM	Same Direction – Rear End	Daylight		Dry	0	0
8/14/2008	12:15 PM	Right Angle	Daylight	Injury	Dry	0	0
8/23/2008	9:32 AM	Same Direction – Rear End	Daylight		Dry	0	0
10/12/2008	2:01 AM	Fixed Object	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
12/11/2008	9:42 AM	Struck Parked Vehicle	Daylight	Property Damage	Wet	0	0
1/30/2009	4:37 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
2/18/2009	2:43 PM	Pedestrian	Daylight	Injury	Wet	1	1
4/20/2009	8:22 AM	Pedestrian	Daylight	Injury	Dry	1	2
6/17/2009	2:34 PM	Right Angle	Daylight	Property Damage	Unknown	0	0
7/29/2009	9:54 AM	Pedestrian	Daylight	Injury	Dry	0	0
8/12/2009	5:33 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	1	2
9/13/2009	3:12 AM	Pedestrian	Dark (Street Lights On /Continuous)	Injury	Wet	0	0
9/29/2009	9:55 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	1	1
10/16/2009	5:32 PM	Same Direction – Side Swipe	Daylight		Wet	0	0
11/14/2009	8:21 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Wet	0	0

Easton Avenue (CR 514) & Wall Street/Little Albany Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDESTRIANS INVOLVED
2/25/2007	9:08 PM	Right Angle	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
5/14/2007	12:50 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
8/28/2007	2:44 PM	Struck Parked Vehicle	Daylight	Property Damage	Dry	0	0
11/14/2007	8:03 AM	Right Angle	Daylight	Injury	Icy	0	0
12/2/2007	7:32 AM	Same Direction – Rear End	Daylight			0	0
2/13/2008	7:16 AM	Pedestrian	Daylight		Dry	0	0
2/22/2008	1:35 AM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
3/5/2008	12:31 PM	Struck Parked Vehicle	Daylight		Snowy	0	0
5/22/2008	6:42 PM	Same Direction – Side Swipe	Daylight		Dry	0	0
5/29/2008	2:31 PM	Fixed Object	Daylight		Dry	0	0
11/12/2008	1:15 PM	Right Angle	Daylight	Property Damage	Dry	0	0
12/18/2008	2:54 PM	Right Angle	Daylight		Wet	1	1
2/24/2009	6:56 AM	Same Direction – Side Swipe	Daylight		Dry	0	0
3/23/2009	2:31 PM	Left Turn / U-Turn	Daylight		Dry	0	0
4/6/2009	1:07 PM	Same Direction – Rear End	Daylight	Injury	Wet	1	0
7/7/2009	1:01 PM	Struck Parked Vehicle	Daylight		Dry	0	0
7/14/2009	1:58 PM	Same Direction – Rear End	Daylight	Injury	Dry	1	0
10/20/2009	4:01 PM	Pedalcyclist	Daylight	Injury	Dry	1	0
11/4/2009	7:22 AM	Right Angle	Daylight		Dry	0	0

Easton Avenue (CR 514) & Somerset Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL VEHICLES INVOLVED
1/15/2007	12:12 PM	Backing	Daylight	Property Damage	Wet	1	2
1/19/2007	6:44 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Injury	Dry	0	2
2/2/2007	10:43 PM	Left Turn / U-Turn	Dark (Street Lights On /Continuous)	Injury	Wet	0	2
2/28/2007	6:06 AM	Pedestrian	Dawn	Injury	Dry	0	2
3/31/2007	4:07 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	3
5/8/2007	9:29 AM	Struck Parked Vehicle	Daylight	Property Damage	Dry	0	3
7/5/2007	5:36 PM	Same Direction – Side Swipe	Daylight	Property Damage	Wet	0	2
7/27/2007	6:16 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	2
8/2/2007	12:57 AM	Struck Parked Vehicle	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	4
8/8/2007	5:02 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	2
8/12/2007	4:07 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	2
9/8/2007	1:11 AM	Opposite Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	2
10/4/2007	4:03 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	2
10/7/2007	2:46 PM	Backing	Daylight	Property Damage	Dry	0	2
10/8/2007	10:17 AM	Struck Parked Vehicle	Daylight	Property Damage	Dry	1	1
1/4/2008	4:15 PM	Same Direction – Rear End	Dusk		Dry	0	2
1/25/2008	1:45 PM	Pedestrian	Daylight		Dry	0	2
2/5/2008	6:24 PM	Struck Parked Vehicle	Dark (Street Lights On /Continuous)	Property Damage	Wet	1	2
4/8/2008	9:04 PM	Backing	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	1
4/17/2008	12:16 AM	Pedestrian	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	2
4/19/2008	5:10 PM	Struck Parked Vehicle	Daylight	Property Damage	Dry	0	2
5/9/2008	12:03 PM	Struck Parked Vehicle	Daylight	Property Damage	Wet	0	1

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL VEHICLES INVOLVED
5/16/2008	8:12 PM	Pedestrian	Dark (Street Lights On /Continuous)	Injury	Wet	0	2
6/22/2008	1:56 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	2
6/30/2008	8:16 PM	Right Angle	Dusk	Property Damage	Dry	1	2
7/2/2008	12:04 PM	Backing	Daylight	Property Damage	Dry	1	1
7/10/2008	4:52 PM	Right Angle	Daylight	Property Damage	Dry	0	2
7/17/2008	4:58 PM	Right Angle	Daylight	Property Damage	Dry	0	2
7/18/2008	5:50 PM	Right Angle	Daylight	Property Damage	Dry	0	2
9/8/2008	4:51 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	2
9/17/2008	9:18 PM	Struck Parked Vehicle	Dark (Street Lights On /Continuous)		Dry	0	2
10/23/2008	6:22 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	1	1
10/25/2008	6:38 PM	Pedestrian	Dark (Street Lights On /Continuous)	Injury	Wet	0	2
12/13/2008	1:12 AM	Backing	Dark (Street Lights Off)	Property Damage	Dry	0	2
12/30/2008	6:03 PM	Same Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	2
1/27/2009	11:31 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	2
3/15/2009	12:01 PM	Right Angle	Daylight		Dry	0	2
3/31/2009	10:42 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	2
4/19/2009	9:52 PM	Backing	Dark (Street Lights On /Spot)	Property Damage	Dry	0	2
5/21/2009	2:12 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	2
7/17/2009	2:15 PM	Left Turn / U-Turn	Daylight	Property Damage	Dry	0	2
8/11/2009	9:29 AM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	2
8/19/2009	2:40 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	2
10/19/2009	1:36 PM	Left Turn / U-Turn	Daylight	Property Damage	Dry	0	2
10/23/2009	5:40 PM	Same Direction – Side Swipe	Dawn	Property Damage	Wet	0	2
11/19/2009	6:27 PM	Same Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	2

Somerset Street & College Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDES-TRIANS INVOLVED
2/20/2007	8:14 PM	Struck Parked Vehicle	Dark (Street Lights On /Continuous)		Wet	0	0
7/24/2007	8:31 AM	Pedestrian	Daylight	Injury	Dry	1	1
8/28/2007	2:28 PM	Right Angle	Daylight	Property Damage	Dry	0	0
4/16/2008	1:04 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
5/3/2008	12:53 AM	Right Angle	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
9/12/2008	6:50 PM	Right Angle	Dark (Street Lights On /Continuous)	Property Damage	Wet	0	0
2/10/2009	5:49 PM	Same Direction – Rear End	Dusk	Property Damage	Dry	0	0
4/28/2009	2:06 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
5/29/2009	5:40 AM	Right Angle	Dark (Street Lights On /Continuous)	Property Damage	Wet	0	0
10/10/2009	11:54 PM	NULL	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0

Somerset Street & Wall Street

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL PEDES-TRIANS INVOLVED
9/4/2008	2:53 PM	Struck Parked Vehicle	Daylight	Property Damage	Dry	1	0
10/16/2008	8:12 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Injury	Dry	0	0
12/26/2008	5:02 PM	Struck Parked Vehicle	Daylight	Property Damage	Dry	0	0
1/27/2009	4:00 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
4/6/2009	3:31 PM	Same Direction – Rear End	Daylight	Property Damage	Wet	0	0
9/15/2009	5:36 PM	Right Angle	Daylight	Property Damage	Dry	0	0

Somerset Street & George Street (CR 672)

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDI-TION	TOTAL INJURED	TOTAL PEDES-TRIANS INVOLVED	PEDES-TRIANS INJURED
5/11/2007	7:19 PM	Fixed Object	Daylight	Property Damage	Dry	0	0	0
8/21/2007	2:53 PM	Same Direction – Side Swipe	Daylight	Property Damage	Wet	1	1	0
9/7/2007	2:47 PM	Fixed Object	Daylight	Property Damage	Dry	0	0	0
9/27/2007	9:15 AM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0	0
10/5/2007	6:46 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0	0
11/26/2007	7:53 PM	Pedestrian	Dark (Street Lights On /Continuous)	Injury	Wet	0	0	0
11/26/2007	6:39 PM	Same Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Wet	0	0	0
1/29/2008	7:52 PM	Pedestrian	Dark (Street Lights On /Continuous)	Injury	Dry	0	0	1
4/13/2008	12:45 AM	Same Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0	0
5/24/2008	10:03 PM	Same Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0	0
5/30/2008	11:14 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0	0
8/5/2008	2:49 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0	0
9/8/2008	3:34 PM	Backing	Daylight	Property Damage	Dry	0	1	0
12/6/2008	11:02 PM	Right Angle	Dark (Street Lights On /Continuous)	Property Damage	Wet	0	0	0
12/22/2008	9:32 AM	Pedestrian	Daylight	Property Damage	Icy	1	1	0
1/2/2009	7:42 PM	Struck Parked Vehicle	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0	0
1/31/2009	7:27 PM	Same Direction – Rear End	Dark (Street Lights On /Spot)	Property Damage	Dry	0	0	0
2/17/2009	7:56 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0	0
4/5/2009	12:03 PM	Right Angle	Daylight	Property Damage	Dry	0	0	0
11/14/2009	5:14 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0	0

George Street (CR 672/171) & Albany Street (Route 27)

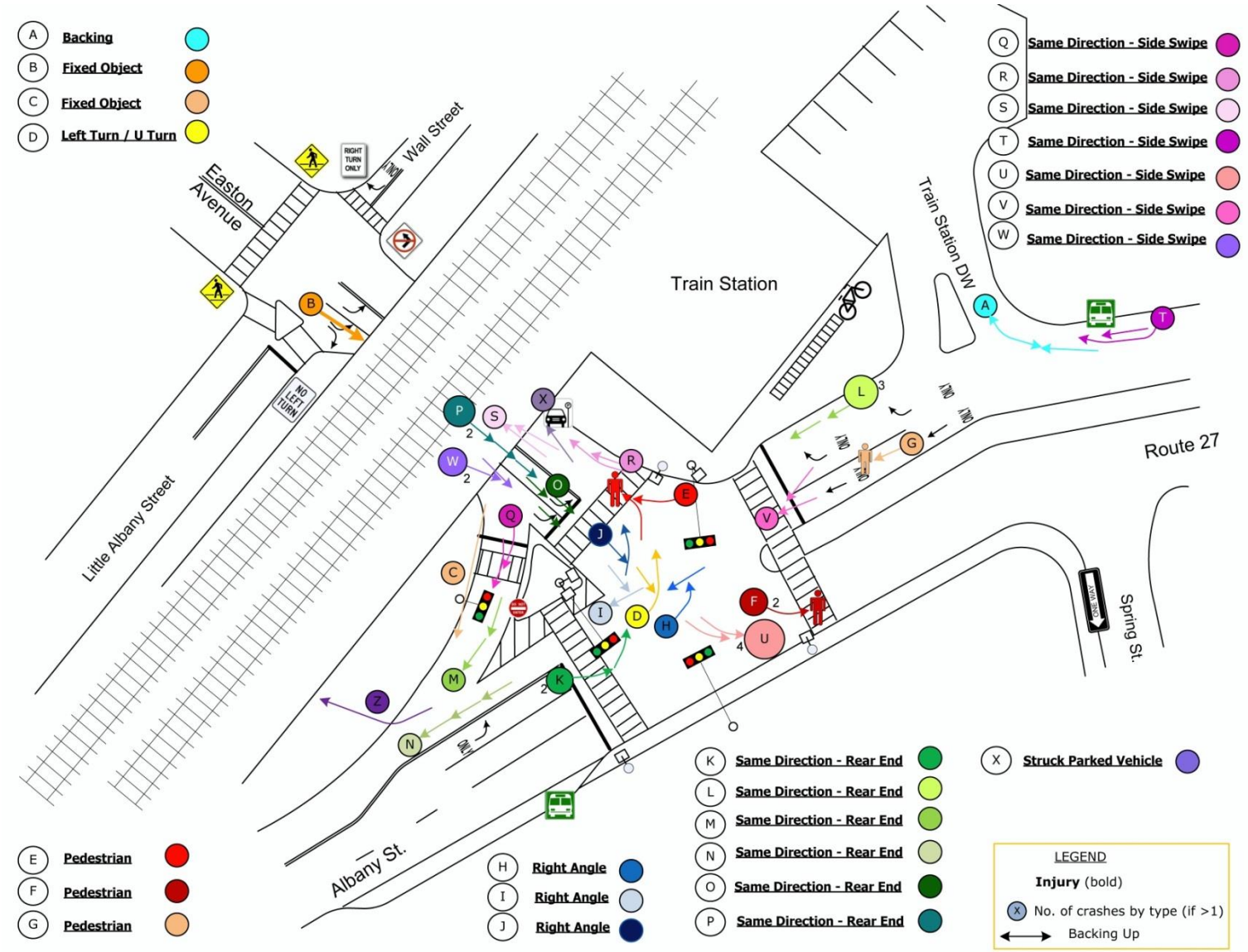
CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDI-TION	TOTAL INJURED	TOTAL PEDES-TRIANS INVOLVED
2/26/2007	10:38 AM	Same Direction – Rear End	Daylight	Injury	Wet	0	0
2/27/2007	12:52 PM	Backing	Daylight	Property Damage	Dry	0	0
3/22/2007	4:56 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
4/27/2007	11:26 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	1	0
5/14/2007	6:49 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
5/24/2007	3:18 AM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
5/29/2007	10:29 AM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
5/29/2007	2:40 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
6/9/2007	11:17 AM	Same Direction – Rear End	Daylight	Injury	Dry	1	0
7/11/2007	10:16 PM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Injury	Dry	0	0
7/26/2007	8:23 AM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
7/29/2007	2:28 AM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
8/2/2007	5:27 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	1	1
8/2/2007	2:26 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
9/17/2007	9:04 AM	Pedestrian	Daylight	Injury	Dry	0	0
9/18/2007	8:42 PM	Left Turn / U-Turn	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
10/3/2007	1:47 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
10/7/2007	1:28 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
10/22/2007	12:31 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
12/7/2007	7:11 PM	Pedestrian	Dark (No Street Lights)		Dry	0	0
1/7/2008	10:17 AM	Pedestrian	Daylight	Property Damage	Dry	0	0

CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDI-TION	TOTAL INJURED	TOTAL PEDES-TRIANS INVOLVED
3/7/2008	3:05 AM	Right Angle	Dark (Street Lights On /Continuous)	Injury	Dry	0	0
4/8/2008	8:22 AM	Other	Daylight	Property Damage	Dry	2	0
4/12/2008	1:36 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
4/17/2008	5:28 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
4/18/2008	4:39 PM	Struck Parked Vehicle	Daylight	Property Damage	Dry	0	0
4/24/2008	6:48 AM	Same Direction – Rear End	Daylight		Dry	0	0
5/26/2008	3:02 PM	Same Direction – Rear End	Daylight	Property Damage	Unknown	0	0
5/29/2008	12:55 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	0
5/30/2008	3:37 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
7/15/2008	6:43 PM	Right Angle	Daylight	Property Damage	Dry	0	0
9/9/2008	11:14 AM	Same Direction – Side Swipe	Daylight	Property Damage	Wet	0	0
10/13/2008	8:16 PM	Same Direction – Side Swipe	Dark (Street Lights On /Continuous)	Property Damage	Dry	0	0
11/5/2008	6:14 PM	Right Angle	Dark (Street Lights On /Continuous)	Property Damage	Wet	0	0
11/6/2008	12:35 PM	Same Direction – Rear End	Daylight	Property Damage	Wet	0	0
11/9/2008	2:20 PM	Other	Daylight	Property Damage	Dry	0	0
11/17/2008	4:18 PM	Right Angle	Daylight	Property Damage	Dry	0	0
11/24/2008	9:57 PM	Right Angle	Dark (Street Lights On/ Continuous)	Property Damage	Wet	0	0
12/14/2008	9:29 AM	Right Angle	Daylight	Property Damage	Dry	0	0
12/16/2008	6:25 PM	Same Direction – Side Swipe	Dusk	Property Damage	Snowy	0	0
12/23/2008	2:54 PM	Same Direction – Side Swipe	Daylight	Property Damage	Dry	0	1
4/29/2009	9:57 AM	Pedestrian	Daylight	Injury	Dry	1	2
5/13/2009	12:13 PM	Same Direction – Rear End	Daylight	Property Damage	Dry	0	0
5/15/2009	6:13 PM	Right Angle	Daylight	Property Damage	Dry	0	0

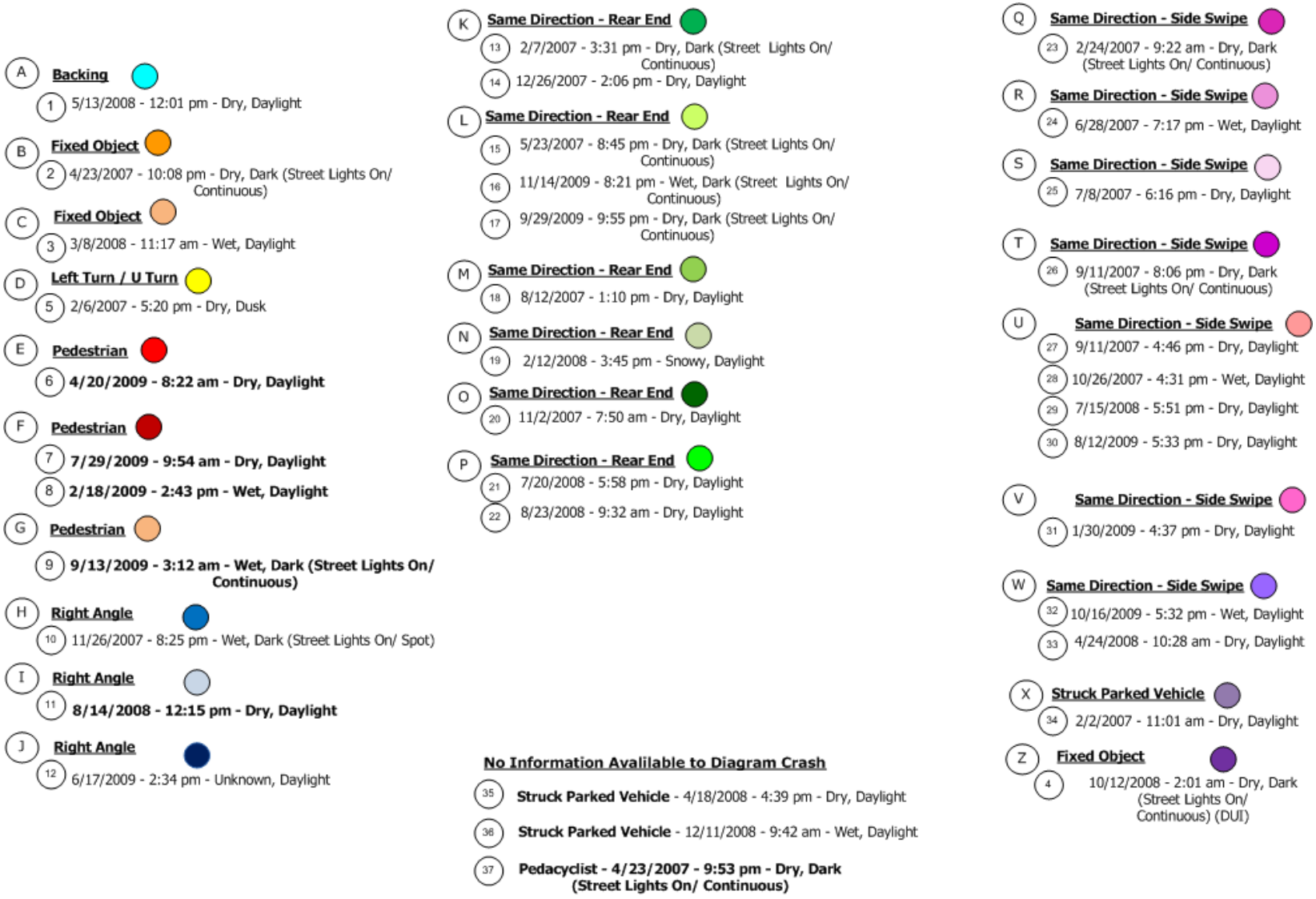
CRASH DATE	CRASH TIME	CRASH TYPE	LIGHT CONDITION	SEVERITY	SURFACE CONDI-TION	TOTAL INJURED	TOTAL PEDES-TRIANS INVOLVED
6/6/2009	12:36 AM	Same Direction – Rear End	Dark (Street Lights On /Continuous)	Injury	Wet	1	0
7/7/2009	5:36 PM	Struck Parked Vehicle	Daylight	Injury	Dry	0	0
7/10/2009	10:25 AM	Same Direction – Rear End	Daylight	Property Damage	Dry	1	1
8/17/2009	9:03 AM	Same Direction – Rear End	Daylight		Dry	0	0
10/1/2009	2:57 PM	Same Direction – Rear End	Daylight	Property Damage	NULL	0	0
10/10/2009	11:01 PM	Pedestrian	Dark (Street Lights On /Continuous)		Dry	0	0
10/26/2009	12:57 PM	Pedestrian	Daylight	Injury	Dry	1	1
11/13/2009	12:22 AM	Right Angle	Dark (Street Lights On /Continuous)	Property Damage	Wet	1	1

Appendix B – Crash Diagrams

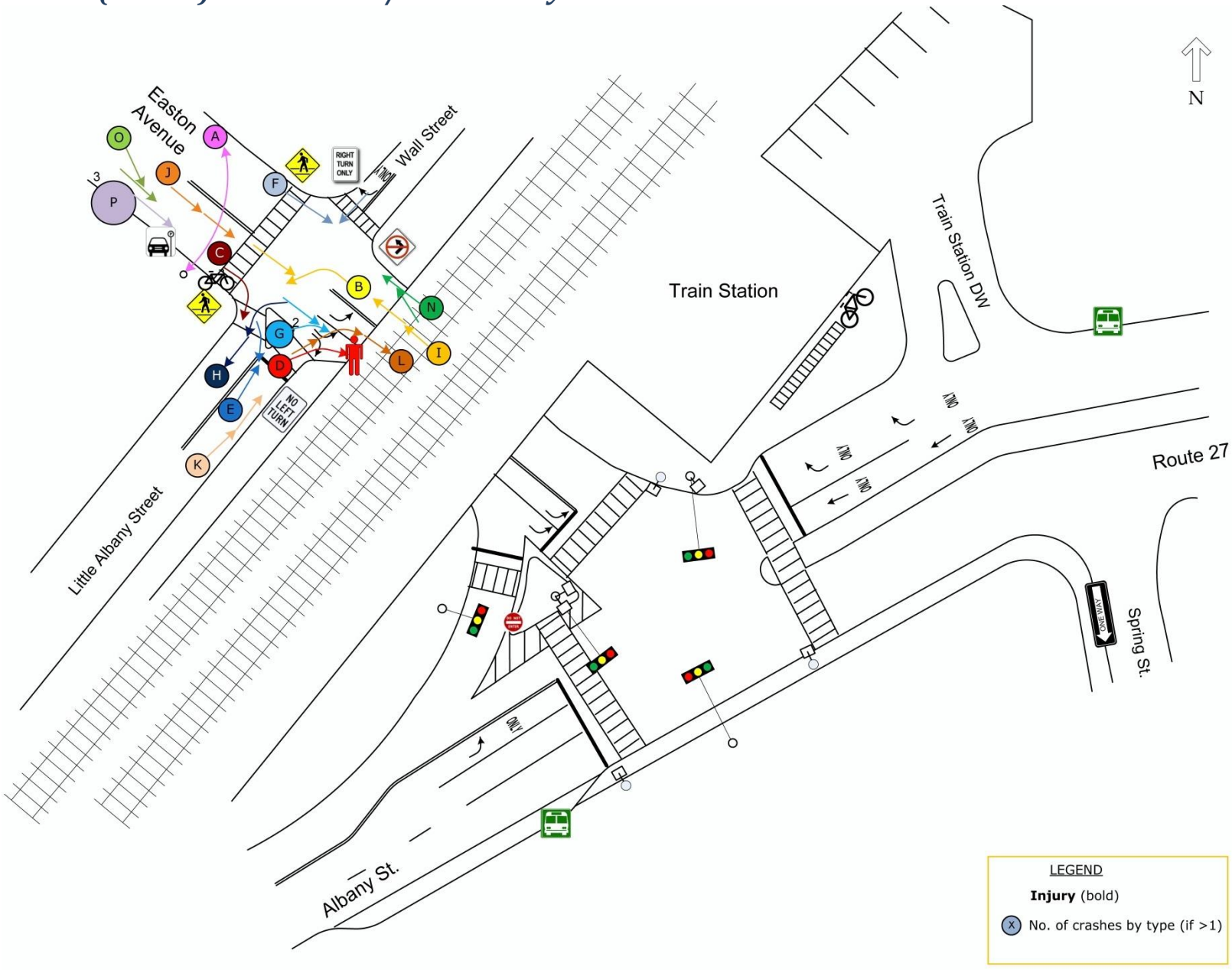
Easton Avenue (CR 514) & Albany Street (Route 27)



Easton Avenue (CR 514) & Albany Street (Route 27)– continued

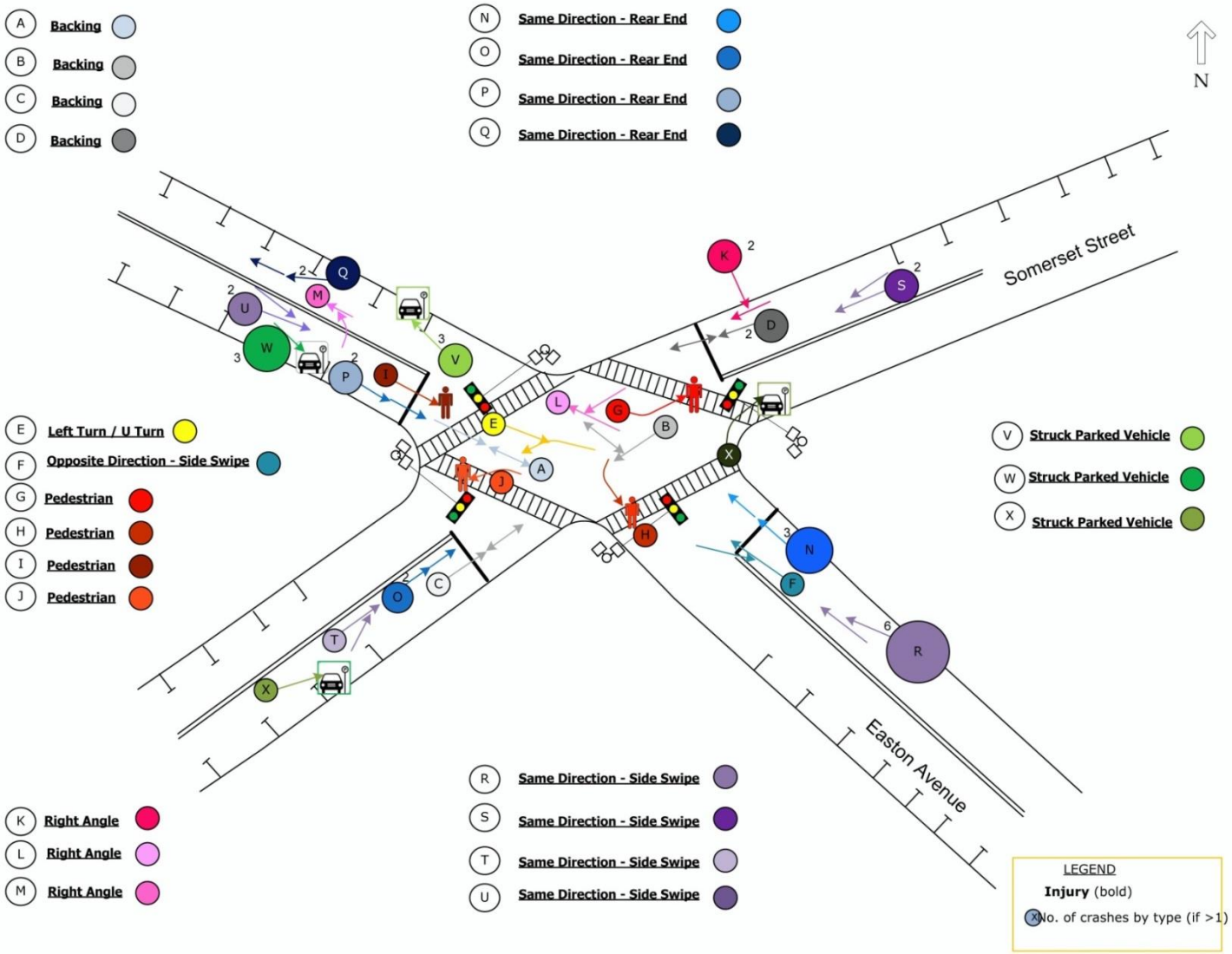


Easton Avenue (CR 514) & Wall Street/Little Albany Street



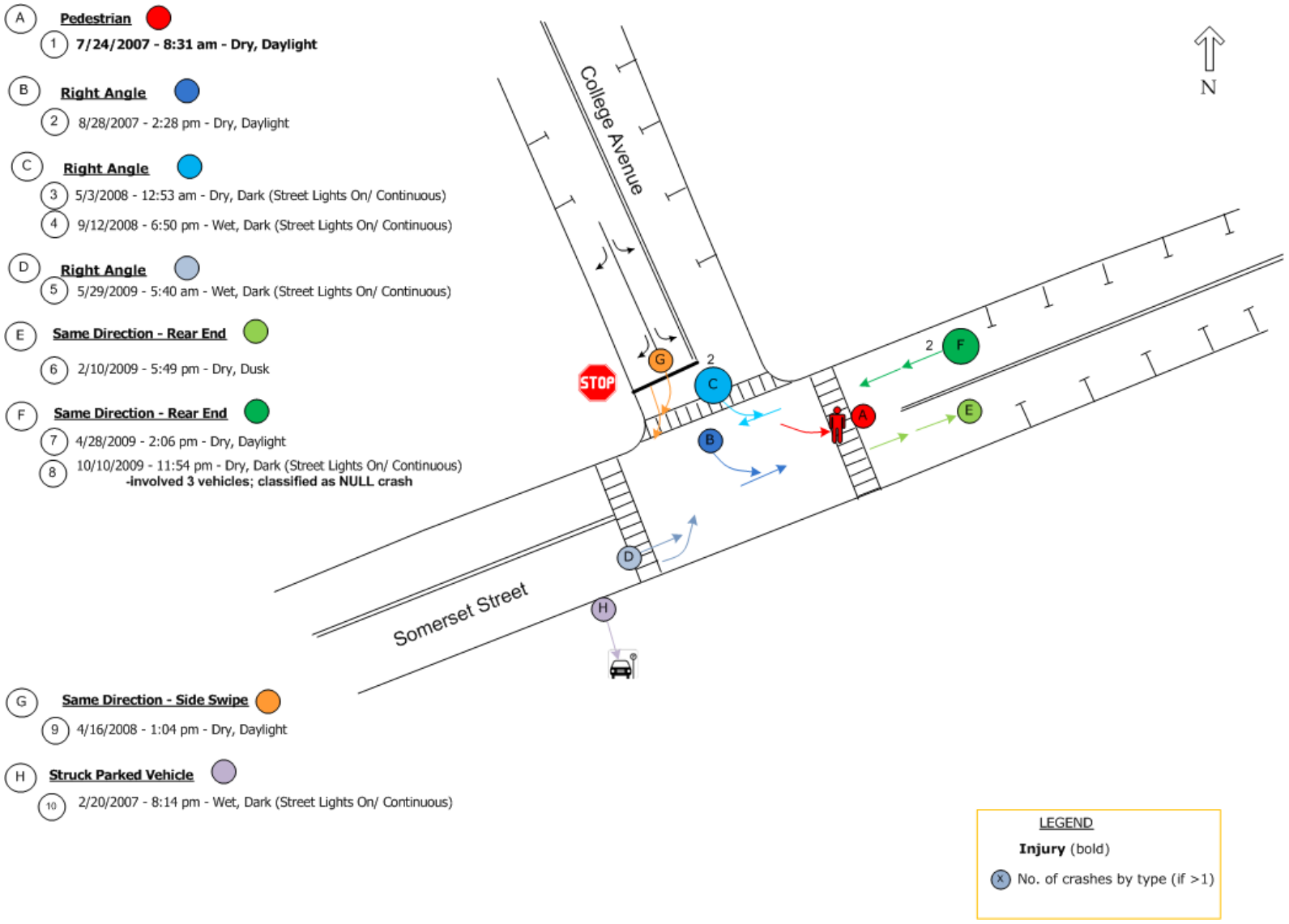
Easton Avenue (CR 514) & Wall Street/Little Albany Street – continued

Easton Avenue (CR 514) & Somerset Street



Easton Avenue (CR 514) & Somerset Street – continued

Somerset Street & College Avenue



Somerset Street & Wall Street

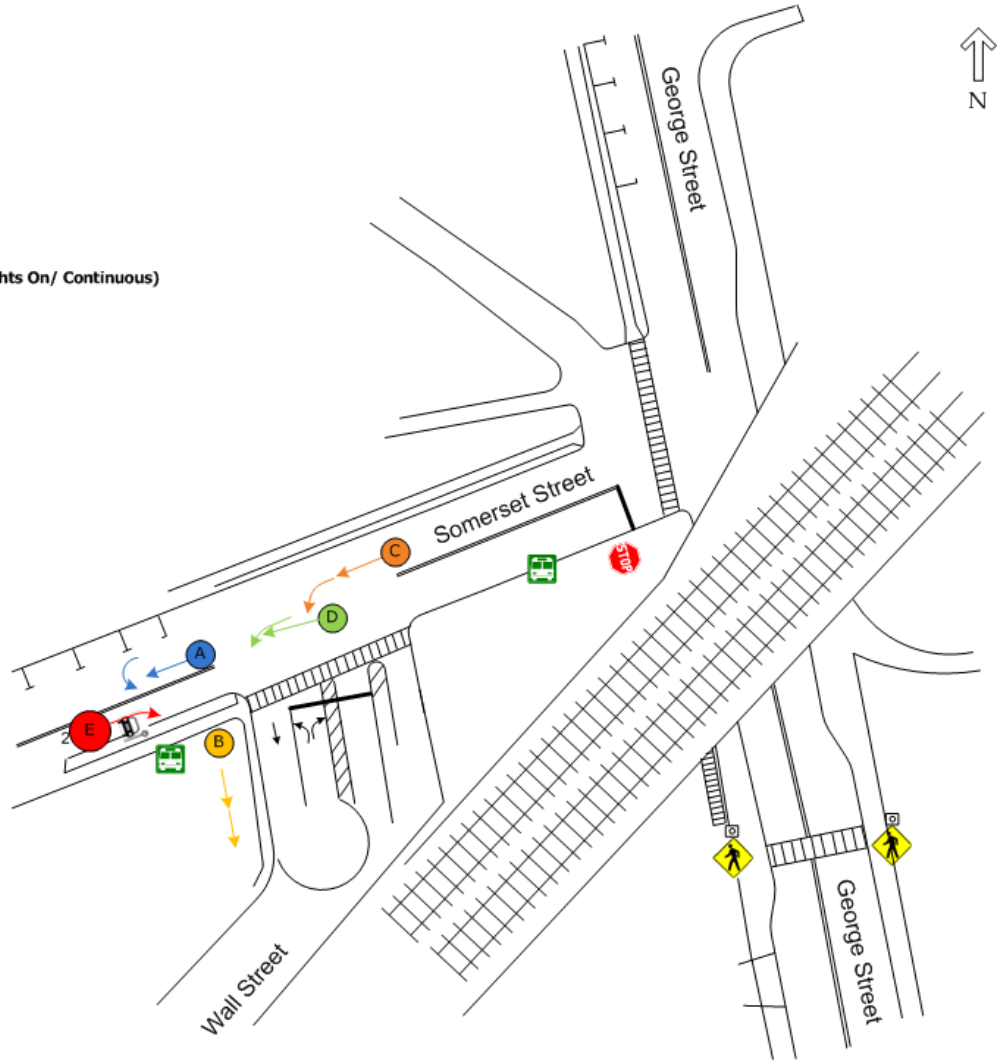
(A) **Right Angle**
(1) 9/15/2009 - 5:36 pm - Dry, Daylight

(B) **Same Direction - Rear End**
(2) 4/6/2009 - 3:31 pm - Wet, Daylight

(C) **Same Direction - Rear End**
(3) **10/16/2008 - 8:12 pm - Dry, Dark (Street Lights On/ Continuous)**

(D) **Same Direction - Side Swipe**
(4) 1/27/2009 - 4:00 pm - Dry, Daylight

(E) **Struck Parked Vehicle**
(5) 9/4/2008 - 2:53 pm - Dry, Daylight
(6) 12/26/2008 - 5:02 pm - Dry, Daylight



LEGEND
Injury (bold)
(X) No. of crashes by type (if >1)

Somerset Street & George Street (CR 672)

A **Fixed Object**
1 5/11/2007 - 7:19 pm - Dry, Daylight

B **Fixed Object**
2 9/7/2007 - 2:47 pm - Dry, Daylight

C **Pedestrian**
3 **11/26/2007 - 7:53 pm - Wet, Dark (Street Lights On/ Continuous)**
4 **1/29/2008 - 7:52 pm - Dry, Dark (Street Lights On/ Continuous)**
5 12/22/2008 - 9:32 am - Icy, Daylight

D **Right Angle**
6 12/6/2008 - 11:02 pm - Wet, Dark (Street Lights On/ Continuous)
7 4/5/2009 - 12:03 pm -Dry, Daylight

E **Same Direction - Rear End**
8 10/5/2007 - 6:46 pm - Dry, Daylight
9 5/30/2008 - 11:14 pm - Dry, Dark (Street Lights On/ Continuous)

F **Same Direction - Rear End**
10 1/31/2009 - 7:27 pm - Dry, Dark (Street Lights On/ Continuous)

G **Same Direction - Rear End**
11 2/17/2009 - 7:56 pm - Dry, Dark (Street Lights On/ Continuous)

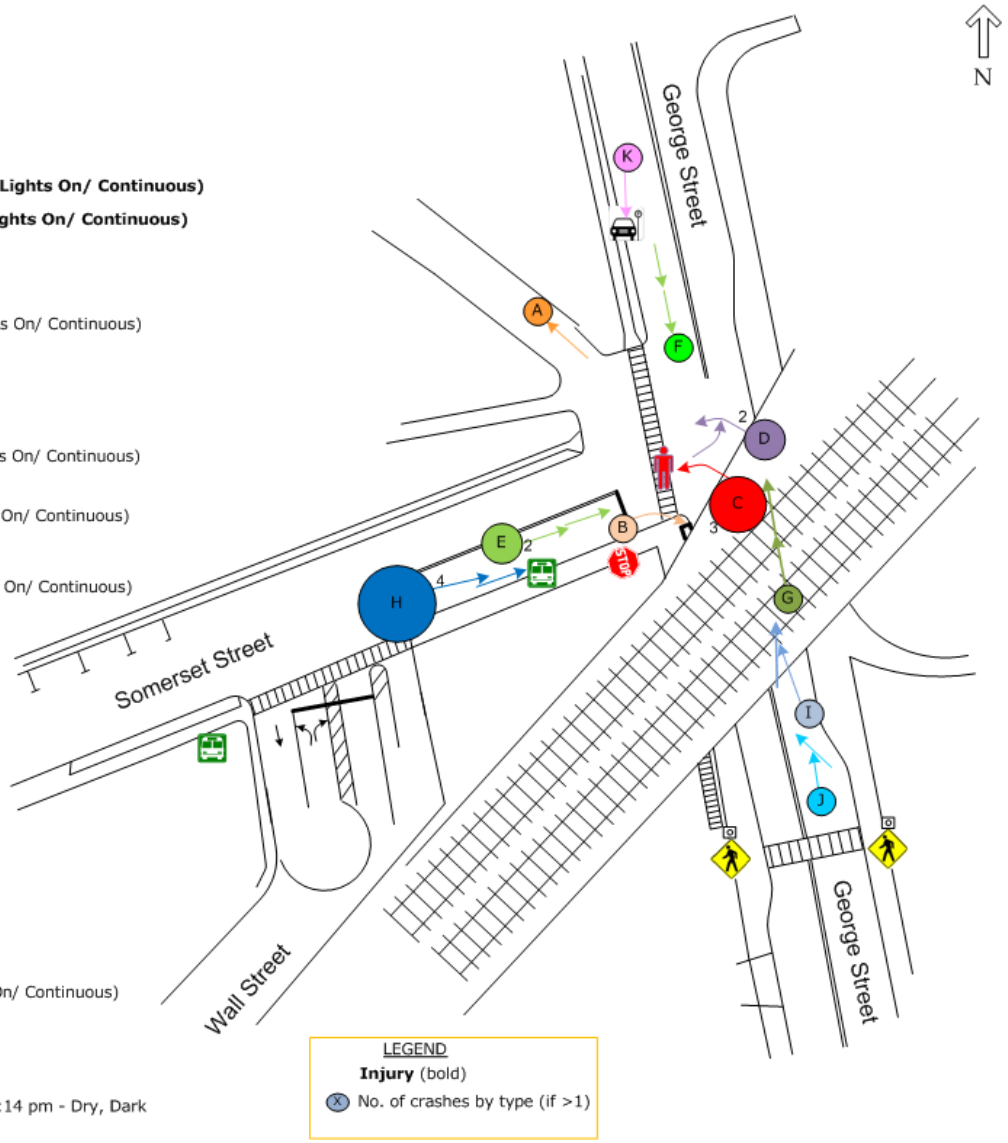
H **Same Direction - Side Swipe**
12 8/21/2007 - 2:53 pm - Wet, Daylight
13 5/24/2008 - 10:03 pm - Dry, Dark (Street Lights On/ Continuous)
14 11/26/2007 - 6:39 pm - Wet, Dark (Street Lights On/ Continuous)
15 4/13/2008 - 12:45 am - Dry, Dark (Street Lights On/ Continuous)

I **Same Direction - Side Swipe**
16 9/27/2007 - 9:15 am - Dry, Daylight

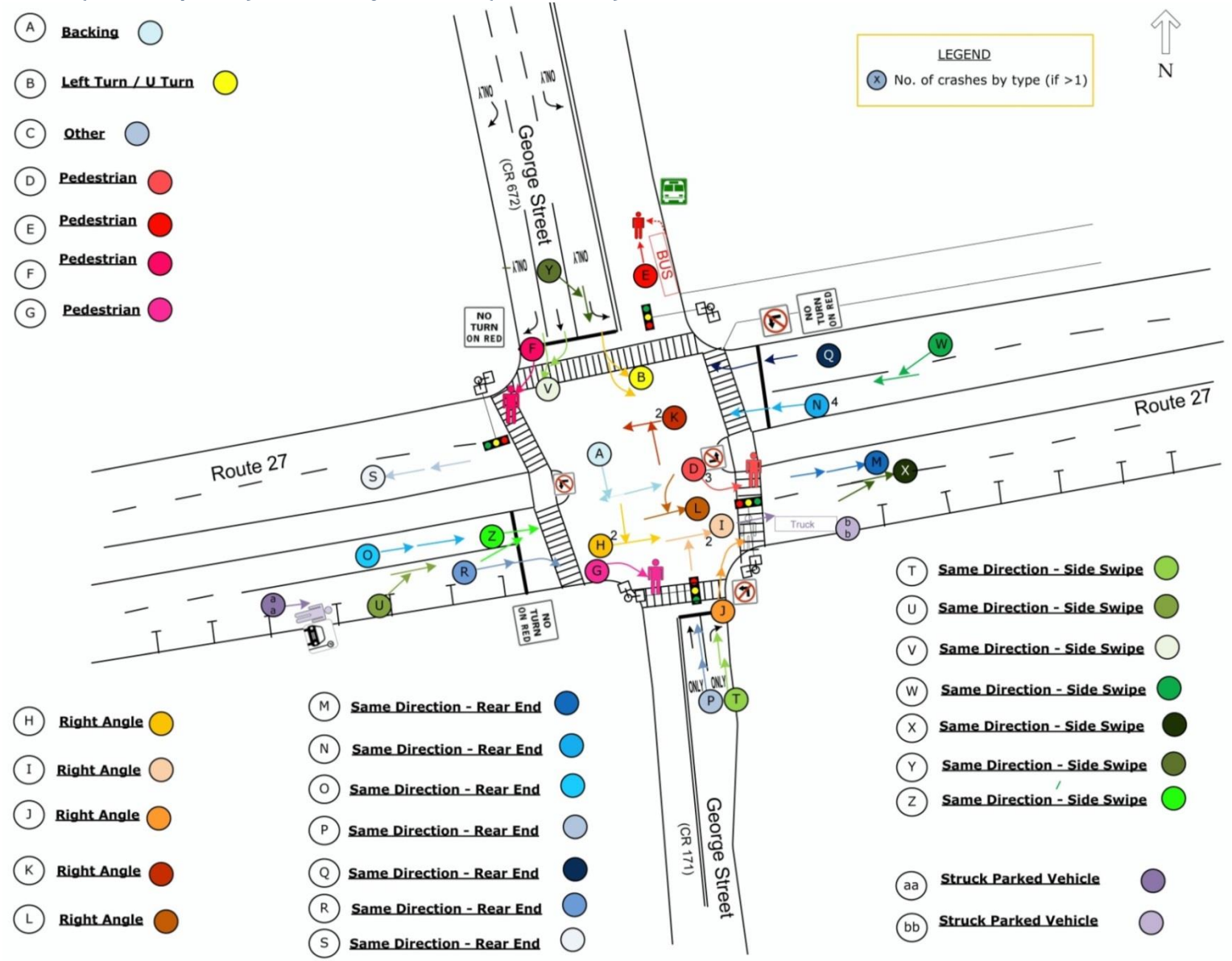
J **Same Direction - Side Swipe**
17 8/5/2008 - 2:49 pm - Dry, Daylight

K **Struck Parked Vehicle**
18 1/2/2009 - 7:42 pm - Dry, Dark (Street Lights On/ Continuous)

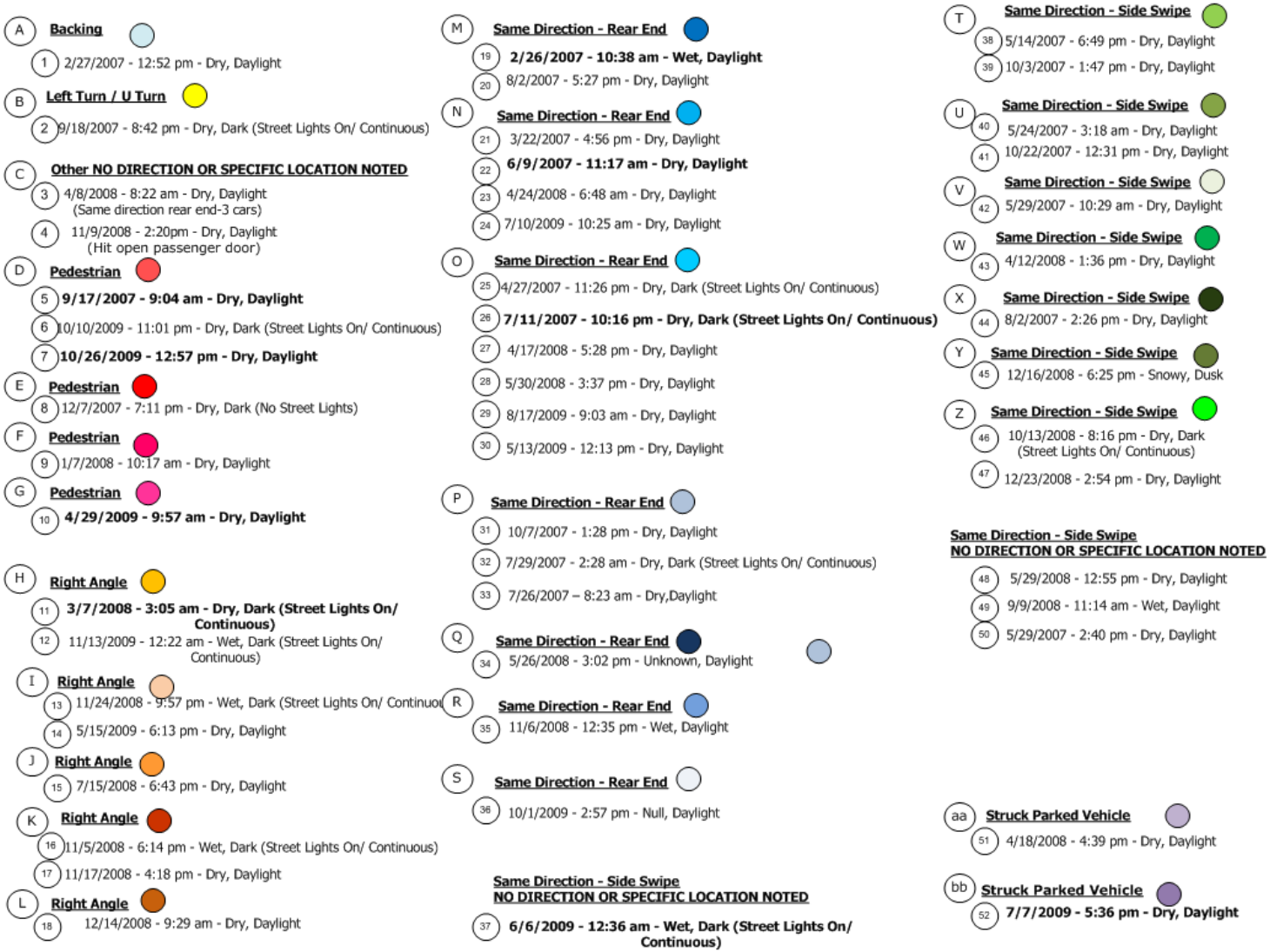
G **No Location or Direction of Travel Specified**
19 **Backing** - 9/8/2008 - 3:34 pm - Dry, Daylight
20 **Same Direction - Rear End** - 11/14/2009 - 5:14 pm - Dry, Dark (Street Lights On/ Continuous)



George Street (CR 672/171) & Albany Street (Route 27)

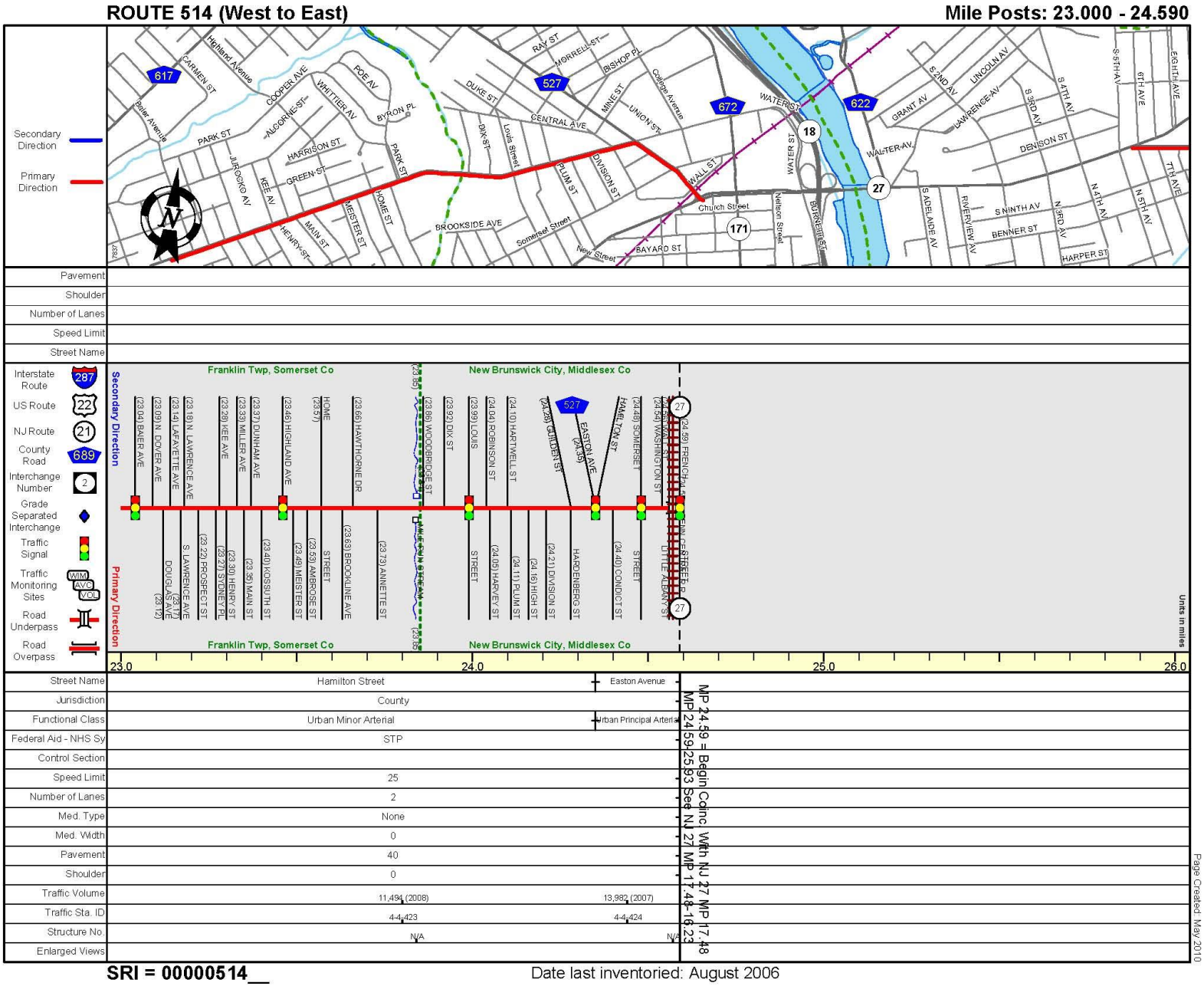


George Street (CR 672/171) & Albany Street (Route 27) – continued



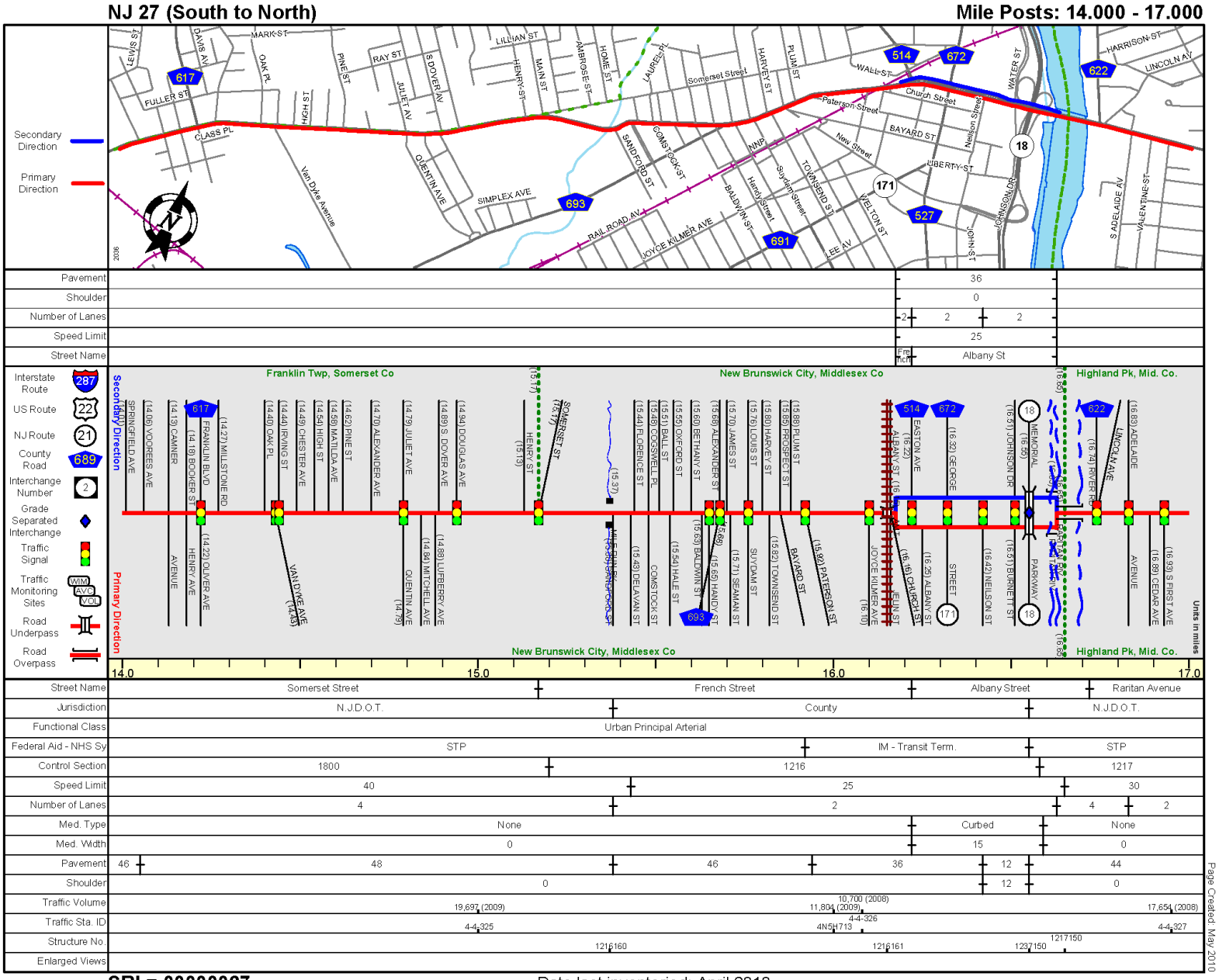
Appendix C – Straight Line Diagrams

Easton Avenue (CR 514)



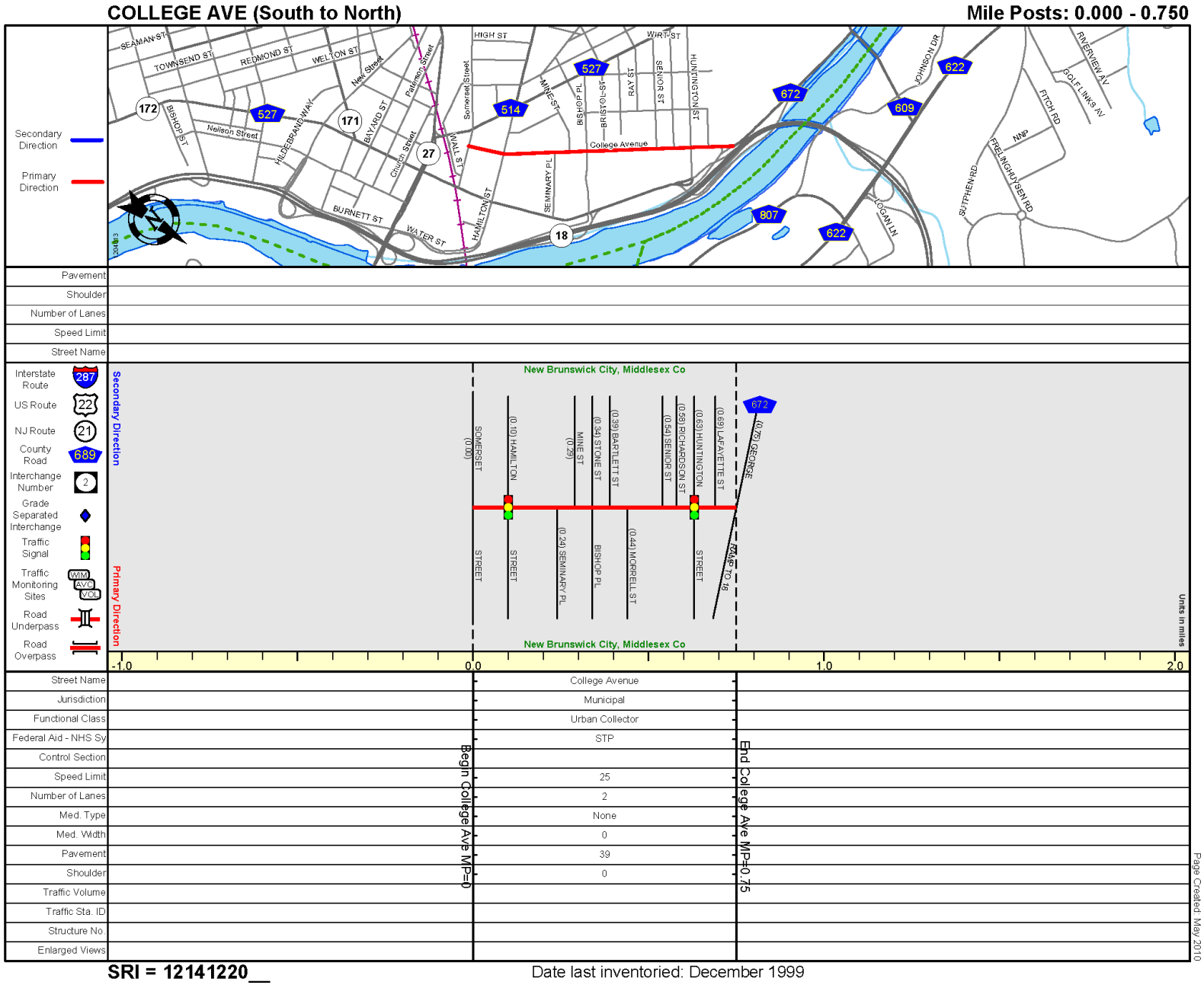
SRI = 00000514__ Date last inventoried: August 2006

Albany Street (NJ 27)



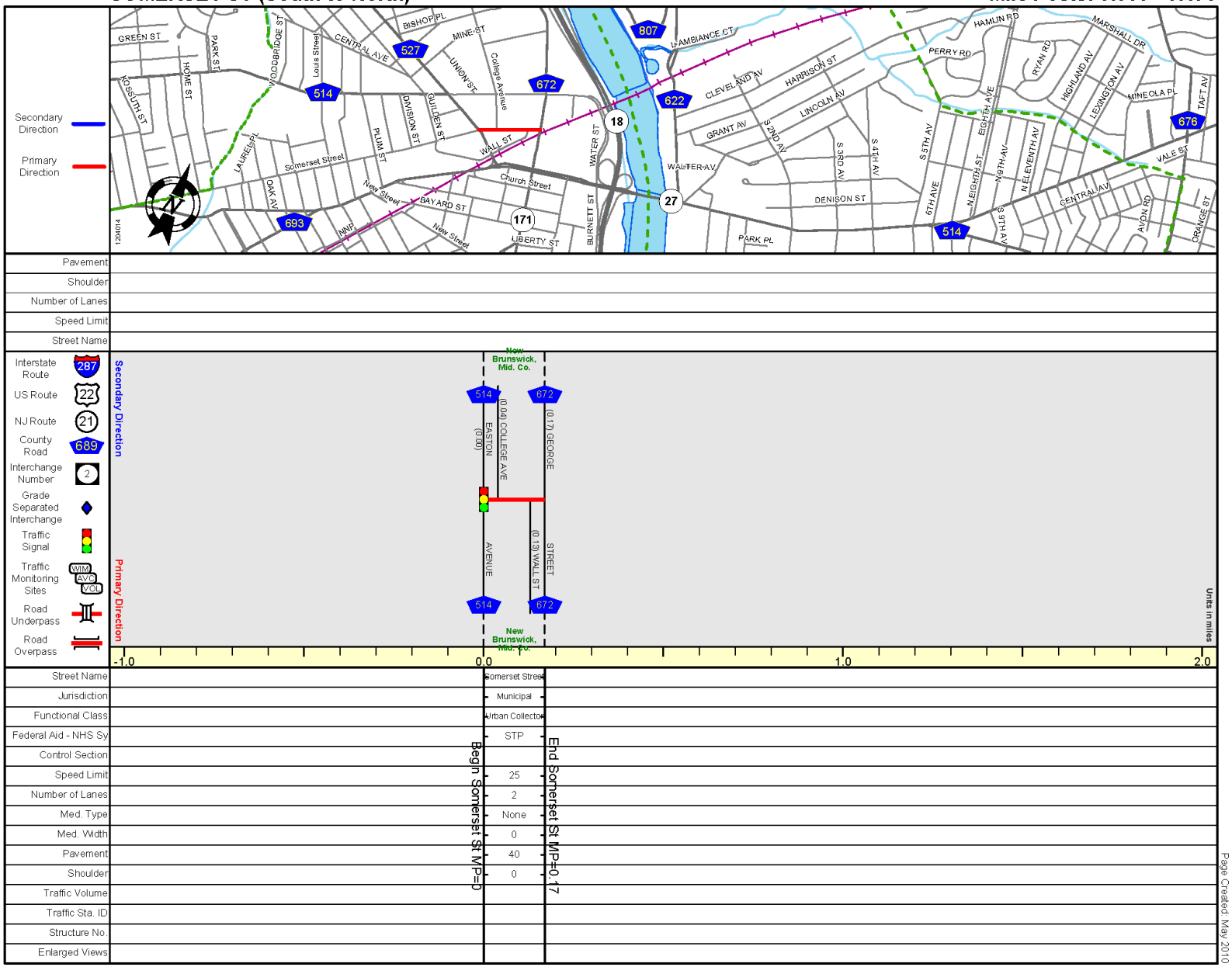
SRI = 00000027__ Date last inventoried: April 2010

College Avenue



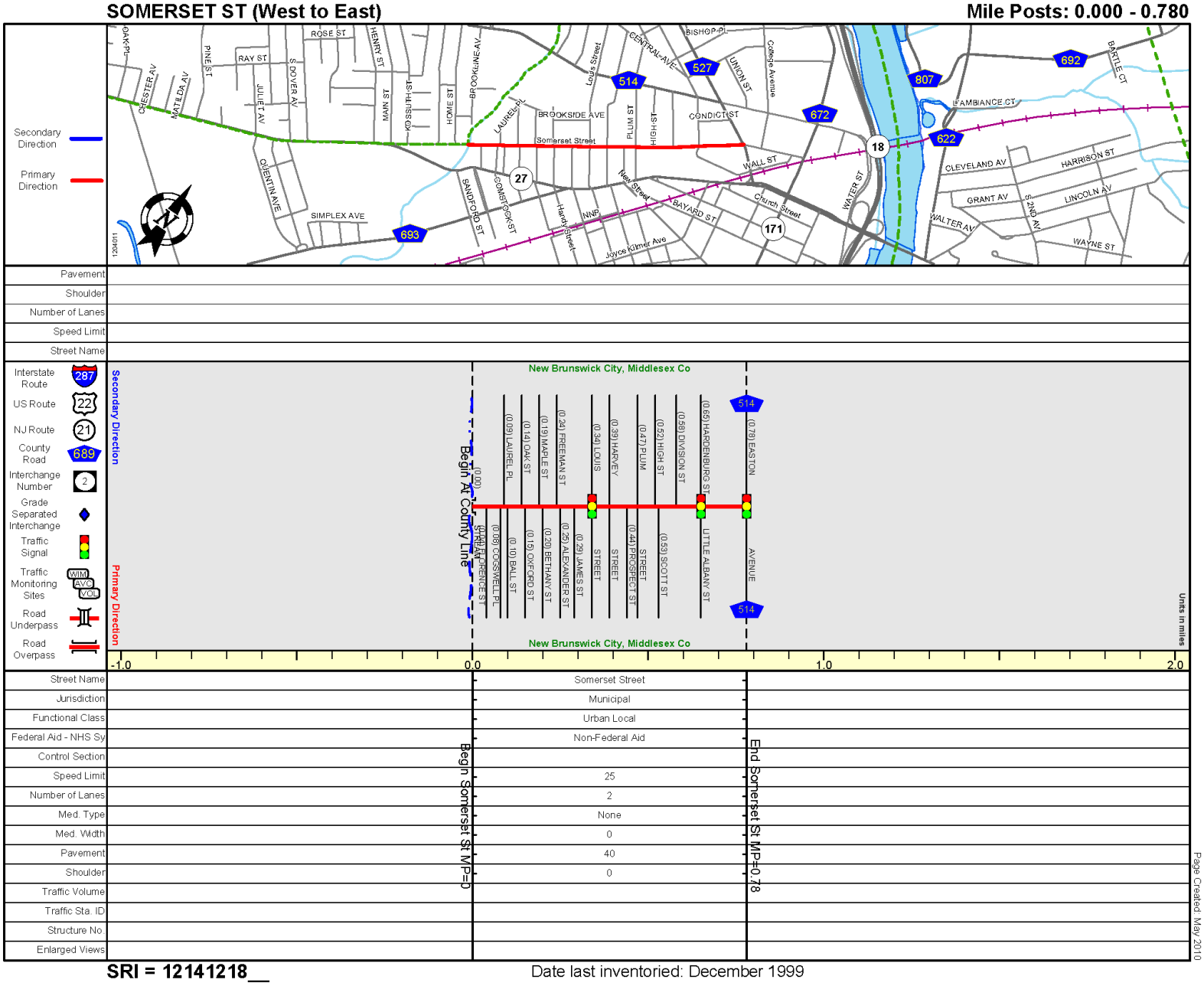
Somerset Street

SOMERSET ST (South to North) **Mile Posts: 0.000 - 0.170**



SRI = 12141221__ Date last inventoried: December 1999

Somerset Street



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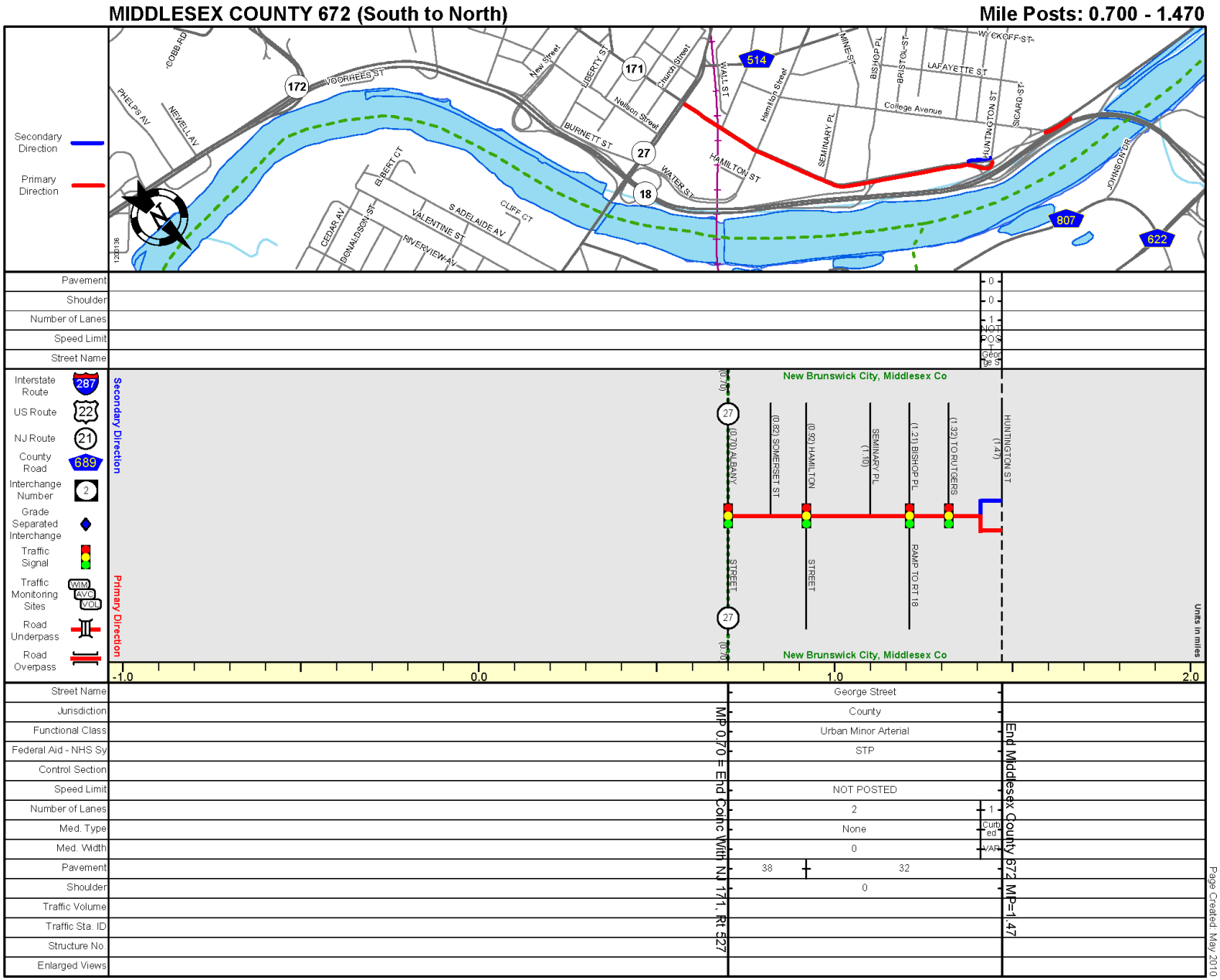
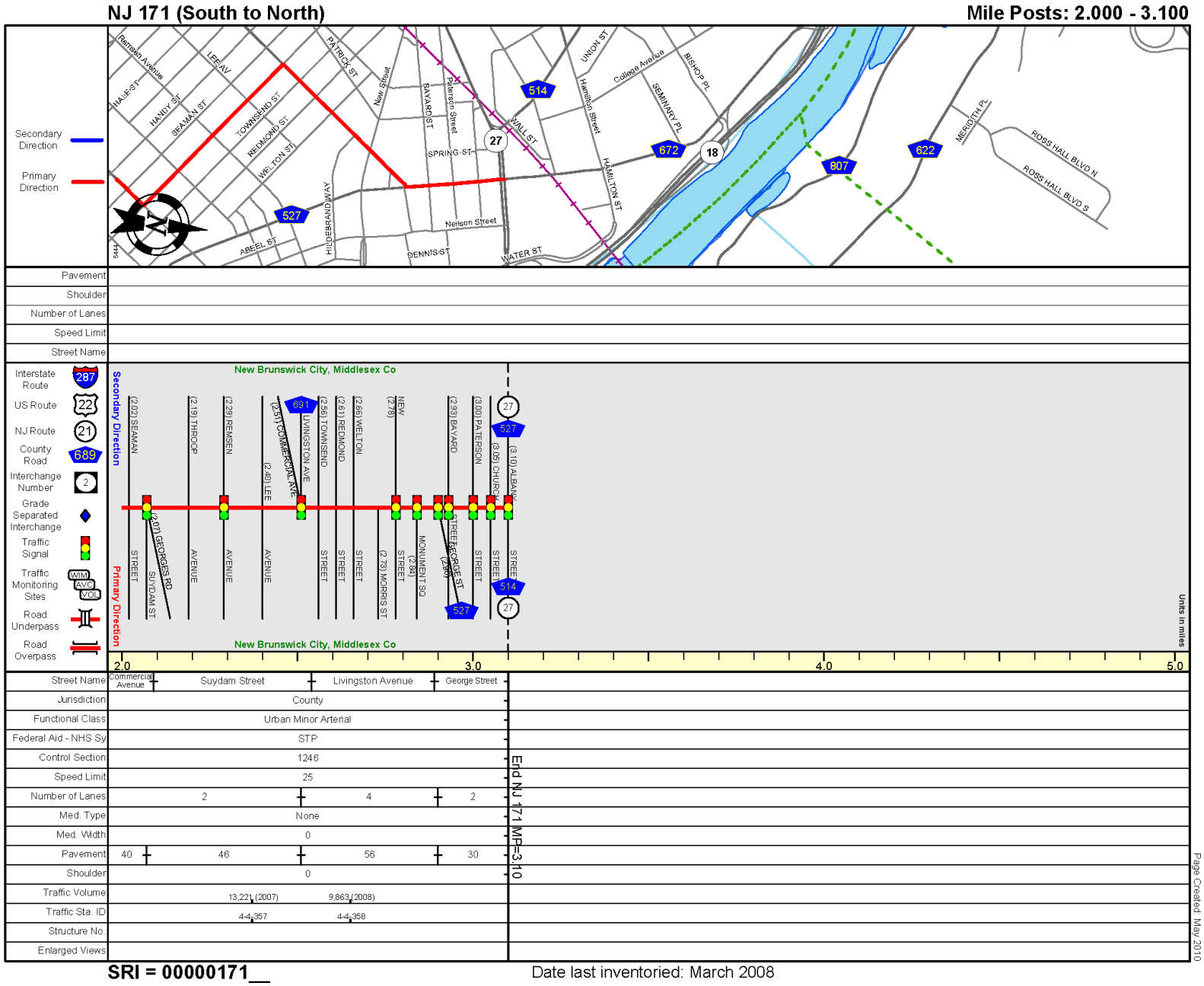
Date last inventoried: December 1999

George Street (CR 672)



SRI = 12000672__ Date last inventoried: December 1999

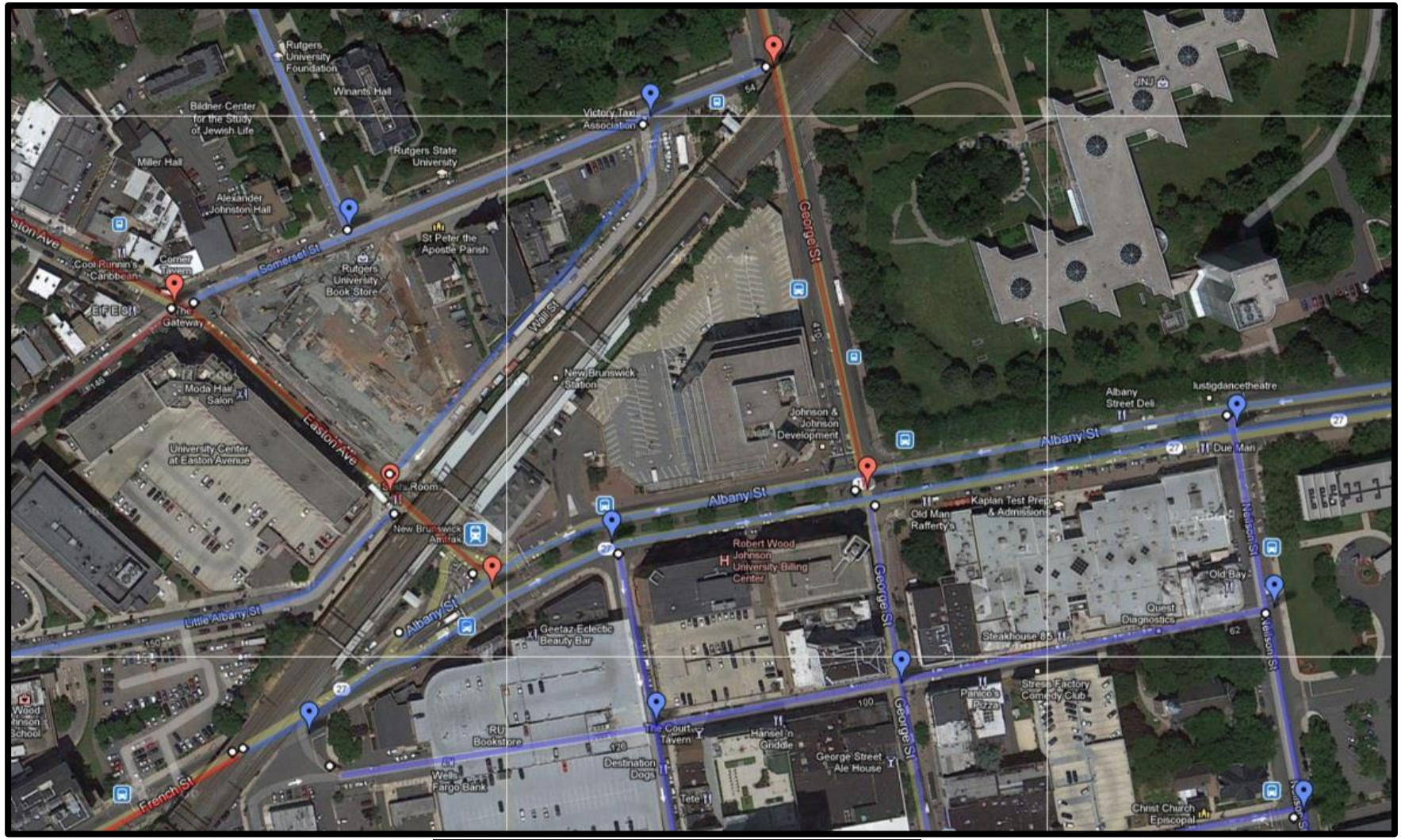
George Street (CR 171)



SRI = 00000171__

Date last inventoried: March 2008

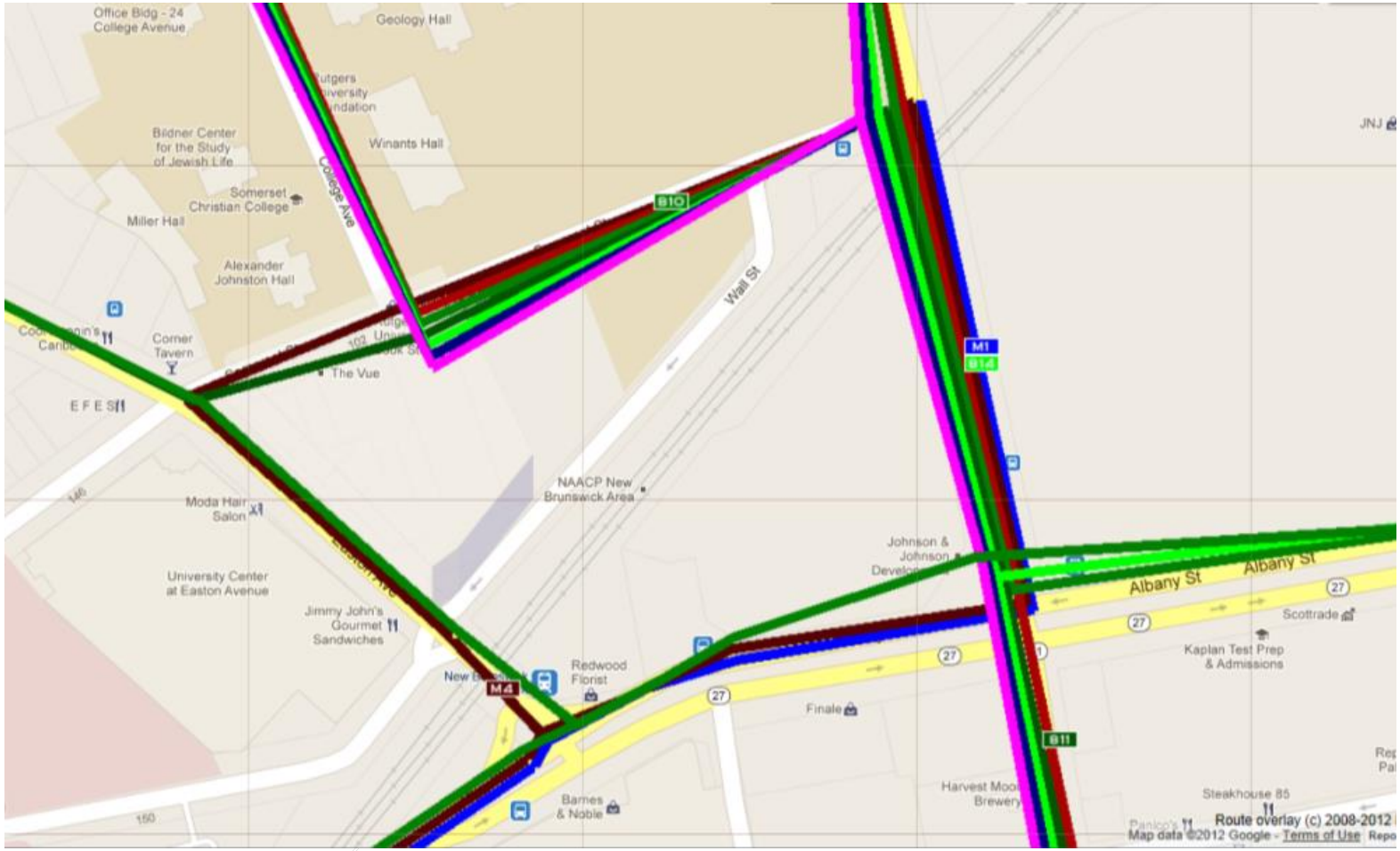
Appendix D – Jurisdictional Map



LEGEND		
Jurisdiction	**Roadway**	**Intersection**
Middlesex County		
City of New Brunswick		

Appendix E – Bus Map

-

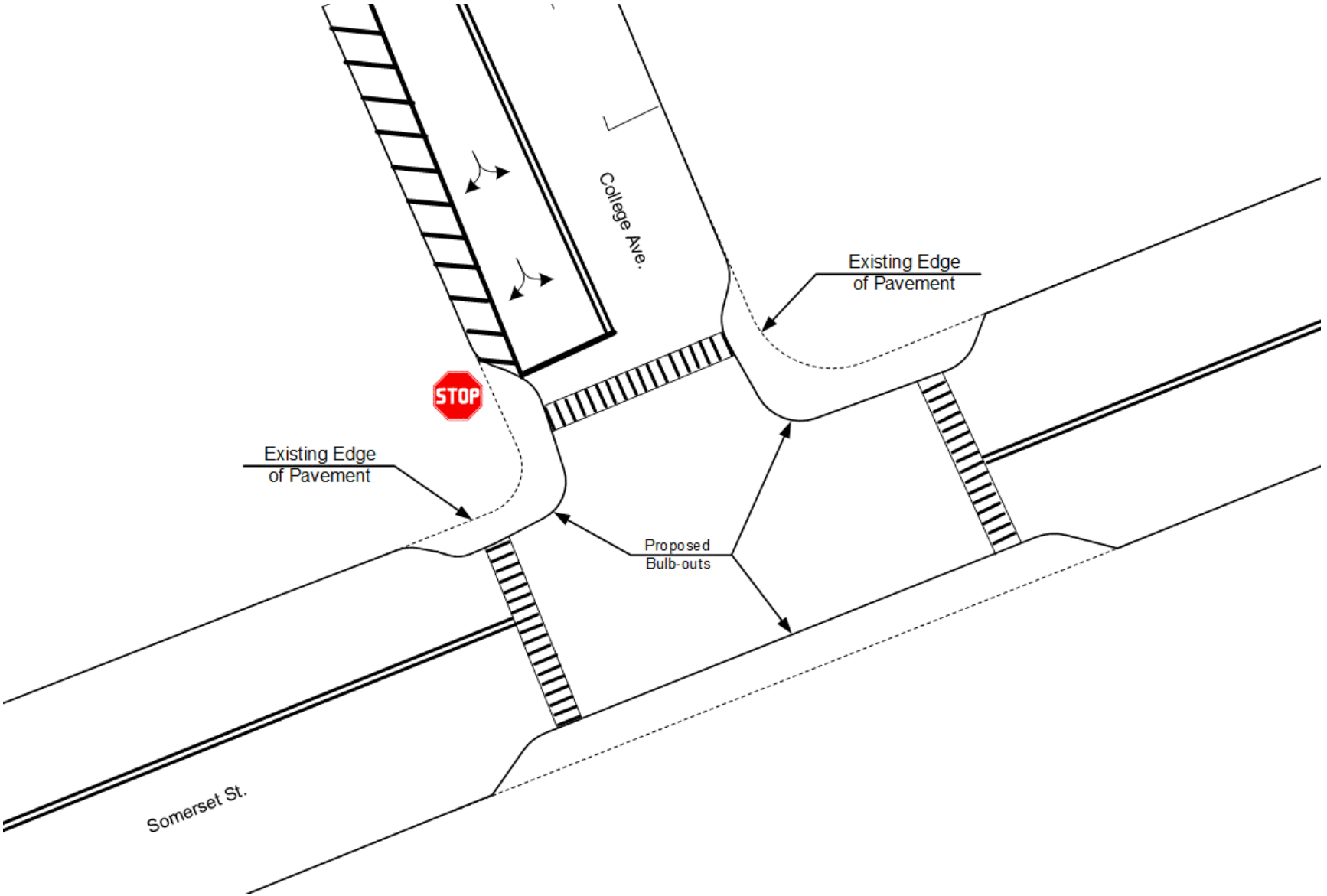


Bus Route Number	Bus Route	Route Color
810	New Brunswick – Woodbridge Center	Med Green
811	New Brunswick – South River	Dark Green
814	North Brunswick – New Brunswick – Middlesex County College	Lighter Green
815	New Brunswick – East Brunswick – Woodbridge Center	Navy Blue

Bus Route Number	Bus Route	Route Color
818	New Brunswick – East Brunswick – Old Bridge	Chartreuse
M1	New Brunswick – Jamesburg 8A Shuttle	Medium Blue
M4	Brunswick – Jersey Avenue Shuttle	Brown
M5	Brunswick – Commercial Avenue Shuttle	Red

Appendix F – Summary of Proposed Diagrams

Recommendation – Somerset Street & College Avenue



Recommendation – Somerset Street & George Street