

Main Avenue (CR 601) Road Safety Audit

CITY OF PASSAIC, COUNTY OF PASSAIC

FINAL REPORT

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

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

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

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

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Introduction

In the summer of 2011, a partnership was formed between the Rutgers Transportation Safety Resource Center (TSRC) and Caminos Seguros—a Division of Highway Traffic Safety (DHTS)—funded, community-based transportation safety program—to conduct an RSA in response to safety concerns. The coordinators at La Casa de Don Pedro (La Casa), the community organization overseeing the northern New Jersey region of Caminos Seguros, worked closely with TSRC to identify the City of Passaic as a location with a large Hispanic community and a disproportionate amount of traffic crashes. TSRC analyzed multiple regional and statewide ranking lists of priority locations and identified the Main Avenue (CR 601) corridor. The Main Avenue corridor is tied for 15th in a ranking of highest weighted crashes on the NJDOT New Jersey Pedestrian Corridor List and ranks among NJTPA’s lists of identified pedestrian corridors and pedestrian intersections. Four intersections within the corridor—Monroe, Washington, Jefferson, and Passaic—qualify under the NJDOT pedestrian intersection methodology. Additionally, the intersection of Main and Monroe, located within the corridor, ranks 103 (tied) for weighed intersection crashes on all intersections statewide.

TSRC and La Casa approached the County of Passaic to identify their interest in conducting an RSA. The county was interested and amenable; however, in the County of Passaic, all signal equipment on county roadways are the responsibility of the municipality. Due to the county’s limited jurisdictional oversight, their support was conditional upon the additional support of the City of Passaic.

With the suggested corridor identified, La Casa facilitated a conversation with the City of Passaic, including the mayor’s office, business administrator, public works, parking authority, chief of police, and engineering. The safety concerns identified by the locals included a history of pedestrian crashes, lack of pedestrian accommodations, proximity to transit facilities, and congestion from Monroe Street to Passaic Street. This conversation solidified support for conducting an RSA along this corridor, in conjunction with both the city and county, and suggested the boundaries for the audit be set between Monroe Street and Lafayette Avenue/NJ 21 Ramps.

TSRC conducted a detailed crash data analysis for the area suggested, and while TSRC felt the entire corridor was warranted for the conduct of an RSA, due to time and logistical limitations the corridor was reduced to the area between Monroe and Passaic, which would encompass the highest crash locations.

An RSA was performed at said intersections with the assistance of Rutgers TSRC. This report documents the findings and recommendations made by the audit team.

Background

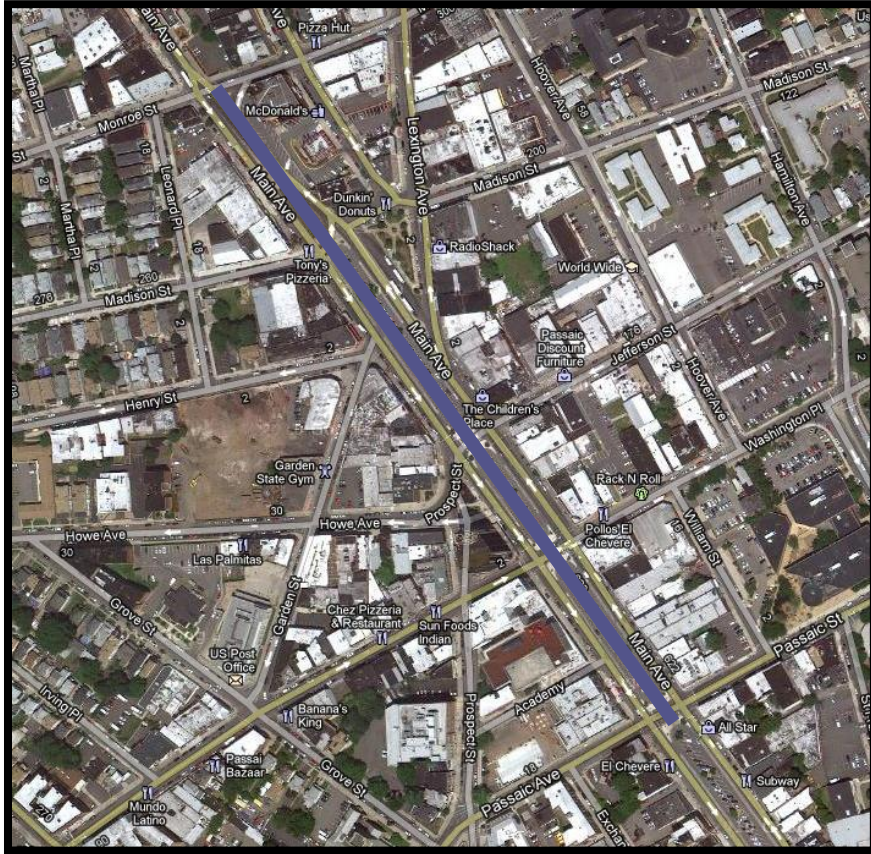


Figure 1—Map of study area (Google Earth)

The audit focused on Main Avenue, or CR 601, beginning at Monroe Street to Passaic Street as shown in Figure 1 above. Main Avenue is an urban principal arterial with two lanes in each direction separated by a center parking island throughout the study area. All of Main Avenue is under Passaic County jurisdiction and the speed limit in the study area is 35 miles per hour (mph). However the Passaic County jurisdiction is limited, and only includes the roadway, some signage, pavement, markings, and bridges. The City of Passaic has jurisdiction and responsibility over the traffic signal equipment and associated striping, in addition to all regulatory signage along the roadway.

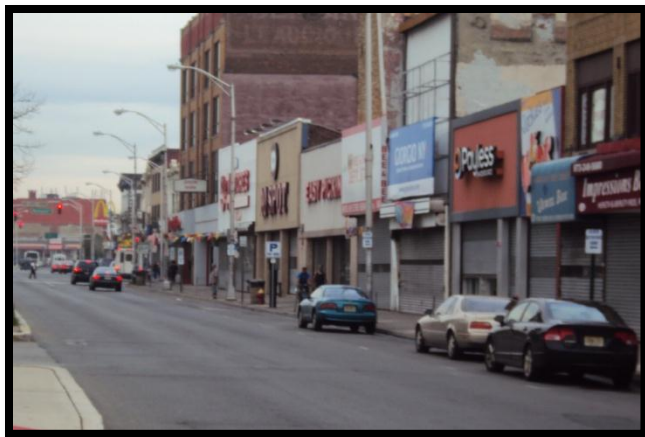


Figure 2—Businesses along Main Avenue

The land use throughout the corridor is predominantly commercial, ranging from fast food and nail salons to clothing stores, as observed in Figure 2. On the northerly end of the study area is the New Jersey Transit Passaic Bus terminal, which consists of a bus pull out area and shelters.

Transit is a popular means of transportation given the corridor's proximity to other major urban areas including Newark and New York City. There are a total of 11 bus routes that service Main Avenue within the study area. They are Routes 74, 702, 703, 705, 707, 709, 758, 744, 780, 1122, and 1151. Every intersection serves as a bus stop for multiple routes, though not all routes stop at every intersection within the study corridor. For example, Route 74, as observed in Figure 3, serves only Passaic Avenue and Washington Avenue connecting users to Nutley Township as well as Newark City. A full outline of bus routes can be found in Appendix C. In addition to New Jersey Transit operations along these bus lines, privately operated jitney paratransit vehicles are commonly operated along these routes.



Figure 3—Passaic Bus Terminal

Currently an elementary school is under construction within the immediate vicinity of Main Avenue. As part of the construction project, it is anticipated that infrastructure improvements will be made to accommodate the traffic patterns for school operations for both vehicles and pedestrians.

Road Safety Audit Process

The Passaic Avenue RSA followed a process that began with data collection, a crucial task that served as the backbone for recommendations for improvement. Crash data was collected using Plan4Safety, a crash data analysis tool, and consisted of crash types, locations, years, road conditions, and contributing circumstances. Using the crash data, collision diagrams, shown in Appendix A, were produced showing crash types and locations.



Figure 3–The RSA team conducting site visit

The RSA occurred on Thursday, September 22, 2011. The day began with a pre-audit meeting that involved the definition of an RSA and an overview of the intersection. A presentation showing details of the crash analysis, aerial images of the site, and an overview of bus service in the area was shown. Following the presentation, a site visit was conducted where all participants were given a chance to inspect the site and utilize their various backgrounds to brainstorm recommended improvements. After the site visit, the team was brought back together to discuss the issues observed and recommendations to remedy the issues, which are documented in this report.

Information Sources

Several sources of information were used in the RSA process. Specific resources used in the analysis include:

- NJDOT crash database (2008–2010)
- Plan4Safety crash data analysis tool
- NJDOT straight line diagrams
- NJ Transit bus routes
- Google Earth

RSA Team

The RSA team consisted of 15 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 to the NJDOT shows a total of 161 crashes occurring during the three-year period from 2008 to 2010. The following tables show detail statistics of the crash data analyzed.

General Crashes

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

- **Monroe Street**
- Madison Street
- Henry/Garden Street
- Lexington Avenue
- **Prospect/Jefferson Street**
- **Washington Place**
- **Passaic Avenue**

Note: **Bolded** intersections are signalized.

Rank	Cross Street	Crashes	Most Common Crash Type(s)
1	Prospect/Jefferson	35	Right Angle
2	Passaic	33	Same Direction - Side Swipe
3	Monroe	32	Pedestrian
4	Washington	23	Same Direction - Side Swipe
5	Madison	21	Same Direction - Side Swipe, Right Angle
6	Lexington	12	Same Direction - Side Swipe, Struck Parked Vehicle
7	Henry/Garden	5	Same Direction - Side Swipe

Table 1–Common crash type data (2008–2010)

Pedalcyclist Crashes

Only two crashes were observed to involve pedalcyclists between 2008 and 2010.

Cross Street	Date	Contributing Circumstance	Injury Class
Lexington	3/16/2009	Driver Inattention	None
Passaic	11/13/2009	Brakes	None

Table 2–Pedalcyclist crash data(2008–2010)

Pedestrian Crashes

Twenty-five pedestrian crashes were observed between 2008 and 2010 throughout the study corridor and are detailed in Table 3.

Cross Street	Date	Time	Light Condition
Henry/Garden Street	9/28/2009	7:00 PM	Dark (Street Lights On/ continuous)
Prospect/Jefferson Street	2/24/2009	3:00 PM	Daylight
Prospect/Jefferson Street	8/11/2009	6:47 PM	Daylight
Prospect/Jefferson Street	7/2/2009	12:21 PM	Daylight
Lexington Street	11/19/2008	9:46 AM	Daylight
Monroe Street	2/23/2008	-	Daylight
Monroe Street	2/6/2008	4:11 PM	Daylight
Monroe Street	12/8/2008	-	Daylight
Monroe Street	9/19/2008	10:32 PM	Dark (Street Lights On/ continuous)
Monroe Street	3/30/2009	3:17 PM	Daylight
Monroe Street	8/21/2009	6:23 AM	Daylight
Monroe Street	9/11/2009	10:24 PM	Dark (Street Lights On/ continuous)
Monroe Street	12/28/2009	5:08 PM	Dark (Street Lights On/ continuous)
Monroe Street	4/14/2010	3:00 PM	Daylight
Monroe Street	2/5/2010	10:00 AM	Daylight
Monroe Street	7/29/2010	2:50 PM	Daylight
Monroe Street	10/24/2010	12:48 AM	Dark (Street Lights On/ continuous)
Passaic Avenue	4/26/2010	8:21 PM	Dark (No Street Lights)
Passaic Avenue	8/27/2010	1:30 PM	Daylight
Passaic Avenue	9/10/2010	10:48 AM	Daylight
Washington Avenue	7/11/2008	4:14 PM	Daylight
Washington Avenue	2/25/2009	5:00 PM	Daylight
Washington Avenue	4/1/2010	4:38 PM	Daylight
Washington Avenue	2/16/2010	4:37 PM	Daylight
Washington Avenue	5/3/2010	2:42 PM	Daylight

Table 3–Pedestrian crash data 2008–2010

RSA Team Findings

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

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


Corridorwide

Issue: General Signage	Safety Risk
Description: Signs throughout Main Avenue corridor are old, faded, and have substandard retroreflectivity and non-breakaway posts. Poor sign orientation was observed as well.	Medium
Lack of pedestrian signs as well as school signs.	Medium
Missing street signs at certain intersections (as noted in the appropriate intersection section of this report.)	Low



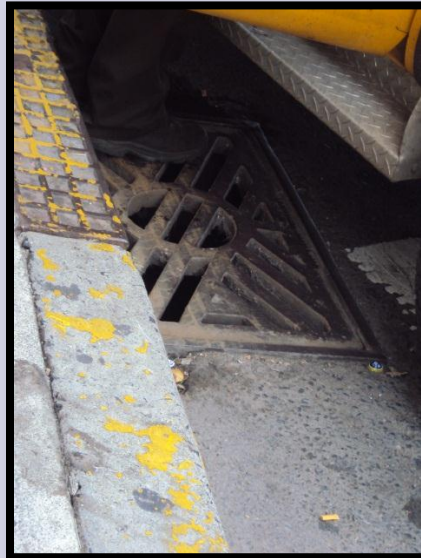
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹ Signage throughout the corridor should be updated to meet current standards.	Low	High
² A sign study should be conducted by professional engineering staff to upgrade the signage and add needed signs throughout the corridor.	Low	Medium

Issue: Accessible Curb Ramps	Safety Risk	
Description: Accessible curb ramps are missing or installed incorrectly. This makes it very difficult for pedestrians with disabilities to cross the street.	Low	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
³ Install access ramps compliant to ADAAG/PROWAG standards at all crosswalks.	Medium	Medium


Issue: Sidewalk Condition	Safety Risk	
Description: Sidewalks within corridor are worn and in poor condition.	Low	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
⁴ Replace sidewalks in conformance with ADAAG/PROWAG standards.	Medium	Low


Issue: Pedestrian Crashes	Safety Risk	
Description: Eleven percent of all crashes involved pedestrians. Main Avenue has large amounts of pedestrian traffic. Pedestrians do not cross the roadway at properly marked crosswalks or during the proper signal phase.	High	
RSA Team's Recommendation	Cost	Potential Safety Benefit
⁵ Expand visible enforcement of the Stop for Pedestrian Law through a pedestrian decoy enforcement program.	Low	Medium
⁶ Implement education programs for both pedestrians and drivers.	Low	Medium
⁷ Engage an engineer to upgrade pedestrian accommodations throughout the study corridor potentially including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPis), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.	Medium	Medium
⁸ Review signal timings to ensure compliance with the latest edition of MUTCD, especially for pedestrian crossing time.	Low	Medium

Issue: Non-bike-friendly Grate	Safety Risk	
Description: Some drainage grates are not bicycle safe/compatible.	Medium	
RSA Team's Recommendation	Cost	Potential Safety Benefit
⁹ Replace with bicycle-safe grates.	Low	Medium



Issue: Signal Heads Layout	Safety Risk	
Description: Signal head layout throughout study corridor is not uniform, which may cause driver confusion.	Medium	
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹⁰ An engineer should update existing signals to meet current standards throughout the corridor.	Low	Medium

Issue: Unmarked/Worn Crosswalk Striping	Safety Risk	
Description: Multiple intersections are missing or have faded crosswalks, thereby reducing the visibility of the pedestrian crossing to motor vehicles.	Medium	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹¹ Replace worn and missing striping with pavement markings in conformance with the MUTCD, while keeping style of crosswalk striping consistent throughout corridor.	Low	High

Issue: Jitneys	Safety Risk	
<p>Description: Jitneys operate throughout Main Avenue in conjunction with NJ Transit buses. The team observed the jitneys stopping for fares causing traffic and blocking access for other buses.</p>	High	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
<p>¹² Initiate conversation with state regulatory agencies regarding the regulatory policies, allowable operations, and enforceability of jitney buses.</p>	Low	Medium
<p>¹³ Extend bus stop/no parking zone to better accommodate jitney operations along bus routes.</p>	Low	Medium/Low

Issue: Location of Litter Baskets & Newspaper Kiosks	Safety Risk	
<p>Description: Litter baskets and newspaper kiosks are located too close to the curb, hindering pedestrian access to crosswalk as well as sight distance for drivers.</p>	<p>Medium</p>	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
<p>¹⁴ Relocate the litter baskets and newspaper kiosks to allow pedestrian access as well as improve sight distance.</p>	<p>Low</p>	<p>Medium</p>

Monroe Street

Issue: Missing Crosswalks/Lane Markings	Safety Risk	
Description: Crosswalks are missing across slip ramp on the southeast corner.	Medium	
Lane markings on the east side of Monroe Street are also missing.		
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹¹ Replace worn and missing striping with pavement markings in conformance with the MUTCD, while keeping style of crosswalk striping consistent throughout corridor.	Low	Medium

Issue: Minimal Pedestrian Accommodations	Safety Risk	
Description: Considering the large number of pedestrians observed in the vicinity and that 12 crashes involved pedestrians at Monroe Street, enhanced crosswalks should be considered.	High	
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹⁵ Conduct a formal engineering investigation to consider the installation of additional painted high-visibility crosswalks and appropriate pedestrian signage.	Low	High
⁸ Review signal timings to ensure compliance with the latest edition of MUTCD, especially for pedestrian crossing time.	Low	Medium

Issue: Sidewalk Issue	Safety Risk	
Description: Sidewalk is missing along southeast side on Main Avenue through parking area.	Low	
Access ramps on both the left and right side of the south crosswalk are missing.	Medium/Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹⁶ Investigate the feasibility of installing proper width sidewalks confirming to ADAAG/PROWAG, including the removal of any trip hazards.	Medium	Medium
³ Install access ramps in conformance with ADAAG/PROWAG standards.	Medium	Low

Issue: Red Light Running	Safety Risk	
Description: Many cars were observed running the red light in order to make the left turn as well as to go straight.	Medium	
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹⁷ Conduct a formal engineering investigation to consider the installation of red light running cameras at Monroe Street.	Medium	Medium
¹⁸ Enhance enforcement for red-light-running vehicles.	Low	Medium

Issue: Trip Hazard	Safety Risk	
Description: Trip hazard in southwest corner from missing light pole.	Low	



RSA Team's Recommendation	Cost	Potential Safety Benefit
¹⁹ In the short-term, the knocked down equipment should be replaced.	Low	Medium
²⁰ Additionally, a design engineer should be consulted to review and perform a lighting study at the intersection. The engineer should prepare a plan indicating the appropriate location of any proposed lighting improvement, and a contractor should be hired to install the lighting improvement.	Medium	Medium/Low

Issue: Missing One Way Sign	Safety Risk	
Description: One way sign in the northwest corner is missing.	Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
²¹ Replace missing sign.	Low	Medium

Issue: Bus Conflict	Safety Risk	
Description: Many bus lines service the Main Avenue corridor with inadequate bus accommodation, causing traffic.	Low	



RSA Team's Recommendation	Cost	Potential Safety Benefit
²² Investigate the feasibility of expanding the bus stop length by implementing a no parking zone to reduce road blockage due to buses, improve pedestrian safety, and allow through traffic to continue.	Low	Low

Madison Street

Issue: Missing Pavement Markings& Crosswalk	Safety Risk	
Description: Center lines and crosswalk are missing.	High	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
²³ Replace missing center line and crosswalk with pavement markings in conformance with the MUTCD.	Low	High

Issue: Bus Terminal Access	Safety Risk	
Description: Many bus lines service the Main Avenue corridor with inadequate bus accommodation, causing traffic backups especially at the entrance and exit area for the bus terminal. Buses have trouble exiting terminal and merging back on to roadway.	High	
RSA Team's Recommendation	Cost	Potential Safety Benefit
²² Investigate the feasibility of expanding the bus stop length by implementing a no parking zone to reduce road blockage due to buses, improve pedestrian safety, and allow through traffic to continue.	Low	Medium
²⁴ Conduct a formal engineering investigation to consider reinstating the "No Right Turn" sign at the entrance of the commercial area.	Low	High

Issue: Sight Distance	Safety Risk
Description: On-street parking on Main Avenue reduces sight triangle distance for both vehicles and pedestrians who must creep out in order to see oncoming vehicles.	Low



Not drawn to scale

RSA Team's Recommendation	Cost	Potential Safety Benefit
²⁵ Investigate the feasibility of reducing Main Avenue to one lane and then open to two lanes after the intersection with bulb outs before Madison Street, which would improve sight distance as well as safety for pedestrians as seen above.	Medium	Medium

Issue: Stop Sign	Safety Risk	
Description: Drivers were observed to disobey the stop sign in the center slip ramp.	High	
RSA Team's Recommendation	Cost	Potential Safety Benefit
²⁶ Enhance enforcement of "Stop" sign.	Low	Medium
²⁷ Enhance sign visibility.	Low	Medium
²⁸ Conduct a formal engineering investigation to remove the U-turn in order to reduce car and bus conflicts as well as improve pedestrian safety.	Medium	Medium

Henry Street/Garden Street

Issue: Missing One-Way Sign	Safety Risk	
Description: One way sign on Henry Street is missing.	Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
²¹ Replace missing sign.	Low	Medium

Issue: Location of Newspaper	Safety Risk	
Description: Newspaper kiosks are located too close to the curb on the corner of Garden Street, as well as on the curb ramp, hindering pedestrian access and sight distance for drivers.	Medium	



RSA Team's Recommendation	Cost	Potential Safety Benefit
²⁹ Relocate the newspaper kiosks further back to allow pedestrian access and improve sight distance.	Low	Medium

Issue: School Accommodation	Safety Risk	
<p>Description: A new school is being constructed on the Henry/Garden Street side of Main Avenue. Vehicular and pedestrian traffic patterns related to the school will change and will require accommodation.</p>	High	
RSA Team's Recommendation	Cost	Potential Safety Benefit
<p>³⁰ Install "School Zone" signage in conformance to the best practices as outlined in the MUTCD.</p>	Low	Medium
<p>³¹ Update current signs to confirm to best practices in the MUTCD, including new fluorescence yellow-green school signs.</p>	Low	Medium
<p>³² Additionally, install pedestrian accommodation at the intersection including countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.</p>	Medium	Medium

Lexington Avenue

Issue: Missing Crosswalks	Safety Risk	
Description: Crosswalks are missing on Lexington Avenue.	Medium	
RSA Team's Recommendation	Cost	Potential Safety Benefit
¹¹ Replace worn and missing striping with pavement markings in conformance with the MUTCD, while keeping style of crosswalk striping consistent throughout corridor.	Low	Medium
³³ Consider upgrading pedestrian accommodation at Lexington Avenue, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.	Medium	Medium

Prospect Street/Jefferson Street

Issue: Parking Islands	Safety Risk
Description: Entrances and exits of center parking island are too close to traffic signals.	Medium



RSA Team's Recommendation	Cost	Potential Safety Benefit
³⁴ Modify vehicle access to center parking islands.	Medium	Medium


Issue: Missing Sidewalk & Ramps	Safety Risk
Description: Sidewalk and ramps are missing along Prospect Street on both sides as well as on the northeast corner of Jefferson Street.	Low

RSA Team's Recommendation	Cost	Potential Safety Benefit
³⁵ Investigate the feasibility of installing proper width sidewalks and ramps confirming to ADAAG/PROWAG, including the removal of any trip hazards.	Low	Medium


Issue: Missing Lane Use Sign	Safety Risk	
Description: Lane use sign in center island lanes for two through lanes and one left turn lane is missing.	Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
²¹ Replace missing sign.	Low	Medium
³⁶ Investigate the feasibility of merging the two through lanes into one and installing guide signage as well as pavement markings in conformance to the best practices as outlined in the MUTCD.	Low	High

Issue: Location of Newspaper	Safety Risk	
Description: Newspaper stands are located too close to the curb on the corners of Prospect Street blocking pedestrian access to crosswalk and sidewalk.	Medium	
RSA Team's Recommendation	Cost	Potential Safety Benefit
²⁹ Relocate the newspaper kiosks further back to allow pedestrian access as well as improve sight distance.	Low	High

Issue: Pavement Condition	Safety Risk	
Description: Pavement condition at northbound curb line is inadequate and worn.	Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
⁴⁰ Patch and repair pavement deficiencies.	Medium	Low

Issue: Signage	Safety Risk	
<p>Description: Signs are old, faded, non-retroreflective, and non-breakaway at Prospect Street and Jefferson Street.</p>	<p>Medium</p>	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
<p>² A sign study should be conducted by professional engineering staff to upgrade the signage and add needed signs throughout the corridor.</p>	<p>Low</p>	<p>Medium</p>

Washington Place

Issue: Pedestrian Signal	Safety Risk	
Description: Pedestrian signal in the northeast corner of Washington Place is not functional. Also, pedestrian signal on both southeast and southwest corners of Main Avenue are malfunctioning.	Medium	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
³⁷ Fix malfunctioning pedestrian signal.	Low	Medium
⁷ Engage an engineer to upgrade pedestrian accommodation at Washington Place, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.	Medium	Medium

Issue: Missing Sign	Safety Risk	
Description: "Do Not Enter" sign on southeast corner of Washington Place is missing.	Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
²¹ Replace missing sign.	Low	Medium

Issue: Missing Sidewalk Ramps	Safety Risk	
Description: Sidewalk ramps are missing on both sides of Washington Place.	Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
³⁵ Investigate the feasibility of installing proper width sidewalks and ramps confirming to ADAAG/PROWAG, including the removal of any trip hazards.	Low	Medium

Issue: Missing Stop Bars	Safety Risk	
Description: Stop bars throughout intersection are missing and worn.	Low	
RSA Team's Recommendation	Cost	Potential Safety Benefit
³⁸ Replace worn and missing stop bars with pavement markings in conformance with the MUTCD.	Low	Medium


Issue: Blocked Signal	Safety Risk	
Description: Near side signal head on southeast corner of Main Avenue is blocked by scaffolding, poles, and trees.	High	




RSA Team's Recommendation	Cost	Potential Safety Benefit
³⁹ Remove obstructions.	Low/Medium	High

Issue: Signage	Safety Risk	
Description: Signs are old, faded, non-retroreflective, and non-breakaway at Washington Place.	Medium	
RSA Team's Recommendation	Cost	Potential Safety Benefit
² A sign study should be conducted by professional engineering staff to upgrade the signage and add needed signs throughout the corridor.	Low	Medium

Passaic Avenue

Issue: Pedestrian Signals	Safety Risk	
Description: Pedestrian signals in all four corners of intersection are not functioning.	Medium	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
³⁷ Fix malfunctioning pedestrian signals.	Low	Medium
⁷ Upgrade pedestrian accommodation at Passaic Avenue, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.	Medium	Medium

Issue: Signage	Safety Risk	
<p>Description: Signs are old, faded, non-retroreflective, and non-breakaway at Passaic Avenue.</p>	<p>Medium</p>	
		
RSA Team's Recommendation	Cost	Potential Safety Benefit
<p>² A sign study should be conducted by professional engineering staff to upgrade the signage and add needed signs throughout the corridor.</p>	<p>Low</p>	<p>Medium</p>

Recommendations

Below organizes the recommendations into potential courses of action.

Local Lead Scoping Study

One recommended course of action would be to initiate a long-term Local Lead Scoping Study through the County of Passaic Planning. This study would work to identify long-term best use of space within the right-of-way for the multimodal demands being placed on the corridor. It is anticipated this course of action would be a long-term implementation, and would result in upgraded signal equipment when implemented.

25. Investigate the feasibility of reducing Main Avenue to one lane and then open to two lanes after intersection with bulb outs before Madison Street, which would improve sight distance as well as safety for pedestrians as seen above.
28. Conduct a formal engineering investigation to remove the U-turn in order to reduce car and bus conflict as well as improve pedestrian safety.
34. Modify vehicle access to center parking islands.
36. Investigate the feasibility of merging the two through lanes into one and installing guide signage as well as pavement markings in conformance to the best practices as outlined in the MUTCD.

Upgrade Signal Equipment

A second course of action would be to conduct an engineering study to upgrade signal equipment, and modify the traffic patterns throughout the corridor. This would require a full engineering study and most likely a significant capital investment for the upgrade of traffic signal equipment. Due to the time required to conduct an engineering study, implementing upgraded signal equipment would be involve a moderate to long-term timeframe.

7. Engage an engineer to upgrade pedestrian accommodation throughout study corridor potentially including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.
10. An engineer should update existing signals to meet current standards throughout the corridor.
32. Additionally, install pedestrian accommodation at intersection including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.
33. Consider upgrading pedestrian accommodation at Lexington Avenue, including the installation of countdown pedestrian signal indications, leading pedestrian intervals (LPIs), exclusive pedestrian phases, and relocation of pedestrian push buttons to be correctly oriented as well as accessible to pedestrians in conformance with the best practices as outlined in the MUTCD and ADAAG/PROWAG.

Upgrade Markings, Signage, ADA & Roadway Environment (Maintenance)

Many of the recommendations are able to be implemented with minimal capital investiture through low-cost and/or short-term efforts.

1. Signage throughout the corridor should be updated to meet current standards.
2. Additionally, a sign study should be conducted by professional engineering staff to upgrade the signage and add needed signs throughout the corridor.
3. Install access ramps compliant to ADAAG/PROWAG standards.
4. Replace sidewalk.
8. Review signal timings to ensure compliance with latest edition of MUTCD, especially for pedestrian crossing time.
9. Replace with bicycle safe grates.
11. Replace worn and missing striping with pavement markings in conformance with the MUTCD, while keeping style of crosswalk striping consistent throughout corridor.
13. Extend bus stop/no parking zone to better accommodate jitney operations along bus routes.
14. Relocate the litter baskets and newspaper kiosks to allow pedestrian access as well as improve sight distance.
15. Conduct a formal engineering investigation to consider the installation of additional painted high-visibility crosswalks and appropriate pedestrian signage.
16. Investigate the feasibility of installing proper width sidewalks confirming to ADAAG/PROWAG, including the removal of any trip hazards.
19. In the short-term, the knocked down equipment should be replaced.
20. Additionally, a design engineer should be consulted to review and perform a lighting study at the intersection. The engineer should prepare a plan indicating the appropriate location of any proposed lighting improvement, and a contractor should be hired to install the lighting improvement.
21. Replace missing sign.
22. Investigate the feasibility of expanding the bus stop length by implementing a no parking zone to reduce road blockage due to buses, improve pedestrian safety, and allow through traffic to continue.
23. Replace missing center line and crosswalk with pavement markings in conformance with the MUTCD.
24. Conduct a formal engineering investigation to consider reinstating the “No Right Turn” sign at the entrance of the commercial area.
27. Enhance sign visibility.
29. Relocate the newspaper kiosks further back to allow pedestrian access as well as improve sight distance.
30. Install “School Zone” signage in conformance to the best practices as outlined in the MUTCD.
31. Update current signs to confirm to best practices in the MUTCD, including new fluorescence yellow-green school signs.
35. Investigate the feasibility of installing proper width sidewalks and ramps confirming to ADAAG/PROWAG, including the removal of any trip hazards.
37. Fix malfunction pedestrian signals.
38. Replace worn and missing stop bars with pavement markings in conformance with the MUTCD.
39. Remove obstructions.
40. Patch and repair pavement deficiencies.

Enforcement

These efforts are enforcement related and should be discussed with the police department. Some grants are available through DHTS for additional enforcement efforts.

5. Expand visible enforcement of the Stop for Pedestrian Law through a pedestrian decoy enforcement program.
17. Conduct a formal engineering investigation to consider the installation of red light running cameras at Monroe Street.
18. Enhance enforcement for red light running vehicles.
26. Enhance enforcement of "Stop" sign.

Education

Educational efforts are imperative to ensure all road users are aware of how to safely interact with the infrastructure. Grass-roots and organized educational efforts, in conjunction with enforcement activity, are typically most effective at institutional behavioral change.

5. Implement education programs for both pedestrians and drivers.

Jitney/Bus Operations

There were concerns related to the operation of the private jitney buses. As this is an operational issue out of the direct control of the roadway owner(s), it is noted as a separate item.

12. Initiate a conversation with state regulatory agencies regarding the regulatory policies, allowable operations, and enforceability of jitney buses.
22. Investigate the feasibility of expanding the bus stop length by implementing a no parking zone to reduce road blockage due to buses, improve pedestrian safety, and allow through traffic to continue.

Potential Funding Sources

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

Local Funding Sources:

Roadway Owner's Maintenance and Operation Budget:

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

State Funding Sources:

Contact:

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

Municipal Aid/Urban Aid Program (NJDOT Local Aid):

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

This program has been a significant resource for municipalities in funding local transportation projects. All municipalities are eligible. The department continues to encourage municipalities to consider using the Municipal Aid Program to fund projects that support walking and biking in their communities. NJDOT has set a goal to award up to 10 percent of the Municipal Aid Program funds to projects such as pedestrian safety improvements, bikeways, and streetscapes.¹

Local Aid Infrastructure Fund (Discretionary Aid):

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

Subject to funding appropriation, a discretionary fund is established to address emergencies and regional needs throughout the state. Any county or municipality may apply at any time. These projects are approved at the discretion of the commissioner. Payment of project costs is the same as the Municipal Aid Program. Under this program a county or municipality may also apply for funding for local pedestrian safety and bikeway projects².

¹ Local Aid Letter Dated June 18, 2010, available publicly:

<http://www.state.nj.us/transportation/business/localaid/documents/2011Letter.pdf>

² NJDOT TTF State Aid Handbook available publicly:

Safe Streets to Transit:

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

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

NJDOT Centers of Place Program:

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

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

Contact:

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

Office of Smart Growth Downtown Business Improvement Zone Loan Fund

<http://www.nj.gov/state/planning/docs/techassist071506.pdf>

This program provides loans up to \$500,000 to make capital improvements within designated downtown business improvement zones.

Contact:

New Jersey Department of Community Affairs
101 South Broad Street
PO Box 800
Trenton, NJ 08625-0800
Laura Julian
Phone: 609-633-6265
Email: ljulian@dca.state.nj.us

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

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

Federal Funding Sources via NJDOT Office of Local Aid:

Contact:

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

Safe Routes to Schools (SRTS):

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

The federal-aid SRTS program provides federal-aid highway funds to State Departments of Transportation over five fiscal years (FY2005–FY2009). The program targets schools for grades K–8 only. The main objectives of the program are:

- to enable and encourage children, including those with disabilities, to walk and bicycle to school;
- to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
- to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

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

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

Federal Funding Sources via North Jersey Transportation Planning Authority (NJTPA):

Contact:

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

Local Safety Program:

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

The federally funded Local Safety Program (LSP) is a component of wider safety planning at the NJTPA, supporting construction of quick-fix, high-impact safety improvements on county and local roadway facilities in the NJTPA region. Projects supported by this program 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); and
- funds the construction phase of work only— planning, design, and right-of-way acquisition are the responsibility of the sponsor.

Local CMAQ Mobility Initiatives:

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

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

RSA Team's Conclusion

The RSA team's recommendations suggested in this report should improve the safety of the Main Avenue corridor in the audited area between Monroe Street and Passaic Street. Many of the recommendations can be implemented through routine maintenance, while others will take more time and investment. However, physical improvements alone will not eliminate the safety issues identified.

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

Appendix A

Raw Crash Data

Monroe Street

ALCOHOL INVOLVED	CRASH DATE	CRASH TIME	CRASH TYPE	ENVIRONMENTAL CONDITION	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL KILLED
No	2/23/2008		Pedestrian	Overcast	Daylight	Injury	Wet	1	0
No	5/14/2008	9:41 AM	Right Angle	Clear	Daylight	Injury	Dry	1	0
No	2/6/2008	4:11 PM	Pedestrian	Clear	Daylight	Property Damage	Dry	0	0
No	12/8/2008		Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	2/8/2008	6:29 PM	Same Direction - Rear End	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	8/12/2008	12:33 PM	Same Direction - Rear End	Clear	Daylight	Injury	Dry	1	0
No	9/19/2008	10:32 PM	Pedestrian	Clear	Dark (Street Lights On/continuous)	Injury	Dry	1	0
No	9/22/2008	5:58 AM	Non-fixed Object	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	9/27/2008	12:38 AM	Opposite Direction - Head On/Angular	Rain	Dark (Street Lights On/continuous)	Property Damage	Wet	0	0
No	6/28/2009	6:10 PM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	2/7/2009	11:05 PM	Opposite Direction - Head On/Angular	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	2/23/2009	8:48 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0

No	3/12/2009	9:53 AM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	3/30/2009	3:17 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	5/31/2009	3:15 AM	Same Direction - Rear End	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	6/26/2009	7:34 AM	Same Direction - Side Swipe	Overcast	Daylight	Property Damage	Dry	0	0
No	8/5/2009	6:35 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	10/28/2009	6:03 PM	Struck Parked Vehicle	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	12/3/2009	3:15 PM	Same Direction - Side Swipe	Overcast	Daylight	Property Damage	Dry	0	0
No	8/18/2009	9:45 AM	Same Direction - Rear End	Clear	Daylight	Injury	Dry	2	0
No	8/21/2009	6:23 AM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	9/11/2009	10:24 PM	Pedestrian	Overcast	Dark (Street Lights On/continuous)	Injury	Wet	1	0
No	12/28/2009	5:08 PM	Pedestrian	Clear	Dark (Street Lights On/continuous)	Injury	Dry	1	0
No	4/14/2010	3:00 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	5/6/2010	12:50 PM	Same Direction - Rear End	Clear	Daylight	Property Damage	Dry	0	0
No	5/31/2010	8:58 PM	Right Angle	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	2/5/2010	10:00 AM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	2/12/2010	2:40 PM	Same Direction - Rear End	Clear	Daylight	Injury	Wet	4	0

No	7/29/2010	2:50 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	8/1/2010	4:18 PM	Opposite Direction - Head On/Angular	Overcast	Daylight	Injury	Dry	1	0
No	12/12/2010	4:30 PM	Same Direction - Rear End	Overcast	Daylight	Property Damage	Wet	0	0
Yes	10/24/2010	12:48 AM	Pedestrian	Rain	Dark (Street Lights On/ continuous)	Injury	Wet	1	0

Madison Street

ALCOHOL INVOLVED	CRASH DATE	CRASH TIME	CRASH TYPE	ENVIRONMENTAL CONDITION	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL KILLED
No	9/23/2008	5:34 PM	Right Angle	Clear	Daylight	Injury	Dry	4	0
No	8/20/2008	8:39 PM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/continuous)	Injury	Dry	1	0
No	11/8/2008	6:05 PM	Backing	Rain	Dark (Street Lights On/continuous)	Injury	Wet	1	0
No	12/29/2008	3:40 PM	Right Angle	Clear	Daylight	Injury	Dry	2	0
No	2/13/2008	10:32 PM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/continuous)	Property Damage	Wet	0	0
No	1/2/2008	9:00 AM	Other	Clear	Daylight	Injury	Dry	1	0
No	1/20/2008	10:00 AM	Fixed Object	Clear	Daylight	Property Damage	Dry	0	0
No	10/27/2008	5:49 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	12/26/2008	2:20 PM	Right Angle	Overcast	Daylight	Injury	Dry	2	0
No	4/7/2009	3:15 PM	Struck Parked Vehicle	Clear	Daylight	Property Damage	Dry	0	0
No	4/12/2009	3:10 PM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	5/29/2009	12:42 PM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	1/30/2009	1:03 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0

No	7/30/2009		Right Angle	Clear	Daylight	Injury	Dry	1	0
No	8/22/2009	7:14 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	12/10/2009	10:37 AM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	12/6/2009	1:50 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	10/10/2010	10:40 AM	Fixed Object	Clear	Daylight	Property Damage	Dry	0	0
Yes	10/24/2010	4:46 PM	Right Angle	Clear	Daylight	Injury	Dry	2	0
No	11/8/2010	10:00 AM	Right Angle	Rain	Daylight	Property Damage	Wet	0	0
Yes	12/18/2010	10:33 PM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0

Henry Street/Garden Street

ALCOHOL INVOLVED	CRASH DATE	CRASH TIME	CRASH TYPE	ENVIRONMENTAL CONDITION	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL KILLED
No	3/23/2008	4:06 PM	Same Direction - Side Swipe	Clear	Daylight	Injury	Dry	1	0
No	12/26/2009	10:44 AM	Same Direction - Side Swipe	Rain	Daylight	Property Damage	Wet	0	0
Yes	7/6/2009	1:48 AM	Struck Parked Vehicle	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	9/28/2009	7:00 PM	Pedestrian	Rain	Dark (Street Lights On/continuous)	Injury	Wet	1	0
No	8/16/2010	6:30 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0

Lexington Avenue

CRASH DATE	CRASH TIME	CRASH TYPE	ENVIRONMENTAL CONDITION	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL KILLED
5/3/2008	3:52 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
7/14/2008	2:10 PM	Struck Parked Vehicle	Clear	Daylight	Property Damage	Dry	0	0
11/19/2008	9:46 AM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
11/26/2008	5:32 PM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/spot)	Property Damage	Dry	0	0
10/12/2008	12:03 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
2/18/2008	3:55 PM	Struck Parked Vehicle	Overcast	Daylight	Property Damage	Wet	0	0
3/16/2009	10:55 PM	Pedalcyclist	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
2/25/2009	7:12 PM	Backing	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
10/4/2009	1:00 PM	Same Direction - Rear End	Clear	Daylight	Property Damage	Dry	0	0

3/14/2010	1:51 PM	Struck Parked Vehicle	Rain	Daylight	Property Damage	Wet	0	0
3/6/2010	6:23 PM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	0
9/2/2010	6:49 PM	Struck Parked Vehicle	Clear	Daylight	Property Damage	Dry	0	0

Prospect Street/Jefferson Street

ALCOHOL INVOLVED	CRASH DATE	CRASH TIME	CRASH TYPE	ENVIRONMENTAL CONDITION	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL KILLED
No	4/24/2008	5:00 PM	Struck Parked Vehicle	Clear	Daylight	Property Damage	Dry	0	0
No	6/5/2008	3:51 PM	Same Direction - Side Swipe	Clear	Daylight	Injury	Dry	1	0
No	1/17/2008	8:41 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	8/2/2008	4:01 PM	Struck Parked Vehicle	Clear	Daylight	Property Damage	Dry	0	0
Yes	9/13/2008	11:55 AM	Right Angle	Clear	Daylight	Injury	Dry	1	0
No	11/7/2008	1:46 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	11/29/2008	4:45 PM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	0
No	2/7/2008	11:30 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	12/31/2008	7:12 PM	Same Direction - Side Swipe	Blowing Snow	Dark (Street Lights On/ spot)	Property Damage	Snowy	0	0
No	12/31/2008	10:40 PM	Right Angle	Clear	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	0
No	5/18/2008	1:30 PM	Right Angle	Rain	Daylight	Property Damage	Wet	0	0
No	9/3/2008	5:51 PM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	11/26/2008	5:40 PM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	0
No	3/14/2009	1:14 PM	Same Direction - Rear End	Clear	Daylight	Property Damage	Dry	0	0

No	6/24/2009	6:03 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	6/13/2009	1:20 PM	Right Angle	Rain	Daylight	Property Damage	Wet	0	0
No	2/24/2009	3:00 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	7/7/2009	4:28 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	8/11/2009	6:47 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	8/23/2009	10:07 AM	Right Angle	Overcast	Daylight	Injury	Dry	4	0
No	10/27/2009	4:35 PM	Same Direction - Rear End	Rain	Daylight	Property Damage	Wet	0	0
No	7/2/2009	12:21 PM	Pedestrian	Overcast	Daylight	Injury	Dry	1	0
No	9/28/2009	10:33 AM	Struck Parked Vehicle	Clear	Daylight	Property Damage	Dry	0	0
No	10/30/2009	3:44 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	11/28/2009	3:08 AM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	0
No	12/29/2009	7:25 PM	Backing	Clear	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	0
No	3/13/2010	3:38 PM	Backing	Rain	Daylight	Property Damage	Wet	0	0
No	5/16/2010	1:10 PM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	7/15/2010	6:24 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	8/12/2010	8:59 PM	Fixed Object	Rain	Dark (Street Lights On/ spot)	Property Damage	Wet	0	0
No	9/15/2010	11:29 PM	Same Direction - Rear End	Clear	Dark (Street Lights On/ continuous)	Property Damage	Dry	0	0
No	10/23/2010	11:27 AM	Right Angle	Clear	Daylight	Injury	Dry	2	0

No	11/13/2010	10:10 AM	Backing	Clear	Daylight	Property Damage	Dry	0	0
No	12/16/2010	9:36 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	12/29/2010	5:02 PM	Struck Parked Vehicle	Clear	Dark (Street Lights On/continuous)	Property Damage	Slush	0	0

Washington Place

CELL PHONE IN USE	CRASH DATE	CRASH TIME	CRASH TYPE	ENVIRONMENTAL CONDITION	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL KILLED
No	3/10/2008	3:25 PM	Backing	Clear	Daylight	Property Damage	Dry	0	0
No	7/11/2008	4:14 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	11/27/2008	1:20 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	4/14/2008	10:58 PM	Fixed Object	Clear	Dark (No Street Lights)	Property Damage	Dry	0	0
No	5/17/2008	5:16 PM	Same Direction - Rear End	Clear	Daylight	Property Damage	Dry	0	0
No	7/26/2008	9:29 AM	Right Angle	Clear	Daylight	Injury	Dry	2	0
No	8/8/2008	5:37 PM	Same Direction - Rear End	Clear	Daylight	Property Damage	Dry	0	0
No	11/8/2008	12:34 PM	Same Direction - Rear End	Rain	Daylight	Property Damage	Wet	0	0
No	7/22/2008	1:48 PM	Backing	Clear	Daylight	Property Damage	Dry	0	0
No	2/25/2009	5:00 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	9/4/2009	11:35 AM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	10/15/2009	7:17 PM	Same Direction - Rear End	Rain	Dawn	Property Damage	Wet	0	0
No	8/10/2009	4:15 PM	Backing	Clear	Daylight	Property Damage	Dry	0	0
No	11/5/2009	11:01 AM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0

No	12/14/2009	6:56 PM	Backing	Clear	Dark (Street Lights On/continuous)	Property Damage	Dry	0	0
No	4/1/2010	4:38 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	5/14/2010	4:22 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	2/16/2010	4:37 PM	Pedestrian	Snow	Daylight	Injury	Snowy	1	0
No	3/23/2010	11:12 AM	Fixed Object	Clear	Daylight	Property Damage	Dry	0	0
No	5/3/2010	2:42 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
Yes	5/25/2010	12:57 PM	Backing	Clear	Daylight	Property Damage	Dry	0	0
No	7/12/2010	8:32 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	9/6/2010	2:30 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0

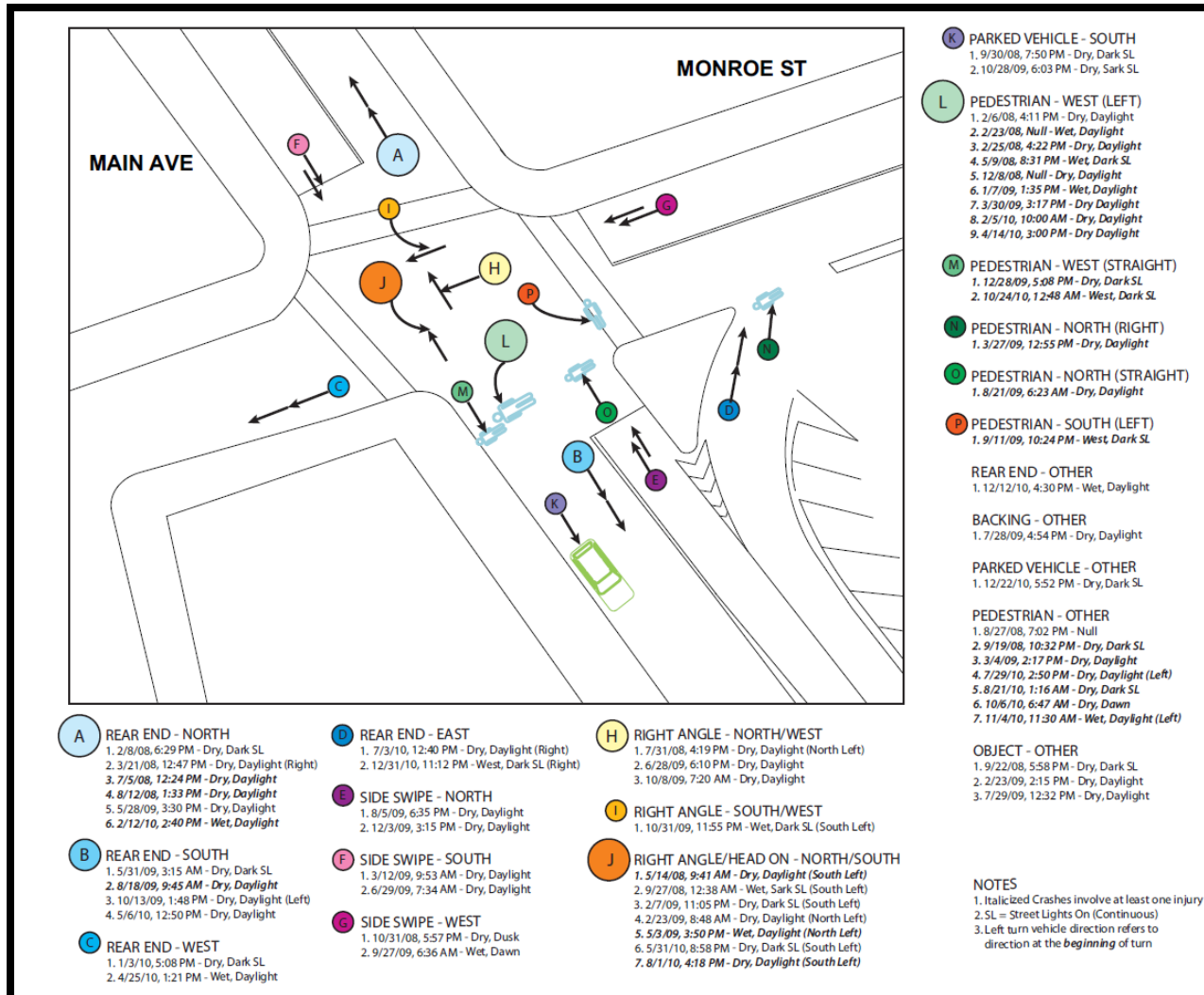
Passaic Avenue

ALCOHOL INVOLVED	CRASH DATE	CRASH TIME	CRASH TYPE	ENVIRONMENTAL CONDITION	LIGHT CONDITION	SEVERITY	SURFACE CONDITION	TOTAL INJURED	TOTAL KILLED
No	1/11/2008	6:17 PM	Right Angle	Clear	Dark (Street Lights On/continuous)	Property Damage	Wet	0	0
No	5/31/2008	1:10 PM	Right Angle	Clear	Daylight	Injury	Dry	1	0
No	6/22/2008	6:55 PM	Struck Parked Vehicle	Clear	Daylight	Property Damage	Dry	0	0
No	7/26/2008	8:35 AM	Same Direction - Rear End	Clear	Daylight	Property Damage	Dry	0	0
No	7/29/2008	2:15 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	8/27/2008	8:30 AM	Right Angle	Clear	Daylight	Injury	Dry	1	0
No	10/14/2008	8:15 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	8/1/2008	4:38 PM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	11/7/2008	12:49 PM	Struck Parked Vehicle	Overcast	Daylight	Property Damage	Dry	0	0
No	2/24/2008	1:40 PM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	3/5/2009	1:32 PM	Fixed Object	Clear	Daylight	Property Damage	Dry	0	0
No	6/23/2009	6:57 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	2/3/2009	1:00 PM	Fixed Object	Snow	Daylight	Property Damage	Snowy	0	0
No	4/27/2009	7:20 AM	Same Direction - Rear End	Clear	Daylight	Injury	Dry	1	0

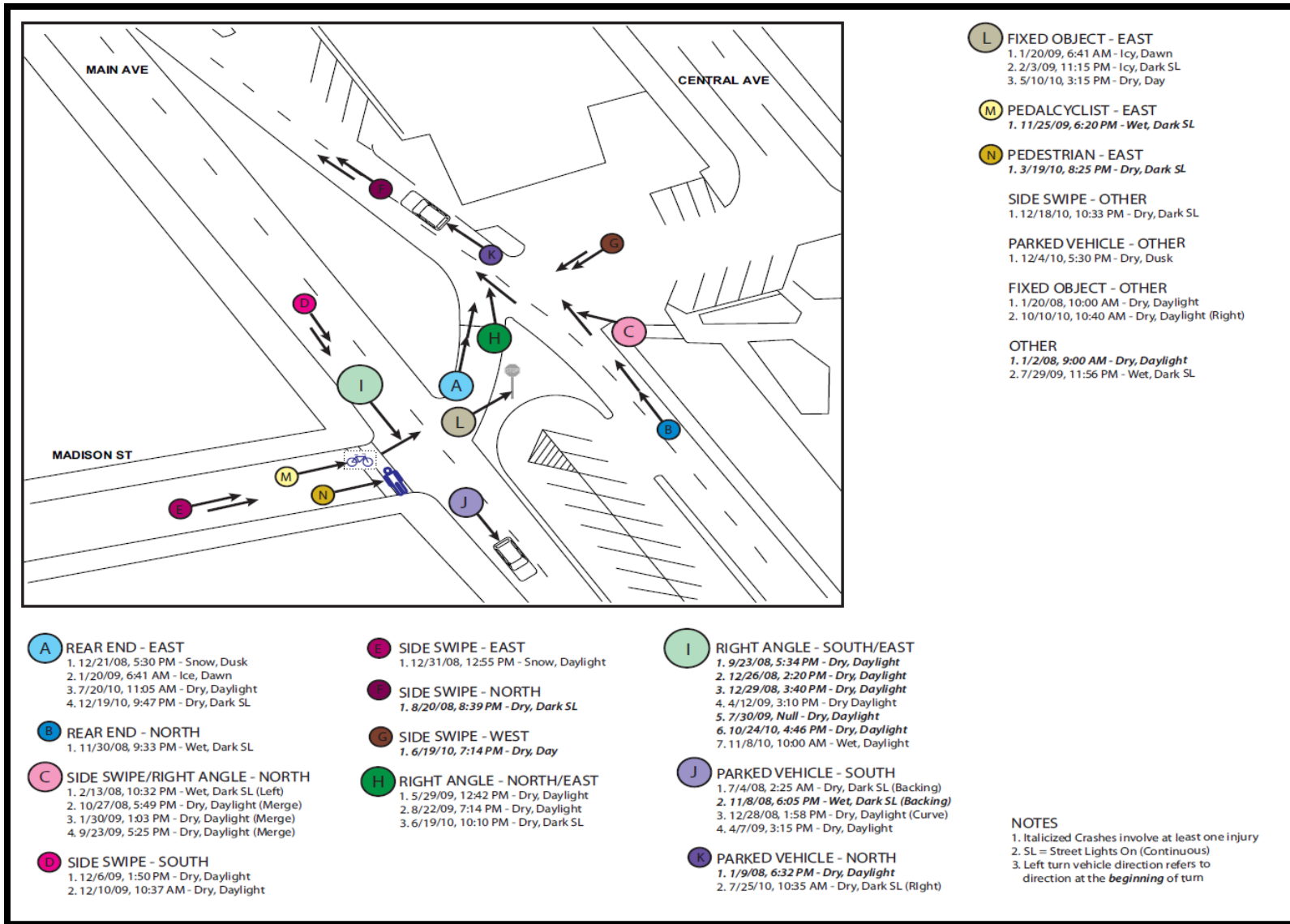
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No	9/14/2009	8:10 AM	Right Angle	Clear	Daylight	Property Damage	Dry	0	0
No	10/18/2009	12:31 AM	Right Angle	Rain	Dark (No Street Lights)	Property Damage	Wet	0	0
No	11/20/2009	11:24 AM	Fixed Object	Clear	Daylight	Property Damage	Dry	0	0
No	12/24/2009	5:08 PM	Struck Parked Vehicle	Clear	Unknown	Property Damage	Dry	0	0
No	8/13/2009	3:38 PM	Same Direction - Side Swipe	Rain	Daylight	Property Damage	Wet	0	0
No	8/18/2009	8:36 AM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
Yes	9/12/2009	2:50 AM	Same Direction - Rear End	Rain	Dark (Street Lights On/continuous)	Injury	Wet	1	0
No	11/13/2009	3:45 PM	Pedalcyclist	Rain	Daylight	Injury	Wet	1	0
No	7/3/2009	11:52 AM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
Yes	4/26/2010	8:21 PM	Pedestrian	Rain	Dark (No Street Lights)	Injury	Wet	1	0
Yes	5/6/2010	2:30 AM	Same Direction - Side Swipe	Clear	Dark (Street Lights On/continuous)	Injury	Dry	1	0
No	7/18/2010	1:08 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	8/12/2010	3:26 PM	Encroachment	Rain	Daylight	Property Damage	Wet	0	0
No	8/27/2010	1:30 PM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	9/1/2010	3:34 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	9/1/2010	1:25 PM	Same Direction - Side Swipe	Clear	Daylight	Property Damage	Dry	0	0
No	9/10/2010	10:48 AM	Pedestrian	Clear	Daylight	Injury	Dry	1	0
No	12/12/2010	4:07 PM	Same Direction - Side Swipe	Rain	Dark (Street Lights On/continuous)	Property Damage	Wet	0	0

Collision Diagrams

Monroe Street



Madison Street



- L** FIXED OBJECT - EAST
 1. 1/20/09, 6:41 AM - Icy, Dawn
 2. 2/3/09, 11:15 PM - Icy, Dark SL
 3. 5/10/10, 3:15 PM - Dry, Day
- M** PEDALCYCLIST - EAST
 1. 11/25/09, 6:20 PM - Wet, Dark SL
- N** PEDESTRIAN - EAST
 1. 3/19/10, 8:25 PM - Dry, Dark SL
- SIDE SWIPE - OTHER
 1. 12/18/10, 10:33 PM - Dry, Dark SL
- PARKED VEHICLE - OTHER
 1. 12/4/10, 5:30 PM - Dry, Dusk
- FIXED OBJECT - OTHER
 1. 1/20/08, 10:00 AM - Dry, Daylight
 2. 10/10/10, 10:40 AM - Dry, Daylight (Right)
- OTHER
 1. 1/2/08, 9:00 AM - Dry, Daylight
 2. 7/29/09, 11:56 PM - Wet, Dark SL

- A** REAR END - EAST
 1. 12/21/08, 5:30 PM - Snow, Dusk
 2. 1/20/09, 6:41 AM - Ice, Dawn
 3. 7/20/10, 11:05 AM - Dry, Daylight
 4. 12/19/10, 9:47 PM - Dry, Dark SL
- B** REAR END - NORTH
 1. 11/30/08, 9:33 PM - Wet, Dark SL
- C** SIDE SWIPE/RIGHT ANGLE - NORTH
 1. 2/13/08, 10:32 PM - Wet, Dark SL (Left)
 2. 10/27/08, 5:49 PM - Dry, Daylight (Merge)
 3. 1/30/09, 1:03 PM - Dry, Daylight (Merge)
 4. 9/23/09, 5:25 PM - Dry, Daylight (Merge)
- D** SIDE SWIPE - SOUTH
 1. 12/6/09, 1:50 PM - Dry, Daylight
 2. 12/10/09, 10:37 AM - Dry, Daylight

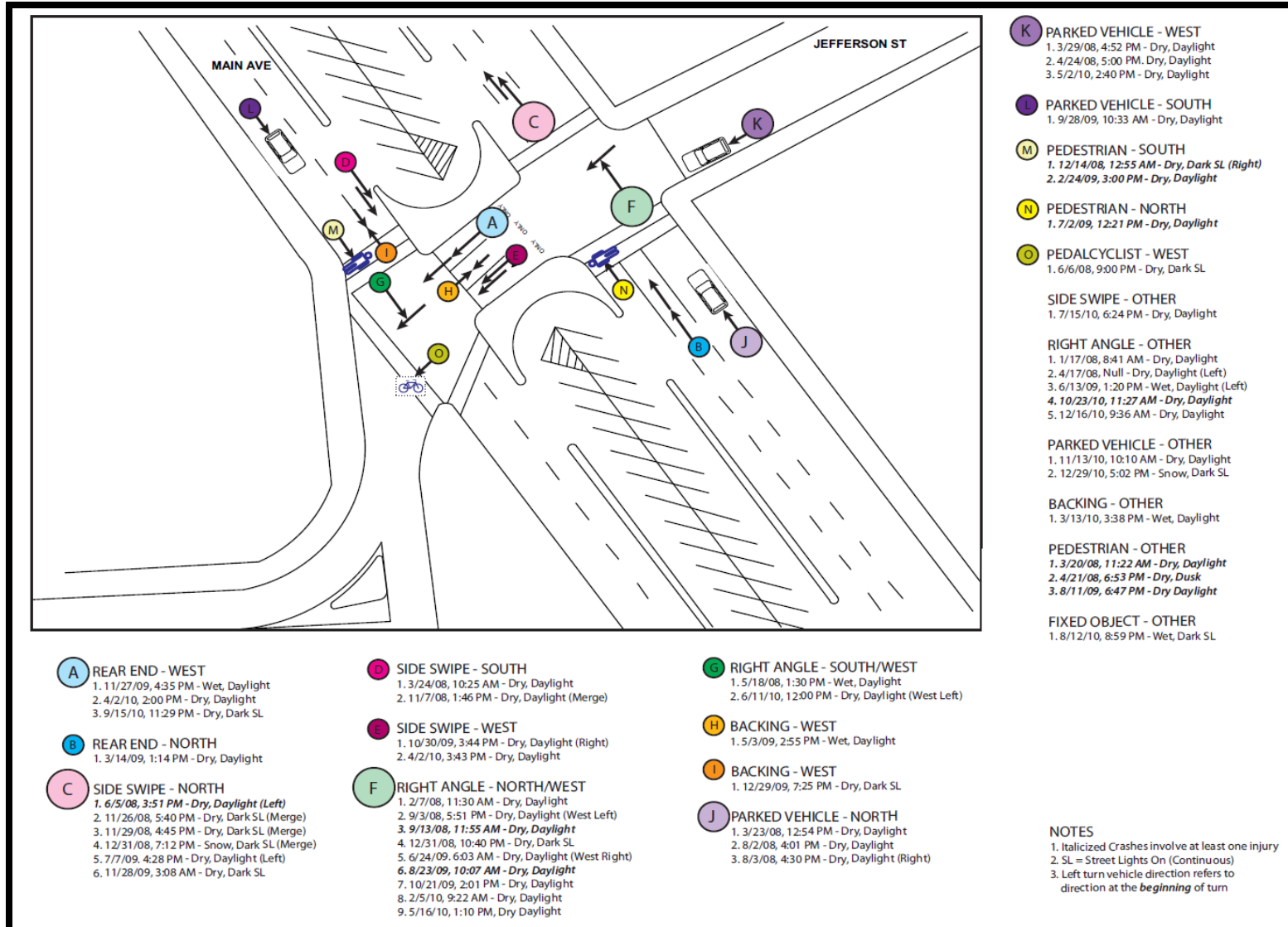
- E** SIDE SWIPE - EAST
 1. 12/31/08, 12:55 PM - Snow, Daylight
- F** SIDE SWIPE - NORTH
 1. 8/20/08, 8:39 PM - Dry, Dark SL
- G** SIDE SWIPE - WEST
 1. 6/19/10, 7:14 PM - Dry, Day
- H** RIGHT ANGLE - NORTH/EAST
 1. 5/29/09, 12:42 PM - Dry, Daylight
 2. 8/22/09, 7:14 PM - Dry, Daylight
 3. 6/19/10, 10:10 PM - Dry, Dark SL

- I** RIGHT ANGLE - SOUTH/EAST
 1. 9/23/08, 5:34 PM - Dry, Daylight
 2. 12/26/08, 2:20 PM - Dry, Daylight
 3. 12/29/08, 3:40 PM - Dry, Daylight
 4. 4/12/09, 3:10 PM - Dry Daylight
 5. 7/30/09, Null - Dry, Daylight
 6. 10/24/10, 4:46 PM - Dry, Daylight
 7. 11/8/10, 10:00 AM - Wet, Daylight
- J** PARKED VEHICLE - SOUTH
 1. 7/4/08, 2:25 AM - Dry, Dark SL (Backing)
 2. 11/8/08, 6:05 PM - Wet, Dark SL (Backing)
 3. 12/28/08, 1:58 PM - Dry, Daylight (Curve)
 4. 4/7/09, 3:15 PM - Dry, Daylight
- K** PARKED VEHICLE - NORTH
 1. 1/9/08, 6:32 PM - Dry, Daylight
 2. 7/25/10, 10:35 AM - Dry, Dark SL (Right)

NOTES

1. Italicized Crashes involve at least one injury
2. SL = Street Lights On (Continuous)
3. Left turn vehicle direction refers to direction at the *beginning* of turn

Prospect Street/Jefferson Street

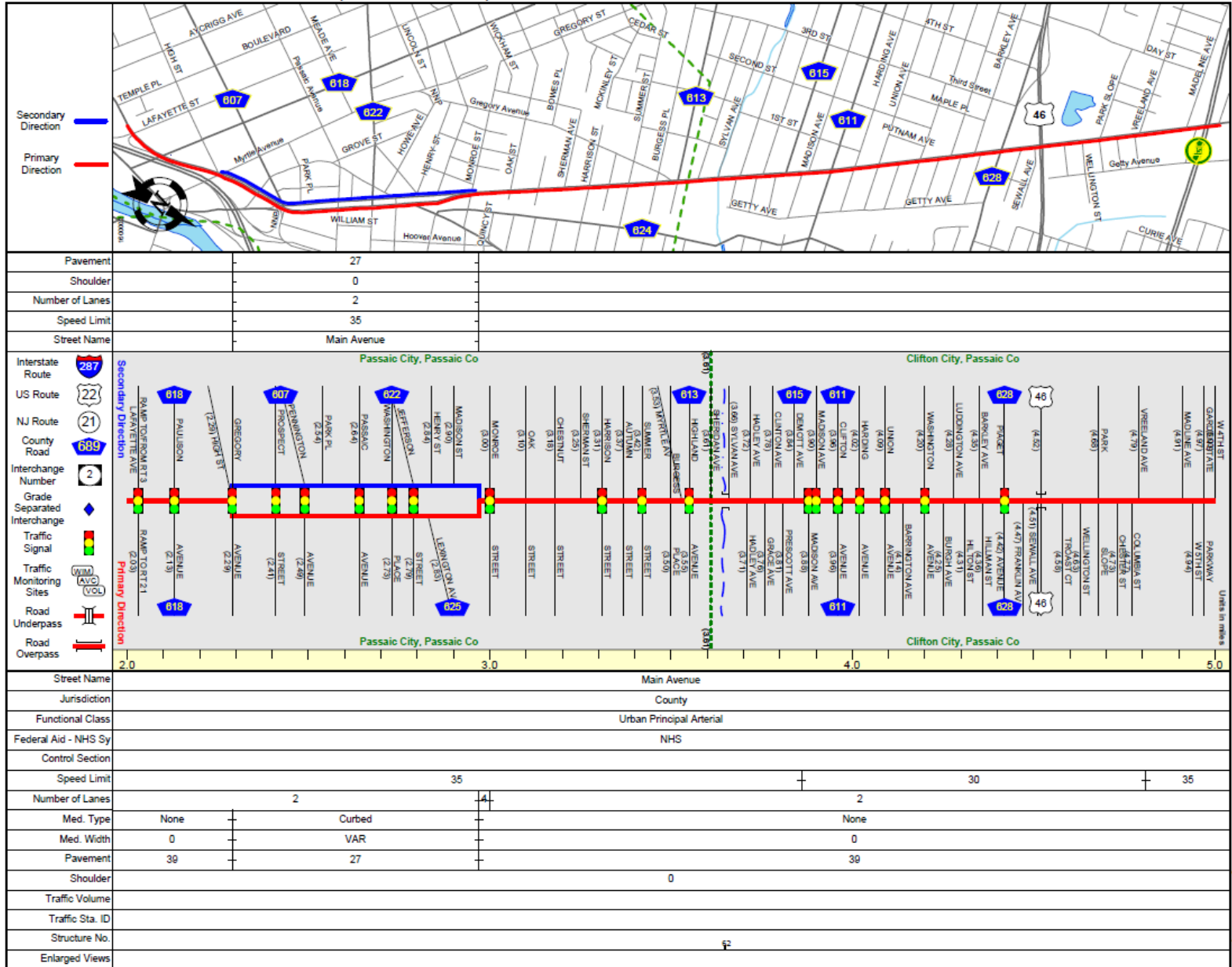


Appendix B

Straight Line Diagram

PASSAIC COUNTY 601 (South to North)

Mile Posts: 2.000 - 5.000



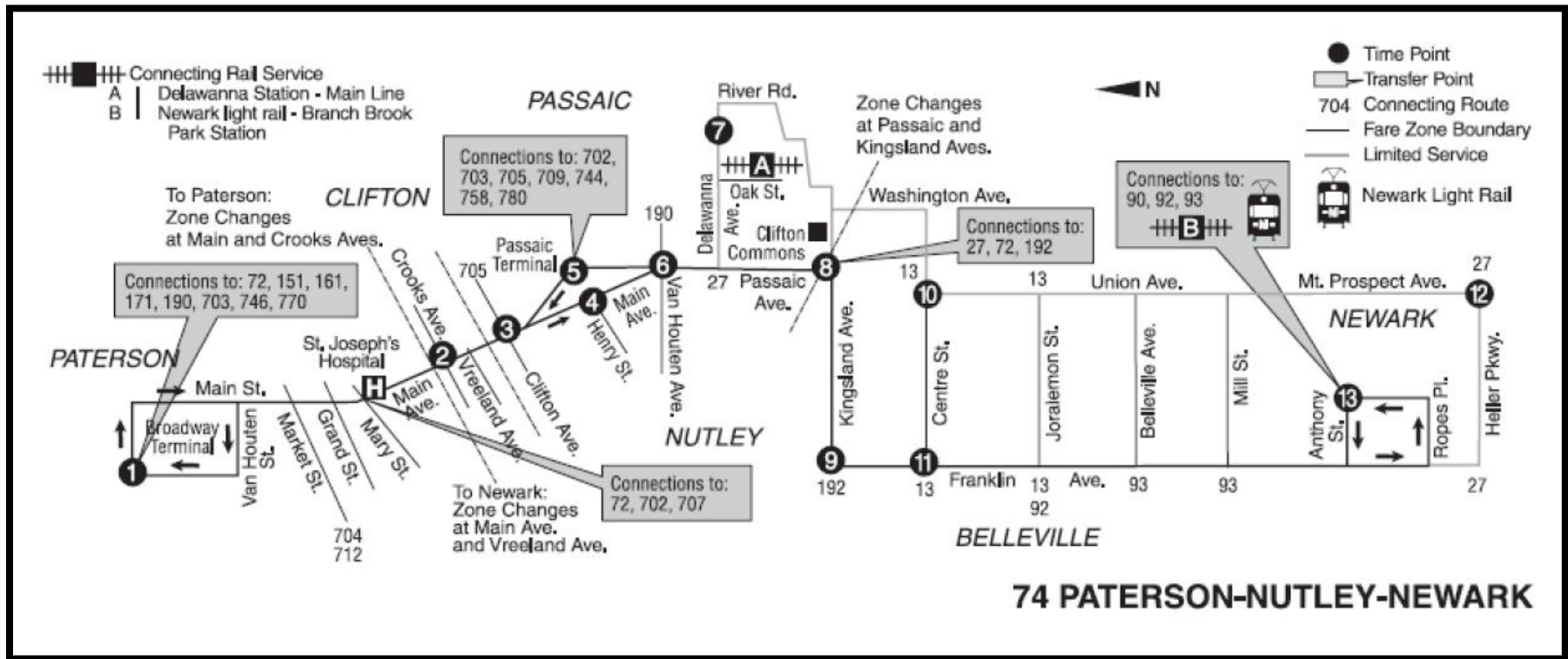
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Date last inventoried: July 2001

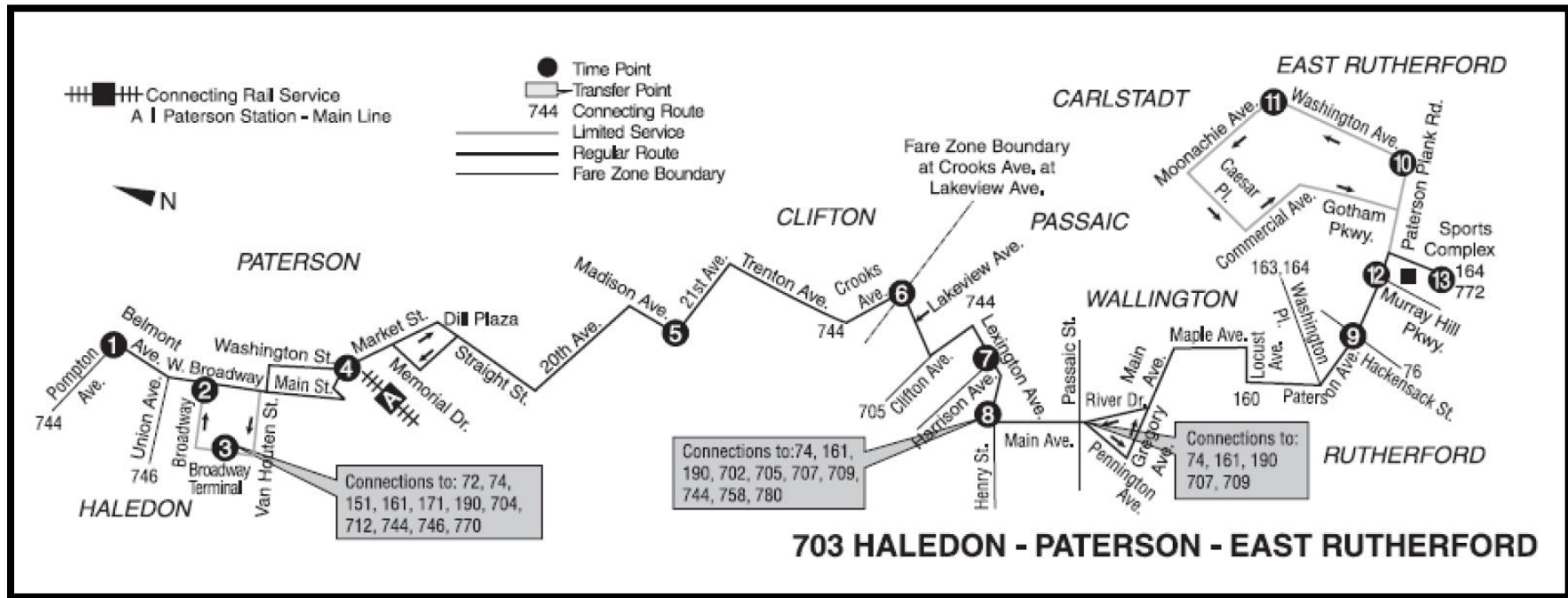
Page Created: May 2010

Appendix C

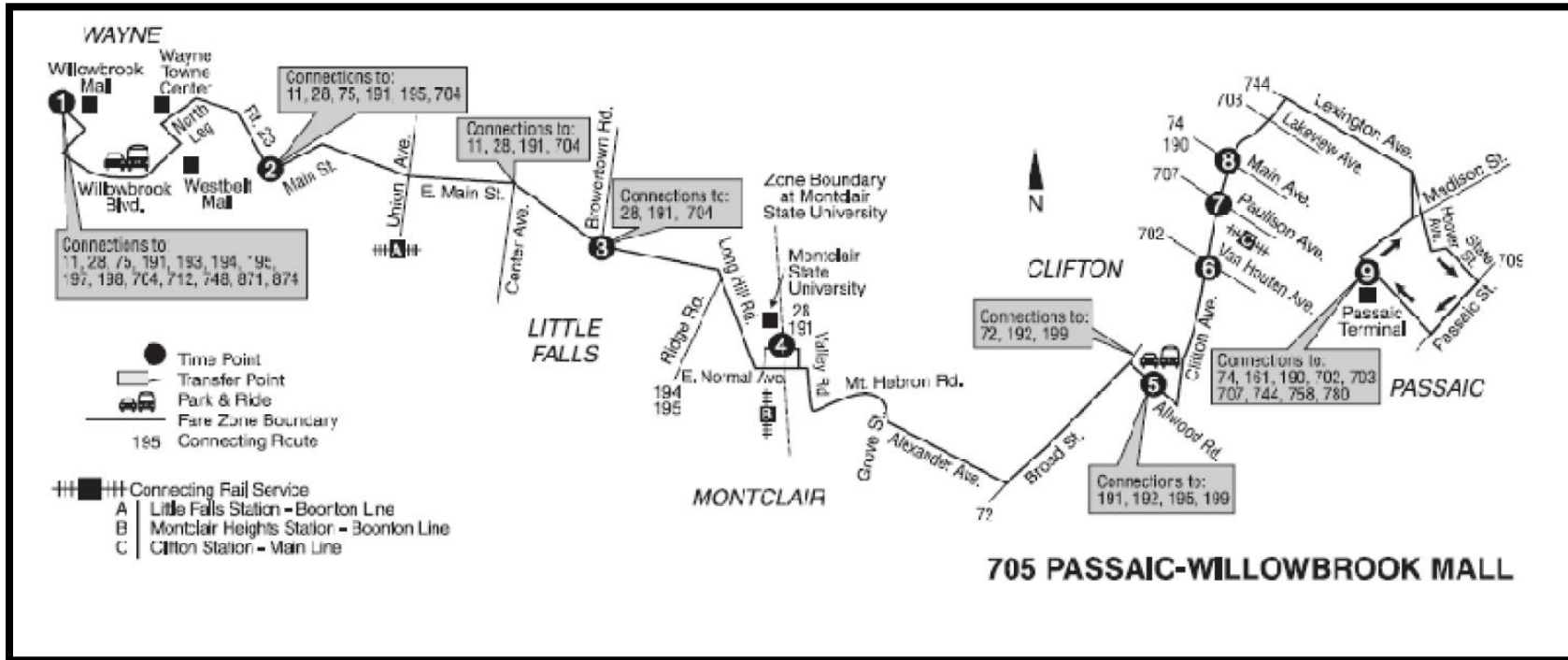
Route 74



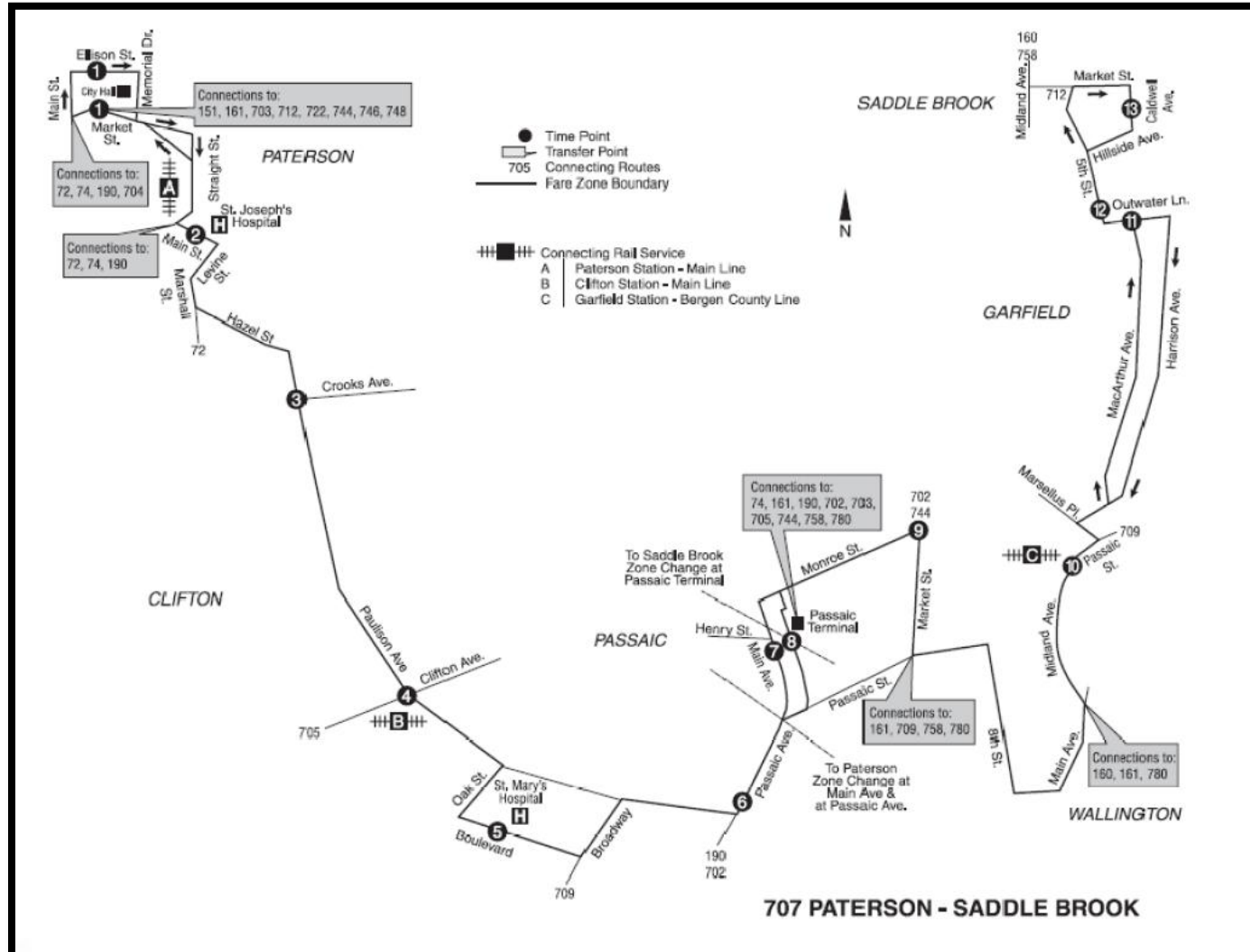
Route 703



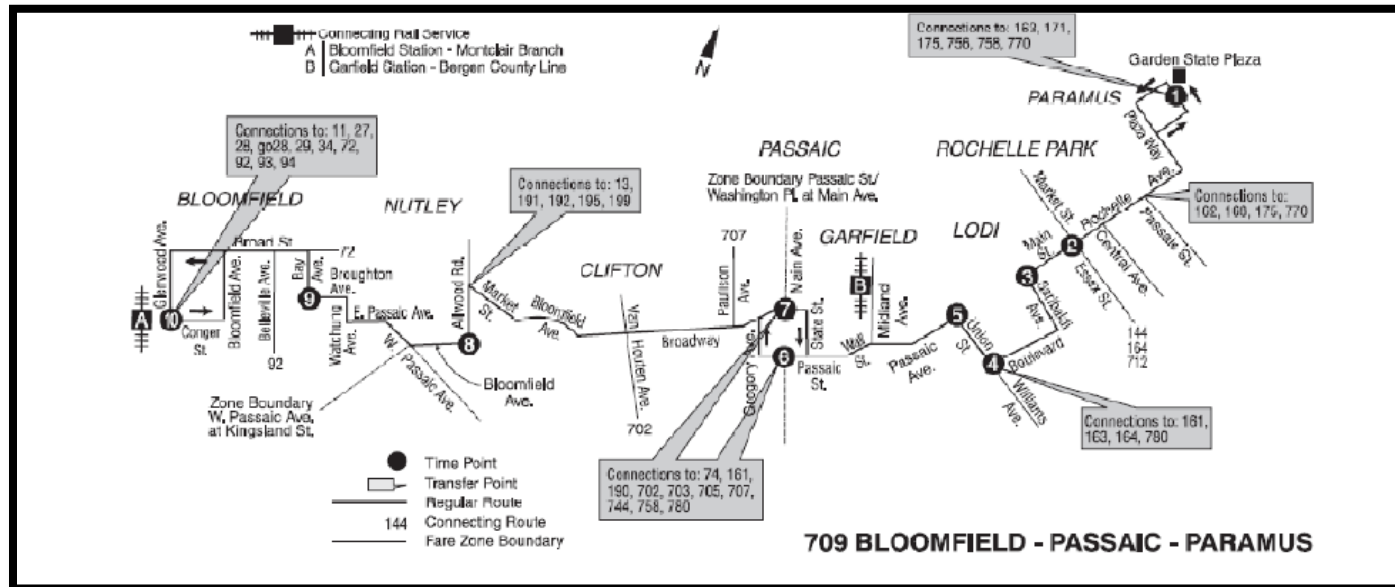
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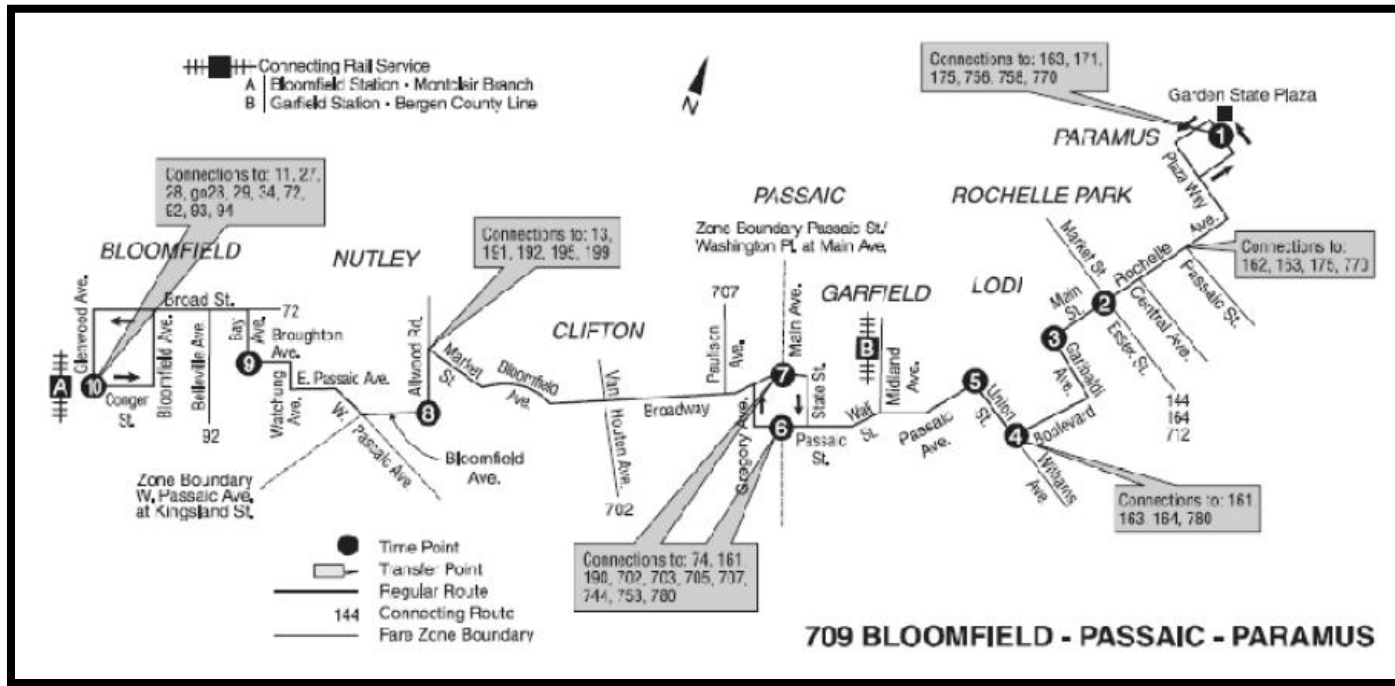
Route 707



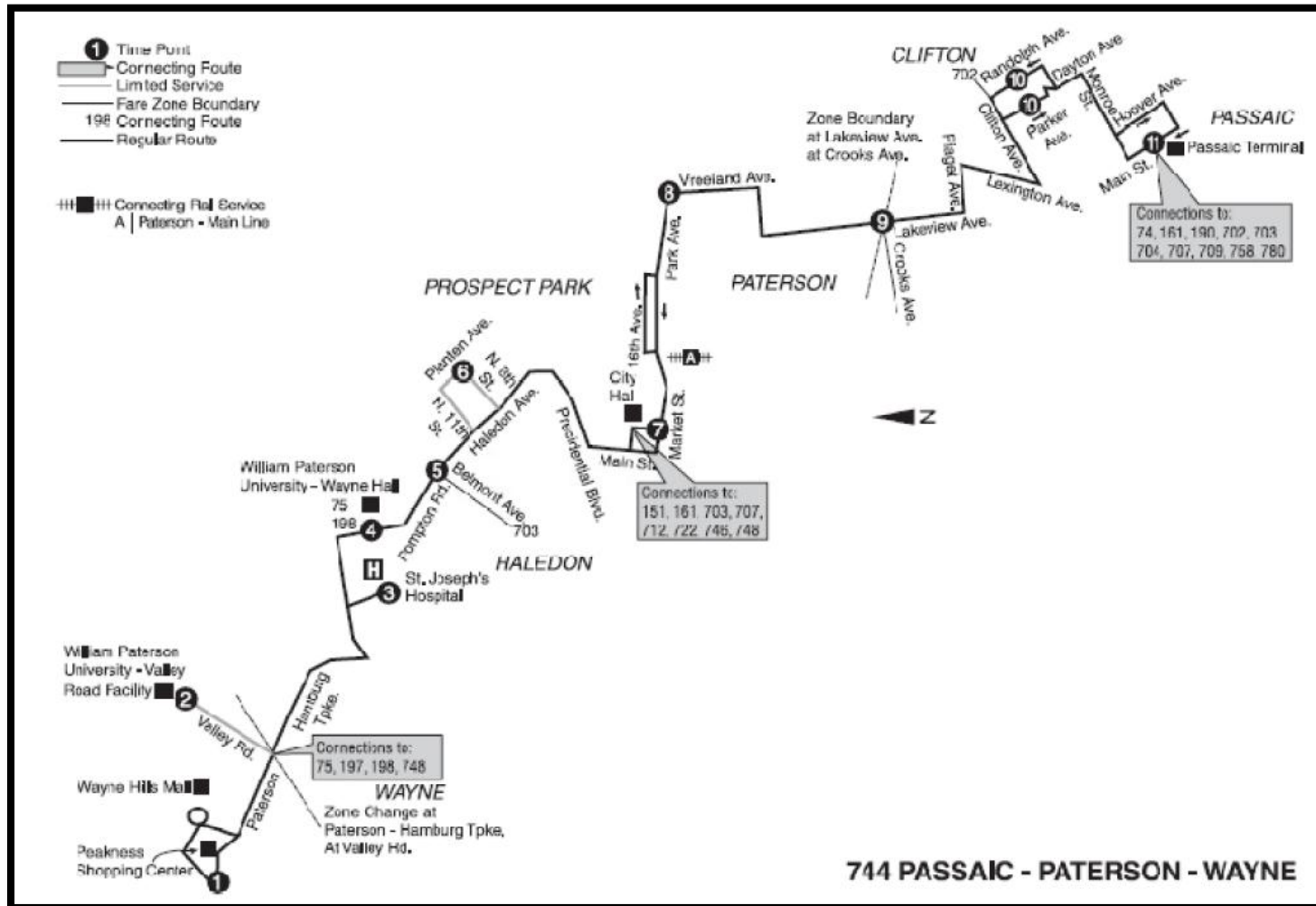
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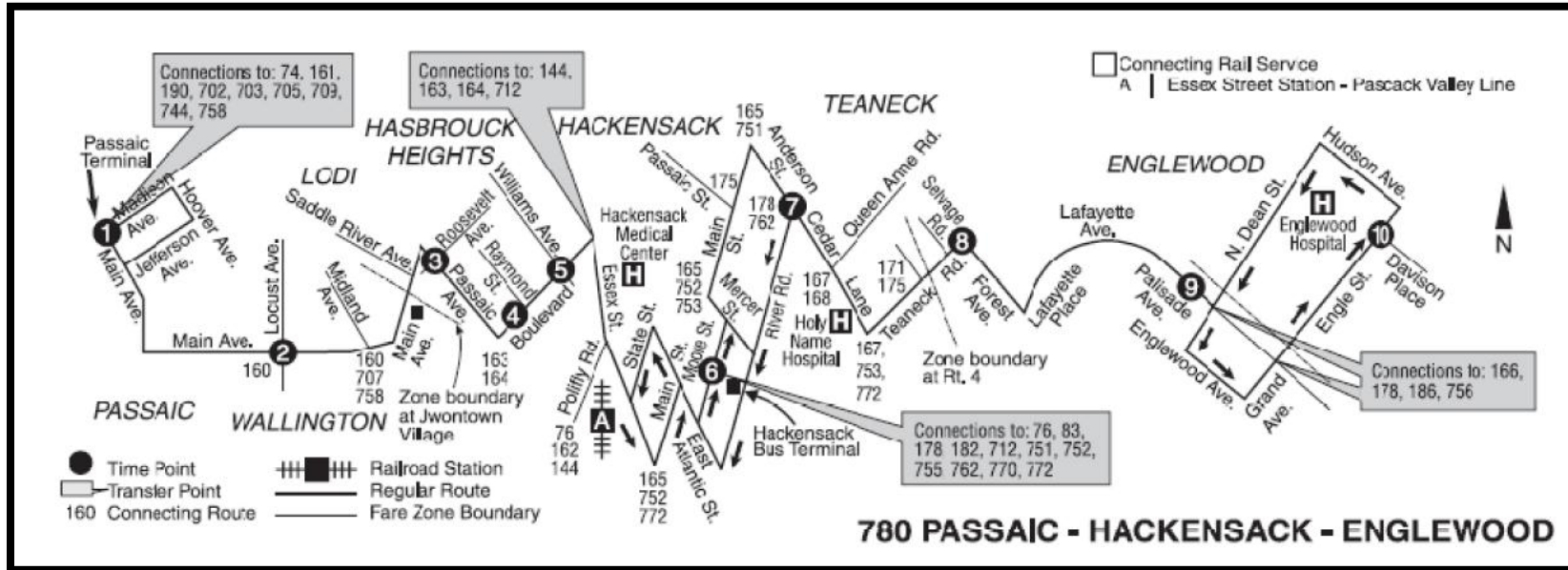
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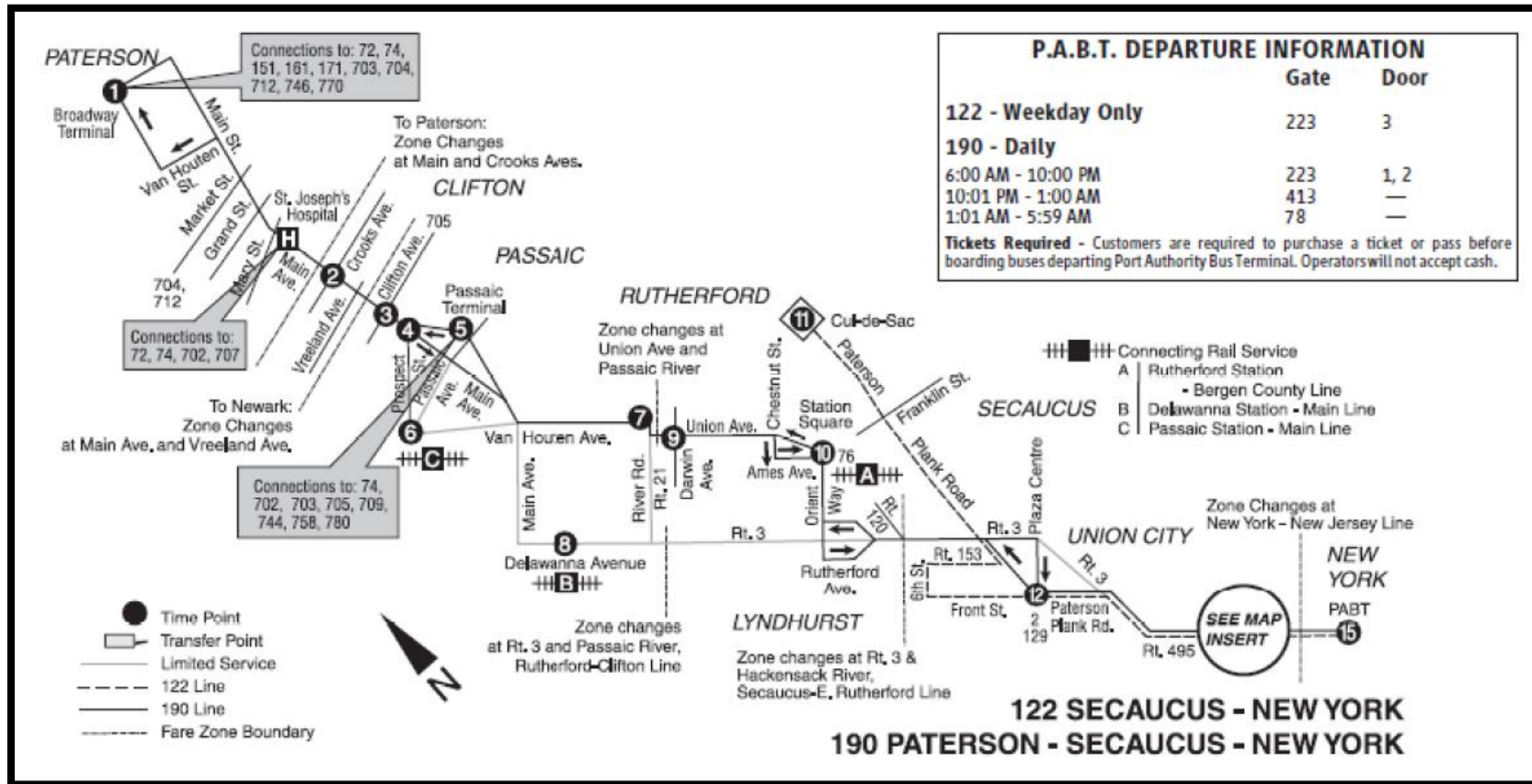
Route 744



Route 780



Route 1122



Route 1151

