



CITY COUNCIL AGENDA REPORT

MEETING DATE: MARCH 3, 2009

ITEM NUMBER: _____

SUBJECT: REVIEW OF STOP SIGN REQUESTS – BROADWAY/WESTMINSTER AVENUE & 20TH STREET/FULLERTON AVENUE

DATE: FEBRUARY 19, 2009

FROM: DEPARTMENT OF PUBLIC SERVICES – TRANSPORTATION SERVICES DIVISION

PRESENTATION BY: RAJA SETHURAMAN, MANAGER, TRANSPORTATION SERVICES

FOR FURTHER INFORMATION CONTACT: RAJA SETHURAMAN, MANAGER,
TRANSPORTATION SERVICES (714) 754-5032

RECOMMENDATION:

Direct staff for appropriate action regarding the installation of four-way stop controls at the intersections of Broadway/Westminster Avenue and 20th Street/Fullerton Avenue.

BACKGROUND:

The City Council, at their meeting of January 20, 2009, received a staff report regarding traffic conditions and possible installation of four-way stop controls at the intersections of Monrovia Avenue/Arbor Street, Broadway/Westminster Avenue, 20th Street/Fullerton Avenue, and 21st Street/Elden Avenue. These intersections had been reviewed for the same purpose in previous years by Transportation Services Division staff and found to be well below the minimum thresholds established by the Manual on Uniform Traffic Control Devices (MUTCD) and adopted by the California Department of Transportation (Caltrans) for installation of four-way stop controls.

As a result of resident input and further consideration by the City Council, staff was directed to install four-way stop controls at the intersection of Monrovia Avenue/Arbor Street. Installation of crosswalks was considered, but since there are no handicap access ramps or sidewalks on either street to provide connectivity, crosswalks are not recommended at this time. However, stop bars will be installed at all four approaches. The existing red curb on Monrovia Avenue, north of Arbor Street was extended to enhance visibility of approaching traffic in this area. This installation was completed on February 10, 2009.

Staff was also directed to return to City Council at their March 3, 2009, meeting for further consideration of four-way stop signs at the intersections of Broadway/Westminster Avenue and 20th Street/Fullerton Avenue. No further action was recommended by the City Council regarding the intersection of 21st Street/Elden Avenue; therefore, no changes will be made to existing traffic controls at that location.

ANALYSIS:

Staff follows standardized criteria established by the MUTCD and Caltrans to determine if the installation of four-way stop controls may be recommended. The stop warrant analysis includes an evaluation of approaching traffic volume from all directions, the balance of the approach volumes between the major and minor streets, the prevailing speed of vehicles, a review of traffic accidents over the past 12 months, and a field review for any unusual conditions that may otherwise affect traffic safety. Where traffic conditions are found to exceed the minimum thresholds, staff recommends the installation of stop controls as a necessary measure to ensure traffic safety. Where traffic conditions fall below the minimum thresholds, staff does not generally support the installation of stop controls.

In order to provide the Council with the most current data at the intersections of Broadway/Westminster Avenue and 20th Street/Fullerton Avenue, staff has reviewed and updated all relevant information relating to the analysis of traffic conditions at the following two intersections:

Broadway/Westminster Avenue:

This specific intersection has been studied on several occasions during the past few years. Past analyses were conducted in 2003, 2005, and 2007. Each one of the analyses resulted in similar staff findings that the intersection did not meet the minimum warrants for the stop sign installation. Staff has determined that there are no unusual conditions that require significant changes in traffic controls. As a result of an earlier analysis, a number of other traffic control measures were identified and implemented on Broadway. These measures included additional speed limit postings and pavement legends, centerline striping modifications, and the addition of bicycle lanes.

The location is within a residential environment, not adjacent to any school, and the existing red curb provides good visibility for pedestrian crossings. Bicycle lanes on Broadway provide linkage to bicycle lanes on Santa Ana Avenue, as well as narrowed travel lanes to discourage speeding. **Attachment 1** shows the location and photographs of the Broadway/Westminster intersection.

In response to the most recent City Council inquiry, new traffic data was collected in January 2009 to determine if any significant changes have occurred that may warrant modifications to the existing traffic control devices on Broadway. The result shows that the level of traffic volume falls well below the minimum standards for installation of multi-way stop controls. Details of the analysis are discussed below and are summarized on **Attachment 2**.

Balance of Traffic:

The four-way stop control analysis utilizes traffic volume data collected for the highest eight-hour period of traffic activity. The approaching traffic volume on Broadway in the vicinity of Westminster Avenue is approximately 1,800 vehicles during the highest eight-hour period and traffic volume on Westminster Avenue approaching Broadway is approximately 430 vehicles. This volume balance is approximately 81% versus 19% of

approaching traffic from the major street versus the minor cross street respectively, and is well below the minimum criteria of 60% versus 40% balance or better.

At the January 20, 2009, City Council meeting, several residents indicated that the traffic volumes on Broadway have increased with the recent installation of a traffic signal at 17th Street/Westminster Avenue. However, the recent counts conducted in January 2009 indicate that there is no significant change in traffic volumes on Westminster Avenue compared to earlier counts.

Minimum Volume:

Average hourly approaching traffic volume on each street measured for the highest eight-hour period must exceed minimum criteria before multi-way stop controls may be recommended. Average hourly approaching traffic volume on Broadway is approximately 225 vehicles per hour, which is below the minimum criteria threshold of 300 vehicles per hour. Average hourly approaching traffic volume on Westminster Avenue is approximately 66 vehicles per hour (including pedestrian and bicycle traffic). This is also below the minimum threshold of 200 vehicles per hour for consideration of four-way stop signs.

Speed of Traffic:

The posted speed limit on Broadway is 25 miles per hour. The most recent speed survey conducted on Broadway in February 2007 indicates the 85th percentile speed as 35.3 miles per hour. The 85th percentile speed is the speed at which 85 percent of the drivers drive safely and comfortably and is the legal basis to determine speed limits in accordance with the State of California regulations. As a result of many residential neighborhood traffic studies, staff has found that the 25 miles per hour prima facie speed limit is frequently exceeded by as much as five to 10 miles per hour. Speeds in this range, while not desirable, are not uncommon, and represent typical conditions in many residential neighborhoods. The analysis for four-way stop controls includes consideration of speed as a factor in the determination of the need for stop signs, only when the 85th percentile speed exceeds 40 miles per hour.

Traffic Accidents:

While MUTCD and Caltrans regulations only specify the review of traffic accidents for a twelve-month period, staff routinely examines accident history for the past three years to determine if there is any pattern to reported accidents. Minimum MUTCD and Caltrans warrants relating to accident frequency are five or more accidents in a twelve-month period.

A review of traffic accident records for the past twelve months reveals one reported accident at this intersection. The accident involved a southbound vehicle from Westminster Avenue entering Broadway in front of a vehicle eastbound on Broadway. No injuries were reported as a result of the accident. No other accidents have occurred in the past three years at this location.

Field Observations:

As a part of the review process, staff has assessed the available visibility at the intersection. Red curb exists on Broadway at two corners of the intersection, providing

adequate visibility. Due to the extra street width and presence of the bike lanes, adequate visibility is provided without the need for red curb on the remaining two corners. The existing traffic conditions and physical features are not uncommon and, in fact, are quite similar to, or better than, many locations within the City. Based upon staff's findings, the existing traffic controls have proven to be effective under these conditions.

As a result of this investigation, staff finds the traffic data for the intersection of Broadway/Westminster Avenue falls well below the minimum warrant threshold established by Caltrans and, therefore, does not recommend the installation of four-way stop controls at this location at this time.

20th Street/Fullerton Avenue:

This location is within a residential environment, not adjacent to any school, has little pedestrian activity crossing 20th Street, and the existing red curb provides good visibility. **Attachment 3** shows the location and photographs of the 20th Street/Fullerton Avenue intersection.

Records show that a four-way stop analysis was last conducted at this intersection in 2003. In response to recent City Council inquiries, staff collected new traffic data and completed an evaluation of traffic conditions in January 2009. The result of this most recent analysis shows that the level of traffic volume falls below the minimum State standards for installation of multi-way stop controls. Details of the analysis are discussed below and are summarized on **Attachment 4**.

Balance of Traffic:

The approaching traffic volume for the highest eight-hour period of traffic activity on 20th Street, in the vicinity of Fullerton Avenue, is approximately 1,800 vehicles, and traffic volume on Fullerton Avenue approaching 20th Street is approximately 950 vehicles. This volume balance is approximately 66% versus 34% of approaching traffic from the major street versus the minor cross street respectively, which is below the minimum criteria of 60% versus 40% balance or better.

Minimum Volume:

Average hourly approaching traffic volume on 20th Street is approximately 227 vehicles per hour, which is below the minimum threshold of 300 vehicles per hour. Average hourly approaching traffic volume on Fullerton Avenue is approximately 131 vehicles per hour (including pedestrian and bicycle traffic). This is also below the minimum threshold of 200 vehicles per hour.

Speed of Traffic:

The posted speed limit on 20th Street is 25 miles per hour. A recent speed survey conducted in January 2009 indicates the 85th percentile speed is 35.4 miles per hour. The analysis for four-way stop controls includes consideration of speed as a factor in the determination of the need for stop signs only when the 85th percentile speed exceeds 40 miles per hour.

Traffic Accidents:

A review of traffic accident records for the past twelve months reveals one reported accident at this intersection in 2008. The accident involved a vehicle traveling at excessive speed and veering off the roadway to avoid a vehicle legally within the intersection. In 2007 there were four reported accidents. Three of these were broadside collisions involving vehicles entering either northbound or southbound from Fullerton Avenue in front of vehicles eastbound or westbound on 20th Street. The fourth accident involved a bicyclist on Fullerton Avenue who failed to stop at the stop sign and collided with a vehicle on 20th Street. No injuries were reported as a result of any of the accidents, except for the accident involving the bicyclist. Minimum MUTCD and Caltrans warrants relating to accident frequency are five or more accidents in a twelve-month period.

Field Observations:

As a part of the review process, staff has assessed the available visibility at the intersection. Red curb exists on 20th Street at all four corners of the intersection to provide adequate visibility. The existing traffic conditions and physical features are not uncommon and, in fact, are quite similar to many other locations within the City. Based upon staff's findings, the existing traffic controls have proven to be effective under these conditions.

As a result of this investigation, staff finds the traffic data falls well below the minimum warrant threshold established by MUTCD and Caltrans and, therefore, does not recommend the installation of four-way stop controls at the intersection of 20th Street and Fullerton Avenue at this time.

Summary:

The purpose of stop signs is to eliminate vehicular conflicts at intersections where the volume of intersecting traffic is approximately equal and assignment of right-of-way is necessary to prevent accidents. The installation of stop controls is not recommended for the purpose of reducing vehicle speeds. When properly placed, stop signs can provide increased safety where frequent vehicle conflicts are evident. Installation of stop signs at locations where traffic conditions do not meet the minimum state standards may, in fact, result in potential safety hazards. These minimum standards are established to maintain consistency in application and emphasize to the driving public of the justifiable and real need to stop. Based on the above analysis staff, therefore, does not recommend the installation of four-way stop controls at either intersection.

ALTERNATIVES CONSIDERED:

One alternative is to direct the installation of four-way stop controls at the subject intersections. However, this action will not be consistent with minimum MUTCD or Caltrans requirements for installation of stop controls.

Another alternative is to direct staff to continue monitoring the intersections for future developments that may result in meeting the minimum warrants for stop controls.

FISCAL REVIEW:

Other than material and staff time, estimated at \$3,000 and sixteen hours respectively, no significant fiscal impact to the City will result from the installation of four way stop controls at the subject intersections.

LEGAL REVIEW:

No legal review is required on this report. However, installation of “unwarranted” traffic controls may present a certain increased liability for the City.

CONCLUSION:

Following a thorough analysis, the Transportation Services Division finds that existing traffic conditions at the intersections of Broadway/Westminster Avenue and 20th Street/Fullerton Avenue fall below the minimum state warrant thresholds for four-way stop controls. Staff, therefore, does not recommend the installation of multi-way stop controls at these intersections.

RAJA SETHURAMAN
Transportation Services Manager

PETER NAGHAVI
Director, Department of Public Services

- ATTACHMENTS:
- 1 [Broadway/Westminster Avenue - Location Map & Photos](#)
 - 2 [Broadway/Westminster Avenue - Stop Warrant Analysis](#)
 - 3 [20th Street/Fullerton Avenue - Location Map & Photos](#)
 - 4 [20th Street/Fullerton Avenue - Stop Warrant Analysis](#)

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