

Traffic Safety Evaluation City Of Long Beach

June 2010
Revised October 2010

Prepared by: VHB Engineering, Surveying, and Landscape Architecture, P.C.
2150 Joshua's Path
Hauppauge, N. Y. 11788

Introduction

The City of Long Beach has retained VHB Engineering, Surveying and Landscape Architecture, P.C. to conduct a traffic engineering study of traffic conditions within the City, identify existing safety concerns and develop recommendations to improve safety on City streets for the protection of residents and visitors, including motorists, pedestrians and bicyclists. There are three primary components which were the focus of this study and report. One of the key objectives of this study was to assess the adequacy of the existing STOP controlled intersections throughout the City for conformance to the Manual of Uniform Traffic Control Devices and to develop recommendations and guidelines to assist the City DPW in developing a uniform policy with regard to the installation of Stop signs.

Another component was to perform a general assessment of traffic conditions on neighborhood streets and identify potential safety measures, including traffic calming techniques to reduce vehicle speeds and create a pedestrian/bicycle friendly street network.

In conjunction with this task, VHB obtained three years worth of accident records for 10 intersections throughout the City with different levels of STOP control and developed specific recommendations with regard to proposed safety measures.

Finally, we evaluated the traffic signal timing and intersection coordination to determine if the signal system timing parameters are adequate or if modification to the timing program would benefit traffic flow on this main City thoroughfare.

Background

Long Beach is a popular shorefront community on the south shore of Long Island which has evolved over the years from a summer resort destination to a year-round residential community. The area along the boardwalk is now characterized by large multi-story residential buildings, including several hotels. Many of the residents of these buildings are “snowbirds” who live elsewhere during the winter months and reside in Long Beach during the warm months of the year. Because it is still an extremely popular beach/resort area, traffic conditions during the summer months are typically more congested than during the remainder of the year. In addition to an increase in vehicular traffic, the pedestrian and bicycle activity also increases significantly during the summer, particularly south of Park Avenue where there is limited availability of parking in proximity to the beach.

The city street network is basically a traditional grid pattern which is not characteristic of most communities on Long Island. The majority of the north-south “boulevards” contain wide medians which are either grassed with parallel parking adjacent to the median curb or paved and striped for head-to-head diagonal parking. With the exception of Park Avenue, Broadway, Beech Street and Hudson Street, the east-west roads are designated for one-way travel. Most of the intersections along Park Avenue and many of those on Broadway and Beech Street are controlled by traffic signals. The remainder of the streets and intersections are controlled to varying degrees by STOP signs. Section 15.7 of the Long Beach City Code of Ordinances, first adopted in 1957 and modified several times since, enumerates the location of the existing Stop signs.

The unique geometric features of the street network, particularly the wide center medians, combined with the substantial volume of pedestrian and bicycle traffic and the large number of seasonal residents and visitors who are not totally familiar with the area contribute to traffic safety issues which are not typical of most communities on Long Island.

It is important to note that the scope of this study was such that it was intended to be a general overview of safety conditions on City streets with a more detailed review of only a limited number of locations, as mentioned above. However, having been involved in several projects in the City of Long Beach over the past several years, VHB does have a good deal familiarity with summer traffic conditions. In addition, we have received input from City officials and concerned residents which served to guide us in our assessment.

STOP Sign Overview

In order to assist in our study, we obtained mapping information from the City DPW depicting all existing STOP signs on City streets. One of our first observations was the lack of consistency in terms of the level of STOP sign control. This was evident throughout all sections of the City. Some intersections were controlled by STOP signs on all approaches, some with signs on two out of three or four approaches, while others contained only one STOP sign. Based on our limited observations, the use of different levels of control from street to street and intersection to intersection appears to create confusion on the part of the motorist, even those who may be familiar with the area. This is compounded by the wide center medians on the north-south boulevards which create a second potential conflict point at each location. This confusion will undoubtedly be exacerbated during the summer months when the number of "transient" drivers increases significantly. We believe that this confusion contributes substantially to the occurrence of right angle accidents at many intersections, as is discussed in the section below.

While we did not conduct any radar surveys, we did observe motorists' driving habits on the local streets and we did not detect what would be considered a significant speeding problem. It should be clarified that we did observe occasional vehicles that were quite apparently exceeding the speed limit, but this is a phenomenon that is common in all communities and is not unique to Long Beach. In our limited review of the accident data at specific locations, we did not detect any indication of a correlation between the accidents and vehicle speeds. However, we also recognize that speeding is likely to be more prevalent during the summer months when there are more non-resident drivers who are less likely to abide by the posted limit.

In terms of STOP sign compliance, our observations revealed an overall acceptable level of compliance with the posted STOP signs. However, as is common in most communities, it was not unusual to see motorists at many of the low volume intersections come to a "rolling" stop. While this is not legally acceptable, it is virtually impossible to enforce without posting a police officer at every location. From a practical standpoint, if the vehicle slows enough to react to a potential conflict, this behavior does not contribute significantly to the accident frequency.

The Manual of Uniform Traffic Control Devices (MUTCD) contains criteria which should be considered for the installation of STOP signs, including the use of all-way STOP control. These criteria include vehicle volumes, pedestrian volumes and accident frequency. While the majority of the intersections within the CITY are not likely to meet these numerical criteria, the MUTCD does recommend that the decision to install STOP signs, including multi-way STOP control, should be based on an engineering study. In the case of Long Beach, we believe that the

conditions described herein provide sufficient justification for the addition of all-way STOP signs at the specific locations discussed below, as well as at other locations where the accident experience indicates that the installation of all-way control may benefit safety and reduce the number of accidents.

Intersection Evaluation

As stated above, one of the specified tasks was to review accident records and observe conditions at ten locations identified by the Long Beach Department of Public Works. These locations are in different sections of the City and have varying levels of intersection control. During the course of our evaluation we did note a significant amount of pedestrian and bicycle traffic throughout the entire study area as compared to most communities on Long Island. We also found that the street geometry, with the wide medians and diagonal parking, contributes to motorist confusion. In addition to the specific recommendations for each location listed below, the recommendation section of this report contains several general safety recommendations for further consideration by City officials.

Franklin Boulevard @ East Chester Street

East Chester Street is a one-way road in the eastbound direction. Franklin Boulevard is a two-way north-south roadway with a wide grass median separating opposing directions of travel. The intersection is presently controlled by a STOP sign for eastbound traffic on East Chester Street and a STOP sign for southbound traffic on Franklin Boulevard. The northbound movement is currently uncontrolled.

The accident records for this location reveal a total of six accidents over the three year analysis period, 5 of which were right angle incidents and the remaining one involved a motor vehicle collision with a bicyclist. Four of the five right angle accidents involved northbound traffic on Franklin Boulevard colliding with eastbound traffic on East Chester Street. This is essentially an uncontrolled conflict point, which appears to be the primary contributing factor to these right angle occurrences. In order to reduce the potential for such incidents in the future, it is recommended that a STOP sign be added to control the northbound Franklin Boulevard approach and that this new sign be supplemented with a panel advising motorists that traffic from the left does not stop. This is recommended because the eastbound STOP is more than 50 feet away.

Laurelton Boulevard @ West Market Street

West Market Street is a one-way road in the eastbound direction. Laurelton Boulevard is a two-way north-south roadway with a wide grass median separating opposing directions of travel. The intersection is presently controlled by a STOP sign for eastbound traffic on West Market Street and a STOP sign for southbound traffic on Franklin Boulevard. The northbound movement is currently uncontrolled.

The accident records for this location reveal a total of six accidents over the three year analysis period, four of which were right angle incidents, one involved a vehicle backing into another and the remaining one involved a southbound motor vehicle in a collision with a bicyclist. During the course of our observations, it was noted that there was a significant number of school children in the immediate area, as well as several bicyclists. In order to enhance overall safety at this location, it is recommended that STOP signs be added on both the northbound and southbound approaches on Laurelton Boulevard and that the northbound sign be supplemented with a panel

advising motorists that traffic from the left does not stop. It is also recommended that a supplemental left side STOP sign be placed on West Market Street.

Lincoln Boulevard @ East Fulton Street

East Fulton Street is a one-way road in the westbound direction. Lincoln Boulevard is a two-way north-south roadway with a wide grass median separating opposing directions of travel. The intersection is presently controlled by a STOP sign for westbound traffic on East Fulton Street. The northbound and southbound approaches on East Fulton Street are currently uncontrolled.

The accident records for this location reveal a total of five accidents over the three year analysis period, 3 of which were right angle incidents one involved a southbound motor vehicle in a collision with a northbound turning left, and the remaining one involved a westbound motor vehicle hitting a pedestrian just west of the intersection. It is noted that all of the incidents, with the exception of the pedestrian accident, involved southbound vehicles. This is consistent with the accident experience at many of the study locations and we believe it is attributable to the presence of the wide grass median and the confusion that this feature creates, particularly for drivers who are unfamiliar with the area. Since Lincoln Boulevard leads directly from Park Avenue to the Long Beach Medical Center, it is utilized regularly by many people from outside of the area. Therefore, in order to enhance safety, it is recommended that STOP signs be added to control the northbound and southbound approaches on Lincoln Boulevard and that the southbound STOP sign be supplemented with a panel advising motorists that traffic from the left does not stop.

Magnolia Boulevard @ West Pine Street

West Pine Street is a one-way road in the eastbound direction approaching Magnolia Boulevard from the west and one-way in the westbound direction approaching from the east. Magnolia Boulevard is a two-way north-south roadway on which opposing directions of travel are separated with a wide area containing head-to-head diagonal parking. The intersection is presently controlled by STOP signs on all approaches.

The accident records reveal a total of 8 accidents at or near this all-way STOP control intersection, but none of these incidents was a right angle collision. Several of the incidents involved parked vehicles and/or vehicles backing into others. Two incidents involved motor vehicles hitting bicyclists, one of which was at the intersection and the other a short distance east of the intersection. Based on our review of the accident records, there is no specific recommendation for action at this intersection.

Grand Boulevard @ West Walnut Street

West Walnut Street is a one-way road in the eastbound direction. Grand Boulevard is a two-way north-south roadway with a wide grass median separating opposing directions of travel. The intersection is presently controlled by a STOP sign for eastbound traffic on West Walnut Street and STOP signs for northbound and southbound traffic on Grand Boulevard.

The accident records reveal a total of four incidents during the analysis period, including one rear end accident, one incident involving a parked vehicle, one involving a northbound vehicle and a southbound vehicle turning left and the remaining one was a right angle collision involving a vehicle travelling the wrong way on West Walnut Street. Based on our review of the accident records, there is no specific recommendation for action at this intersection.

Monroe Boulevard @ East Market Street

East Market Street is a one-way road in the westbound direction. Monroe Boulevard is a two-way north-south roadway with no median separating opposing directions of travel. The intersection is presently controlled by a STOP sign for eastbound traffic on East Market Street and STOP signs for northbound and southbound traffic on Monroe Boulevard.

The accident records reveal a total of twelve incidents at or near this intersection, including five right angle collisions, one left turn accident, one rear-end and one incident involving a bicyclist. Of the remaining incidents three involved parked vehicles and the other was caused by a vehicle backing up. Based on our observations at this location, we believe that one of the contributing factors may be poor visibility of the existing STOP signs. Therefore, it is recommended that the trees in the vicinity of the STOP signs be trimmed and that left side supplemental STOP signs be installed on all approaches. It is also suggested that the mounting height of the signs be increased as they are sometimes blocked by parked vehicles.

Roosevelt Boulevard @ East Walnut Street

East Walnut Street is a one-way road in the eastbound direction. Roosevelt Boulevard is a two-way north-south roadway on which opposing directions of travel are separated with a grass median south of East Walnut Street and wide area containing head-to-head diagonal parking north of East Walnut Street. The intersection is presently controlled by STOP signs on all approaches.

The accident records reveal a total of six incidents at or near this intersection, including two right angle collisions, one left turn accident, one involving a vehicle hitting a fixed object, one involving a parked vehicle and one incident involving a bicyclist. Based on our review of the collision diagram, it is recommended that the existing northbound and southbound STOP signs be supplemented with panels advising motorists that traffic from the left does not stop.

Neptune Boulevard and Shore Road

Shore Road is a one-way road in the eastbound direction. Neptune Boulevard is a two-way north-south roadway with opposing directions of travel separated by a wide area containing head-to-head diagonal parking. Neptune Boulevard terminates in a dead-end at the boardwalk just south of Shore Road. The intersection is presently controlled by a STOP sign for eastbound traffic on Shore Road and a STOP sign for northbound traffic on Neptune Boulevard.

The accident records reveal a total of 9 incidents at or near this intersection, three of which involved parked vehicles, four involving vehicles backing, one involving a fixed object and one involving a bicyclist. Based on our review of the accident records, there is no specific recommendation for action at this intersection.

Riverside Boulevard @ Beech Street

Beech Street is the only two-way road between Park Avenue to the north and Broadway to the south. Riverside Boulevard is a two-way north-south roadway with a wide grass median separating opposing directions of travel. The intersection is presently controlled by STOP signs on all approaches.

The accident records reveal a total of 10 incidents at or near this intersection, six of which were right angle incidents, two involved left turn vehicles, one involved a U-turn and one involved a

bicyclist. Based on our review of the collision diagram, it is recommended that the existing northbound and southbound STOP signs be supplemented with panels advising motorists that traffic from the left does not stop.

Monroe Boulevard @ Olive Street

Olive Street is a one-way road in the westbound direction. Monroe Boulevard is a two-way north-south roadway with a wide grass median separating opposing directions of travel. The intersection is presently controlled by a STOP sign for westbound traffic on Olive Street and a STOP sign for southbound traffic on Monroe Boulevard.

The accident records reveal a total of 5 incidents at or near this intersection, three of which were right angle incidents, one involving left turns, and one involving a bicyclist which ultimately resulted in a fatality. In order to reduce the potential for right angle incidents in the future, it is recommended that a STOP sign be added to control the northbound Monroe Boulevard approach. It is also recommended that a supplemental left side STOP sign be posted on Olive Street and that the existing northbound STOP sign, as well as the recommended southbound STOP sign be supplemented with panels advising motorists that traffic from the left does not stop.

Park Avenue Signalization

Another specific task that was undertaken as part of our assessment was a review of the traffic signal timing and signal coordination along Park Avenue. The objective of this task was to determine if the local east-west roads are being utilized as by-pass routes due to the signal timing and apparent lack of coordination along this main arterial street. In conjunction with this task, several travel time runs were made along Park Avenue at various times of day and compared to the times using the local streets. We found that the total travel time in each direction consistently ranged from just under 7 minutes to a little over 8 minutes. The travel times in the early morning hours before the majority of the businesses are open are slightly less, as might be expected. However, we found that the overall travel time utilizing the local east-west streets was essentially the same. Perhaps more significant than the travel time is the fact that we were stopped at six or seven signals each time, regardless of direction. Effectively, with the current timing parameters, it is difficult to progress more than three or four blocks without stopping. Although we have been unable to obtain the signal timing parameters from Nassau County as of the preparation of this report, it is clear from our observations that the coordination of the signals can be improved to provide a more favorable progression and reduce the number of times that motorists must stop.

In spite of the above, it is our opinion that improvement of the signal timing will not have any measurable impact on the volume of traffic on the local street network. The driving experience on Park Avenue, regardless of the signal timing is relatively unpleasant and stressful due to the side friction from parked vehicles, double parking, mid-block pedestrian crossing, and perceived congestion. Based on our experience, we believe that most area residents, as well as visitors to the area, will continue to avoid Park Avenue even if the traffic signal coordination is improved. This

is not to say that the City should not pursue the timing issue with the Nassau County DPW. Any improvement in the traffic progression on Park Avenue would be beneficial and, over the long term, can only serve to encourage use of this thoroughfare in lieu of the local streets.

NOTE: The City and the County met to discuss available options on improving the sequencing or traffic signal timing on Park Ave. The County is currently evaluating traffic signal timing alternatives to improve the flow of traffic on Park Ave.

Recommendations

In addition to the specific recommendations for the ten locations described above, based on our observations we have developed several recommendations for consideration by City officials. The first of these is to review the existing STOP sign posting at all intersections to ensure that the signs are clearly visible to approaching motorists. It was obvious during our observations that parked vehicles, particularly vans and large SUV's can obstruct the view of oncoming motorists if they are parked too close to the corner. Since parking in Long Beach is at a premium, it is not practical to post parking restrictions at most locations. Therefore, either raising the height of the STOP signs or adding a supplemental sign on the left side of the approach is suggested on a case-by-case basis to correct such a condition. Furthermore, because of the overall lack of consistency in terms of the placement of STOP signs and the resulting confusion on the part of motorists, it is recommended that all-way STOP control be implemented at most intersections within the City, as depicted on Table 1 as well as the attached GIS map.

Finally, during the course of our observations, we noted the need for review and upgrade of the existing school signing throughout the City, as well as the need to upgrade pedestrian crossing signs and crosswalk markings at numerous locations.

City of Long Beach
Proposed STOP Sign Locations

<u>Intersection</u>	<u>Location</u>	<u>Controlling Traffic</u>
Bay Drive and Lafayette Boulevard	SEC(Southeast Corner)	Northbound
Bay Drive and Laurelton Boulevard	SEC	Northbound
Broadway and Coolidge Avenue	NWC(Northwest Corner)	Southbound
Broadway and Cleveland Avenue	NWC	Southbound
Broadway and Maple Boulevard	SEC	Northbound
Broadway and Mitchel Avenue	NWC	Southbound
Chester Street and Franklin Boulevard	SEC	Northbound
Chester Street and Laurelton Boulevard	SEC	Northbound
Chester Street and Lincoln Boulevard	NWC	Southbound
Chester Street and Lincoln Boulevard	SEC	Northbound
Chester Street and Washington Boulevard	NWC	Southbound
Chester Street and Washington Boulevard	SEC	Northbound
Fulton Street and Franklin Boulevard	NWC	Southbound
Fulton Street and Franklin Boulevard	SEC	Northbound
Fulton Street and Lafayette Boulevard	NWC	Southbound
Fulton Street and Lafayette Boulevard	SEC	Northbound
Fulton Street and Laurelton Boulevard	NWC	Southbound
Fulton Street and Laurelton Boulevard	SEC	Northbound
Fulton Street and Lincoln Boulevard	SEC	Northbound
Fulton Street and Magnolia Boulevard	SEC	Northbound
Fulton Street and National Boulevard	SEC	Northbound
Fulton Street and Washington Boulevard	NWC	Southbound
Fulton Street and Washington Boulevard	SEC	Northbound
Harrison Street and Neptune Boulevard	NWC	Southbound
Harrison Street and Neptune Boulevard	SEC	Northbound
Hudson Street and Lindell Boulevard	NWC	Southbound
Market Street and Franklin Boulevard	SEC	Northbound
Market Street and Lafayette Boulevard	NWC	Southbound
Market Street and Lafayette Boulevard	SEC	Northbound
Market Street and Laurelton Boulevard	NWC	Southbound
Market Street and Laurelton Boulevard	SEC	Northbound
Market Street and Magnolia Boulevard	NWC	Southbound
Market Street and Washington Boulevard	NWC	Southbound
Market Street and Washington Boulevard	SEC	Northbound
Olive Street and Edwards Boulevard	SEC	Northbound
Olive Street and Lafayette Boulevard	SEC	Northbound
Olive Street and Laurelton Boulevard	SEC	Northbound
Olive Street and Magnolia Boulevard	SEC	Northbound
Olive Street and Monroe Boulevard	SEC	Northbound
Olive Street and National Boulevard	SEC	Northbound
Olive Street and Neptune Boulevard	SEC	Northbound

Intersection**Location****Controlling Traffic**

Olive Street and New York Avenue	NEC(Northeast Corner)	Westbound
Olive Street and New York Avenue	SEC	Northbound
Olive Street and New York Avenue	NWC	Southbound
Olive Street and Riverside Boulevard	SEC	Northbound
Olive Street and Washington Boulevard	SEC	Northbound
Park Avenue and Alabama Street	SEC	Northbound
Park Avenue and Arizona Avenue	SEC	Northbound
Park Avenue and California Street	SEC	Northbound
Park Avenue and Florida Street	SEC	Northbound
Park Avenue and Kentucky Street	SEC	Northbound
Park Avenue and Louisiana Street	SEC	Northbound
Park Avenue and Michigan Avenue	SEC	Northbound
Park Avenue and Nebraska Street	SEC	Northbound
Park Avenue and New Hampshire Street	SEC	Northbound
Park Avenue and Oregon Street	SEC	Northbound
Park Avenue and Tennessee Avenue	SEC	Northbound
Park Avenue and Vermont Avenue	SEC	Northbound
Park Avenue and Wisconsin Street	SEC	Northbound
Park Avenue and Wyoming Avenue	SEC	Northbound
Penn Street and Edwards Boulevard	NWC	Southbound
Penn Street and Franklin Boulevard	NWC	Southbound
Penn Street and Lafayette Boulevard	NWC	Southbound
Penn Street and Laurelton Boulevard	NWC	Southbound
Penn Street and Lincoln Boulevard	NWC	Southbound
Penn Street and Lindell Boulevard	NWC	Southbound
Penn Street and Magnolia Boulevard	NWC	Southbound
Penn Street and Monroe Boulevard	NWC	Southbound
Penn Street and National Boulevard	NWC	Southbound
Penn Street and Neptune Boulevard	NWC	Southbound
Penn Street and Riverside Boulevard	NWC	Southbound
Penn Street and Roosevelt Boulevard	NWC	Southbound
Penn Street and Washington Boulevard	NWC	Southbound
Pine Street and Doyle Street	NWC	Southbound
Pine Street and Doyle Street	SWC (Southwest Corner)	Eastbound
Pine Street and Doyle Street	SEC	Northbound
Pine Street and Heron Street	NWC	Southbound
Pine Street and Heron Street	SWC	Eastbound
Pine Street and Kerrigan Street	NWC	Southbound
Pine Street and Kerrigan Street	SWC	Eastbound
Pine Street and Laurelton Boulevard	NWC	Southbound
Pine Street and Laurelton Boulevard	SEC	Northbound
Pine Street and Vinton Street	NEC	Westbound
Pine Street and Clark Street	SWC	Eastbound

Intersection**Location****Controlling Traffic**

Shore Road and Franklin Boulevard	NWC	Southbound
Shore Road and Lincoln Boulevard	NWC	Southbound
Shore Road and Monroe Boulevard	NWC	Southbound
Shore Road and Monroe Boulevard	SEC	Northbound
Shore Road and Neptune Boulevard	NWC	Southbound
Shore Road and Pacific Boulevard	NWC	Southbound
Shore Road and Roosevelt Boulevard	NWC	Southbound
State Street and Franklin Boulevard	SWC	Eastbound
State Street and Franklin Boulevard	NEC	Westbound
State Street and Lincoln Boulevard	SEC	Northbound
State Street and Neptune Boulevard	NWC	Southbound
State Street and Neptune Boulevard	SWC	Eastbound
State Street and Neptune Boulevard	NEC	Westbound
State Street and Neptune Boulevard	SEC	Northbound
Walnut Street and Atlantic Avenue	SEC	Northbound
Walnut Street and Harding Avenue	SEC	Northbound
Walnut Street and Laurelton Boulevard	NWC	Southbound
Walnut Street and Lindell Boulevard	NWC	Southbound
Walnut Street and Magnolia Boulevard	NWC	Southbound
Walnut Street and Maple Boulevard	NWC	Southbound
Walnut Street and Maple Boulevard	SEC	Northbound
Walnut Street and Wilson Boulevard	SEC	Northbound
Walnut Street and Franklin Boulevard	NWC	Southbound

