TRAFFIC ENGINEERING STAFF REPORT

Agenda Item 4.b. **Solar Powered LED Stop Signs at Gilbert Street and Lampson Avenue, May 2, 2010**

OBJECTIVE

To consider a request to install solar powered LED stop signs at the intersection of Gilbert Street and Lampson Avenue.

BACKGROUND

The City of Garden Grove has received a letter from the Central Garden Grove Neighborhood Association (CGGNA) to install solar powered LED stop signs at the intersection of Gilbert and Lampson. The letter references the recent installation of these signs installed by the City of Anaheim at the intersection of Orangewood Loara.

DISCUSSION

The signs installed at the intersection of Orangewood and Loara are solar powered light emitting diode (LED) units. The LED's are placed along the border of the stop sign and flash simultaneously at a rate of 50 to 60 times per minute. The signs are Manual on Uniform Traffic Control Devices (MUTCD) approved. They cost $1,860 per sign. The intersection of Gilbert and Lampson requires four signs for a total cost of $7,440.

Staff reviewed the collision history at the intersection to see if there is a safety issue. Staff reviewed the data looking at the total number of accidents as well as determining the number of accidents possibly attributed to the existing stop signs. Over a nearly 6-year period there were only eleven accidents at the intersection. Five of those eleven accidents were attributed to signage; however, this designation includes the failure of the driver to obey the stop sign, as well as the right-of-way, once stopped. Staff field reviewed the intersection and found all the existing stop signs visible. Also, there are advanced "STOP AHEAD" signs and pavement legends on all four approaches.

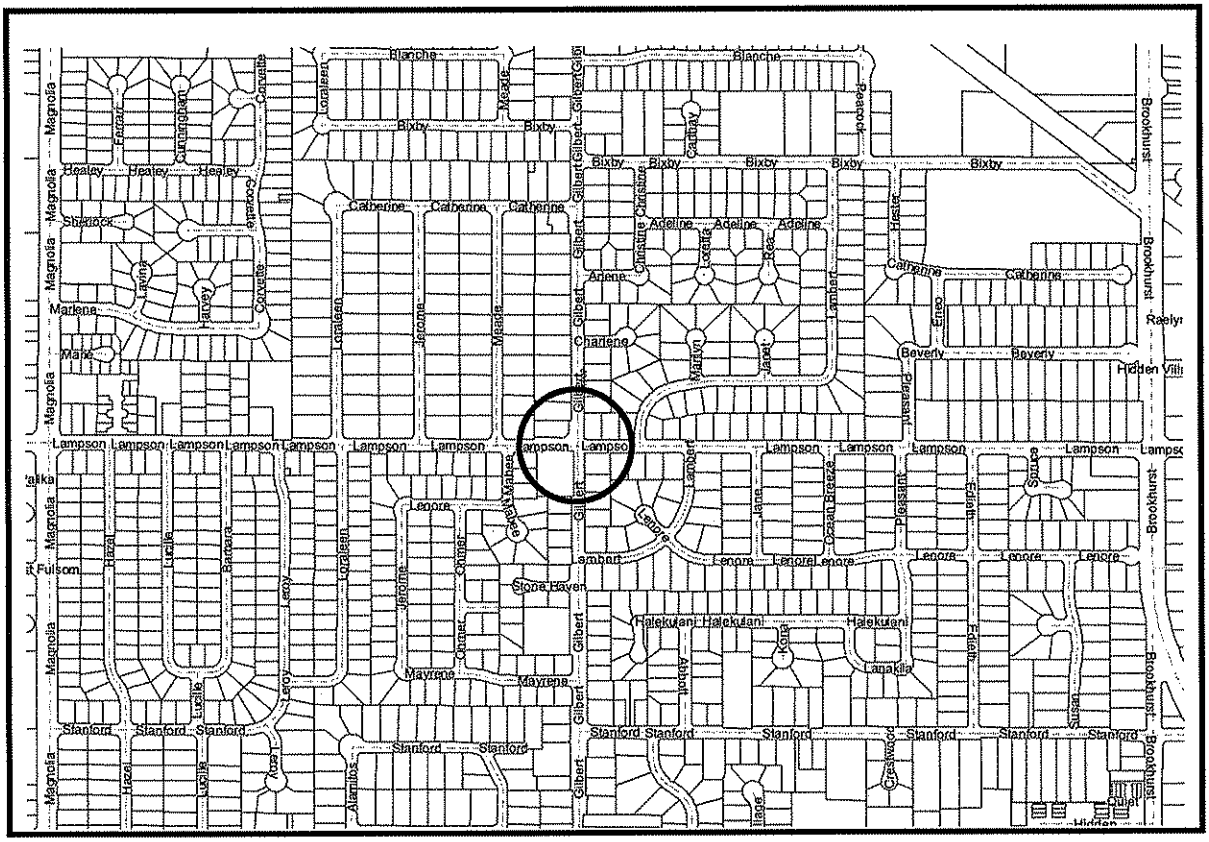
RECOMMENDATION

It is recommended that the Traffic Commission receive public input and approve staff's recommendation to deny the request to install blinking stop signs at the intersection of Gilbert Street and Lampson Avenue.

Dan Candelaria, P.E., T.E.
Executive Secretary

Attachments: Vicinity Map
Letter dated March 16, 2010 from CGGNA
MUTCD excerpt
Traffic Collision History Report

LOCATION MAP



Agenda Item 4.b

N

Central Garden Grove Neighborhood Association
P. O. Box 1879
Garden Grove, CA 92842
Cggna.org

March 16, 2010

Dan Candelaria, Senior Traffic Engineer
P.O. Box 3070
Garden Grove, CA 92842

Dear Mr. Candelaria,

This is a request to install solar powered blinking stop signs at the intersection of Gilbert and Lampson. Our board is interested in improving the traffic safety in Garden Grove. The solar powered blinking stop signs are an efficient and cost effective way to decrease traffic accidents and increase traffic safety. The blinking stop signs are estimated at a couple of thousand each as compared to traffic signals, whose costs are in the hundreds of thousands of dollars.

The idea to request these blinking stop signs occurred to me as I recently passed through the intersection at Orangewood and Loara in Anaheim. Unfortunately, a 9-year-old boy was killed at that intersection due to lack of visibility by a driver in a tall off road-type truck. Blinking stop signs at that intersection might have prevented this unfathomably tragic loss of life.

I believe that the Gilbert-Lampson intersection would meet the guidelines for traffic volume and potential traffic incidents to warrant the granting of this modest request.

Please research and forward this request to the Traffic Commission. For additional information, please go to the following: http://www.blinkersign.com/

Thank you for your serious consideration of this request.

Sincerely,

Robin Marcario, Central Garden Grove Neighborhood Association

Information regarding the design and application of portable changeable message signs in temporary traffic control zones is contained in Section 6F.55. Section 1A.14 contains information regarding the use of abbreviations on traffic control devices, including changeable message signs.

Option:

Changeable message signs (including portable changeable message signs) that display a regulatory or warning message may use a black background with a white, yellow, orange, red, or fluorescent yellow-green legend as appropriate, except where specifically restricted in this Manual for a particular sign.

Changeable message signs, both permanent and portable, may be used by State and local highway agencies to display safety or transportation-related messages. State and local highway agencies may develop and establish a policy regarding the display of safety and transportation-related messages on permanent and changeable message signs that specifies the allowable messages and applications, consistent with the provisions of this Manual.

Support:

Examples of safety messages include SEAT BELTS BUCKLED? and DON'T DRINK AND DRIVE. Examples of transportation-related messages include STADIUM EVENT SUNDAY, EXPECT DELAYS NOON TO 4 PM and OZONE ALERT CODE RED—USE TRANSIT.

Guidance:

When a changeable message sign is used to display a safety or transportation-related message, the requirements of Section 6F.55 should be followed. The message should be simple, brief, legible, and clear. A changeable message sign should not be used to display a safety or transportation-related message if doing so would adversely affect the respect for the sign. "CONGESTION AHEAD" or other overly simplistic or vague messages should not be displayed alone. These messages should be supplemented with a message on the location or distance to the congestion or incident, how much delay is expected, alternative route, or other similar messages.

Standard:

When a changeable message sign is used to display a safety or transportation-related message, the display format shall not be of a type that could be considered similar to advertising displays. The display format shall not include animation, rapid flashing, or other dynamic elements that are characteristic of sports scoreboards or advertising displays.

Section 2A.08 Retroreflectivity and Illumination

Support:

There are many materials currently available for retroreflection and various methods currently available for the illumination of signs. New materials and methods continue to emerge. New materials and methods can be used as long as the signs meet the standard requirements for color, both by day and by night.

Standard:

Regulatory, warning, and guide signs shall be retroreflective or illuminated to show the same shape and similar color by both day and night, unless specifically stated otherwise in the text discussion in this Manual of a particular sign or group of signs.

The requirements for sign illumination shall not be considered to be satisfied by street or highway lighting.

Guidance:

All overhead sign installations should be illuminated unless an engineering study shows that retroreflection will perform effectively without illumination.

Option:

Sign elements may be illuminated by the means shown in Table 2A-1.

Retroreflection of sign elements may be accomplished by the means shown in Table 2A-2.

~~Light Emitting Diode (LED) units may be used individually within the face of a sign and in the border of a sign, except for Changeable Message Signs, to improve the conspicuity, increase the legibility of sign legends and borders, or provide a changeable message. Individual LED pixels may be used in the border of a sign.~~

Light Emitting Diode (LED) units may be used in the border of a STOP or warning signs, except for Changeable Message Signs, to improve the conspicuity of signs.

Standard:

~~**If used, the LEDs shall be the same color as the sign legend, border, or background. If flashed, all LED units shall flash simultaneously at a rate of more than 50 and less than 60 times per minute. The uniformity of the sign design shall be maintained without any decrease in visibility, legibility, or driver comprehension during either daytime or nighttime conditions.**~~

~~**A module of multiple LED units used as a closely spaced, single light source shall only be used within the sign face for legends or symbols.**~~

If used, the LEDs shall be red for STOP signs and yellow for warning signs. All LED units shall flash simultaneously at a rate of more than 50 and less than 60 times per minute. The uniformity of the sign design shall be maintained without any decrease in visibility, legibility, or driver comprehension during either daytime or nighttime conditions.

Support:

Information regarding the use of retroreflective material on the sign support is contained in Section 2A.21.

Section 2A.09 Minimum Retroreflectivity Levels

Support:

(This section is reserved for future text based on FHWA rulemaking.)

Section 2A.10 Shapes

Standard:

Particular shapes, as shown in Table 2A-3, shall be used exclusively for specific signs or series of signs, unless specifically stated otherwise in the text discussion in this Manual for a particular sign or class of signs.

Section 2A.11 Sign Colors

Standard:

The colors to be used on standard signs and their specific use on these signs shall be as indicated in the applicable Sections of this Manual. The color coordinates and values shall be as described in 23 CFR, Part 655, Subpart F, Appendix.

Support:

As a quick reference, common uses of sign colors are shown in Table ~~2A-4~~ 2A-4(CA). Color schemes on specific signs are shown in the illustrations located in each appropriate Section.

Whenever white is specified herein as a color, it is understood to include silver-colored retroreflective coatings or elements that reflect white light.

The colors coral, purple, and light blue are being reserved for uses that will be determined in the future by the Federal Highway Administration.

Information regarding color coding of destinations on guide signs is contained in Section 2D.03.

Section 2A.12 Dimensions

Support:

Sign sizes for use on the different classes of highways are shown in Sections 2B.03, 2C.04, 2D.04, 5A.03, 6F.02, 7B.01, 8B.02, and 9B.02, and in the "Standard Highway Signs" book.

The "Standard Highway Signs" book (see Section 1A.11) prescribes design details for up to five different sizes depending on the type of traffic facility, including bikeways. Smaller sizes are designed to be used on bikeways and some other off-road applications. Larger sizes are designed for use on freeways and expressways, and can also be used to enhance road user safety and convenience on other facilities, especially on multi-lane divided highways and on undivided highways having five or more lanes of traffic and/or high speeds. The intermediate sizes are designed to be used on other highway types.