

CITY OF SAN MARINO

MEMORANDUM

TO: CHAIR HALE AND MEMBERS OF THE
TRAFFIC ADVISORY COMMISSION

FROM: ERIK ZANDVLIET, TRAFFIC ENGINEER

DATE: SEPTEMBER 19, 2011

SUBJECT: NORTHWEST AREA INITIAL TRAFFIC CALMING PLAN

BACKGROUND:

At the July 19, 2010 meeting, the Traffic Advisory Commission (Commission) recommended that the City move forward with an evaluation of a traffic calming plan for the Northwest area of the City. Four primary streets were identified as follows:

1. Garfield Avenue
2. Los Robles Avenue
3. El Molino Avenue
4. Oak Knoll Avenue

The Commissioners agreed that all four streets should be addressed at the same time, and that it was important that an overall traffic calming strategy be in place before individual measures are pursued.

On October 18, 2010, an update of the traffic calming plan was given to the Commissioners, explaining that traffic counts were being conducted, and that the Traffic Engineer was evaluating prior studies and analyzing potential short-term and long-term solutions.

On February 28, 2011, the Commission held a public workshop, in which residents in the Northwest area were invited to attend and provide comments regarding issues, goals, and potential solutions for the four study streets. These comments were collected by staff and used to develop a traffic calming strategy for the Northwest area. A history of prior traffic calming measures was also presented for each of the four streets.

After extensive evaluation of the public input, current traffic conditions, collision history, enforcement activity, and potential results and consequences of possible traffic calming measures, the Traffic Engineer prepared a comprehensive plan to begin addressing the identified concerns and goals for this area. A list of possible measures was presented to the public in two Commission workshop meetings held on June 13 and 20, 2011.

After the workshops, staff reviewed comments from residents. Due to the wide range of opinion and potential for impacts on other streets, a survey questionnaire was prepared and mailed to residents along the four North-South streets in August 2011. The results were tabulated to gauge

the level of support for particular measures and to solicit additional written comments and suggestions. A Summary of the Northwest Area Traffic Calming Survey results and comments is listed in *Table 1* of this report.

The intent of this report is to finalize the initial traffic calming plan and make recommendations on the specific measures to be implemented on a trial basis. The Commission's recommendations will be forwarded to the City Council in October for their approval.

Traffic Calming Plan History

Several studies have been made regarding traffic calming in the Northwest area of the City, including:

1. Neighborhood traffic control plans prepared as part of the City's General Plan Circulation Plan update in 1995;
2. Citywide conceptual traffic management strategies prepared by the City Traffic Engineer in 2002 and 2003;
3. Los Robles Avenue Traffic Collision Study and traffic calming measures in 2007; and
4. Oak Knoll Avenue Traffic Circulation Study in 2009.

While some traffic calming measures have been implemented from these studies, there are many that were not pursued for various reasons, such as the need for further evaluation, lack of funding or resident support.

Goals and Objectives

Based on the City's Circulation Element, some of the transportation goals of the City are:

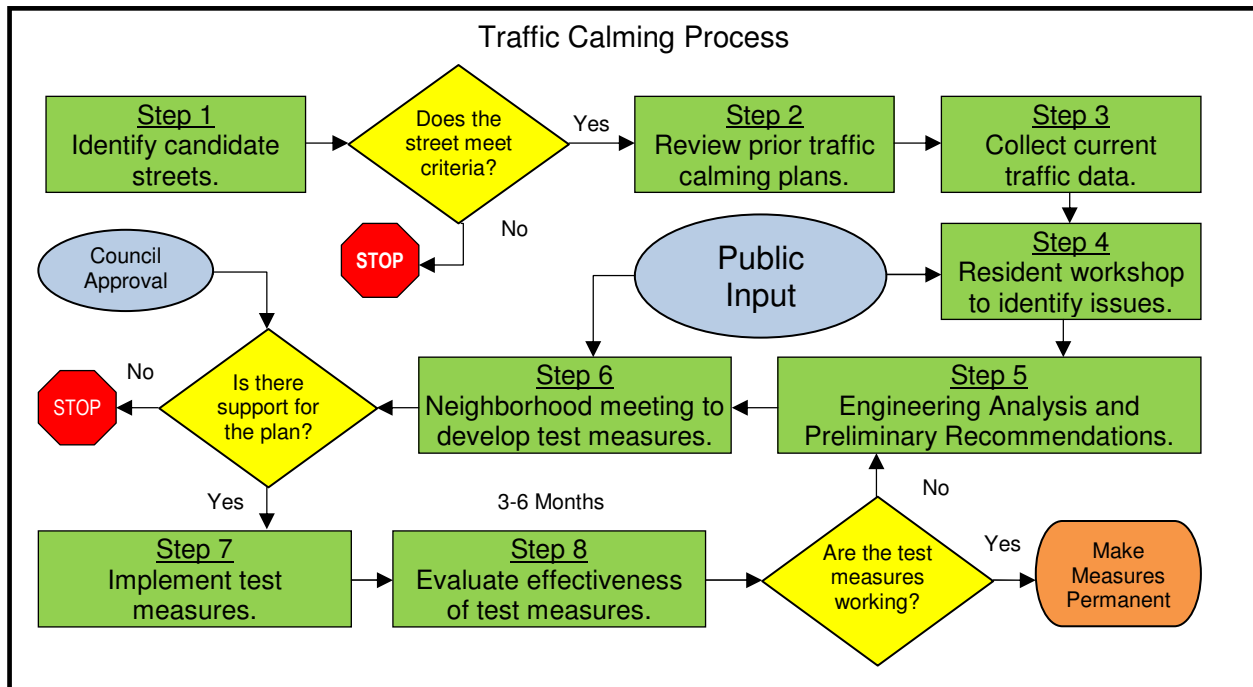
- To address issues on all streets without moving traffic from one residential street to another;
- Not to redistribute traffic between streets; and
- Develop a master plan that addresses traffic reduction, speed, safety and beautification in a comprehensive manner.

These are the goals that have been followed in preparing this traffic calming plan for the Northwest area of the City.

Methodology and Process

Pursuant to the 1995 General Plan Circulation Element and related Neighborhood Traffic Calming Plan guidelines, this report updates and develops a comprehensive neighborhood traffic calming plan for the Northwest area that conforms to the City's General Plan policies and objectives, while providing equal protection and opportunity for the individual streets within this area of the City. At the direction of the Commission, the plan has been divided into short and long-term solutions. This approach will enable the City to quickly implement a range of immediate measures that can be tested for effectiveness, while at the same time pursuing larger, more expansive measures to be considered after additional study. Future "advanced measures" will then be developed based on a citywide long term goal for the overall circulation network.

The following process has been prepared for implementation of the Northwest Traffic Calming Plan:



By following these steps, both neighborhoods and individual streets are given equal access to the neighborhood traffic calming process. There is ample opportunity for public input as well as the ability to adjust the measures to the general desire of the community. Measures that are not working can be removed, and those that are improving conditions can be made permanent. More advanced measures may be added after analyzing the potential consequences that may be anticipated by comparing the effects of less stringent measures that have already been implemented.

For the Northwest Area Traffic Calming Plan, many of these steps have already been taken. A summary of those steps already completed is listed below:

1. Identify Candidate Streets – July 2010
2. Review Prior Traffic Calming Plans – November 2010
3. Collect Current Traffic Data – October 2010 to January 2011
4. Resident Workshop to Identify Issues – February 2011
5. Engineering Analysis and Initial Recommendations – March to May 2011
6. Neighborhood Meetings to Identify Test Measures – June 2011
7. Resident Traffic Calming Survey – August 2011

This meeting is intended to finalize recommendations for the initial measures to be implemented. Upon identifying the initial test measures, the Commission’s recommendations will be forwarded to City Council for approval. Implementation of the approved measures (Step 7) is anticipated by the end of 2011. After implementation, the Traffic Engineer will conduct follow-up studies and evaluate the effectiveness of the test measures (Step 8). Those results will then be presented to the Commission for public review and comment. At that time, additional measures may be considered for further evaluation, and test measures may be made permanent or removed.

Development of the Initial Traffic Calming Plan

A list of initial traffic calming measures has been prepared for each street. Some measures address peak hour traffic flows to reduce congestion, while others are aimed at improving overall traffic safety or speeds all day. For example, certain road narrowing features will slow traffic or prevent passing on the right but will not reduce the capacity on the street. On the other hand, peak hour turn restrictions would only be effective during the peak hours, but would not affect residents during the rest of the day. Therefore, these measures have been subdivided into two groups, “Peak” and “24/7” to reflect the intended results.

While the initial traffic calming measures have been chosen to minimize any traffic diversion to other streets, there are some measures that may potentially discourage traffic from using one street in lieu of another route. If that route is an arterial street that is designed to carry high volumes, such as Huntington Drive, Fair Oaks Boulevard or Sierra Madre Boulevard, appropriate non-local traffic diversion has been achieved. However, there is a risk that diverted traffic may attempt to use one of the other three north-south collector streets that are not designated as regional thoroughfare. In these instances, several measures must be implemented together in order to prevent the traffic from spilling over onto local or collector streets. For example, some measures will increase the amount of travel time during peak hours, which could entice drivers to try another route that takes less time.

Due to the unique characteristics of each street, the effectiveness of traffic calming measures can not be predicted with any certainty. As such, a specific volume or speed reduction percentage is impossible to know before implementation, but a long history of traffic calming has shown that both physical and psychological changes occur that improve the livability of the street. To measure effectiveness, the City conducted before or “baseline” volume and speed counts on all four streets in February 2011. After the initial traffic calming measures are implemented, additional counts will be taken in the same manner. By comparing the “after” counts to the “baseline” counts, the City can determine whether certain measures are working, need modification or require supplemental measures. It will also reveal if any traffic diversion to other study streets is occurring. Advanced measures would be considered after evaluating the effectiveness of the initial measures and once the City Council has established a citywide traffic calming policy.

Resident Survey

In August 2011, the City mailed survey questionnaires to the residents with frontages along the four study streets: Garfield Avenue, Los Robles Avenue, El Molino Avenue and Oak Knoll Avenue. The survey polled the level of support for the possible traffic calming measures that had been developed through the traffic calming process. The results of the survey are shown below:

Table 1

				Northwest Area Traffic Calming Survey Results by Residents on Street Possible Measures	
In Favor	% In Favor	Opposed	% Opposed		
EL MOLINO AVENUE POSSIBLE MEASURES					
11	48%	12	52%	1. Post four-way stop signs at El Molino Avenue and Plymouth Road.	
11	50%	11	50%	2. Post 1 or 2-hour parking (8am-4pm, Mon-Sat, Except by resident permit) signs on El Molino Ave. north of Mission St.	
8	40%	12	60%	3. Post 1 or 2-hour parking (8am-4pm, Mon-Sat, Except by resident permit) signs on Doresta Road up to 500 feet east of El Molino Ave.	
10	45%	12	55%	4. Post "No Left Turn 6-9am and 4-7pm, Monday to Friday " restrictions for northbound El Molino Ave. onto Old Mill Rd.	
17	74%	6	26%	5. Deploy a mobile speed display sign on El Molino Avenue in the neighborhood on a regular basis to inform drivers of their speed.	
20	87%	3	12%	6. Conduct regular speeding and stop sign enforcement along El Molino Avenue at peak commute and school times.	
23	87%	1	4%	7. Paint high-visibility crosswalks at El Molino Avenue and Mission Street.	
13	62%	8	38%	8. Install street lighting on wood poles between Mission Street and Wilson Avenue (upon majority consent of owners).	
GARFIELD AVENUE POSSIBLE MEASURES					
3	75%	1	25%	9. Install solar powered red flashing beacons on stop signs at Garfield Ave. and Monterey Rd.	
5	100	0	0%	10. Post directional and wayfinding signs at Huntington/Atlantic/Garfield and along Huntington Drive to direct commuter traffic away from residential streets. (See plan)	
5	100	0	0%	11. Deploy a mobile speed display sign on northbound Garfield Avenue north of Oak Street on a regular basis to inform drivers of their speed.	
4	80%	1	20%	12. Pursue reduction in bus trips and frequency in early AM and PM hours.	
6	100	0	0%	13. Conduct periodic crosswalk and speed enforcement along Garfield Avenue at peak commute and school times.	
3	75%	1	25%	14. Install street lighting on wood poles along Garfield Avenue (upon majority consent of adjacent owners).	
LOS ROBLES AVENUE POSSIBLE MEASURES					
18	62%	11	38%	15. Install solar powered red flashing beacons on stop signs on Los Robles Ave. at Ashborne Dr. and Winthrop Road in the northbound and southbound directions.	
19	66%	10	34%	16. Install larger stop signs on Los Robles Ave. at Ashborne Dr. and Winthrop Road in the northbound and southbound directions.	
25	83%	5	17%	17. Post directional and wayfinding signs at Huntington/Atlantic/Garfield and along Huntington Drive to direct commuter traffic away from residential streets. (See plan.)	
16	55%	13	45%	18. Install an electronic speed awareness sign for southbound Los Robles Ave. south of Marengo Ave.	
18	60%	12	40%	19. Install an electronic speed awareness sign for northbound Los Robles Ave. north of Plymouth Rd.	
19	70%	8	30%	20. Increase the number of off-peak hours when flashing red signals operate at Monterey Rd. and Wilson Ave. (Adjust as needed to prevent significant back-up.)	
23	79%	6	21%	21. Install countdown pedestrian signal heads for crosswalks at Los Robles Ave. and Mission St.	
11	38%	18	62%	22. Post "No Left Turn 6-9am and 4-7pm, Monday to Friday " restrictions for SB Los Robles Ave. onto Old Mill Rd.	
25	86%	5	17%	23. Plant street trees along Los Robles Avenue.	
25	83%	4	14%	24. Regular enforcement of speeding and stop sign violations along Los Robles Avenue at peak commute/school times.	
14	48%	15	52%	25. Post 1 or 2-hour parking (8am-4pm, Mon-Sat, Except by resident permit) signs on Los Robles Avenue from Mission Street north to Old Mill Rd.	
14	48%	15	52%	26. Post 1 or 2-hour parking (8am-4pm, Mon-Sat, Except by resident permit) signs on Los Robles Avenue from Mission St. south to Montroble Place.	
27	87%	4	13%	27. Plant trees in entry median at Los Robles Avenue north of Huntington Drive.	
OAK KNOLL AVENUE POSSIBLE MEASURES					
6	60%	4*	40%	28. Restripe stops at Oak Knoll Avenue and Monterey Road as two separate intersections. (See plan.)	
6	67%	3*	33%	29. Adjust centerline and alternate curb parking from side to side to reduce driver perception as a straight, unrestricted street. (See plan.)	
8	80%	2	20%	30. Deploy a mobile speed display sign on northbound Oak Knoll Avenue north of Courtland Avenue on a regular basis to inform drivers of their speed.	
10	83%	2	17%	31. Pursue elimination of Metro bus route.	
9	82%	2	18%	32. Regular enforcement of speeding, oversize truck and stop sign violations along Oak Knoll Avenue.	
4	36%	7	64%	33. Install street lighting on wood poles along Oak Knoll Avenue (upon majority consent of adjacent owners).	
2	20%	8	80%	34. Remove southbound to west bound right turn lane on Oak Knoll Avenue at Huntington Dr.	
8	80%	2	20%	35. Reduce left turn green signal time from eastbound Huntington Dr. onto northbound Oak Knoll Ave.	

Note: Shaded boxes represent the majority response. * Opposed by supplemental surveys from 8 homes.

In addition to submitting opinions on measures on their own street, residents were offered the opportunity to provide opinions on measures proposed for the other three streets as well. The overall opinion of the residents on all four streets largely supported the opinion of the residents on each individual street. In addition, written comments were tabulated and reviewed by staff to help formulate the initial list of recommended measures.

Consideration of Additional Initial Measures

Granada Avenue Street Striping

On March 21, 2011, the Commission reviewed a request from residents to reduce speeding on Granada Avenue north of Huntington Drive. After reviewing the traffic study by the Traffic Engineer, and hearing from residents, the Commission supported staff's recommendation to paint parking edgelines and a painted center median on Granada Avenue in conjunction with the Northwest Area Traffic Calming Plan. Please refer to *Attachment 3* to see an image of the conceptual striping plan.

"SLOW – Children at Play" or "Watch for Driveways" Signs

In public comments received by staff, a request for "SLOW-Children at Play" signs was suggested for Los Robles Avenue. It has been long established by traffic engineering studies across the nation that "Children at Play" signs are counter-productive to the intent of the message. Therefore, these signs are not approved for use on public streets by State and Federal departments of transportation. Signs do not protect children in any physical way, and take the driver's attention away from the street. Lastly, the far greater occurrence of passing such signs without seeing any children causes the driver to ignore the sign over time.

The Traffic Engineer did notice in conducting the field study that numerous driveways along Los Robles Avenue are hidden by vegetation or curves, and a "WATCH FOR DRIVEWAYS" sign may be useful to address this condition. This sign would remind drivers of the potential for vehicles or pedestrians that may enter the street from the driveways along Los Robles Avenue.

Peak Hour Left Turn Restriction from Huntington Drive to Oak Knoll Avenue

Residents of eight homes on Oak Knoll Avenue submitted supplemental petitions supporting a reduction in green time for left turns from eastbound Huntington Drive onto northbound Oak Knoll Avenue (Measure #35). This measure could be accomplished by modifying the signal timing without causing a measureable diversion of traffic to another study street.

The petitions also requested a prohibition of the same left turns during peak hours (6:30 a.m.- 8:30 a.m. and 4:30 p.m. - 6:30 p.m.). It should be noted that such a prohibition would be considered an advanced measure, because it would physically divert traffic to other streets.

Items Excluded from the Initial Traffic Calming Plan

Commercial Parking Restrictions with Resident Permits

In response to resident comments about commercial parking intrusion in the Mission District, a parking study was conducted by the Police Department along El Molino Avenue, Doresta Road, Los Robles Avenue and Euclid Avenue, near Mission Street. Curb parking demand was tabulated hourly from 8 a.m. to 5 p.m. during the week of July 18, 2011. However, the survey response was inconclusive regarding the level of resident support for permit parking, and businesses have not been given an opportunity to provide comments about the potential loss of public parking. Therefore, it is recommended that this item be excluded from the initial traffic calming plan and considered at a separate Commission meeting.

Dips and Cross-gutters

Dips in the roadway and cross-gutters can have a traffic calming effect, but are usually limited to locations where drainage is necessary due to topography. Placing dips or cross-gutters in locations that are not required can have an adverse effect on pavement life, drainage flow, noise and ongoing maintenance. They can collect standing water and debris, and may cause drivers to make erratic movements to avoid them. They can also cause drivers to lose control and run off the road if taken too fast. Unsightly warning signs are normally needed to warn motorists of the uneven pavement because they are less visible than speed humps. For these reasons, dips and cross-gutters are not generally considered viable traffic calming devices.

Mission District Restricted Delivery Hours

Another suggestion was made to restrict the business delivery hours in the Mission District to the hours between 9 a.m. and 5 p.m., so that fewer trucks use Los Robles, El Molino Avenue and the nearby streets and alleys to service the businesses along Mission Street during peak times. Of course, any discussion of delivery hours would have to involve the businesses, and local regulations would need to be adopted into the Municipal Code. Since the business community is not aware of this proposal, the Commission could consider this suggestion as a future agenda item. It may also be possible to develop voluntary delivery hours through a cooperative agreement with the Mission District business owners.

Advanced Measures and Citywide Traffic Calming Policy

As part of the Traffic Calming process, more advanced traffic calming measures would be considered after implementation of the initial measures. Advanced measures have been defined as those that would have greater traffic diversion potential, greater adverse consequences, significant engineering design, and would require large capital expenditure and/or supplemental neighborhood funding through a property assessment. It should be noted that additional study is needed before advanced measures can be recommended, which would be predicated on the results of less intrusive measures to determine neighborhood traffic sensitivity. An environmental study may also be needed for large projects or those measures that physically redirect traffic to other streets. Many potential advanced measures were included in the June Workshop packet, and several other measures were suggested in public comments, including:

- a) Prohibition of left turns from eastbound Huntington Drive to northbound Oak Knoll Avenue during peak hours (6:30 a.m. - 8:30 a.m. and 4:30 p.m. - 6:30 p.m.);
- b) Reduction to a single Northbound lane on Los Robles Avenue at Huntington Drive;
- c) Reconfiguration of Atlantic Boulevard/Garfield Avenue/Huntington Drive intersection; and
- d) Speed humps or cushions.

Prior to the development of advanced measures, a formal citywide traffic calming policy should be adopted so that overall goals and objectives for the entire street system are identified and achieved in a deliberate manner. This way, non-local regional traffic is routed to appropriate streets both within the City and in adjacent cities. The policy may include identification of preferred commuter routes, protected local streets, target future traffic volumes, and a funding method for future advanced measures. Once a policy is in place for the City, specific volume or speed reduction goals could then be adopted for advanced traffic calming measures.

Funding

In anticipation of the need to obtain funding for traffic calming measures under development, staff proposed \$98,000 in restricted street funds in the Fiscal Year 2011-12 Capital Improvement budget. This budget has been approved by City Council and is sufficient to implement the recommended initial measures. Restricted funds include gas tax and Measure R funds. The approximate costs for the specific measures are only estimates; actual costs will vary depending on quantity and the public bidding process.

Next Steps

Upon the Commission's recommendation of initial measures, the Initial Traffic Calming Plan will be presented to the City Council for their review and approval. Those measures approved by City Council will be implemented as soon as practicable. Part of the Plan may include recommendations to pursue a citywide traffic calming policy to help guide further development of advanced measures.

RECOMMENDATION:

Traffic calming plans are developed through a partnership between residents and City representatives. The success of a Plan is largely dependent on the acceptance of the residents of the measures to be implemented. Measures that do not have significant support are typically an irritant to residents, and are ultimately removed whether or not they are effective. As such, staff is not recommending a measure unless there is general support for it, or there is a public safety reason for it. Therefore, based on the compilation of traffic data, traffic engineering analysis, survey results and public comments, the following traffic calming measures are recommended at this time: (For detailed information, please refer to *Attachment 1*)

EL MOLINO AVENUE INITIAL MEASURES

- 5. Deploy a mobile speed display sign on El Molino Avenue in the neighborhood on a regular basis to inform drivers of their speed.

6. Conduct regular speeding and stop sign enforcement along El Molino Avenue at peak commute and school times.
7. Paint high-visibility crosswalks at El Molino Avenue and Mission Street.
8. Install street lighting on existing wood poles between Mission Street and Wilson Avenue (upon majority consent of adjacent owners).

GARFIELD AVENUE INITIAL MEASURES

9. Install solar powered red flashing beacons on stop signs at Garfield Avenue and Monterey Road.
10. Post directional and wayfinding signs at Huntington/Atlantic/Garfield and along Huntington Drive to direct commuter traffic away from residential streets. (See Plan in *Attachment 3*)
11. Deploy a mobile speed display sign on northbound Garfield Avenue, North of Oak Street, on a regular basis to inform drivers of their speed.
12. Pursue reduction in bus trips and frequency in early AM and PM hours.
13. Conduct periodic crosswalk and speed enforcement along Garfield Avenue at peak commute and school times.
14. Install street lighting on existing wood poles along Garfield Avenue (upon majority consent of adjacent owners).

LOS ROBLES INITIAL MEASURES

15. Install solar powered red flashing beacons on stop signs on Los Robles Avenue at Ashborne Drive and Winthrop Road in the Northbound and Southbound directions.
16. Install larger stop signs on Los Robles Avenue at Ashborne Drive and Winthrop Road in the Northbound and Southbound directions.
17. Post directional and wayfinding signs at Huntington/Atlantic/Garfield and along Huntington Drive to direct commuter traffic away from residential streets. (Please see Plan in *Attachment 3*)
18. Install an electronic speed awareness sign for southbound Los Robles Avenue, South of Marengo Avenue.
19. Install an electronic speed awareness sign for northbound Los Robles Avenue, North of Plymouth Road.
20. Increase the number of off-peak hours when flashing red signals operate at Monterey Road and Wilson Avenue (Adjust as needed to prevent significant back-up.)

21. Install countdown pedestrian signal heads for crosswalks at Los Robles Avenue and Mission Street.
23. Plant Street trees along Los Robles Avenue.
24. Regular enforcement of speeding and stop sign violations along Los Robles Avenue at peak commute and school times.
27. Plant trees in entry median at Los Robles Avenue, North of Huntington Drive.

OAK KNOLL AVENUE INITIAL MEASURES

30. Deploy a mobile speed display sign on northbound Oak Knoll Avenue, North of Courtland Avenue on a regular basis to inform drivers of their speed.
31. Pursue elimination of Metro bus route.
32. Regular enforcement of speeding, oversize truck and stop sign violations along Oak Knoll Avenue.
35. Reduce left turn green signal time from eastbound Huntington Drive onto northbound Oak Knoll Ave.

GRANADA AVENUE INITIAL MEASURES

36. (New) Paint parking edge lines and painted center median on Granada Avenue between Huntington Drive and Wilson Avenue.

OTHER RECOMMENDATIONS

The Commission should provide staff with direction on the following measures due to ambiguity in resident opinion. Note that Measures 28 and 29 can be implemented on a trial basis and removed if needed:

28. Restripe stops at Oak Knoll Avenue and Monterey Road as two separate intersections. (See plan in *Attachment 3*)
29. Adjust Oak Knoll Avenue centerline and alternate curb parking from side to side to reduce driver perception as a straight, unrestricted street. (See Plan in *Attachment 3*)

In addition, the Northwest Area Traffic Calming Plan should include the following recommendations to the City Council:

- A. Continue development of an advanced Northwest Area Traffic Calming Plan based on the results of the initial measures;
- B. Review the feasibility of speed humps and speed hump alternatives as a viable traffic calming measure for use in the City;

- C. Pursue conceptual design and negotiations with adjacent cities to reconfigure the intersection of Atlantic Boulevard/Garfield Avenue/Huntington Drive to discourage neighborhood intrusion;
- D. Develop a formal Citywide Traffic Calming Policy to identify the long-term goals and objectives for the City's street system;
- E. Send resident surveys and hold a future Commission meeting to determine whether time-limit parking with permits should be posted on certain streets in the Mission District with high parking demand; and
- F. Review the feasibility of restricted delivery hours in the Mission District.

Attachments:

- 1. 2011 Revised Initial Traffic Calming Measures (By Street)
- 2. 2011 Revised Initial Traffic Calming Plan Map (Combined)
- 3. Conceptual Sketches of Selected Measures
- 4. Resident Survey Results and Comments
- 5. Public Correspondence since June 20, 2011
- 6. June 13 and 20, 2011 Traffic Calming Plan Booklet (By Reference)

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