



RSA facilitated by the Transportation Safety Resource Center (TSRC) at the Rutgers' Center for Advanced Infrastructure and Transportation (CAIT) in partnership with the North Jersey Transportation Planning Authority (NJTPA) and the City of Paterson with funding provided by FHWA and NJDOT

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## >> INTRODUCTION

### WHAT IS A ROAD SAFETY AUDIT (RSA)?

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 which are 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 about 60 percent.

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### DISCLAIMER

Road Safety Audit reports provided by the Center for Advanced Infrastructure and Transportation staff do not constitute an engineering report. The agency responsible for design and construction should consult a professional engineer licensed in the state of New Jersey in preparing construction documents to implement any of the safety countermeasures in the report.

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the New Jersey Department of Transportation or the Rutgers' Center for Advanced Infrastructure and Transportation. This report does not constitute a standard, specification, or regulation. Such document is disseminated under the sponsorship of the Department of Transportation, University Transportation Centers Program, in the interest of information exchange. The U.S. government assumes no liability for the contents or use thereof.



## EXECUTIVE SUMMARY

The Road Safety Audit (RSA) of Main Street in Paterson was chosen as a result of an NJTPA network screening of crashes on county and municipal roadways. The intersection of Main Street and Madison Avenue ranked high on the Passaic County intersection and pedestrian spot list and number one for the city of Paterson. Based on additional crash analysis, produced using data from Plan4Safety of Rutgers Transportation Safety Resource Center, a corridor on Main Street was identified. This document is the final report for the Main Street RSA, from Gould Avenue to Hemlock Street and including the intersection of Madison Avenue and Getty Avenue. The RSA process helped in identifying safety issues, evaluating risks, and brainstorming countermeasures. The audit process employs a dynamic and intensive short-term approach that taps into the collective knowledge of local and subject matter experts using crash data and a walking survey of the corridor. The result, detailed in this report, is a summary of the corridor's safety history and a listing of needed improvements organized by aerial view maps. During the three-year analysis period, there were 175 total crashes, including 10 pedestrian crashes along the half mile stretch and the additional intersection.

Main St. is a heavily travelled roadway, primarily for local access. The area is heavily concentrated with small commercial properties, municipal services, and some residential properties. Two NJ Transit bus routes run along Main St. and numerous jitneys service the same area. In addition, the proximity to St. Joseph's Hospital brings emergency vehicles to the area.

The additional intersection of the RSA is Madison Avenue and Getty Avenue is parallel to Main Street one block to the east. The intersection is comprised of larger businesses and warehouses, and there is significant truck traffic. In addition, there are on/off ramps to/from Interstate 80.

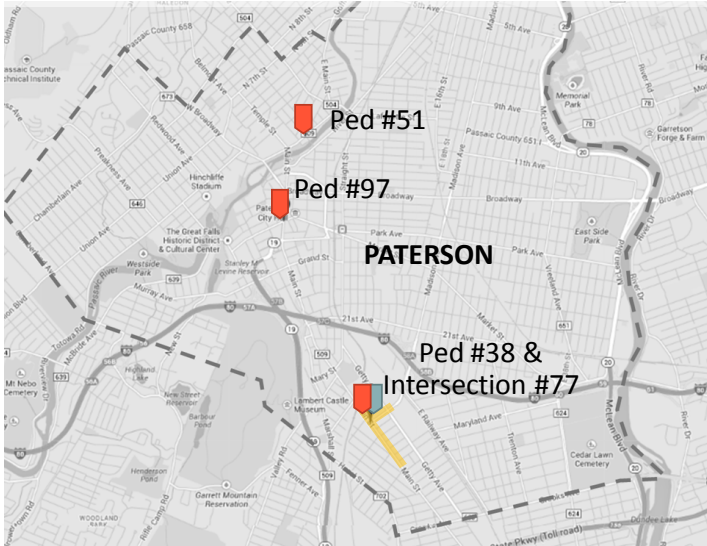
Given the busy nature of this corridor, with many vehicles and pedestrians making frequent stops to access the retail establishments and residential units, there is naturally a lot of conflicting movements. There is also frequent bus and jitney service. One of the biggest issues is the volume of parked vehicles, many of them in illegal spots, blocking the sight distance at intersections. The many commercial establishments generate many short trips. Of the 10 intersections on Main Street, only three of them are signalized. Of the unsignalized intersections, many of the crosswalks are unmarked. There is very little lane delineation, which causes confusion with the parked cars and with passing and turning vehicles.

Improving the parking situation would significantly improve the safety environment of the Main Street corridor. It is understood that the need for parking spots is great, and there is resistance to reducing the available parking. The conflicting demands need to be fundamentally addressed. In addition, clearly delineated travel lanes, parking/no parking, and turning movements would noticeably improve safety in the area.

The intersection of Madison Avenue and Getty Avenue, one block east of Main Street is exclusively commercial and industrial; this includes a higher percentage of truck traffic. The eastern leg of Madison Avenue is an extension of a ramp off Interstate 80 which generates speeding. Improving the transition from higher speeds to an intersection will significantly help safety. In addition, better lane delineation as previously mentioned, will improve the travel environment.

## >> 1.0 CORRIDOR DESCRIPTION AND ANALYSIS

### 1.1 SITE SELECTION



Passaic County made the initial request for conducting an RSA in Paterson. The request focused on the area around the Great Falls National Historical Park, in anticipation of improvements to be made for pedestrian and bicycle access to the park and the overall effects on the circulation system in Paterson. A crash data analysis was conducted but the results did not support conducting a Road Safety Audit in this area. However, as there are a significant number of crashes in the city of Paterson, especially pedestrian crashes, the NJTPA decided to conduct an RSA in Paterson. Network screening was conducted to prioritize a location for an RSA. The intersection of Main Street (CR 601) and Madison Avenue was chosen as the focus of the RSA.

The intersection of Main Street and Madison Avenue ranked high on the Passaic County intersection and pedestrian spot list and number one for the City of Paterson. Based on additional crash analysis pulled from the database Plan4Safety of Rutgers Transportation Safety Resource Center, the RSA corridor along Main Street was identified.

The rankings\* were as follows:

| Madison Avenue & Main Street   | NJTPA # | Passaic County # | Paterson # |
|--------------------------------|---------|------------------|------------|
| <b>Intersection ranking</b>    | 38      | 2                | 1          |
| <b>Pedestrian spot ranking</b> | 77      | 3                | 1          |

\*Local Roadways, 2008-2012, weighed for severity

A further analysis was done in the vicinity of the intersection, and a corridor was selected with the following intersections:

- |                                 |                             |
|---------------------------------|-----------------------------|
| Main Street & Hemlock Street    | Main Street & Elk Street    |
| Main Street & Elizabeth Street  | Main Street & Robert Street |
| Main Street & Madison Avenue    | Main Street & Thomas Street |
| Main Street & Park Street       | Main Street & George Street |
| Main Street & Bloomfield Avenue | Main Street & Gould Avenue  |
| Madison Avenue & Getty Avenue   |                             |

## 1.2 TRAFFIC VOLUMES

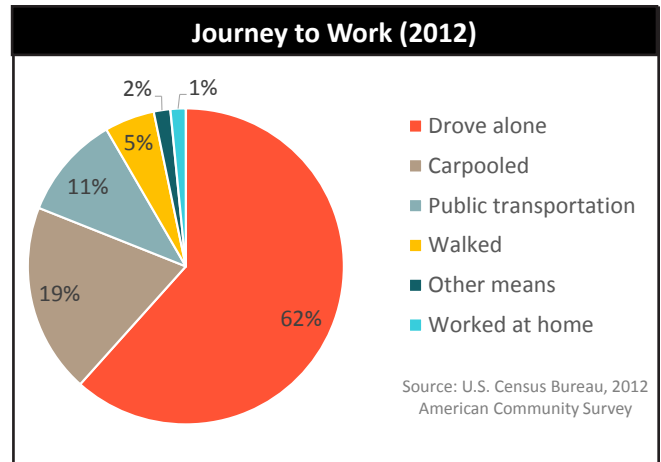
The traffic count for Main Street at MP 6.31 just north of the RSA corridor was 11,741 in 2012.

The traffic count for Madison Avenue at MP 0.03 adjacent to the Main Street corridor was 9,920 in 2011. The traffic count for Getty Avenue at MP 0.93 just north of the RSA intersection of Madison Avenue and Getty Avenue was 12,039 in 2012.

## 1.3 TRANSIT SERVICE

The study corridor is well served by transit with two NJ Transit routes along Main St. Route 74 connects Paterson to Nutley and Newark and the other, Route 190, connects Paterson to Rutherford and New York, and runs approximately every 10 to 20 minutes during the day. Route 722 runs along Getty Avenue connecting Paterson to Ridgewood and Paramus, with limited service on weekdays only.

The jitney traffic is prolific, and the competition for passengers increases aggressive driving behaviors. In addition, the jitneys are significantly represented in the crash history.



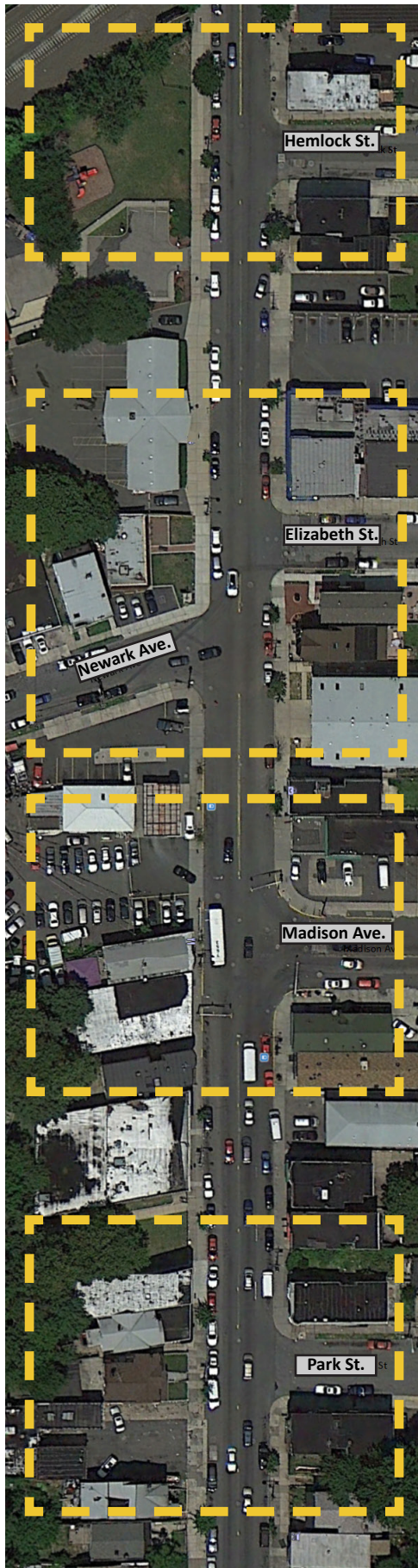
## 1.4 AREA CHARACTERISTICS

County Route 601, Main Street (Main Avenue before it enters Paterson) is an Urban Principal Arterial that runs more than 6.5 miles in a northwest direction crossing Clifton City, Passaic City, and ending in Paterson. It is a two-lane roadway with a speed limit of 35 mph in the RSA corridor. The corridor runs from NJ 21 in the south, crosses NJ 46, the Garden State Parkway, Interstate 80, and ends at the Passaic River in the north.

Main Street is a heavily travelled roadway, primarily to access the adjacent properties. The area is heavily concentrated with small commercial properties, municipal services, and some residential properties. There is an elementary school on George Street, a block east of Main Street. St. Joseph's Hospital is a block north of the RSA corridor. Two NJ Transit bus routes run along Main Street, and numerous jitneys service the same area. In addition, the proximity to St. Joseph's Hospital brings emergency vehicles to the area.

The additional intersection of the RSA is Madison Avenue (CR 649), an Urban Principal Arterial, and Getty Avenue (CR 647), an Urban Collector; Getty Avenue is parallel to Main Street one block to the east. Both roadways are two-lane roadways. Madison Avenue is 25 mph and Getty Avenue is 30 mph through the RSA intersection and increases to 35 mph north of there. Madison Avenue is a major north-south roadway that extends to the Passaic River. The intersection is comprised of larger businesses and warehouses, and there is significant truck traffic. In addition, there are on/off ramps to/from Interstate 80.

## 1.5 INTERSECTION CHARACTERISTICS



### Hemlock Street & Main Street

- Hemlock Street ends at Main Street in a T-intersection on the east side, is stop-controlled, and one-way towards Main Street
- There are no marked crosswalks across Main Street
- There is one lane in each direction, although it is not delineated, with room for parking on both sides of the street

### Elizabeth Street & Main Street

- Ends at Main Street in a T-intersection on the east side, is stop controlled and one-way away from Main Street
- There are no marked crosswalks across Main Street
- There is one lane in each direction, although it is not delineated, with room for parking on both sides of the street

### Newark Avenue & Main Street

- Ends at Main Street in a skewed T-intersection, offset from Elizabeth Street approximately 50 feet, is stop-controlled with two-way traffic
- Gas station on southwest corner with access on both streets
- Small restaurant on northwest corner

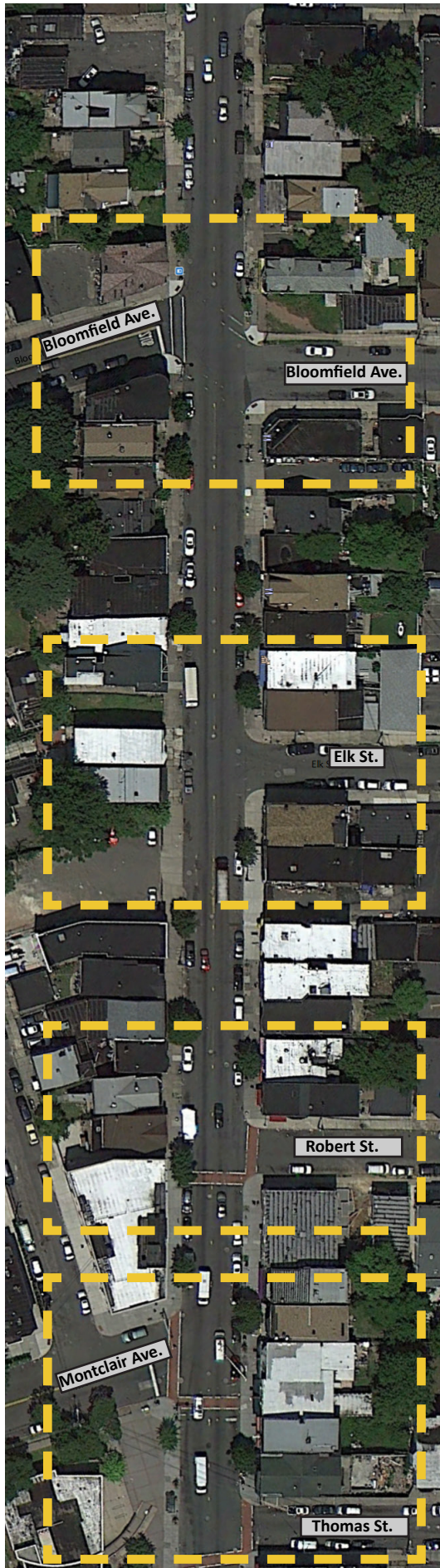
### Madison Avenue & Main Street – Signalized

- Madison Avenue ends at Main Street in a T-intersection
- Gas station on west side of Main Street with one access drive approximately 50 feet north of the intersection
- Bus stops on both sides of the roadway
- Signal phasing: southbound lead left
- Two marked lanes on Main Street

### Park Street & Main Street

- Park Street ends at Main Street in a T-intersection on the east side, is stop-controlled, and one-way towards Main Street
- There are no marked crosswalks across Main Street
- There is one lane in each direction along Main Street, although it is not delineated, with room for parking on both sides
- Mix of residential and small businesses





#### Bloomfield Avenue & Main Street

- Stop-controlled and two-way on the west, one way from Main Street on the east, bus stops
- On the east side of Main Street, the intersection is close to a right angle, it is one-way away from Main Street
- On the west Bloomfield Avenue meets Main Street at a skew and has two-way traffic, the two roads are offset approximately 30 feet
- Because of the offset, the crosswalks on Main Street are long
- There is one lane in each direction along Main Street, although it is not delineated, with room for parking on both sides
- Mix of residential and small businesses; there is a bar on the northwest corner that has a lot of traffic and pedestrian activity
- There are bus stops on both sides of Main Street
- Significant truck traffic along Bloomfield Avenue

#### Elk Street & Main Street

- Elk Street ends at Main Street in a T-intersection on the east side, is stop-controlled, and one-way towards Main Street
- There are no marked crosswalks across Main Street
- There is one lane in each direction, although it is not delineated, with room for parking on both sides
- Mix of residential and small businesses

#### Robert Street & Main Street

- Ends at Main Street in a T-intersection on the east side with one-way travel away from Main Street
- There is one lane in each direction, although it is not delineated, with room for parking on both sides of the street

#### Montclair Avenue & Main Street

- Signalized, T-intersection, two-way traffic, bus stop, library
- Montclair Avenue ends at Main Street in a T-intersection on the west side, is stop-controlled, with two-way traffic
- There is one marked crosswalk across Main Street and across Montclair Avenue
- There is one lane in each direction, although it is not delineated, with room for parking on both sides
- South Paterson Library Community Center is on the southwest corner

#### Thomas Street & Main Street

- Thomas Street ends at Main Street in a T-intersection on the east side, is stop-controlled, and one-way towards Main Street
- There is one marked crosswalk across Main Street
- There is one lane in each direction along Main Street, although it is not delineated, with room for parking on both sides
- Mix of residential and small businesses
- South Paterson Library Community Center on west side of Main Street
- Bus stop on both sides of street

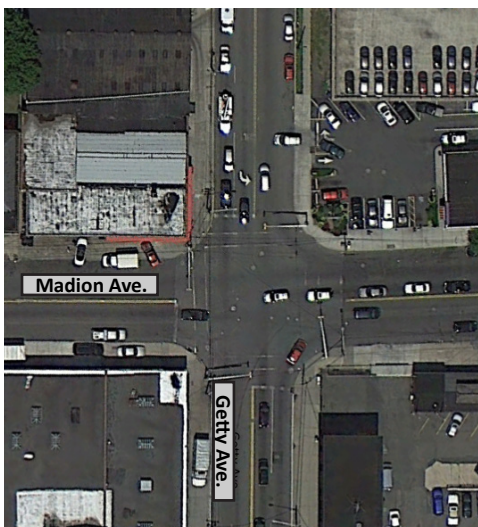


George Street & Main Street

- Ends at Main Street in a T-intersection on the east side, is stop controlled and one-way travel away from Main Street
- One crosswalk
- There is one lane in each direction along Main Street, although it is not delineated, with room for parking on both sides of the street

Gould Avenue & Main Street

- Offset intersection, signalized at both legs
- There are two marked crosswalks across Main Street
- Crossing guard was observed in the morning, using unmarked crosswalk along Main Street
- Split phasing on Gould



Madison Avenue & Getty Avenue – Signalized

- Madison Avenue - westbound has dedicated right and left turn lanes and one through lane; one receiving lane; exit from Interstate 80 ramp
- Madison Avenue - eastbound has two lanes, one dedicated left turn lane and one through/right; receiving lane appears wide enough for two lanes but isn't striped as such
- Getty Avenue - northbound appears wide enough for two lanes but isn't striped; same as for receiving lane
- Getty Avenue - southbound has two lanes, a dedicated left-turn lane and a through lane; receiving road appears wide enough for two lanes but isn't delineated
- Commercial and industrial properties on three of the four corners, Dunkin Donuts on north corner with significant traffic
- Lead left for Getty Avenue southbound



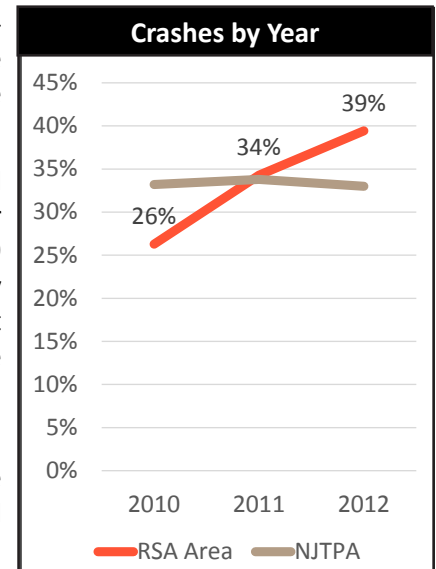
## >> 2.0 CRASH FINDINGS

### 2.1 CHRONOLOGY

According to the NJDOT crash database, there were 175 reportable crashes during the three-year analysis period of 2010 to 2012. The percentage of crashes per year rose over the three-year period as seen in the figure to the right.

Examining concentrations by month over the three-year period, the total ranged between 14 and 15 crashes in most months. During the three year span, the low point was 9 crashes in August and 20 crashes in March, 19 in November. By the day of the week, crash totals were also fairly evenly spread with a range of 19 and 29 crashes. Wednesdays had the lowest number of crashes and Friday had the highest. Regarding the hour of the day, more than a quarter of the crashes occurred between 4 and 8 p.m., with the peak between 6 and 8 p.m.

When compared to crashes in the larger NJTPA region, the crashes in the study area have been increasing whereas crashes at the regional level have maintained relatively constant.



### 2.2 SEVERITY

| Severity          | All People | Pedestrians | Bicyclists |
|-------------------|------------|-------------|------------|
| Killed            | 0          | 0           | 0          |
| Incapacitated     | 2          | 2           | 0          |
| Moderate Injury   | 3          | 0           | 0          |
| Complaint of Pain | 55         | 3           | 0          |

There were 134 property damage only crashes out of a total of 175 crashes; there were 37 crashes with complaints of pain, two moderate injuries, and two incapacitating injuries. There were no fatal crashes.

### 2.3 COLLISION TYPE

Out of the 175 crashes between the years of 2010 and 2012, 46 percent were Same Direction crashes, both Rear End and Side Swipe crashes.

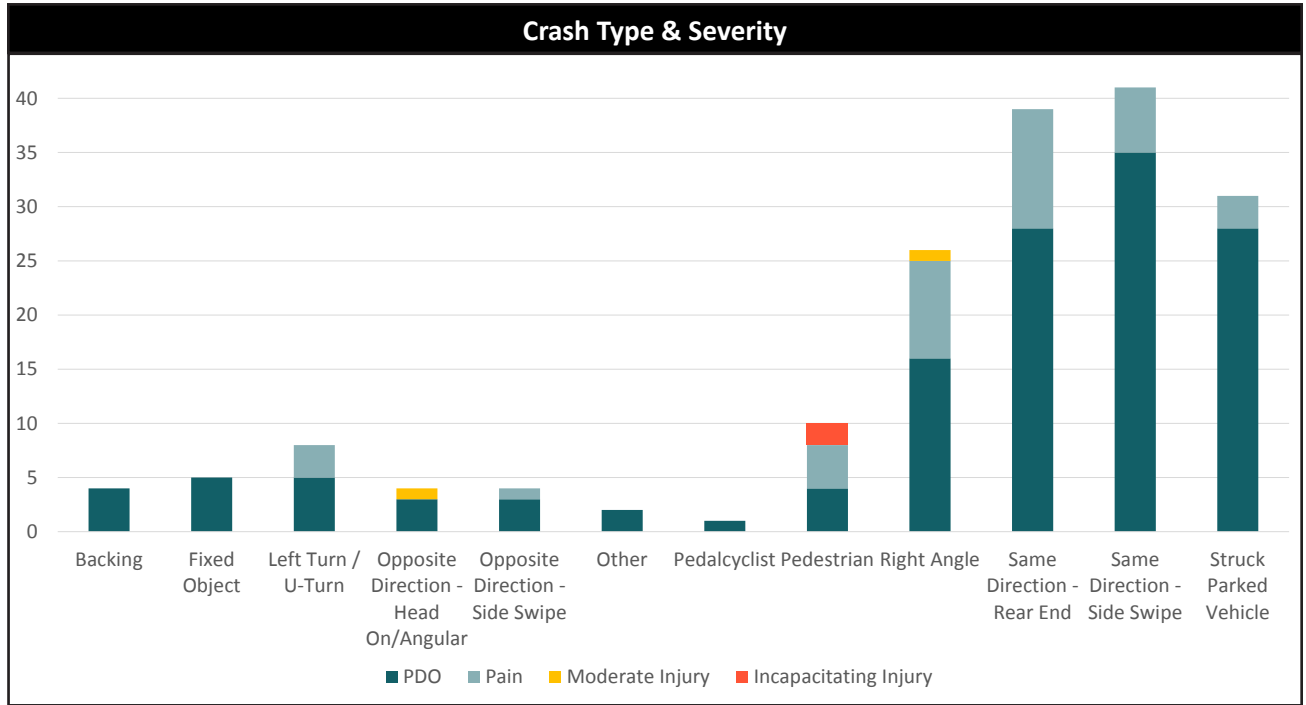
When compared to the NJTPA region, the RSA area has an over-representation of Same Direction - Side Swipe, Right Angle, and Pedestrian crashes.

When examined by intersection, some crash type statistics are even more contrasting. At the intersection of Madison Avenue & Main Street, pedestrian crashes account for 9.1 percent of crashes, more than three times greater than the NJTPA region. Similarly, Same Di-

| Crash Type                           | Count in RSA Area | % in RSA Area | % in NJTPA Region |
|--------------------------------------|-------------------|---------------|-------------------|
| Same Direction - Rear End            | 39                | 22.4%         | 22.7%             |
| Same Direction - Side Swipe          | 41                | 23.6%         | 11.1%             |
| Right Angle                          | 26                | 14.9%         | 18.3%             |
| Opposite Direction - Head On/Angular | 4                 | 2.3%          | 2.1%              |
| Opposite Direction - Side Swipe      | 4                 | 2.3%          | 1.3%              |
| Struck Parked Vehicle                | 31                | 17.8%         | 17.0%             |
| Left Turn / U-Turn                   | 8                 | 4.6%          | 3.1%              |
| Backing                              | 4                 | 2.3%          | 5.5%              |
| Fixed Object                         | 5                 | 2.9%          | 10.4%             |
| Pedestrian                           | 10                | 5.7%          | 2.7%              |
| Pedalcyclist                         | 1                 | 0.6%          | 1.0%              |
| Other                                | 1                 | 0.6%          | 0.7%              |
| TOTAL                                | 174               | 100.0%        | 96.0%             |

rection - Rear End and Same Direction - Side Swipe crashes are relatively more represented at 34.1 percent and 27.3 percent of crashes, respectively.

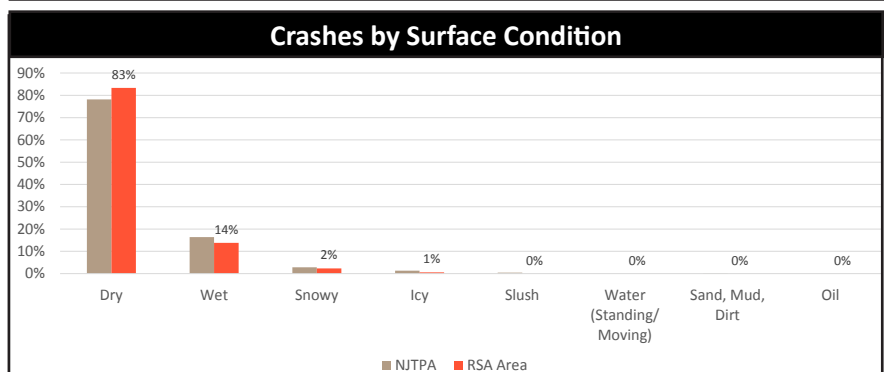
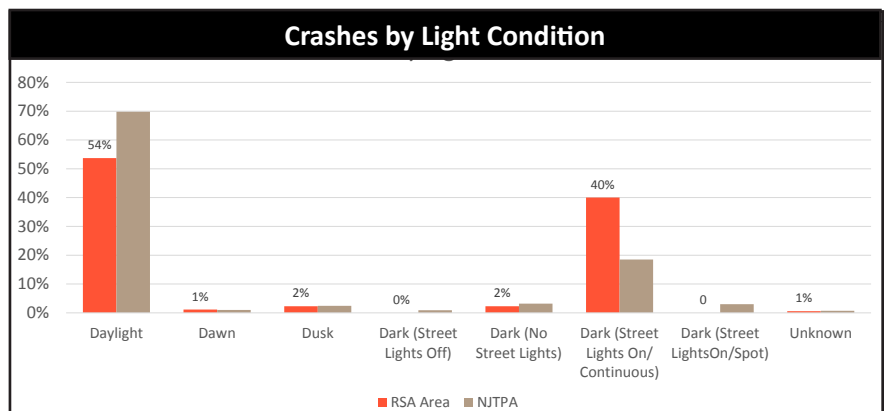
At Madison Avenue and Getty Avenue, Same Direction - Rear End (20.9 percent) and Same Direction - Side Swipe (25.6 percent) are also somewhat overrepresented, but it is Right Angle crashes, one of the more severe kinds of crashes, that makes this intersection unique—23.3 percent of the intersection’s crashes are Right Angle.



## 2.4 ROADWAY SURFACE AND LIGHTING CONDITIONS

Light condition is less typical in that only 54 percent occurred during daylight conditions and 45 percent occurred during dark or partial dark conditions. According to the 2010 to 2012 statewide averages for county routes, daylight crashes typically account for 69 percent of all crashes.

Eighty-three percent of the corridorwide crashes occurred in dry road conditions, 14 percent in wet conditions, and the remainder in snowy, icy, or unknown conditions. The distribution suggests that road surface was not a factor contributing to crash frequency.





## 2.5 CROSS-SECTION GEOMETRY



The cross-section on Main Street is primarily two lanes with additional width that is used for parking in many areas and turning lanes in others. According to the Straight Line Diagram, the width of Main Street is 39 feet. There is almost no delineation of the right edge of travel lane and there is minimal signage for parking and no pavement markings delineating approved parking spaces.

According to the Straight Line Diagram, the cross-section on Madison Avenue is 47 feet wide and Getty Avenue is 48 feet wide. There are two lanes in each direction.

Finally, as a general comment, note that the street grid pattern differs on each side of Main Street, creating several skewed intersections (circled in yellow).

## 2.6 CRASH FREQUENCY BY MILEPOST

### Hemlock Street & Main Street: 1/year

Two of the three crashes were Right Angle crashes and one was a Struck Parked Vehicle crash from a left turning vehicle from Hemlock Street, a property damage only crash.

### Elizabeth Street to Newark Avenue & Main Street: 3/year

- Four of the nine crashes were Same Direction crashes southbound on Main Street
- Three crashes involved turning movements
- One pedestrian was involved crossing Elizabeth Street
- Five crashes resulted in property damage only, and four resulted in complaint of pain injuries.

### Madison Avenue & Main Street: 15/year

- Sixty percent of the crashes were Same Direction. A frequent contributing factor was confusion with lane delineation and/or driving too close to car in front. A few crashes involved vehicles exiting the gas station.
- Four crashes involved pedestrians, three of them involved pedestrians crossing Madison Avenue and left-turning vehicles from Main Street. Another one involved a pedestrian crossing in front of a stopped bus on Main Street and the through traffic didn't see pedestrian. A fifth pedestrian was the catalyst for a rear-end crash. Two of these pedestrian crashes (and none of the others) resulted in incapacitating injuries.
- Five crashes involved Striking Parked Vehicles; some parked vehicles were adjacent to the intersection or within the box.

Approximately half of the crashes were in dark conditions and a quarter were in wet conditions.

### Park Street & Main Street: 1.7/year

Two of the five crashes were Right Angle crashes, one involved limited sight distance due to a parked car, the other due to high speed of travel, which resulted in a moderate injury. Three of the five crashes occurred in dark conditions with street lights on.

#### Bloomfield Avenue & Main Street: 4/year

- Three of the 12 crashes involved pedestrians, one pedestrian crossing outside of crosswalk.
- Buses dropping off passengers were factors in two of the four Same Direction - Side Swipe crashes.
- Three of the crashes involved parked vehicles.
- One of the two Right Angle crashes involved a stopped bus, blocking the sight distance.

#### Elk Street & Main Street: 1.3/year

The four crashes all occurred on Main Street and were all Same Direction crashes. Two of the four involved vehicles backing into parking spaces.

#### Robert Street & Main Street: 2.7/year

- Six of the eight crashes involved parked vehicles; two of these involved buses (or jitneys), and one involved a vehicle parked directly at the intersection.
- Right Angle crashes involved a vehicle pulling out of parking space and the U-turn of a northbound vehicle.

#### Montclair Avenue to Thomas Street & Main Street: 6/year

- Five of the 18 crashes were Same Direction - Rear End; one resulted from a crossing pedestrian, but most were related to driving too close to another vehicle.
- Two of the five Same Direction - Side Swipe crashes involved vehicles pulling into traffic from parking spaces; one involved a U-turn of southbound vehicle; one vehicle trying to pass on the right.
- Four of the eighteen crashes involved striking parked vehicles.
- One crash involving a pedestrian crossing Thomas Street.
- One crash involved the U-turn of a northbound vehicle.

#### George Street & Main Street: 3/year

- Four of the nine crashes involved striking parked vehicles; two of them involved striking vehicle doors.
- Two crashes were Same Direction - Side Swipe, and both involved vehicles attempting to pass other vehicles on Main Street.
- A Pedestrian crash occurred when a pedestrian tried crossing Main Street between two parked cars.
- Two Left-Turn crashes occurred as a result of vehicles turning into driveways on Main Street.

#### Gould Avenue & Main Street: 6.7/year

- Seven out of the 20 crashes were Same Direction - Rear End; four of these involved jitneys, one was caused by a pedestrian.
- Three crashes were Same Direction - Side Swipe, two involved jitneys.
- Three crashes involved striking parked vehicles.
- Two crashes were Right Angle; one caused by pedestrians crossing Main Street.
- Three crashes were Opposite Direction, two on Main Street and one on Gould Avenue.
- There were two Left Turn crashes, turning from Main Street onto Gould Avenue.

#### Madison Avenue & Getty Avenue: 14.3/year

- Five out of 43 total crashes involved Fixed Objects; three of these involved traffic poles, and two involved southbound vehicles on Madison Avenue coming off the ramp.
- Nine crashes were Same Direction - Rear End; most occurred due to driver error/inattention.
- Eleven crashes were Same Direction - Side Swipe; three crashes on Getty Avenue involved lane changes; five occurred between vehicles coming off the ramp on Madison Avenue and involved lane changes; two crashes involved a U-turn on Madison Avenue.
- There were 10 Right Angle crashes; many of them appeared to involve confusion over the traffic signal.
- Of the six Left Turn crashes, one crash involved a U-turn on Getty Avenue.
- There was one Pedalcyclist crash; sun glare may have been a factor.

### >> 3.0 IDENTIFIED ISSUES

| Ref #                                  | Issue   | Main St. Intersections |             |                             |              |          |                 |         |            |                             |            |            |                           |
|--|---|------------------------|-------------|-----------------------------|--------------|----------|-----------------|---------|------------|-----------------------------|------------|------------|---------------------------|
|  |   | Corridorwide           | Hemlock St. | Elizabeth St. & Newark Ave. | Madison Ave. | Park St. | Bloomfield Ave. | Elk St. | Robert St. | Montclair Ave. & Thomas St. | George St. | Gould Ave. | Getty Ave. & Madison Ave. |
| <b>Parking</b>                         |   |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 1                                      | There are many cars parked at the intersections—both at metered and unmetered spaces—that limit sight distance for turning vehicles.  | ✓                      | ✓           |                             | ✓            | ✓        | ✓               | ✓       |            |                             |            | ✓          |                           |
| 2                                      | Several handicap parking spaces may not be warranted.   | ✓                      |             |                             |              |          |                 | ✓       |            |                             |            |            |                           |
| 3                                      | Angled parking may create dangerous backing conditions.   |                        |             |                             |              |          |                 |         | ✓          | ✓                           |            |            |                           |
| <b>Signage &amp; Pavement Markings</b> |   |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 4                                      | Insufficient lane delineation increases driver confusion (parking, bus, turning movements) since at some of the intersections it isn't clear if there are two lanes or one lane through the intersection.   | ✓                      |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 5                                      | The stop bar is missing.  |                        | ✓           |                             |              | ✓        |                 |         |            |                             |            |            |                           |
| 6                                      | Street name signs are not adjacent to the street they apply to.   | ✓                      |             | ✓                           |              |          |                 |         |            |                             |            | ✓          |                           |
| 7                                      | Signs to designate no parking areas are lacking.  | ✓                      |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 8                                      | One-way signs are lacking.  | ✓                      |             | ✓                           |              | ✓        |                 | ✓       | ✓          |                             |            |            |                           |
| 9                                      | Lack of wayfinding signage, particularly signage guiding motorists to St. Joseph's.   | ✓                      |             |                             | ✓            |          |                 |         |            |                             |            | ✓          |                           |
| 10                                     | Breakaway posts are missing on many signs.  | ✓                      |             |                             |              |          |                 | ✓       |            |                             |            |            |                           |
| 11                                     | There is a stop sign on a utility pole on Newark Ave. approach.   |                        |             | ✓                           |              |          |                 |         |            |                             |            |            |                           |
| 12                                     | There is no signage indicating a merge.   |                        |             |                             | ✓            |          |                 |         |            |                             |            |            |                           |
| 13                                     | Southbound traffic coming off the I-80 ramp has no advance warning signage for the Getty Avenue intersection nor is there advanced warning to direct traffic to the correct left, right, or through lane.   |                        |             |                             |              |          |                 |         |            |                             |            | ✓          |                           |
| <b>Pedestrian Accommodations</b>       |   |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 14                                     | Missing pedestrian heads and countdown signals.   |                        |             |                             | ✓            |          |                 |         |            |                             |            | ✓          | ✓                         |
| 15                                     | Jaywalking is frequent and compromises the safety of both vehicles and pedestrians.   | ✓                      |             | ✓                           |              |          |                 |         |            |                             |            |            |                           |
| 16                                     | Marked crosswalks are missing.  | ✓                      | ✓           | ✓                           |              | ✓        |                 |         | ✓          | ✓                           | ✓          | ✓          |                           |
| 17                                     | Due to significant skew of crosswalks, the length may be excessive for pedestrians.   |                        |             |                             |              |          |                 | ✓       |            |                             |            |            |                           |
| 18                                     | <p>Longer crosswalks increase pedestrian exposure to potentially speeding vehicles on:</p> <ul style="list-style-type: none"> <li>Streets with two, bi-directional travel lanes: Main Street (39 feet), Newark Avenue (40 feet), Gould Avenue (35 to 45 feet), Bloomfield Avenue on west (35 feet), Madison Avenue (46 feet), Montclair Avenue (50 feet)</li> <li>Streets with one, one-directional travel lane: Elk Street, Robert Street, Thomas Street and George Street (30 feet each); Hemlock Street, Elizabeth Street, Park Street and Bloomfield Avenue on east (35 feet each)</li> </ul> | ✓                      | ✓           | ✓                           | ✓            | ✓        | ✓               | ✓       | ✓          | ✓                           | ✓          | ✓          |                           |

| Ref #                       | Issue  | Main St. Intersections |             |                             |              |          |                 |         |            |                             |            |            |                           |
|-----------------------------|--|------------------------|-------------|-----------------------------|--------------|----------|-----------------|---------|------------|-----------------------------|------------|------------|---------------------------|
|                             |  | Corridorwide           | Hemlock St. | Elizabeth St. & Newark Ave. | Madison Ave. | Park St. | Bloomfield Ave. | Elk St. | Robert St. | Montclair Ave. & Thomas St. | George St. | Gould Ave. | Getty Ave. & Madison Ave. |
| 19                          | There is a horizontal cross slope in the sidewalk.   |                        |             |                             |              | ✓        |                 |         |            |                             |            |            |                           |
| 20                          | A crossing guard was observed crossing students on the “missing” crosswalk, but it may be unsafe due to conflicting vehicle/pedestrian turning movements and signal phasing.     |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| 53                          | Cars were observed parked on sidewalk.   |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| <b>Traffic Signals</b>      |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 21                          | Location of some of the signal heads are not clearly visible .   |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| 22                          | The 8-inch signal heads may limit visibility.  |                        |             | ✓                           |              |          |                 |         |            |                             |            | ✓          | ✓                         |
| 23                          | The lack of uniformity of traffic signals can be confusing (both horizontal and verticle signal heads).  |                        |             |                             |              |          |                 |         | ✓          |                             |            | ✓          |                           |
| <b>Traffic Operations</b>   |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 24                          | There may be driver confusion from the numerous one-way streets that lack a consistant pattern.  | ✓                      |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 25                          | Lanes appear wide in some sections and may contribute to speeding.   | ✓                      | ✓           |                             |              |          |                 |         |            |                             |            |            |                           |
| 26                          | There are a significant number of emergency vehicles in the corridor, due to the proximity of St. Joseph's Hospital.   | ✓                      |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 27                          | Heavy truck volume was observed for through and turning movements.   |                        |             |                             |              |          | ✓               |         |            |                             |            |            | ✓                         |
| 28                          | Many vehicles travel at excessive speed around the curve, coming off of the I-80 ramp.   |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| 29                          | Offset for left turns from Madison Avenue may reduce visibility.   |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| <b>Bus and transit</b>      |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 30                          | The conditions of bus shelter are poor.  |                        |             | ✓                           |              |          |                 |         | ✓          |                             |            |            |                           |
| 31                          | Location of bus stop is not optimal.   |                        |             | ✓                           |              |          |                 |         |            |                             |            | ✓          |                           |
| 32                          | Bus stop sign is missing arrow.  |                        |             |                             |              |          |                 |         |            | ✓                           |            |            |                           |
| <b>Geometry</b>             |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 33                          | The grid to the west of Main Street is not well aligned to the grid east of Main Street, some of the intersections are complicated for both drivers and pedestrians to navigate. |                        |             |                             |              |          |                 | ✓       |            |                             |            |            | ✓                         |
| <b>Roadway</b>              |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 34                          | Inlets are not safe for bicycles.  | ✓                      | ✓           |                             |              | ✓        |                 |         |            |                             |            |            |                           |
| 35                          | The lighting appears to be inadequate for the needs of both drivers and pedestrians.   | ✓                      |             | ✓                           |              |          |                 |         |            |                             |            |            | ✓                         |
| 36                          | Mailbox on the southeast corner limits sight distance for turning vehicles.  |                        | ✓           |                             |              |          |                 |         |            |                             |            |            |                           |
| <b>Driveways and Access</b> |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 37                          | There are many driveway entrances close to the intersection .  |                        |             | ✓                           |              |          |                 |         |            |                             |            |            |                           |
| 39                          | The ADA ramp on the northeast corner is being used as an illegal driveway.   |                        |             |                             |              |          | ✓               |         |            |                             |            |            |                           |

| Ref #                | Issue  | Main St. Intersections |             |                             |              |          |                 |         |            |                             |            |            |                           |
|----------------------|--|------------------------|-------------|-----------------------------|--------------|----------|-----------------|---------|------------|-----------------------------|------------|------------|---------------------------|
|                      |  | Corridorwide           | Hemlock St. | Elizabeth St. & Newark Ave. | Madison Ave. | Park St. | Bloomfield Ave. | Elk St. | Robert St. | Montclair Ave. & Thomas St. | George St. | Gould Ave. | Getty Ave. & Madison Ave. |
| 40                   | There is an old curb cut on the northwest corner that blocks the sidewalk.                         |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| 51                   | Hemlock Street is allegedly used as a cut-through alternative to Madison Avenue from Getty Avenue. |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 52                   | Lack of curb creates inconsistently large driveway entrance to grocery store.                      |                        |             |                             |              |          |                 |         |            | ✓                           | ✓          |            |                           |
| <b>Maintenance</b>   |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 41                   | Some pavement markings are worn or no longer visible.  | ✓                      |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 42                   | Inlet is full of dirt and/or garbage.  |                        |             |                             |              |          |                 | ✓       |            |                             |            |            |                           |
| 43                   | The presence of numerous potholes affects rideability.   |                        |             |                             |              | ✓        |                 |         |            |                             |            |            |                           |
| 44                   | Pedestrian heads are not functioning correctly.  |                        |             |                             |              |          |                 |         |            |                             |            | ✓          | ✓                         |
| 45                   | Uneven or broken sidewalks and obstacles in the sidewalk are tripping hazards.                     | ✓                      | ✓           |                             |              |          |                 |         |            | ✓                           |            | ✓          |                           |
| 46                   | Vegetation is blocking the wayfinding sign.  |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| <b>Crash History</b> |  |                        |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 47                   | There were a significant number of crashes involving jitneys and buses.                            | ✓                      |             |                             |              |          |                 |         |            |                             |            |            |                           |
| 48                   | There were a significant number of pedestrian crashes and pedestrians involved in the crashes.     | ✓                      |             | ✓                           |              |          |                 |         |            |                             |            |            |                           |
| 49                   | There are many Same Direction - Side Swipe crashes westbound on the east leg of Getty Avenue.      |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |
| 50                   | There are many Left Turn and Right Angle crashes.  |                        |             |                             |              |          |                 |         |            |                             |            |            | ✓                         |



## VISUALIZING ISSUES - CORRIDORWIDE



Many crosswalks across Madison Avenue are unmarked. There are two travel lanes, but the street measures 39 feet across, a long distance for pedestrians to cross exposed, without a crosswalk to alert drivers to their presence. Wide lanes without visual or physical definition may encourage speeding.



Many street signs are missing or not adjacent to the street they apply to.



Lack of wayfinding signage, specifically in regards to location of St. Joseph's, contributes to the issues.



Many vehicles are parked in illegal areas. Signs prohibiting parking allow for fine enforcement, but the signs are currently only present near the Hemlock Street area.



Sidewalk obstacles like tree stumps, broken pavement, etc. are tripping hazards.



Lighting seems to be insufficient throughout the corridor.



Five percent of crashes in the study area involved buses or jitneys, significantly more than the NJTPA average of 1 percent. In particular, the unpredictability of drivers was noted



Trash in the drain grate contributes to the problem.



Many vehicles were observed to be parked close to the intersection.



# VISUALIZING ISSUES - MAIN STREET & HEMLOCK STREET TO NEWARK AVENUE



Many vehicles are parked in illegal areas. Signs prohibiting parking allow for fine enforcement, but the signs are currently only present near the Hemlock Street area.

Elizabeth Street needs signs to indicate it is one-way.

There is a stop sign on a utility pole on the Newark Avenue approach.



51 Hemlock Street is alleged to be used as a cut-through alternative to Madison Avenue

Missing stop bar



Sight visibility is limited by cars parking too near the intersection and this mailbox.



Many crosswalks across Madison Avenue are unmarked. There are two travel lanes, but the street measures 39 feet across, a long distance for pedestrians to cross exposed without a crosswalk to alert drivers to their presence. Wide lanes without visual or physical definition may encourage speeding.

# VISUALIZING ISSUES - MAIN STREET & MADISON AVENUE TO PARK STREET



The gas station at the Madison Avenue intersection has three driveway entrances, one of which is very close to the intersection. There are several crashes that involved vehicles utilizing this driveway.



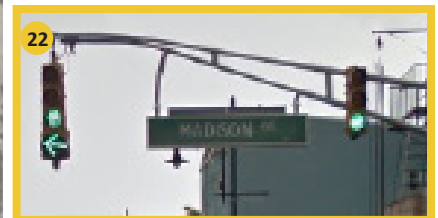
There are no southbound merge signs or pavement markings on south leg.



There are no northbound merge signs or pavement markings on the north leg.



Over a period of three years, three crashes occurred here that involved southbound left-turning vehicles and pedestrians crossing Madison Avenue.



The 8-inch signal head (green ball) is not as visible as the 12-inch arrow.

Lacking one-way signage.

Missing stop bar.



# VISUALIZING ISSUES - MAIN STREET & BLOOMFIELD AVENUE TO ELK STREET



The skew of the Bloomfield Avenue intersection makes the legal crosswalk 52 feet long, 13 feet longer than the actual curb-to-curb width. This added distance may reduce the attractiveness to cross in the crosswalk, leading pedestrians to cross outside of the legal area.



The ADA ramp on the northeast corner of Bloomfield Avenue is being used as a driveway to an illegal parking lot.



Potholes affect rideability.

**38** Many trucks, especially recycling trucks, were observed on Bloomfield Avenue eastbound crossing Main Street (possibly travelling on Hazel and Marshall).

**10** Missing break-away posts.

**42** Inlet full of garbage.

**16** Missing marked crosswalk.

**19** Steep horizontal slope on sidewalk.

**2** Handicap parking in intersection.

**8** Lacking one-way signage.

**VISUALIZING ISSUES - MAIN STREET & ROBERT STREET TO THOMAS STREET**



Missing marked crosswalk.

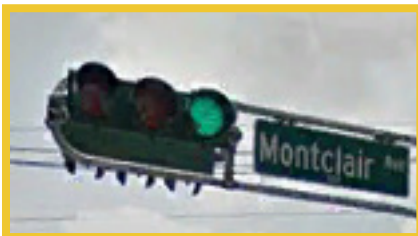
16

Lacking one-way signage.

8

Missing marked crosswalk across Main Street on north leg.

16



Lack of uniform traffic signals may be confusing.

1

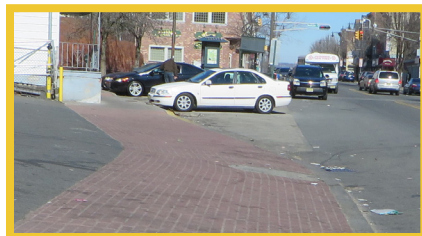
Montclair Ave.

23

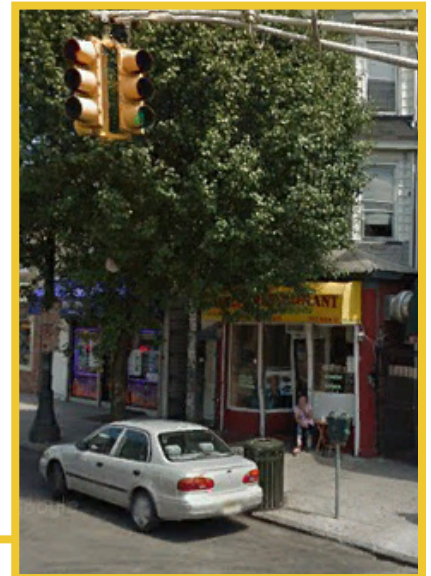
45

Thomas St.

3



Angled parking may create dangerous backing issues and inconsistent sidewalk.



Illegal parking meters located in the intersection.



Broken sidewalk and curb cut on south leg of Montclair Avenue, east side.



# VISUALIZING ISSUES - MAIN STREET & GEORGE STREET TO GOULD AVENUE



Lack of curb creates a large driveway entrance that is inconsistent with access patterns along the corridor and exposes pedestrians to potentially dangerous backing behaviour.



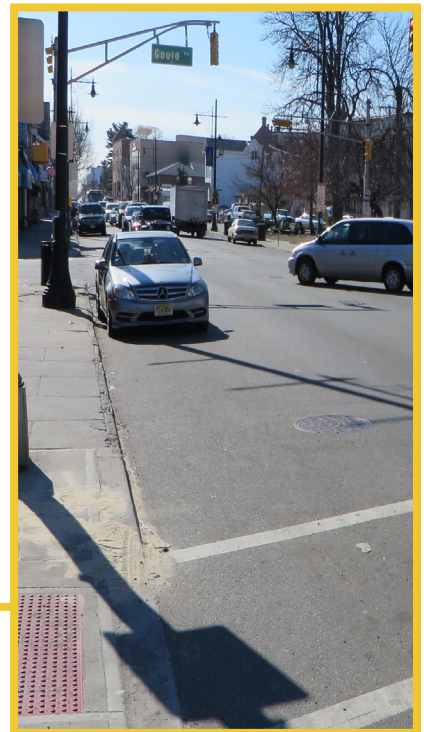
Pedestrian heads are not working.

This foundation may be a tripping hazard on the sidewalk.



George St.

Bus sign is missing arrow that indicates stop location.



Cars were observed to be illegally parked within the skewed intersection of Gould Avenue & Main Street.

Gould Ave.





# VISUALIZING ISSUES - MADISON AVENUE & GETTY AVENUE

Vegetation blocks this wayfinding sign.



Many vehicles were observed to be traveling at excessive speeds around the curve coming off from the I-80 ramp.



Many crashes occurred on the west-bound approach to the east leg of Getty Avenue & Madison Avenue. Vehicles were also observed to be stopped in the roadway as they were waiting to enter the driveway at Dunkin' Donuts.

Street signs are not very visible, pavement markings are very worn, 8-inch signal heads have limited visibility and may contribute to Right Angle crashes.



Missing or non-functioning pedestrian heads on every corner of the Getty Avenue & Madison Avenue intersection.



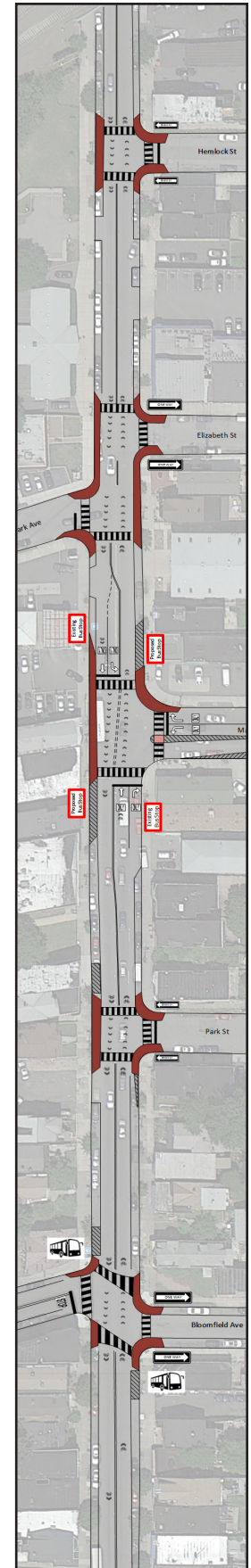
Vehicles parked on sidewalk on both sides of the eastern leg of Madison Avenue.



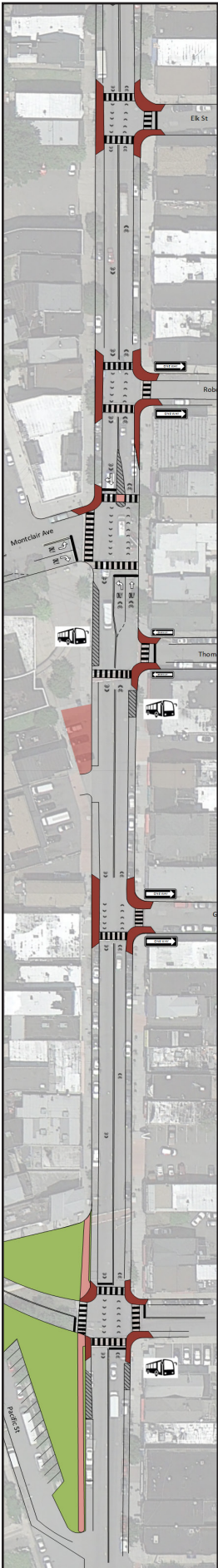
Heavy truck traffic and challenging turning movements were observed.

>> 4.0 RECOMMENDATIONS

| Ref #                                | Location  | Safety Benefit | Time Frame     | Cost   | Jurisdiction                      | Issue Ref # |
|--------------------------------------|---|----------------|----------------|--------|-----------------------------------|-------------|
| <b>CORRIDORWIDE</b>                  |   |                |                |        |                                   |             |
| <b>Parking</b>                       |   |                |                |        |                                   |             |
| A-1                                  | Remove parking meters within and adjacent to the intersection.  | Medium / High  | Short          | \$     | Paterson City & Parking Authority | 1           |
| A-2                                  | Increased enforcement to limit parking adjacent to intersection.  | High           | Short          | \$     | Paterson PD                       | 1           |
| A-3                                  | Consider installing "NO PARKING" signs throughout the corridor.   | Medium / High  | Short          | \$     | Paterson City                     | 1, 7        |
| A-4                                  | Painted curb and/or hatching on roadway to indicate parking prohibition.  | Medium / High  | Short          | \$     | Paterson City                     | 1           |
| A-5                                  | Review the authorized handicap parking spaces.  | Medium         | Short          | \$     | Paterson PD                       | 2           |
| <b>Signs &amp; Pavement Markings</b> |   |                |                |        |                                   |             |
| A-6                                  | Install uniform street name signs on every street in corridor.  | Medium / Low   | Short          | \$\$   | Paterson City                     | 6           |
| A-7                                  | An assessment of existing signage should be conducted to evaluate if additional wayfinding signs are needed, especially to direct drivers to the St. Joseph Hospital main entrance and the emergency entrances. | Medium         | Medium         | \$     | St. Joseph's Hospital             | 9           |
| A-8                                  | One-way signs should be added wherever they are lacking.  | Medium / High  | Short          | \$     | Paterson City                     | 8, 24       |
| A-9                                  | Replace sign posts with breakaway posts.  | Medium / Low   | Medium         | \$     | Paterson City                     | 10          |
| <b>Pedestrian Accommodations</b>     |   |                |                |        |                                   |             |
| A-10                                 | Investigate adding painted, texturized, or poured concrete pedestrian refuge islands.   | Medium / High  | Medium / Long  | \$     | Paterson City                     | 25, 18      |
| A-11                                 | Install RRFB at crosswalks with a high volume of pedestrians.   | High           | Medium / Long  | \$\$   | Paterson City                     | 18          |
| A-12                                 | Consider installation of bulb-outs (painted or physical), which would shorten the crosswalk and help delineate the allowed parking.   | Medium / High  | Medium / Long  | \$\$\$ | Paterson City                     | 18          |
| A-13                                 | Repair any sidewalk areas that are tripping hazards .   | Medium         | Medium         | \$\$   | Paterson City                     | 45, 19      |
| A-14                                 | Install or replace pedestrian heads with countdown signals.   | Medium / High  | Short / Medium | \$\$   | Paterson City                     | 14, 21      |
| A-15                                 | Installation of high visibility marked crosswalks may increase pedestrian safety and alert motorists to pedestrian crossing.  | Medium / High  | Short          | \$     | Paterson City                     | 18, 25      |
| A-16                                 | Add centerline "STOP FOR PEDESTRIANS" sign.   | High           | Short          | \$     | Paterson City                     | 18, 25      |
| A-17                                 | Install advanced warning for crosswalk crossings, or general "PEDESTRIAN CROSSING AREA" with specific call out additionally at each crosswalk (maybe on crosswalk).   | Medium / High  | Short          | \$\$   | Paterson City                     | 18, 25      |
| <b>Traffic Signals</b>               |   |                |                |        |                                   |             |
| A-18                                 | Upgrading from 8-inch to 12-inch LED increases visibility of signal heads.  | Medium / High  | Medium         | \$\$   | Paterson City                     | 22          |
| A-19                                 | Plan on uniform orientation of signal heads as traffic signals are being upgraded.  | Medium         | Medium / High  | \$\$\$ | Paterson City                     | 23          |
| A-20                                 | Evaluate the addition of a pre-emptive system for emergency vehicles with an adaptive system throughout the corridor to coordinate the signals.   | High           | High           | \$\$\$ | Paterson City                     | 26          |
| <b>Traffic Operations</b>            |   |                |                |        |                                   |             |
| A-21                                 | A study should be conducted to evaluate the one-way network of streets and evaluate if there might be a need for some prohibiting left-turns.   | Medium         | Medium         | \$\$   | Paterson City                     |             |







| Ref #                  | Location  | Safety Benefit | Time Frame   | Cost   | Jurisdiction   | Issue Ref # |
|------------------------|---|----------------|--------------|--------|----------------|-------------|
| A-22                   | Increased enforcement may help to increase safety of jitney operations.   | High           | Short        | \$     | Paterson PD    | 47          |
| Roadway                |   |                |              |        |                |             |
| A-23                   | Replace inlet covers with bicycle friendly grates.  | Medium         | Short        | \$\$   | Passaic County | 34          |
| A-24                   | Delineating the edge of the travel lane may reduce speeding.  | Medium/High    | Short        | \$     | Passaic County | 25          |
| A-25                   | Professional staff should conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. | Medium/High    | Short/Medium | \$\$   | Paterson City  | 35          |
| A-26                   | The addition of larger trees may help to improve safety by separating the pedestrians from the vehicles.  | Medium         | Medium/Long  | \$\$\$ | Paterson City  | 25          |
| Bicycle Accommodations |   |                |              |        |                |             |
| A-27                   | Install sharrow markings along Main Street in accordance with the guidelines set forth in the MUTCD and the Passaic County Complete Streets Policy and Guidelines document. | Medium         | Short        | \$\$   | Passaic County |             |



Image: Andrew Besold on Walk Bike Jersey Blog

LEFT: Hoboken's use of plastic bollards prevents vehicles from parking at the intersection. The bollards are glued to the pavement with a simple epoxy and can be easily relocated if needed.

BELOW: In-street pedestrian warning sign

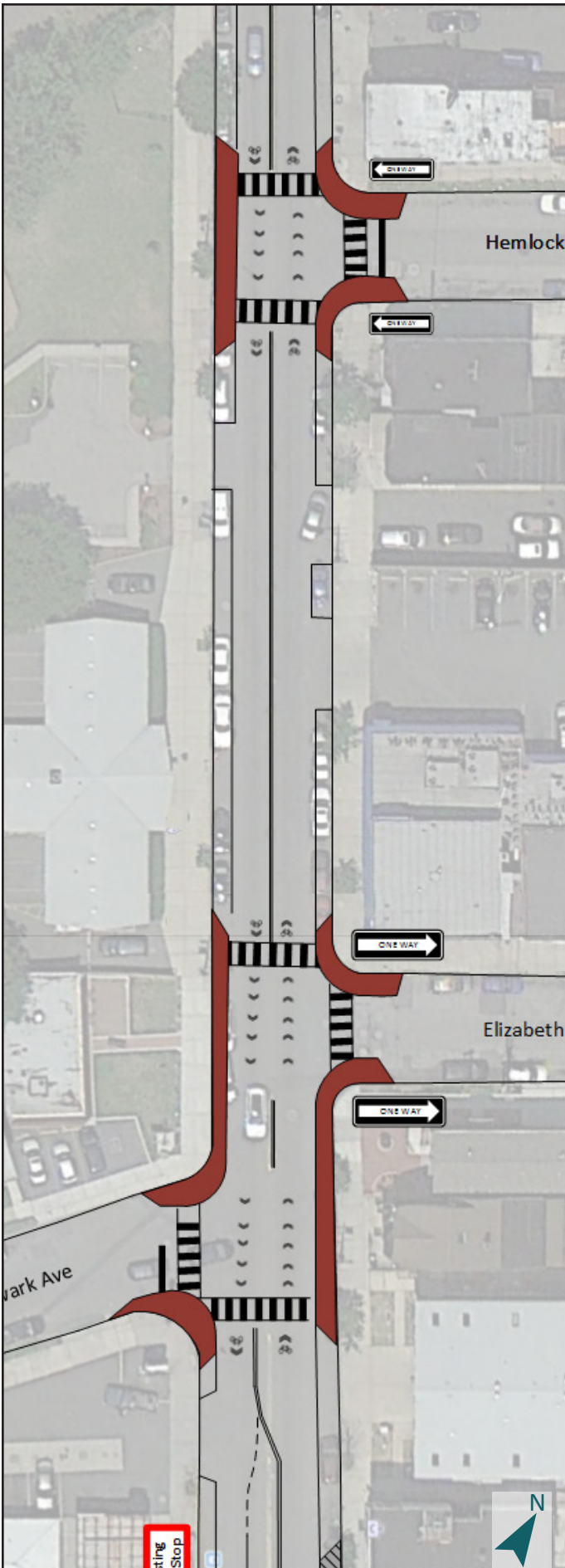
Image: FHWA

Pedestrian refuge islands are recognized by the FHWA as a proven safety countermeasure, reducing pedestrian crashes by 46 percent and motor vehicle crashes by up to 39 percent. They act as a visual barrier to slow traffic and help to alert drivers to the presence of a crosswalk. They may also provide a refuge for pedestrians who are not able to cross the entire length of the intersection in one movement.

A commonly expressed concern with refuge islands is that they will impede emergency vehicles from full use of the center lane. One way to circumvent this concern is to consider the use of a mountable curb shown in the image at right in Princeton, New Jersey.



Image: Google Earth

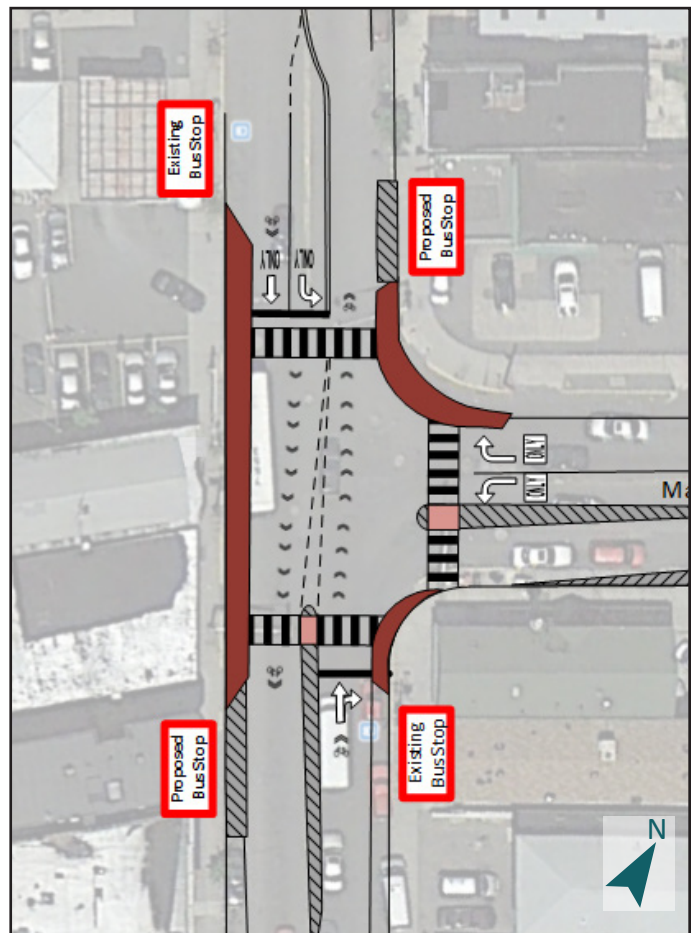
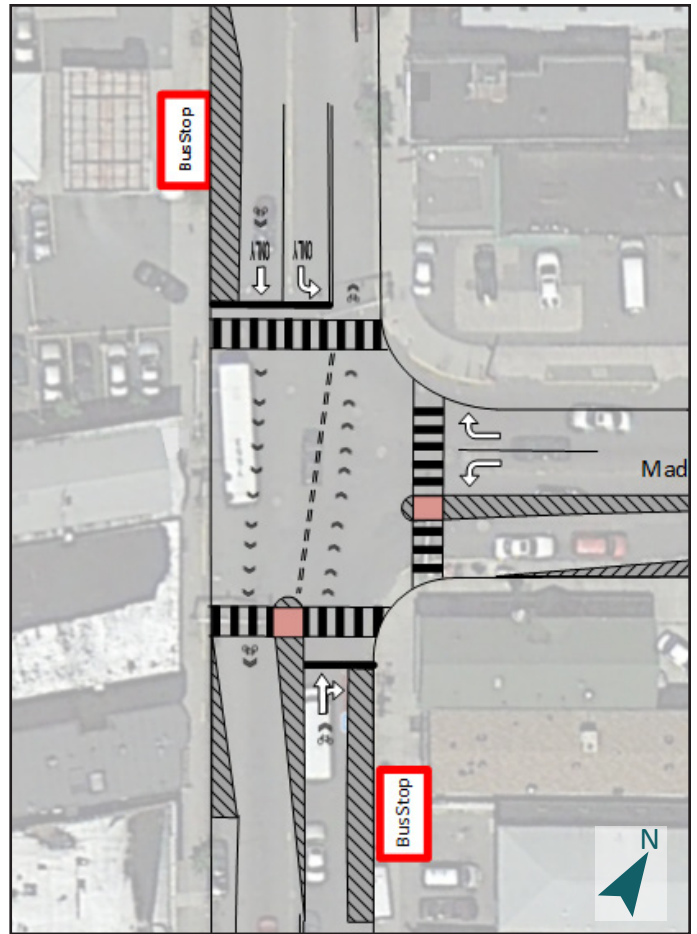


| Ref #                        | Location  | Safety Benefit | Time Frame | Cost | Jurisdiction  | Issue Ref # |
|------------------------------|---|----------------|------------|------|---------------|-------------|
| HEMLOCK STREET & MAIN STREET |   |                |            |      |               |             |
| B-1                          | Make right turn only from Hemlock Street. [TRAFFIC OPERATIONS]  | Medium         | Short      | \$   | Paterson City | 1           |
| B-2                          | Ensure that the missing stop bar and other roadway markings are replaced. [PAVEMENT MARKINGS]   | Medium /Low    | Short      | \$   | Paterson City | 41          |
| B-3                          | Traffic calming devices along Hemlock Street, such as speed humps or chicanes, may help reduce speed and prevent vehicles from using Hemlock Street as a bypass to Madison Avenue. [TRAFFIC OPERATIONS] | Medium         | Short      | \$\$ | Paterson City | 25, 51      |
| B-4                          | Moving the location of the mailbox will improve sight distance. [ROADWAY]   | Medium         | Short      | \$   | Paterson City | 36          |
| Corridor recommendations     |   |                |            |      |               |             |

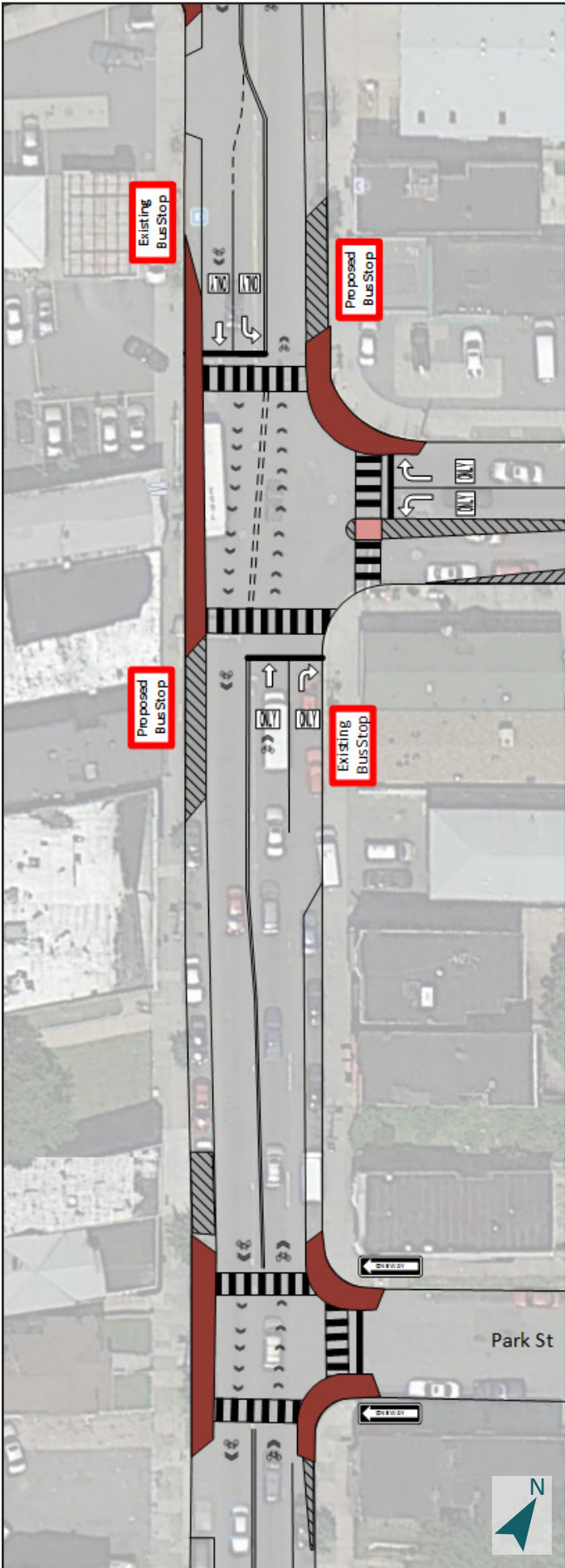
| Ref #                            | Location   | Safety Benefit | Time Frame    | Cost     | Jurisdiction  | Issue Ref # |
|----------------------------------|--|----------------|---------------|----------|---------------|-------------|
| ELIZABETH STREET & NEWARK AVENUE |  |                |               |          |               |             |
| C-1                              | Installation of bulbouts. [PARKING, PEDESTRIAN ACCOMODATIONS]  | Medium /High   | Short/ Medium | \$/ \$\$ | Paterson City | 1, 25       |
| C-2                              | Install high visibility crosswalks across Main Street. There are three legal crossings; consider if all are warranted. [PEDESTRIAN ACCOMMODATIONS] | High           | Short         | \$       | Paterson City | 25, 41, 16  |
| C-3                              | Correctly mount stop sign on Newark Avenue approach. [SIGNAGE]   |                |               |          | Paterson City |             |
| Corridor recommendations         |  |                |               |          |               |             |



| Ref #                                   | Location   | Safety Benefit | Time Frame   | Cost        | Jurisdiction               | Issue Ref # |
|---|--|----------------|--------------|-------------|----------------------------|-------------|
| <b>MADISON AVENUE &amp; MAIN STREET</b> |  |                |              |             |                            |             |
| <b>Signs &amp; Pavement Markings</b>    |  |                |              |             |                            |             |
| D-1                                     | There is sufficient width for two southbound lanes; determine feasibility of delineated for left turn and through traffic while maintaining bus operations.  | Medium/High    | Short/Medium | \$\$/\$\$\$ | Paterson City              | 4           |
| D-2                                     | Consider installing a designated right turn lane for northbound vehicles (If right turn lane provided, bus stop will have to be moved past intersection.)  | Medium         | Medium/Long  | \$\$        | Paterson City              | 45, 31      |
| D-3                                     | Provide clear information about lane delineation, including right and left turn lanes for westbound traffic, striping for one lane away from intersection.   | Medium         | Medium       | \$\$        | Paterson City              | 4, 12       |
| D-4                                     | If lanes merge, install warning sign indicating the merge.   | Medium         | Short        | \$          | Paterson City              | 4           |
| D-5                                     | Add double-headed arrow at T-intersection.   | Low            | Medium       | \$\$        | Passaic County             |             |
| <b>Pedestrian Accommodations</b>        |  |                |              |             |                            |             |
| D-6                                     | Consider installing a pedestrian refuge island on Madison Avenue.  | High           | Medium/Long  | \$\$        | Paterson City              | 18          |
| D-7                                     | Evaluate signal phasing alternatives such as a lead pedestrian signal and lag left turn.   | High           | Short        | \$          | Paterson City              | 18, 48      |
| <b>Traffic Signals</b>                  |  |                |              |             |                            |             |
| D-9                                     | Evaluate protected vs. protected permitted phasing.  | Medium         | Short        | \$          | Paterson City              | 48          |
| <b>Roadway</b>                          |  |                |              |             |                            |             |
| D-10                                    | Consider prohibiting left turns into southern gas station driveway as there is another entrance on Main Street and on Newark Avenue.   | Medium/High    | Short        | \$          | Paterson City              | 37          |
| D-11                                    | Investigate if there are restrictions to turning movements in site plans.  | Medium         | Short        | \$          | Paterson City              | 37          |
| <b>Bus &amp; Transit</b>                |  |                |              |             |                            |             |
| D-12                                    | Repair/ replace southbound bus shelter, allowing sufficient sidewalk width for pedestrians.  | Medium         | Medium       | \$\$/\$\$\$ | Paterson City & NJ Transit | 30          |
| D-13                                    | Consider moving the bus stop/shelter on southbound Main Street past the intersection, moving the double yellow lines east to allow for a through lane and a left turn lane (this would involve removing a loading zone). | Medium/High    | Medium       | \$\$/\$\$\$ | Paterson City & NJ Transit | 31          |
| D-14                                    | Consider moving northbound bus stop/shelter past the intersection.   | Medium/High    | Medium/Long  | \$\$        | Paterson City & NJ Transit | 31          |
| <b>Corridor recommendations</b>         |  |                |              |             |                            |             |







BEFORE



AFTER

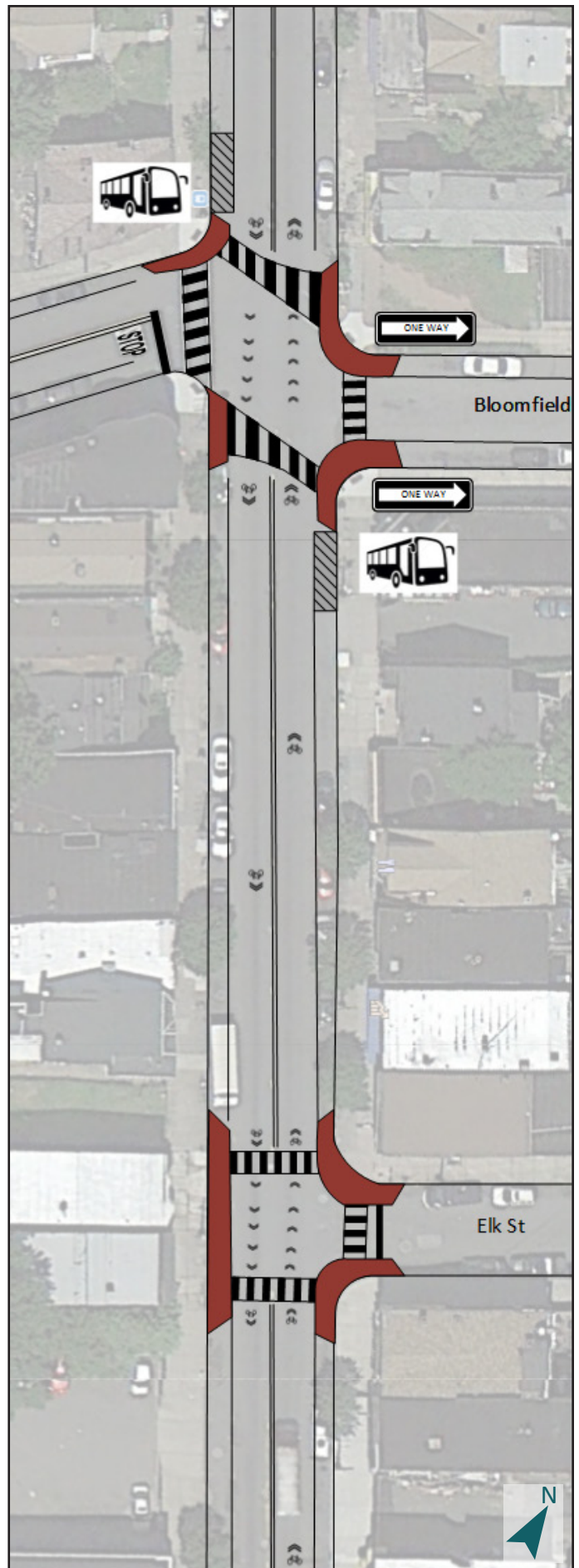
Painted bulb-outs or curb extensions, like those pictured above, are quick, inexpensive way to provide safer pedestrian accommodations. They may also be augmented with landscaping elements like planters, benches, bike racks, or garbage receptacles. Notice that the image above also features ergonomic crosswalks that reflect pedestrian desire lines, high visibility crosswalks, and a parking area that doesn't intersect onto sidewalk space.

Images: NYC DOT

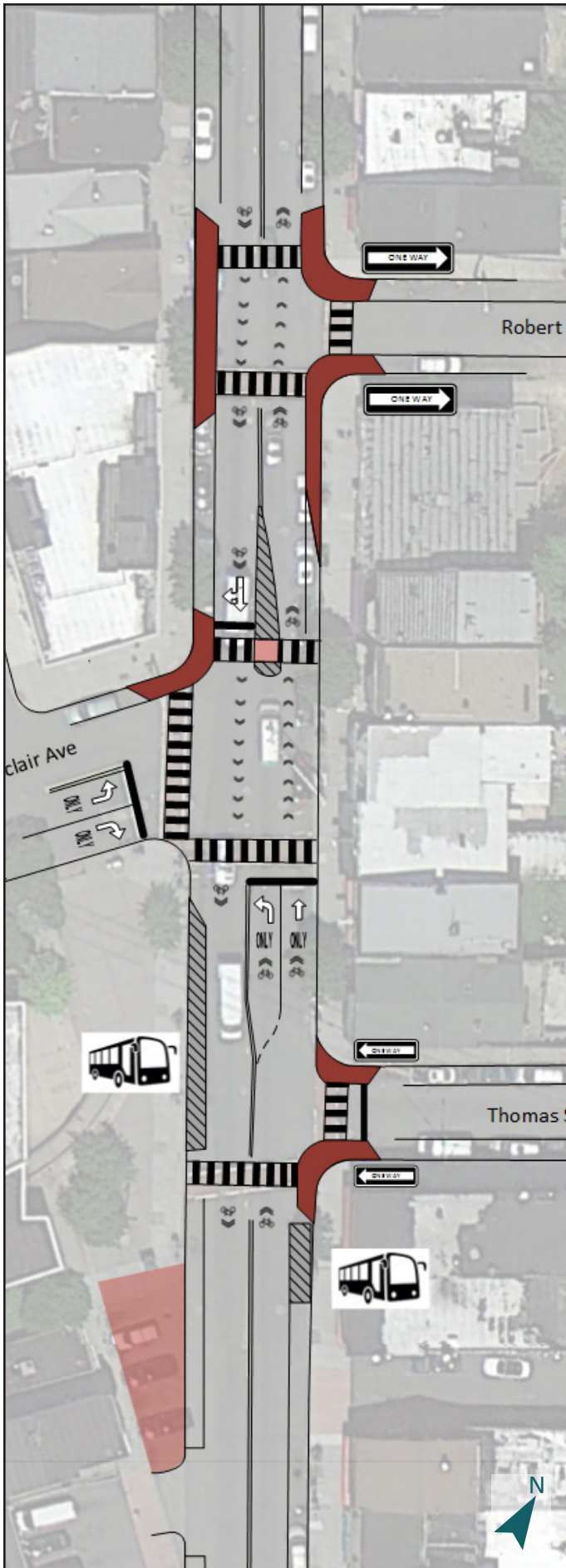
| Ref #                    | Location  | Safety Benefit | Time Frame | Cost | Jurisdiction  | Issue Ref # |
|--------------------------|---|----------------|------------|------|---------------|-------------|
| PARK STREET              |   |                |            |      |               |             |
| F-1                      | Ensure that the missing stop bar and other roadway markings are replaced. [PAVEMENT MARKINGS] | Medium         | Short      | \$   | Paterson City | 5           |
| Corridor recommendations |   |                |            |      |               |             |

| Ref #                    | Location  | Safety Benefit | Time Frame | Cost | Jurisdiction  | Issue Ref # |
|--------------------------|---|----------------|------------|------|---------------|-------------|
| BLOOMFIELD AVENUE        |   |                |            |      |               |             |
| G-1                      | Consider the installation of ergonomic crosswalks, to provide for natural pedestrian movements. [PEDESTRIAN ACCOMMODATIONS] | Medium         | Short      | \$   | Paterson City | 16, 41      |
| G-2                      | Installation of bollards would prevent cars from using the ADA ramp as a driveway. [PEDESTRIAN ACCOMMODATIONS]              | Low            | Short      | \$   | Paterson City | 39          |
| G-3                      | Investigate if signal is warranted. [TRAFFIC SIGNALS]   | High           | Medium     | \$\$ | Paterson City | 33          |
| G-4                      | Investigate routing truck traffic to the Route 19 ramp and prohibit truck traffic on Bloomfield Ave. [TRAFFIC OPERATIONS]   | Low            | Medium     | \$   | Paterson City | 33          |
| G-5                      | Repair potholes. [MISC]   | Medium         | Medium     | \$   | Paterson City | 43          |
| Corridor recommendations |   |                |            |      |               |             |

| Ref #                    | Location | Safety Benefit | Time Frame | Cost | Jurisdiction | Issue Ref # |
|--------------------------|----------|----------------|------------|------|--------------|-------------|
| ELK STREET               |          |                |            |      |              |             |
| Corridor recommendations |          |                |            |      |              |             |



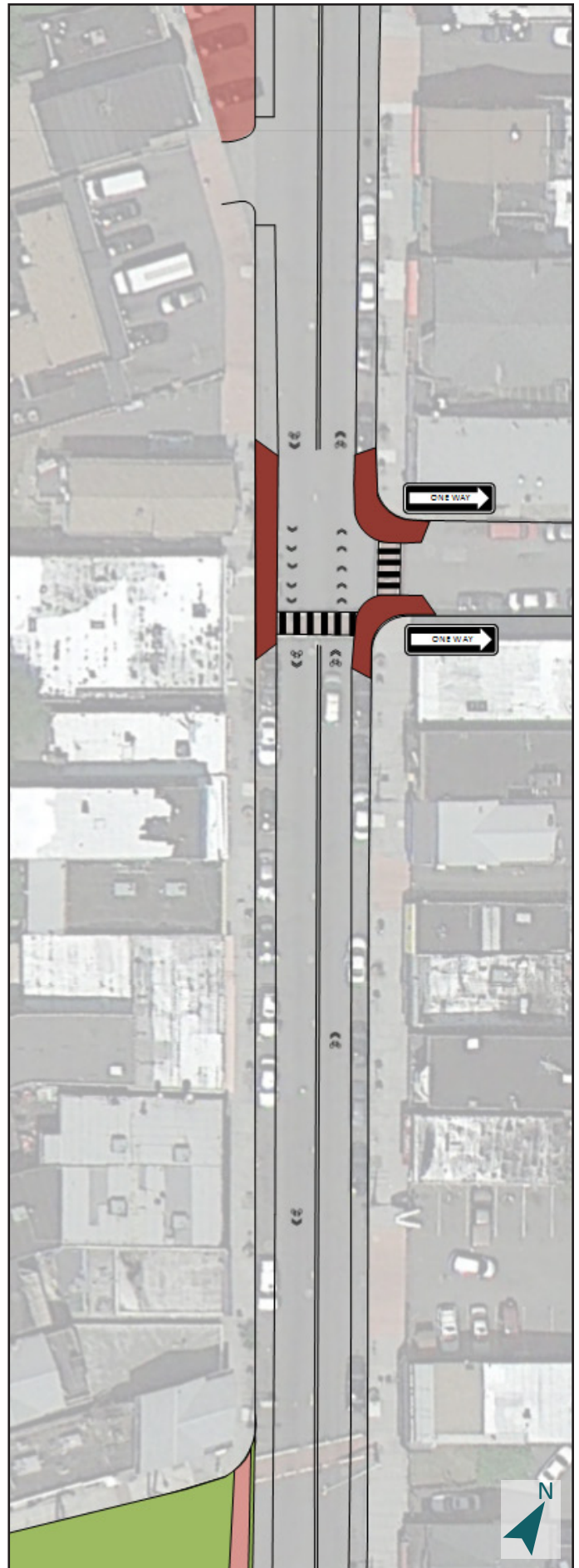




| Ref #                    | Location  | Safety Benefit | Time Frame | Cost | Jurisdiction                      | Issue Ref # |
|--------------------------|---|----------------|------------|------|-----------------------------------|-------------|
| ROBERT STREET            |   |                |            |      |                                   |             |
| I-1                      | Remove parking meters in intersection. [PARKING]  | Medium /High   | Short      | \$   | Paterson City & Parking Authority | 1           |
| I-2                      | Install one-way signs for Robert Street. [SIGN]   | Medium         | Short      |      | Paterson City                     | 8           |
| I-3                      | Install marked crosswalk, using a uniform style throughout the corridor; a continental style would be highly visible. [PEDESTRIAN ACCOMMODATIONS] | Medium /High   | Short      | \$   | Paterson City                     | 16, 18      |
| Corridor recommendations |   |                |            |      |                                   |             |

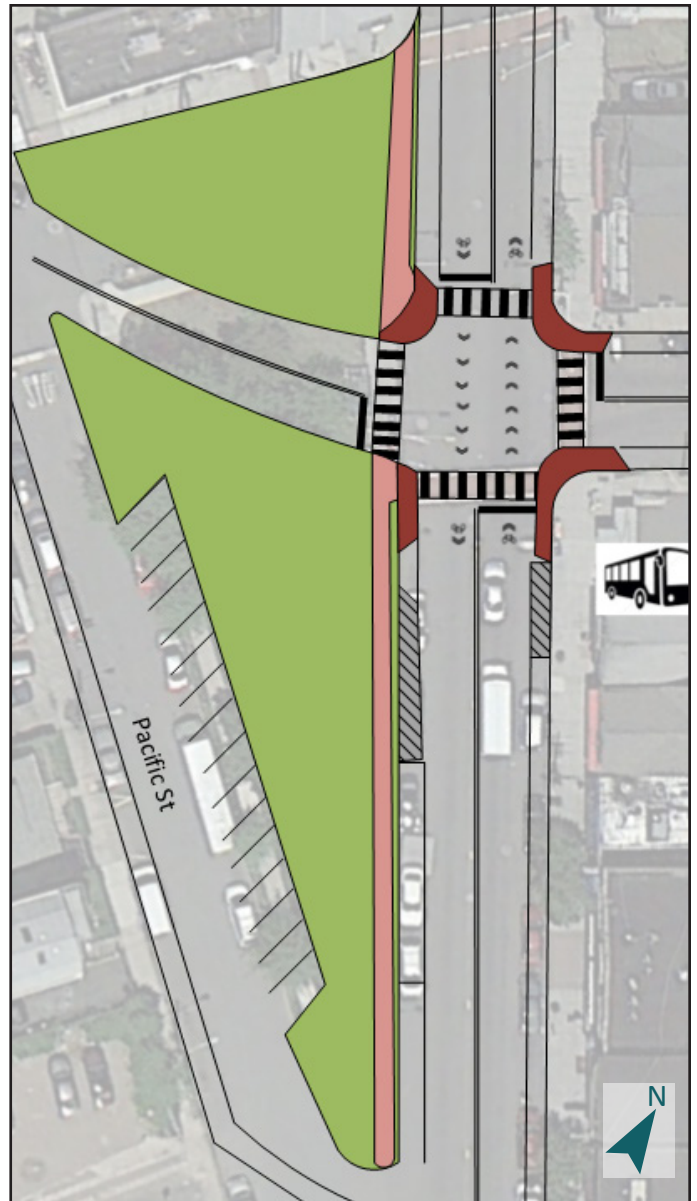
| Ref #                            | Location  | Safety Benefit | Time Frame | Cost   | Jurisdiction  | Issue Ref # |
|----------------------------------|---|----------------|------------|--------|---------------|-------------|
| MONTCLAIR AVENUE & THOMAS STREET |   |                |            |        |               |             |
| J-1                              | Remove angled parking and replace with parallel parking (even though spaces will be reduced). [PARKING]           | High           | Long       | \$\$\$ | Paterson City | 3           |
| J-2                              | Create left turn lane for northbound traffic and move the through lane adjacent to the curb. [TRAFFIC OPERATIONS] | Medium /High   | Long       | \$\$   | Paterson City | 1           |
| J-3                              | A full signal upgrade is recommended. [TRAFFIC SIGNAL]  | Medium         | Long       | \$\$\$ | Paterson City | 23          |
| J-4                              | Install missing crosswalks. [PEDESTRIAN ACCOMMODATIONS]   | Medium /High   | Short      | \$     | Paterson City | 16, 18      |
| J-5                              | Investigate construction of a pull in for the bus stop. [BUS]   | Medium         | Medium     | \$\$   | Paterson City | 47, 31      |
| Corridor recommendations         |   |                |            |        |               |             |

| Ref #                    | Location   | Safety Benefit | Time Frame   | Cost   | Jurisdiction  | Issue Ref # |
|--------------------------|--|----------------|--------------|--------|---------------|-------------|
| GEORGE STREET            |  |                |              |        |               |             |
| K-1                      | Extend curb and sidewalk to even up the parking lane. [PARKING]            | Medium         | Long         | \$\$\$ | Paterson City | 3, 17       |
| K-2                      | A third, middle crosswalk could be considered. [PEDESTRIAN ACCOMMODATIONS] | Low            | Short/Medium | \$     | Paterson City | 16, 18      |
| K-3                      | Add "END BUS STOP" arrow. [BUS]  | Low            | Short        | \$     | NJ Transit    | 32          |
| Corridor recommendations |  |                |              |        |               |             |





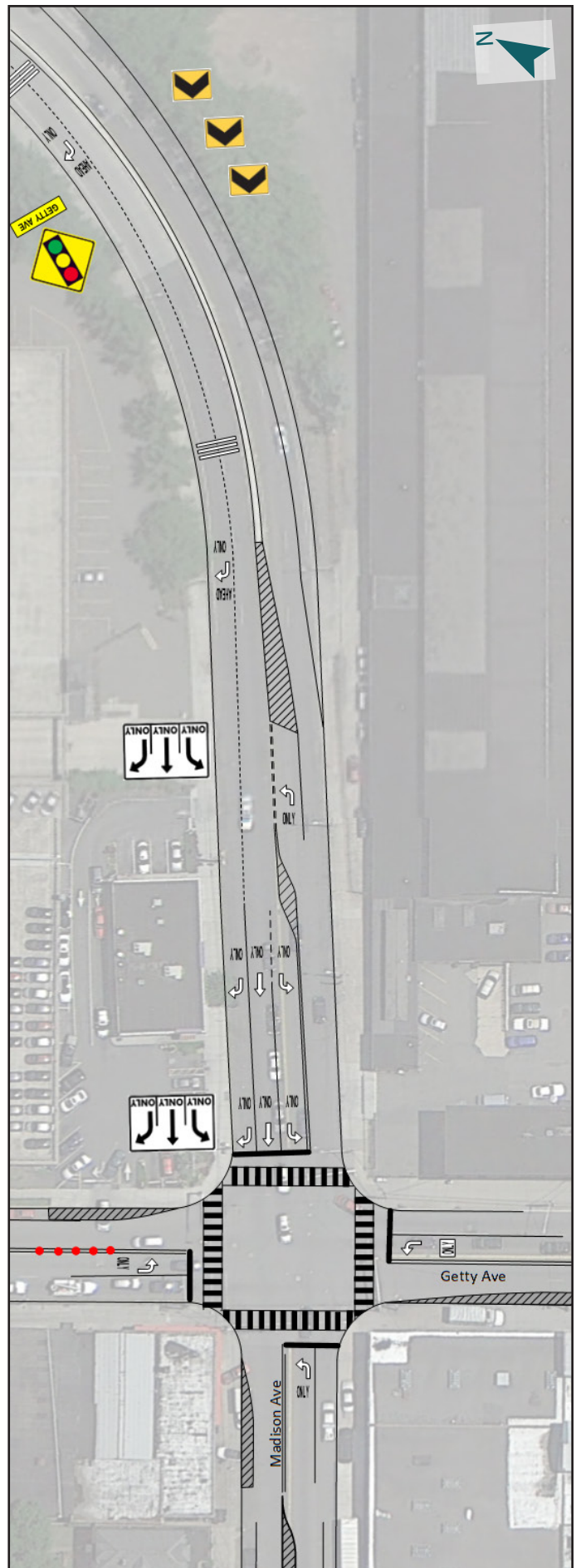
| Ref #                    | Location  | Safety Benefit | Time Frame    | Cost   | Jurisdiction  | Issue Ref # |
|--------------------------|---|----------------|---------------|--------|---------------|-------------|
| GOULD AVENUE             |   |                |               |        |               |             |
| L-1                      | Upgrade pedestrian heads to countdown. [PEDESTRIAN ACCOMMODATIONS]  | Medium /High   | Medium        | \$\$   | Paterson City | 44          |
| L-2                      | Crossing guard training is available for the police department through the VTC. [PEDESTRIAN ACCOMMODATIONS]                 | High           | Medium /Long  | \$     | Paterson City | 20          |
| L-3                      | A third, middle crosswalk could be considered. [PEDESTRIAN ACCOMMODATIONS]  | Low            | Short/ Medium | \$     | Paterson City | 16, 18      |
| L-4                      | Education of elementary students in rules for pedestrians would improve safety. [PEDESTRIAN ACCOMMODATIONS]                 | Medium         | Medium /Long  | \$\$   | Paterson City | 20          |
| L-5                      | Remove unused foundation from the sidewalk. [PEDESTRIAN ACCOMMODATIONS]   | Low            | Short         | \$     | Paterson City | 45          |
| L-6                      | A full traffic signal upgrade is recommended. [TRAFFIC SIGNAL]  | Medium         | Long          | \$\$\$ | Paterson City | 23          |
| L-7                      | Evaluate the feasibility of moving the bus stop out of the intersection box. [BUS]  | Medium /High   | Medium        | \$\$   | Paterson City | 31          |
| L-8                      | Investigate the feasibility of revising the intersection geometry in order to have one four-legged intersection. [GEOMETRY] | High           | Long          | \$\$\$ | Paterson City | 33          |
| Corridor recommendations |   |                |               |        |               |             |



This is a conceptual sketch from the Paterson Department of Engineering. The proposed geometric modification will not only improve the traffic moving capacity and mobility through the intersection on Main Street, but provide safer street crossing for pedestrians, particular for school kids since it is a designated school crossing spot.



| Ref #                                    | Location   | Safety Benefit | Time Frame   | Cost     | Jurisdiction                   | Issue Ref # |
|--|--|----------------|--------------|----------|--------------------------------|-------------|
| <b>MADISON AVENUE &amp; GETTY AVENUE</b> |  |                |              |          |                                |             |
| <b>Signs &amp; Pavement Markings</b>     |  |                |              |          |                                |             |
| E-1                                      | Install advance guidance signs prior to curve, especially lane use signs.                        | Medium /High   | Medium       | \$\$     | Passaic County                 | 28, 18, 13  |
| E-2                                      | Trim vegetation.   | Low            | Short        | \$       | Passaic County                 | 46          |
| <b>Pedestrian Accommodations</b>         |  |                |              |          |                                |             |
| E-3                                      | Replace the pedestrian heads with countdown times.   | Medium /High   | Medium       | \$\$     | Paterson City                  | 44, 14      |
| E-4                                      | Evaluate a revised location of the pole.   | High           | Long         | \$\$\$   | Paterson City                  | 27          |
| E-5                                      | Install curb and sidewalk at location of illegal driveway.                                       | Medium /Low    | Medium /Long | \$\$     | Paterson City                  | 40          |
| E-6                                      | Increased enforcement and fine for sidewalk parking.   | Medium         | Short        | \$       | Paterson PD                    | 53          |
| <b>Traffic Signals</b>                   |  |                |              |          |                                |             |
| E-7                                      | Evaluate the need for signal head sizes and additional traffic signal heads, one for each lane.  | Medium /High   | Medium       | \$\$\$   | Paterson City                  | 21, 22      |
| E-8                                      | Install signal ahead sign with road name placard.  | Medium /High   | Short        | \$       | Paterson City                  | 28, 49, 13  |
| E-9                                      | Revise phasing to opposing lead left on Getty Avenue with head to head left turns.               | Medium /High   | Short        | \$\$     | Paterson City                  | 50, 29      |
| <b>Traffic Operations</b>                |  |                |              |          |                                |             |
| E-10                                     | Revise phasing to add lead left for westbound Madison Avenue traffic coming from I-80 ramp.      | Medium         | Medium       | \$\$     | Paterson City                  | 50          |
| E-11                                     | Investigate if left turn restrictions is part of site plan at Dunkin Donuts.                     | Medium /High   | Short        | \$       | Passaic County & Paterson City | 37          |
| E-12                                     | If left turns are prohibited, install centline bollards along Getty Avenue to prevent left turn. | Medium /High   | Short        | \$/ \$\$ | Passaic County                 | 37          |
| E-13                                     | Add a short left turn bay for southbound Madison Avenue vehicles.                                | Medium         | Medium       | \$\$     | Paterson City                  | 49          |
| E-14                                     | Ensure speed limit sign is visible and includes proper advanced warning signage.                 | Medium /High   | Short        | \$       | Paterson City                  | 28, 13      |
| E-15                                     | Install chevrons along horizontal curve.   | Medium /High   | Short        | \$       | Passaic County                 | 28          |
| E-16                                     | Installation of rumble strips to reduce speed.   | Medium /High   | Short        | \$       | Passaic County                 | 28, 18      |
| <b>Corridor recommendations</b>          |  |                |              |          |                                |             |



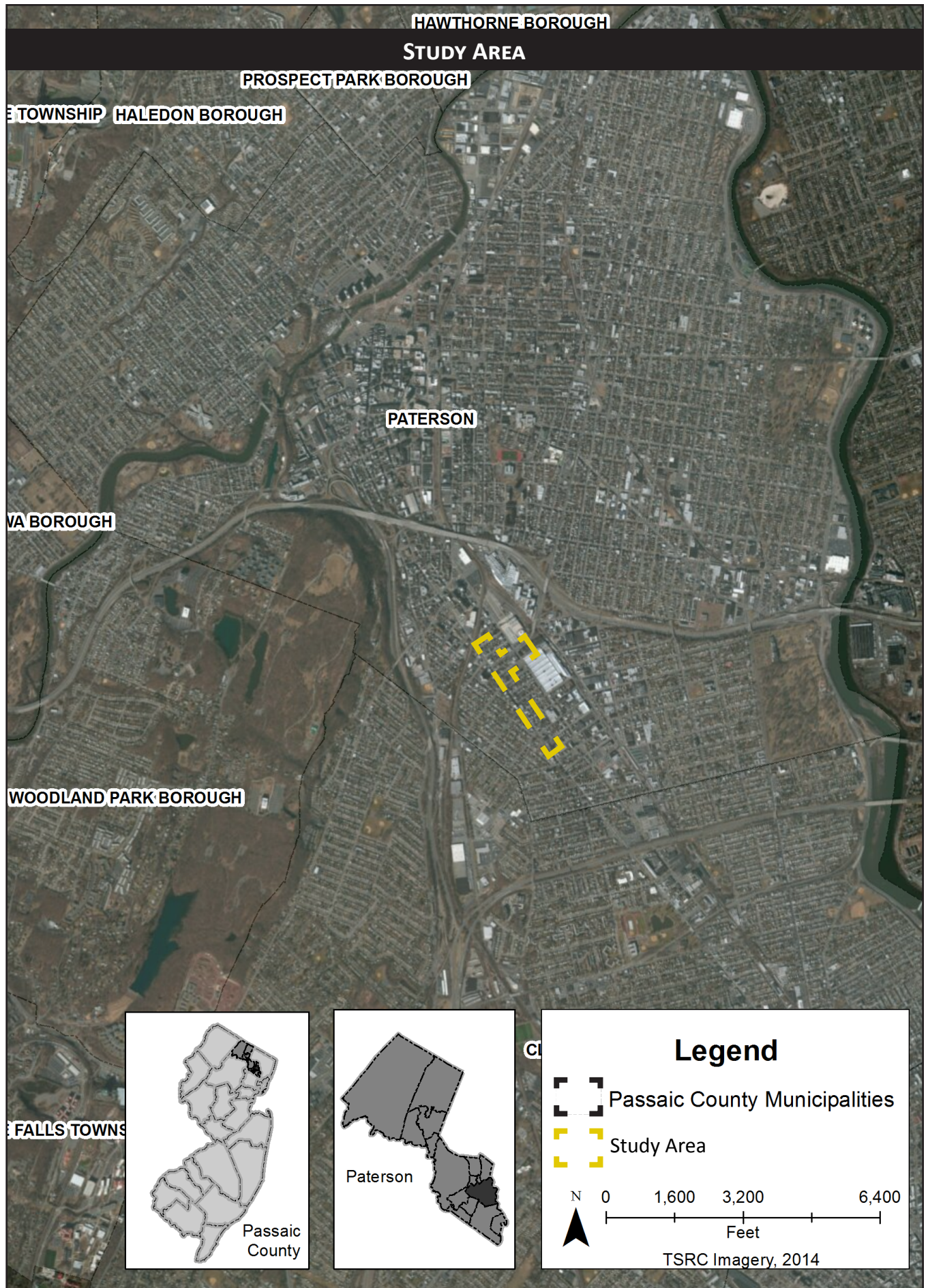
## >> APPENDICES

>> APPENDIX A - RSA TEAM

| Name                 | E-mail                             | Representing                   |
|----------------------|------------------------------------|--------------------------------|
| Joseph Birchenough   | joseph.birchenough@dot.state.nj.us | NJDOT Local Aid                |
| Eve Chamberlain      | echamberlain@njtpa.org             | NJTPA                          |
| Rosemaire Condi      | rcondi@njtransit.com               | NJ Transit                     |
| Michael De Block     | deblockm@sjhmc.org                 | St. Joseph's Hospital          |
| Baher Girgis         | Baher.Girgis@dot.state.nj.us       | NJDOT                          |
| Chris Gonda          | cgonda@ezride.org                  | Meadowlink                     |
| Aimee Jefferson      | aimee.jefferson@rutgers.edu        | Rutgers TSRC                   |
| Andy Kaplan          | akaplan1@rutgers.edu               | Rutgers TSRC                   |
| Sally Karasov        | sally.karasov@rutgers.edu          | Rutgers TSRC                   |
| Paul Lionetti        | LionettP@sjhmc.org                 | St. Joseph's Hospital          |
| Michael Lysicatos    | mlysicatos@passaiccountynj.org     | Passaic County - Planning      |
| Heather Martin       | heather.martin@ejb.rutgers.edu     | Voorhees Transportation Center |
| Lt. Shawn Mclvor     | smcivor@patersonpd.com             | Paterson Police Department     |
| Dhananjay Rana       | dhananjay.rana@dot.state.nj.us     | NJDOT                          |
| Sgt Joseph Rodriquez | jrodriguez@patersonpd.com          | Paterson Police Department     |
| Chuck Silverstein    | charless@passaiccountynj.org       | Passaic County - Engineering   |
| Elizabeth Thompson   | ethompson@njtpa.org                | NJTPA                          |
| Hong-Chao Yu         | hyu@patersonnj.gov                 | Paterson City Engineer         |



**>> APPENDIX B – AREA MAPS**



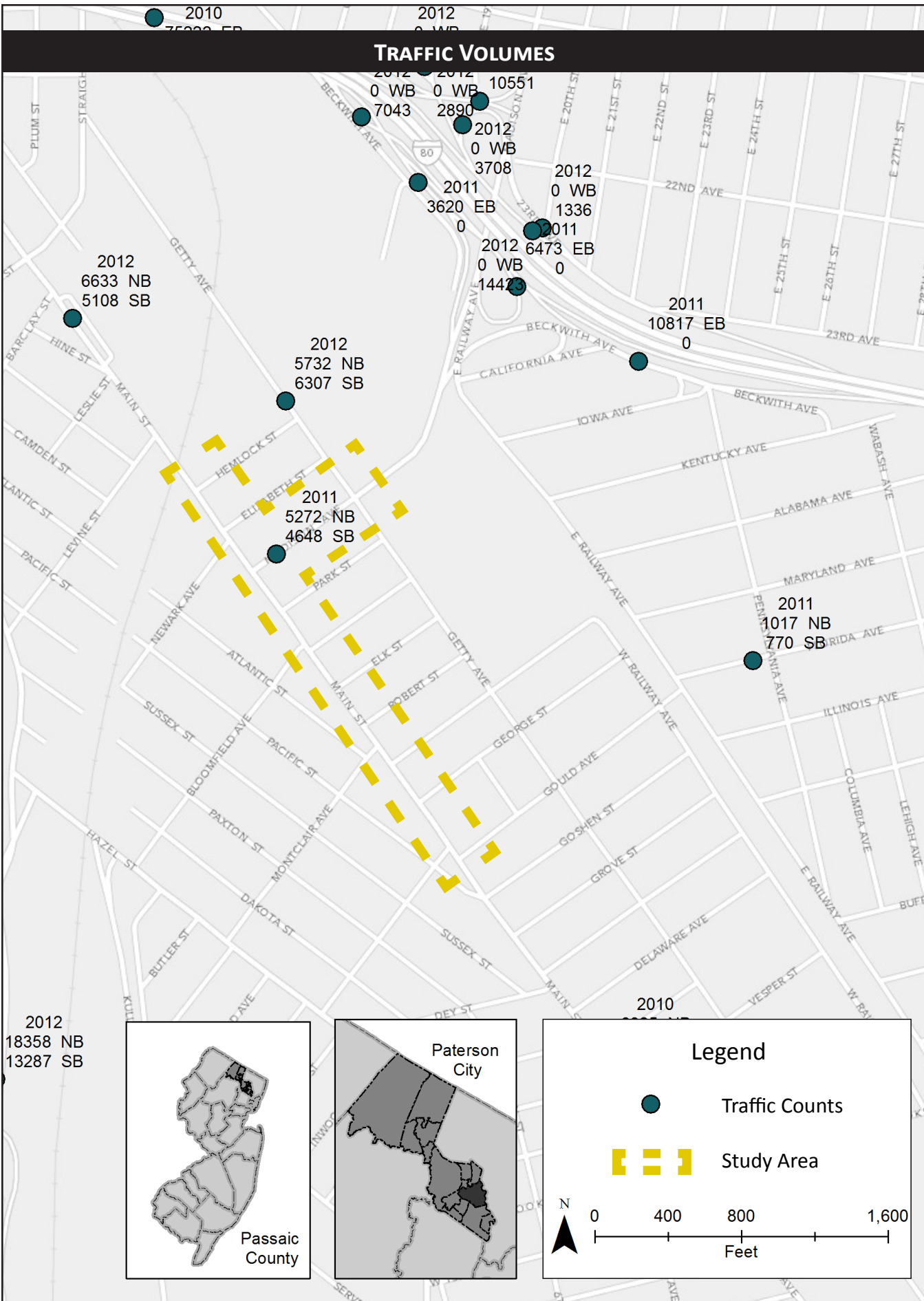


# AREA TRANSIT





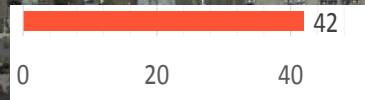
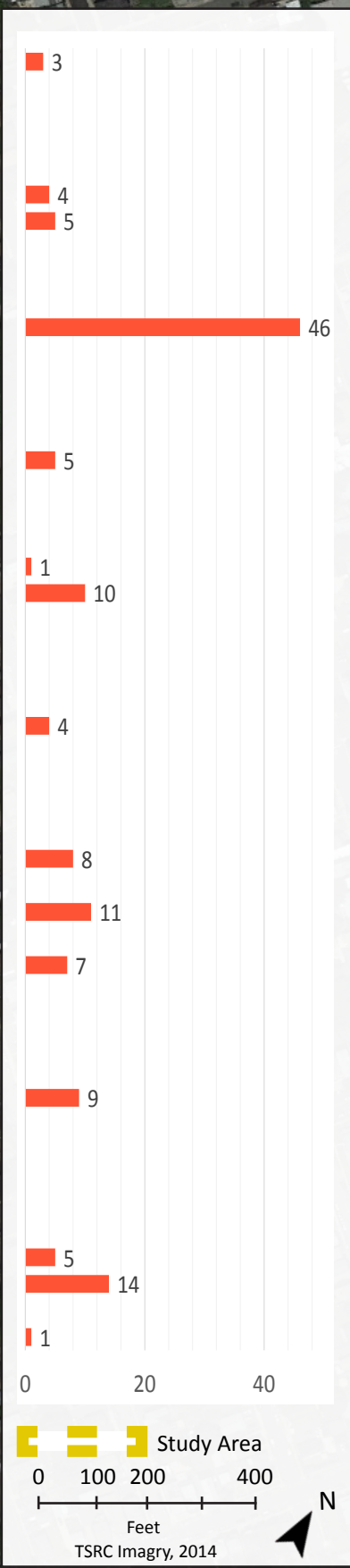
# TRAFFIC VOLUMES



>> APPENDIX C – CRASH DATA

# STUDY AREA

1996



Imagery Date: 6/17/2010 40°54'08



## CRASH SUMMARY

| Crash Type                            | #          |
|---------------------------------------|------------|
| Same Direction - Rear End             | 39         |
| Same Direction - Side Swipe           | 41         |
| Right Angle                           | 26         |
| Opposite Direction - Head On/ Angular | 4          |
| Opposite Direction - Side Swipe       | 4          |
| Struck Parked Vehicle                 | 31         |
| Left Turn / U-Turn                    | 8          |
| Backing                               | 4          |
| Encroachment                          | 0          |
| Overtuned                             | 0          |
| Fixed Object                          | 5          |
| Animal                                | 0          |
| Pedestrian                            | 10         |
| Pedalcyclist                          | 1          |
| Non-fixed Object                      | 0          |
| Railcar - Vehicle                     | 0          |
| Other                                 | 2          |
| <b>Total</b>                          | <b>175</b> |

| Month        | #          |
|--------------|------------|
| January      | 11         |
| February     | 14         |
| March        | 20         |
| April        | 14         |
| May          | 14         |
| June         | 14         |
| July         | 15         |
| August       | 9          |
| September    | 15         |
| October      | 15         |
| November     | 19         |
| December     | 15         |
| <b>Total</b> | <b>175</b> |

| Severity              | #          |
|-----------------------|------------|
| Property Damage Only  | 134        |
| Pain                  | 37         |
| Moderate Injury       | 2          |
| Incapacitating Injury | 2          |
| Fatal                 | 0          |
| <b>Total</b>          | <b>175</b> |

| Day          | #          |
|--------------|------------|
| Monday       | 28         |
| Tuesday      | 26         |
| Wednesday    | 19         |
| Thursday     | 23         |
| Friday       | 29         |
| Saturday     | 25         |
| Sunday       | 25         |
| <b>Total</b> | <b>175</b> |

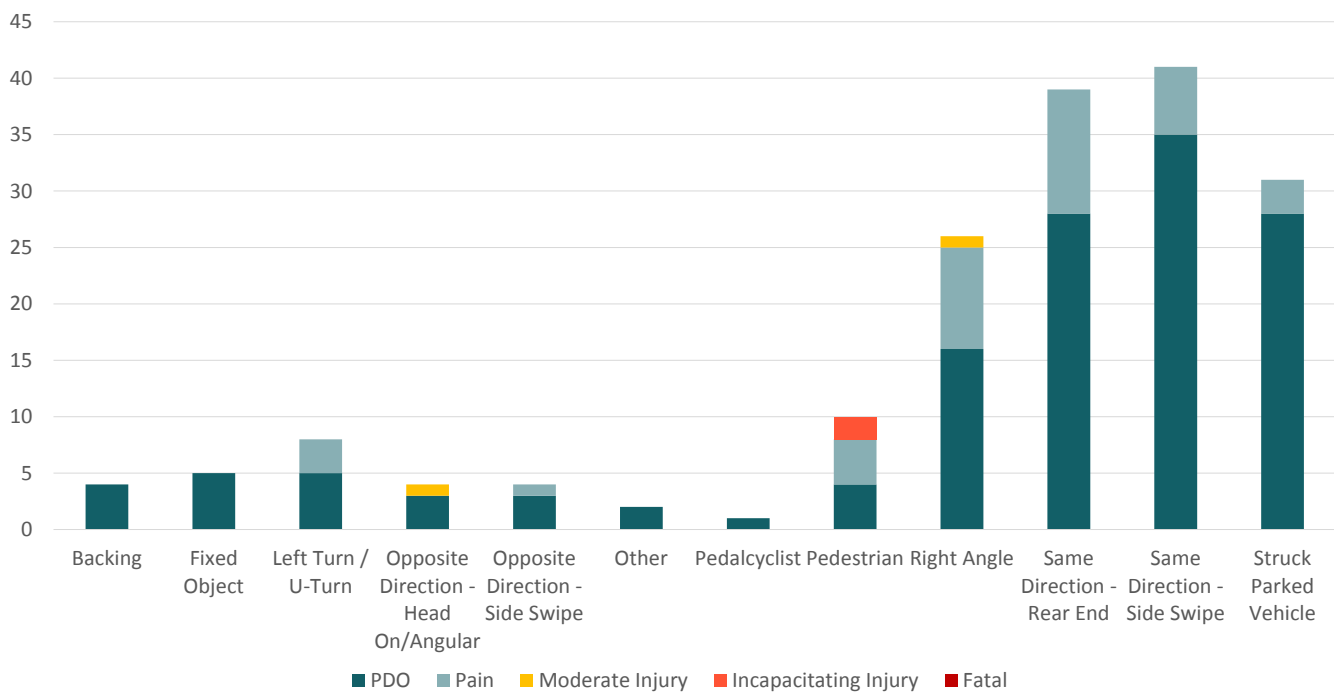
| Surface Condition     | #          |
|-----------------------|------------|
| Dry                   | 145        |
| Wet                   | 24         |
| Snowy                 | 4          |
| Icy                   | 1          |
| Slush                 | 0          |
| Water-Standing/Moving | 0          |
| Sand, Mud, Dirt       | 0          |
| Oil                   | 0          |
| NULL                  | 1          |
| <b>Total</b>          | <b>175</b> |

| Light Condition                     | #          |
|-------------------------------------|------------|
| Daylight                            | 94         |
| Dawn                                | 2          |
| Dusk                                | 4          |
| Dark - No Street Lights             | 4          |
| Dark - Street Lights On/ Continuous | 70         |
| Dark - Street Lights On/Spot        | 0          |
| NULL                                | 1          |
| <b>Total</b>                        | <b>175</b> |

| Intersection        | #          |
|---------------------|------------|
| At intersection     | 112        |
| Not at intersection | 63         |
| <b>Total</b>        | <b>175</b> |

| Crash Year   | #          |
|--------------|------------|
| 2010         | 46         |
| 2011         | 60         |
| 2012         | 69         |
| <b>Total</b> | <b>175</b> |

### Crash Type & Severity



# MAIN STREER & HEMLECK STREET - CRASH DIAGRAM (2010 – 2012)



## MAIN STREET & HEMLECK STREET - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #        |
|---------------------------------------|----------|
| Same Direction - Rear End             | 0        |
| Same Direction - Side Swipe           | 0        |
| Right Angle                           | 1        |
| Opposite Direction - Head On/ Angular | 0        |
| Opposite Direction - Side Swipe       | 0        |
| Struck Parked Vehicle                 | 1        |
| Left Turn / U-Turn                    | 0        |
| Backing                               | 0        |
| Encroachment                          | 0        |
| Overturned                            | 0        |
| Fixed Object                          | 0        |
| Animal                                | 0        |
| Pedestrian                            | 0        |
| Pedalcyclist                          | 0        |
| Non-fixed Object                      | 0        |
| Railcar - Vehicle                     | 0        |
| Other                                 | 1        |
| <b>Total</b>                          | <b>3</b> |

| Month        | #        |
|--------------|----------|
| January      | 0        |
| February     | 0        |
| March        | 1        |
| April        | 1        |
| May          | 0        |
| June         | 0        |
| July         | 0        |
| August       | 0        |
| September    | 0        |
| October      | 1        |
| November     | 0        |
| December     | 0        |
| <b>Total</b> | <b>3</b> |

| Day          | #        |
|--------------|----------|
| Monday       | 0        |
| Tuesday      | 0        |
| Wednesday    | 0        |
| Thursday     | 0        |
| Friday       | 0        |
| Saturday     | 0        |
| Sunday       | 3        |
| <b>Total</b> | <b>3</b> |

| Light Condition                     | #        |
|-------------------------------------|----------|
| Daylight                            | 1        |
| Dawn                                | 0        |
| Dusk                                | 0        |
| Dark - No Street Lights             | 0        |
| Dark - Street Lights On/ Continuous | 2        |
| Dark - Street Lights On/Spot        | 0        |
| <b>Total</b>                        | <b>3</b> |

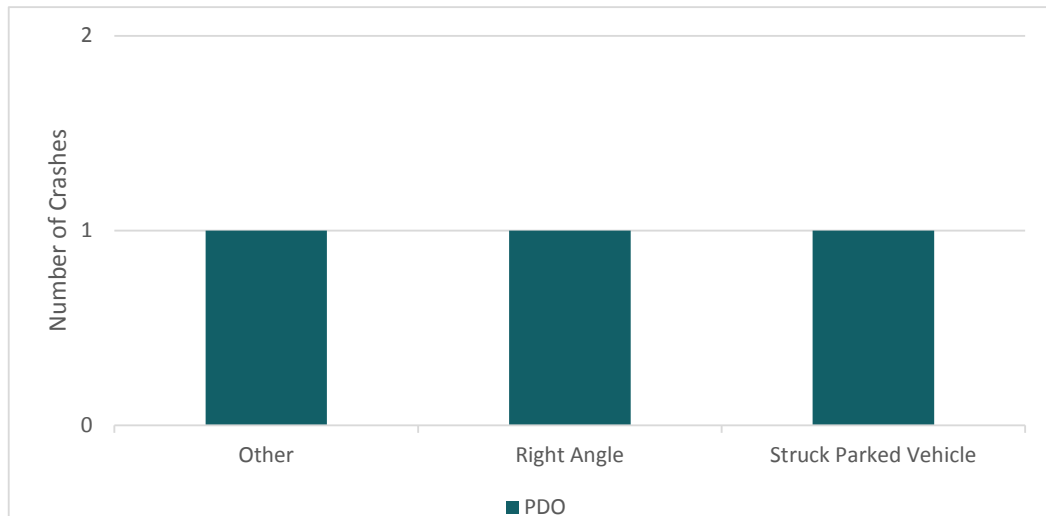
| Severity              | #        |
|-----------------------|----------|
| Property Damage Only  | 3        |
| Pain                  | 0        |
| Moderate Injury       | 0        |
| Incapacitating Injury | 0        |
| Fatal                 | 0        |
| <b>Total</b>          | <b>3</b> |

| Surface Condition     | #        |
|-----------------------|----------|
| Dry                   | 2        |
| Wet                   | 1        |
| Snowy                 | 0        |
| Icy                   | 0        |
| Slush                 | 0        |
| Water-Standing/Moving | 0        |
| Sand, Mud, Dirt       | 0        |
| Oil                   | 0        |
| <b>Total</b>          | <b>3</b> |

| Intersection        | #        |
|---------------------|----------|
| At intersection     | 3        |
| Not at intersection | 0        |
| <b>Total</b>        | <b>3</b> |

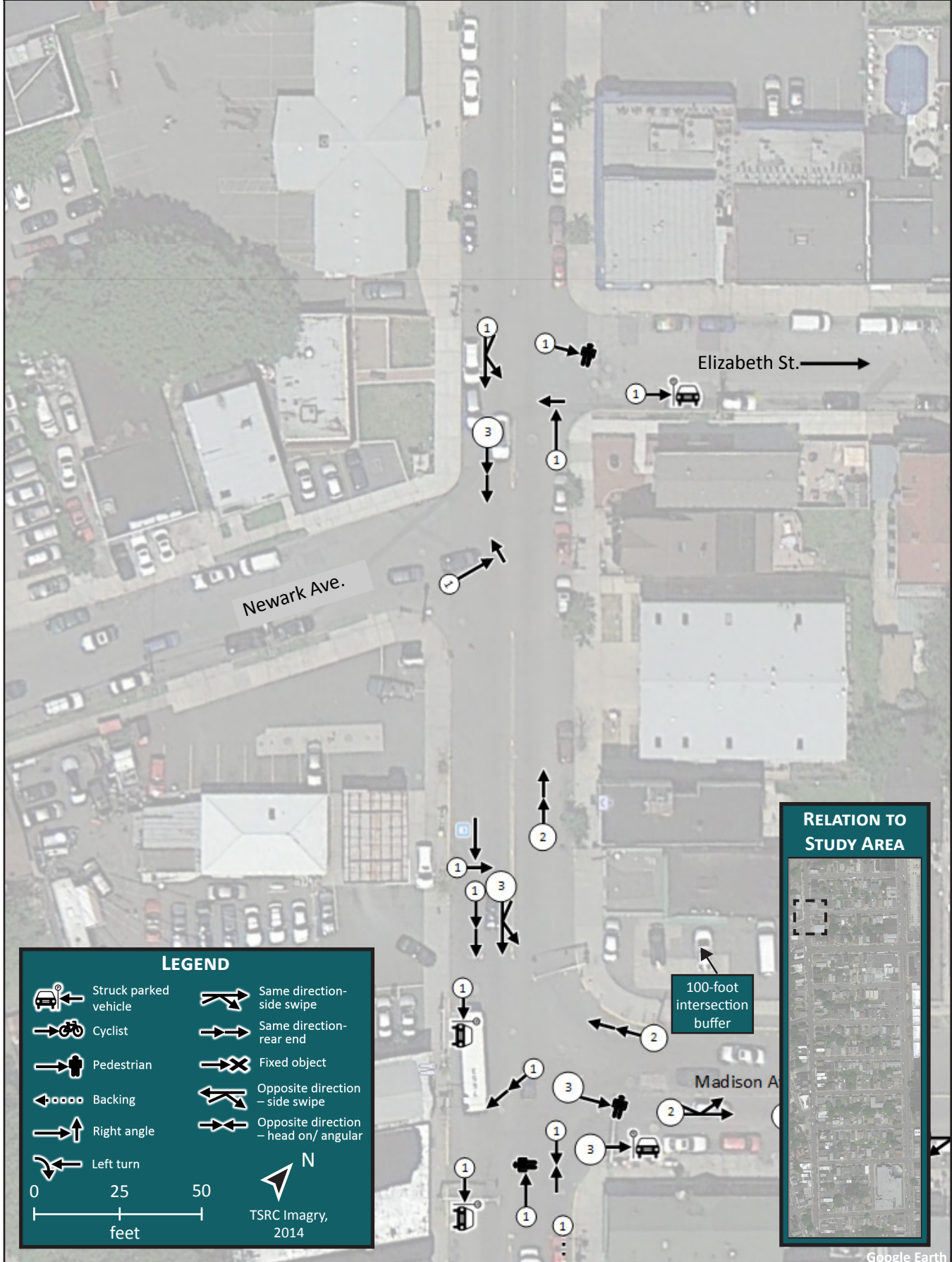
| Crash Year   | #        |
|--------------|----------|
| 2010         | 1        |
| 2011         | 1        |
| 2012         | 1        |
| <b>Total</b> | <b>3</b> |

### Crash Type & Severity





# MAIN STREET/ELIZABETH STREET TO NEWARK AVENUE – CRASH DIAGRAM (2010 - 2012)



# MAIN STREET/ELIZABETH STREET TO NEWARK AVENUE - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #        |
|---------------------------------------|----------|
| Same Direction - Rear End             | 2        |
| Same Direction - Side Swipe           | 2        |
| Right Angle                           | 2        |
| Opposite Direction - Head On/ Angular | 0        |
| Opposite Direction - Side Swipe       | 0        |
| Struck Parked Vehicle                 | 1        |
| Left Turn / U-Turn                    | 1        |
| Backing                               | 0        |
| Encroachment                          | 0        |
| Overturned                            | 0        |
| Fixed Object                          | 0        |
| Animal                                | 0        |
| Pedestrian                            | 1        |
| Pedalcyclist                          | 0        |
| Non-fixed Object                      | 0        |
| Railcar - Vehicle                     | 0        |
| Other                                 | 0        |
| <b>Total</b>                          | <b>9</b> |

| Month        | #        |
|--------------|----------|
| January      | 0        |
| February     | 1        |
| March        | 1        |
| April        | 3        |
| May          | 1        |
| June         | 2        |
| July         | 1        |
| August       | 0        |
| September    | 0        |
| October      | 0        |
| November     | 0        |
| December     | 0        |
| <b>Total</b> | <b>9</b> |

| Day          | #        |
|--------------|----------|
| Monday       | 2        |
| Tuesday      | 1        |
| Wednesday    | 0        |
| Thursday     | 3        |
| Friday       | 2        |
| Saturday     | 0        |
| Sunday       | 1        |
| <b>Total</b> | <b>9</b> |

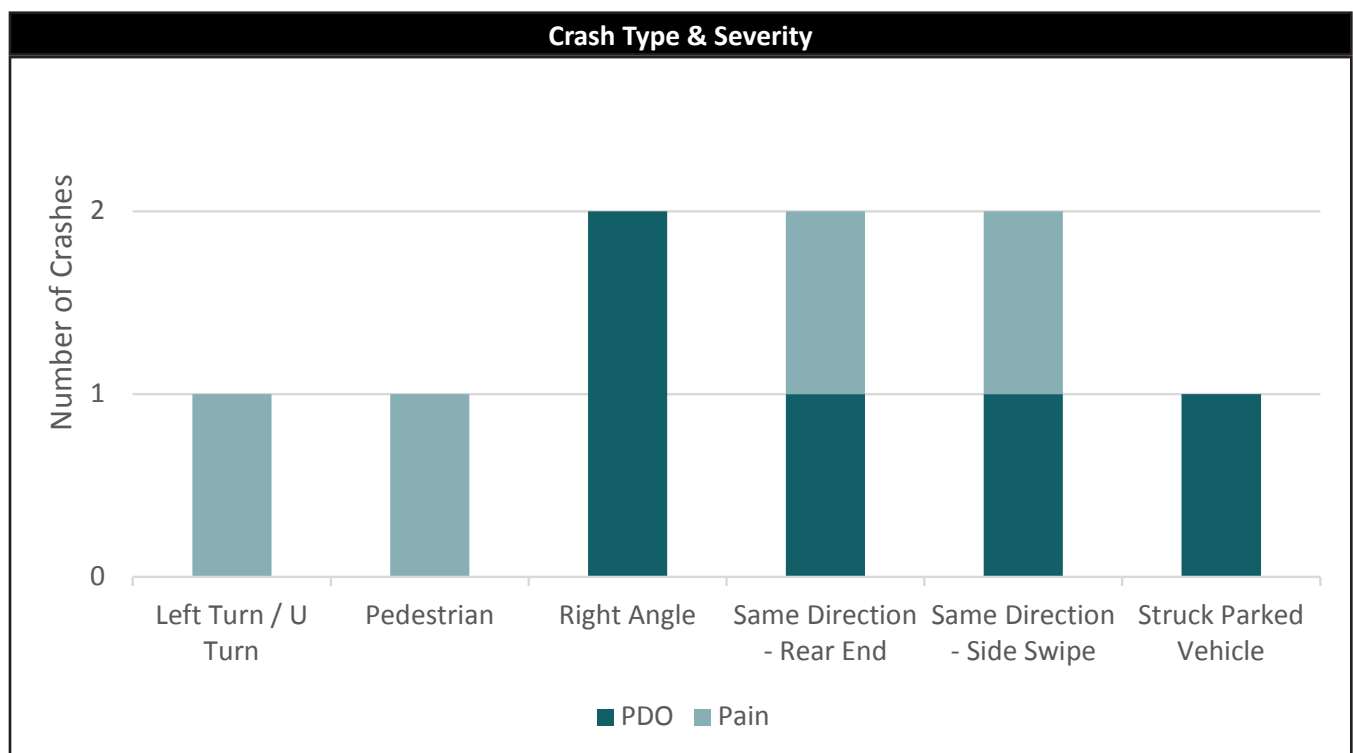
| Light Condition                     | #        |
|-------------------------------------|----------|
| Daylight                            | 6        |
| Dawn                                | 0        |
| Dusk                                | 0        |
| Dark - No Street Lights             | 0        |
| Dark - Street Lights On/ Continuous | 2        |
| Dark - Street Lights On/Spot        | 0        |
| <b>Total</b>                        | <b>8</b> |

| Severity              | #        |
|-----------------------|----------|
| Property Damage Only  | 5        |
| Pain                  | 4        |
| Moderate Injury       | 0        |
| Incapacitating Injury | 0        |
| Fatal                 | 0        |
| <b>Total</b>          | <b>9</b> |

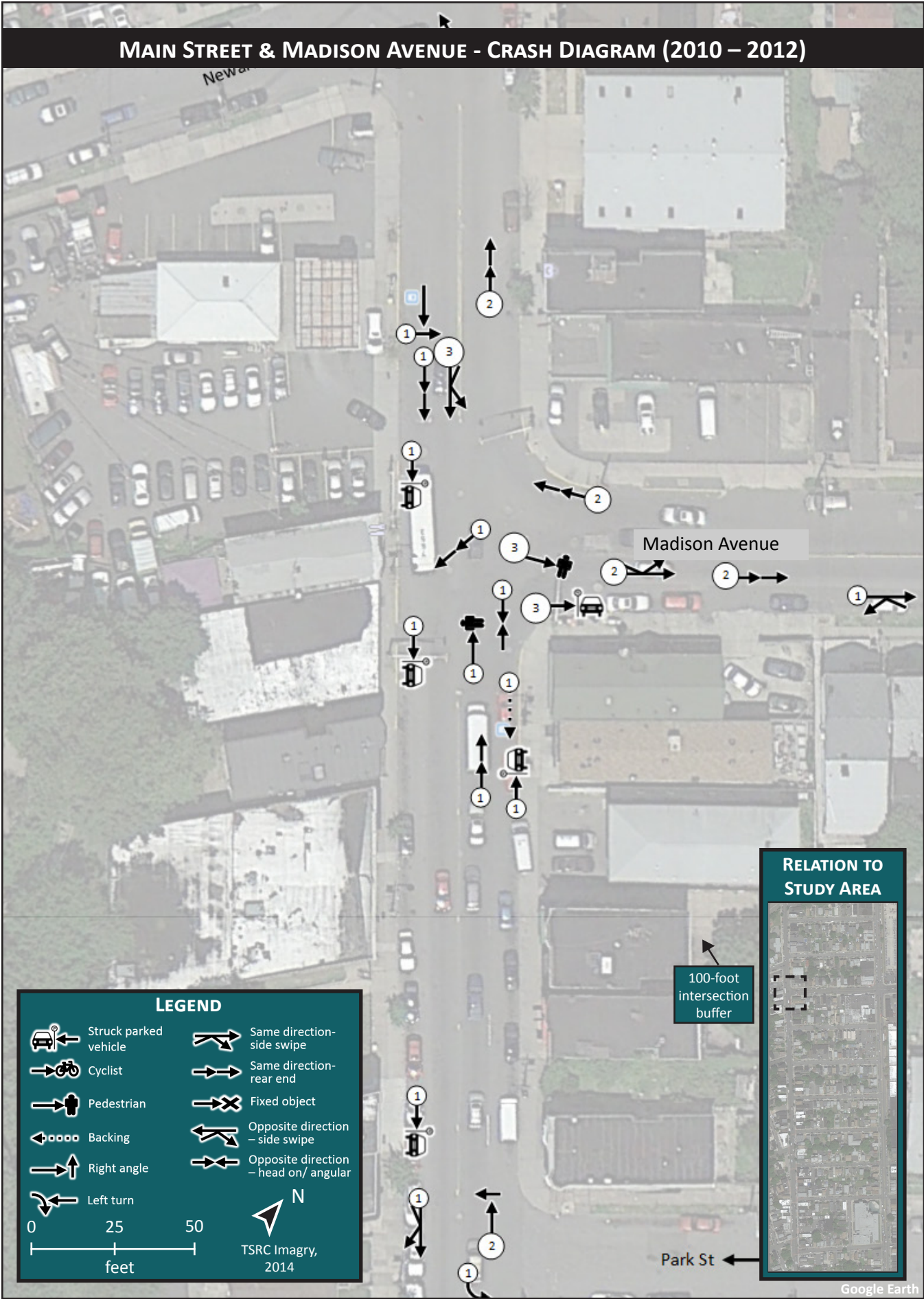
| Surface Condition     | #        |
|-----------------------|----------|
| Dry                   | 7        |
| Wet                   | 2        |
| Snowy                 | 0        |
| Icy                   | 0        |
| Slush                 | 0        |
| Water-Standing/Moving | 0        |
| Sand, Mud, Dirt       | 0        |
| Oil                   | 0        |
| <b>Total</b>          | <b>9</b> |

| Intersection        | #        |
|---------------------|----------|
| At intersection     | 8        |
| Not at intersection | 1        |
| <b>Total</b>        | <b>9</b> |

| Crash Year   | #        |
|--------------|----------|
| 2010         | 2        |
| 2011         | 5        |
| 2012         | 2        |
| <b>Total</b> | <b>9</b> |



# MAIN STREET & MADISON AVENUE - CRASH DIAGRAM (2010 – 2012)





## MAIN STREET & MADISON AVENUE - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #         |
|---------------------------------------|-----------|
| Same Direction - Rear End             | 15        |
| Same Direction - Side Swipe           | 12        |
| Right Angle                           | 3         |
| Opposite Direction - Head On/ Angular | 2         |
| Opposite Direction - Side Swipe       | 1         |
| Struck Parked Vehicle                 | 5         |
| Left Turn / U-Turn                    | 0         |
| Backing                               | 2         |
| Encroachment                          | 0         |
| Overturned                            | 0         |
| Fixed Object                          | 0         |
| Animal                                | 0         |
| Pedestrian                            | 4         |
| Pedalcyclist                          | 0         |
| Non-fixed Object                      | 0         |
| Railcar - Vehicle                     | 0         |
| Null                                  | 1         |
| <b>Total</b>                          | <b>45</b> |

| Month        | #         |
|--------------|-----------|
| January      | 3         |
| February     | 3         |
| March        | 4         |
| April        | 2         |
| May          | 2         |
| June         | 2         |
| July         | 3         |
| August       | 3         |
| September    | 7         |
| October      | 4         |
| November     | 5         |
| December     | 7         |
| <b>Total</b> | <b>45</b> |

| Day          | #         |
|--------------|-----------|
| Monday       | 8         |
| Tuesday      | 6         |
| Wednesday    | 4         |
| Thursday     | 2         |
| Friday       | 8         |
| Saturday     | 9         |
| Sunday       | 8         |
| <b>Total</b> | <b>45</b> |

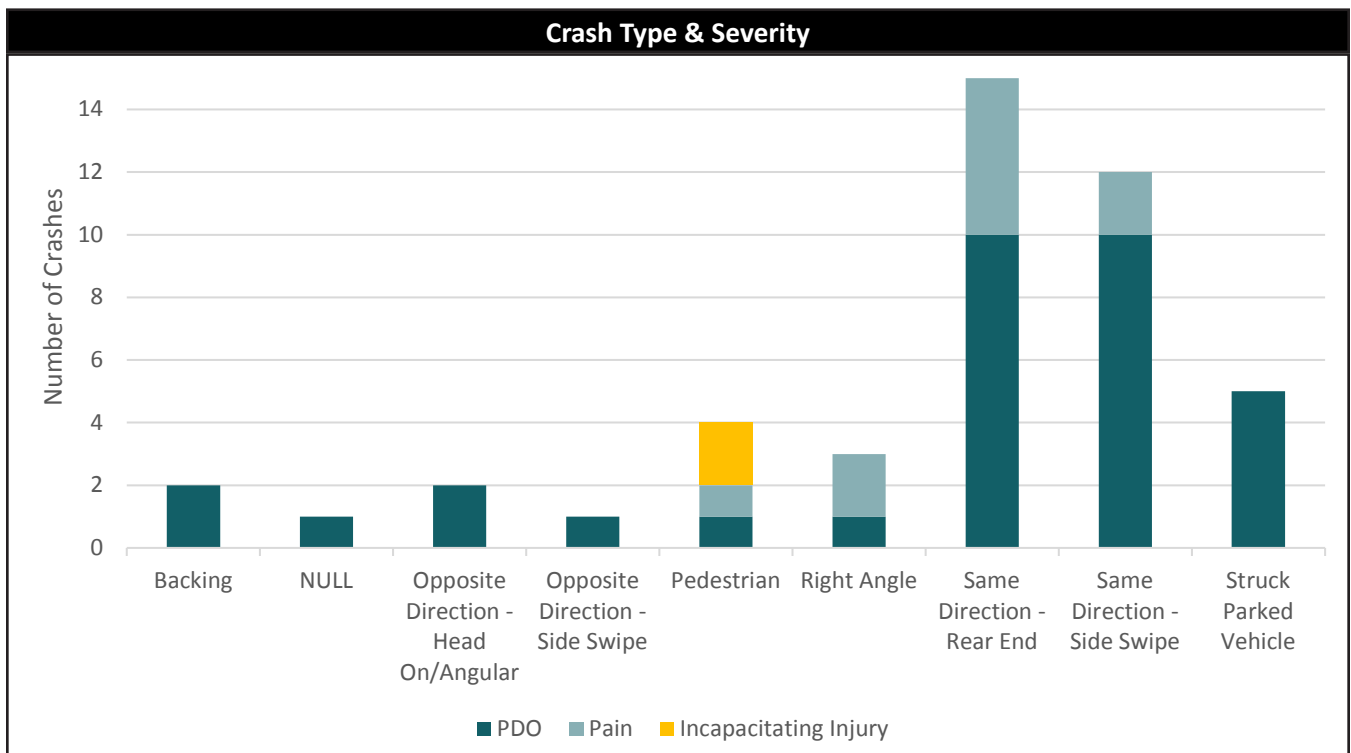
| Light Condition                     | #         |
|-------------------------------------|-----------|
| Daylight                            | 22        |
| Dawn                                | 2         |
| Dusk                                | 0         |
| Dark - No Street Lights             | 3         |
| Dark - Street Lights On/ Continuous | 18        |
| Dark - Street Lights On/Spot        | 0         |
| <b>Total</b>                        | <b>45</b> |

| Severity              | #         |
|-----------------------|-----------|
| Property Damage Only  | 33        |
| Pain                  | 10        |
| Moderate Injury       | 0         |
| Incapacitating Injury | 2         |
| Fatal                 | 0         |
| <b>Total</b>          | <b>45</b> |

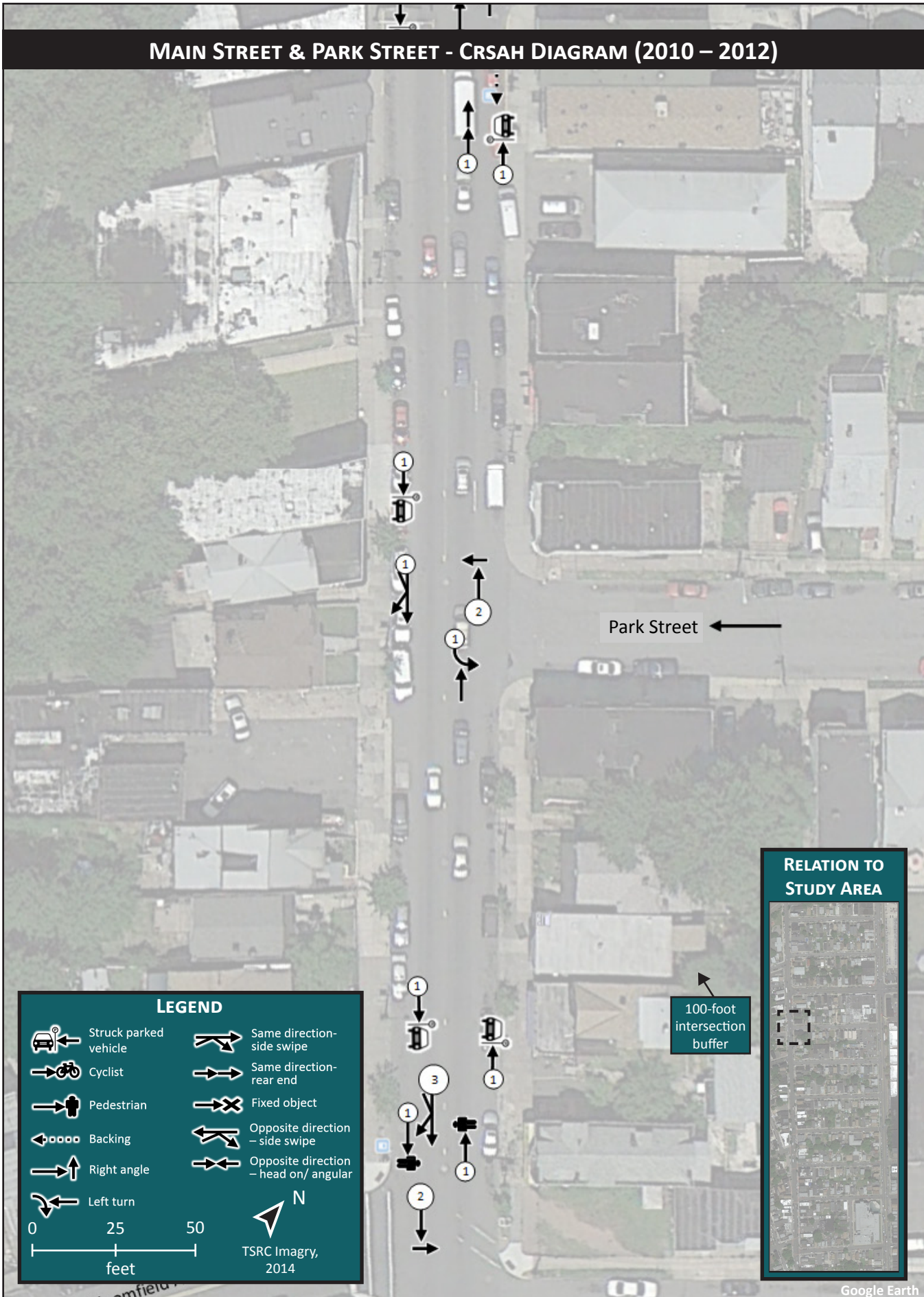
| Surface Condition     | #         |
|-----------------------|-----------|
| Dry                   | 34        |
| Wet                   | 11        |
| Snowy                 | 0         |
| Icy                   | 0         |
| Slush                 | 0         |
| Water-Standing/Moving | 0         |
| Sand, Mud, Dirt       | 0         |
| Oil                   | 0         |
| <b>Total</b>          | <b>45</b> |

| Intersection        | #         |
|---------------------|-----------|
| At intersection     | 27        |
| Not at intersection | 18        |
| <b>Total</b>        | <b>45</b> |

| Crash Year   | #         |
|--------------|-----------|
| 2010         | 12        |
| 2011         | 18        |
| 2012         | 15        |
| <b>Total</b> | <b>45</b> |



# MAIN STREET & PARK STREET - CRSAH DIAGRAM (2010 – 2012)



## MAIN STREET & PARK STREET - CRASH SUMMARY (2010 – 2012)

| Crash Type                           | #        |
|--------------------------------------|----------|
| Same Direction - Rear End            | 0        |
| Same Direction - Side Swipe          | 1        |
| Right Angle                          | 2        |
| Opposite Direction - Head On/Angular | 0        |
| Opposite Direction - Side Swipe      | 0        |
| Struck Parked Vehicle                | 1        |
| Left Turn / U Turn                   | 1        |
| Backing                              | 0        |
| Encroachment                         | 0        |
| Overturned                           | 0        |
| Fixed Object                         | 0        |
| Animal                               | 0        |
| Pedestrian                           | 0        |
| Pedalcyclist                         | 0        |
| Non-fixed Object                     | 0        |
| Railcar - Vehicle                    | 0        |
| Other                                | 0        |
| <b>TOTAL</b>                         | <b>5</b> |

| Month        | #        |
|--------------|----------|
| January      | 1        |
| February     | 0        |
| March        | 1        |
| April        | 0        |
| May          | 0        |
| June         | 0        |
| July         | 0        |
| August       | 1        |
| September    | 1        |
| October      | 0        |
| November     | 1        |
| December     | 0        |
| <b>Total</b> | <b>5</b> |

| Day          | #        |
|--------------|----------|
| Monday       | 1        |
| Tuesday      | 2        |
| Wednesday    | 1        |
| Thursday     | 0        |
| Friday       | 0        |
| Saturday     | 1        |
| Sunday       | 0        |
| <b>Total</b> | <b>5</b> |

| Light Condition                     | #        |
|-------------------------------------|----------|
| Daylight                            | 2        |
| Dawn                                | 0        |
| Dusk                                | 0        |
| Dark - No Street Lights             | 0        |
| Dark - Street Lights On/ Continuous | 3        |
| Dark - Street Lights On/Spot        | 0        |
| <b>Total</b>                        | <b>5</b> |

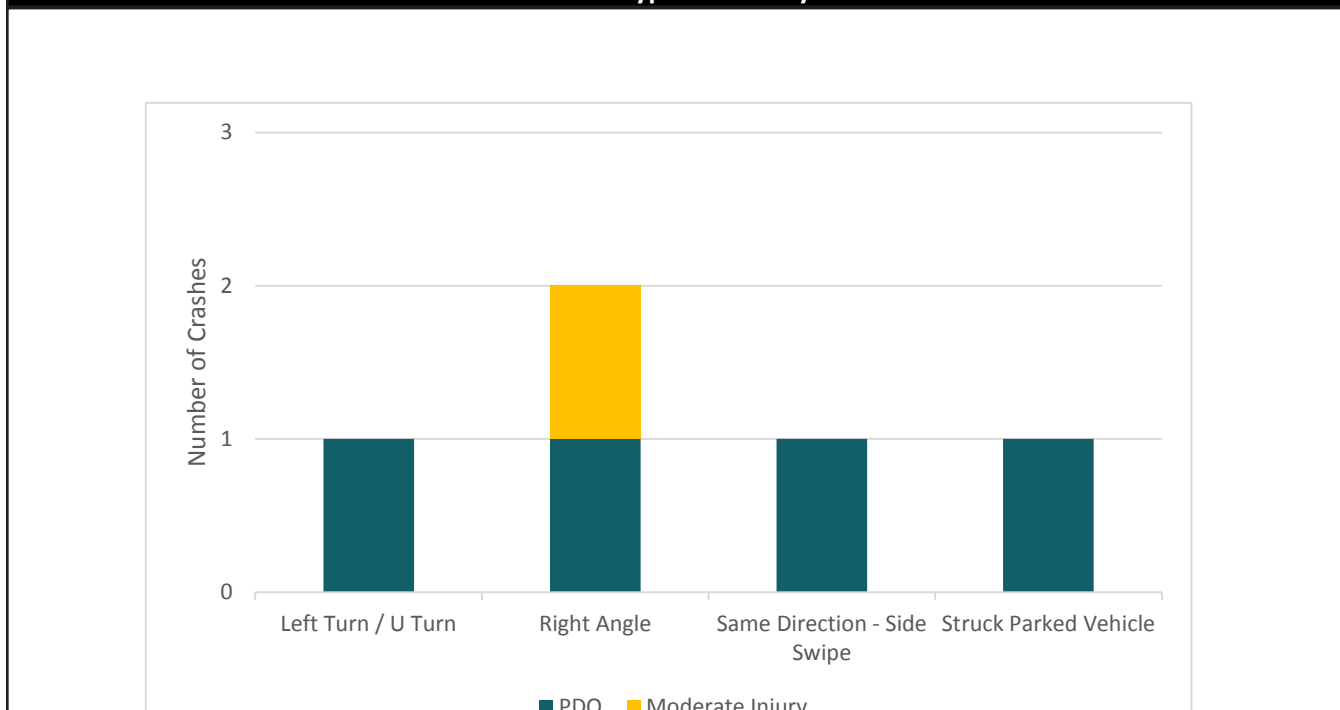
| Severity              | #        |
|-----------------------|----------|
| Property Damage Only  | 4        |
| Pain                  | 0        |
| Moderate Injury       | 1        |
| Incapacitating Injury | 0        |
| Fatal                 | 0        |
| <b>Total</b>          | <b>5</b> |

| Surface Condition     | #        |
|-----------------------|----------|
| Dry                   | 4        |
| Wet                   | 1        |
| Snowy                 | 0        |
| Icy                   | 0        |
| Slush                 | 0        |
| Water-Standing/Moving | 0        |
| Sand, Mud, Dirt       | 0        |
| Oil                   | 0        |
| <b>Total</b>          | <b>5</b> |

| Intersection        | #        |
|---------------------|----------|
| At intersection     | 5        |
| Not at intersection | 0        |
| <b>Total</b>        | <b>5</b> |

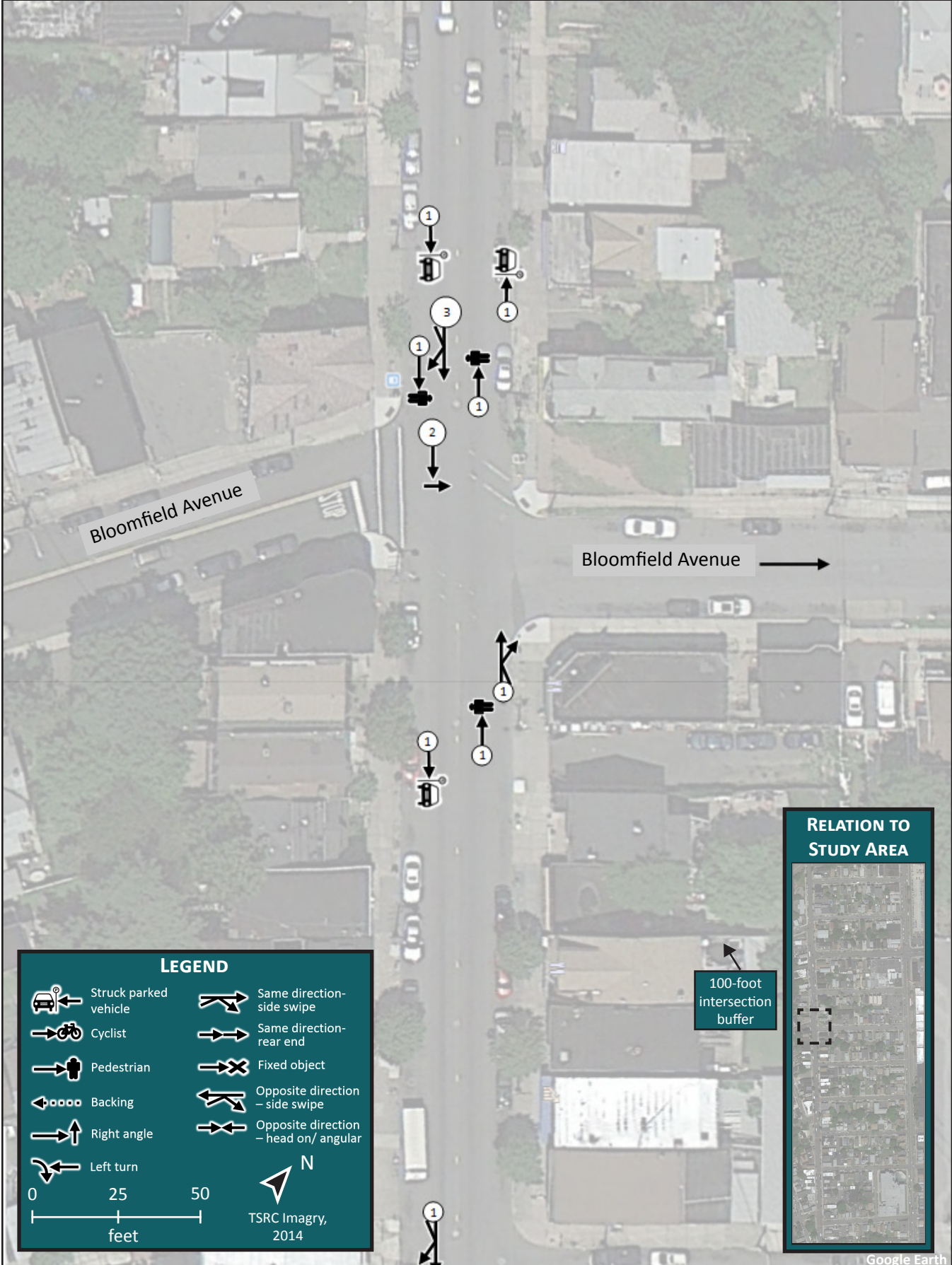
| Crash Year   | #        |
|--------------|----------|
| 2010         | 1        |
| 2011         | 3        |
| 2012         | 1        |
| <b>Total</b> | <b>5</b> |

**Crash Type & Severity**





# MAIN STREET & BLOOMFIELD AVENUE - CRASH DIAGRAM (2010 – 2012)



## MAIN STREET & BLOOMFIELD AVENUE - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #         |
|---------------------------------------|-----------|
| Same Direction - Rear End             | 0         |
| Same Direction - Side Swipe           | 3         |
| Right Angle                           | 2         |
| Opposite Direction - Head On/ Angular | 0         |
| Opposite Direction - Side Swipe       | 0         |
| Struck Parked Vehicle                 | 3         |
| Left Turn / U-Turn                    | 1         |
| Backing                               | 0         |
| Encroachment                          | 0         |
| Overturned                            | 0         |
| Fixed Object                          | 0         |
| Animal                                | 0         |
| Pedestrian                            | 3         |
| Pedalcyclist                          | 0         |
| Non-fixed Object                      | 0         |
| Railcar - Vehicle                     | 0         |
| Other                                 | 0         |
| <b>Total</b>                          | <b>12</b> |

| Month        | #         |
|--------------|-----------|
| January      | 1         |
| February     | 1         |
| March        | 2         |
| April        | 1         |
| May          | 0         |
| June         | 1         |
| July         | 1         |
| August       | 1         |
| September    | 1         |
| October      | 1         |
| November     | 2         |
| December     | 0         |
| <b>Total</b> | <b>12</b> |

| Day          | #         |
|--------------|-----------|
| Monday       | 1         |
| Tuesday      | 2         |
| Wednesday    | 2         |
| Thursday     | 3         |
| Friday       | 0         |
| Saturday     | 1         |
| Sunday       | 3         |
| <b>Total</b> | <b>12</b> |

| Light Condition                     | #         |
|-------------------------------------|-----------|
| Daylight                            | 4         |
| Dawn                                | 0         |
| Dusk                                | 1         |
| Dark - No Street Lights             | 0         |
| Dark - Street Lights On/ Continuous | 7         |
| Dark - Street Lights On/Spot        | 0         |
| <b>Total</b>                        | <b>12</b> |

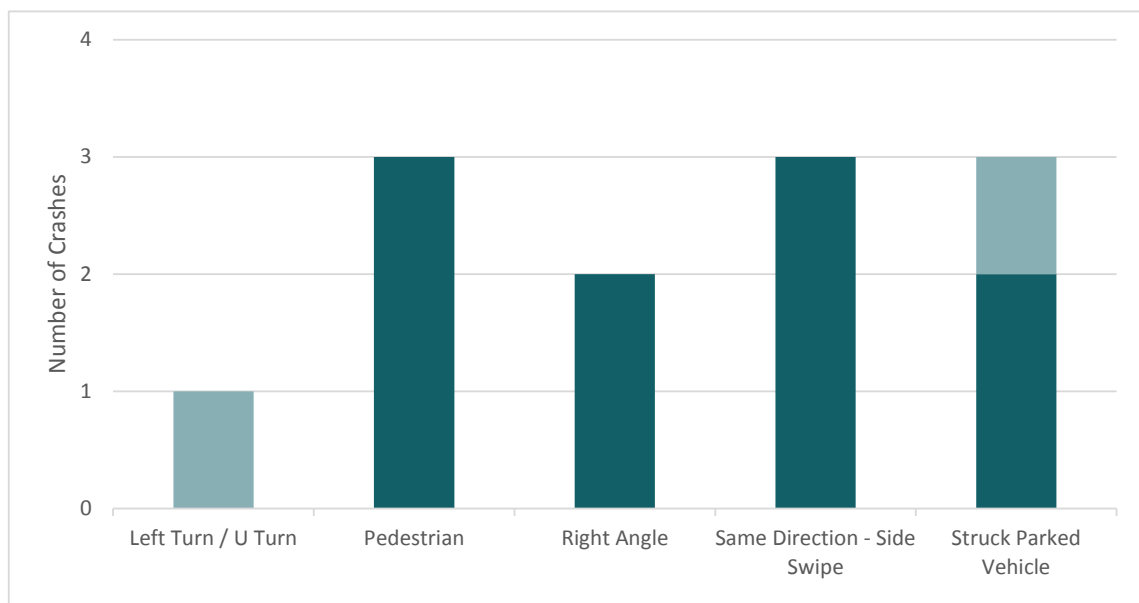
| Severity              | #         |
|-----------------------|-----------|
| Property Damage Only  | 10        |
| Pain                  | 2         |
| Moderate Injury       | 0         |
| Incapacitating Injury | 0         |
| Fatal                 | 0         |
| <b>Total</b>          | <b>12</b> |

| Surface Condition     | #         |
|-----------------------|-----------|
| Dry                   | 11        |
| Wet                   | 0         |
| Snowy                 | 1         |
| Icy                   | 0         |
| Slush                 | 0         |
| Water-Standing/Moving | 0         |
| Sand, Mud, Dirt       | 0         |
| Oil                   | 0         |
| <b>Total</b>          | <b>12</b> |

| Intersection        | #         |
|---------------------|-----------|
| At intersection     | 8         |
| Not at intersection | 4         |
| <b>Total</b>        | <b>12</b> |

| Crash Year   | #         |
|--------------|-----------|
| 2010         | 2         |
| 2011         | 3         |
| 2012         | 7         |
| <b>Total</b> | <b>12</b> |

**Crash Type & Severity**



# MAIN STREET & ELK STREET - CRASH DIAGRAM (2010 – 2012)





## MAIN STREET & ELK STREET - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #        |
|---------------------------------------|----------|
| Same Direction - Rear End             | 1        |
| Same Direction - Side Swipe           | 3        |
| Right Angle                           | 0        |
| Opposite Direction - Head On/ Angular | 0        |
| Opposite Direction - Side Swipe       | 0        |
| Struck Parked Vehicle                 | 0        |
| Left Turn / U-Turn                    | 0        |
| Backing                               | 0        |
| Encroachment                          | 0        |
| Overturned                            | 0        |
| Fixed Object                          | 0        |
| Animal                                | 0        |
| Pedestrian                            | 0        |
| Pedalcyclist                          | 0        |
| Non-fixed Object                      | 0        |
| Railcar - Vehicle                     | 0        |
| Other                                 | 0        |
| <b>Total</b>                          | <b>4</b> |

| Month        | #        |
|--------------|----------|
| January      | 0        |
| February     | 1        |
| March        | 0        |
| April        | 0        |
| May          | 0        |
| June         | 1        |
| July         | 0        |
| August       | 0        |
| September    | 0        |
| October      | 1        |
| November     | 1        |
| December     | 0        |
| <b>Total</b> | <b>4</b> |

| Day          | #        |
|--------------|----------|
| Monday       | 0        |
| Tuesday      | 2        |
| Wednesday    | 1        |
| Thursday     | 1        |
| Friday       | 0        |
| Saturday     | 0        |
| Sunday       | 0        |
| <b>Total</b> | <b>4</b> |

| Light Condition                     | #        |
|-------------------------------------|----------|
| Daylight                            | 3        |
| Dawn                                | 0        |
| Dusk                                | 1        |
| Dark - No Street Lights             | 0        |
| Dark - Street Lights On/ Continuous | 0        |
| Dark - Street Lights On/Spot        | 0        |
| <b>Total</b>                        | <b>4</b> |

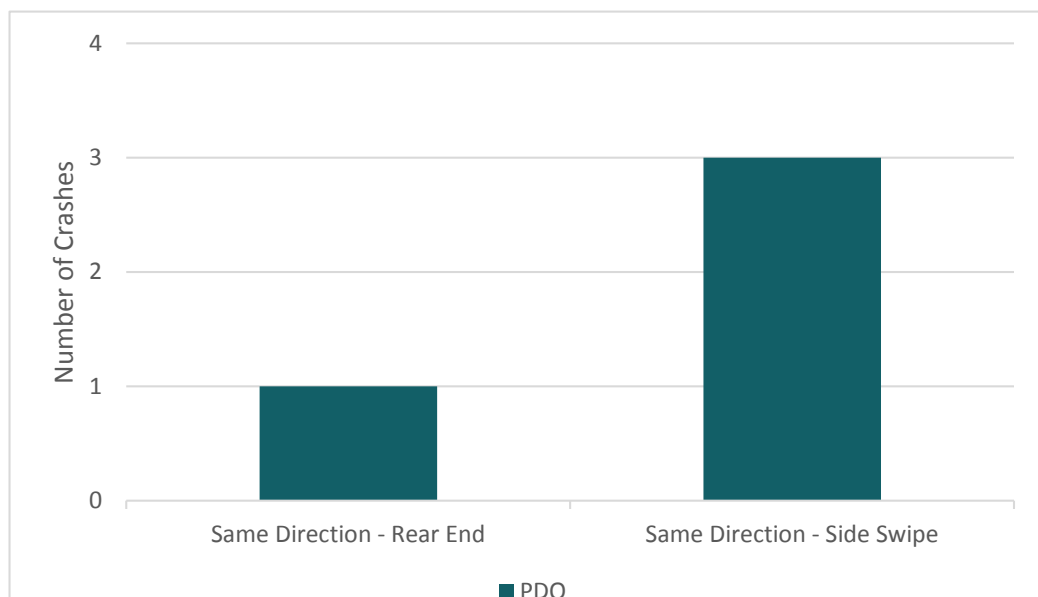
| Severity              | #        |
|-----------------------|----------|
| Property Damage Only  | 4        |
| Pain                  | 0        |
| Moderate Injury       | 0        |
| Incapacitating Injury | 0        |
| Fatal                 | 0        |
| <b>Total</b>          | <b>4</b> |

| Surface Condition     | #        |
|-----------------------|----------|
| Dry                   | 4        |
| Wet                   | 0        |
| Snowy                 | 0        |
| Icy                   | 0        |
| Slush                 | 0        |
| Water-Standing/Moving | 0        |
| Sand, Mud, Dirt       | 0        |
| Oil                   | 0        |
| <b>Total</b>          | <b>4</b> |

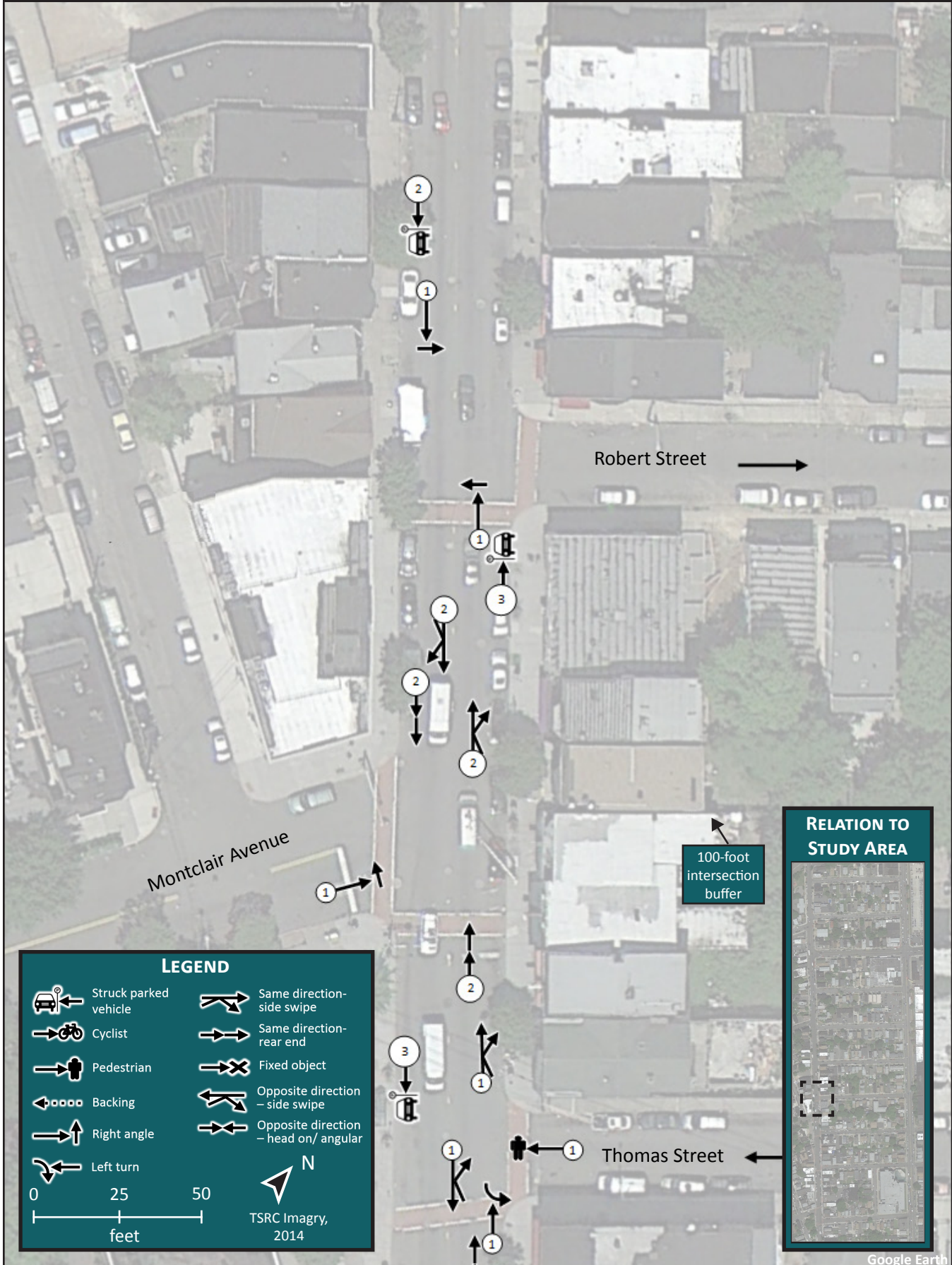
| Intersection        | #        |
|---------------------|----------|
| At intersection     | 2        |
| Not at intersection | 2        |
| <b>Total</b>        | <b>4</b> |

| Crash Year   | #        |
|--------------|----------|
| 2010         | 1        |
| 2011         | 1        |
| 2012         | 2        |
| <b>Total</b> | <b>4</b> |

**Crash Type & Severity**



# MAIN STREET & ROBERT STREET - CRASH DIAGRAM (2010 – 2012)



## MAIN STREET & ROBERT STREET - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #        |
|---------------------------------------|----------|
| Same Direction - Rear End             | 0        |
| Same Direction - Side Swipe           | 0        |
| Right Angle                           | 2        |
| Opposite Direction - Head On/ Angular | 0        |
| Opposite Direction - Side Swipe       | 0        |
| Struck Parked Vehicle                 | 6        |
| Left Turn / U-Turn                    | 0        |
| Backing                               | 0        |
| Encroachment                          | 0        |
| Overturned                            | 0        |
| Fixed Object                          | 0        |
| Animal                                | 0        |
| Pedestrian                            | 0        |
| Pedalcyclist                          | 0        |
| Non-fixed Object                      | 0        |
| Railcar - Vehicle                     | 0        |
| Other                                 | 0        |
| <b>Total</b>                          | <b>8</b> |

| Month        | #        |
|--------------|----------|
| January      | 0        |
| February     | 0        |
| March        | 1        |
| April        | 0        |
| May          | 0        |
| June         | 1        |
| July         | 3        |
| August       | 0        |
| September    | 0        |
| October      | 2        |
| November     | 1        |
| December     | 0        |
| <b>Total</b> | <b>8</b> |

| Day          | #        |
|--------------|----------|
| Monday       | 2        |
| Tuesday      | 0        |
| Wednesday    | 1        |
| Thursday     | 2        |
| Friday       | 3        |
| Saturday     | 0        |
| Sunday       | 0        |
| <b>Total</b> | <b>8</b> |

| Light Condition                     | #        |
|-------------------------------------|----------|
| Daylight                            | 4        |
| Dawn                                | 0        |
| Dusk                                | 0        |
| Dark - No Street Lights             | 0        |
| Dark - Street Lights On/ Continuous | 4        |
| Dark - Street Lights On/Spot        | 0        |
| <b>Total</b>                        | <b>8</b> |

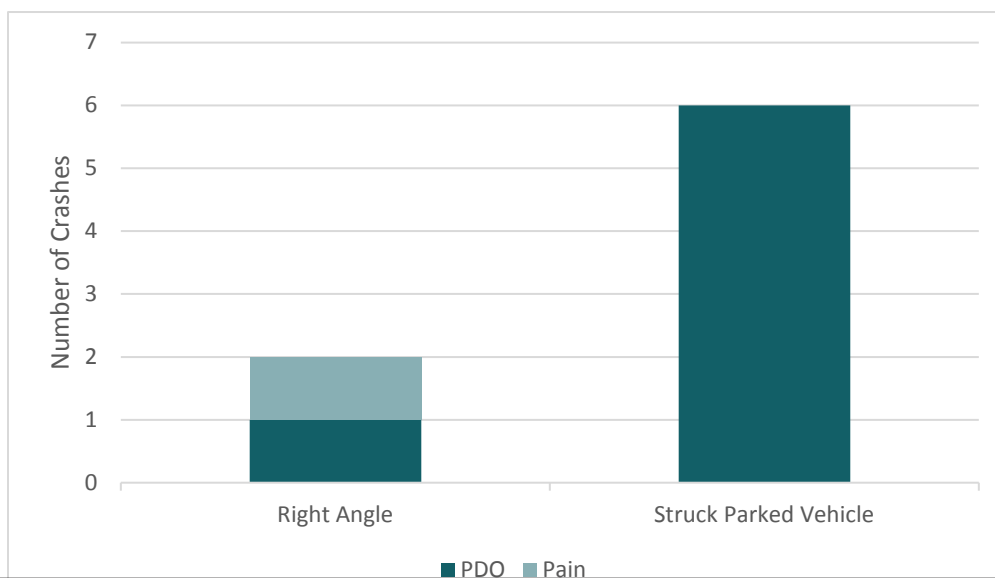
| Severity              | #        |
|-----------------------|----------|
| Property Damage Only  | 7        |
| Pain                  | 1        |
| Moderate Injury       | 0        |
| Incapacitating Injury | 0        |
| Fatal                 | 0        |
| <b>Total</b>          | <b>8</b> |

| Surface Condition     | #        |
|-----------------------|----------|
| Dry                   | 7        |
| Wet                   | 1        |
| Snowy                 | 0        |
| Icy                   | 0        |
| Slush                 | 0        |
| Water-Standing/Moving | 0        |
| Sand, Mud, Dirt       | 0        |
| Oil                   | 0        |
| <b>Total</b>          | <b>8</b> |

| Intersection        | #        |
|---------------------|----------|
| At intersection     | 3        |
| Not at intersection | 5        |
| <b>Total</b>        | <b>8</b> |

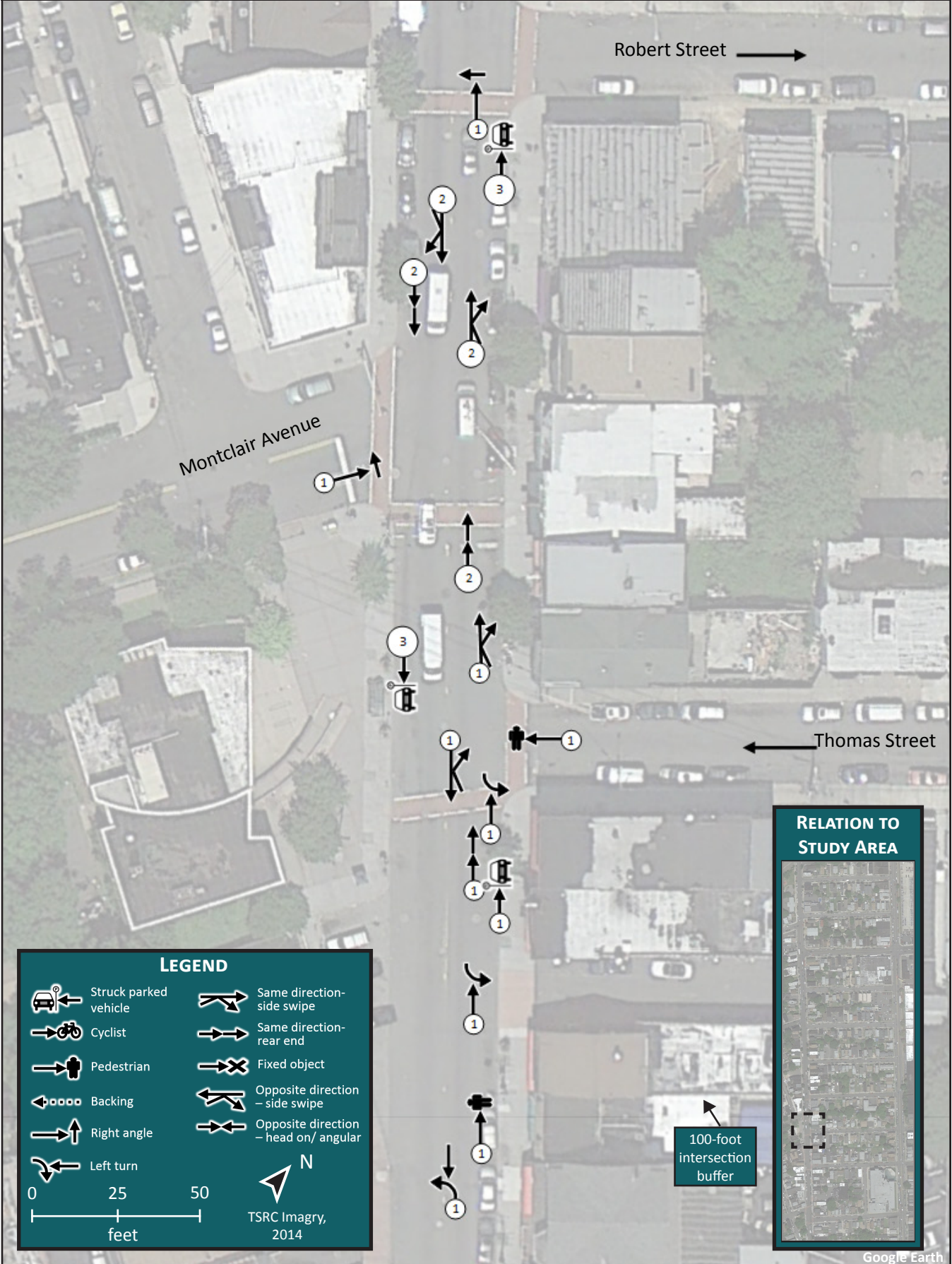
| Crash Year   | #        |
|--------------|----------|
| 2010         | 0        |
| 2011         | 3        |
| 2012         | 5        |
| <b>Total</b> | <b>8</b> |

**Crash Type & Severity**





# MAIN STREET/MONTCLAIR AVENUE TO THOMAS STREET - CRASH DIAGRAM (2010 – 2012)



# MAIN STREET/MONTCLAIR AVENUE TO THOMAS STREET - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #         |
|---------------------------------------|-----------|
| Same Direction - Rear End             | 5         |
| Same Direction - Side Swipe           | 5         |
| Right Angle                           | 2         |
| Opposite Direction - Head On/ Angular | 0         |
| Opposite Direction - Side Swipe       | 1         |
| Struck Parked Vehicle                 | 4         |
| Left Turn / U-Turn                    | 0         |
| Backing                               | 0         |
| Encroachment                          | 0         |
| Overturned                            | 0         |
| Fixed Object                          | 0         |
| Animal                                | 0         |
| Pedestrian                            | 1         |
| Pedalcyclist                          | 0         |
| Non-fixed Object                      | 0         |
| Railcar - Vehicle                     | 0         |
| Other                                 | 0         |
| <b>Total</b>                          | <b>18</b> |

| Month        | #         |
|--------------|-----------|
| January      | 1         |
| February     | 1         |
| March        | 1         |
| April        | 2         |
| May          | 1         |
| June         | 3         |
| July         | 3         |
| August       | 0         |
| September    | 1         |
| October      | 1         |
| November     | 2         |
| December     | 2         |
| <b>Total</b> | <b>18</b> |

| Day          | #         |
|--------------|-----------|
| Monday       | 3         |
| Tuesday      | 1         |
| Wednesday    | 2         |
| Thursday     | 2         |
| Friday       | 3         |
| Saturday     | 4         |
| Sunday       | 3         |
| <b>Total</b> | <b>18</b> |

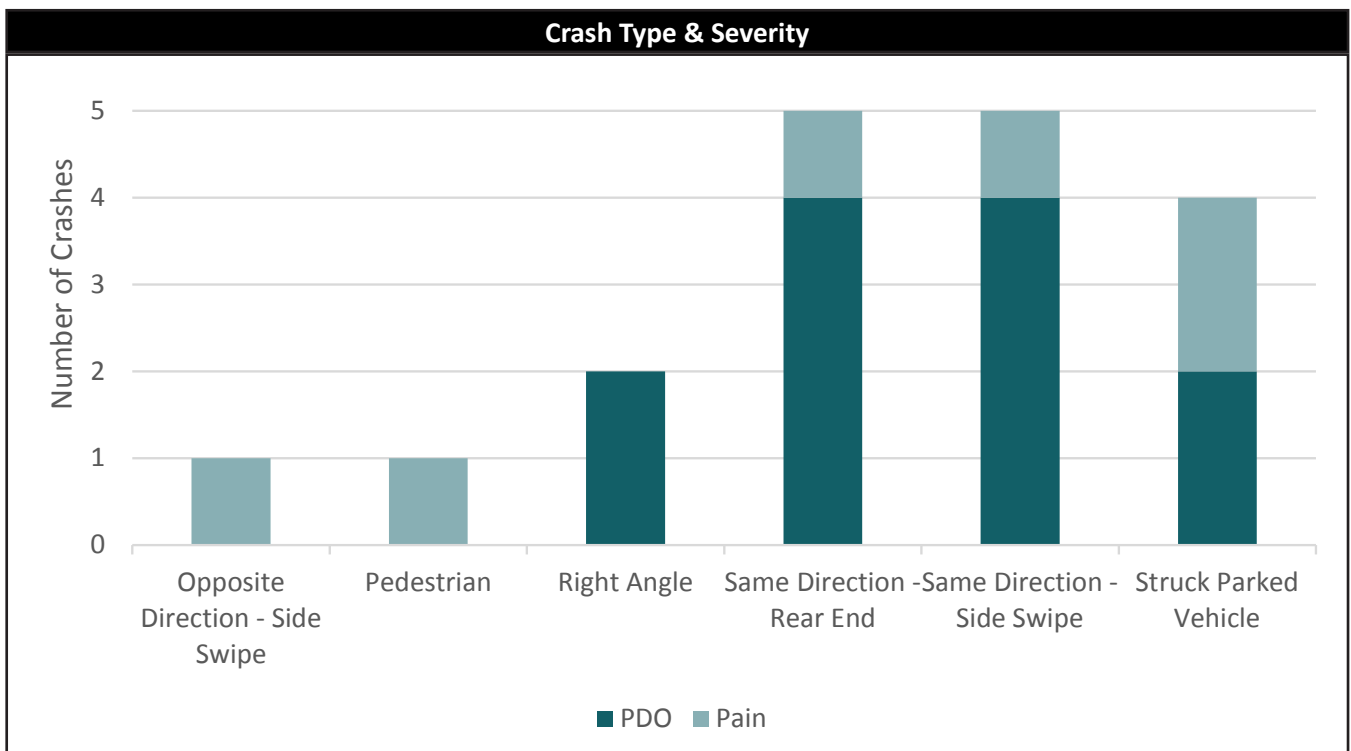
| Light Condition                     | #         |
|-------------------------------------|-----------|
| Daylight                            | 9         |
| Dawn                                | 0         |
| Dusk                                | 0         |
| Dark - No Street Lights             | 0         |
| Dark - Street Lights On/ Continuous | 9         |
| Dark - Street Lights On/Spot        | 0         |
| <b>Total</b>                        | <b>18</b> |

| Severity              | #         |
|-----------------------|-----------|
| Property Damage Only  | 12        |
| Pain                  | 6         |
| Moderate Injury       | 0         |
| Incapacitating Injury | 0         |
| Fatal                 | 0         |
| <b>Total</b>          | <b>18</b> |

| Surface Condition     | #         |
|-----------------------|-----------|
| Dry                   | 15        |
| Wet                   | 2         |
| Snowy                 | 1         |
| Icy                   | 0         |
| Slush                 | 0         |
| Water-Standing/Moving | 0         |
| Sand, Mud, Dirt       | 0         |
| Oil                   | 0         |
| <b>Total</b>          | <b>18</b> |

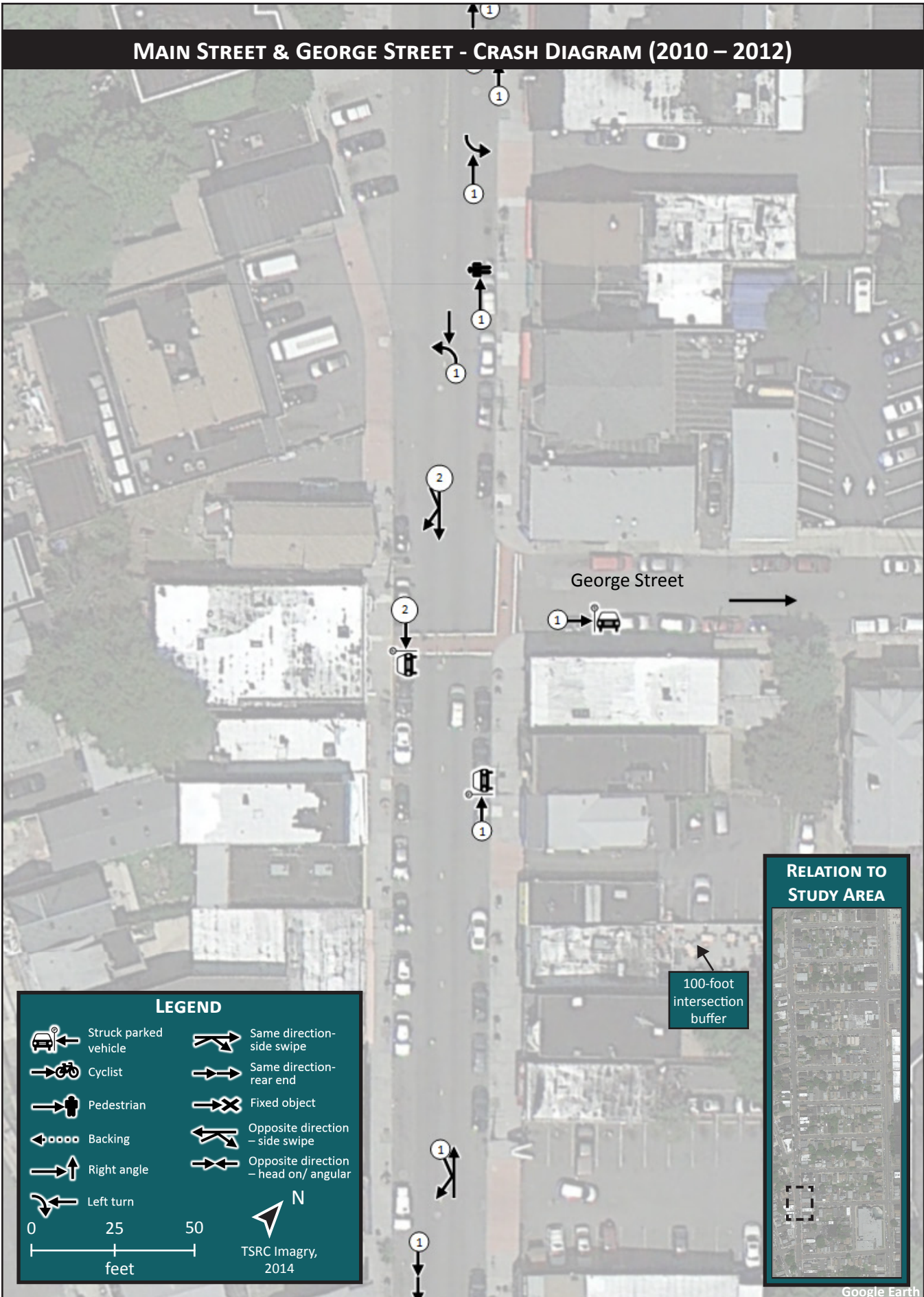
| Intersection        | #         |
|---------------------|-----------|
| At intersection     | 12        |
| Not at intersection | 6         |
| <b>Total</b>        | <b>18</b> |

| Crash Year   | #         |
|--------------|-----------|
| 2010         | 5         |
| 2011         | 4         |
| 2012         | 9         |
| <b>Total</b> | <b>18</b> |





# MAIN STREET & GEORGE STREET - CRASH DIAGRAM (2010 – 2012)





## MAIN STREET & GEORGE STREET - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #        |
|---------------------------------------|----------|
| Same Direction - Rear End             | 0        |
| Same Direction - Side Swipe           | 2        |
| Right Angle                           | 0        |
| Opposite Direction - Head On/ Angular | 0        |
| Opposite Direction - Side Swipe       | 0        |
| Struck Parked Vehicle                 | 4        |
| Left Turn / U-Turn                    | 2        |
| Backing                               | 0        |
| Encroachment                          | 0        |
| Overturned                            | 0        |
| Fixed Object                          | 0        |
| Animal                                | 0        |
| Pedestrian                            | 1        |
| Pedalcyclist                          | 0        |
| Non-fixed Object                      | 0        |
| Railcar - Vehicle                     | 0        |
| Other                                 | 0        |
| <b>Total</b>                          | <b>9</b> |

| Month        | #        |
|--------------|----------|
| January      | 1        |
| February     | 0        |
| March        | 0        |
| April        | 1        |
| May          | 3        |
| June         | 0        |
| July         | 0        |
| August       | 2        |
| September    | 1        |
| October      | 1        |
| November     | 0        |
| December     | 0        |
| <b>Total</b> | <b>9</b> |

| Day          | #        |
|--------------|----------|
| Monday       | 1        |
| Tuesday      | 1        |
| Wednesday    | 0        |
| Thursday     | 2        |
| Friday       | 3        |
| Saturday     | 1        |
| Sunday       | 1        |
| <b>Total</b> | <b>9</b> |

| Light Condition                     | #        |
|-------------------------------------|----------|
| Daylight                            | 5        |
| Dawn                                | 0        |
| Dusk                                | 0        |
| Dark - No Street Lights             | 0        |
| Dark - Street Lights On/ Continuous | 4        |
| Dark - Street Lights On/Spot        | 0        |
| <b>Total</b>                        | <b>9</b> |

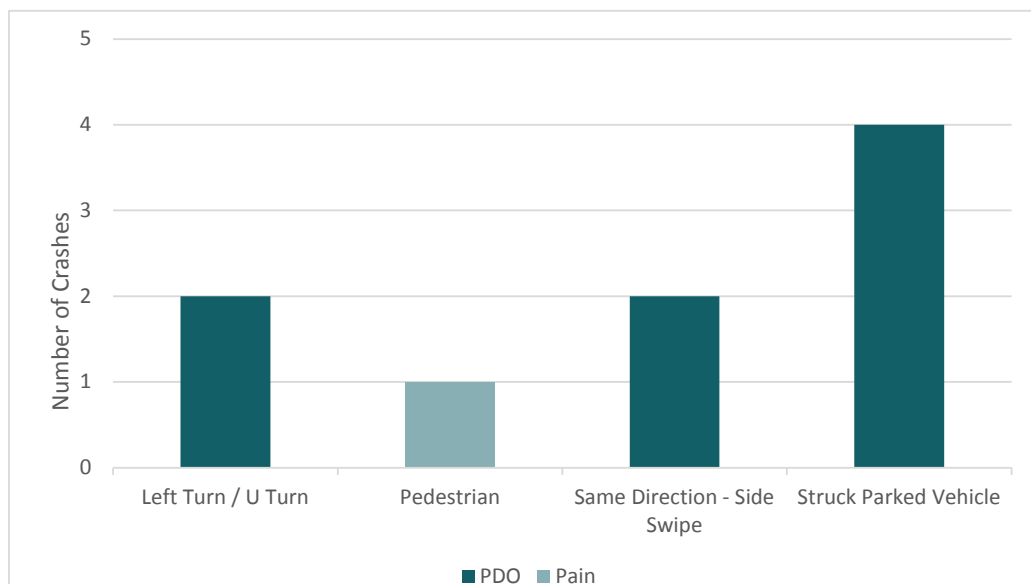
| Severity              | #        |
|-----------------------|----------|
| Property Damage Only  | 8        |
| Pain                  | 1        |
| Moderate Injury       | 0        |
| Incapacitating Injury | 0        |
| Fatal                 | 0        |
| <b>Total</b>          | <b>9</b> |

| Surface Condition     | #        |
|-----------------------|----------|
| Dry                   | 9        |
| Wet                   | 0        |
| Snowy                 | 0        |
| Icy                   | 0        |
| Slush                 | 0        |
| Water-Standing/Moving | 0        |
| Sand, Mud, Dirt       | 0        |
| Oil                   | 0        |
| <b>Total</b>          | <b>9</b> |

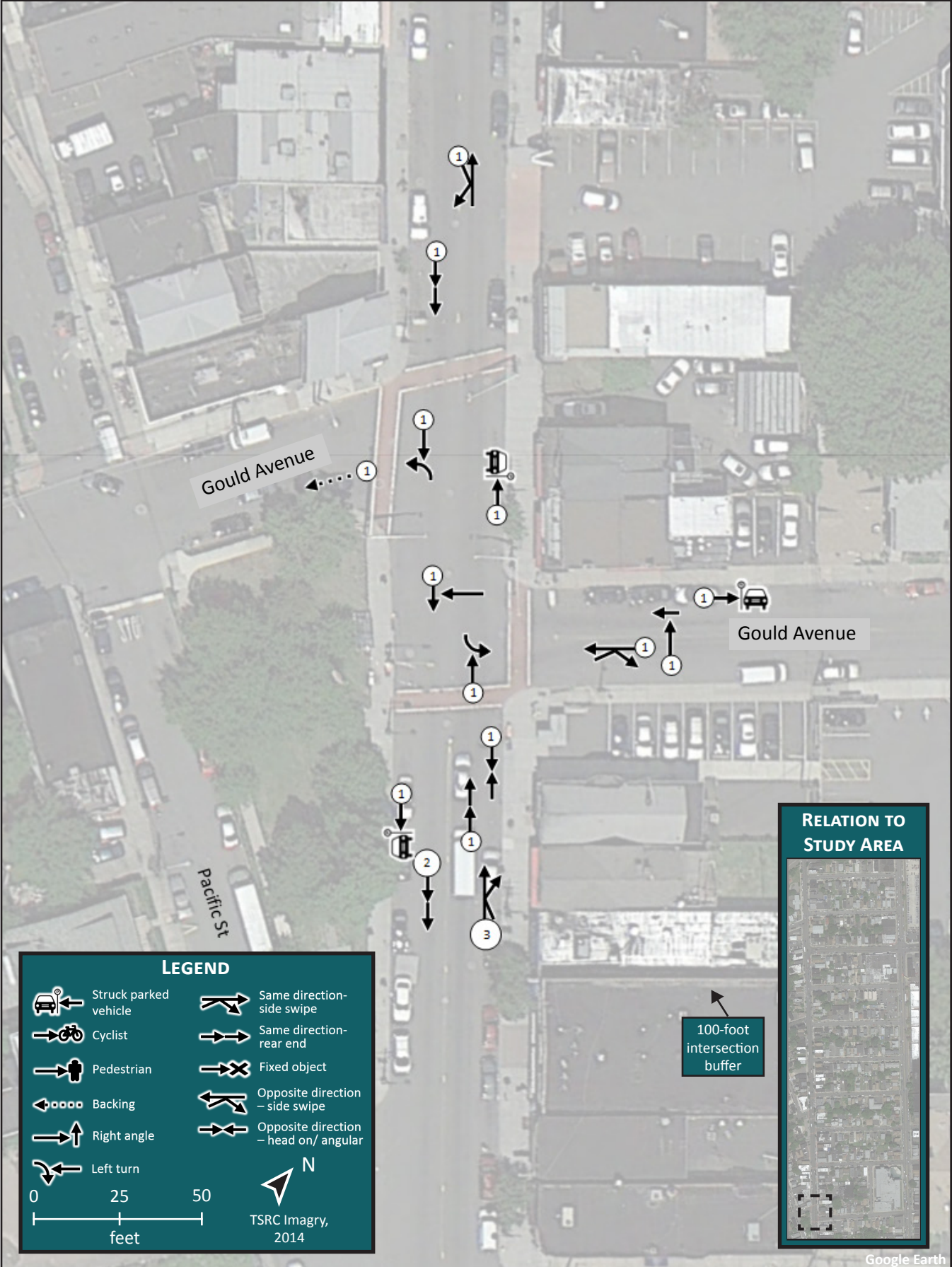
| Intersection        | #        |
|---------------------|----------|
| At intersection     | 4        |
| Not at intersection | 5        |
| <b>Total</b>        | <b>9</b> |

| Crash Year   | #        |
|--------------|----------|
| 2010         | 2        |
| 2011         | 5        |
| 2012         | 2        |
| <b>Total</b> | <b>9</b> |

**Crash Type & Severity**



# MAIN STREET & GOULD AVENUE - CRASH DIAGRAM (2010 – 2012)



## MAIN STREET & GOULD AVENUE - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #         |
|---------------------------------------|-----------|
| Same Direction - Rear End             | 7         |
| Same Direction - Side Swipe           | 3         |
| Right Angle                           | 2         |
| Opposite Direction - Head On/ Angular | 1         |
| Opposite Direction - Side Swipe       | 2         |
| Struck Parked Vehicle                 | 3         |
| Left Turn / U-Turn                    | 2         |
| Backing                               | 0         |
| Encroachment                          | 0         |
| Overturned                            | 0         |
| Fixed Object                          | 0         |
| Animal                                | 0         |
| Pedestrian                            | 0         |
| Pedalcyclist                          | 0         |
| Non-fixed Object                      | 0         |
| Railcar - Vehicle                     | 0         |
| Other                                 | 0         |
| <b>Total</b>                          | <b>20</b> |

| Month        | #         |
|--------------|-----------|
| January      | 0         |
| February     | 3         |
| March        | 1         |
| April        | 1         |
| May          | 1         |
| June         | 2         |
| July         | 1         |
| August       | 1         |
| September    | 1         |
| October      | 2         |
| November     | 4         |
| December     | 3         |
| <b>Total</b> | <b>20</b> |

| Day          | #         |
|--------------|-----------|
| Monday       | 2         |
| Tuesday      | 3         |
| Wednesday    | 3         |
| Thursday     | 3         |
| Friday       | 3         |
| Saturday     | 5         |
| Sunday       | 1         |
| <b>Total</b> | <b>20</b> |

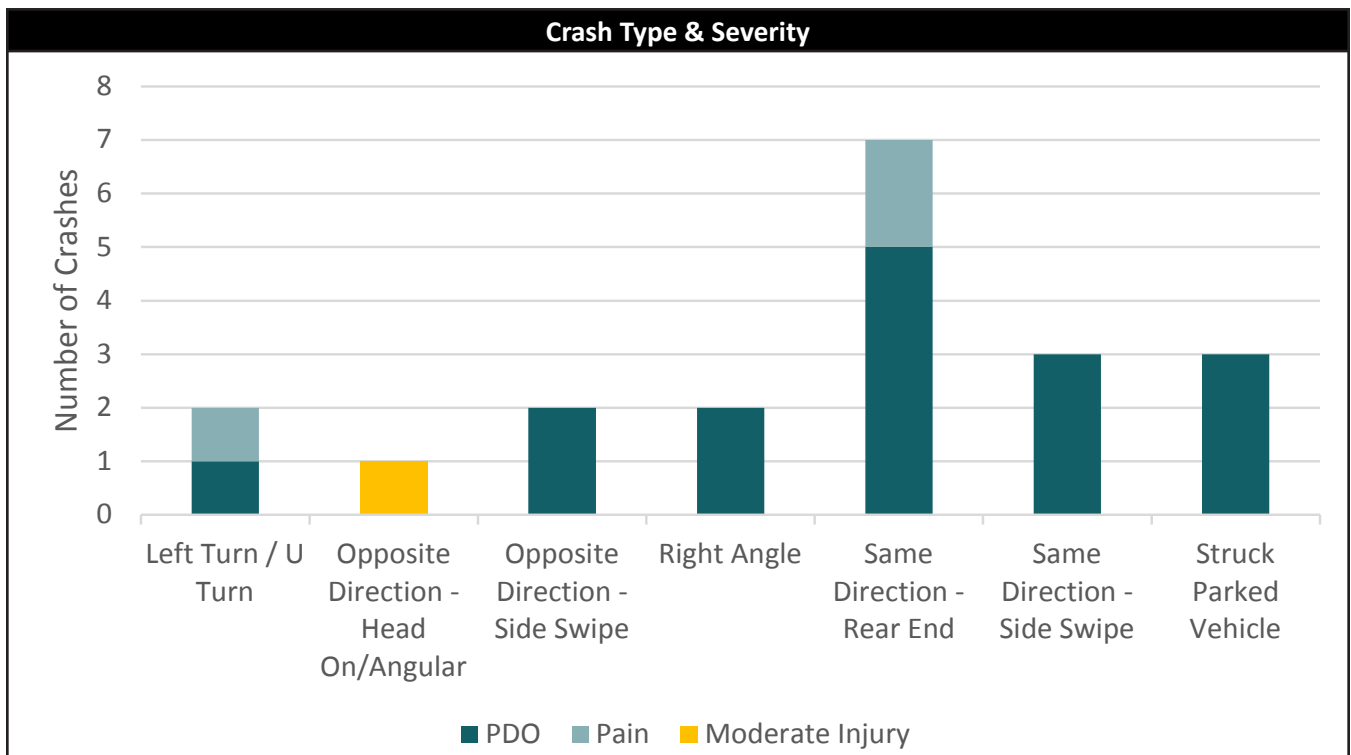
| Light Condition                     | #         |
|-------------------------------------|-----------|
| Daylight                            | 9         |
| Dawn                                | 0         |
| Dusk                                | 0         |
| Dark - No Street Lights             | 1         |
| Dark - Street Lights On/ Continuous | 10        |
| Dark - Street Lights On/Spot        | 0         |
| <b>Total</b>                        | <b>20</b> |

| Severity              | #         |
|-----------------------|-----------|
| Property Damage Only  | 16        |
| Pain                  | 3         |
| Moderate Injury       | 1         |
| Incapacitating Injury | 0         |
| Fatal                 | 0         |
| <b>Total</b>          | <b>20</b> |

| Surface Condition     | #         |
|-----------------------|-----------|
| Dry                   | 17        |
| Wet                   | 2         |
| Snowy                 | 0         |
| Icy                   | 1         |
| Slush                 | 0         |
| Water-Standing/Moving | 0         |
| Sand, Mud, Dirt       | 0         |
| Oil                   | 0         |
| <b>Total</b>          | <b>20</b> |

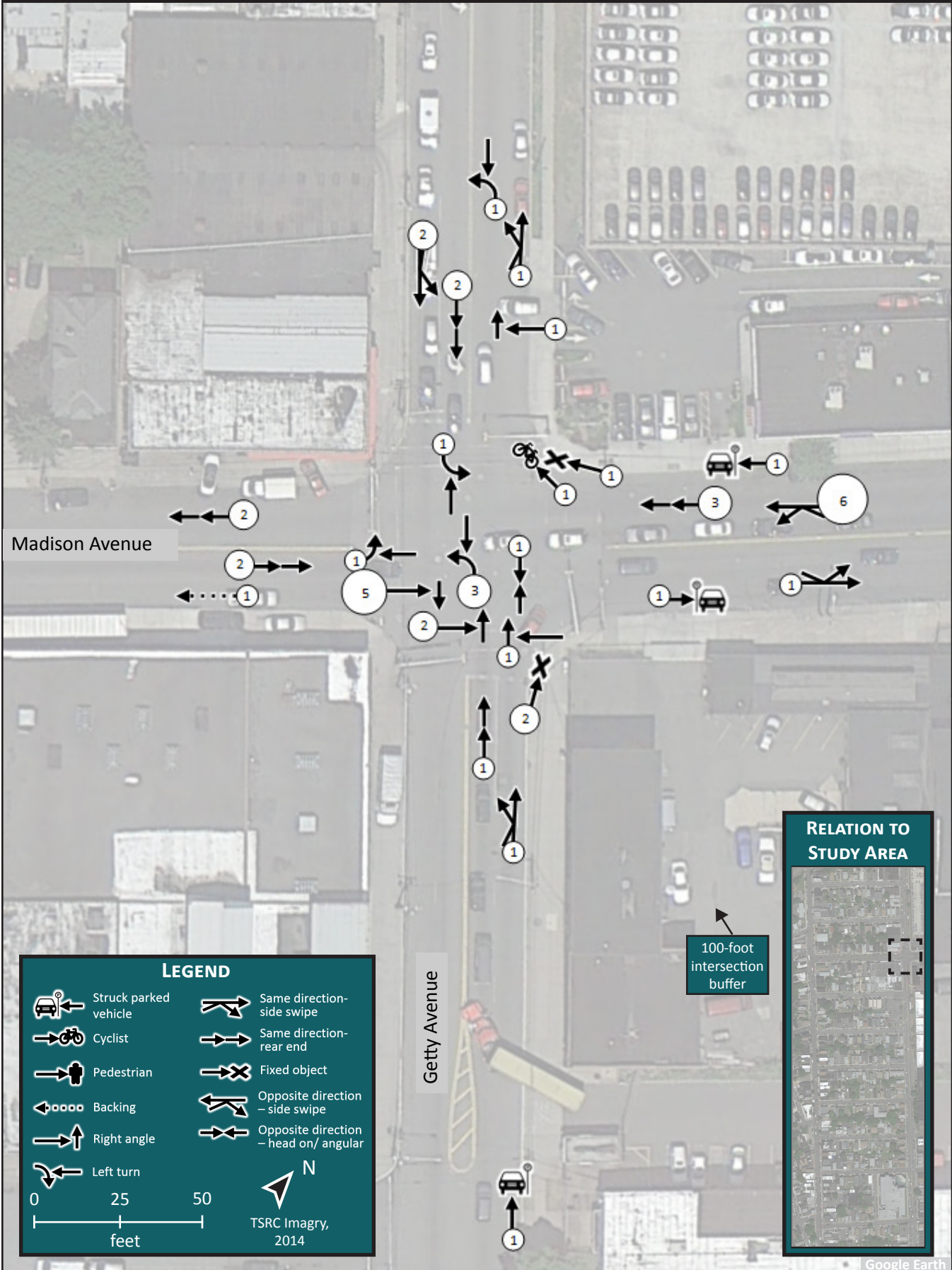
| Intersection        | #         |
|---------------------|-----------|
| At intersection     | 9         |
| Not at intersection | 11        |
| <b>Total</b>        | <b>20</b> |

| Crash Year   | #         |
|--------------|-----------|
| 2010         | 5         |
| 2011         | 8         |
| 2012         | 7         |
| <b>Total</b> | <b>20</b> |





# MADISON AVENUE & GETTY AVENUE - CRASH DIAGRAM (2010 – 2012)



## MADISON AVENUE & GETTY AVENUE - CRASH SUMMARY (2010 – 2012)

| Crash Type                            | #         |
|---------------------------------------|-----------|
| Same Direction - Rear End             | 9         |
| Same Direction - Side Swipe           | 11        |
| Right Angle                           | 10        |
| Opposite Direction - Head On/ Angular | 1         |
| Opposite Direction - Side Swipe       | 0         |
| Struck Parked Vehicle                 | 3         |
| Left Turn / U-Turn                    | 1         |
| Backing                               | 2         |
| Encroachment                          | 0         |
| Overturned                            | 0         |
| Fixed Object                          | 5         |
| Animal                                | 0         |
| Pedestrian                            | 0         |
| Pedalcyclist                          | 1         |
| Non-fixed Object                      | 0         |
| Railcar - Vehicle                     | 0         |
| Other                                 | 0         |
| <b>Total</b>                          | <b>43</b> |

| Month        | #         |
|--------------|-----------|
| January      | 4         |
| February     | 4         |
| March        | 8         |
| April        | 3         |
| May          | 6         |
| June         | 2         |
| July         | 3         |
| August       | 1         |
| September    | 3         |
| October      | 2         |
| November     | 4         |
| December     | 3         |
| <b>Total</b> | <b>43</b> |

| Day          | #         |
|--------------|-----------|
| Monday       | 8         |
| Tuesday      | 9         |
| Wednesday    | 5         |
| Thursday     | 5         |
| Friday       | 7         |
| Saturday     | 4         |
| Sunday       | 5         |
| <b>Total</b> | <b>43</b> |

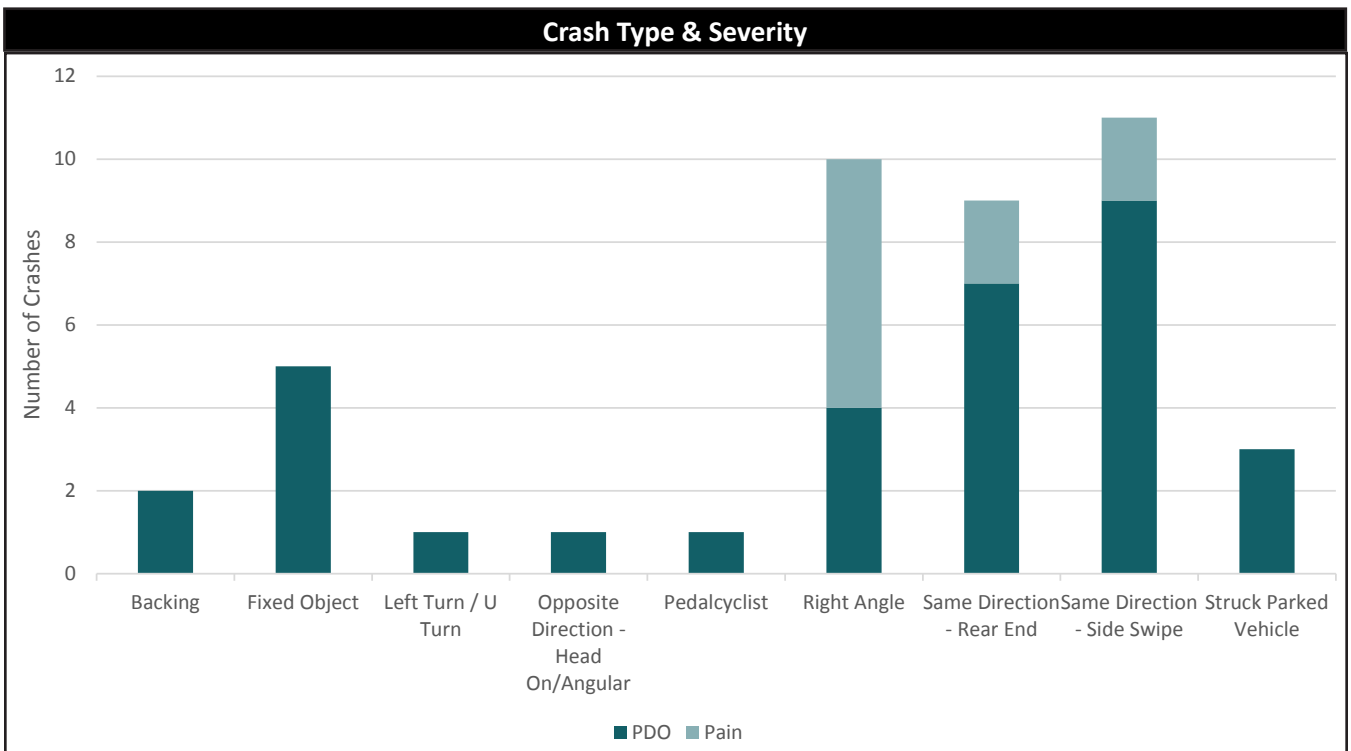
| Light Condition                     | #         |
|-------------------------------------|-----------|
| Daylight                            | 29        |
| Dawn                                | 0         |
| Dusk                                | 3         |
| Dark - No Street Lights             | 0         |
| Dark - Street Lights On/ Continuous | 11        |
| Dark - Street Lights On/Spot        | 0         |
| <b>Total</b>                        | <b>43</b> |

| Severity              | #         |
|-----------------------|-----------|
| Property Damage Only  | 33        |
| Pain                  | 10        |
| Moderate Injury       | 0         |
| Incapacitating Injury | 0         |
| Fatal                 | 0         |
| <b>Total</b>          | <b>43</b> |

| Surface Condition     | #         |
|-----------------------|-----------|
| Dry                   | 36        |
| Wet                   | 4         |
| Snowy                 | 2         |
| Icy                   | 0         |
| Slush                 | 0         |
| Water-Standing/Moving | 0         |
| Sand, Mud, Dirt       | 0         |
| Oil                   | 0         |
| <b>Total</b>          | <b>42</b> |

| Intersection        | #         |
|---------------------|-----------|
| At intersection     | 32        |
| Not at intersection | 11        |
| <b>Total</b>        | <b>43</b> |

| Crash Year   | #         |
|--------------|-----------|
| 2010         | 16        |
| 2011         | 9         |
| 2012         | 18        |
| <b>Total</b> | <b>43</b> |

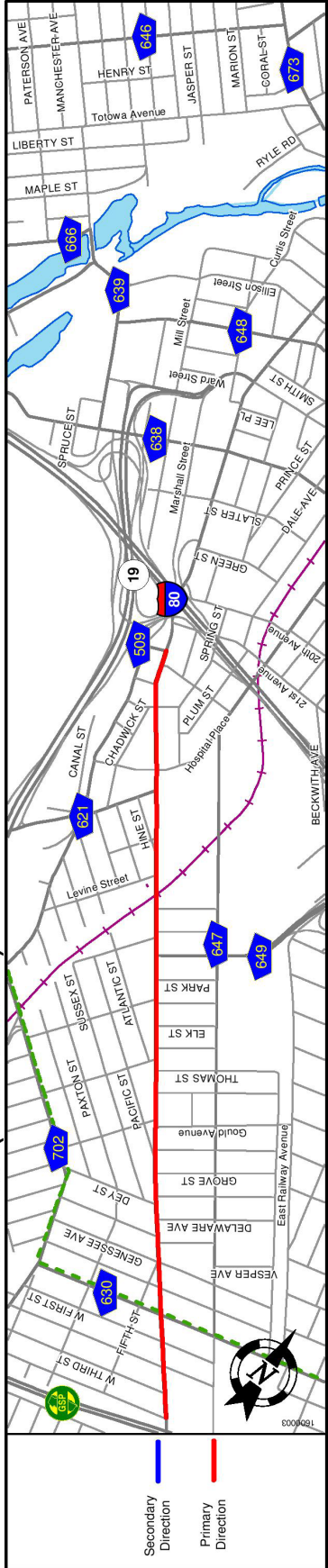


>> APPENDIX D – STRAIGHT LINE DIAGRAM



Mile Posts: 5.000 - 6.640

PASSAIC COUNTY 601 (South to North)



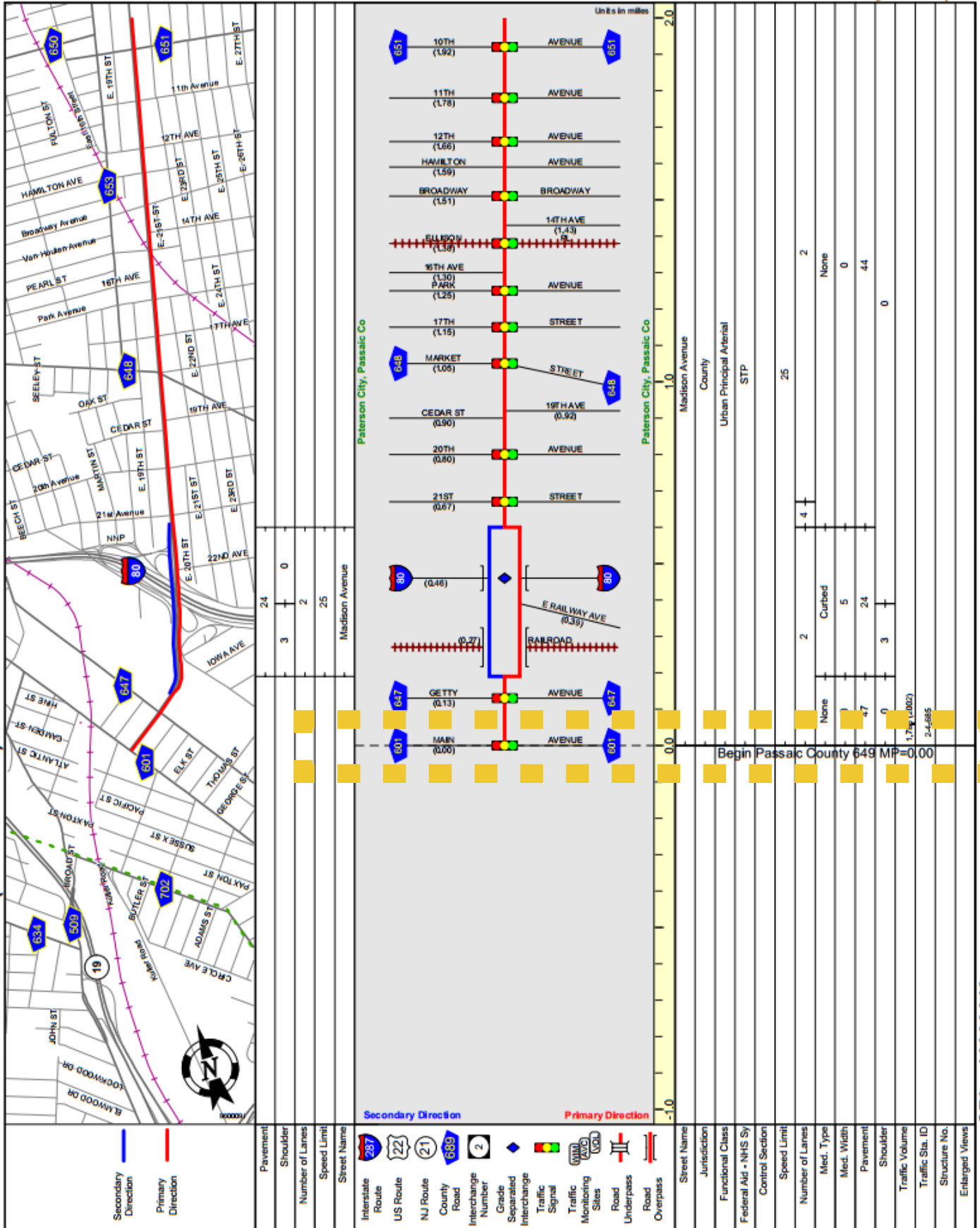
| Legend                |                          | Units in miles           |     |
|-----------------------|--------------------------|--------------------------|-----|
|                       | Secondary Direction      | 6.0                      | 7.0 |
|                       | Primary Direction        | 5.0                      | 8.0 |
|                       | Pavement                 |                          |     |
|                       | Shoulder                 |                          |     |
|                       | Number of Lanes          |                          |     |
|                       | Speed Limit              |                          |     |
|                       | Interstate Route         |                          |     |
|                       | US Route                 |                          |     |
|                       | NJ Route                 |                          |     |
|                       | County Road              |                          |     |
|                       | Interchange Number       |                          |     |
|                       | Grade                    |                          |     |
|                       | Separated Interchange    |                          |     |
|                       | Traffic Signal           |                          |     |
|                       | Traffic Monitoring Sites |                          |     |
|                       | Underpass                |                          |     |
|                       | Road Overpass            |                          |     |
| Street Name           | Jurisdiction             | Main Street              |     |
| Functional Class      | County                   | Urban Principal Arterial |     |
| Federal Aid - NHS Sys | NHS                      |                          |     |
| Control Section       |                          |                          |     |
| Speed Limit           |                          | 35                       |     |
| Number of Lanes       |                          | 2                        |     |
| Med. Type             |                          | None                     |     |
| Med. Width            |                          | 0                        |     |
| Pavement              |                          | 39                       |     |
| Shoulder              |                          | 0                        |     |
| Traffic Volume        |                          | 13,305 (2009)            |     |
| Traffic Sta. ID       |                          | 2-4651                   |     |
| Structure No.         |                          |                          |     |
| Enlarged Views        |                          |                          |     |

End Passaic County 601 MP=6.64

SRI = 16000601 Date last inventoried: July 2001

Mile Posts: 0.000 - 2.000

PASSAIC COUNTY 649 (South to North)



Date last inventoried: July 2001

SRI = 16000649