

# **JOURNAL SQUARE**

## **ROAD SAFETY AUDIT**

### **Jersey City, Hudson County, New Jersey**

#### **(REPORT)**

>> March 2015

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 Hudson County with funding provided by FHWA and NJDOT

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## >> INTRODUCTION

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

The Center for Advanced Infrastructure and Transportation's (CAIT) 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 an RSA conducted by a team of engineers, planners, and law-enforcement officers to help municipalities and counties make cost-effective safety improvements.

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

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

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

For more information, contact Safety Program Manager Andy Kaplan at [andy.kaplan@rutgers.edu](mailto:andy.kaplan@rutgers.edu).

### **DISCLAIMER**

Road Safety Audit reports provided by the CAIT staff do not constitute an engineering report. The agency responsible for design and construction should consult a professional engineer licensed by the State of New Jersey in preparing the design and construction documents to implement any of the safety countermeasures in this 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 Journal Square Road Safety Audit (RSA) was conducted on September 16, 2014. RSA team members included roadway owners, stakeholders, and outside transportation experts. Journal Square stands to benefit from this report's safety countermeasures, if implemented, not simply in terms of safety but also in terms of enhancing the experience of motorists, cyclists, and pedestrians as they move through the corridor, and improving their quality of life.

The crash findings for Journal Square indicate that while the rate of crashes in Hudson County has remained steady, the RSA area surrounding Journal Square has spiked in 2012. The consistency of crash type, time of day, and day of the week suggests pattern problems with the opportunity to improve. The fact that pedestrians bear the greatest severity of these crashes also suggests a glaring mismatch between Journal Square's street design and its users.

The RSA team has identified these key issues in the RSA corridor: consistently faded pavement striping and markings, the lack of truncated domes and ADA compliant curb ramps, outdated inlet grates that can harm cyclists, the antiquated use of 8-inch signal heads, the lack of street amenities, aggressive driving and generally dangerous driver behavior expressed through double parking, parking in travel lanes, and parking too close to intersections.

The RSA team has also identified the following recommendations central to the improvement of the RSA: re-milling and re-striping pavement markings, upgrading curb ramps to include truncated domes and ADA compliant dimensions, installing curb extensions to narrow wide travel lanes and limit crossing distances for pedestrians, installing ergonomic crosswalks to match pedestrian's desired path and introducing street furniture, trees, and bus shelters along the corridor. Graphic design concepts and photo simulations accompany each study intersection with proposed recommendations.



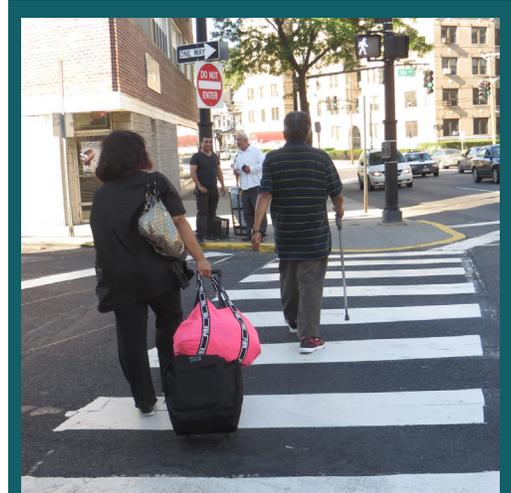
## 1.4 AREA CHARACTERISTICS

Journal Square is one of the central transportation hubs not only in Jersey City but also in the entri. Journal Square is at the intersection of a central business district, an expanding residential sector, and a transportation hub critical to the economic function of New Jersey and New York City. These factors, combined with Jersey City’s density, highlight the area’s importance and the need for a safe and effective multimodal transportation network.

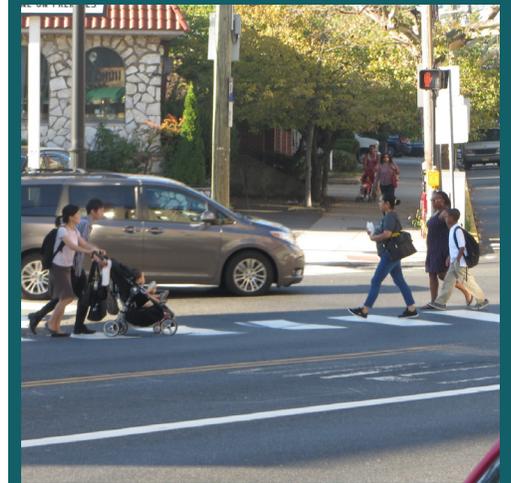
**Area roadways:** As it is now, the neighborhood is bordered by highways on two sides, the Pulaski Skyway and Route 1 & 9 to the north and Route 78 to the East. Drivers tend to use Journal Square area, and JFK Boulevard in particular, as a cut through. The significant volume of traffic, particularly trucks, creates conflicts with pedestrians and cyclists.

**Zoning:** Journal Square is also comprised of various, and sometimes opposing, land uses. According to current Jersey City zoning regulations, all intersections in the RSA study area except Bond Street and JFK Boulevard are located in a Redevelopment Plan Area.<sup>1</sup> This majority area is zoned as “commercial center” and is intended “[...] for an active and intensive use of parcels surrounding the Journal Square Transportation Center.”<sup>2</sup> At the north end of the study area, where Bergen Avenue and JFK Boulevard intersect, the area is zoned as “core,” and “[...] is to provide for high-density, high-rise construction [...]” and has “[...] the greatest potential to provide housing, office space, and other uses in a transit oriented manner.”<sup>3</sup> In addition to being a commercial corridor, the western street edge between Tonnelle Avenue and Sip Avenue is zoned for historic preservation. Beyond the commercial corridor, between Sip Avenue and Bond Street, there are a handful of lots that are zoned as “central business district” while the rest are “multi-family midrise.”<sup>4</sup>

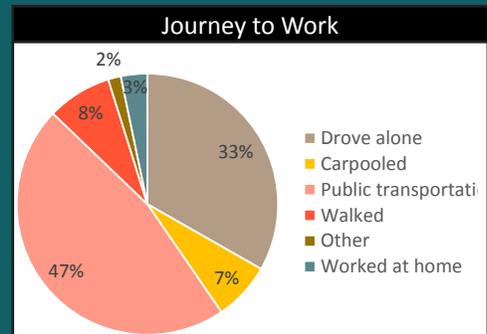
**Mode splits:** Also in conflict with one another are street users of all modes, abilities, and ages. The city’s modal split differs greatly from the rest of New Jersey. At the state level, 11 percent of people commute via public transit, and over 70 percent drive alone, whereas in Jersey City, nearly one-half of people use public transit and only one-third drive alone. When comparing Jersey City to the rest of Hudson County, the contrast is not as great, though Hudson County has only slightly fewer people who take public transit (42 percent) and more people who drive alone (37 percent), according to the 2013 American Community Survey (ACS) data. This is a change from the mode split in 2000, when public transit represented only one-third of commuters.<sup>5</sup> The increased frequency of workers using public transit has many implications for the transportation network, but in terms



**Figure 3 – JFK Boulevard and Tonnelle Avenue**



**Figure 4 – JFK Boulevard & Sip Avenue**  
Pedestrians of all ages with different needs, including school children, prefer smooth sidewalks for strollers, canes, wheelchairs, and suitcases.



**Figure 5 – Mode Split in 2010**

Source: U.S. Census Bureau, ACS 2010 – American Community Survey Three-Year Estimates for Jersey City, NJ

Journey to work data reflects a community employs people who walk or take public transit to work.

<sup>1</sup> City of Jersey City Zoning Map. [http://www.cityofjerseycity.com/uploadedFiles/City\\_Government/Department\\_of\\_Housing,\\_Economic\\_Development\\_and\\_Commerce/City\\_Planning/Zoning%20Map%20092513.pdf](http://www.cityofjerseycity.com/uploadedFiles/City_Government/Department_of_Housing,_Economic_Development_and_Commerce/City_Planning/Zoning%20Map%20092513.pdf)

<sup>2</sup> Journal Square 2060 Plan, p. 24 [http://www.cityofjerseycity.com/uploadedFiles/City\\_Government/Department\\_of\\_Housing,\\_Economic\\_Development\\_and\\_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf](http://www.cityofjerseycity.com/uploadedFiles/City_Government/Department_of_Housing,_Economic_Development_and_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf)

<sup>3</sup> Ibid, p. 24

<sup>4</sup> Ibid, p. 40

<sup>5</sup> Hudson County Reexamination of the Master Plan. p. 34 [http://www.hudsoncountynj.org/wp-content/uploads/2013/06/Hudson\\_County\\_Master\\_Plan\\_Reexamination\\_Report\\_2008.pdf](http://www.hudsoncountynj.org/wp-content/uploads/2013/06/Hudson_County_Master_Plan_Reexamination_Report_2008.pdf)

of safety, it is important to understand that transit users are also typically pedestrians for a time, especially near a large transit hub like Journal Square. When added to the actual number of people who walk to work, we see that Jersey City has over half of its population traveling by foot at some point in their daily commute to work. This high number of pedestrians does not account for all of the students who walk or take the bus to the area's various primary and secondary schools, colleges, universities, and institutes.

**Complete Streets:** Both Jersey City and Hudson County have established Complete Streets policies that support safe and accessible roads for all users, including pedestrians and cyclists. The 2008 Hudson County Master Plan also explicitly supports pedestrian and bicycle facilities in their Circulation Goals 10 and 11:

Goal 10: To promote a pedestrian-first approach in downtown areas.

Goal 11: To provide pedestrian and bicycle access along all roadways, particularly those roads that lead residents to job centers.<sup>6</sup>

Sidewalks exist along the entirety of the corridor, and according to the Circulation Element of the Jersey City Master Plan, both Sip Avenue and Tonnelle Avenue are both identified as existing bicycle routes though no pavement markings indicate them as such.

Public transit is also a central tenet of the Complete Streets policies. In the Journal Square 2060 Plan, the Jersey City Division of Planning has proposed a streetcar corridor along JFK Boulevard north of Journal Square and Bergen Avenue south of Journal Square. There is also a proposed bus rapid transit along Sip Avenue.<sup>7</sup>

**Incoming developments:** Journal Square will be home to several new residential and commercial buildings in the next several years. For example, phase one of the 1,840-unit Journal Squared complex is expected to be completed in mid-2016. New residential developments will especially impact traffic patterns, creating an increase in the number of pedestrians during non-peak hours (as compared with the current abundance of daytime commuters). Furthermore, Jersey City seeks to become more sustainable, encouraging transit-friendly development and “[...] reducing parking to limit traffic congestion and effects on air quality, requiring bicycle parking and wider sidewalks to limit automobile use, and promote alternative modes, requiring retail uses along pedestrian corridors to create an enjoyable and safe neighborhood environment...”<sup>10</sup> The ideas are supported in the recommendation of the RSA team.

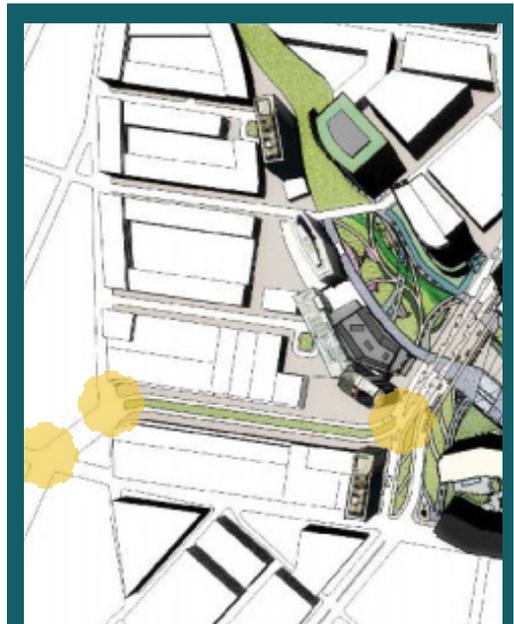


Figure 6 – Aerial Rendering of Journal Square<sup>8</sup>

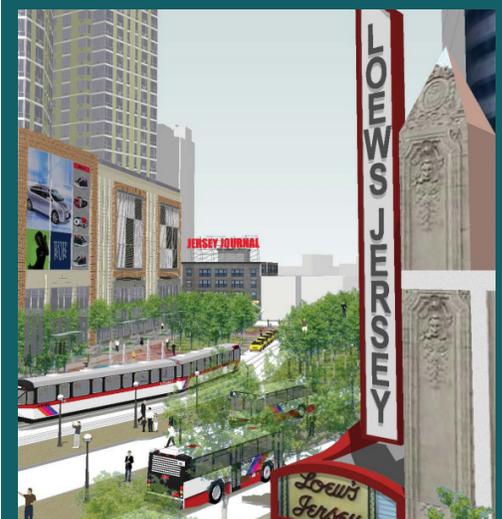


Figure 7 – Rendering of Bergen Avenue & JFK Boulevard<sup>9</sup>

The above image shows renderings from the Vision Journal Square Plan. The top image highlights intersections from the RSA in yellow.

<sup>6</sup>Hudson County Reexamination of the Master Plan, p. 6, [http://www.hudsoncountynj.org/wp-content/uploads/2013/06/Hudson\\_County\\_Master\\_Plan\\_Reexamination\\_Report\\_2008.pdf](http://www.hudsoncountynj.org/wp-content/uploads/2013/06/Hudson_County_Master_Plan_Reexamination_Report_2008.pdf)

<sup>7</sup>Map 6: Circulation Map." Journal Square 2060 Plan, page 44. [http://www.cityofjerseycity.com/uploadedFiles/City\\_Government/Department\\_of\\_Housing,\\_Economic\\_Development\\_and\\_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf](http://www.cityofjerseycity.com/uploadedFiles/City_Government/Department_of_Housing,_Economic_Development_and_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf)

<sup>8</sup> Vision Journal Square, p.125. Prepared for the Jersey City Redevelopment Agency and the City of Jersey City by A. Nelessen Associates and Dean Marchetto Architects. [http://www.thejcra.org/jcra\\_files/File/development\\_projects/journal\\_square/JSqVisionPlan.pdf](http://www.thejcra.org/jcra_files/File/development_projects/journal_square/JSqVisionPlan.pdf)

<sup>9</sup> Ibid, p. 53.

<sup>10</sup> "Journal Square 2060 Redevelopment Plan." City Planning Division, Jersey City, July 2010, p. 2.

## 1.5 INTERSECTION CHARACTERISTICS

The roadways in the study area vary in width, number of lanes, and lane usage. The main corridor, JFK Boulevard, runs north to south and has two lanes in each direction and has a curve as it runs through the Journal Square area.



Figure 8 – JFK Boulevard and Bergen Avenue

### JFK Boulevard and Bergen Avenue

- Three-legged intersection
- JFK Boulevard southbound: Curb to curb about 110 feet, including a 20-foot median. Southbound vehicles may use two lanes to turn right to follow JFK Boulevard or continue straight on two lanes to travel along Bergen Avenue.
- JFK Boulevard northbound: Curb to curb 60 feet. Northbound vehicles on JFK Boulevard may use one lane to turn right onto Bergen Avenue or use two lanes curve that left to continue along JFK Boulevard.
- Bergen Avenue: Curb to curb about 100 feet. The intersection is the terminating point for Bergen Avenue, and northbound vehicles from Bergen Avenue use three lanes to continue straight on JFK Boulevard.



Figure 9 – JFK Boulevard between Bergen Avenue and Tonnelle Avenue

### JFK Boulevard between Tonnelle Avenue and Bergen Avenue:

- Curb to curb: 60 feet
- JFK Boulevard has two travel lanes in each direction with metered, unmarked parking along both curbs.
- North of the mid-block crosswalk, the curbside parking lane becomes a travel lane to accommodate northbound vehicles turning right onto Bergen Avenue.

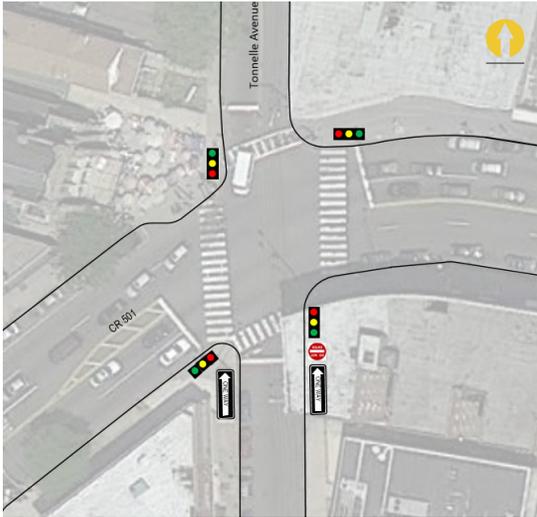


Figure 10 – Tonnelle Avenue and JFK Boulevard

#### Tonnelle Avenue and JFK Boulevard

- Tonnelle Avenue southbound: Curb to curb 30 feet. One lane to turn either right or left onto JFK Boulevard.
- Tonnelle Avenue northbound: Curb to curb 30 feet. One lane to turn left or right onto JFK Boulevard or continue north on Tonnelle Avenue.
- JFK Boulevard northbound: Curb to curb 65 feet, with a bulb-out at corner of southbound traffic and an 8-foot median. Northbound vehicles have two lanes to continue north on JFK Boulevard (left turns are not permitted). Parallel parking on the curbside of the southbound lanes.
- JFK Boulevard southbound: Curb to curb 60 feet. Metered curbside parking on both sides of street.

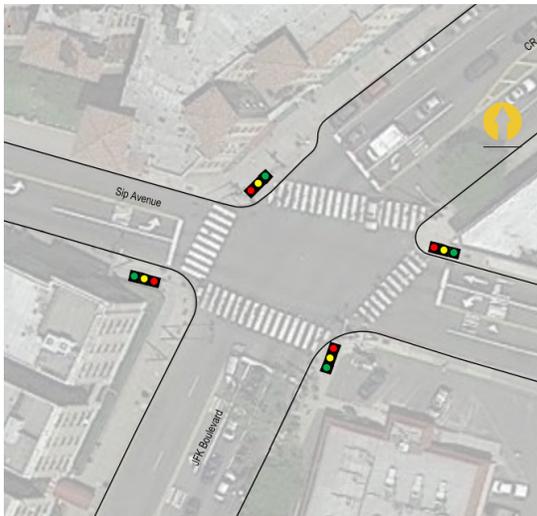


Figure 11 – Sip Avenue and JFK Boulevard

#### Sip Avenue and JFK Boulevard

- Skewed four-legged intersection
- JFK Boulevard southbound: Curb to curb 65 feet, with a bulb-out at the corner of southbound traffic. One lane to turn left onto Sip Avenue, one through lane, and one right-turn/through lane.
- Sip Avenue westbound: Curb to curb 40 feet. Westbound traffic may use the left lane to turn left or the right lane to go straight.
- JFK Boulevard northbound: Curb to curb 60 feet. One lane to turn left onto Sip Avenue, the middle lane to continue on JFK Boulevard, and the right lane to turn right or continue straight on JFK Boulevard.
- Sip Avenue eastbound: Curb to curb 35 feet. Situated on the top of a hill just west of the intersection. One left-turn lane and one shared through/right-turn lane.



Figure 12 – Bond Street and JFK Boulevard

#### Bond Street and JFK Boulevard

- Three-legged T-intersection. Cross street intersects JFK Boulevard at a slight curve in the road. Curbside parallel parking on both sides of both JFK Boulevard and Bond Street. Several driveway entrances located on the west side of the intersection. No crosswalk on south leg of intersection.
- JFK Boulevard southbound: Curb to curb 60 feet. Two southbound lanes travel straight through the intersection.
- JFK Boulevard northbound: Curb to curb 60 feet. Two northbound lanes travel straight through the intersection.
- Bond Street eastbound: Curb to curb 30 feet. One lane to turn either right or left onto JFK Boulevard.

## >> 2.0 CRASH FINDINGS

### 2.1 CHRONOLOGY

Crash volume remained steady and slightly lower than the county crash volume percentages during the first two years of the study period but were overrepresented in 2012. In terms of time of day, crashes in the RSA area were overrepresented in the afternoon to evening hours, as well as slightly in the early morning hours. In terms of day of week, more crashes occurred towards the end of the week, from Thursday to Saturday.

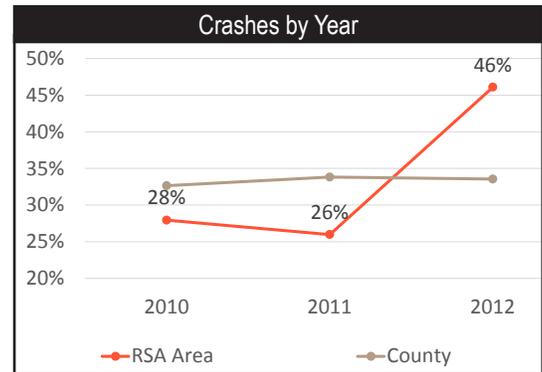


Figure 14 – Crashes by Year

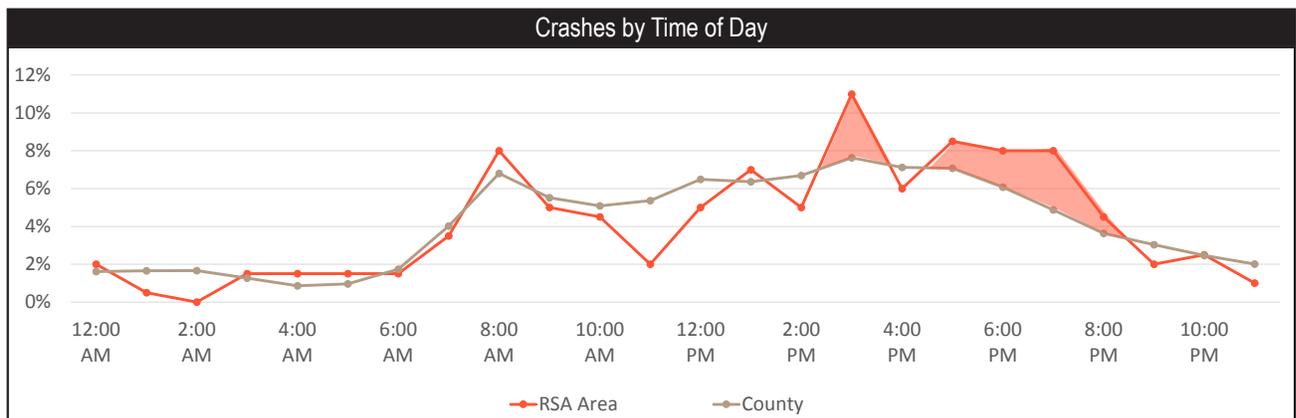


Figure 15 – Crashes by Time of Day, 2010-2012

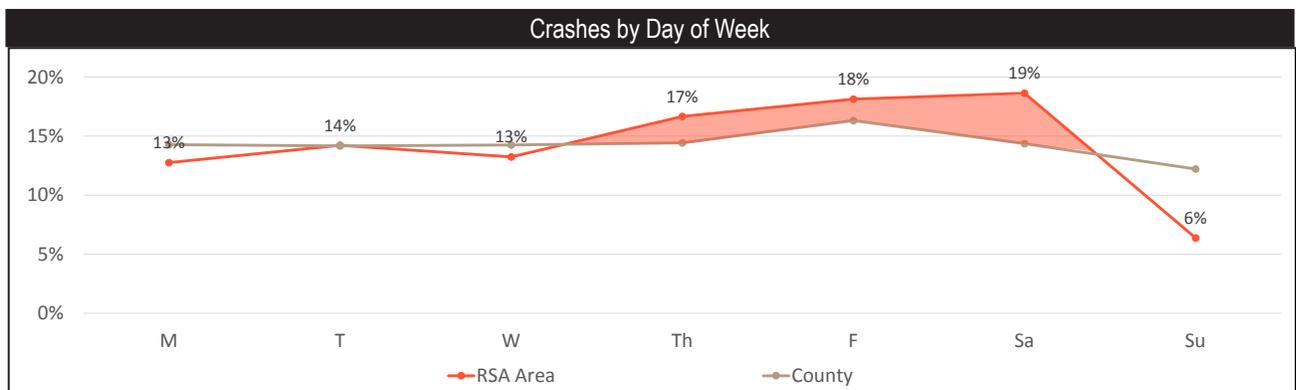


Figure 16 – Crashes by Day of Week, 2010-2012

## 2.2 SEVERITY

Severity	All People	Pedestrians	Bicyclists
Fatal	1	1	-
Incapacitated	4	4	-
Moderate Injury	5	2	-
Complaint of Pain	47	17	1
Property Damage Only	147	2	-
TOTAL	204	26	1

Pedestrian crashes account for all fatal and incapacitating crashes in the RSA area. Thirty-seven percent of crashes resulting in moderate injury or complaint of pain involved pedestrians or bicyclists.

Figure 17 – Crash Severity in RSA Area

## 2.3 COLLISION TYPE

When compared to the rest of Hudson County, the following crash types were overrepresented in the RSA area: same direction (both side swipe and rear end), left turn/u-turn, and pedestrian. The overrepresented crashes are highlighted in Figure 19 below, which also identifies the crash severity. Note that even though there are fewer pedestrian crashes than same direction crashes, they are markedly more severe.

Crash Type	Count in RSA Area	% in RSA Area	% in Hudson County
Same Direction – Rear End	55	27%	18%
Same Direction – Side Swipe	65	32%	16%
Right Angle	5	2%	15%
Opposite Direction – Head On/Angular	2	1%	1%
Opposite Direction – Side Swipe	1	0%	1%
Struck Parked Vehicle	32	16%	28%
Left Turn / U-Turn	9	4%	2%
Backing	5	2%	7%
Overturned	1	0%	0%
Fixed Object	2	1%	4%
Pedestrian	26	13%	5%
Pedalcyclist	1	0%	1%
TOTAL	204	100%	100%

Figure 18 – Crash Type in RSA Area and County

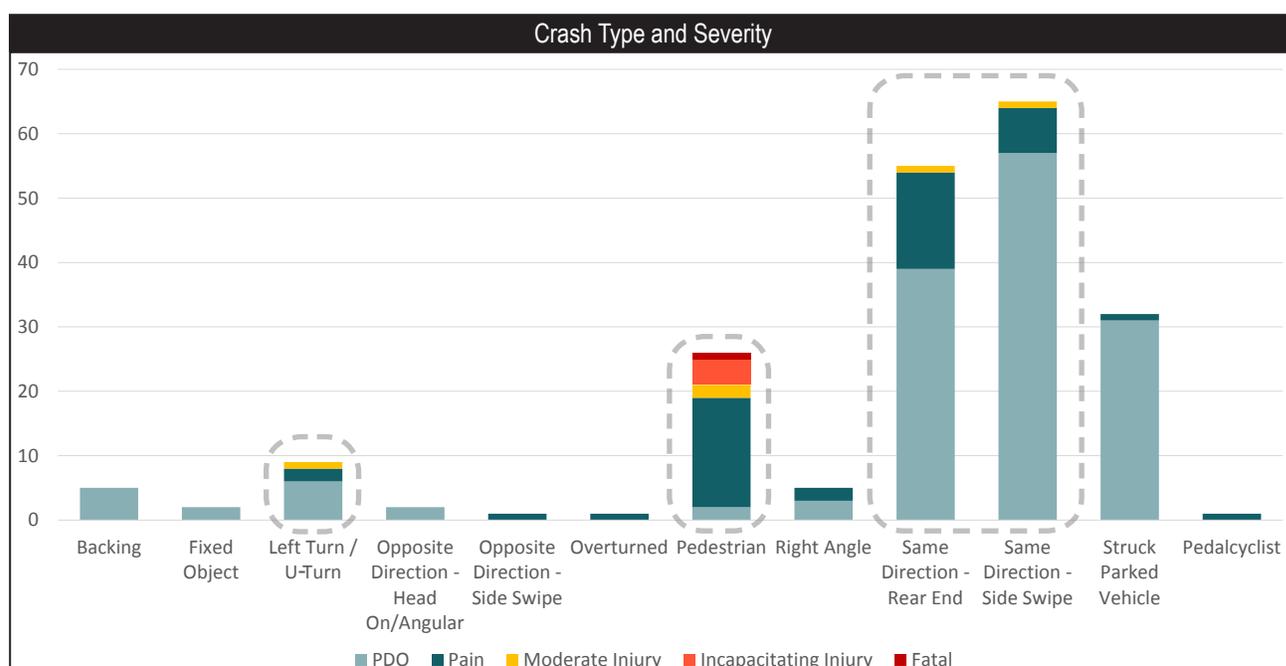


Figure 19 – Crash Type and Severity

## 2.4 ROADWAY SURFACE AND LIGHTING CONDITIONS

When compared to the county crash percentages, crashes occurring in “dark” conditions were overrepresented in the RSA area, indicating that lighting is possibly an issue. On the other hand, road condition (dry, wet, etc.), did not have a strong correlation in the crash data and does not appear to be a contributing factor.

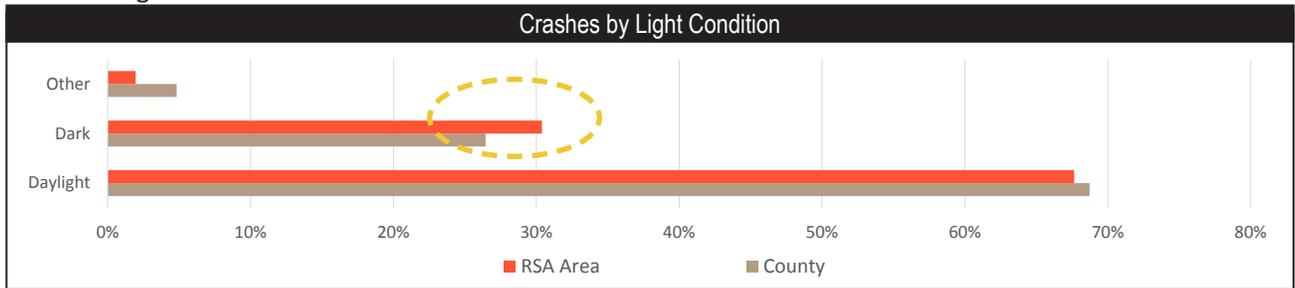


Figure 20 – Crashes by Light Condition

### >> 3.0 IDENTIFIED ISSUES

Issue #	Issues	Corridor	Bergen Avenue	between Bergen and Tonnelle	Tonnelle Avenue	Sip Avenue	Bond Street
Lighting							
1	Pedestrian and vehicle lighting may be insufficient	✓					
2	Broken and exposed bulbs on street lamps	✓					
Pavement and Markings							
3	Cross-slope not steep enough for drainage	✓					
4	Poor drainage, particularly at intersection crosswalks	✓					
5	Pavement markings and striping are fading	✓					
6	Visible pavement rutting and frequently occurring potholes	✓					
7	Inconsistent yellow curb striping and parking meter placement	✓					
8	Lack of edgeline marking			✓	✓	✓	✓
9	Unclear delineation of travel lane(s)		✓		✓		
10	Worn paint no longer delineates parking spaces, creates ill-spaced parking and/or vehicles parked illegally		✓				
Pedestrian Infrastructure							
11	Lack of truncated domes and ADA curb ramp compliance	✓					
12	Pedestrian push buttons must be user-activated past 9:00 PM		✓				
13	Push button alignment and location do not properly align with ADA compliancy	✓					
14	Push buttons lack arrows indicating crossing direction	✓					
15	Long crossing distance	✓					
16	Median refuge is narrow, appears too small for afternoon peak foot traffic		✓				
17	Pedestrian desire lines not aligned with crosswalk placement		✓				
18	Utility cover in NW corner of intersection interferes with pedestrian crosswalk safety		✓				
19	Curb cut in NW corner facilitates pedestrians crossing EB outside of the marked crosswalk		✓				
20	Old crosswalk marking still exists under new marking				✓		
21	Crosswalk striping improperly slanted		✓		✓	✓	
22	Vertical curve at approach may limit visibility of crosswalk at intersection					✓	✓
23	Lacking crosswalk on south side of intersection						✓
24	Utility pole in NE corner of intersection blocks crosswalk curb ramp area						✓
25	Driveway curb cuts along intersection						✓
26	Drainage catch basins blocked with debris or are otherwise not draining properly	✓					
59	Tripping hazards in sidewalk	✓					

Issue #	Issues	Corridor	Bergen Avenue	between Bergen and Tonnelle	Tonnelle Avenue	Sip Avenue	Bond Street
Pedestrian Behavior							
27	Pedestrians crossing against signal. Specifically at Bergen Avenue, after all ped phase ends one crosswalk of the intersection still allows pedestrian crossing in conflict with right-turning cars. The continued pedestrian crossing across Bergen Avenue confuses both pedestrians and drivers. Other pedestrians may think Bergen Avenue pedestrians are crossing against a signal and may be inclined to walk against their own signal. Drivers may understand the all ped phase to have ended completely and believe the pedestrians to be crossing out of turn		✓				
28	Pedestrians jump landscaped median to cross		✓				
29	Pedestrians were observed to take advantage of vehicle gaps to cross street and sometimes became stranded in the middle of the street		✓				
30	Commercial activity and transportation access generates large amounts of foot traffic and people were often observed to cross mid-block to access these services. One signalized mid-block crossing may be insufficient to accommodate current pedestrian volume.			✓			
31	Pedestrians cross behind stop bar			✓			
Bicycling							
32	Some inlet grates not bicycle safe	✓					
33	Lack of bicycle parking	✓					
34	Cyclists ride on sidewalks	✓					
Vehicular Behavior							
35	Double parking		✓	✓			
36	Reckless/aggressive driving	✓					
37	Vehicles park or stand in bus lanes and live travel lane		✓				
38	Vehicles park too close to intersection			✓	✓		
39	Vehicles use the hatched median on JFK Boulevard as an extended left-turn lane for Sip Avenue				✓	✓	
40	Crash history indicates that left-turn crashes occur frequently at the Tonnelle Avenue intersection and often result in pedestrian injuries				✓		
41	Heavy bus and truck traffic, both loading and through-traffic	✓					
42	Conflict between lead left SB JFK Blvd. and pedestrians. Pedestrians were observed taking the lead in the interval instead of deferring to vehicles					✓	
Signs							
43	Orientation and location of signage makes it difficult to read and navigate	✓					
44	Not retroreflective	✓					
45	Not breakaway posts	✓					
46	Vehicles traveling northbound on JFK Boulevard illegally turn left onto Tonnelle Avenue				✓		

Issue #	Issues	Corridor	Bergen Avenue	between Bergen and Tonnelle	Tonnelle Avenue	Sip Avenue	Bond Street
Signals							
47	Signal heads old dimension of 8-inch are harder to see	✓					
48	Antiquated use of induction loops which are prone to breaking	✓					
50	Poor placement/low visibility of left turn arrow from WB Sip to SB JFK, placed on opposite side of intersection					✓	
51	Conflicting signals at closely spaced intersections confuse drivers, especially on which signal to follow					✓	
Street Amenities							
52	Lack of street furniture	✓					
53	Lack of trees	✓					
54	Lack of bus shelters			✓		✓	
Visual Obstructions							
55	Sight distance on NB JFK limited by utility boxes					✓	
56	Pedestrian signal head blocked by foliage, especially in NW corner of intersection						✓
57	"Do Not Enter" sign for JFK vehicles obstructed by foliage						✓
Other							
58	Sun glare	✓					

### 3.1 CORRIDOR ISSUES

The numbers included on images and within captions correspond to the associated issue number.

#### MAINTAINENCE



Draining did not appear to be functioning properly, contributing to large puddles in intersections and near pedestrian curb cuts (4).



Abandoned facilities like this light foundation (59) may be sidewalk tripping hazards.



Broken pavements (5,6) may present crosswalk tripping hazards.



Inusfficient lighting and broken bulbs (2) may contribute to crashes occurring as a result of poor lighting conditions.

Several signs were noted to be faded or lacking retroreflectivity (44).



#### OUTDATED INFRASTRUCTURE COMPLIANCE



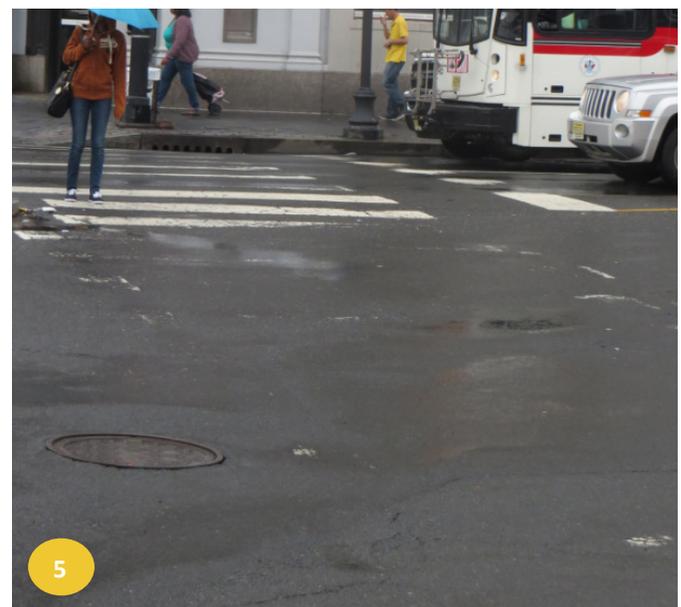
Lacking breakaway posts (45).



Outdated bicycle grates (32) have large slats that could trap thin bicycle tires, cause cyclist to crash or flip over.



Lack of truncated domes (11) do not comply with current ADA standards.



Faded crosswalks (5) fail to signal the pedestrian right of way to drivers.

**IMPROPER MOTORIST BEHAVIOR**



37



37



37



41

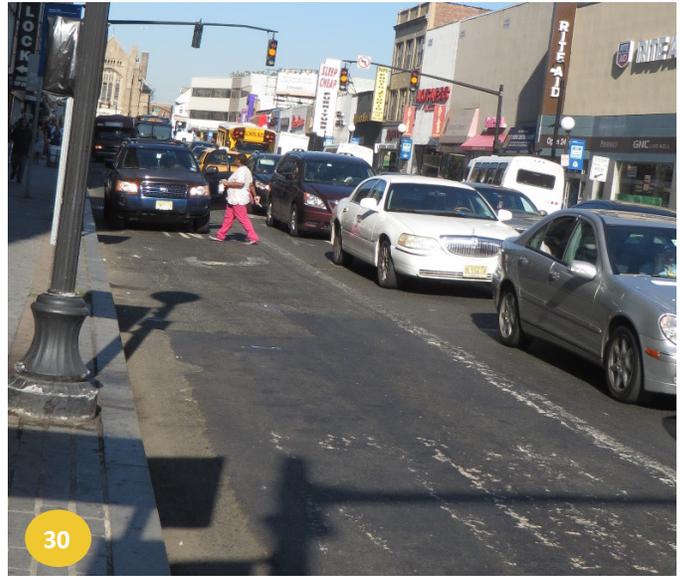
Trucks stop to unload in the travel lane (top 37).

Motorists stop to drop off passengers or wait for pick up passengers near the PATH station (middle 37).

Vehicles park illegally in live right turn lane on Bergen Ave (above 37).

Buses occupy middle lane and have passengers unload into right turn lane (41).

**IMPROPER PEDESTRIAN/CYCLIST BEHAVIOR**

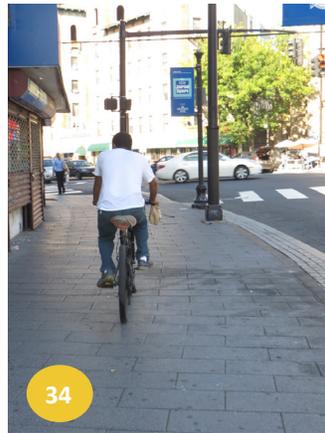


30

Pedestrians cross street at undesigned mid-block spots (30).

Cyclists ride on the sidewalk (34).

Pedestrians cross against signal (27).



34



27



30

Pedestrians cross mid-block (30) near hatched island at JFK Boulevard and Tonnelle Avenue.

OTHER



Ineffective drain placement (4).

Limited street amenities like garbage cans (above 52) and benches, bus shelters, and trees (below 52).



Utility boxes block line of sight (55).

Crosswalks improperly slanted (21).

Lack of bicycle parking force cyclists to lock bikes to alternative objects, like utility poles (33).

### 3.2 BERGEN AVENUE AND JFK BOULEVARD



Pedestrians edge out into the street to observe oncoming vehicles and sometimes cross the two right-turning lanes illegally.



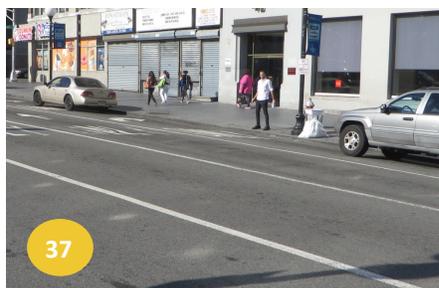
Pedestrians follow the old footpath from Magnolia Avenue to the PATH station, illegally jumping the median.



Live lane observed to be a frequent vehicle passenger drop-off and standing site.



Faded pavement markings make it difficult to identify the location of the crosswalk.

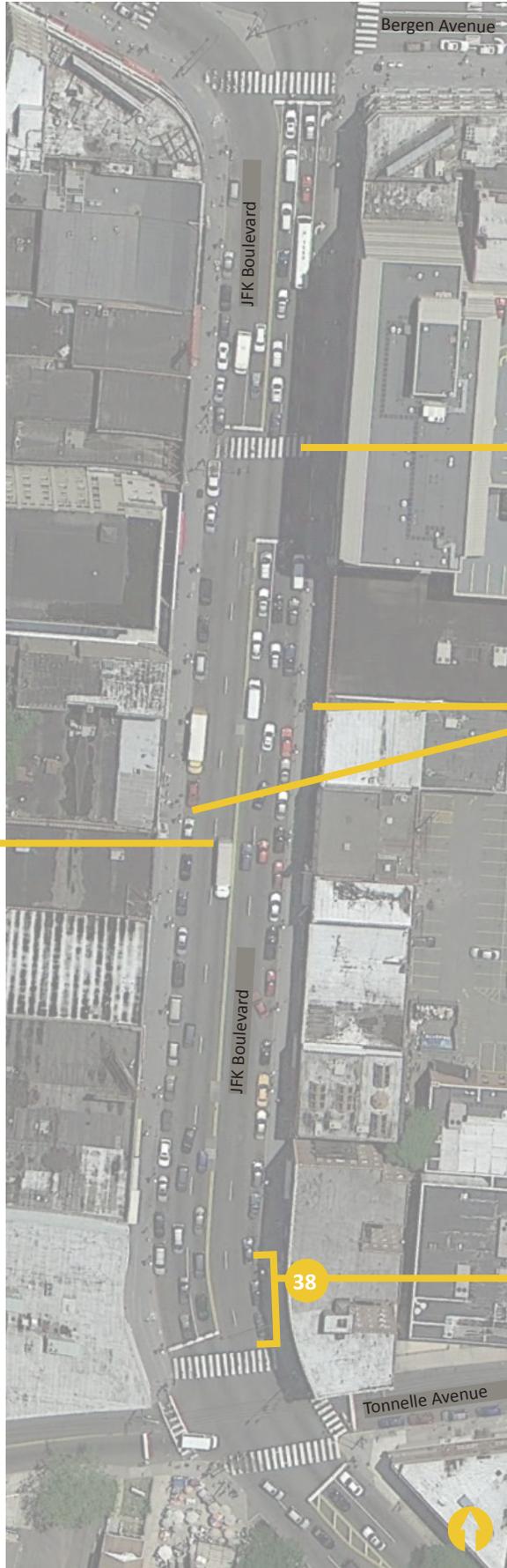


Cars were observed parking or idling in travel lanes, contributing to congestion and wider turns for buses.



Pedestrians cross the street in undesignated areas and use the concrete island as a pedestrian refuge island.

### 3.3 JFK BOULEVARD BETWEEN TONNELLE AVENUE AND BERGEN AVENUE



Pedestrians cross behind stop bar.  
Push button alignment and location do not properly align with ADA compliancy.  
Pavement marking is faded.

Lack of bus shelters.

One signalized mid-block crossing may be insufficient to accommodate current pedestrian volume and desire lines.



Visible pothole.

Lack of delineated parking spaces.

17 Double parking throughout corridor

38 Vehicles park too close to intersection.

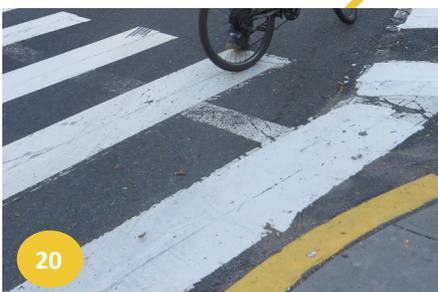
### 3.4 TONNELLE AVENUE AND JFK BOULEVARD



Vehicles enter hatched median on southbound JFK Boulevard and after the Tonnelle Avenue intersection and before the left turn lane begins in anticipation of turning left on Sip Avenue. Truck in left image may be making wide right turn for this reason.



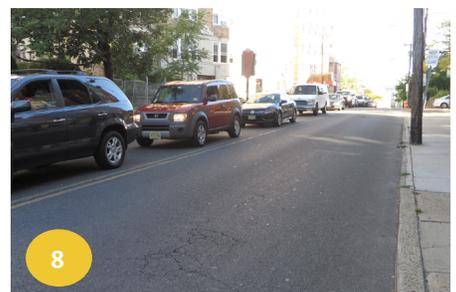
The two immediate signal heads in a driver's sight line cause confusion. Drivers may focus on the latter signal, ignoring the first.



Old crosswalk marking still exists under new marking.

21

Crosswalk improperly slanted.



Edgeline marking missing completely.

8

### 3.5 JFK BOULEVARD AND SIP AVENUE



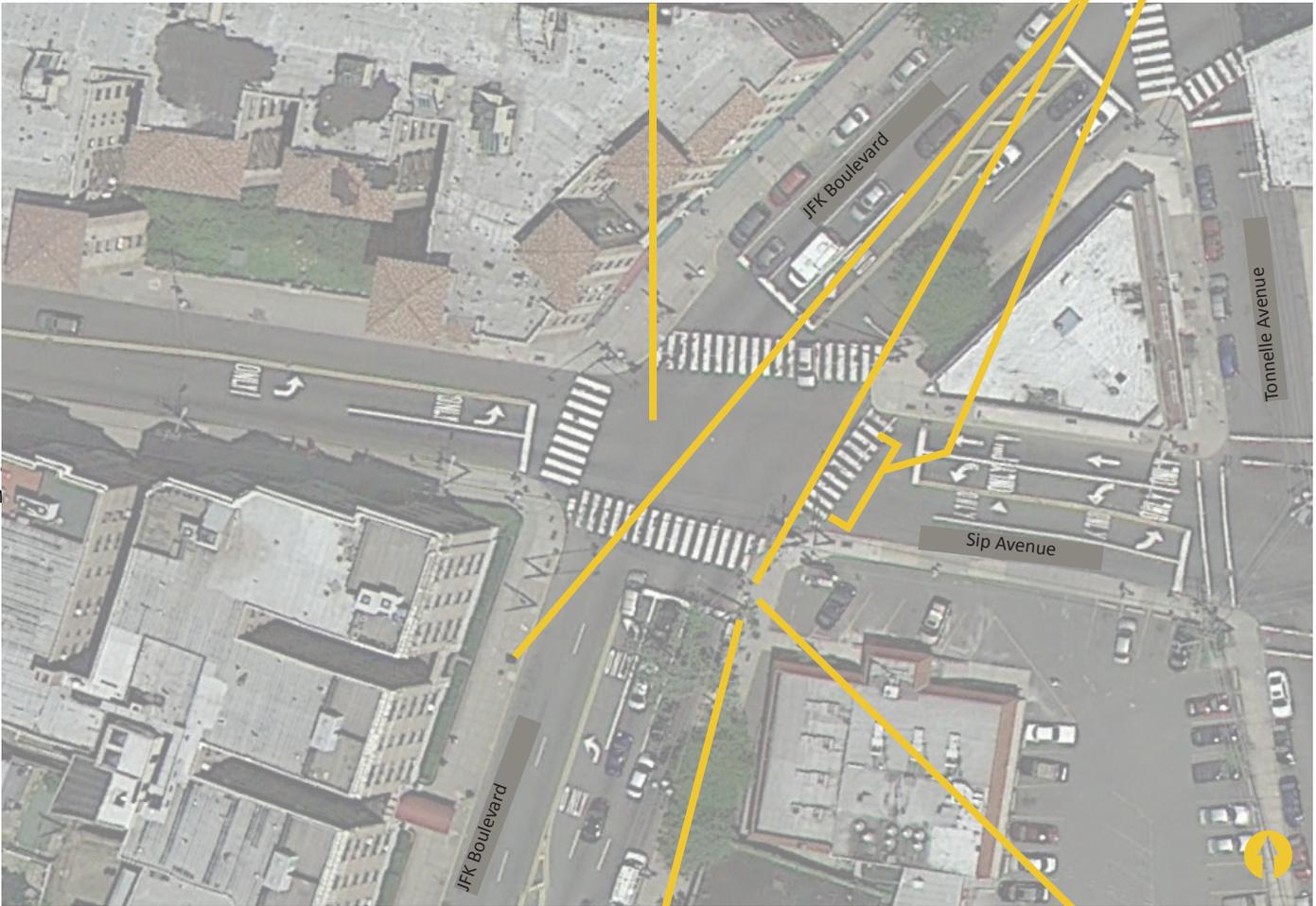
The inclined approach to the intersection limits the driver's visibility of pedestrians in crosswalk.



8-inch signal heads are small and hard to see.

Improperly slanted crosswalk. 21

Lacking bus shelters. 54



Edgeline marking is missing completely.



Buses alight passengers in middle of travel lane instead of against curb because of utility boxes and street newspaper stands obstructing sidewalk. This could be especially challenging for disabled passengers.



Northbound JFK Boulevard vehicles turning right onto Sip Avenue have limited sight distance of pedestrians in crosswalk due to utility boxes and street newspaper stands.

### 3.6 JFK BOULEVARD AND BOND STREET



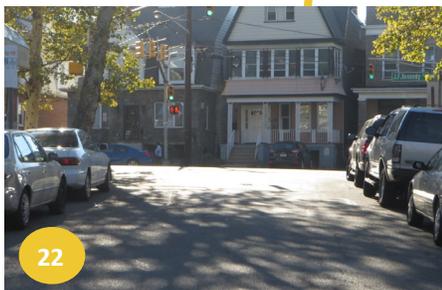
Signs along the corridor are often faded and lacking retroreflectivity.



Signs and signal heads blocked by foliage.



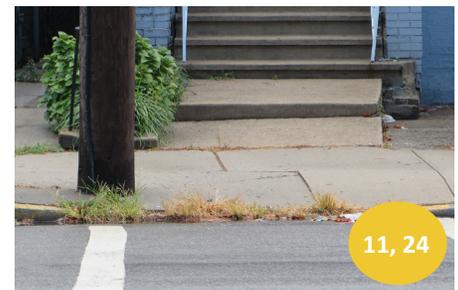
Driveway curb cuts line the corridor around Bond Street. Inconsistent yellow striping.



Vehicles approaching JFK from Bond Street enter the intersection on an incline, which limits their visibility of pedestrians.



A crosswalk does not exist on the south side of the intersection.



The curb cut lacks ADA compliant facilities and general maintenance. A utility pole blocks the crosswalk curb ramp area.

## >> 4.0 RECOMMENDATIONS

Costs and time frame estimates are purposely left ambiguous to allow for flexibility in the design process.

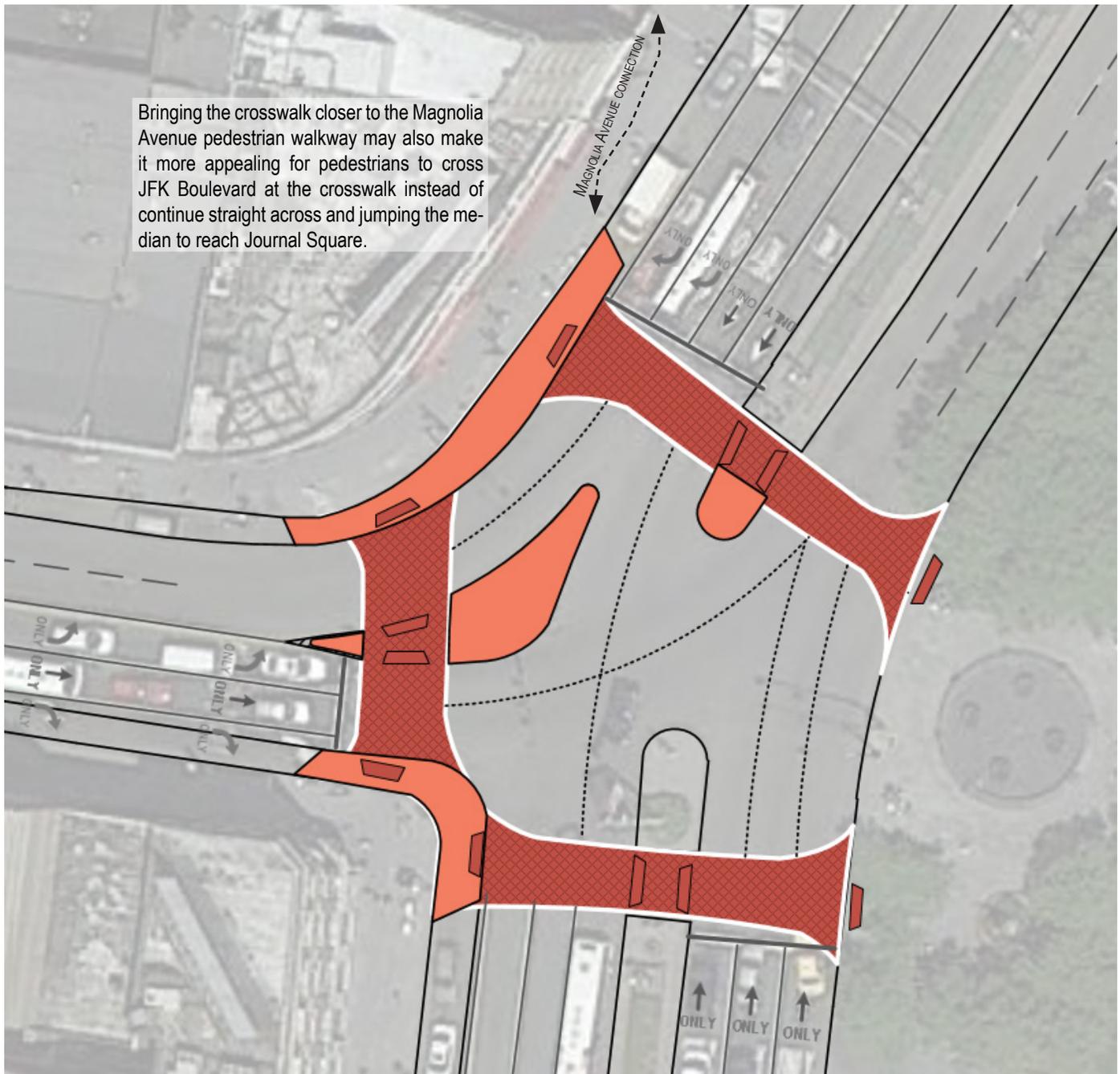
Rec. #	Location	Safety Benefit	Time Frame	Cost	Jurisdiction	Issue Ref. #
	Corridor					
	Lighting					
A-1	Professional staff should conduct an engineering study of existing lighting conditions throughout the corridor to evaluate where both vehicle and pedestrian level lighting can be improved	Medium	Short	\$	County	1
A-2	Broken and exposed bulbs should be replaced	Low	Short	\$	City	2
	Pavement and Markings					
A-3	Cross-slope should be examined and corrected if it is found to not appropriately accommodate drainage	Low	Long	\$\$\$	County	3, 4
A-4	Clear catch basins/storm drains	Low	Short	\$	County	4, 31
A-5	Pavement markings should be re-milled and re-stripped so they are clearly visible. Possibly mark crosswalks with stamped brick in the commercial areas, depending on what will offer the greatest visibility	High	Medium	\$\$	County	5, 8, 9, 10
A-6	Pavement should be replaced in locations of potholes and uneven pavement	Medium	Short/ Medium	\$/\$\$\$	County	6
A-7	Curbs should be re-stripped yellow where fading and lacking to indicate how closely vehicles may park to the intersection	Medium	Short	\$	City	7
A-24	Consider installing ergonomic crosswalks at intersections that more accurately reflect pedestrian desire lines	Medium	Short	\$	County	31
	Pedestrian Infrastructure					
A-8	Upgrade curb ramps to include truncated domes and ADA compliant dimensions	Medium	Short	\$\$	County	11
A-9	Install and upgrade pedestrian push buttons so they are realigned and include an arrow to indicate crossing direction	Medium	Short	\$	County	13, 14
A-10	Install pedestrian refuge islands or curb extensions, either painted or poured concrete; the latter may offer more definitive protection for the pedestrian	High	Medium/ Long	\$/\$\$\$	County	15
A-11	Investigate signal timing at wider intersections to verify if crossing time is long enough for pedestrians. Increase crossing times if needed	Medium	Short	\$	County	15
	Bicycling					
A-12	Upgrade inlet grates to bicycle safe grates	Medium	Short	\$	County	32
A-13	Install bicycle parking	Low	Short	\$	County	33
A-14	Consider the provision of shared lane markings or bicycle lanes to encourage on-street riding	Medium	Medium	\$	County	34
	User Behavior					
A-15	Increase enforcement of reckless/aggressive driving	Medium	Long	\$\$	PD	36
A-16	Increase enforcement of jaywalking and crossing against the signal	Medium	Long	\$\$	PD	29, 30
A-17	Engage NJTPA in their Street Smart program to install educational signs	Medium	Long	\$\$	NJTPA	27, 36
	Signs					
A-18	Reorient and relocate signage so they are clearly visible	Low	Short	\$	County	43
A-19	Upgrade to retroreflective signs	Medium	Short/ Medium	\$\$	County	44
A-20	Upgrade sign posts to be breakaway posts	Medium	Short	\$\$	County	45

Rec. #	Location	Safety Benefit	Time Frame	Cost	Jurisdiction	Issue Ref. #
	Signals					
A-21	Upgrade 8-inch signal heads to 12-inch signal heads with retroreflective backplates	Medium	Medium	\$\$	County	47
A-22	Upgrade induction loop to video image vehicle detection system	Low	Long	\$\$\$	County	48
	Street Amenities					
A-23	Provide street amenities:					
a	Install street furniture	Low	Short	\$	County	52
b	Plant trees between curb and sidewalk as traffic calming measure	Low	Medium	\$\$	County/City	53
c	Install bus shelters	Low	Medium	\$\$	NJ Transit/ City	54
	Bergen Avenue					
B-1	Re-mill and re-stripe pavement markings to be clearly visible	High	Medium	\$\$	County	9
B-2	Re-paint delineation markers for parking spaces and yellow curb lines to indicate where parking is prohibited	Medium	Short	\$	County	10
B-3	Consider removing push buttons and make all pedestrian crossing signals recalled at all times	Medium	Short	\$	County	12
B-4	Consider increasing width of crosswalk	High	Medium	\$\$	County	15, 16
B-5	Install dashed lane line extensions	Medium	Short	\$	County	17, 19, 21
B-6	Relocate utility cover in curb ramp at NW corner of intersection	Low	Medium	\$\$	Utility Owner	18
B-8	Considering adding taller vegetation to median	Medium	Medium	\$\$	County	28
B-9	Investigate signal phasing at adjacent intersections to limit the gaps between traffic flow and pedestrian phasing	High	Medium	\$\$	County	29
B-10	Increase enforcement of double parking	Medium	Long	\$\$	PD	35
B-11	Remove southbound right turn lane between Sip Avenue and JFK Boulevard and replace with parking as this is what motorists do anyway	Medium	Short	\$	County	37
B-12	Increase enforcement of parking in bus stops	Medium	Long	\$\$	PD	37
	between Bergen Avenue and Tonnelle Avenue					
C-1	Re-stripe edge line to be clearly visible	Medium	Short	\$	County	8
C-2	Consider installing a second signalized mid-block ergonomic crosswalk and investigate its best location	High	Long	\$\$	County	30
C-3	Consider installing ergonomic crosswalk at existing mid-block crosswalk	Medium	Short	\$	County	31
C-4	Increase enforcement of double parking	Medium	Long	\$\$	PD	35
C-5	Increase enforcement of parking too close to intersection and crosswalks	Medium	Long	\$\$	PD	38
C-6	Re-paint yellow curb line	Medium	Short	\$	County	38
	Tonnelle Avenue					
D-1	Re-stripe travel lanes to be clearly visible, include dashed line extensions	Medium	Short	\$	County	9
D-2	Remove old crosswalk paint that exists under new crosswalk	Low	Short	\$	County	20
D-3	Increase enforcement of parking too close to intersection	Medium	Long	\$\$	PD	38
D-4	Re-paint yellow curb line	Medium	Short	\$	County	38
D-6	Consider signal improvements that reduce vehicle-pedestrian conflicts, such as:					
a	Lead pedestrian interval on the leg of the southbound JFK Boulevard approach	High	Short	\$	County	40
b	Split phasing	High	Short	\$	County	40
D-7	Consider installing green left arrow for left-turning vehicles from Tonnelle Avenue	Medium	Medium	\$\$	County	40
D-8	Increase signage to heighten awareness of prohibited turns	Medium	Short	\$	County	46

Rec. #	Location	Safety Benefit	Time Frame	Cost	Jurisdiction	Issue Ref. #
D-9	Install green through or turn arrows where appropriate to reinforce turning options and restrictions (e.g., northbound JFK Boulevard approach can have straight through arrow and northbound Tonnelle Avenue approach can have straight through arrow, both of which limit left turns)	Medium	Medium	\$\$	County	40
D-10	Restrict Tonnelle Avenue northbound left-turn onto JFK Boulevard south Sip Avenue	Medium	Short	\$	County	49
E-1	Re-mill and re-stripe crosswalk to align with intersection at the approach of southbound JFK Boulevard	Low	Medium	\$\$	County	21
E-2	Consider lead pedestrian interval	High	Short	\$	County	42
E-3	Consider reconfiguration of overhead traffic lights to properly align with lanes on westbound Sip Avenue approach	Medium	Medium	\$\$	County	50
E-5	Coordinate with NJ Transit to install bus shelters	Low	Medium	\$\$	NJ Transit/ City	54
E-6	Consider relocating utility boxes, signage, and telephone pole; removing newspaper stands and tree to increase sight visibility for northbound vehicles turning right onto Sip Avenue	High	Medium	\$\$	County	59
E-7	Install bus bulb outs and/or rehatch bus area in southeast and southwest corner of intersection	Medium	Medium	\$\$	NJ Transit/ County	41
E-8	Install dashed lane line extensions	Medium	Short	\$	County	17, 19, 21
E-9	Relocate westbound left arrow signal heads to far-left signal quadrant Bond Street	Medium	Medium	\$\$	County	50
F-1	Re-stripe edge line to be clearly visible	Medium	Short	\$	County	8
F-2	Consider installing "TURNING VEHICLES MUST YIELD TO PEDESTRIANS" sign on Bond Street approach to JFK Boulevard	Medium	Short	\$	County	22
F-3	Consider installing second crosswalk for southern side of intersection	Medium	Medium	\$\$	County	23
F-4	Recall all crosswalk paint to be consistent and high-visibility thermoplastic					26
F-5	Consider relocating telephone pole blocking curb ramp	Low	Medium	\$\$	Utility Owner	24
F-6	When installing curb extensions on east side of intersection, consider driveway access	Low	Short	\$	County	25
F-7	Trim foliage to make pedestrian signal head visible	Medium	Short	\$	County	56
F-8	Trim foliage to make "DO NOT ENTER" sign visible	Medium	Short	\$	County	57

## 4.1 CONCEPT DESIGNS

### BERGEN AVENUE AND JFK BOULEVARD



Concept designs include:

- Re-milling and re-stripping pavement markings so they are clearly visible
- Re-stripping the edge line, and installing stamped brick within crosswalks (A-5)
- Striping the intersection with dashed line extensions (B-5)
- Re-painting yellow curb lines and delineated parking spaces (B-2)
- Extending crosswalks ergonomically to reflect pedestrians' desired crossing path (B-4, B-5)
- Enlarging the existing poured concrete pedestrian refuge island (A-10)
- Enlarging the pork chop island and extending it behind the crosswalk (A-10)
- Installing curb extensions at the two west corners of the intersection (A-10)
- Upgrading all curb ramps to include truncated domes and ADA compliant dimensions (A-8)

## JFK BOULEVARD BETWEEN BERGEN AVENUE AND TONNELLE AVENUE



Concept designs include

- Replacing broken and exposed bulbs on street lamps (A-2)
- Re-milling and re-striping pavement markings so they are clearly visible, re-striping the edge line, and installing stamped brick within crosswalks (A-5, C-1)
- Re-painting yellow curb lines (C-6)
- Extending crosswalks ergonomically to reflect pedestrians' desired crossing path (C-3)
- Installing a second ergonomic crosswalk (C-2)
- Installing curb extensions at all crossing points along the corridor (A-10)
- Installing street amenities, particularly a bus shelter (A-23)
- Upgrading all curb ramps to include truncated domes and ADA compliant dimensions (A-8)

## TONNELLE AVENUE AND JFK BOULEVARD

For both scenarios:

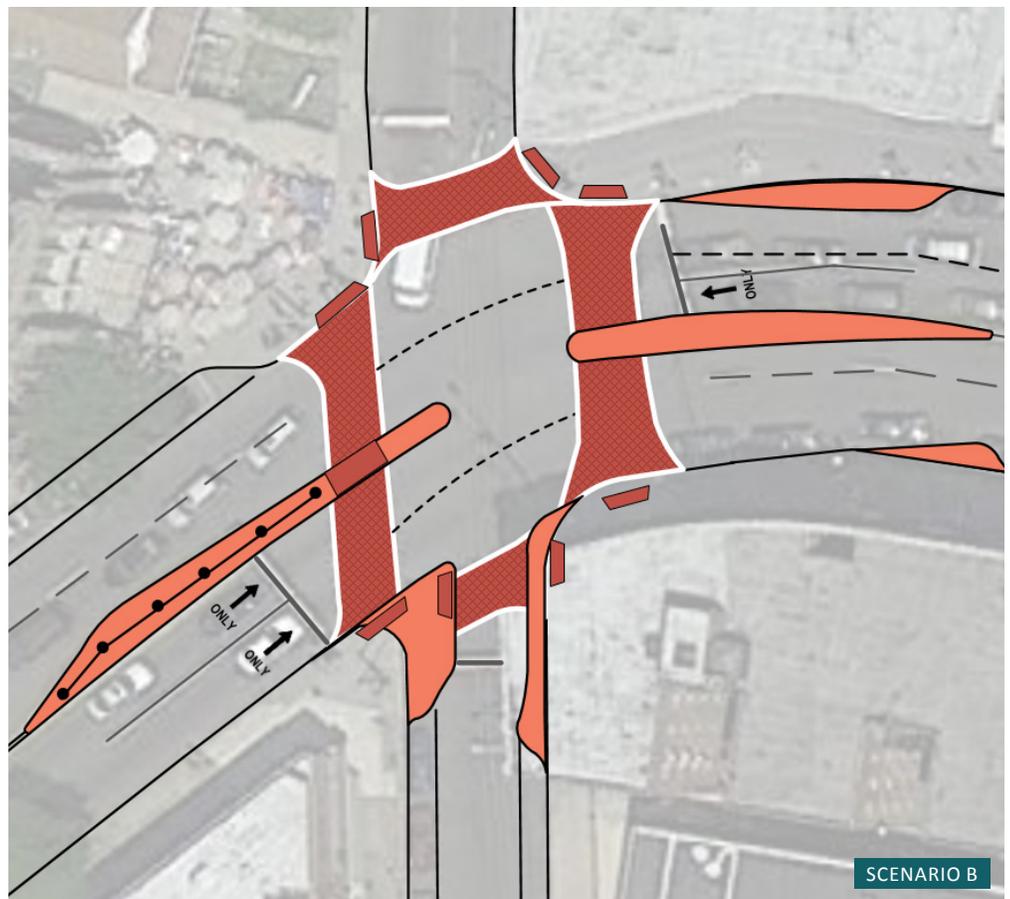
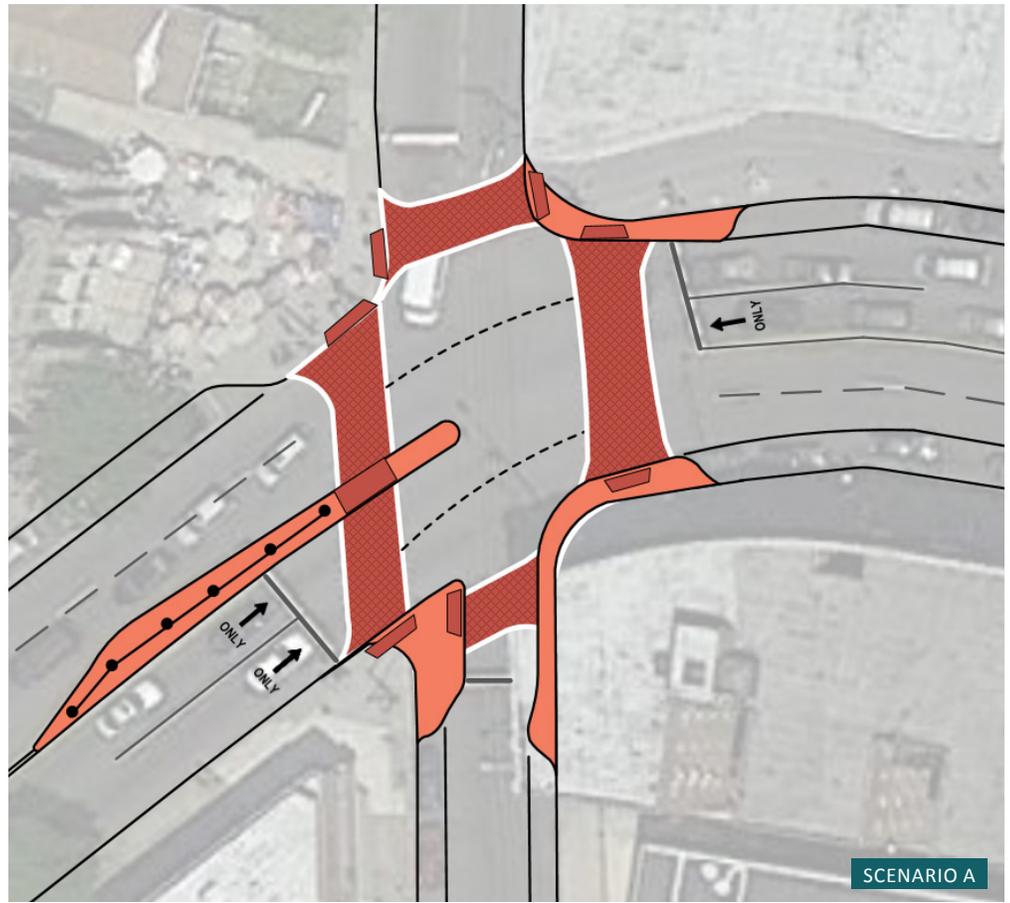
- Re-milling and re-striping pavement markings so they are clearly visible, re-striping the edge line, and installing stamped brick within crosswalks (A-5)
- Re-striping travel lanes to be clearly visible (D-1)
- Milling to remove old crosswalk under new crosswalk (D-2)
- Re-painting yellow curb lines (D-4)
- Extending crosswalks ergonomically to reflect pedestrians' desired crossing path (A-24)
- Upgrading all curb ramps to include truncated domes and ADA compliant dimensions (A-8)

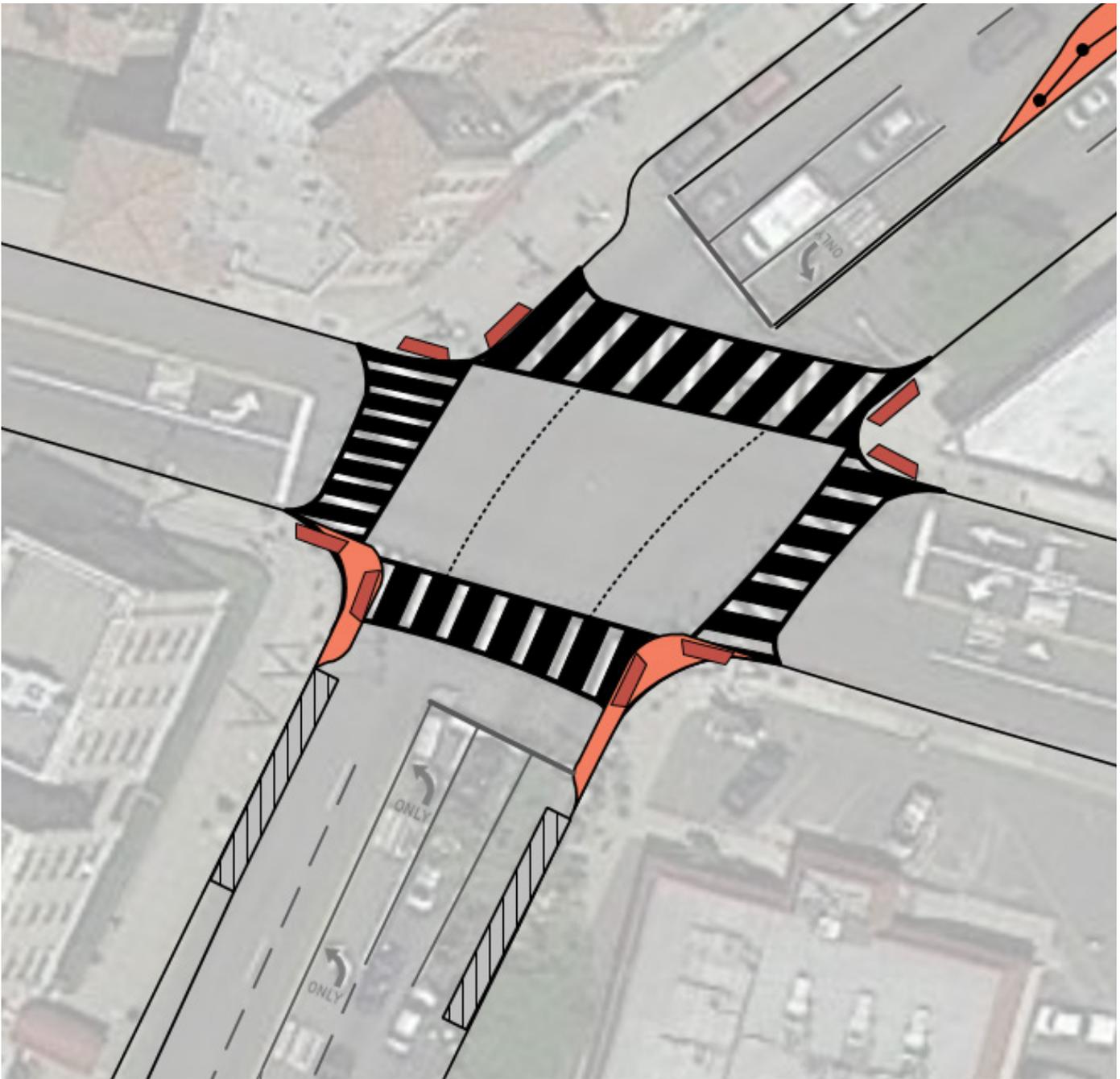
For scenario A:

- Installing curb extensions at the south and northeast corners of the intersection (A-10)
- Installing a concrete median between NB and SB JFK vehicular traffic to the west of the intersection (A-10)

Scenario B:

- Installing curb extensions at the south corners of the intersection and curb extensions beyond the intersection to the east (A-10)
- Installing a concrete median between NB and SB JFK vehicular traffic to the east and west of the intersection (A-10)





Concept designs include:

- Re-stripping the edge line (A-5)
- Re-milling and re-stripping crosswalks to align with intersection approaches (E-1)
- Striping the intersection with dashed line extensions (E-8)
- Extending crosswalks ergonomically to reflect pedestrians' desired crossing path (A-24)
- Installing curb extensions at the south corners of the intersection (A-10)
- Rehatching in both bus stop areas at the south corners of the intersection (E-7)
- Upgrading all curb ramps to include truncated domes and ADA compliant dimensions (A-8)

## BOND STREET AND JFK BOULEVARD

Concept designs:

For both scenarios:

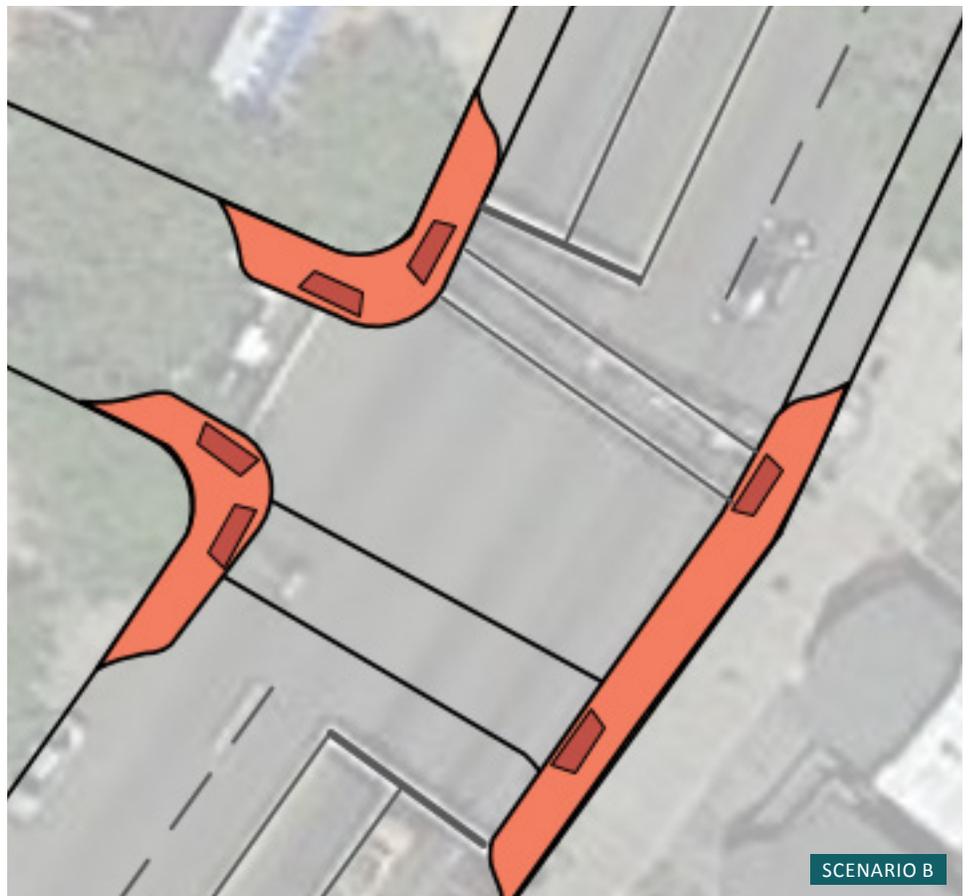
- Re-striping the edge line (A-5)
- Considering the installation of a second crosswalk at the south side of the intersection (F-3)
- Installing curb extensions along the east side of the intersection (A-10)
- Upgrading all curb ramps to include truncated domes and ADA compliant dimensions (A-8)

Scenario A:

- Remaining sensitive to existing driveway access points along the same stretch (F-6)

Scenario B:

- Remaining sensitive to driveway access along the same stretch but extending the driveway entrance points (F-6)



## 4.2 PHOTO SIMULATIONS

### TONNELLE AVENUE AND JFK BOULEVARD



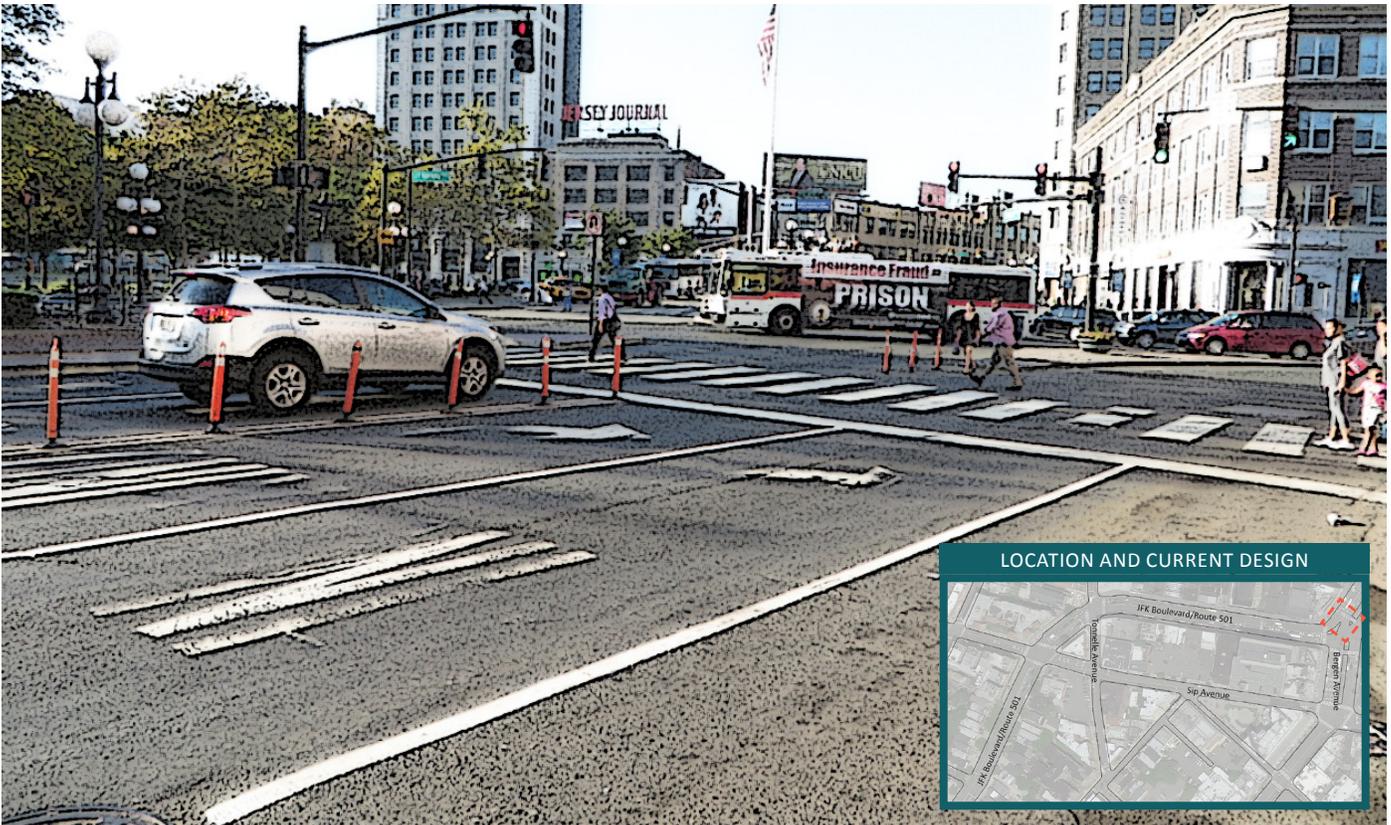
The above images show the western leg of the JFK Boulevard and Tonnelle Avenue intersection, which currently experiences a high volume of left turn crashes and pedestrian crashes. The proposed concepts include a pedestrian refuge island (in the image above, the island also has concrete planters and a small fence), stamped crosswalks and ADA-compliant curb cuts.

## BERGEN AVENUE AND JFK BOULEVARD



The above image shows the mid-block crossing on JFK Boulevard between Tonnelle Avenue and Bergen Avenue. The proposed design features bulb-outs that shorten the pedestrian crossing distance and deter vehicles from parking in the crosswalk. There are also ADA-compliant curbs and a stamped crosswalk.

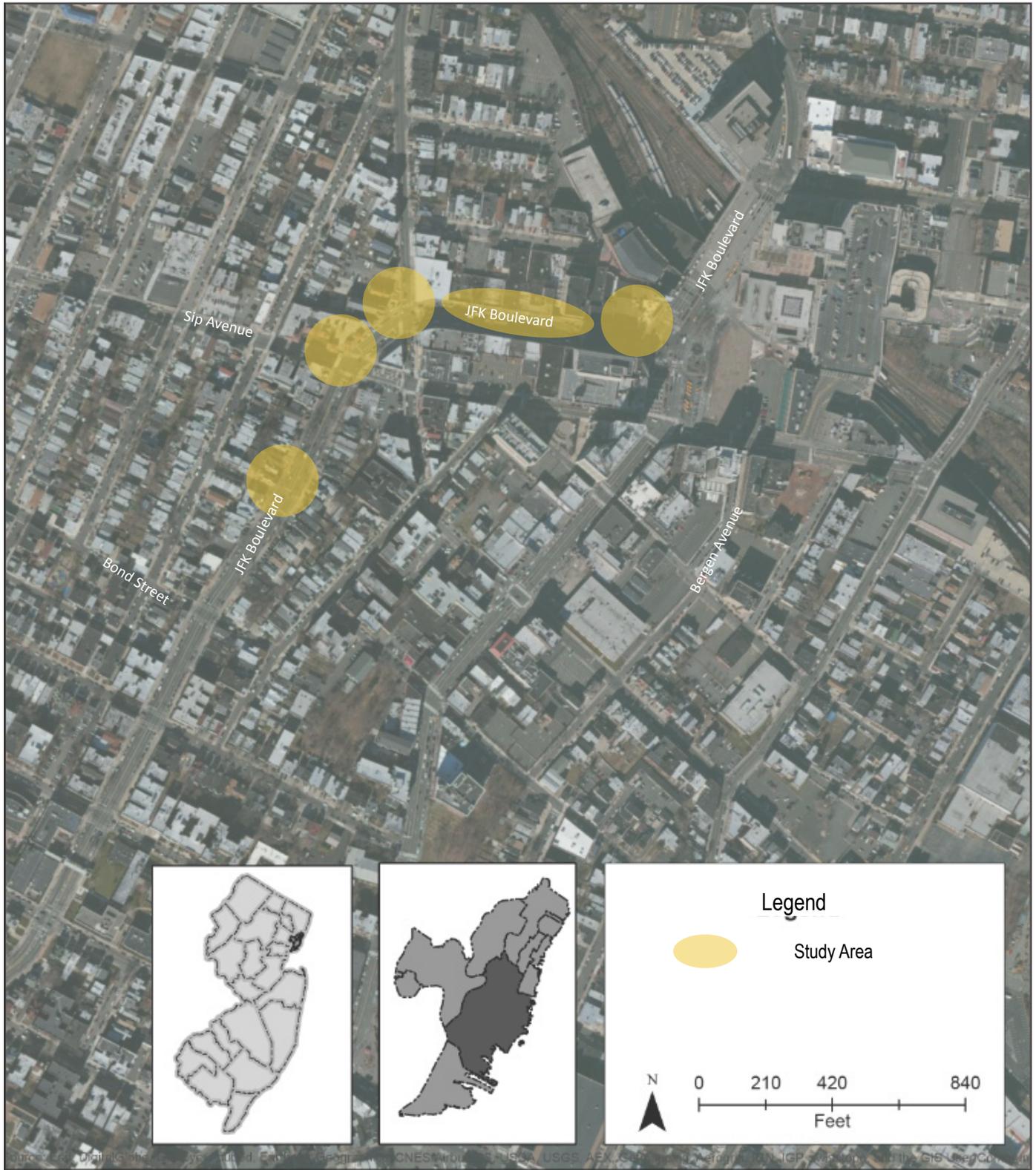
## BERGEN AVENUE AND JFK BOULEVARD



The above images show the intersection of Bergen Avenue and JFK Boulevard. The proposed design features a bulb-out that utilizes the unused corner space and prevents vehicles from illegally parking within or too near to the intersection. There is also a stamped crosswalk, an ADA-compliant curb cut, planters to further delineate the travel lane, and bicycle parking.

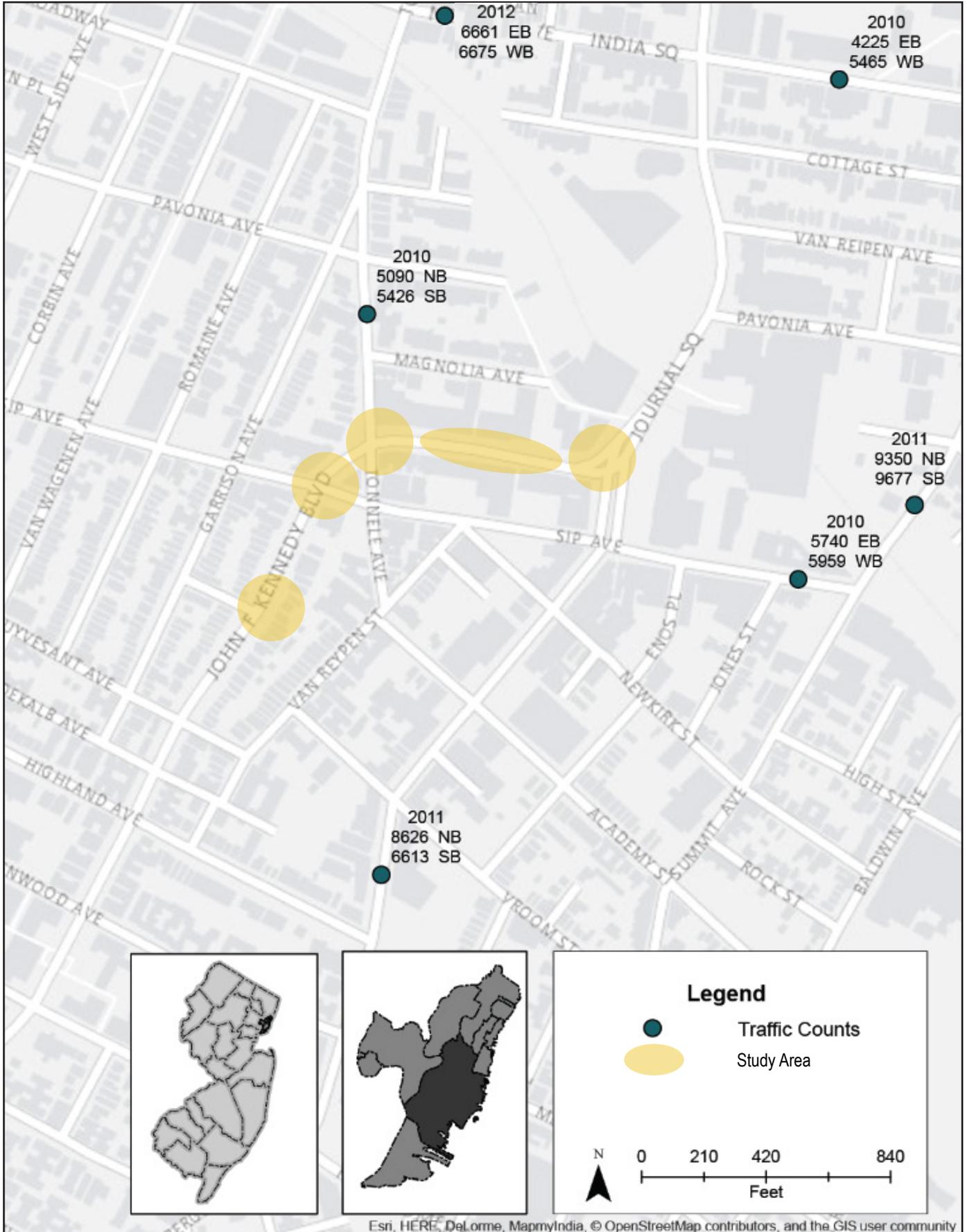
## >> 5.0 APPENDIX A – RSA INFORMATION

### 5.1 STUDY AREA



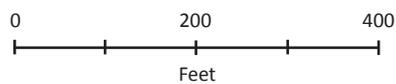
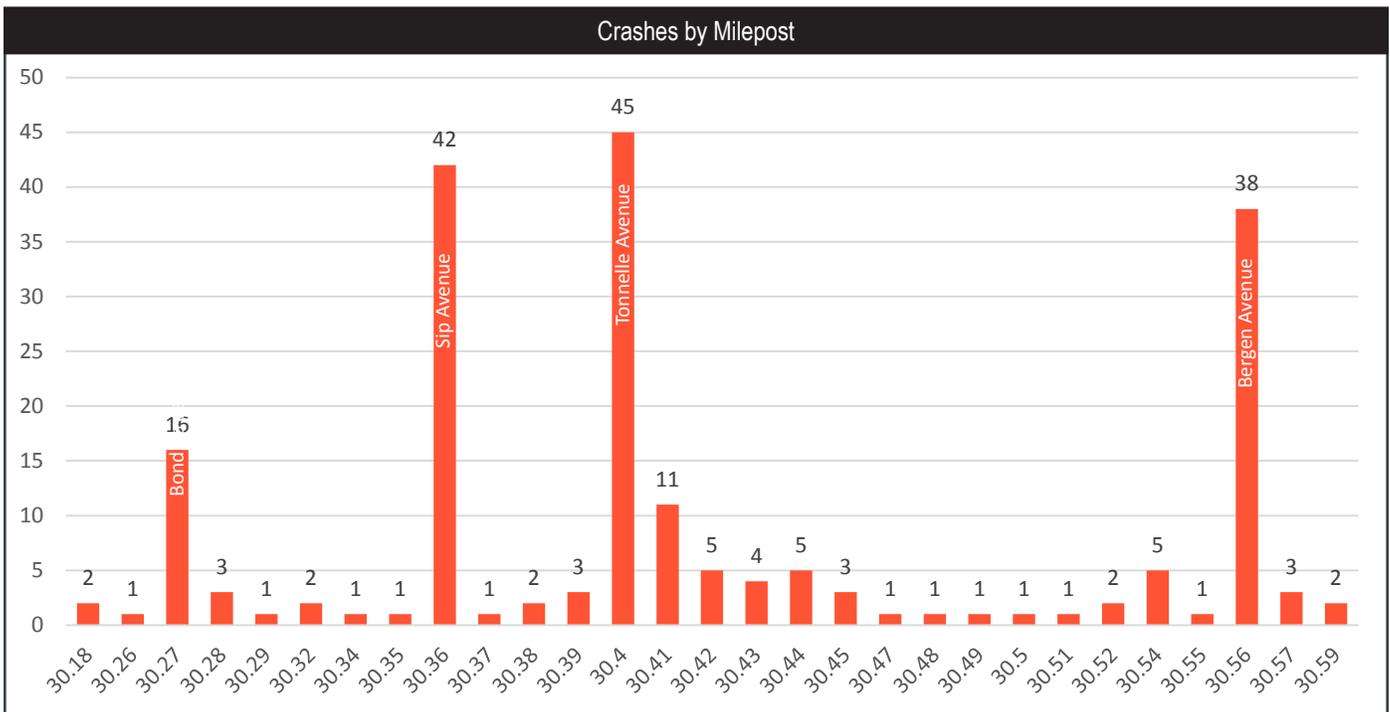
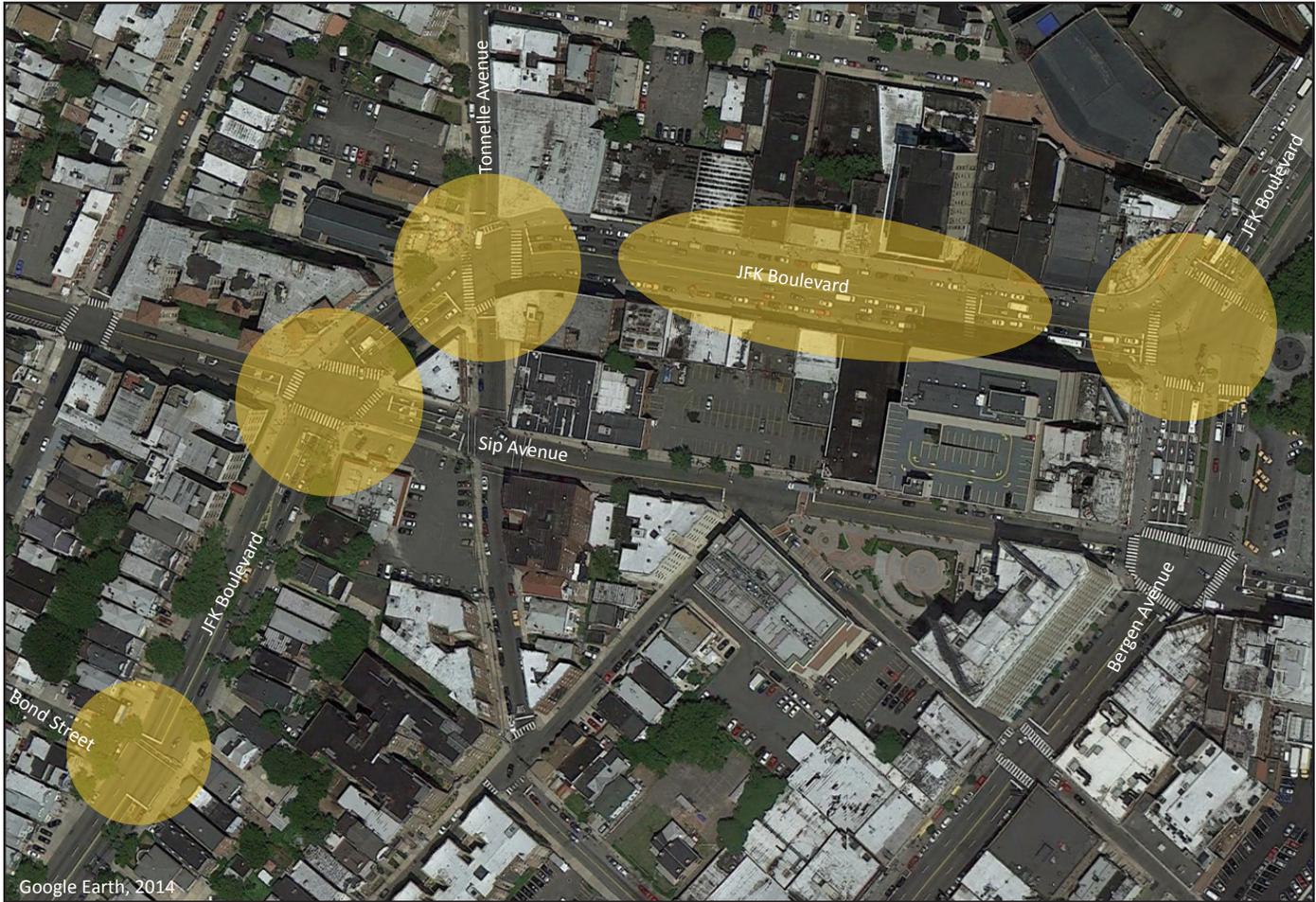


### 5.3 TRAFFIC VOLUMES



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

## 5.4 CRASHES BY MILEPOST AND CORRIDOR SUMMARY



Study Area  
(2010 – 2012 crash data)

## RSA AREA – CRASH SUMMARY (2010–2012)

Crash Type	#
Same Direction – Rear End	55
Same Direction – Side Swipe	65
Right Angle	5
Opposite Direction – Head On/ Angular	2
Opposite Direction – Side Swipe	1
Struck Parked Vehicle	32
Left Turn / U-Turn	9
Backing	5
Encroachment	-
Overtuned	1
Fixed Object	2
Animal	-
Pedestrian	27
Pedalcyclist	-
Non-fixed Object	-
Railcar – Vehicle	-
Other	-
<b>Total</b>	<b>204</b>

Month	#
January	12
February	14
March	23
April	19
May	22
June	15
July	15
August	14
September	15
October	15
November	15
December	25
<b>Total</b>	<b>204</b>

Severity	#
Property Damage Only (PDO)	147
Pain	47
Moderate Injury	5
Incapacitating Injury	4
Fatal	1
<b>Total</b>	<b>204</b>

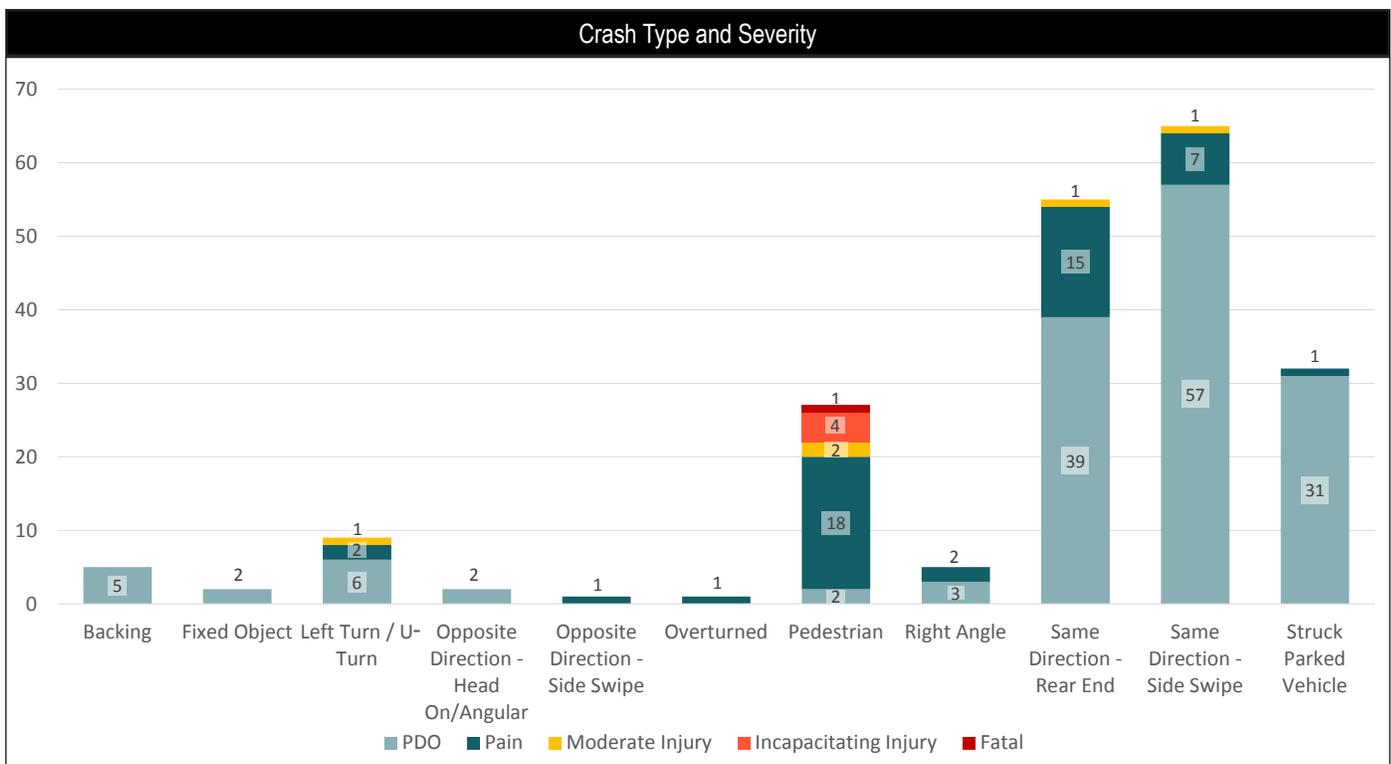
Crash Year	#
2010	57
2011	53
2012	94
<b>Total</b>	<b>204</b>

Intersection	#
At intersection	74
Not at intersection	130
At or Near Railroad	-
<b>Total</b>	<b>204</b>

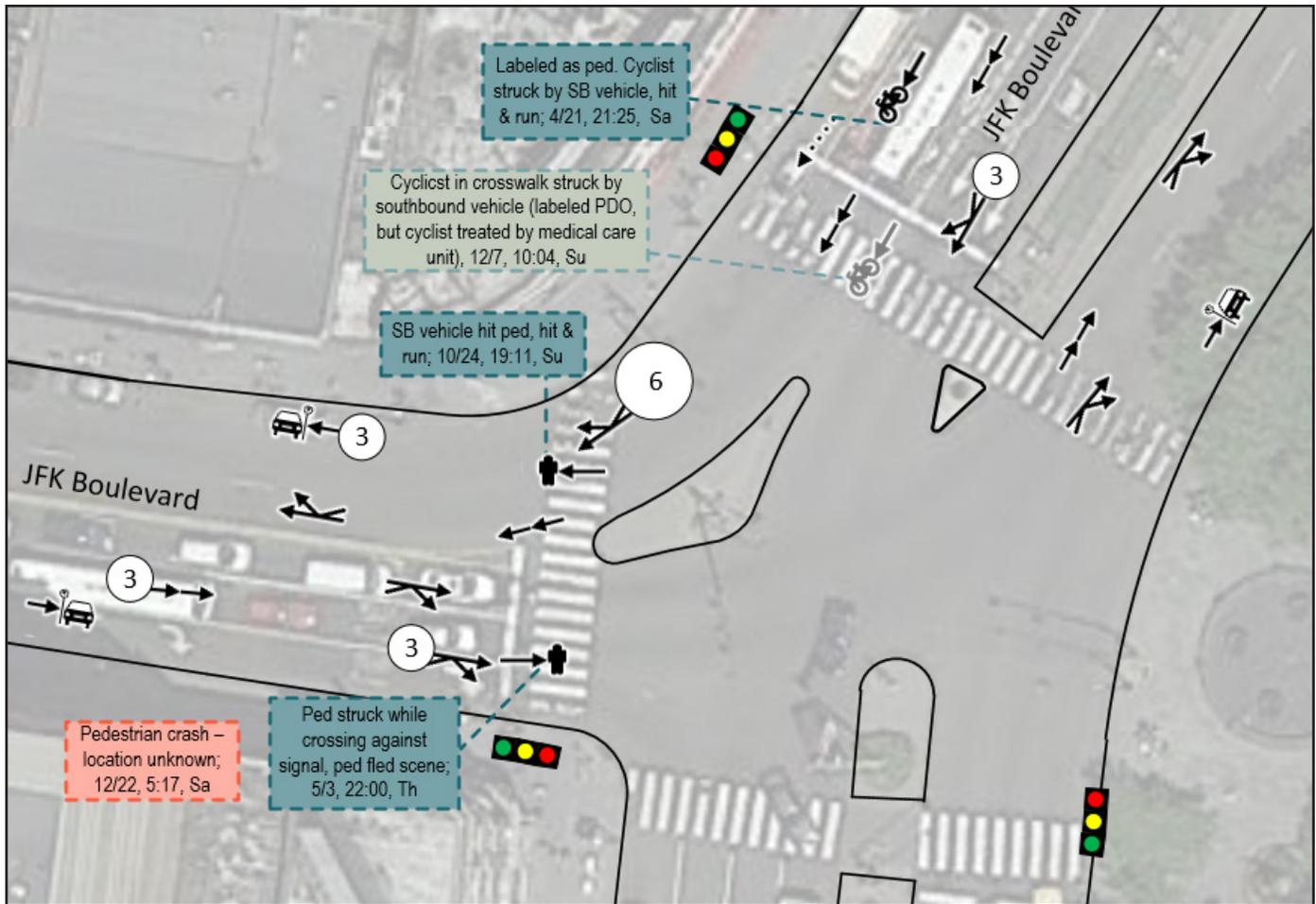
Surface Condition	#
Dry	168
Wet	33
Snowy	3
Icy	-
Slush	-
Water – Standing/ Moving	-
Sand, Mud, Dirt	-
Oil	-
<b>Total</b>	<b>204</b>

Light Condition	#
Daylight	138
Dawn	2
Dusk	2
Dark – No Street Lights	2
Dark – Street Lights On/ Continuous	53
Dark – Street Lights On/ Spot	3
Dark – Street Lights Off	4
Other	-
<b>Total</b>	<b>204</b>

Day	#
Monday	26
Tuesday	29
Wednesday	27
Thursday	34
Friday	37
Saturday	38
Sunday	13
<b>Total</b>	<b>204</b>



## 5.5 BERGEN AVENUE AND JFK BOULEVARD



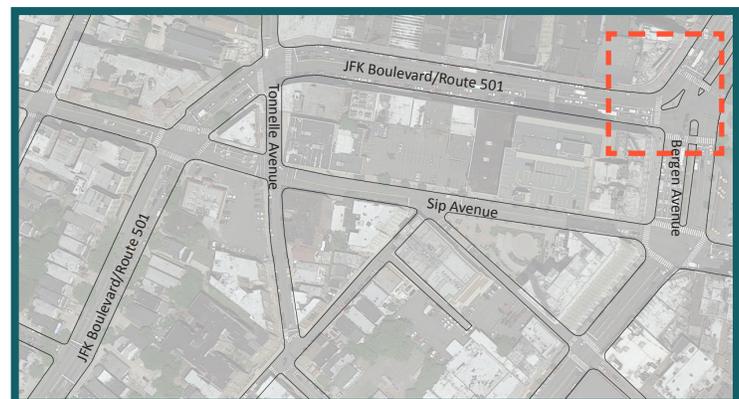
All pedestrian and cyclist crashes from 2008–2012 have a brief crash narrative included in the diagram and are color coded by severity. Grey icons (pedestrian or cyclist) indicate that the crash occurred in 2008 or 2009. Additionally, any crash from 2010–2012 that has a severity of “moderate injury” or greater has a color-coded narrative.

- = Incapacitating injury
- = Complaint of pain
- = Property damage only (PDO)

**LEGEND**

	Same direction-rear end		Same direction-side swipe
	Pedestrian		Backing
	Cyclist		Struck parked vehicle

0
50
100  
Feet



## BERGEN AVENUE AND JFK BOULEVARD – CRASH SUMMARY (2010–2012)

Crash Type	#
Same Direction – Rear End	10
Same Direction – Side Swipe	22
Right Angle	-
Opposite Direction – Head On/ Angular	1
Opposite Direction – Side Swipe	-
Struck Parked Vehicle	11
Left Turn / U-Turn	-
Backing	1
Encroachment	-
Overtaken	-
Fixed Object	1
Animal	-
Pedestrian	6
Pedalcyclist	-
Non-fixed Object	-
Railcar – Vehicle	-
Other	-
<b>Total</b>	<b>52</b>

Month	#
January	2
February	3
March	5
April	5
May	6
June	3
July	4
August	6
September	1
October	5
November	4
December	8
<b>Total</b>	<b>52</b>

Severity	#
Property Damage Only (PDO)	41
Pain	9
Moderate Injury	-
Incapacitating Injury	2
Fatal	-
<b>Total</b>	<b>52</b>

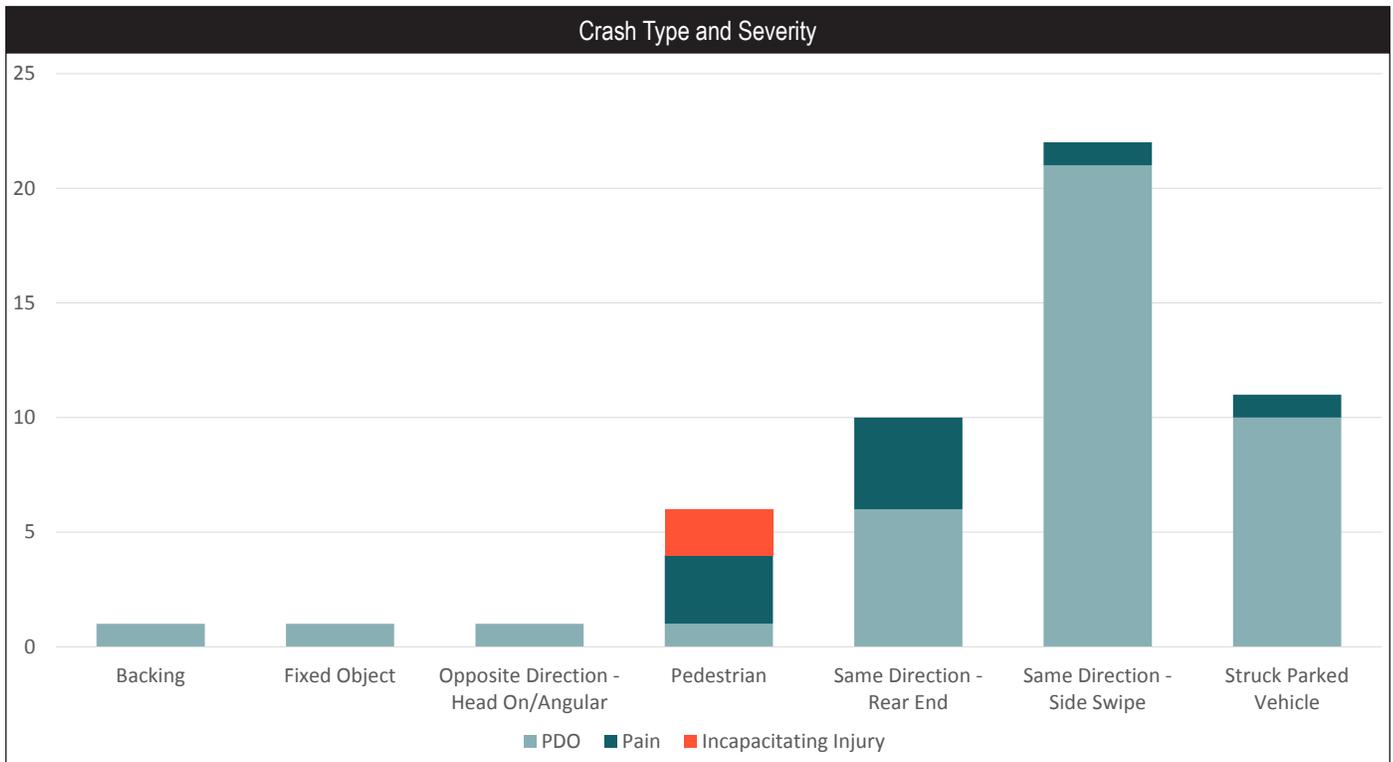
Crash Year	#
2010	20
2011	3
2012	29
<b>Total</b>	<b>52</b>

Intersection	#
At intersection	15
Not at intersection	37
At or Near Railroad	-
<b>Total</b>	<b>52</b>

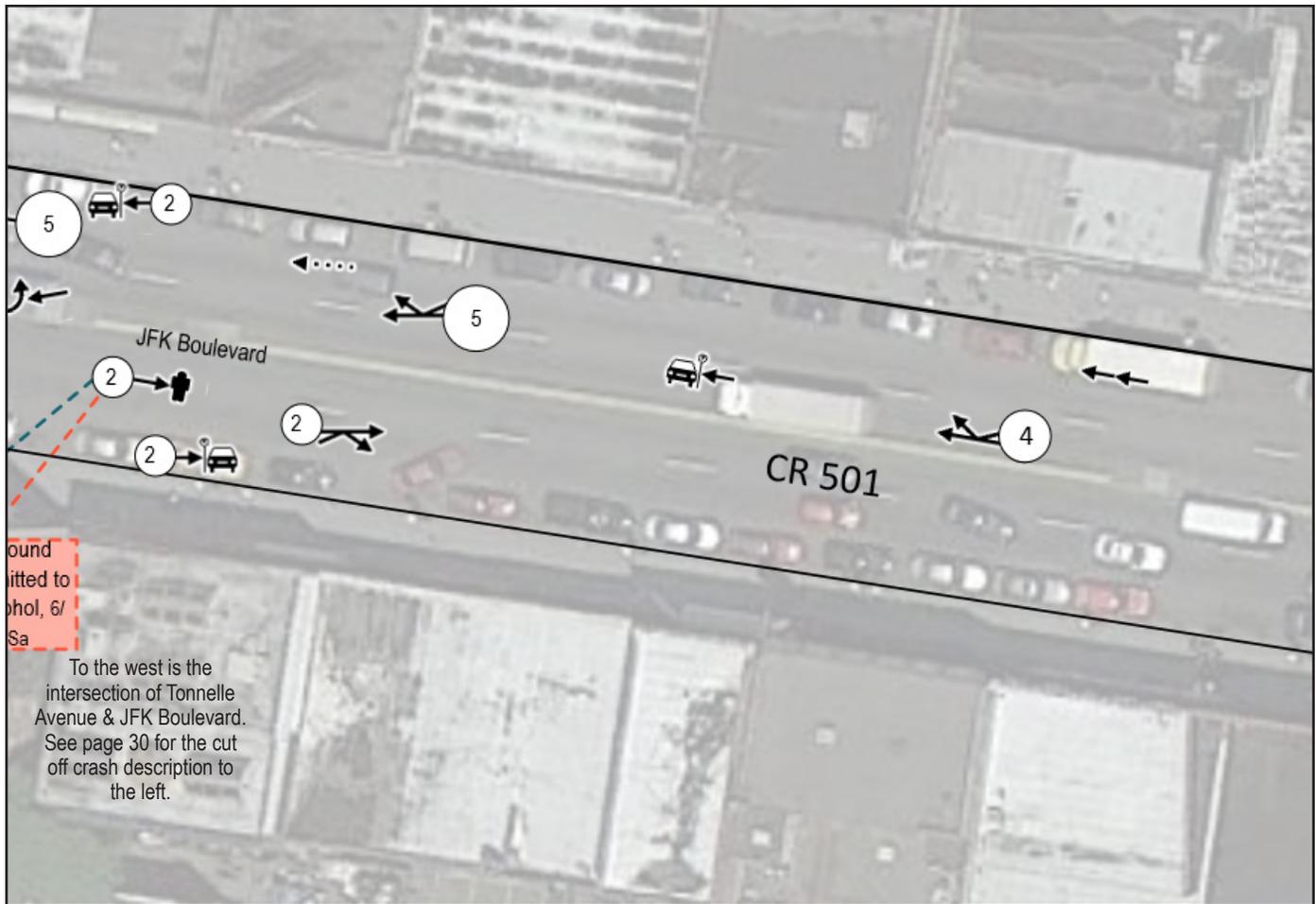
Surface Condition	#
Dry	39
Wet	11
Snowy	2
Icy	-
Slush	-
Water – Standing/ Moving	-
Sand, Mud, Dirt	-
Oil	-
<b>Total</b>	<b>52</b>

Light Condition	#
Daylight	38
Dawn	-
Dusk	-
Dark – No Street Lights	-
Dark – Street Lights On/ Continuous	14
Dark – Street Lights On/ Spot	-
Dark – Street Lights Off	-
Other	-
<b>Total</b>	<b>52</b>

Day	#
Monday	6
Tuesday	7
Wednesday	6
Thursday	7
Friday	14
Saturday	9
Sunday	3
<b>Total</b>	<b>52</b>



5.6 JFK BOULEVARD BETWEEN TONNELLE AVENUE AND BERGEN AVENUE



All pedestrian and cyclist crashes from 2008–2012 have a brief crash narrative included in the diagram and are color coded by severity. Grey icons (pedestrian or cyclist) indicate that the crash occurred in 2008 or 2009. Additionally, any crash from 2010–2012 that has a severity of “moderate injury” or greater has a color-coded narrative.

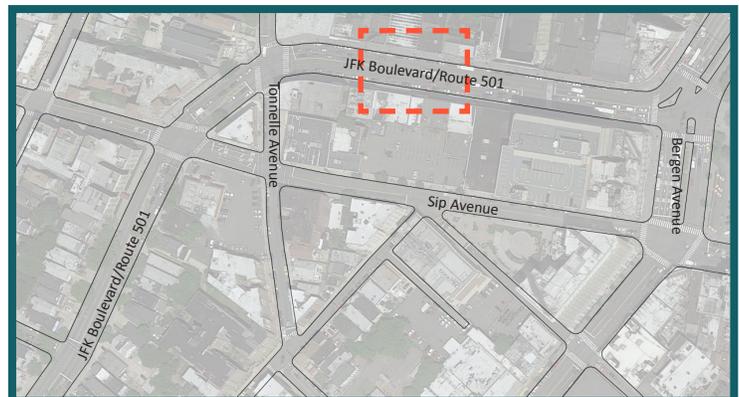
= Incapacitating injury

= Complaint of pain

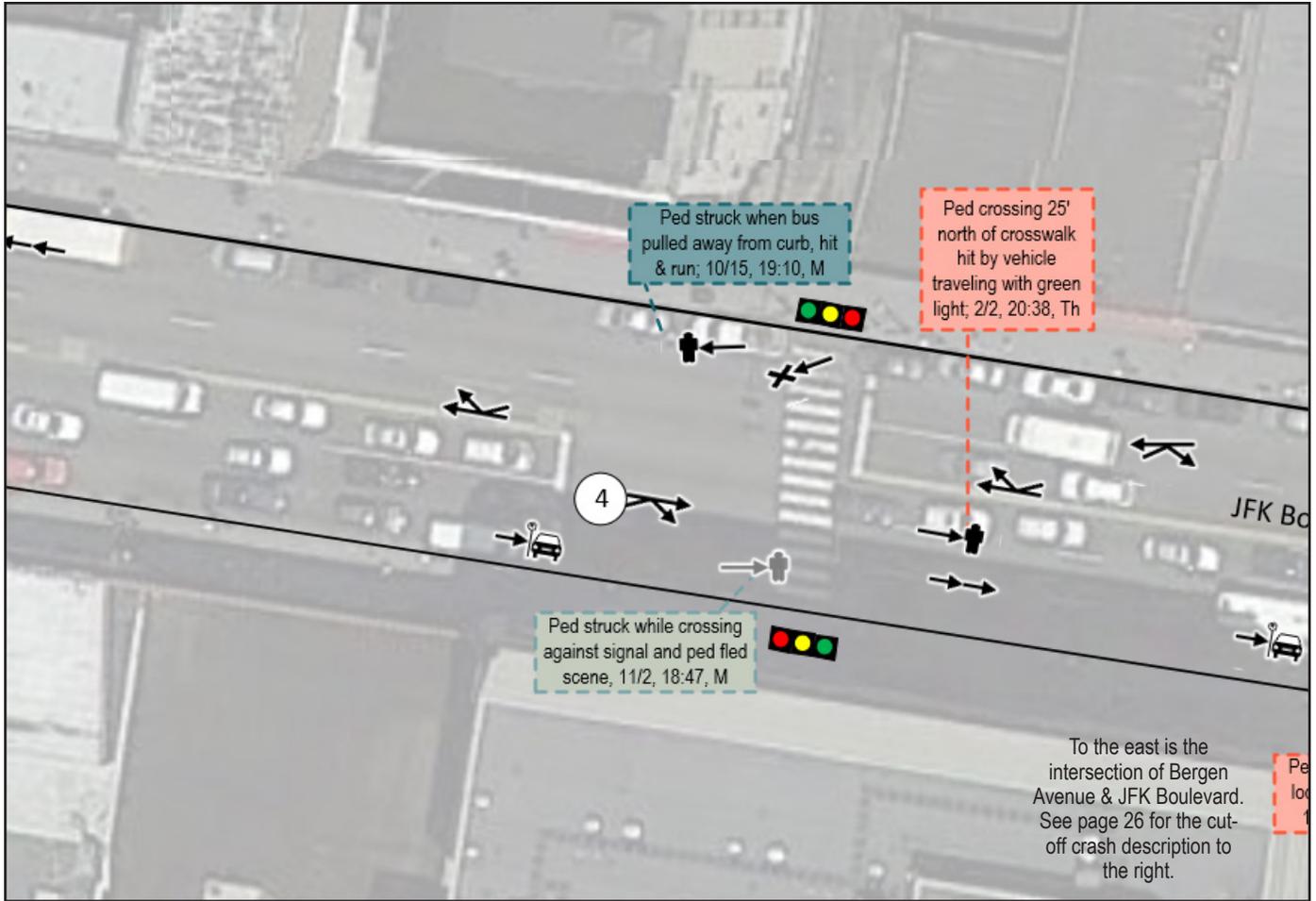
**LEGEND**

	Left turn		Backing
	Struck parked vehicle		Same direction-side swipe
	Pedestrian		Same direction-rear end

0 50 100  
Feet



# JFK BOULEVARD BETWEEN TONNELLE AVENUE AND BERGEN AVENUE



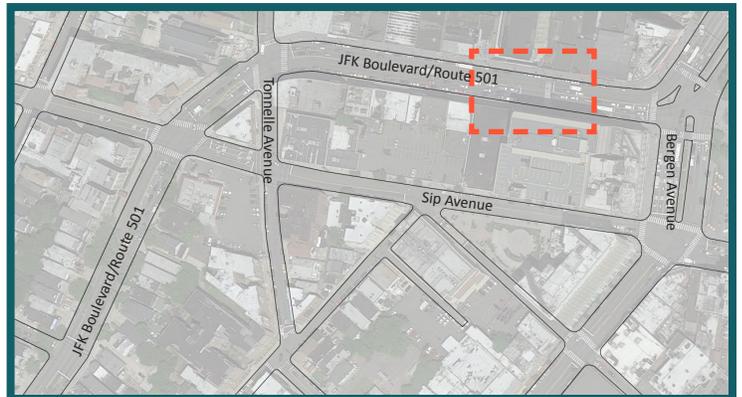
All pedestrian and cyclist crashes have a brief crash narrative included in the diagram and are color coded by severity. Additionally, all crashes in which a moderate injury, incapacitating injury, or a fatality have occurred include a narrative insert.

- = Incapacitating injury
- = Complaint of pain
- = Property damage only (PDO)

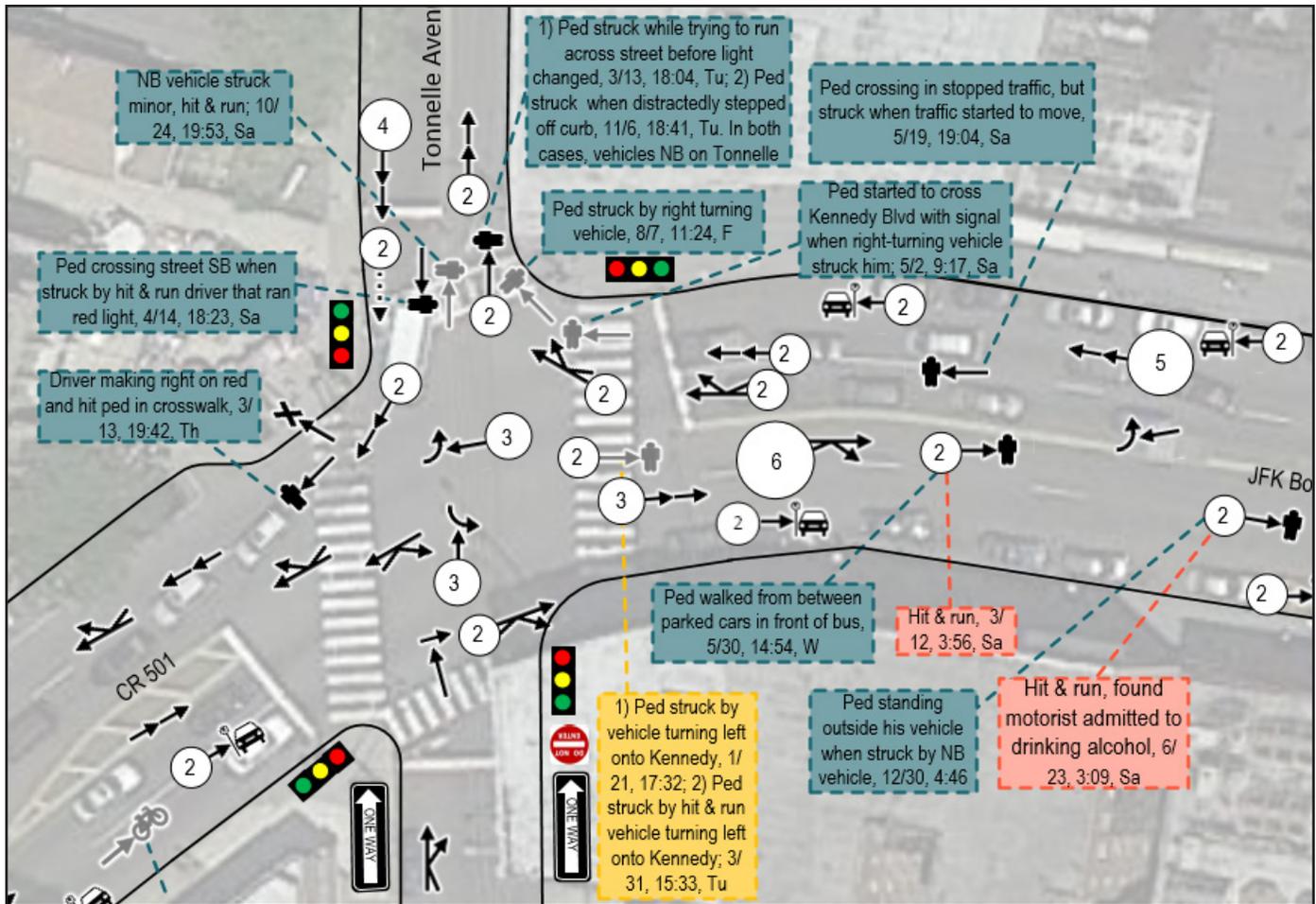
**LEGEND**

	Opposite direction – side swipe		Fixed object
	Struck parked vehicle		Same direction - side swipe
	Pedestrian		Same direction - rear end

0
50
100  
Feet

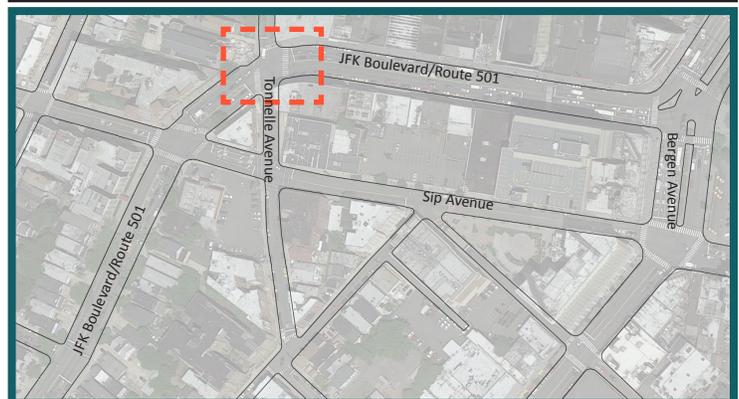
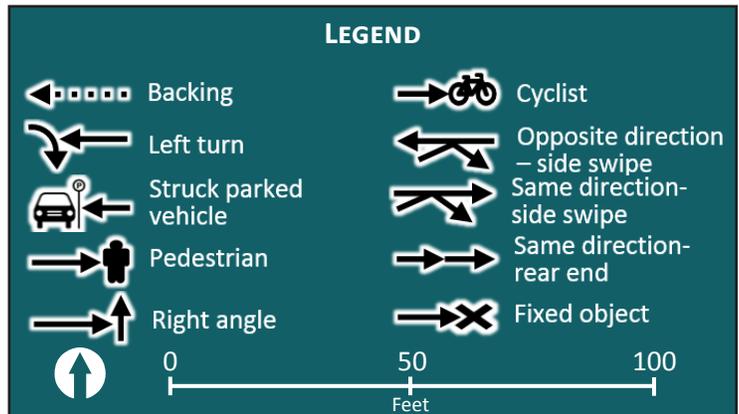


## 5.7 TONNELLE AVENUE AND JFK BOULEVARD



All pedestrian and cyclist crashes from 2008–2012 have a brief crash narrative included in the diagram and are color coded by severity. Grey icons (pedestrian or cyclist) indicate that the crash occurred in 2008 or 2009. Additionally, any crash from 2010–2012 that has a severity of “moderate injury” or greater has a color-coded narrative.

- = Incapacitating injury
- = Complaint of pain
- = Moderate injury



## TONNELLE AVENUE AND JFK BOULEVARD – CRASH SUMMARY (2010–2012)

Crash Type	#
Same Direction – Rear End	21
Same Direction – Side Swipe	28
Right Angle	1
Opposite Direction – Head On/ Angular	-
Opposite Direction – Side Swipe	1
Struck Parked Vehicle	11
Left Turn / U-Turn	5
Backing	3
Encroachment	-
Overtaken	-
Fixed Object	1
Animal	-
Pedestrian	9
Pedalcyclist	-
Non-fixed Object	-
Railcar – Vehicle	-
Other	-
<b>Total</b>	<b>80</b>

Month	#
January	5
February	4
March	12
April	8
May	9
June	8
July	6
August	5
September	5
October	4
November	5
December	9
<b>Total</b>	<b>80</b>

Severity	#
Property Damage Only (PDO)	62
Pain	16
Moderate Injury	-
Incapacitating Injury	2
Fatal	-
<b>Total</b>	<b>80</b>

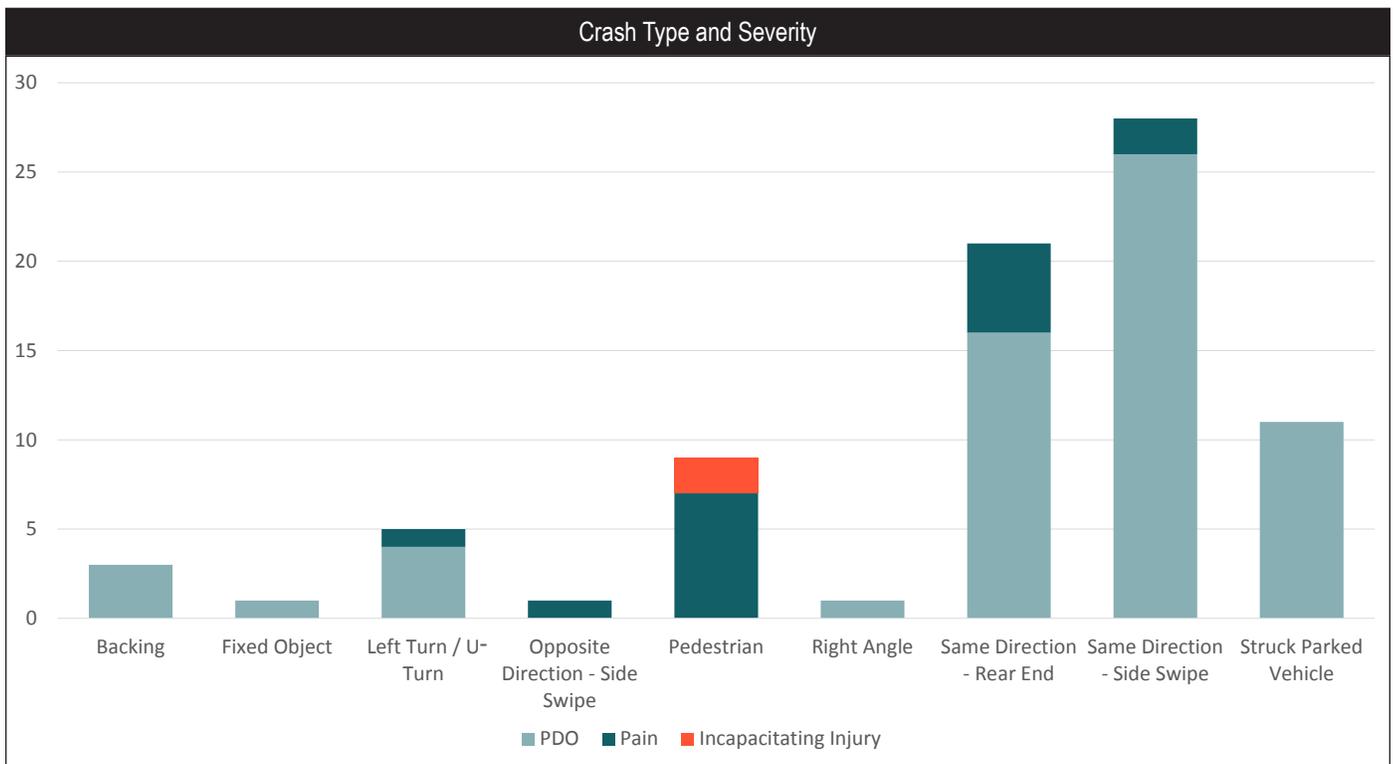
Crash Year	#
2010	12
2011	27
2012	41
<b>Total</b>	<b>80</b>

Intersection	#
At intersection	26
Not at intersection	54
At or Near Railroad	-
<b>Total</b>	<b>80</b>

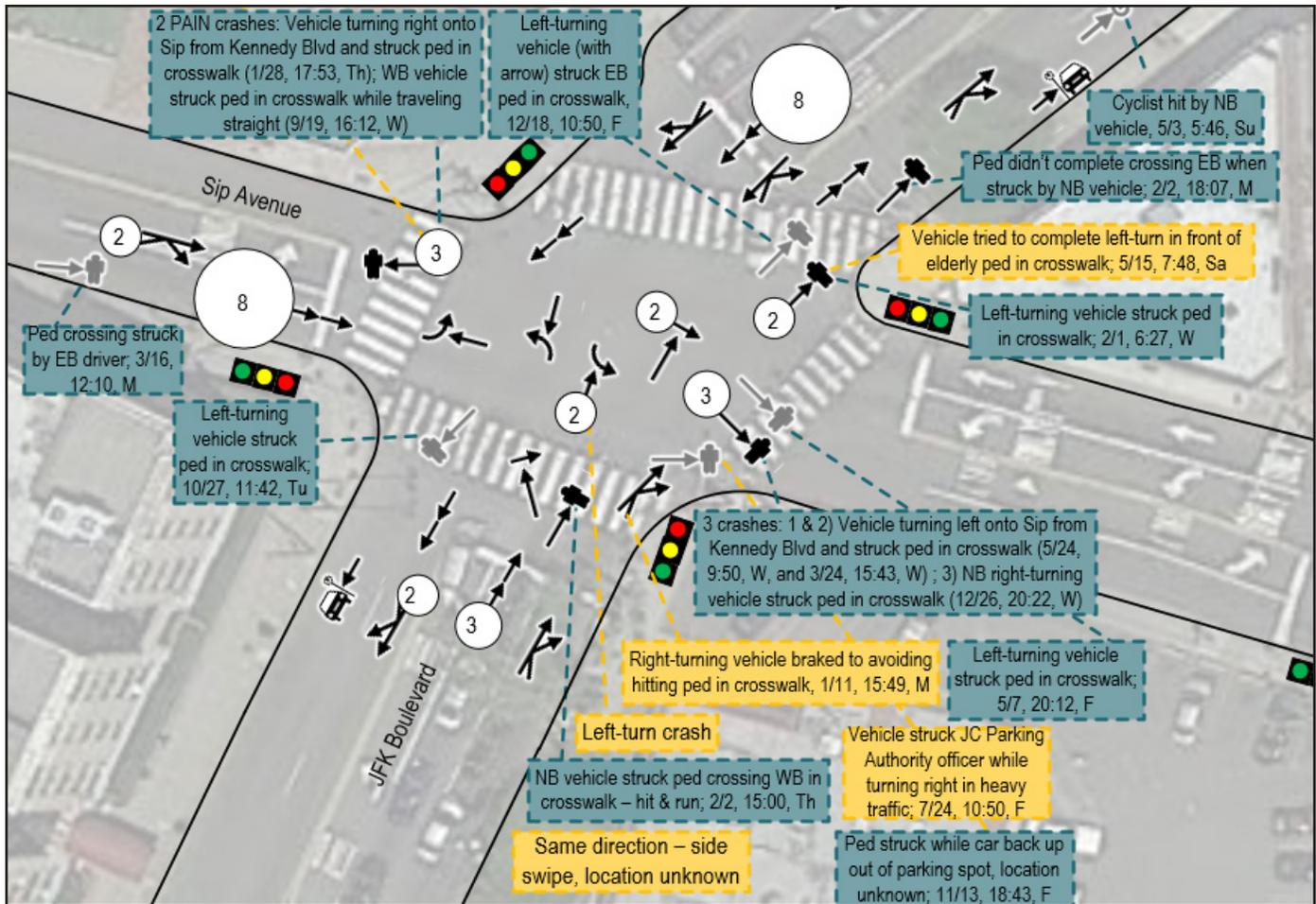
Surface Condition	#
Dry	72
Wet	7
Snowy	1
Icy	-
Slush	-
Water – Standing/ Moving	-
Sand, Mud, Dirt	-
Oil	-
<b>Total</b>	<b>80</b>

Light Condition	#
Daylight	57
Dawn	-
Dusk	2
Dark – No Street Lights	-
Dark – Street Lights On/ Continuous	18
Dark – Street Lights On/ Spot	2
Dark – Street Lights Off	1
Other	-
<b>Total</b>	<b>80</b>

Day	#
Monday	10
Tuesday	12
Wednesday	9
Thursday	16
Friday	9
Saturday	16
Sunday	7
<b>Total</b>	<b>79</b>



## 5.8 SIP AVENUE AND JFK BOULEVARD



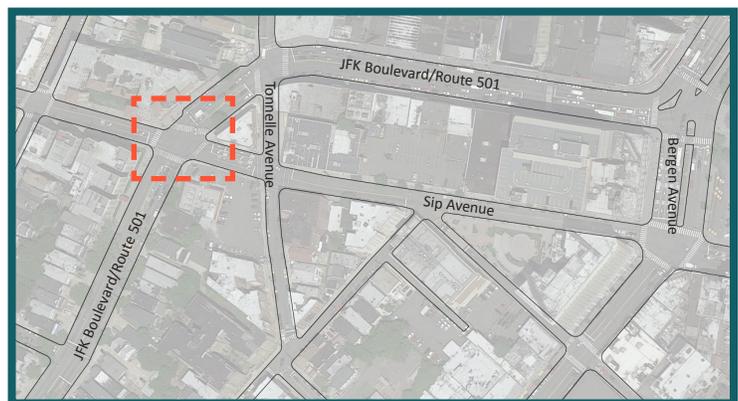
All pedestrian and cyclist crashes from 2008–2012 have a brief crash narrative included in the diagram and are color coded by severity. Grey icons (pedestrian or cyclist) indicate that the crash occurred in 2008 or 2009. Additionally, any crash from 2010–2012 that has a severity of “moderate injury” or greater has a color-coded narrative.

- = Moderate injury
- = Complaint of pain

**LEGEND**

	Same direction-side swipe		Cyclist
	Same direction-rear end		Pedestrian
	Right angle		Struck parked vehicle
	Left turn		Opposite direction – side swipe

0 50 100  
Feet



## SIP AVENUE AND JFK BOULEVARD – CRASH SUMMARY (2010–2012)

Crash Type	#
Same Direction – Rear End	22
Same Direction – Side Swipe	11
Right Angle	4
Opposite Direction – Head On/ Angular	1
Opposite Direction – Side Swipe	-
Struck Parked Vehicle	3
Left Turn / U-Turn	4
Backing	1
Encroachment	-
Overtuned	-
Fixed Object	-
Animal	-
Pedestrian	10
Pedalcyclist	-
Non-fixed Object	-
Railcar – Vehicle	-
Other	-
<b>Total</b>	<b>56</b>

Month	#
January	4
February	5
March	5
April	6
May	7
June	3
July	2
August	3
September	8
October	4
November	3
December	6
<b>Total</b>	<b>56</b>

Severity	#
Property Damage Only (PDO)	33
Pain	18
Moderate Injury	5
Incapacitating Injury	-
Fatal	-
<b>Total</b>	<b>56</b>

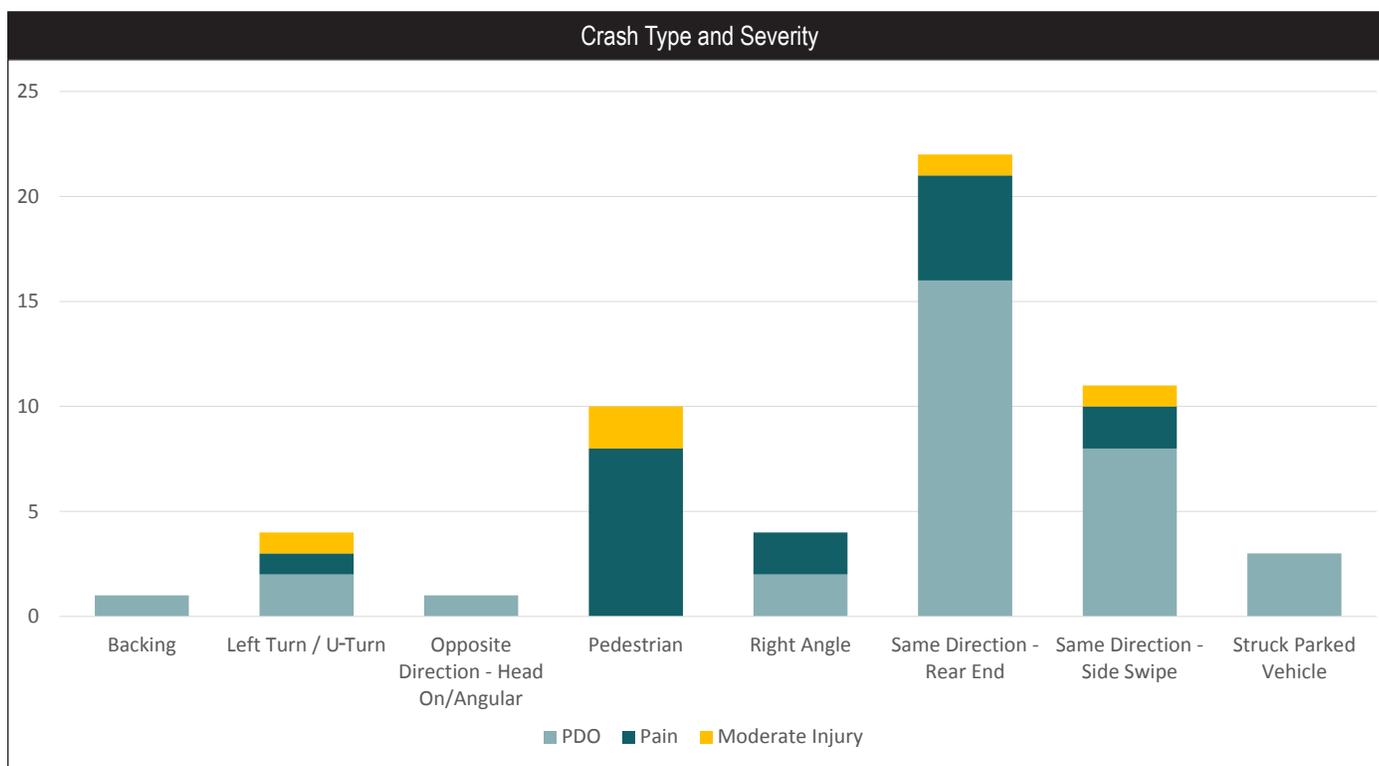
Crash Year	#
2010	19
2011	17
2012	20
<b>Total</b>	<b>56</b>

Intersection	#
At intersection	28
Not at intersection	28
At or Near Railroad	-
<b>Total</b>	<b>56</b>

Surface Condition	#
Dry	43
Wet	13
Snowy	-
Icy	-
Slush	-
Water – Standing/ Moving	-
Sand, Mud, Dirt	-
Oil	-
<b>Total</b>	<b>56</b>

Light Condition	#
Daylight	32
Dawn	2
Dusk	-
Dark – No Street Lights	1
Dark – Street Lights On/ Continuous	18
Dark – Street Lights On/ Spot	1
Dark – Street Lights Off	2
Other	-
<b>Total</b>	<b>56</b>

Day	#
Monday	5
Tuesday	9
Wednesday	10
Thursday	9
Friday	11
Saturday	9
Sunday	3
<b>Total</b>	<b>56</b>



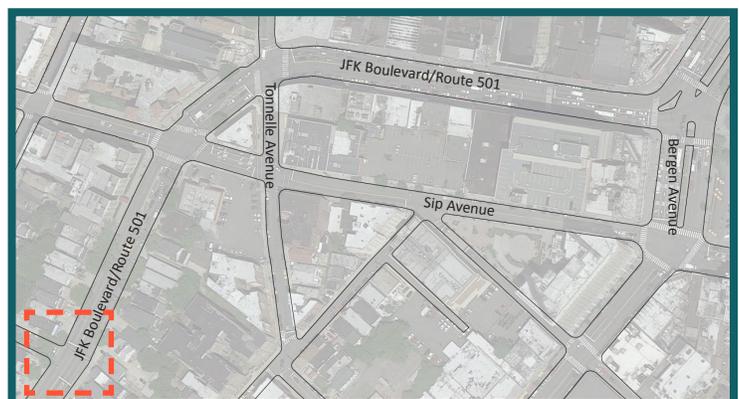
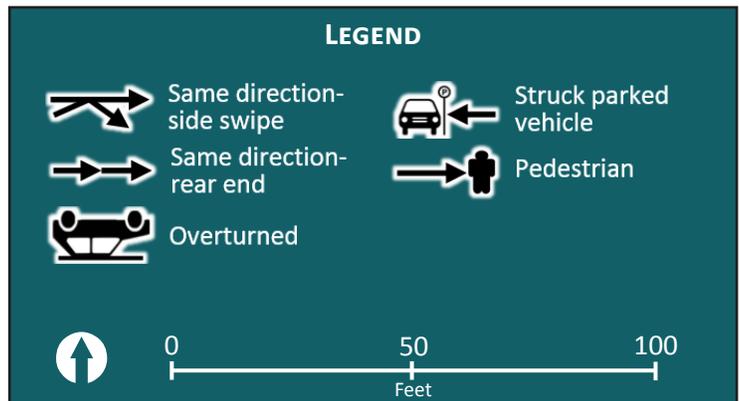
## 5.9 BOND STREET AND JFK BOULEVARD



All pedestrian and cyclist crashes from 2008–2012 have a brief crash narrative included in the diagram and are color coded by severity. Grey icons (pedestrian or cyclist) indicate that the crash occurred in 2008 or 2009. Additionally, any crash from 2010–2012 that has a severity of “moderate injury” or greater has a color-coded narrative.

= Fatal

= Complaint of pain



## BOND STREET AND JFK BOULEVARD – CRASH SUMMARY (2010–2012)

Crash Type	#
Same Direction – Rear End	2
Same Direction – Side Swipe	4
Right Angle	-
Opposite Direction – Head On/ Angular	-
Opposite Direction – Side Swipe	-
Struck Parked Vehicle	7
Left Turn / U-Turn	-
Backing	-
Encroachment	-
Overtaken	1
Fixed Object	-
Animal	-
Pedestrian	2
Pedalcyclist	-
Non-fixed Object	-
Railcar – Vehicle	-
Other	-
<b>Total</b>	<b>16</b>

Month	#
January	1
February	2
March	1
April	-
May	-
June	1
July	3
August	-
September	1
October	2
November	3
December	2
<b>Total</b>	<b>16</b>

Severity	#
Property Damage Only (PDO)	11
Pain	4
Moderate Injury	-
Incapacitating Injury	-
Fatal	1
<b>Total</b>	<b>16</b>

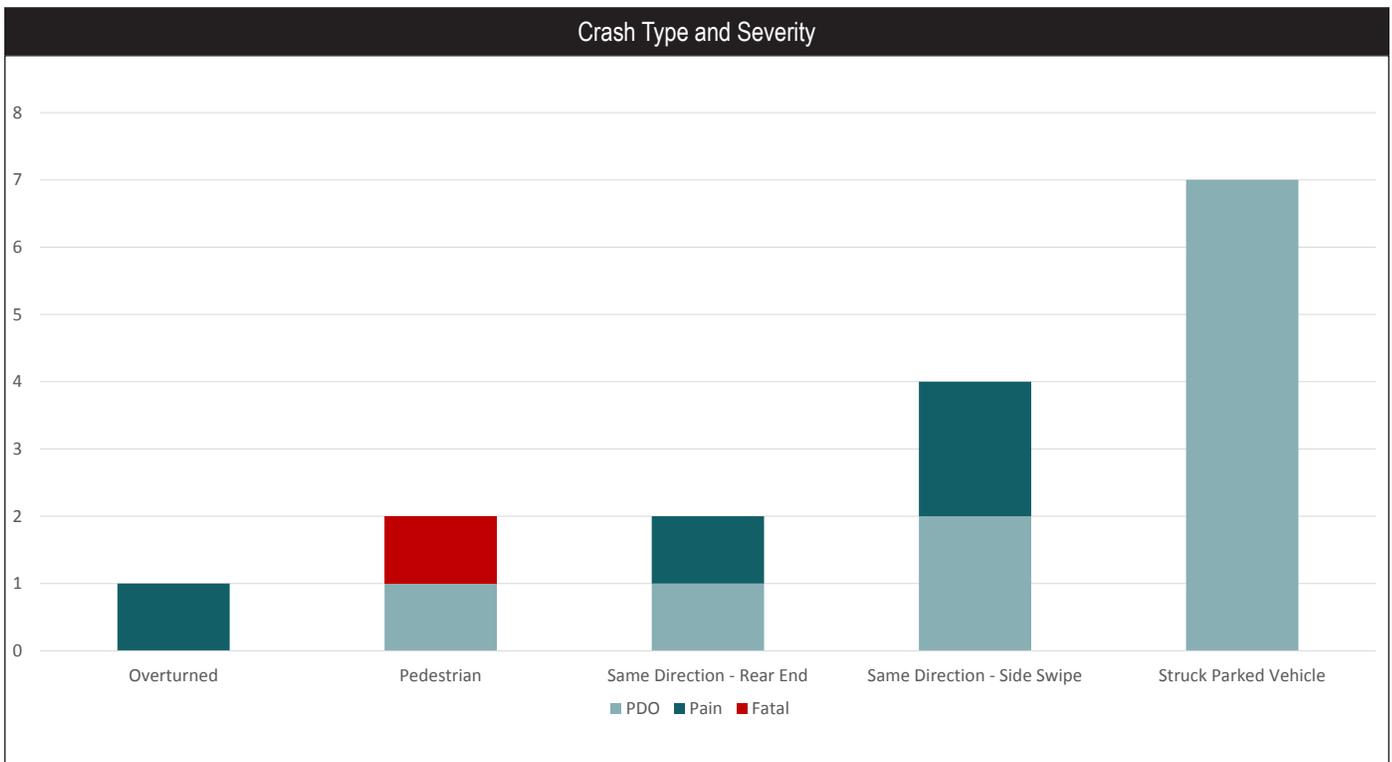
Crash Year	#
2010	6
2011	6
2012	4
<b>Total</b>	<b>16</b>

Intersection	#
At intersection	5
Not at intersection	11
At or Near Railroad	0
<b>Total</b>	<b>16</b>

Surface Condition	#
Dry	14
Wet	2
Snowy	-
Icy	-
Slush	-
Water – Standing/ Moving	-
Sand, Mud, Dirt	-
Oil	-
<b>Total</b>	<b>16</b>

Light Condition	#
Daylight	11
Dawn	-
Dusk	-
Dark – No Street Lights	1
Dark – Street Lights On/ Continuous	3
Dark – Street Lights On/ Spot	-
Dark – Street Lights Off	1
Other	-
<b>Total</b>	<b>16</b>

Day	#
Monday	5
Tuesday	1
Wednesday	1
Thursday	2
Friday	3
Saturday	4
Sunday	-
<b>Total</b>	<b>16</b>

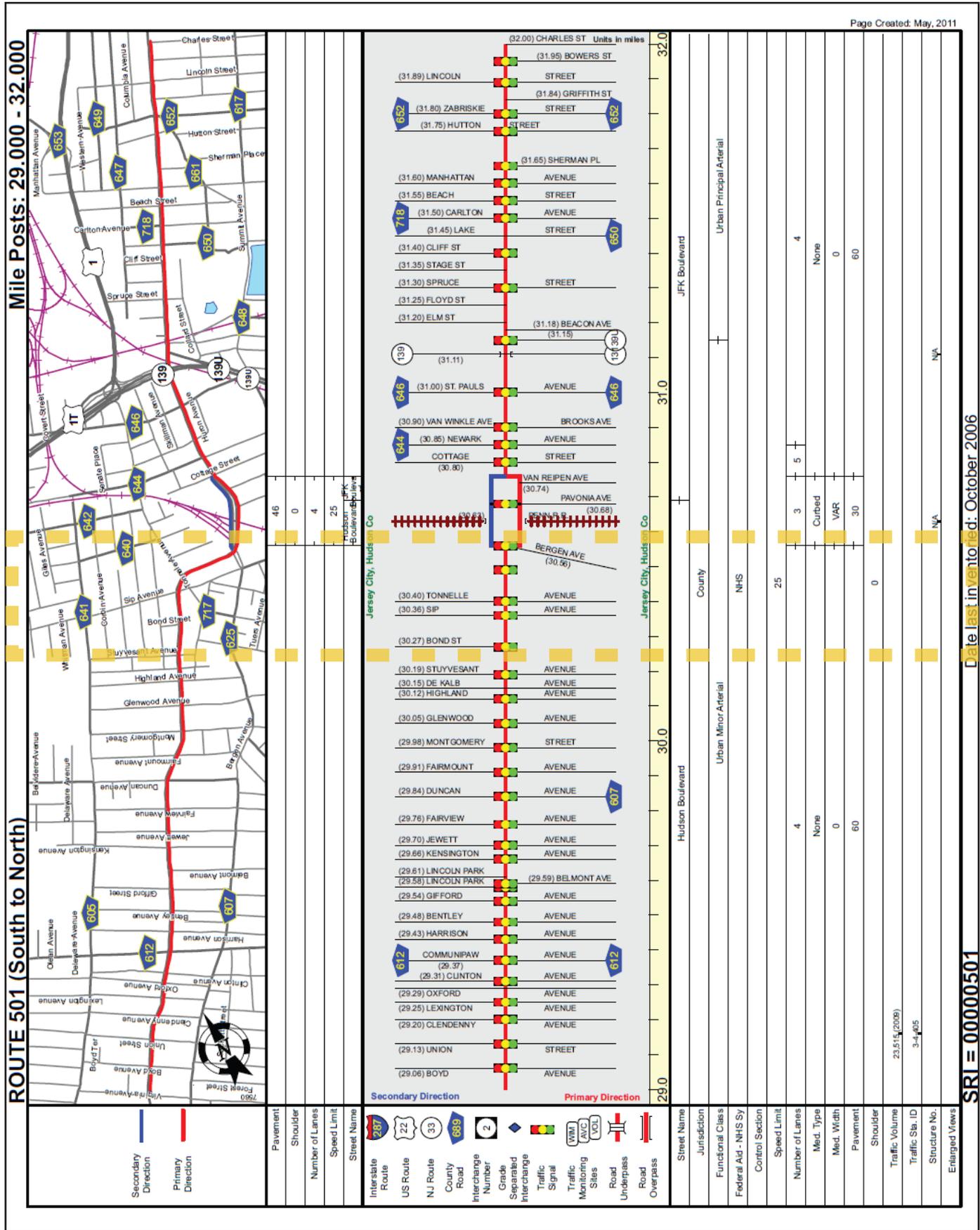


## 5.10 RSA TEAM

Name	Representing	E-mail
James Sinclair	Alan M. Voorhees Transportation Center	james.sinclair@ejb.rutgers.edu
Aileen Daney	Center for Advanced Infrastructure and Transportation	aileen.daney@gmail.com
Aimee Jefferson	Center for Advanced Infrastructure and Transportation	aimee.jefferson@rutgers.edu
Andy Kaplan	Center for Advanced Infrastructure and Transportation	akaplan1@rutgers.edu
Sally Karasov	Center for Advanced Infrastructure and Transportation	sally.karasov@rutgers.edu
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Christopher Roberts	Hudson County Division of Planning	croberts@hcnj.us
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Stanley Huang	Jersey City Department of Public Works	stanley@jcnj.org
Joao D'Souza	Jersey City Department of Public Works	joao@jcnj.org
Officer John Romaniello	Jersey City Police Department	jromaniello@njcps.org
Rosemary Condi	New Jersey Transit	rcondi@njtransit.com
Amon Boucher	New Jersey Department of Transportation	Amon.Boucher@dot.state.nj.us
Christine Mittman	North Jersey Transportation Planning Authority	cmittman@njtpa.org
Elizabeth Thompson	North Jersey Transportation Planning Authority	ethompson@njtpa.org

**>> 6.0 APPENDIX B – OUTSIDE DOCUMENTS**

6.1 STRAIGHT LINE DIAGRAMS

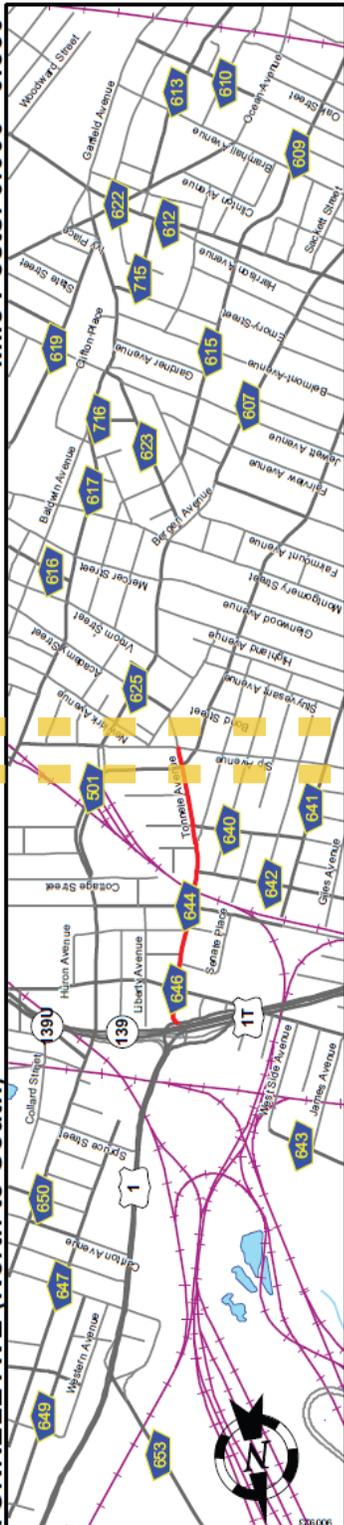


Date last inventoried: October 2006

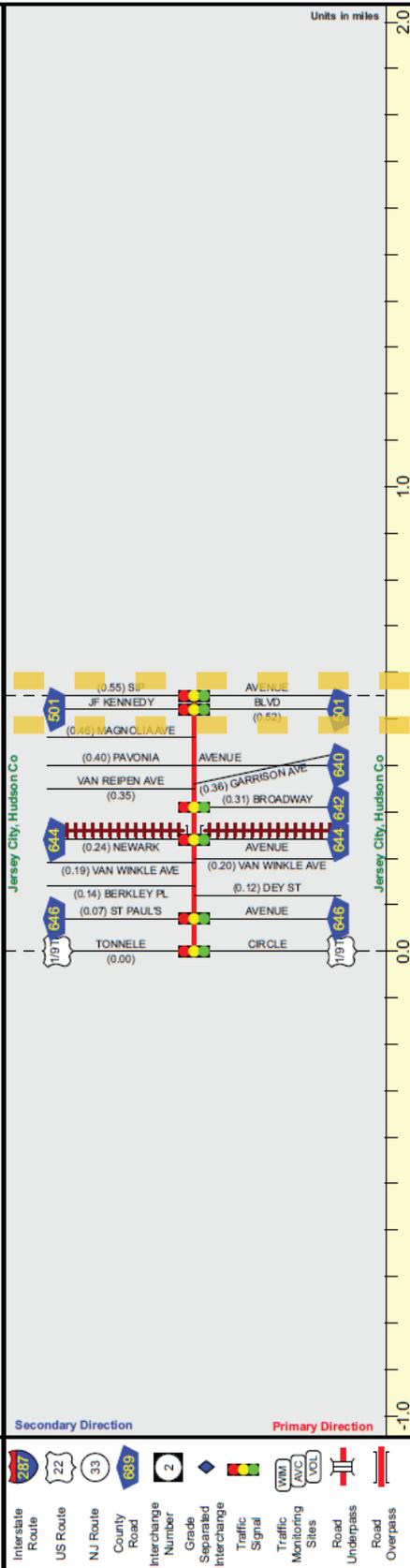
SRI = 00000501

Mile Posts: 0.000 - 0.550

TONNELE AVE (North to South)



Pavement	Shoulder
Number of Lanes	Speed Limit
Street Name	Street Name



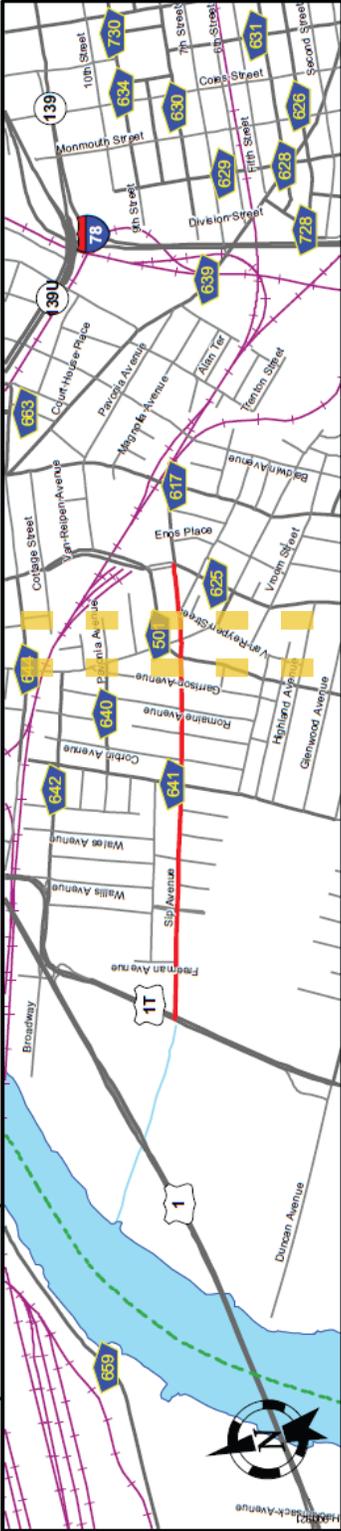
Street Name	Tonnele Avenue
Jurisdiction	Municipal
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	IM - Transit Term.
Control Section	
Speed Limit	25
Number of Lanes	2
Mech. Type	None
Med. Width	0
Pavement	34
Shoulder	0
Traffic Volume	10,000 (2007)
Traffic Sta. ID	3MS9721
Structure No.	
Enlarged Views	

Date last inventoried: August 2000

SRI = 09061564

Mile Posts: 0.000 - 0.910

SIP AVE (West to East)



Street Name	MP	Direction
BERGEN AVENUE	0.91	West to East
NEWKIRK ST REYFEN AVE	0.82	West to East
TOINELLE AVENUE	0.77	West to East
JF KENNEDY AVENUE	0.73	West to East
GARRISON AVENUE	0.67	West to East
ROMAINE AVENUE	0.62	West to East
VAN WAGENEN AVENUE	0.57	West to East
CORBIN AVENUE	0.52	West to East
WEST SIDE AVENUE	0.47	West to East
WHITMAN AVE	0.42	West to East
HAWTHORNE AVE	0.37	West to East
BRYANT AVENUE	0.32	West to East
HOLMES AVE	0.26	West to East
EMERSON AVENUE	0.21	West to East
FREEMAN AVE	0.11	West to East

Street Name	Jurisdiction	Functional Class	Federal Aid - NHS Sy	Control Section	Speed Limit	Number of Lanes	Med. Type	Med. Width	Pavement	Shoulder	Traffic Volume	Traffic Sta. ID	Structure No.	Enlarged Views
Sip Avenue	Municipal	Urban Minor Arterial	STP	STP	25	2	None	0	0	0	10,865(2009)	3M5H726		
Begin Sip Ave MP=0														
End Sip Ave MP=0.91														

Secondary Direction Primary Direction

Jersey City, Hudson Co Jersey City, Hudson Co

SPI - 00061561 Date last inventoried: August 2000

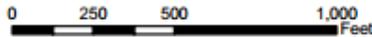
6.2 EXCERPTS FROM JOURNAL SQUARE 2060 PLAN

JOURNAL SQUARE 2060

MAP 2: ZONE DISTRICTS MAP

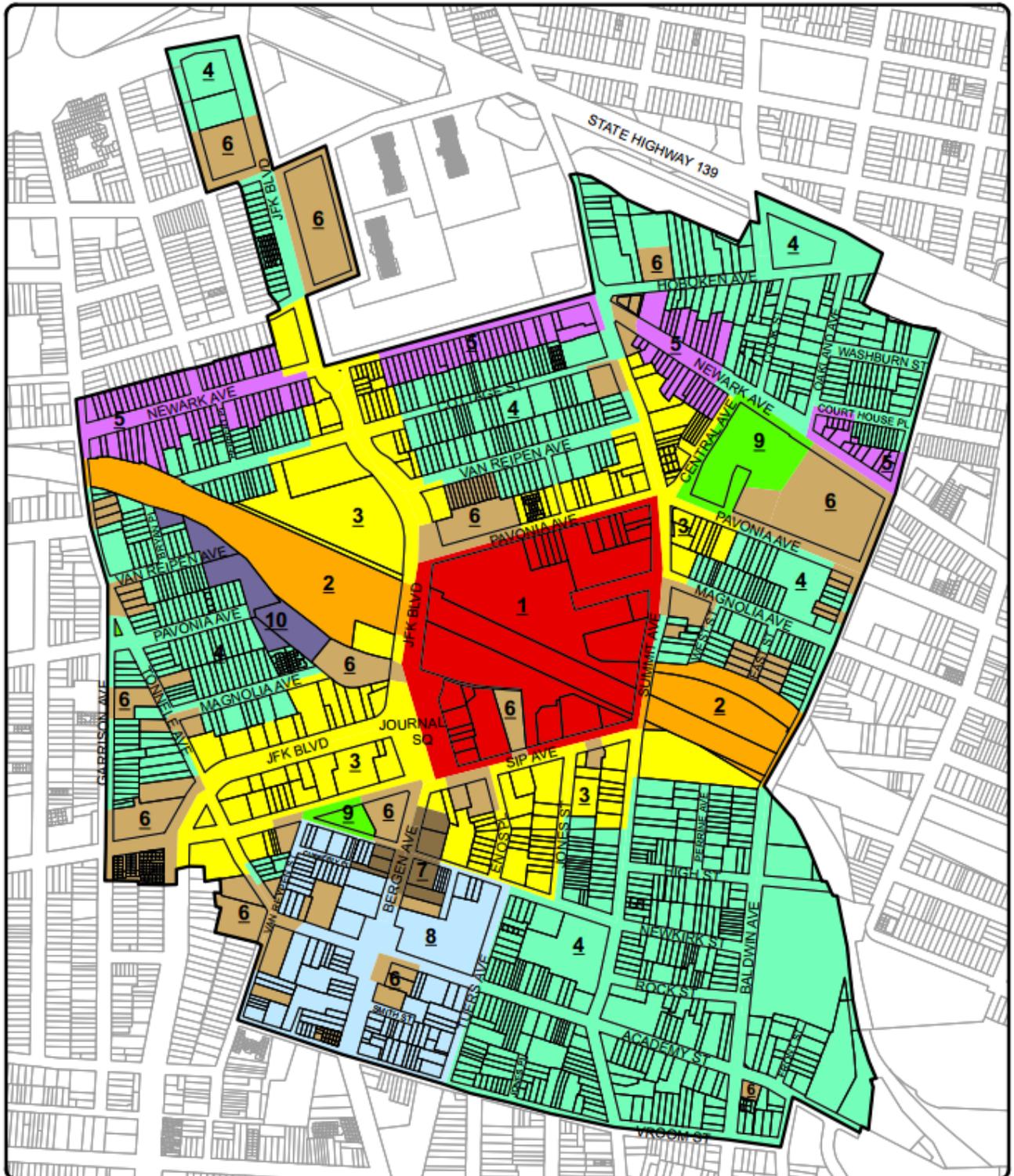
JULY 8, 2010

1 inch = 500 feet



Zone Districts

- Zone 1: Core
- Zone 2: Air-Rights
- Zone 3: Commercial Center
- Zone 4: Neighborhood Mixed Use
- Zone 5: Commercial Main Street
- Zone 6: Preservation
- Zone 7: Deco
- Zone 8: Bergen Square
- Zone 9: Parks
- Zone 10: Transition



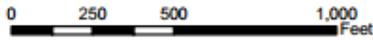
Source: "Map 2: Zone Districts Map." Journal Square 2060 Plan, page 40 [http://www.cityofjerseycity.com/uploadedFiles/City\\_Government/Department\\_of\\_Housing\\_Economic\\_Development\\_and\\_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf](http://www.cityofjerseycity.com/uploadedFiles/City_Government/Department_of_Housing_Economic_Development_and_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf)

# JOURNAL SQUARE 2060

## MAP 6: CIRCULATION MAP

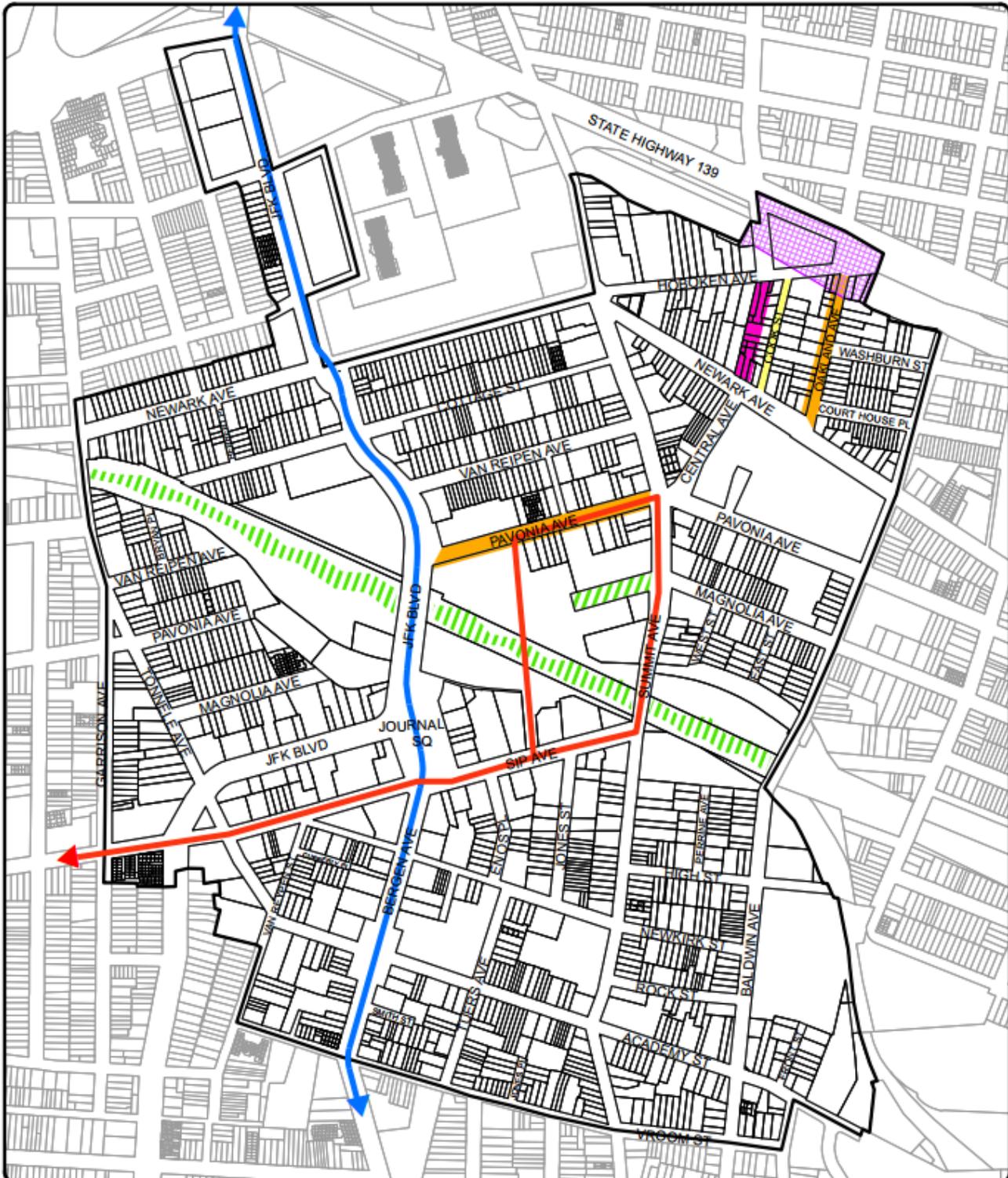
JULY 8, 2010

1 inch = 500 feet



### New Circulation Elements

- Proposed Streetcar
- Proposed Bus Rapid Transit
- Street Vacation
- Central Avenue New Street Connector
- Pedestrian Plaza (exact boundaries to be determined)
- Right-of-Way Preservation
- Street Widening



Source: "Map 6: Circulation Map." Journal Square 2060 Plan, page 44. [http://www.cityofjerseycity.com/uploadedFiles/City\\_Government/Department\\_of\\_Housing\\_Economic\\_Development\\_and\\_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf](http://www.cityofjerseycity.com/uploadedFiles/City_Government/Department_of_Housing_Economic_Development_and_Commerce/JOURNAL%20SQUARE%202060%20RDP%20-%20Ord%2010-103.pdf)