# Long Beach Boulevard Road Safety Audit

**OCEAN COUNTY**

FINAL REPORT

December 2013


Submitted by

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Bureau of Transportation Data and Safety
and
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Federal Highway Administration

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**Supplementary Notes**

**Abstract**

This report documents findings and recommendations made by the RSA team on August 28, 2012, on the southern half of Long Beach Boulevard on Long Beach Island in Ocean County, New Jersey.

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

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

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

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

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# Introduction

The Rutgers' Transportation Safety Resource Center (TSRC) at the Rutgers' Center for Advanced Infrastructure and Transportation (CAIT) and the North Jersey Transportation Planning Authority (NJTPA) have partnered to provide NJTPA's sub-regions with facilitated Road Safety Audits at locations identified by the sub-regions as having safety concerns. To assist the sub-regions in making this determination, NJTPA and TSRC have prepared a ranking of roadway segments based on crash data.

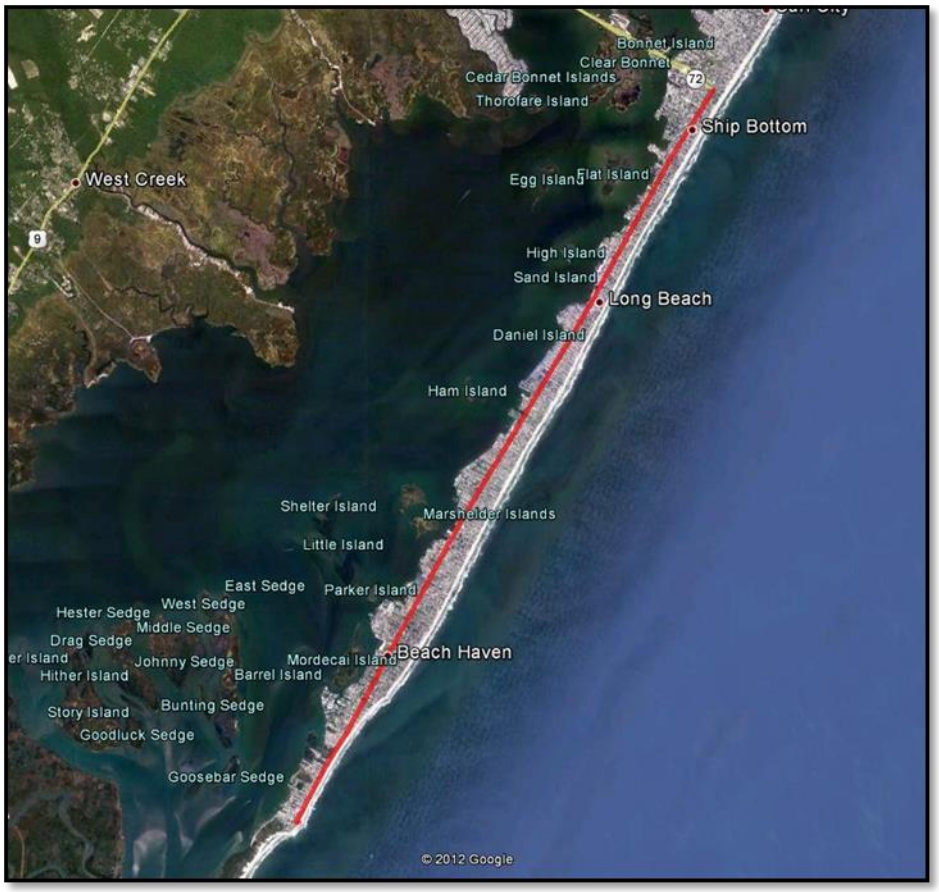



**Figure 1 – Map of study area**

In 2012, Ocean County was selected by NJTPA as a sub-region to obtain an RSA. Ocean County identified Long Beach Boulevard, south of New Jersey Route 72 on Long Beach Island, as a corridor of long-standing safety concern. This section of roadway is the main, and at times only, north-south roadway along the barrier island, serving as the sole arterial roadway to the single access point to the island—the Route 72 Causeway Bridge. In addition to the traffic demands, this roadway is traversed by pedestrians accessing the beach from homes and business on the western side of the roadway. The safety of pedestrians in this area has been deemed a primary concern for the municipalities, as the economic vitality of these shore communities is enhanced by the mobility of pedestrians.

As such, Ocean County directed the Road Safety Audit to consider the critical safety needs of this roadway.

## Background

The audit focused on Long Beach Boulevard (CR 607) from Route 72, the bridge at 9th Street, to the southern tip of Long Beach Island, as shown in Figure 1. This roadway is an important north-south arterial in a narrow north-south oriented island. The Road Safety Audit includes approximately nine miles of roadway and crosses multiple municipalities, from north to south: Ship Bottom Borough, Long Beach Township, Beach Haven Borough, and again, Long Beach Township. Long Beach Boulevard is an "Urban Minor Arterial" with three different roadway sections. The majority of the RSA corridor includes two lanes in each direction with a two-way-left-turn lane. Towards the southern end of the island is a half-mile section with one lane in each direction, a left-turn lane, and angled parking on both sides of the road. The southern two plus miles is a two-lane roadway with shoulders. (See Appendix D for diagram of the roadway sections.)

All of Long Beach Boulevard is under Ocean County jurisdiction with many of the traffic lights under municipal jurisdiction. There are more than 200 intersections on Long Beach Boulevard in the RSA area, and 33 are signalized. Of the unsignalized intersections, 12 have marked crosswalks. From mid-May to mid-October, the speed limit in the study area varies between 30 to 35 miles per hour (mph). The speed limit from mid-October to mid-May is 40 to 45 mph, and the signals are deactivated. Variable message


**Figure 2 – Typical view along Long Beach Boulevard**

signs instruct the public with the change in speed limits. The land use throughout the corridor is predominantly focused on tourism, primarily during the warmer weather, and includes commercial and residential properties, as observed in Figure 2 above. There is one bus route that operates only one day a week.

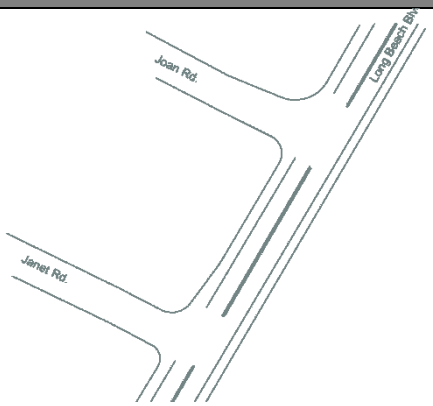
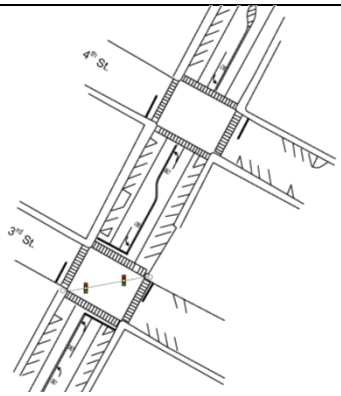
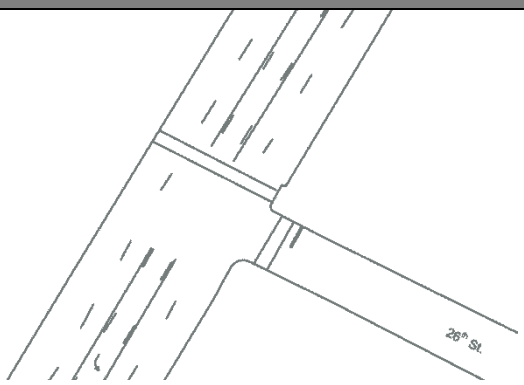
Primarily during the tourist season, and especially during the weekends, there is heavy vehicular volume as well as significant pedestrian activity. There is confusion to both drivers and pedestrians due to the lack of uniformity of traffic signals (see Figures 3a and 3b), signage, and crosswalks. In addition, pedestrians take a lot of liberties with their roadway crossings.

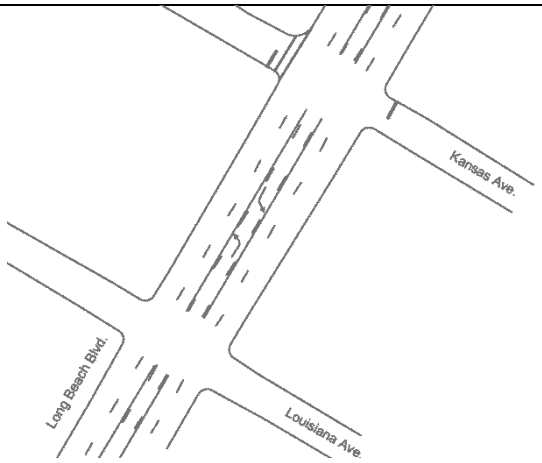
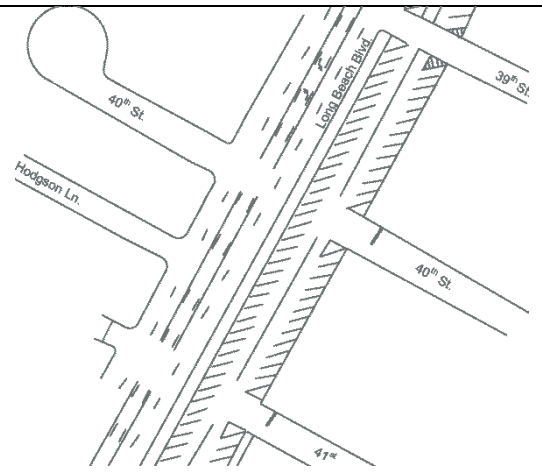
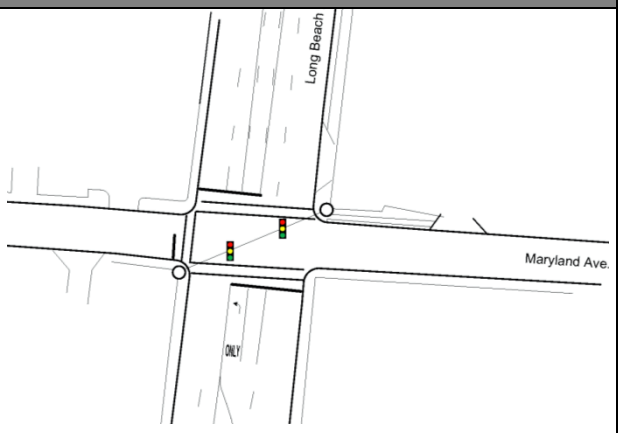
Figure 3a – Horizontal signal on span wire

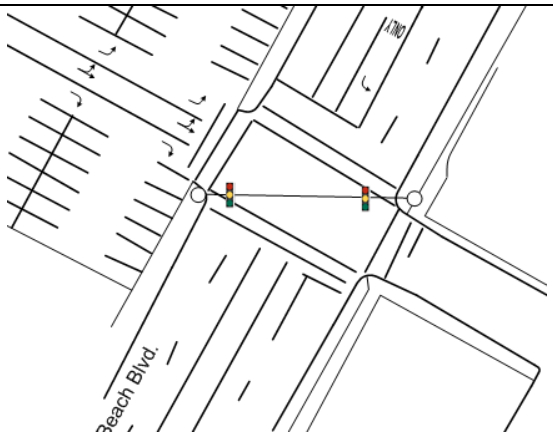
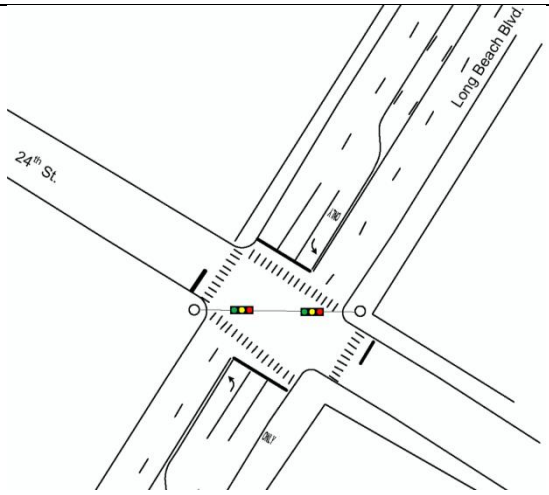
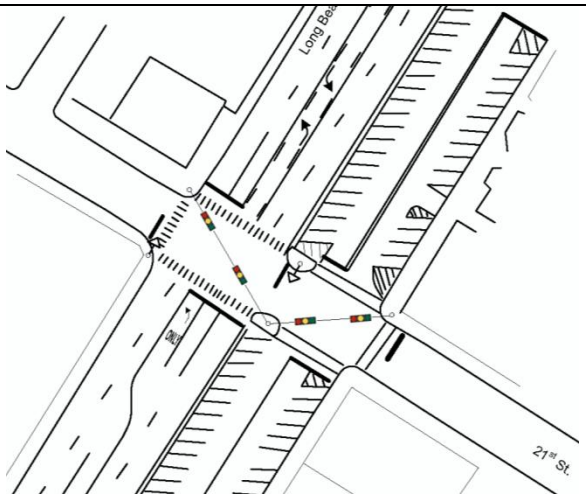

Figure 3b – Vertical signal on span wire

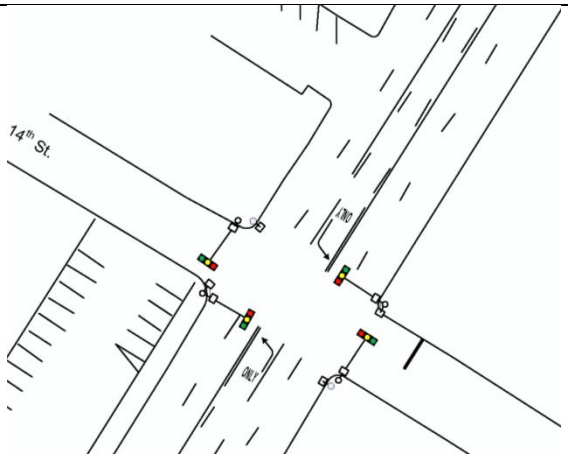
Because of the high number of intersections, the attention of the RSA was focused on characteristics of the intersections and roadway segments rather than on specific locations. Specifically, the different roadway cross sections and the variation in intersection appearance and operation were taken into account. Any improvements to the Long Beach Boulevard corridor need to take into consideration that this is an evacuation route and that the five-lane width must be maintained for emergency vehicles throughout the majority of the RSA study area. Therefore, improvements will focus on signing, striping, and encouraging uniformity in traffic signals rather than recommending the installment of physical barriers.

The intersections and roadway segments along Long Beach Boulevard in the southern half of the island, which were selected for further analyses, are based on crash data and the variations of the different traffic signal layouts as well as marked and unmarked intersections. The roadway segments and intersections studied in the RSA are as follows:

| | | |
|---|---|---|
| **Roadway Sections** | | |
| 1) | **Two-Lane Roadway without Crosswalks**<br><br>Janet Road to Joan Road (MP 0.23 to MP 0.26): This section is in the southern end of the island. There are 12.5-foot lanes in each direction with 5-foot shoulders. This section of roadway has significantly less traffic volume than the rest of the RSA study area. Pedestrians and bicycle activity coexist with fewer cars. |  |
| 2) | **Two-Lane Roadway with Angled Parking**<br><br>3rd Street to 4th Street (MP 2.60 to MP 2.64): This section in the southern end of the roadway has a pavement width of 75 feet with one lane in each direction and a left-turn lane. There is angled parking on both sides of the road with marked crosswalks on all crossings. This is downtown Beach Haven's central business district with a lot of pedestrian and vehicular activity. |  |
| **Unsignalized Intersections** | | |
| 3) | **Five-Lane Roadway with Crosswalk**<br><br>26th Street (MP 3.75): The roadway section includes two lanes in each direction with a two-way-left-turn lane. The pavement width is 69 feet, with wide outside lanes to accommodate parking. There are no shoulders. There is one marked crosswalk across Long Beach Boulevard, the only one within seven blocks, primarily serving pedestrians going to and from the beach. |  |

| | | |
|---|---|---|
| 4) | **Five-Lane Roadway without Crosswalk**<br><br>Louisiana Avenue (MP 5.24) and Kansas Avenue (MP 5.29): The roadway section includes two lanes in each direction with a two-way-left-turn lane. The pavement width is 69 feet, with wide outside lanes to accommodate parking. There are no shoulders or marked crosswalks. |  |
| 5) | **Five-Lane Roadway with Adjacent Angled Parking and No Crosswalk**<br><br>Hodgson Street (MP 7.89): The roadway section includes two lanes in each direction with a two-way-left-turn lane. The pavement width is 69 feet, with wide outside lanes to accommodate parking. There are no shoulders or marked crosswalks. There is a deli on the southwest corner that causes a lot of pedestrian traffic. There is an adjacent roadway to the east with angled parking in both directions; access is gained through the cross streets. |  |
| **Signalized Intersections** | | |
| 6a) | **Five-Lane Roadway with Vertical Signals on Span Wire**<br><br>Maryland Avenue (MP 4.18): The roadway section includes two lanes in each direction with a southbound two-way-left-turn lane and a northbound left-turn lane The pavement width is 69 feet, with wide outside lanes to accommodate parking. There are no shoulders. There are marked crosswalks across the mainline. The traffic signal heads are vertical on a span wire. |  |

| | | |
|---|---|---|
| 6b) | 48th Street (MP 7.60): The western part of the intersection is a one-way exit (only) from a church parking lot. The roadway section includes two lanes in each direction with a southbound left-turn lane. The pavement width is 69 feet, with wide outside lanes to accommodate parking. There are no shoulders. There are marked crosswalks at all crossings. The traffic signal heads are vertical on a span wire.<br><br>**Note:** See crash diagram in Appendix D. |  |
| 7) | **Five-Lane Roadway with Horizontal Signals on Span Wire**<br><br>24th Street (MP 8.56): The roadway section includes two lanes in each direction with a left-turn lane in both directions. The pavement width is 69 feet, with wide outside lanes to accommodate parking. There are no shoulders. The crosswalks are marked at all the crossings and the horizontal traffic signal heads are on a span wire. There is mini-golf on the northwest side of the intersection that generates pedestrian traffic. |  |
| 8) | **Five-Lane Roadway with Horizontal Signals on Span Wire and Adjacent Angled Parking**<br><br>21st Street (MP 8.70): The roadway section includes two lanes in each direction with a two-way-left-turn lane. The pavement width is 69 feet, with wide outside lanes to accommodate parking; there are no shoulders. The crosswalks are marked. There is an adjacent roadway to the east with angled parking in both directions; access is from 21st Street. The traffic signals are horizontal signal heads on a span wire. |  |

| | | |
|---|---|---|
| 9) | **Five-Lane Roadway with Vertical Heads on Mast Arm**<br><br>14th Street (MP 9.06): The roadway section includes two lanes in each direction with a left-turn lane. The pavement width is 69 feet, with wide outside lanes to accommodate parking. There are no shoulders or marked crosswalks. This traffic signal is newly installed. |  |

## Road Safety Audit Process

Long Beach Boulevard RSA followed a process that began with data collection, a crucial task that served as the backbone for improvement recommendations. Crash data was collected using Plan4Safety, a crash data analysis tool, and consisted of crash types, locations, years, road conditions, and contributing circumstances. Because of the varied nature of this RSA corridor and the many intersections contained within the project area, crash diagrams were not created (except for 48th Street). Instead, a systemic approach was utilized, analyzing the various cross sections and the variety of intersection treatments.

**Figure 4 – RSA team conducting site visit**

The Road Safety Audit (RSA) occurred on Tuesday, August 28, 2012. The day began with a pre-audit meeting that involved the definition of an RSA and an overview of the project corridor. A presentation showing details of the crash analysis, aerial images of the site, and an overview of the pedestrian and vehicle activity in the area was shown. Following the presentation, a site visit was conducted where all participants were given a chance to inspect the sites and utilize their various backgrounds to brainstorm recommended improvements. After the site visit, the team reconvened to discuss the issues observed and recommendations to remedy the issues, which are documented in this report.

## Information Sources

Several sources of information were used in the RSA process. For example, crash data from 2009 to 2011 was examined for trends and patterns. Specific resources used in the analysis include:

- NJDOT Crash Database (2009 to 2011)
- Plan4Safety Crash Data Analysis Tool
- NJTR-1 Crash Reports
- NJDOT Straight Line Diagrams
- Google Earth

## RSA Team

The RSA team consisted of 21 members, including police officers, engineers, and planners from different agencies across the state.

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## Crash Data

As of the date of this report, the crash data reported to the NJDOT shows a total of 172 crashes occurring during the three-year period from 2009 to 2011. The following tables show detail statistics of the crash data analyzed.

| | | SEVERITY | | |
|---|---|---|---|---|
| | | Property Damage | Injury | TOTAL |
| CRASH TYPE | **Same Direction–Rear End** | 64 | 23 | **87** |
| | **Same Direction–Side Swipe** | 16 | | **16** |
| | **Right Angle** | 26 | 5 | **31** |
| | **Struck Parked Vehicle** | 12 | | **12** |
| | **Left Turn / U-Turn** | | 1 | **1** |
| | **Backing** | 9 | | **9** |
| | **Fixed Object** | 7 | 2 | **9** |
| | **Pedalcyclist** | 2 | 3 | **5** |
| | **Other** | | 2 | **2** |
| **TOTAL** | | **136** | **36** | **172** |

Table 1 – Crash type vs. severity 2009 to 2011

| | | VEHICLE – CONTRIBUTING CIRCUMSTANCES | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Unknown | Driver Inattention | Failed to Obey Traffic Control Device (Driver/Pedcycle) | Failed to Yield Right of Way to Vehicle/Pedestrian | Improper Lane Change | Improper Passing | Improper Turning | Following Too Closely | Backing Unsafely | None (Driver/Pedcycle) | Other Driver/Pedalcyclist Action | Brakes | Tires | Other Vehicle Factor | Road Surface Condition | Control Device Defective or Missing | Physical Obstructions (viewing) | NULL | TOTAL |
| VEHICLE – PRE-CRASH VEHICLE ACTION | **Unknown** | 1 | | | | | | | | | | | | | | | | | | **1** |
| | **Going Straight Ahead** | | 69 | 3 | 3 | | 2 | 2 | 10 | | 59 | 1 | | 1 | | 1 | 1 | 1 | | **153** |
| | **Making Right Turn (Not Turn on Red)** | | 2 | | 1 | | | 1 | | | 4 | | | | | | | | | **8** |
| | **Making Left Turn** | | 7 | | 2 | | | 7 | | | 11 | | | | | | | 1 | | **28** |
| | **Making U-Turn** | | | | | | | 1 | | | | | | | | | | | | **1** |
| | **Starting From Parking** | | 1 | | | | | | | | | | | | | | | | | **1** |
| | **Starting in Traffic** | | 3 | | | | | | 2 | | 1 | | | | | | | | | **6** |
| | **Slowing or Stopping** | | 16 | | | | | | 1 | | 21 | 2 | 2 | | | | | | | **42** |
| | **Stopped in Traffic** | | 5 | | | | | | | | 52 | | | | | | | | | **57** |
| | **Parking** | | 2 | | | | | | | | | | | | | | | | | **2** |
| | **Parked** | | 1 | | | | | | | | 12 | 1 | | | 1 | | | | 1 | **16** |
| | **Changing Lanes** | | 2 | | | 2 | | | | | | | | | | | | | 1 | **5** |
| | **Merging/Entering Lane** | | | 1 | 1 | | | | | | | | | | | | | | | **2** |
| | **Backing** | | 6 | | | | | | | 4 | | | | | | | | | | **10** |
| | **Passing** | | 1 | | | | 1 | | | | 2 | | | | | | | | | **4** |
| | **Other Vehicle/Cyclist Action** | | | | | | | 1 | | | | | | | | | | | | **1** |
| | **NULL** | | | | | | | | | | | | | | | | | | 1 | **1** |
| **TOTAL** | | **1** | **115** | **4** | **7** | **2** | **3** | **12** | **13** | **4** | **162** | **4** | **2** | **1** | **1** | **1** | **1** | **2** | **3** | |

Table 2 – Vehicle contributing circumstances vs. vehicle pre-crash action

As can be seen from the tables above, the predominant crash type is “Same Direction–Rear End”. There were also a significant number of “Right Angle” crashes. The significant pre-crash vehicle action” is “Going Straight Ahead”; also significant are “Slowing or Stopping” and “Stopped in Traffic.” This correlates with the predominant crash type. The primary contributing circumstance” is “Driver Inattention.”

| | | CRASH TYPE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Same Direction–Rear End | Same Direction–Side Swipe | Right Angle | Struck Parked Vehicle | Left Turn / U-Turn | Backing | Fixed Object | Pedal-cyclist | Other | TOTAL |
| INTERSECTION TYPE | At Intersection | 24 | 7 | 21 | 2 | 1 | 1 | 5 | | 1 | **62** |
| | Not At Intersection | 63 | 9 | 10 | 10 | | 8 | 4 | 5 | 1 | **110** |
| | **TOTAL** | **87** | **16** | **31** | **12** | **1** | **9** | **9** | **5** | **2** | |

Table 3 – Crash type vs. intersection type

| | | SURFACE | | | |
|---|---|---|---|---|---|
| | | Dry | Wet | Water (Standing/Moving) | TOTAL |
| LIGHT CONDITION | Daylight | 129 | 8 | 1 | **138** |
| | Dawn | 3 | | | **3** |
| | Dusk | 6 | 2 | | **8** |
| | Dark (Street Lights On/Continuous) | 17 | 4 | | **21** |
| | Dark (Street Lights On/Spot) | 2 | | | **2** |
| **TOTAL** | | **157** | **14** | **1** | **172** |

Table 4 – Surface condition vs. light condition

As can be seen from the tables above, 80 percent of the crashes occurred during daylight hours, and more than 90 percent of the crashes occurred during dry conditions. Also, slightly less than two-thirds of the crashes occurred between intersections.

The table below makes it very clear that the majority of the crashes occurred during the summer tourist season.

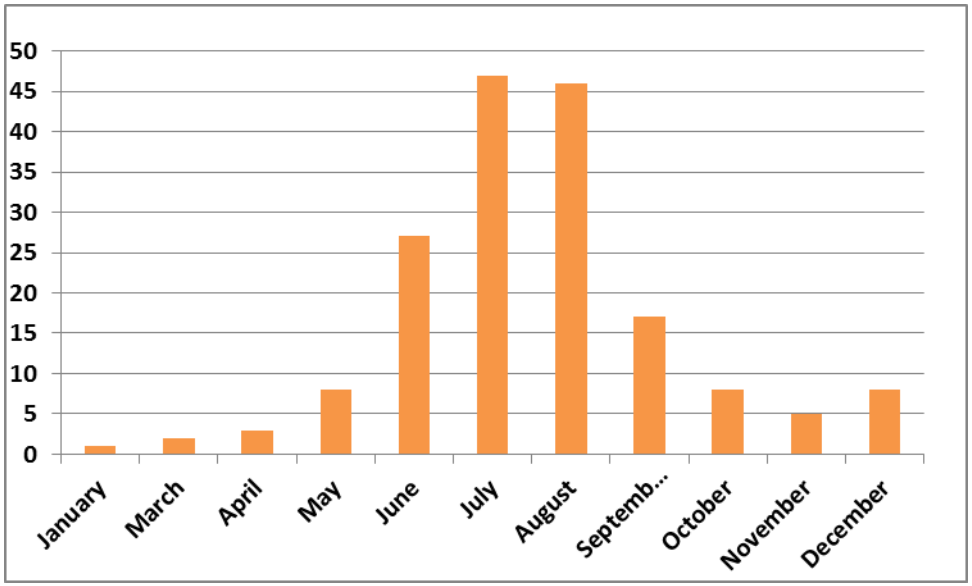



Figure 5 – Crashes by month 2009 to 2011

**Pedestrian Crashes**

There were many pedestrians indirectly involved in crashes, according to the police officers and other RSA team members familiar with the area. In reading some of the crash narratives, it was noted that pedestrians were involved in precipitating a crash yet were not impacted directly. Therefore, pedestrians were underreported based on the crash data available. It was also noted that there was some confusion in coding and that some of the crashes that occurred in the northern part of Long Beach Island were coded for the southern half of Long Beach Island, the area of this RSA study.

## RSA Team Findings

### *Long Beach Boulevard*

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

## General

| Issue: Visibility | Safety Risk |
|---|---|
| **Description:** Visibility at intersections is limited by parked vehicles and high speed of traffic. | Medium/High |


| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Consider the installation of (mountable or painted) bulb-outs at intersections. (1) | Low (Painted),<br>High (Mountable) | Medium/High |

| Issue: Excessive Speed | Safety Risk |
|---|---|
| **Description:** The current roadway cross section is experiencing high vehicle operating speed. | High |

| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Speed reduction may be encouraged by narrowing lanes from 12 to 11 feet. (2) | Low | High |
| Consider the delineation of the edge of the outer travel lane with shoulder markings. (3) | Low | High |


**Proposed cross section on top; existing cross section on bottom[1]**

[1]The proposed cross section includes substandard elements in order to accommodate existing on-street parking. The design engineer should determine the best specific cross section throughout the roadway. A full width (12-foot) two-way-left-turn lane could be maintained by narrowing the inside travel lanes to 10 feet (8'-11'-10'-12'-10'-11'-8').

| Issue: Lack of Familiarity | Safety Risk | |
|---|---|---|
| **Description:** Many roadway users are tourists or otherwise not familiar with the local traffic patterns. | Medium | |
| **RSA Team's Recommendation** | **Cost** | **Potential Safety Benefit** |
| Consider using Variable Message Signs (VMS) for educational purposes during peak season. (4) | Low | Medium |
| Continue educational programs for tourists emphasizing the importance of crossing at crosswalks. Enhance existing programs by producing brochures, advertising on retail bags and in business windows, and creating a website and social media messages. Rental real estate agents could also include this information when welcoming new tourists. (5) | Low | Medium/High |

| Issue: ADA | Safety Risk | |
|---|---|---|
| **Description:** ADA accommodations are not uniformly fully compliant. | Medium | |
|   | | |
| **RSA Team's Recommendation** | **Cost** | **Potential Safety Benefit** |
| Plan for full ADA compliance by scheduling upgrades of existing curbs and sidewalks. (6) | Medium | Medium |

## Signage

| Issue: Signs Not Uniform | Safety Risk |
|---|---|
| **Description:** Signage use and application is not uniform throughout the corridor. | Medium/High |







| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Professional engineering staff should review the use and application of signage to ensure standardized application throughout the corridor.(7) | Low | Medium/High |
| Professional engineering staff should conduct a thorough evaluation of existing and required signage to reduce the amount of signage along the corridor and decrease sign clutter. (8) | Low | Medium/High |

## Pedestrians – Signalized Intersections

| Issue: Pedestrian Heads | Safety Risk |
|---|---|
| **Description:** Traffic signals lack pedestrian heads or have older, non-countdown pedestrian signal heads or no pedestrian heads. | Medium/High |
| **Description:** Pedestrians appear to have difficulty crossing at signalized intersections. | Medium |

| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Consider installation or upgrade of countdown pedestrian heads at signalized intersections.(9) | Medium | Medium/High |

## Pedestrians – Unsignalized Intersections

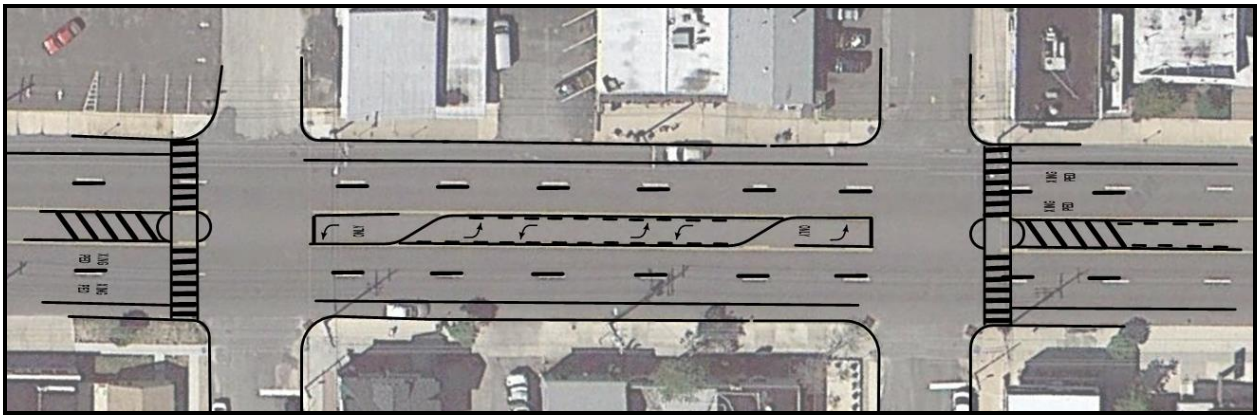
| Issue: Uniformity of Crosswalks | Safety Risk |
|---|---|
| **Description:** There is a lack of consistency in the overall marking, signage, and locations of unsignalized crosswalks. | Medium/High |

| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Review the corridor to identify crosswalks with inconsistent marking styles and promote uniformity with crosswalks.(10) | Low | Medium/High |
| Consider providing an unsignalized crossing location periodically between signals, at consistent intervals. (Every block, every other block, every third block, etc.) (11) | Low | Medium/High |

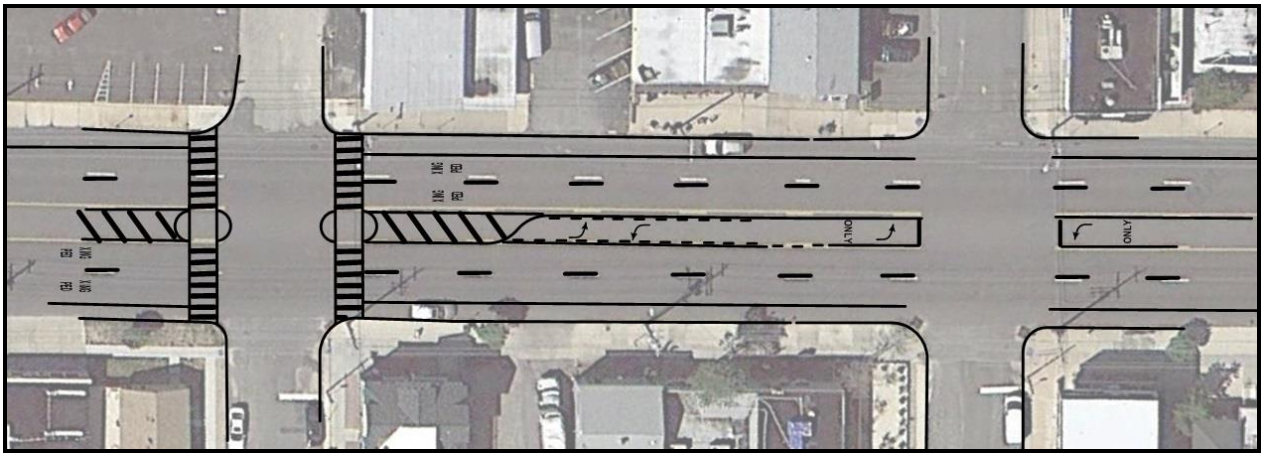
| Issue: Crosswalk Placement | Safety Risk | |
|---|---|---|
| **Description:** Progression of traffic creates gaps, but limited alignment of gaps at unsignalized intersections strands pedestrians in the middle of the roadway. | High | |
| **RSA Team's Recommendation** | **Cost** | **Potential Safety Benefit** |
| Review feasibility of pedestrian refuge islands (striped or mountable) that pedestrians can cross to and safely wait for a gap in opposing traffic. (12) | Low (Striped), Medium (Mountable) | Medium/High |
| Any pedestrian median refuge islands should be installed such that they are mountable for emergency vehicle access and to allow for emergency evacuation activities. (13) | N/A | N/A |
| Any pedestrian median refuge islands should be visually differentiated from the roadway pavement in order to raise awareness of pedestrian crossing locations and increase perception of safety by pedestrians. Consider vegetation, traffic stanchions, or other mountable objects.(14) | N/A | N/A |
| **Alternate 1:** Consider installation of pedestrian refuge islands at each intersection, alternating with location of left-turn lane from Long Beach Boulevard. (See Crosswalks **–** Alternative 1.) (15) | Medium | Medium/High |
| **Alternate2:** Consider installation of refuge island on one side of the intersection with left-turn lane on the other side of intersection. (See Crosswalks – Alternative 2.) (16) | Medium | Medium/High |
| **Alternate 3:** Consider installation of a midblock crosswalk with a refuge island and head–to-head left-turn lanes at the intersections. (See Crosswalks **–** Alternative 3.) (17) | Medium | Medium/High |

## Crosswalks – Alternative 1

## Crosswalks – Alternative 2



## Crosswalks – Alternative 3



| Issue: Crosswalk Design | Safety Risk |
|---|---|
| **Description:** Pedestrians did not feel comfortable crossing at unsignalized designated pedestrian crossing locations, due to driver behavior. | Medium/High |
| **Description:** Pedestrians were observed not using pedestrian facilities such as sidewalks and marked crosswalks. | High |

| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Additional active lighted crosswalk signage should be considered at marked crosswalks where additional visibility is needed.(18) | Medium | Medium/High |
| Consider the use of treatments to enhance visibility of crosswalks, potentially including stamped concrete, bump-outs, bollards, stanchions, and refuges where additional visibility is needed. (19) | Medium | Medium/High |

| | | |
|---|---|---|
| Investigate the installation of active warning beacons, especially rectangular rapid flashing beacons, at unsignalized marked crossing locations where additional visibility is needed. (20) | Medium | Medium/High |
| Where additional visibility is needed, consider installing supplemental overhead pedestrian crossing signage. (21) | Medium/High | Medium/High |
| Pedestrians may be encouraged to use sidewalks by providing streetscaping along the roadway, making them more comfortable. This would also increase driver awareness of potential pedestrian activity. (22) | Medium | High |
| The addition of pedestrian way-finding signs to clearly direct pedestrians may increase safer pedestrian behavior. (23) | Low/Medium | Low |
| Consider providing an unsignalized crossing location periodically between signals, at consistent intervals. (Every block, every other block, every third block, etc.) (11) | Medium | Medium/High |

## Parking Impacts

| Issue: Sight Distance | Safety Risk | |
|---|---|---|
| **Description:** Cars were observed parked along Long Beach Boulevard, obstructing the sight distance of pedestrians at crosswalks. | Medium/High | |
| **RSA Team's Recommendation** | **Cost** | **Potential Safety Benefit** |
| Consider the installation of additional roadway marking delineating areas of parking prohibition in the vicinity of crosswalks. (24) | Low | Medium |
| Ensure that proper no parking zone signage is clearly marked adjacent to crosswalks and approaching intersections. (25) | Low | Medium |
| Increase visible enforcement of parking restrictions in the vicinity of the crosswalk. (26) | Low | High |

## Traffic Signals

| Issue: Signal Locations | Safety Risk |
|---|---|
| **Description**: Left turns are difficult to make; the signal locations are not optimally located and the network of intersections does not operate efficiently. | Medium |

| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Professional staff should conduct a study to determine the optimal locations and intervals of signalized intersections. (28) | High | High |

| Issue: Horizontal Signal Heads | Safety Risk |
|---|---|
| **Description:** Some of the signals are horizontal and because this type of signal head is uncommon, and drivers are not familiar with it, enhanced visibility would be helpful. | Medium |

| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| Increased visibility of signal heads would be enhanced by installing retroreflective back plates. (29) | Low | Medium |

| Issue: Signal Heads | Safety Risk |
|---|---|
| **Description:** There are a number of different combinations of signal head configurations at traffic signals: vertical, horizontal, on span wires, and on poles. The inconsistency can be confusing to drivers. | Medium |

| RSA Team's Recommendation | Cost | Potential Safety Benefit |
|---|---|---|
| A standard signal configuration should be developed and implemented as signal equipment is upgraded in conformance with the MUTCD. (30) | High | Medium/High |
| Consider installation of 12-inch lenses for vehicle signal heads as per MUTCD. (31) | Medium | Medium |

## Lighting

| Issue: Inadequate Lighting | Safety Risk | |
|---|---|---|
| **Description:** Lighting was inconsistent and not uniform, and may not address the nighttime visibility needs of both pedestrians and vehicles. | Medium | |
| **RSA Team's Recommendation** | **Cost** | **Potential Safety Benefit** |
| Have professional staff conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. Additional consideration should be given at designated unsignalized pedestrian crossing locations. (32) | High | High |

## Bicycle

| Issue: Bike Lanes | Safety Risk | |
|---|---|---|
| **Description:** Bicycle accommodations are limited along Long Beach Boulevard | Medium | |
|  | | |
| **RSA Team's Recommendation** | **Cost** | **Potential Safety Benefit** |
| Consider providing quality bicycle facilities on parallel roadways to Long Beach Boulevard to encourage bicycle use of these facilities. (33) | Medium | Medium/High |
| Consider the installation of additional bicycle facilities along Long Beach Boulevard.(34) | Medium | Medium/High |

## Implementing Recommendations

The RSA Team's recommendations suggested in this report should improve the safety of Long Beach Boulevard in the RSA area, the southern half of Long Beach Island. Many of the recommendations can be implemented through routine maintenance, while others will take more time and investment. Creating a corridor with uniformity of crosswalks, traffic signals, and signage will go a long way to improve driver and pedestrian expectations.

Recognizing limited resources and developing partnerships can help to extend the impact of safety efforts. Rutgers' TSRC can provide support to municipalities and counties in identifying partnership opportunities. North Jersey Transportation Planning Authority (NJTPA) staff also provides a great partnership to assist with analysis with respect to crash data, capacity analysis, or any other related assistance.

Some of the recommendations may require sizable capital investment to obtain a long-term safety benefit. It is understood that larger projects may require funding assistance from non-county and non-municipal funds. In the section following the recommendations, various potential funding sources are listed.

However, physical improvements alone will not eliminate the safety issues identified. This area is predominantly a vacation destination with a continually changing population during peak seasons that is, therefore, unfamiliar with traffic patterns and safety issues. Education of the transient population is especially important in this situation. In addition, a combined effort of public education and police enforcement is necessary to make this corridor a safer place for all users. Education about traffic safety in public schools, such as drivers' education courses in high school and distributing informational pamphlets to pedestrians, are just two examples of the different educational campaigns that can benefit road users. Enforcement, especially in the areas of parking and pedestrian right-of-way, can go a long way in reducing crashes and alerting drivers of the seriousness of being safety conscious.

All of the recommendations fall under the jurisdiction of Ocean County, and any potential projects generated from this report would be led by Ocean County.

The following information organizes the recommendations into potential course of actions:

| Recommendations | | Education and Enforcement | Two-Lane Roadway | Two-Lane Roadway with Angled Parking | Five-Lane Roadway Signalized | Five-Lane Roadway Unsignalized |
|---|---|---|---|---|---|---|
| (1) | Consider the installation of (mountable or painted) bulb-outs at intersections. | | ✓ | ✓ | ✓ | ✓ |
| (2) | Speed reduction may be encouraged by narrowing lanes from 12 to 11 feet. | | | | ✓ | ✓ |
| (3) | Consider the delineation of the edge of the outer travel lane with shoulder markings. | | | | ✓ | ✓ |
| (4) | Consider using variable message signs (VMS) for educational purposes during peak season. | ✓ | | | | |
| (5) | Continue educational programs for tourists emphasizing the importance of crossing at crosswalks. Enhance existing programs by producing brochures, advertising on retail bags and in business windows, and creating a website and social media messages. Rental real estate agents could also include this information when welcoming new tourists. | ✓ | | | | |
| (6) | Plan for full ADA compliance by scheduling upgrades of existing curbs and sidewalks. | | ✓ | ✓ | ✓ | ✓ |
| (7) | Professional engineering staff should review the use and application of signage to ensure standardized application throughout the corridor. | | ✓ | ✓ | ✓ | ✓ |
| (8) | Professional engineering staff should conduct a thorough evaluation of existing and required signage to reduce the amount of signage along the corridor and decrease sign clutter. | | ✓ | ✓ | ✓ | ✓ |
| (9) | Consider installation or upgrade of countdown pedestrian heads at signalized intersections. | | | | ✓ | |

| Recommendations | | Education and Enforcement | Two-Lane Roadway | Two-Lane Roadway with Angled Parking | Five-Lane Roadway Signalized | Five-Lane Roadway Unsignalized |
|---|---|---|---|---|---|---|
| (10) | Review the corridor to identify crosswalks with inconsistent marking styles and promote uniformity with crosswalks. | | ✓ | ✓ | ✓ | ✓ |
| (11) | Consider providing an unsignalized crossing location periodically between signals, at consistent intervals (every block, every other block, every third block, etc.). | | ✓ | ✓ | | ✓ |
| (12) | Review feasibility of pedestrian refuge islands (striped or mountable; see #15 through17) that pedestrians can cross to and safely wait for a gap in opposing traffic. | | ✓ | ✓ | | ✓ |
| (13) | Any pedestrian median refuge islands should be installed such that they are mountable for emergency vehicle access and to allow for emergency evacuation activities. | | ✓ | ✓ | | ✓ |
| (14) | Any pedestrian median refuge islands should be visually differentiated from the roadway pavement in order to raise awareness of pedestrian crossing locations and increase perception of safety by pedestrians. Consider vegetation, traffic stanchions, or other mountable objects. | | ✓ | ✓ | | ✓ |
| (15) | Consider installation of pedestrian refuge islands at each intersection, alternating with location of left-turn lane from Long Beach Boulevard. (See Crosswalks – Alternative 1.) | | ✓ | ✓ | | ✓ |
| (16) | Consider installation of a refuge island on one side of the intersection with left turn lane on the other side of intersection (See Crosswalks – Alternative 2.) | | ✓ | ✓ | | ✓ |
| (17) | Consider installation of a midblock crosswalk with a refuge island and head to head left turn lanes at the intersections (See Crosswalks – Alternative 3.) | | ✓ | ✓ | | ✓ |

| Recommendations | | Education and Enforcement | Two-Lane Roadway | Two-Lane Roadway with Angled Parking | Five-Lane Roadway Signalized | Five-Lane Roadway Unsignalized |
|---|---|---|---|---|---|---|
| (18) | Additional active lighted crosswalk signage should be considered at marked crosswalks where additional visibility is needed. | | ✓ | ✓ | | ✓ |
| (19) | Consider the use of treatments to enhance visibility of crosswalks, potentially including stamped concrete, bulb-outs, bollards, stanchions, and refuges where additional visibility is needed. | | ✓ | ✓ | ✓ | ✓ |
| (20) | Investigate the installation of active warning beacons, especially rectangular rapid flashing beacons, at unsignalized marked crossing locations where additional visibility is needed. | | ✓ | ✓ | | ✓ |
| (21) | Where additional visibility is needed, consider installing supplemental overhead pedestrian crossing signage. | | ✓ | ✓ | | ✓ |
| (22) | Pedestrians may be encouraged to use sidewalks by providing streetscaping along the roadway, making them more comfortable. This would also increase driver awareness of potential pedestrian activity. | | ✓ | ✓ | ✓ | ✓ |
| (23) | The addition of pedestrian way-finding signs to clearly direct pedestrians may increase safer pedestrian behavior. | | ✓ | ✓ | ✓ | ✓ |
| (24) | Consider the installation of additional roadway marking delineating areas of parking prohibition in the vicinity of crosswalks. | | ✓ | ✓ | ✓ | ✓ |
| (25) | Ensure that proper no parking zone signage is clearly marked adjacent to crosswalks and approaching intersections. | | ✓ | ✓ | ✓ | ✓ |
| (26) | Increase visible enforcement of parking restrictions in the vicinity of the crosswalk. | | ✓ | ✓ | ✓ | ✓ |

| Recommendations | | Education and Enforcement | Two-Lane Roadway | Two-Lane Roadway with Angled Parking | Five-Lane Roadway Signalized | Five-Lane Roadway Unsignalized |
|---|---|---|---|---|---|---|
| (28) | Professional staff should conduct a study to determine the optimal locations and intervals of signalized intersections. | | ✓ | ✓ | ✓ | ✓ |
| (29) | Increased visibility of signal heads would be enhanced by installing retroreflective back plates. | | | | ✓ | |
| (30) | A standard signal configuration should be developed and implemented as signal equipment is upgraded in conformance with the MUTCD. | | | | ✓ | |
| (31) | Consider installation of 12-inch lenses for vehicle signal heads as per MUTCD. | | | | ✓ | |
| (32) | Have professional staff conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. Additional consideration should be given at designated unsignalized pedestrian crossing locations. | | ✓ | ✓ | ✓ | ✓ |
| (33) | Consider providing quality bicycle facilities on parallel roadways to Long Beach Boulevard to encourage bicycle use of these facilities. | | ✓ | ✓ | ✓ | ✓ |
| (34) | Consider the installation of additional bicycle facilities along Long Beach Boulevard. | | ✓ | ✓ | ✓ | ✓ |

## Potential Funding Sources

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

## *Local Funding Sources:*

**Roadway Owner's Maintenance and Operation Budget:**

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

## *State Funding Sources:*

**LOCAL AID**

**Contact:**

**NJDOT Local Aid District 3 (Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset)**
District 3, Bureau of Local Aid
PO Box 600
Trenton, NJ 08625-0600
Phone: 732-625-4290
Fax: 732-625-4292

**MUNICIPAL AID/URBAN AID PROGRAM (NJDOT Local Aid):**

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

This program has been a significant resource for municipalities in funding local transportation projects. All municipalities are eligible. The department continues to encourage municipalities to consider using the Municipal Aid Program to fund projects such as resurfacing, rehabilitation, or reconstruction and signalization.

**LOCAL AID INFRASTRUCTURE FUND (Discretionary Aid):**

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

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

**SAFE STREETS TO TRANSIT:**

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

This program provides funding to counties and municipalities in improving access to transit facilities and all modes of public transportation. The objectives of the SSTT program are:

- To improve the overall safety and accessibility for mass transit riders walking to transit facilities
- To encourage mass transit users to walk to transit stations
- To facilitate the implementation of projects and activities that will improve safety in the vicinity of transit facilities (approximately one half-mile for pedestrian improvements)

**HIGHWAY SAFETY FUND (Safe Corridors):**

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

**Contact:**

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

**BIKEWAY:**

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

The NJDOT Bikeway Grant Program provides funds to counties and municipalities to promote bicycling as an alternate mode of transportation in New Jersey. A primary objective of the Bikeway Grant Program is to support the state's goal of constructing 1,000 new miles of dedicated bike paths. This program is available to every municipality and county throughout New Jersey.

**TRANSIT VILLAGES:**

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

The Transit Village Grant Program is designed to assist municipalities who have been formally designated as Transit Villages. These are municipalities that have made a commitment to grow in the area surrounding a transit facility. The facility can service commuter rail, bus, ferry, or light rail. It funds projects within a half-mile radius of major transit facilities.

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

## NEW JERSEY DEPARTMENT OF COMMUNITY AFFAIRS

### MAIN STREET NEW JERSEY

http://www.nj.gov/dca/divisions/dhcr/offices/msnj.html

Main Street New Jersey provides selected communities with technical assistance and training of proven value in revitalizing historic downtowns. The program helps municipalities improve the economy, appearance, and image of their central business districts through the organization of local citizens and resources.

**Contact:**
Main Street New Jersey
NJ Department of Community Affairs - Office of Smart Growth
P.O. Box 204
Trenton, NJ 08625-0204
Jef Buehler
Phone: 609-633-9769
Email: jef.buehler@dca.state.nj.us

### COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

http://www.nj.gov/dca/divisions/dhcr/offices/cdbg.html

The Community Development Block Grant provides funds for economic development, housing rehabilitation, community revitalization, and public facilities designated to benefit people of low and moderate income, to prevent or eliminate slums and blight, or to address recent local needs for which no other source of funding is available.

**Contact:**
New Jersey Department of Community Affairs
101 South Broad Street
PO Box 811, 5TH Floor
Trenton, NJ 08625-0800
Terry Schrider
Phone: 609-633-6283
Email: terence.schrider@dca.state.nj.us

## *Federal Funding Sources – via NJDOT Office of Local Aid:*

**Contact (see details under State Funding section):**

NJDOT Local Aid District 3 (Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset)

**SAFE ROUTES TO SCHOOLS (SRTS):**

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

The Safe Routes to Schools (SRTS) Program is a federally funded program and is administered by the New Jersey Departments of Transportation. This program provides funds to substantially improve the ability of primary and middle school students to walk and bicycle to school safely.

The purposes of the program are:

- to enable and encourage children, including those with disabilities, to walk and bicycle to school;
- to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age;
- to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately two miles) of primary and middle schools (grades K through 8).

The program establishes two distinct types of funding opportunities: infrastructure projects (the planning, design, and construction of engineering improvements) and non-infrastructure related activities (such as education, enforcement, and encouragement programs).

**Contact:**
Elise M Bremer-Nei
Supervising Planner Transportation, NJDOT
Statewide Planning
Phone: 609-530-2765
Email: Elise.Bremer-Nei@dot.state.nj.us

## *via North Jersey Transportation Planning Authority (NJTPA):*

**Contact:**

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

**LOCAL SAFETY PROGRAM:**

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

The federally funded Local Safety Program (LSP) is a component of wider safety planning at the NJTPA, supporting construction of quick-fix, high-impact safety improvements on county and local roadway facilities in the NJTPA region. Projects supported by this program include new and upgraded traffic signals, signage, pedestrian indications, crosswalks, curb ramps, pavement markings, and other improvements to increase the safety of drivers, bicyclists, and pedestrians.

The Local Safety Program:

- typically addresses NJTPA and/or NJDOT derived high-priority crash locations on county or local roadways;
- supports quick-fix projects, backed with detailed crash data, with minimal or no environmental or cultural resource impacts (eligible for programmatic categorical exclusion from FHWA);
- funds the construction phase of work only—planning, design, and right-of-way acquisition are the responsibility of the sponsor.

**LOCAL CMAQ MOBILITY INITIATIVES:**

http://www.njtpa.org/Project/Mobility/Default.aspx

The NJTPA established the CMAQ Local Mobility Initiatives Program to promote a variety of initiatives—including ridesharing, transit usage, travel demand management, and traffic mitigation projects—to lessen the level of pollutants and greenhouse gases generated through the use of fossil fuels. Proposals must implement strategies and policies in the Regional Transportation Plan, Plan 2040.

**THE HIGH RISK RURAL ROADS PROGRAM**

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

The High Risk Rural Roads Program (HRRRP) provides federal funds for construction improvements to address safety problems only on roadways that are functionally classified as rural major collector, rural minor collector, or rural local roads *and* have a crash rate that exceeds the statewide average for those functional classes of roadways. Projects supported by this program include skid-resistant surface treatments, guiderails, reflective pavement markings, rumbles strips and rumble stripes, safety edge, and enhanced and advanced warning signs.

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

**LOCAL CONCEPT DEVELOPMENT PHASE of the LOCAL CAPITAL PROJECT DELIVERY PROGRAM**

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

The Local Capital Project Delivery (LCPD) Program (LCPD) provides federal funding for priority local projects. The LCD Phase involves drafting a well-defined and well-justified Purpose and Need Statement focusing on the primary transportation need to be addressed. The LCD Phase elements include, but are not limited to, data collection, coordination, development of a reasonable number of prudent and feasible conceptual alternatives, and investigation of all aspects of a project (environmental, right-of-way, access, utilities, design, community involvement, constructability, etc., at a "planning level of effort") and addressing requirements of the NJTPA Congestion Management Process (CMP).

**SUBREGIONAL STUDIES Program**

http://www.njtpa.org/Plan/Subregion/subregional_studies/default.aspx

This is a competitive program that provides two-year grants to individual sub-regions or sub-regional teams. The program is designed to assist sub-regions in refining and developing transportation improvement strategies rooted in the NJTPA's Regional Transportation Plan (RTP). Ultimately, the program aims to generate project concepts ready for further development or implementation consistent with the RTP and/or other transportation planning activities in the region.

**TRANSPORTATION ALTERNATIVES PROGRAM**

This is new under MAP-21 and is currently under development at the NJDOT.
http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

The Transportation Alternatives Program (TAP) provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving nondriver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for the planning, design, or construction of boulevards and other roadways largely in the right-of-way of former interstate system routes or other divided highways.

## *Federal Funding Sources – via NJDOT Department of Highway Safety:*

http://www.nj.gov/oag/hts/grants/index.html

The New Jersey Division of Highway Traffic Safety offers, on an annual basis, federal grant funding to agencies that wish to undertake programs designed to reduce motor vehicle crashes, injuries, and fatalities on the roads of New Jersey. Municipal, county, state government, and law enforcement agencies, as well as nonprofit organizations, are encouraged to apply for NJDHTS grant funding to address specific, local traffic safety issues.

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

# Appendix A

# Raw Crash Data

*Long Beach Boulevard (CR 607)*

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 7/31/2009 | 6:16 PM | Same Direction – Rear End | Rain | Daylight | 0.000 | Injury | Water (Standing /Moving) | 1 | 2 |
| 8/6/2009 | 3:37 PM | Same Direction – Rear End | Clear | Daylight | 0.000 | Injury | Dry | 1 | 2 |
| 12/13/2010 | 10:00 AM | Fixed Object | Clear | Daylight | 0.038 | Property Damage | Dry | 0 | 1 |
| 6/26/2011 | 11:16 AM | Fixed Object | Clear | Daylight | 1.250 | Property Damage | Dry | 0 | 1 |
| 7/30/2011 | 2:45 PM | Same Direction – Rear End | Clear | Daylight | 1.250 | Injury | Dry | 2 | 3 |
| 6/26/2009 | 6:45 PM | Right Angle | Clear | Dusk | 1.520 | Property Damage | Dry | 0 | 2 |
| 8/11/2010 | 5:48 PM | Same Direction – Rear End | Clear | Daylight | 2.002 | Property Damage | Dry | 0 | 2 |
| 5/25/2009 | 9:37 PM | Same Direction – Rear End | Clear | Dark (Street Lights On/ continuous) | 2.050 | Property Damage | Dry | 0 | 2 |
| 3/22/2011 | 1:47 PM | Fixed Object | Clear | Daylight | 2.250 | Property Damage | Dry | 0 | 1 |
| 7/16/2009 | 5:25 PM | Struck Parked Vehicle | Rain | Daylight | 2.357 | Property Damage | Wet | 0 | 2 |
| 10/3/2009 | 10:30 PM | Pedalcyclist | Clear | Dark (Street Lights On/ spot) | 2.360 | Property Damage | Dry | 0 | 1 |
| 7/4/2009 | 11:42 AM | Backing | Clear | Daylight | 2.390 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 8/2/2009 | 7:57 AM | Same Direction - Rear End | Clear | Dawn | 2.404 | Property Damage | Dry | 0 | 2 |
| 6/28/2009 | 5:30 PM | Same Direction - Rear End | Clear | Daylight | 2.408 | Property Damage | Dry | 0 | 2 |
| 6/18/2009 | 3:41 PM | Pedalcyclist | Clear | Daylight | 2.410 | Injury | Wet | 1 | 1 |
| 8/9/2011 | 1:05 PM | Backing | Clear | Daylight | 2.410 | Property Damage | Dry | 0 | 2 |
| 6/7/2009 | 12:58 AM | Backing | Clear | Dark (Street Lights On/ continuous) | 2.480 | Property Damage | Dry | 0 | 2 |
| 7/16/2009 | 11:43 AM | Backing | Clear | Daylight | 2.480 | Property Damage | Dry | 0 | 2 |
| 8/3/2011 | 12:08 AM | Struck Parked Vehicle | Clear | Dark (Street Lights On/ continuous) | 2.530 | Property Damage | Dry | 0 | 2 |
| 10/21/2010 | 9:14 AM | Backing | Clear | Daylight | 2.590 | Property Damage | Dry | 0 | 2 |
| 8/19/2011 | 12:07 PM | Same Direction - Side Swipe | Clear | Daylight | 2.590 | Property Damage | Dry | 0 | 2 |
| 11/6/2010 | 12:00 PM | Same Direction - Rear End | Clear | Daylight | 2.593 | Property Damage | Dry | 0 | 3 |
| 7/31/2011 | 5:11 PM | Backing | Clear | Daylight | 2.640 | Property Damage | Dry | 0 | 2 |
| 6/30/2010 | 1:57 PM | Same Direction - Rear End | Clear | Daylight | 2.697 | Property Damage | Dry | 0 | 2 |
| 7/31/2009 | 6:13 PM | Same Direction - Rear End | Rain | Daylight | 2.746 | Property Damage | Wet | 0 | 2 |
| 6/27/2010 | 9:30 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 2.760 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 8/12/2011 | 7:00 PM | Struck Parked Vehicle | Clear | Dark (Street Lights On/ continuous) | 2.790 | Property Damage | Dry | 0 | 2 |
| 8/14/2010 | 9:51 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 2.810 | Property Damage | Dry | 0 | 2 |
| 9/12/2011 | 6:23 PM | Same Direction - Side Swipe | Overcast | Daylight | 2.830 | Property Damage | Dry | 0 | 2 |
| 7/27/2010 | 9:32 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 2.840 | Property Damage | Dry | 0 | 2 |
| 8/6/2011 | 10:25 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 2.840 | Property Damage | Dry | 0 | 2 |
| 7/3/2009 | 7:39 PM | Backing | Clear | Dusk | 2.890 | Property Damage | Dry | 0 | 2 |
| 7/22/2010 | 9:48 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 2.890 | Property Damage | Dry | 0 | 2 |
| 8/3/2010 | 10:54 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 2.893 | Property Damage | Dry | 0 | 2 |
| 10/13/2010 | 7:05 AM | Fixed Object | Clear | Dawn | 2.940 | Property Damage | Dry | 0 | 1 |
| 12/14/2010 | 2:24 PM | Fixed Object | Clear | Daylight | 3.020 | Injury | Dry | 1 | 1 |
| 9/3/2010 | 9:15 PM | Pedalcyclist | Clear | Dark (Street Lights On/ continuous) | 3.060 | Property Damage | Dry | 0 | 1 |
| 8/6/2011 | 11:59 AM | Right Angle | Clear | Daylight | 3.070 | Property Damage | Dry | 0 | 2 |
| 7/8/2010 | 3:40 PM | Same Direction - Side Swipe | Clear | Daylight | 3.110 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 7/3/2009 | 7:35 PM | Right Angle | Clear | Daylight | 3.120 | Property Damage | Dry | 0 | 2 |
| 7/11/2011 | 12:05 AM | Same Direction - Side Swipe | Clear | Dark (Street Lights On/ continuous) | 3.120 | Property Damage | Dry | 0 | 2 |
| 8/7/2009 | 2:15 PM | Right Angle | Clear | Daylight | 3.165 | Property Damage | Dry | 0 | 2 |
| 7/20/2011 | 4:15 PM | Same Direction - Rear End | Clear | Daylight | 3.170 | Property Damage | Dry | 0 | 2 |
| 8/4/2011 | 1:15 AM | Same Direction - Rear End | Clear | Daylight | 3.170 | Property Damage | Dry | 0 | 2 |
| 8/26/2009 | 3:47 PM | Same Direction - Rear End | Clear | Daylight | 3.174 | Property Damage | Dry | 0 | 2 |
| 9/18/2010 | 1:28 PM | Same Direction - Rear End | Clear | Daylight | 3.215 | Injury | Dry | 1 | 2 |
| 7/18/2010 | 11:00 AM | Same Direction - Rear End | Clear | Daylight | 3.220 | Property Damage | Dry | 0 | 2 |
| 8/8/2011 | 12:10 PM | Same Direction - Side Swipe | Clear | Daylight | 3.220 | Property Damage | Dry | 0 | 2 |
| 8/7/2009 | 1:04 PM | Right Angle | Clear | Daylight | 3.260 | Property Damage | Dry | 0 | 2 |
| 7/17/2010 | 6:20 PM | Same Direction - Rear End | Clear | Daylight | 3.260 | Property Damage | Dry | 0 | 2 |
| 7/20/2011 | 9:38 AM | Same Direction - Side Swipe | Clear | Daylight | 3.260 | Property Damage | Dry | 0 | 2 |
| 5/25/2009 | 9:30 AM | Same Direction - Rear End | Clear | Daylight | 3.310 | Property Damage | Dry | 0 | 2 |
| 5/29/2009 | 8:38 PM | Right Angle | Rain | Dusk | 3.310 | Property Damage | Wet | 0 | 2 |
| 8/17/2009 | 11:40 AM | Right Angle | Clear | Daylight | 3.310 | Property Damage | Dry | 0 | 2 |
| 4/5/2009 | 1:33 PM | Right Angle | Clear | Daylight | 3.360 | Injury | Dry | 1 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 6/1/2010 | 2:43 PM | Same Direction - Rear End | Clear | Daylight | 3.360 | Property Damage | Dry | 0 | 2 |
| 6/1/2010 | 4:58 PM | Right Angle | Clear | Daylight | 3.410 | Property Damage | Dry | 0 | 2 |
| 7/11/2010 | 6:20 PM | Right Angle | Clear | Daylight | 3.447 | Property Damage | Dry | 0 | 2 |
| 7/19/2010 | 2:16 PM | Same Direction - Side Swipe | Clear | Daylight | 3.450 | Property Damage | Dry | 0 | 2 |
| 8/7/2009 | 9:52 AM | Same Direction - Rear End | Clear | Daylight | 3.498 | Property Damage | Dry | 0 | 2 |
| 6/25/2010 | 10:22 AM | Same Direction - Rear End | Clear | Daylight | 3.500 | Property Damage | Dry | 0 | 2 |
| 8/16/2009 | 8:24 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 3.502 | Property Damage | Dry | 0 | 2 |
| 10/2/2010 | 11:30 AM | Same Direction - Rear End | Clear | Daylight | 3.590 | Property Damage | Dry | 0 | 2 |
| 7/17/2011 | 8:15 PM | Same Direction - Rear End | Clear | Dusk | 3.600 | Property Damage | Dry | 0 | 2 |
| 8/27/2009 | 4:47 PM | Same Direction - Rear End | Clear | Daylight | 3.610 | Property Damage | Dry | 0 | 2 |
| 7/29/2009 | 2:20 PM | Same Direction - Rear End | Clear | Daylight | 3.640 | Property Damage | Dry | 0 | 2 |
| 7/5/2010 | 2:50 PM | Same Direction - Rear End | Clear | Daylight | 3.640 | Property Damage | Dry | 0 | 2 |
| 8/20/2011 | 3:24 PM | Same Direction - Rear End | Clear | Daylight | 3.750 | Property Damage | Dry | 0 | 2 |
| 9/17/2009 | 7:34 PM | Struck Parked Vehicle | Clear | Dark (Street Lights On/ continuous) | 3.805 | Property Damage | Dry | 0 | 2 |
| 6/19/2010 | 4:30 PM | Same Direction - Rear End | Clear | Daylight | 3.930 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 7/11/2010 | 12:07 AM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 3.930 | Property Damage | Dry | 0 | 2 |
| 8/28/2010 | 5:39 PM | Same Direction - Side Swipe | Clear | Daylight | 4.013 | Property Damage | Dry | 0 | 2 |
| 7/24/2009 | 8:02 PM | Right Angle | Clear | Daylight | 4.070 | Property Damage | Dry | 0 | 2 |
| 6/2/2010 | 2:38 PM | Same Direction - Rear End | Clear | Daylight | 4.110 | Injury | Dry | 3 | 2 |
| 7/10/2009 | 4:42 PM | Struck Parked Vehicle | Clear | Daylight | 4.133 | Property Damage | Dry | 0 | 2 |
| 8/21/2009 | 10:30 AM | Same Direction - Rear End | Clear | Daylight | 4.140 | Property Damage | Dry | 0 | 2 |
| 6/11/2010 | 12:36 PM | Same Direction - Rear End | Clear | Daylight | 4.170 | Injury | Dry | 1 | 2 |
| 9/22/2010 | 3:34 PM | Same Direction - Rear End | Clear | Daylight | 4.177 | Property Damage | Dry | 0 | 2 |
| 6/18/2010 | 12:43 PM | Right Angle | Clear | Daylight | 4.180 | Property Damage | Dry | 0 | 2 |
| 7/27/2009 | 1:45 PM | Struck Parked Vehicle | Rain | Daylight | 4.310 | Property Damage | Wet | 0 | 2 |
| 1/30/2009 | 9:01 AM | Right Angle | Clear | Daylight | 5.530 | Property Damage | Dry | 0 | 2 |
| 9/30/2009 | 10:20 AM | Right Angle | Clear | Daylight | 5.980 | Property Damage | Dry | 0 | 2 |
| 6/5/2010 | 7:50 AM | Other | Clear | Daylight | 6.200 | Injury | Dry | 1 | 1 |
| 7/23/2010 | 12:20 PM | Same Direction - Rear End | Clear | Daylight | 6.200 | Property Damage | Dry | 0 | 2 |
| 6/28/2009 | 2:08 PM | Struck Parked Vehicle | Clear | Daylight | 6.89 | Property Damage | Dry | 0 | 2 |
| 7/7/2009 | 6:28 PM | Same Direction - Side Swipe | Clear | Daylight | 6.900 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 7/23/2009 | 9:21 PM | Same Direction - Rear End | Rain | Dark (Street Lights On/ continuous) | 7.140 | Injury | Wet | 1 | 2 |
| 10/26/2009 | 3:53 PM | Fixed Object | Clear | Daylight | 7.280 | Property Damage | Dry | 0 | 1 |
| 9/20/2009 | 9:50 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 7.370 | Property Damage | Dry | 0 | 2 |
| 8/14/2010 | 3:45 PM | Same Direction - Rear End | Clear | Daylight | 7.455 | Property Damage | Dry | 0 | 2 |
| 8/25/2010 | 12:15 AM | Same Direction - Rear End | Clear | Daylight | 7.596 | Property Damage | Dry | 0 | 2 |
| 8/8/2010 | 11:50 AM | Right Angle | Clear | Daylight | 7.600 | Property Damage | Dry | 0 | 2 |
| 8/11/2010 | 12:30 PM | Right Angle | Clear | Daylight | 7.600 | Injury | Dry | 1 | 2 |
| 8/30/2010 | 5:30 PM | Right Angle | Clear | Daylight | 7.600 | Property Damage | Dry | 0 | 2 |
| 5/14/2011 | 6:05 PM | Right Angle | Clear | Daylight | 7.600 | Property Damage | Dry | 0 | 2 |
| 6/2/2011 | 11:24 AM | Same Direction - Rear End | Clear | Daylight | 7.600 | Injury | Dry | 1 | 2 |
| 9/3/2011 | 9:02 PM | Same Direction - Rear End | Clear | Dark (Street Lights On/ continuous) | 7.600 | Property Damage | Dry | 0 | 2 |
| 11/16/2009 | 9:05 AM | Left Turn / U Turn | Clear | Daylight | 7.680 | Injury | Dry | 1 | 2 |
| 7/3/2011 | 7:42 PM | Same Direction - Rear End | Rain | Daylight | 7.685 | Property Damage | Wet | 0 | 2 |
| 6/24/2011 | 5:34 AM | Right Angle | Clear | Dawn | 7.690 | Injury | Dry | 1 | 2 |
| 5/29/2011 | 7:15 PM | Same Direction - Rear End | Clear | Daylight | 7.750 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 7/8/2010 | 4:24 PM | Same Direction - Rear End | Clear | Daylight | 7.755 | Property Damage | Dry | 0 | 2 |
| 9/3/2011 | 1:20 PM | Backing | Clear | Daylight | 7.820 | Property Damage | Dry | 0 | 2 |
| 10/5/2009 | 5:36 PM | Same Direction - Rear End | Clear | Daylight | 7.830 | Injury | Dry | 1 | 2 |
| 6/21/2010 | 8:49 PM | Same Direction - Side Swipe | Clear | Dusk | 7.830 | Property Damage | Dry | 0 | 2 |
| 7/7/2010 | 11:12 AM | Same Direction - Rear End | Clear | Daylight | 7.830 | Injury | Dry | 4 | 2 |
| 11/3/2010 | 3:55 PM | Fixed Object | Clear | Daylight | 7.830 | Property Damage | Dry | 0 | 1 |
| 8/9/2010 | 1:23 PM | Same Direction - Rear End | Clear | Daylight | 7.864 | Property Damage | Dry | 0 | 2 |
| 7/28/2009 | 1:00 PM | Same Direction - Rear End | Clear | Daylight | 7.980 | Property Damage | Dry | 0 | 3 |
| 6/13/2011 | 7:56 PM | Fixed Object | Clear | Daylight | 8.020 | Injury | Dry | 1 | 1 |
| 7/8/2009 | 10:19 AM | Struck Parked Vehicle | Clear | Daylight | 8.060 | Property Damage | Dry | 0 | 2 |
| 8/4/2011 | 2:17 PM | Same Direction - Rear End | Clear | Daylight | 8.080 | Property Damage | Dry | 0 | 2 |
| 8/28/2009 | 8:17 PM | Same Direction - Rear End | Rain | Dark (Street Lights On/ continuous) | 8.085 | Property Damage | Wet | 0 | 2 |
| 9/2/2010 | 3:30 PM | Same Direction - Rear End | Clear | Daylight | 8.088 | Property Damage | Dry | 0 | 2 |
| 5/21/2009 | 7:21 PM | Same Direction - Rear End | Clear | Daylight | 8.090 | Property Damage | Dry | 0 | 2 |
| 8/20/2009 | 1:38 PM | Same Direction - Rear End | Clear | Daylight | 8.090 | Property Damage | Dry | 0 | 2 |
| 8/25/2011 | 11:30 PM | Same Direction - Side Swipe | Clear | Dark (Street Lights On/ continuous) | 8.090 | Property Damage | Wet | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 8/14/2009 | 7:55 PM | Right Angle | Clear | Dusk | 8.130 | Property Damage | Dry | 0 | 2 |
| 9/7/2009 | 11:18 AM | Same Direction - Rear End | Overcast | Daylight | 8.130 | Injury | Dry | 1 | 2 |
| 7/11/2009 | 6:53 AM | Pedalcyclist | Clear | Daylight | 8.133 | Injury | Dry | 1 | 1 |
| 5/2/2009 | 12:28 PM | Backing | Clear | Daylight | 8.250 | Property Damage | Dry | 0 | 2 |
| 6/18/2009 | 12:03 PM | Same Direction - Rear End | Rain | Daylight | 8.250 | Property Damage | Wet | 0 | 2 |
| 7/16/2009 | 3:50 PM | Same Direction - Rear End | Clear | Daylight | 8.250 | Property Damage | Dry | 0 | 2 |
| 8/6/2010 | 4:11 PM | Same Direction - Rear End | Clear | Daylight | 8.250 | Property Damage | Dry | 0 | 2 |
| 7/14/2011 | 11:21 AM | Right Angle | Overcast | Daylight | 8.250 | Injury | Dry | 1 | 1 |
| 9/5/2011 | 12:03 PM | Same Direction - Rear End | Clear | Daylight | 8.270 | Injury | Dry | 1 | 4 |
| 7/5/2010 | 12:50 PM | Right Angle | Clear | Daylight | 8.320 | Property Damage | Dry | 0 | 2 |
| 9/14/2011 | 3:05 PM | Right Angle | Clear | Daylight | 8.320 | Property Damage | Dry | 0 | 2 |
| 8/6/2009 | 1:50 PM | Struck Parked Vehicle | Clear | Daylight | 8.360 | Property Damage | Dry | 0 | 2 |
| 12/7/2010 | 9:20 AM | Same Direction - Rear End | Clear | Daylight | 8.360 | Injury | Dry | 2 | 2 |
| 3/21/2009 | 4:17 PM | Right Angle | Clear | Daylight | 8.400 | Injury | Dry | 1 | 2 |
| 7/2/2010 | 11:15 AM | Struck Parked Vehicle | Clear | Daylight | 8.420 | Property Damage | Dry | 0 | 2 |
| 9/28/2009 | 1:20 PM | Same Direction - Side Swipe | Clear | Daylight | 8.450 | Property Damage | Dry | 0 | 2 |
| 12/3/2011 | 2:00 AM | Same Direction - Side Swipe | Clear | Daylight | 8.460 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 7/9/2009 | 1:40 PM | Same Direction - Rear End | Clear | Daylight | 8.500 | Property Damage | Dry | 0 | 2 |
| 6/26/2011 | 1:35 PM | Same Direction - Rear End | Clear | Daylight | 8.560 | Property Damage | Dry | 0 | 2 |
| 12/15/2010 | 4:20 PM | Right Angle | Clear | Dusk | 8.650 | Property Damage | Dry | 0 | 2 |
| 7/16/2010 | 4:30 PM | Same Direction - Rear End | Clear | Daylight | 8.680 | Property Damage | Dry | 0 | 2 |
| 9/29/2010 | 12:01 PM | Same Direction - Rear End | Clear | Daylight | 8.699 | Property Damage | Dry | 0 | 2 |
| 9/2/2011 | 4:10 PM | Struck Parked Vehicle | Clear | Daylight | 8.700 | Property Damage | Dry | 0 | 2 |
| 12/4/2010 | 9:55 AM | Right Angle | Clear | Daylight | 8.810 | Property Damage | Dry | 0 | 2 |
| 8/7/2011 | 4:15 PM | Same Direction - Rear End | Clear | Daylight | 8.840 | Injury | Dry | 1 | 2 |
| 4/17/2011 | 3:30 PM | Same Direction - Side Swipe | Clear | Daylight | 8.860 | Property Damage | Dry | 0 | 2 |
| 7/4/2011 | 3:15 PM | Right Angle | Clear | Daylight | 8.860 | Property Damage | Dry | 0 | 2 |
| 7/30/2010 | 5:25 PM | Same Direction - Rear End | Clear | Daylight | 8.870 | Injury | Dry | 1 | 2 |
| 10/23/2010 | 10:02 AM | Other | Clear | Daylight | 8.870 | Injury | Dry | 1 | 2 |
| 12/11/2011 | 11:20 AM | Fixed Object | Clear | Daylight | 8.930 | Property Damage | Dry | 0 | 1 |
| 6/20/2009 | 4:35 PM | Same Direction - Rear End | Clear | Daylight | 8.955 | Injury | Dry | 1 | 2 |
| 8/27/2010 | 5:20 PM | Same Direction - Rear End | Clear | Daylight | 9.000 | Injury | Dry | 1 | 3 |
| 6/27/2009 | 11:10 AM | Same Direction - Rear End | Clear | Daylight | 9.060 | Property Damage | Dry | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 6/26/2011 | 3:30 PM | Same Direction - Rear End | Clear | Daylight | 9.060 | Property Damage | Dry | 0 | 2 |
| 12/18/2011 | 2:35 PM | Same Direction - Side Swipe | Clear | Daylight | 9.060 | Property Damage | Dry | 0 | 2 |
| 7/23/2009 | 12:30 PM | Same Direction - Rear End | Rain | Daylight | 9.070 | Injury | Wet | 1 | 2 |
| 7/23/2009 | 12:30 PM | Same Direction - Rear End | Rain | Daylight | 9.070 | Injury | Wet | 1 | 3 |
| 10/21/2010 | 7:05 PM | Struck Parked Vehicle | Clear | Dark (Street Lights On/ spot) | 9.100 | Property Damage | Dry | 0 | 2 |
| 8/12/2011 | 5:14 PM | Same Direction - Rear End | Clear | Daylight | 9.110 | Property Damage | Dry | 0 | 3 |
| 9/1/2009 | 1:21 PM | Right Angle | Clear | Daylight | 9.150 | Property Damage | Dry | 0 | 2 |
| 7/4/2010 | 8:50 PM | Same Direction - Rear End | Clear | Daylight | 9.160 | Injury | Dry | 1 | 2 |
| 8/17/2009 | 1:10 PM | Same Direction - Rear End | Clear | Daylight | 9.195 | Property Damage | Dry | 0 | 2 |
| 8/3/2009 | 10:15 AM | Right Angle | Clear | Daylight | 9.200 | Property Damage | Dry | 0 | 2 |
| 11/20/2010 | 2:40 PM | Right Angle | Clear | Daylight | 9.200 | Property Damage | Dry | 0 | 2 |
| 8/18/2011 | 1:43 PM | Same Direction - Rear End | Clear | Daylight | 9.200 | Property Damage | Dry | 0 | 2 |
| 8/21/2011 | 6:27 PM | Same Direction - Rear End | Clear | Daylight | 9.200 | Injury | Dry | 1 | 3 |
| 8/20/2011 | 10:53 AM | Pedalcyclist | Clear | Daylight | 9.200 | Injury | Dry | 1 | 1 |
| 6/6/2010 | 3:30 PM | Same Direction - Rear End | Clear | Daylight | 9.205 | Property Damage | Dry | 0 | 2 |
| 7/31/2009 | 7:20 PM | Same Direction - Rear End | Rain | Dusk | 9.210 | Property Damage | Wet | 0 | 2 |

| CRASH DATE | CRASH TIME | CRASH TYPE | ENVIRON-MENTAL CONDITION | LIGHT CONDITION | MILEPOST | SEVERITY | SURFACE CONDITION | TOTAL INJURED | TOTAL VEHICLES INVOLVED |
|---|---|---|---|---|---|---|---|---|---|
| 8/20/2009 | 3:50 PM | Same Direction – Rear End | Clear | Daylight | 9.210 | Injury | Dry | 1 | 3 |
| 8/12/2009 | 9:22 PM | Same Direction – Rear End | Rain | Dark (Street Lights On/ continuous) | 9.240 | Injury | Wet | 1 | 2 |
| 5/31/2009 | 1:35 PM | Same Direction – Rear End | Clear | Daylight | 9.250 | Property Damage | Dry | 0 | 2 |
| 4/20/2010 | 3:35 PM | Same Direction – Rear End | Clear | Daylight | 9.260 | Property Damage | Dry | 0 | 2 |
| 11/22/2010 | 1:17 PM | Right Angle | Clear | Daylight | 9.300 | Property Damage | Dry | 0 | 2 |
| 6/23/2009 | 12:25 PM | Same Direction – Side Swipe | Clear | Daylight | 9.314 | Property Damage | Dry | 0 | 2 |

# Appendix B

# Panel Legend for Aerial Image of Crash Locations

| Image | From Street | To Street | From MP +/- | to MP +/- |
|---|---|---|---|---|
| **LBI 1** | McKinley Avenue | Joan Road | 0.00 | 0.26 |
| **LBI 2** | Jacqueline Avenue | Scott Drive | 0.30 | 0.55 |
| **LBI 3** | Tebco Terrace | Rosemma Avenue (Riptide Lane) | 0.62 | 0.80 |
| **LBI 4** | Rosemma Avenue (Riptide Lane) | Osborn Avenue | 0.80 | 1.14 |
| **LBI 5** | North of Osborn | Jefferries Avenue | 1.14 | 1.45 |
| **LBI 6** | Stratford Avenue | Glendola Avenue | 1.50 | 1.75 |
| **LBI 7** | Fairview Avenue | Norwood Avenue | 1.80 | 2.05 |
| **LBI 8** | Berkeley Avenue | Amber Street | 2.10 | 2.36 |
| **LBI 9** | Engleside Avenue | 5th Street | 2.41 | 2.70 |
| **LBI 10** | 6th Street | 11th Street | 2.75 | 3.02 |
| **LBI 11** | 11th Street | 17th Street | 3.02 | 3.31 |
| **LBI 12** | 17th Street | 23rd Street | 3.31 | 3.60 |
| **LBI 13** | 23rd Street | 29th Street | 3.60 | 3.89 |
| **LBI 14** | 29th Street | Maryland Avenue | 3.89 | 4.18 |
| **LBI 15** | Maryland Avenue | Ryerson Avenue | 4.18 | 4.48 |
| **LBI 16** | Ryerson Avenue | Colorado Avenue | 4.48 | 4.76 |
| **LBI 17** | Colorado Avenue | North Carolina Avenue | 4.76 | 5.04 |
| **LBI 18** | North Carolina Avenue | Lillie Avenue | 5.04 | 5.33 |
| **LBI 19** | Lillie Avenue | Herbert Avenue | 5.33 | 5.61 |
| **LBI 20** | Herbert Avenue | Sailboat Drive | 5.61 | 5.89 |
| **LBI 21** | Sailboat Drive | Massachusetts Avenue | 5.89 | 6.16 |
| **LBI 22** | Massachusetts Avenue | Mea Lane | 6.16 | 6.42 |
| **LBI 23** | Mea Lane | Goodrich Avenue | 6.42 | 6.80 |
| **LBI 24** | Goodrich Avenue | Harmony Avenue | 6.80 | 7.18 |
| **LBI 25** | Harmony Avenue | 50th Street | 7.18 | 7.52 |
| **LBI 26** | 49th Street | 40th Street | 7.56 | 7.92 |
| **LBI 27** | 39th Street | 30th Street | 7.94 | 8.28 |
| **LBI 28** | 30th Street | 22nd Street | 8.28 | 8.65 |
| **LBI 29** | 22nd Street | 15th Street | 8.65 | 9.01 |
| **LBI 30** | 15th Street | 8th Street | 9.01 | 9.36 |

# Aerial Image of Crash Locations along the Corridor

Panels are from South to North

**LBI Panel 1**
From: McKinley Avenue (MP 0.00)
To: Jacqueline Avenue (MP 0.30)


**LBI Panel 2**
From: Jacqueline Avenue (MP 0.30)
To: Scott Drive (MP 0.55)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 3**
From: Tebco Terrace (MP 0.62)
To: Rosemma Avenue (MP 0.80)


**LBI Panel 4**
From: Rosemma Avenue (MP 0.80)
To: Osborn Avenue (MP 1.14)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 5**
From: Osborn Avenue (MP 1.14)
To: Jefferies Avenue. (MP 1.45)


**LBI Panel 6**
From: Stratford Avenue (MP 1.50)
To: Glendola Avenue (MP 1.75)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 7**
From: Fairview Avenue (MP 1.80)
To: Norwood Avenue (MP 2.05)


**LBI Panel 8**
From: Berkeley Avenue (MP 2.10)
To: Amber Street (MP 2.36)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 9**
From: Engleside Avenue (MP 2.41)
To: 5th Street (MP 2.70)


**LBI Panel 10**
From: 6th Street (MP 2.75)
To: 11th Street (MP 3.02)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 11**
From: 11th Street (MP 3.02)
To: 17th Street (MP 3.31)


**LBI Panel 12**
From: 17th Street (MP 3.31)
To: 23rd Street (MP 3.60)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 13**
From: 23rd Street (MP 3.60)
To: 29th Street (MP 3.89)


**LBI Panel 14**
From: 29th Street (MP 3.89)
To: Maryland Ave. (MP 4.18)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 15**
From: Maryland Avenue (MP 4.18)
To: Ryerson Avenue (MP 4.48)


**LBI Panel 16**
From: Ryerson Avenue (MP 4.48)
To: Colorado Avenue (MP 4.76)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 17**
From: Colorado Avenue (MP 4.76)
To: North Carolina Avenue (MP 5.04)


**LBI Panel 18**
From: North Carolina Avenue (MP 5.04)
To: Lillie Avenue (MP 5.33)

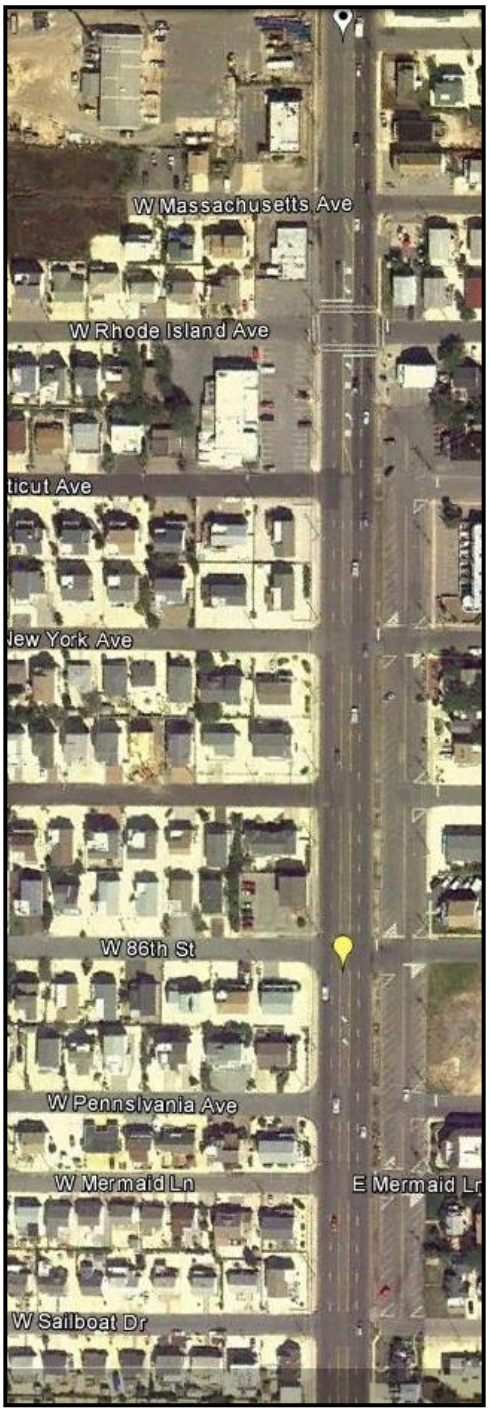

| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 19**
From: Lillie Avenue (MP 5.33)
To: Herbert Avenue (MP 5.61)


**LBI Panel 20**
From: Herbert Avenue (MP 5.61)
To: Sailboat Drive (MP 5.89)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 21**
From: Sailboat Drive (MP 5.89)
To: Massachusetts Avenue (MP 6.16)




**LBI Panel 22**
From: Massachusetts Avenue (MP 6.16)
To: Mea Lane (MP 6.42)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 23**
From: Mea Lane (MP 6.42)
To: Goodrich Avenue (MP 6.80)


**LBI Panel 24**
From: Goodrich Avenue (MP 6.80)
To: Harmony Avenue (MP 7.18)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 25**
From: Harmony Avenue (MP 7.18)
To: 50th Street (MP 7.52)


**LBI Panel 26**
From: 49th Street (MP 7.56)
To: 40th Street (MP 7.92)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

**LBI Panel 27**
From: 39th Street (MP 7.94)
To: 30th Street (MP 8.28)


**LBI Panel 28**
From: 30th Street (MP 8.28)
To: 22nd Street (MP 8.65)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

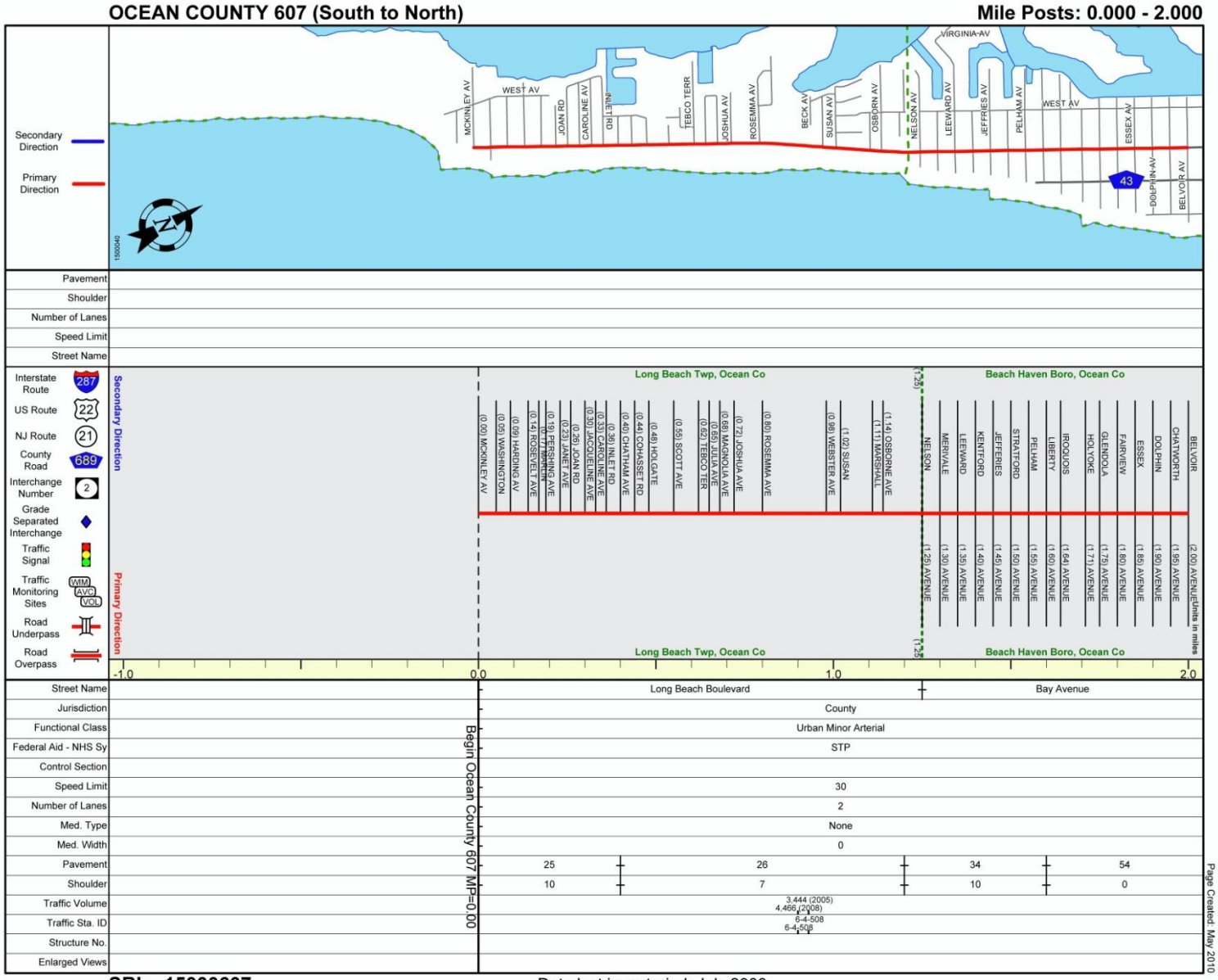
**LBI Panel 29**
From: 22nd Street (MP 8.65)
To: 15th Street (MP 9.01)


**LBI Panel 30**
From: 15th Street (MP 9.01)
To: 8th Street (MP 9.36)


| LEGEND | | | | | | |
|---|---|---|---|---|---|---|
| **Type of Crash** | **No Injury** | **Injury** | | **Type of Crash** | **No Injury** | **Injury** |
| Same Direction – Rear End | | | | | | |
| Same Direction – Side Swipe | | | | Backing | | |
| Right Angle or Left Turn/U-Turn | | | | Fixed Object | | |
| Struck Parked Vehicle | | | | Pedalcyclist | | |

# Appendix C

# Straight Line Diagram

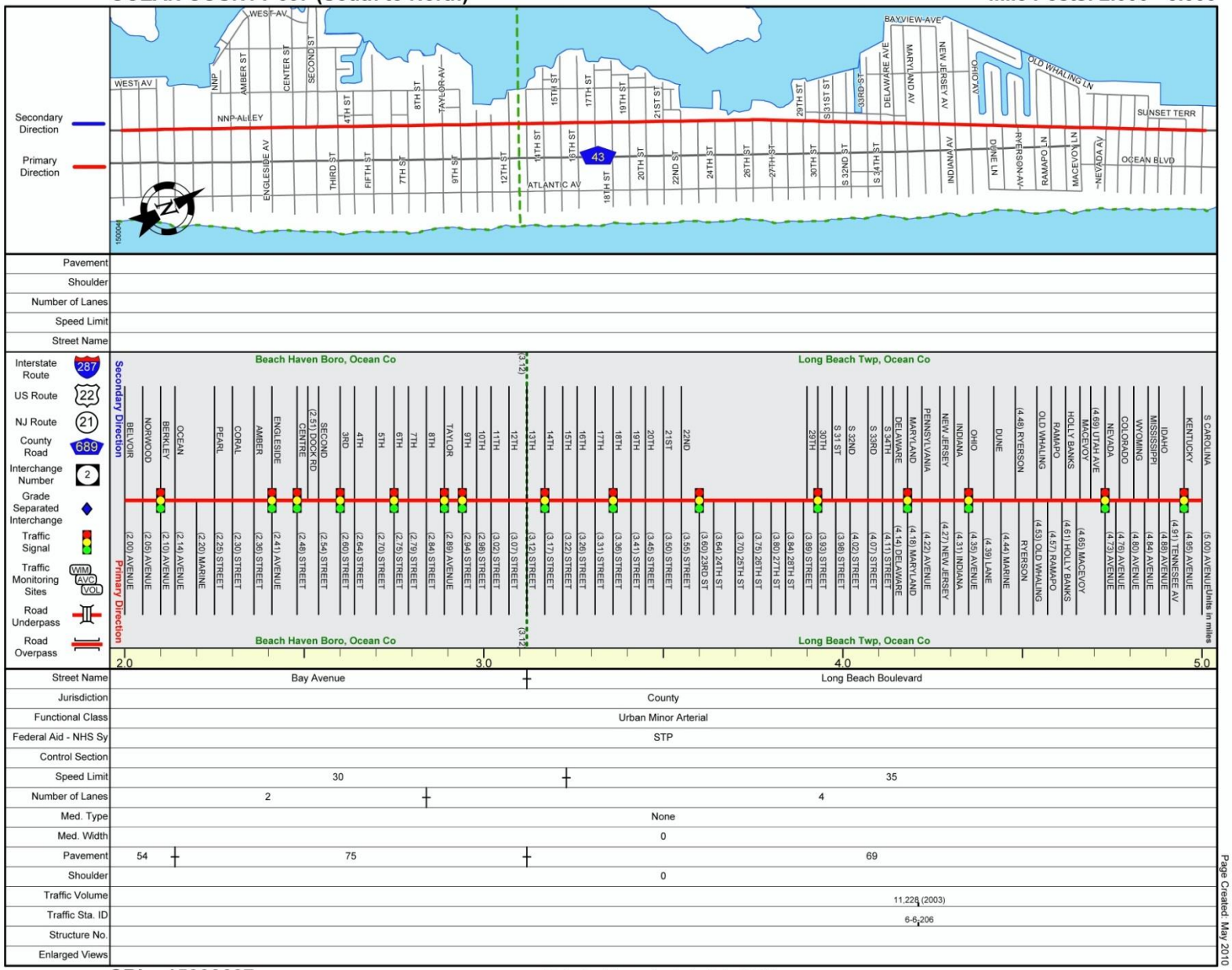



**SRI = 15000607__**

Date last inventoried: July 2000

## OCEAN COUNTY 607 (South to North)

**Mile Posts: 2.000 - 5.000**



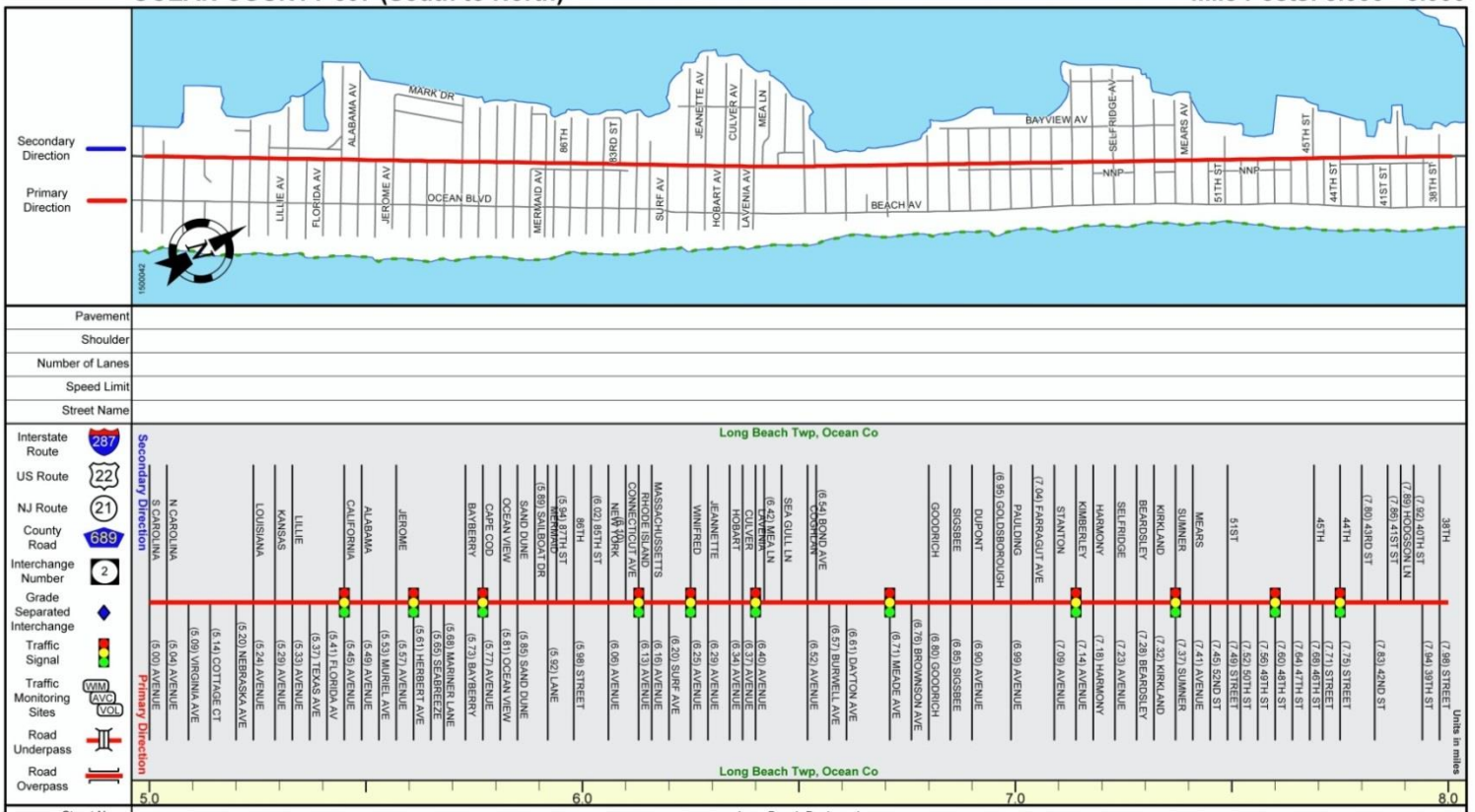

Page Created: May 2010

**SRI = 15000607__**

Date last inventoried: July 2000

## OCEAN COUNTY 607 (South to North)

**Mile Posts: 5.000 - 8.000**




| | |
|---|---|
| Street Name | Long Beach Boulevard |
| Jurisdiction | County |
| Functional Class | Urban Minor Arterial |
| Federal Aid - NHS Sy | STP |
| Control Section | |
| Speed Limit | 35 |
| Number of Lanes | 4 |
| Med. Type | None |
| Med. Width | 0 |
| Pavement | 69 |
| Shoulder | 0 |
| Traffic Volume | |
| Traffic Sta. ID | |
| Structure No. | |
| Enlarged Views | |

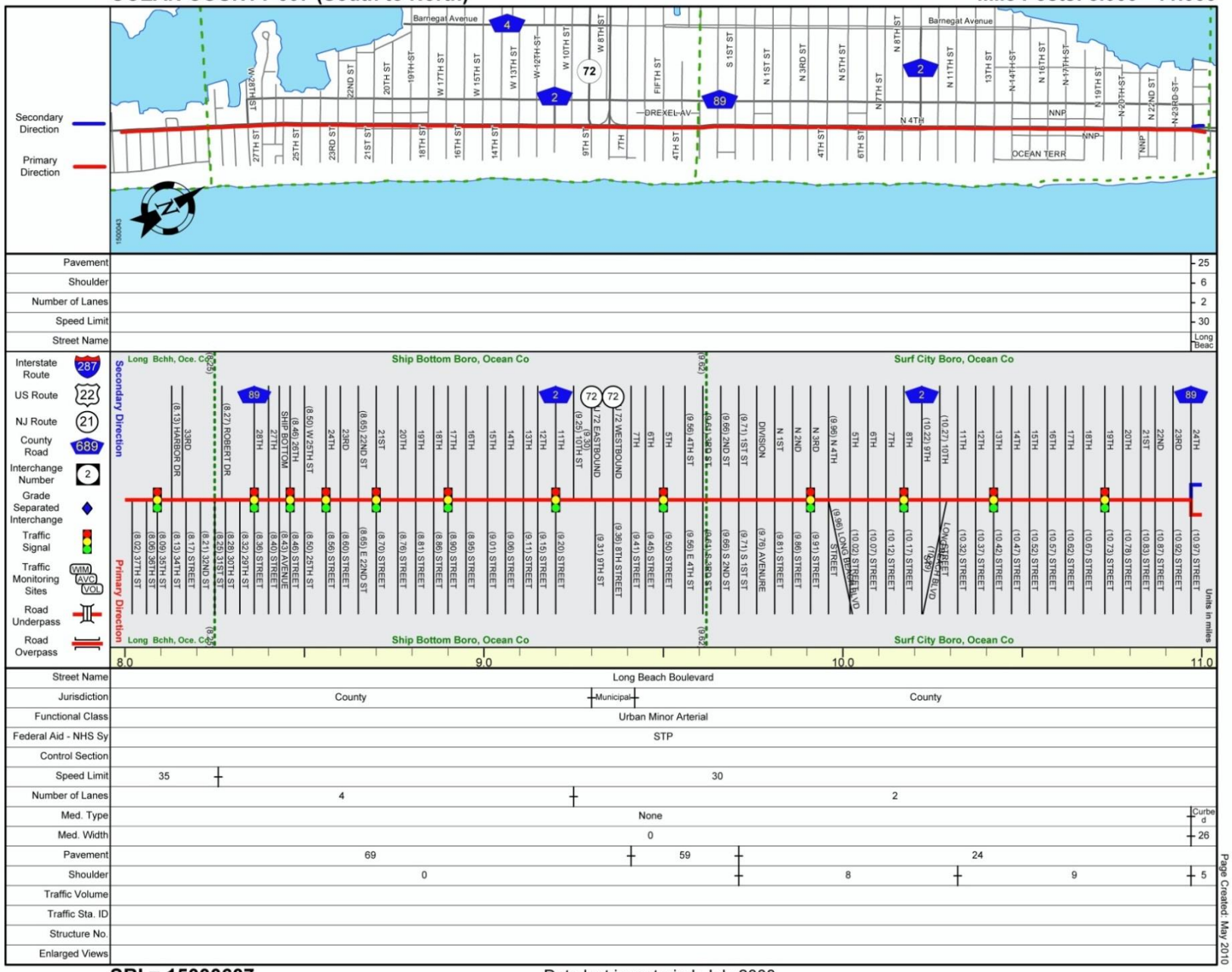
Page Created: May 2010

**SRI = 15000607__**

Date last inventoried: July 2000

## OCEAN COUNTY 607 (South to North)

**Mile Posts: 8.000 - 11.000**




**SRI = 15000607__**

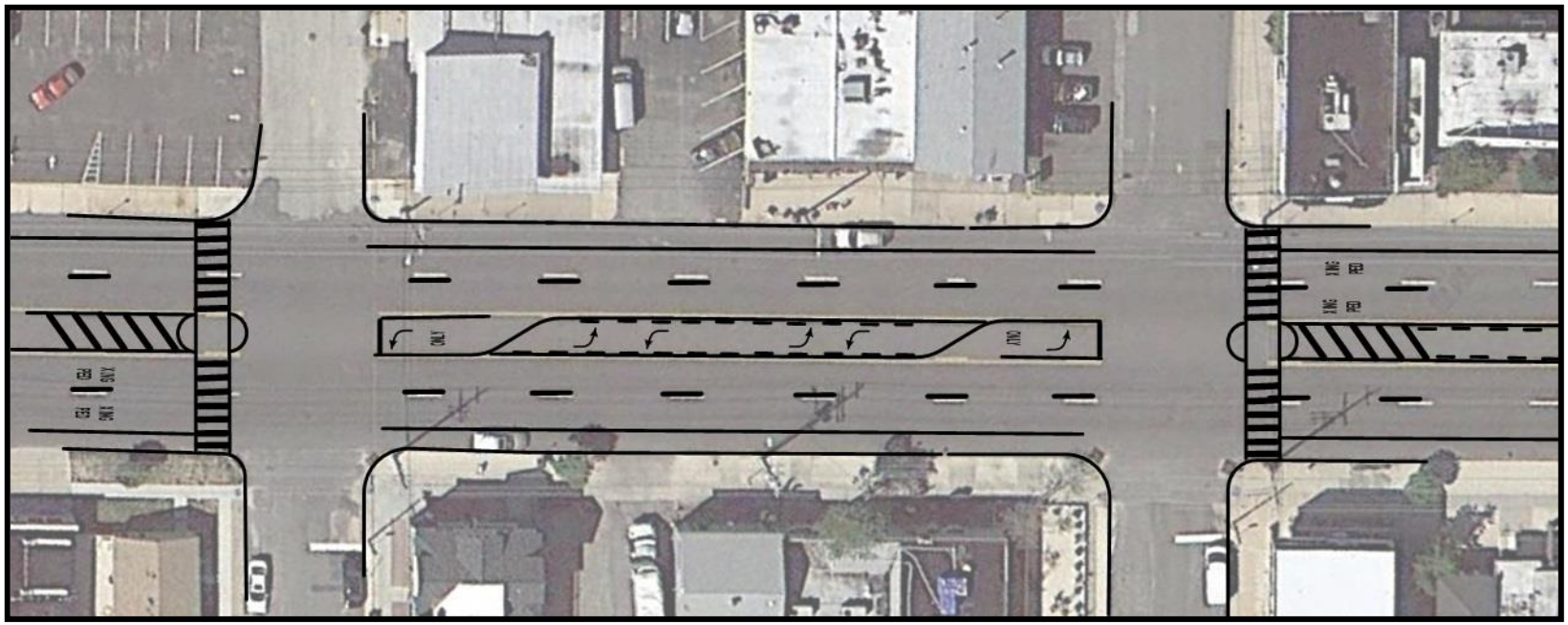
Date last inventoried: July 2000

# Appendix D

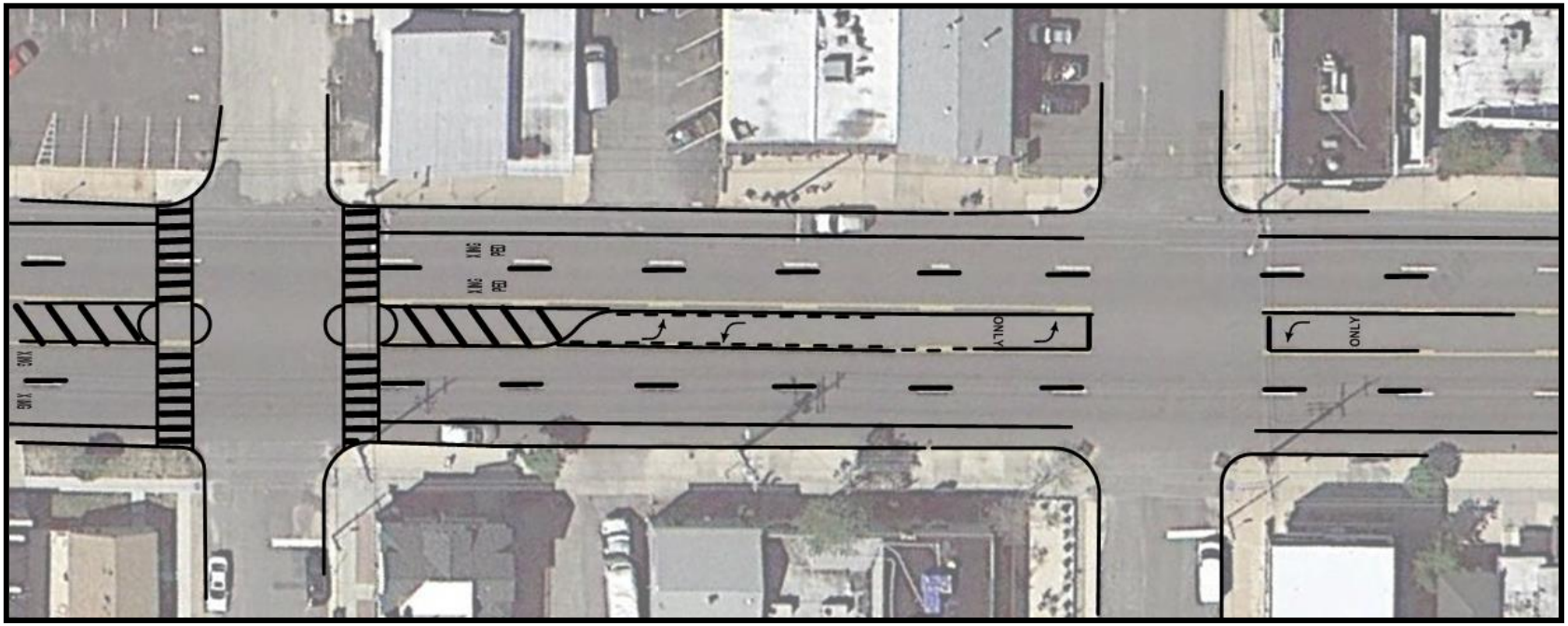
# Alternative Crosswalks

**Alternative 1**

## Alternative 2



**Alternative 3**



# Crash Diagram – 48th Street

(A) **RIGHT ANGLE**
(1) 8/8/2010- 11:50 am – Dry, Daylight

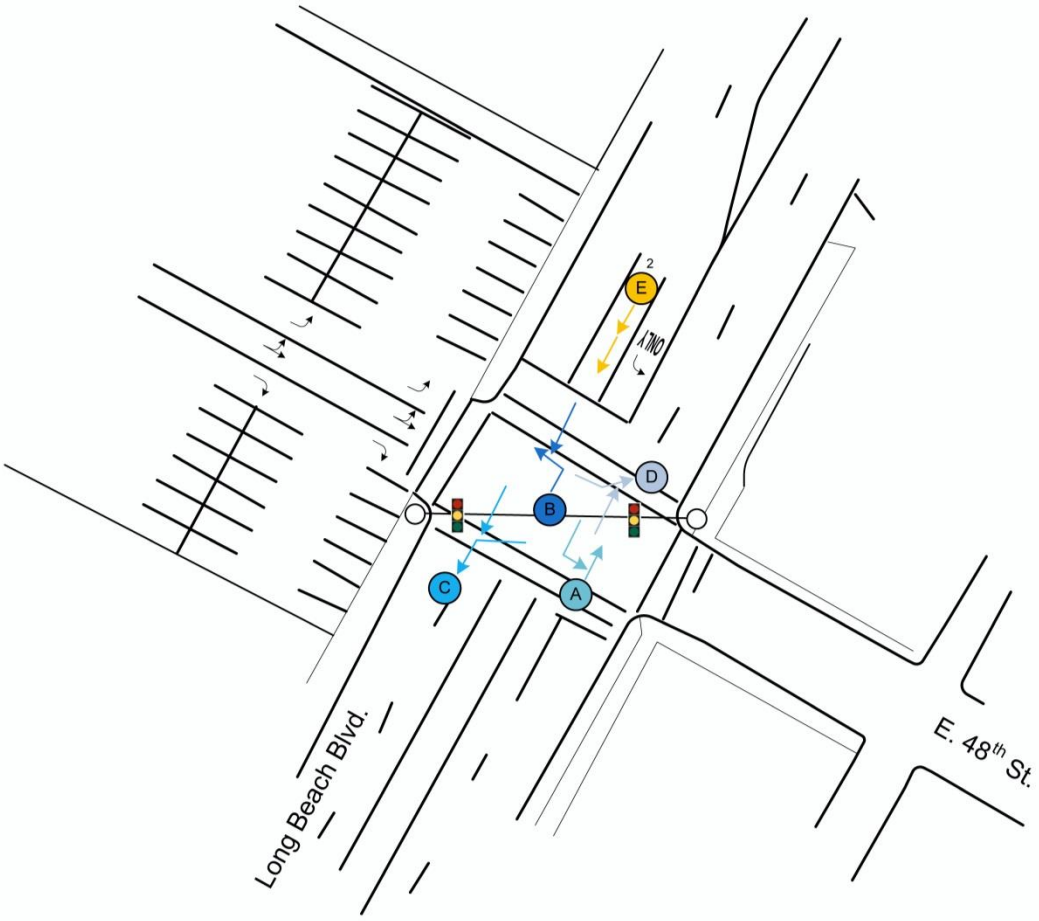
(B) **RIGHT ANGLE**
* (2) **8/11/2010 – 12:30 pm – Dry, Daylight**

(C) **RIGHT ANGLE**
(3) 8/30/2010 – 5:30 pm – Dry, Daylight

(D) **RIGHT ANGLE**
(4) 5/14/2011 – 6:05 pm – Dry, Daylight

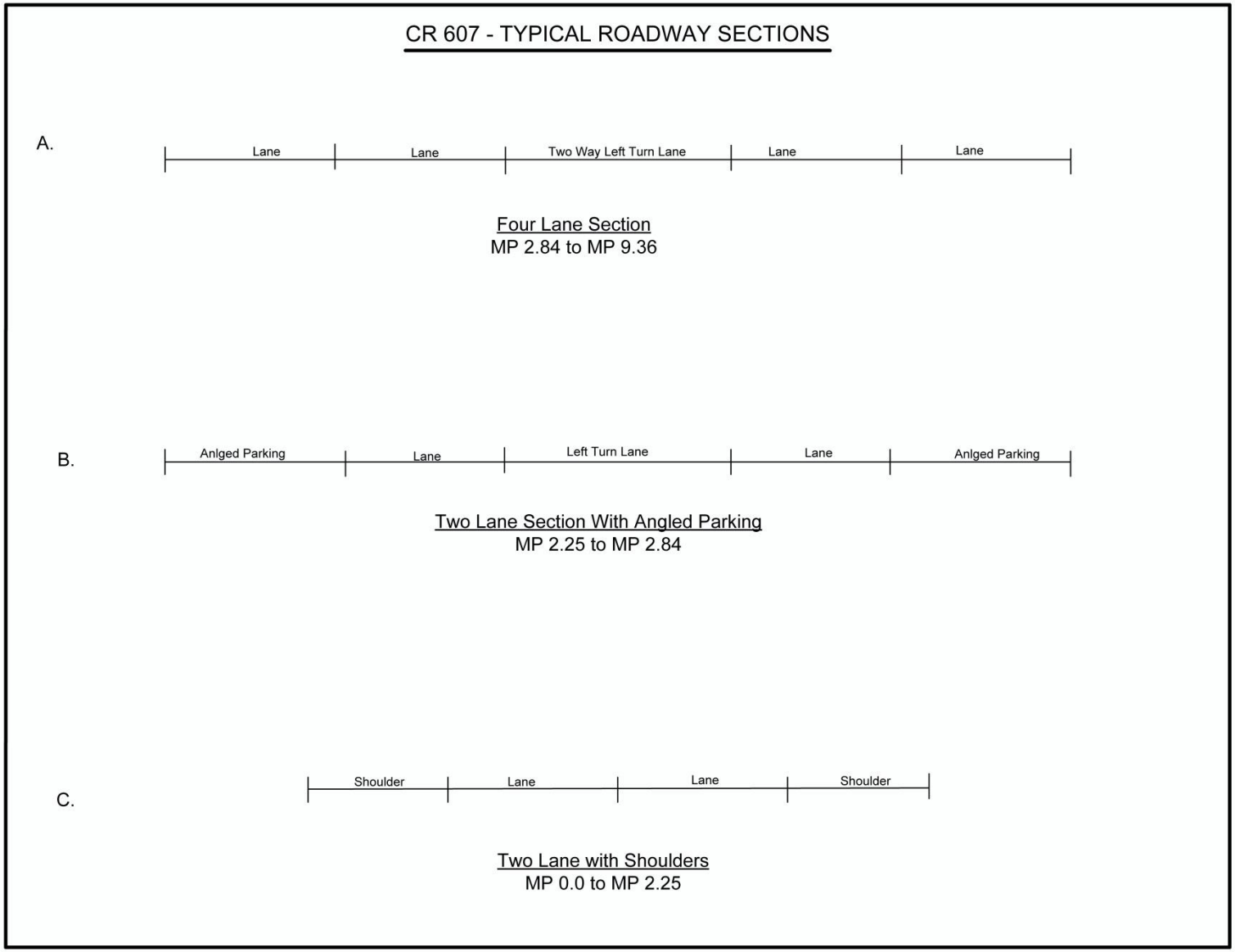
(E) **SAME DIRECTION REAR END**
(5) 8/25/2010 – 12:15 am – Dry, Daylight
(6) **6/2/2011 –11:24 am – Dry, Daylight**

( ) **SAME DIRECTION REAR END**
(7) 9/3/2011 – 9:02 pm – Dry, Dark
(Street Lights On/Continuous)




**LEGEND**
Bold = Injury
(2x) Number of crashes if >1
* Confirmed by NJTR-1 Police narrative

# Typical Roadway Sections



# Appendix E

# List of Recommendations

## *General Corridorwide Recommendations*

(1) Consider the installation of (mountable or painted) bulb-outs at intersections.

(2) Speed reduction may be encouraged by narrowing lanes from 12 to 11 feet.

(3) Consider the delineation of the edge of the outer travel lane with shoulder markings.

(6) Plan for full ADA compliance by scheduling upgrades of existing curbs and sidewalks.

(10) Review the corridor to identify crosswalks with inconsistent marking styles and promote uniformity with crosswalks.

## *Signage*

(7) Professional engineering staff should review the use and application of signage to ensure standardized application throughout the corridor.

(8) Professional engineering staff should conduct a thorough evaluation of existing and required signage to reduce the amount of signage along the corridor and decrease sign clutter.

## *Pedestrians – Signalized Intersections*

Professional staff should conduct a study to determine the optimal locations and intervals of signalized intersections. It is anticipated this course of action would be a long-term implementation, and would result in upgraded signal equipment when implemented.

(9) Consider installation of countdown pedestrian heads at signalized intersections.

## *Pedestrians – Unsignalized Intersections*

(11) Consider providing an unsignalized crossing location periodically between signals, at consistent intervals (every block, every other block, every third block, etc.).

(12) Review feasibility of pedestrian refuge islands (striped or mountable; see #15 through17) that pedestrians can cross to and safely wait for a gap in opposing traffic.

(13) Any pedestrian median refuge islands should be installed such that they are mountable for emergency vehicle access and to allow for emergency evacuation activities.

(14) Any pedestrian median refuge islands should be visually differentiated from the roadway pavement in order to raise awareness of pedestrian crossing location and increase perception of safety by pedestrians. Consider vegetation, traffic stanchions, or other mountable objects.

(15) Consider installation of pedestrian refuge islands at each intersection, alternating with location of left-turn lane from Long Beach Boulevard (see Crosswalks: Alternative 1).

(16) Consider installation of a refuge island on one side of the intersection with left-turn lane on the other side of intersection (see Crosswalks: Alternative 2).

(17) Consider installation of a midblock crosswalk with a refuge island and head-to-head left-turn lanes at the intersections (see Crosswalks: Alternative 3).

## *Pedestrians – General*

(18) Additional active lighted crosswalk signage should be considered at marked crosswalks where additional visibility is needed.

(19) Consider the use of treatments to enhance visibility of crosswalks, potentially including stamped concrete, bulb-outs, bollards, stanchions, and refuges where additional visibility is needed.

(20) Investigate the installation of active warning beacons, especially rectangular rapid flashing beacons, at unsignalized marked crossing locations where additional visibility is needed.

(21) Where additional visibility is needed, consider installing supplemental overhead pedestrian crossing signage.

(22) Pedestrians may be encouraged to use sidewalks by providing streetscaping along the roadway, making them more comfortable. This would also increase driver awareness of potential pedestrian activity.

(23) The addition of pedestrian way-finding signs to clearly direct pedestrians may increase safer pedestrian behavior.

## *Parking*

(24) Consider the installation of additional roadway marking delineating areas of parking prohibition in the vicinity of crosswalks.

(25) Ensure that proper no parking zone signage is clearly marked adjacent to crosswalks and approaching intersections.

(26) Increase visible enforcement of parking restrictions in the vicinity of the crosswalk.

## *Traffic Signals*

(28) Professional staff should conduct a study to determine the optimal locations and intervals of signalized intersections.

(29) Increased visibility of signal heads would be enhanced by installing retroreflective back plates.

(30) A standard signal configuration should be developed and implemented as signal equipment is upgraded.

(31) Consider the installation of 12-inch lenses for vehicle signal heads as per MUTCD.

## *Lighting*

(32) Have professional staff conduct a formal engineering review of existing lighting conditions to evaluate where both vehicle and pedestrian level lighting can be enhanced. Additional consideration should be given at designated unsignalized pedestrian crossing locations.

## *Bicycles*

(33) Consider providing quality bicycle facilities on parallel roadways to Long Beach Boulevard to encourage bicycle use of these facilities.

(34) Consider the installation of additional bicycle facilities along Long Beach Boulevard.

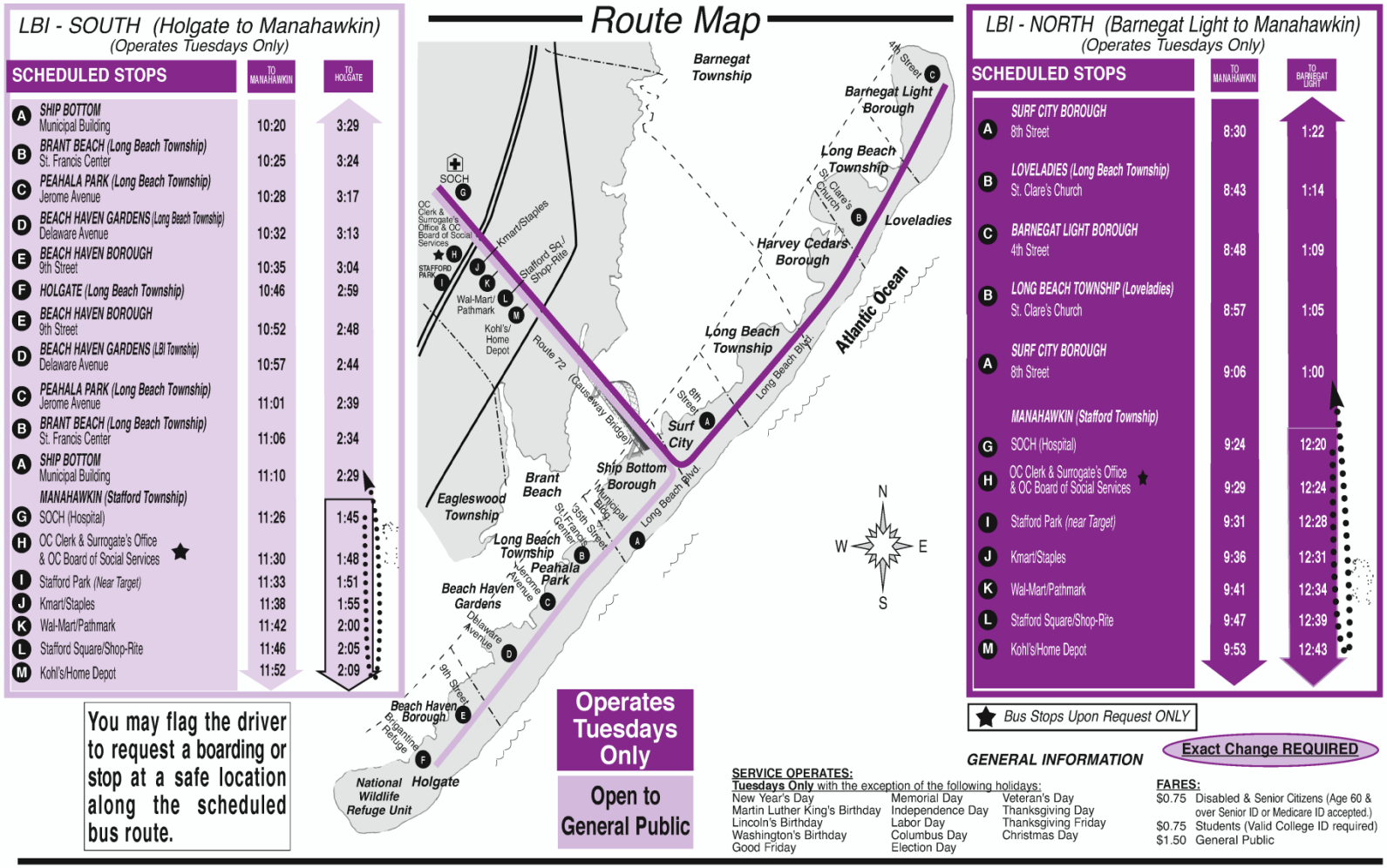
## *Education*

(4) Consider using Variable Message Signs (VMS) for educational purposes during peak season.

(5) Continue educational programs for tourists emphasizing the importance of crossing at crosswalks. Enhance existing programs by producing brochures, advertising on retail bags and in business windows, and creating a website and social media messages. Rental real estate agents could also include this information when welcoming new tourists.

# Appendix F

# Bus Route


LBI - SOUTH (Holgate to Manahawkin)
(Operates Tuesdays Only)
SCHEDULED STOPS
TO MANAHAWKIN
TO HOLGATE
A SHIP BOTTOM Municipal Building 10:20 3:29
B BRANT BEACH (Long Beach Township) St. Francis Center 10:25 3:24
C PEAHALA PARK (Long Beach Township) Jerome Avenue 10:28 3:17
D BEACH HAVEN GARDENS (Long Beach Township) Delaware Avenue 10:32 3:13
E BEACH HAVEN BOROUGH 9th Street 10:35 3:04
F HOLGATE (Long Beach Township) 10:46 2:59
E BEACH HAVEN BOROUGH 9th Street 10:52 2:48
D BEACH HAVEN GARDENS (LBI Township) Delaware Avenue 10:57 2:44
C PEAHALA PARK (Long Beach Township) Jerome Avenue 11:01 2:39
B BRANT BEACH (Long Beach Township) St. Francis Center 11:06 2:34
A SHIP BOTTOM Municipal Building 11:10 2:29
MANAHAWKIN (Stafford Township)
G SOCH (Hospital) 11:26 1:45
H OC Clerk & Surrogate's Office & OC Board of Social Services 11:30 1:48
I Stafford Park (Near Target) 11:33 1:51
J Kmart/Staples 11:38 1:55
K Wal-Mart/Pathmark 11:42 2:00
L Stafford Square/Shop-Rite 11:46 2:05
M Kohl's/Home Depot 11:52 2:09
Route Map
Barnegat Township
Barnegat Light Borough
Long Beach Township
Loveladies
Harvey Cedars Borough
Atlantic Ocean
Long Beach Township
Surf City
Ship Bottom Borough
Brant Beach
Eagleswood Township
Long Beach Township
Peahala Park
Beach Haven Gardens
Beach Haven Borough
Holgate
National Wildlife Refuge Unit
SOCH
OC Clerk & Surrogate's Office & OC Board of Social Services
STAFFORD PARK
Kmart/Staples
Stafford Sq./ Shop-Rite
Wal-Mart/ Pathmark
Kohl's/ Home Depot
Route 72
(Causeway Bridge)
Long Beach Blvd
8th Street
4th Street
St. Clare's Church
Municipal Bldg.
St. Francis Center
13th Street
Jerome Avenue
Delaware Avenue
9th Street
Brigantine Refuge
N
W
E
S
You may flag the driver to request a boarding or stop at a safe location along the scheduled bus route.
Operates Tuesdays Only
Open to General Public
LBI - NORTH (Barnegat Light to Manahawkin)
(Operates Tuesdays Only)
SCHEDULED STOPS
TO MANAHAWKIN
TO BARNEGAT LIGHT
A SURF CITY BOROUGH 8th Street 8:30 1:22
B LOVELADIES (Long Beach Township) St. Clare's Church 8:43 1:14
C BARNEGAT LIGHT BOROUGH 4th Street 8:48 1:09
B LONG BEACH TOWNSHIP (Loveladies) St. Clare's Church 8:57 1:05
A SURF CITY BOROUGH 8th Street 9:06 1:00
MANAHAWKIN (Stafford Township)
G SOCH (Hospital) 9:24 12:20
H OC Clerk & Surrogate's Office & OC Board of Social Services 9:29 12:24
I Stafford Park (near Target) 9:31 12:28
J Kmart/Staples 9:36 12:31
K Wal-Mart/Pathmark 9:41 12:34
L Stafford Square/Shop-Rite 9:47 12:39
M Kohl's/Home Depot 9:53 12:43
Bus Stops Upon Request ONLY
GENERAL INFORMATION
Exact Change REQUIRED
SERVICE OPERATES:
Tuesdays Only with the exception of the following holidays:
New Year's Day
Martin Luther King's Birthday
Lincoln's Birthday
Washington's Birthday
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Thanksgiving Friday
Christmas Day
FARES:
$0.75 Disabled & Senior Citizens (Age 60 & over Senior ID or Medicare ID accepted.)
$0.75 Students (Valid College ID required)
$1.50 General Public