



TRANSPORTATION DIVISION

STAFF REPORT

TO: PLANNING & TRANSPORTATION COMMISSION

FROM: Ruchika Aggarwal **DEPARTMENT:** Planning and
Community Environment

AGENDA DATE: March 8, 2006

SUBJECT: Waverley Street Traffic Calming Project--Approval of Permanent Retention of Three Speed Humps on Waverley Street between East Meadow and El Verano.

RECOMMENDATION

Staff recommends that the Commission recommend that the Director of Planning and Community Environment approve permanent retention of the Waverley Street Traffic Calming Project—three speed humps on Waverley Street between East Meadow and El Verano.

BACKGROUND

Council adopted the City of Palo Alto Neighborhood Traffic Calming Program (NTCP) on April 9, 2001. The program provides for Transportation Division recommendation and Planning Director approval of proposed traffic calming trials of simple spot treatment projects on local streets. In November 2001, a group of residents living on Waverley Street between East Meadow and El Verano submitted a request for traffic calming per the NTCP guidelines. The request qualified to be placed on the project list.

The Transportation Division kicked off the project in October 2002. During the meetings with neighborhood residents, many similar alternative plans were developed with varying combinations of speed humps, median island and bulb-outs. Ultimately, the participating residents decided on two similar alternative plans to move forward for a neighborhood opinion survey for a possible trial.

The opinion survey for the trial was conducted in May 2003. Together, the two alternative plans received 32 “yes” responses out of 56 project area households (57 percent). According to the NTCP guidelines, when more than one plan is included in the opinion survey, the alternative receiving the most “yes” responses will be considered for the trial. Of the two

alternatives, Plan A received 24 “yes” responses and Plan B received 3. There were 5 votes that supported either plan A or B. These 5 votes were added to the support for plan A, since plan A had more votes than plan B.

On July 9, 2003, the Planning Director approved a trial of Plan A. The Director’s Decision approving the trial implementation of Plan A is attached (Attachment B). Illustrations of Plans A and B are included with the Director’s Decision.

SUMMARY OF SIGNIFICANT ISSUES

Evaluation of Trial Project

Installation of the trial plan was completed in August 2003. Staff gathered the evaluation data in 2004. The detailed evaluation report is attached (Attachment A).

Speed reduction is the primary goal of the project. Speeds decreased from 33 mph before the measures were installed, to about 20 mph at each speed hump and to 26 mph between the humps. Based on the speed between measures, the speed reduction is about 7 mph, or a 21 percent decrease from the original speed. Traffic volumes were decreased about 190 vpd, or a 16-18 percent. The volume reduction is presumed to be cut-through traffic that has dispersed to other nearby streets, principally South Court and Bryant. No significant negative impacts resulted from this diversion of through traffic, as explained in detail in the project evaluation report.

As of January 11, 2005 there was only one collision in the project area during the trial period but it was not directly related to the speed humps.

The trial project did not have any significant impact on the Police and Fire Departments response, Palo Alto Sanitation Company (PASCO) or the Postal Service. During the trial period, the Fire Department did not respond to any emergency calls in the neighborhood. Even though any delay could have a negative impact on the condition of a fire or an emergency medical situation, the maximum delay would not cause the Department’s response time to exceed its mission goals.

Public Works did not have any particular problems during the trial but, over the long run, speed humps interfere somewhat with weekly street sweeping and require increased maintenance for paint and signs. Speed humps also interfere with and increase the costs of, pavement maintenance and utility projects. No additional funds have been budgeted for increased maintenance workload.

Residents’ Opinion Survey

An opinion survey was conducted in August 2005. All 56 households on Waverley Street between East Meadow and El Verano were included in the survey. (refer to survey areas illustrated in Attachment C). According to the NTCP guidelines, the only households that abut the street on which the measures are installed, plus any cul-de-sacs are included in the

survey area for a local street project without significant traffic diversion issues. There were no complaints about this policy from other households not included in the survey area.

In order for staff to consider recommending approval of the trial, the guidelines require support from 50 percent of the households abutting the street where the measures are installed. The survey results are as follows:

| | # Responses (% of Project Area Households) |
|--|--|
| Support permanent retention of the traffic calming project as installed | 29 (52 % of households) |
| Support permanent removal of the speed humps and no installation of other traffic calming measures | 6 (11% of households) |
| No response to Survey | 21 (37 % of households) |

There was a general agreement amongst residents that speed humps are effective and have slowed traffic volumes and speeds. Some other comments were as follows:

- Anxiety level has reduced-before speed humps we worried about children and adults being hit by speeding vehicles.
- Noise level reduced both day and night because vehicles going slower.
- Exiting driveways are safer since there are no speeding vehicles.
- These speed humps are very gentle. It should be sharper and higher to slow traffic more.
- Do not add street legends “HUMPS” on the street. Would also propose taking down the speed hump signs.

POLICY IMPLICATIONS

Comprehensive Plan

Traffic calming is supported in the Comprehensive Plan. Policy T-34 states: “Implement traffic calming measures to slow traffic on local and collector residential streets.... Include traffic circles and other traffic calming devices among these measures.” Program T-43 states: “Implement a Neighborhood Traffic Calming Program to implement appropriate traffic calming measures....” The proposed project is consistent with this policy and program.

PUBLIC NOTICE

On February 17, 2006, project area residents were mailed a notification of this Commission meeting and the availability of the staff report.

ENVIRONMENTAL REVIEW

This traffic calming project consists of three speed humps in a one block distance as an implementation of the above stated Comprehensive Plan goals for residential and collector

streets. These traffic calming measures are consistent with the design and use of a residential street and will slow traffic down in the immediate area. The proposed modifications are minor upgrades to an existing residential street right-of-way and would not result in any new impacts to the existing environment. This project is considered as a minor alteration to the existing street system, and therefore categorically exempt (Class 1 Exemption, Section 15301) from the provisions of the California Environmental Quality Act (CEQA).

NEXT STEPS

Assuming the Commission approves the staff recommendation, the final decision about retaining the three speed humps would rest with the Director of Planning and Community Environment. That approval would take place approximately one week after the Commission decision. The speed humps would then remain permanently as they are now installed. Staff will then notify residents by mail of the Director's decision.

ATTACHMENTS/EXHIBITS:

- A. Evaluation of Waverley Trial Traffic Calming Project
- B. Director's Decision to Implement Trial Plan (with illustrations of Plans A and B)
- C. Survey Areas
- D. Correspondence received from the residents

COURTESY COPIES:

Waverley Residents Working Group

Prepared by: Ruchika Aggarwal

Division Head Approval: 
Gayle Likens, Acting Chief Transportation Official

**WAVERLEY TRIAL TRAFFIC CALMING PROJECT
OPERATIONAL EVALUATION Completed October 2005**

Project Description: This project consists of three speed humps on Waverley between East Meadow Drive and El Verano Avenue. Installation of the speed humps was completed on August 20th, 2003.

Project Evaluation: Operational evaluation includes impacts on street functions and services. The neighborhood opinion survey, conducted separately, is the other major component of the project evaluation, which will report on residents' experiences with the measures, such as noise, impacts on vehicles, visual impacts, and their overall assessment of whether or not the project should be retained permanently. Traffic Counts were measured in December in 2001 at one location when the request was first received. These counts are also considered as the base or "before" counts. Approximately eight months after the trial began new speed and volume counts were taken in May 2004 for the "after" condition. Information was gathered in late 2004 from public service providers.

Traffic Speed: Speeds decreased from 33 mph before the measures were installed, to about 20 mph at each speed hump and 26 mph between the humps. Based on the speed between measures, the speed reduction is about 7 mph, or a 21 percent decrease from the original speed. Speed reduction is the primary goal of the traffic-calming project.

Traffic Volume: Depending on location, daily traffic volume decreased about 190 vpd, or a 16-18 percent decrease from the original volume as a result of the traffic calming measures. The presumption is that these vehicles were "cut-through" traffic that chose another route such as Alma, Ramona, Bryant, South Court, Cowper, and Middlefield. The nearest streets—South Court and Bryant—would probably receive the most. Even if all the diverted volume dispersed evenly onto just 2 of these nearby streets, the increase of about 100 vpd on a single street would be substantially less than the traffic calming program's 25% impact threshold for increases on adjacent streets, and would not be noticeable to the average resident.

Before-After Volume and Speed results: Before counts were measured in December 2001 at one location (3418 Waverley). The after counts were taken in May 2004. Thus, there is about a 2-1/2 year gap between the two counts, permitting some potential inaccuracies in measuring the before-after impacts of the speed humps. The single "before" count is presumed to represent the same speed and volume conditions at all three locations where the "after" counts were measured. Volumes are vehicles per weekday. Speeds are 85th percentile.

| Location | Before Humps December 2001 | | After Humps May 2004 | | Change From Before to After | |
|--|-------------------------------|-------|-------------------------|-------|--------------------------------|---------------|
| | Volume | Speed | Volume | Speed | Volume | Speed |
| (1) #3337 Midway between hump and northbound stop sign | 1070 | 33 | 880 | 28 | -190 (-18%) | -5 (-15%) |
| (2) #3377 Immediately adjacent to hump | 1070 | 33 | 890 | 20 | -180 (-17%) | -13 (-39%) |
| (3) #3451 Midway between two humps | 1070 | 33 | 900 | 26 | -170 (-16%) | -7 (-21%) |

Traffic Crashes: As of January 11, 2005 there was one collision in the project area during the trial period but it was not directly related to the speed humps.

Police Department: No calls for service were caused by the traffic calming measures during the trial period. The Police Department concluded that the traffic calming measures have caused no notable impact on emergency response times.

Fire Department: During the trial period, the Fire Department did not respond to any emergency calls in the neighborhood. However, these speed humps do slow the emergency response time but not to an extent that they are not able to meet their response goals. Also, there is a minimal impact on the equipments if the driver of the vehicle approaches them at the speed limit. There are no major or adverse problems created by these traffic-calming devices. On the other hand, reduced vehicle volumes, and especially speeds, can reduce the number of and severity of personal injury in any future crashes on these streets.

PASCO (Sanitation): The project has not impacted PASCO's services.

Postal Service: The project has not impacted Postal Service operations.

Public Works Department: These traffic-calming measures, like any others, have negative impacts on street maintenance. The measures will interfere with a street repaving project. Speed humps would have to removed and replaced for a major project.

The biggest and most frequent impact of the measures is on street sweeping. The street sweepers cannot follow the contour of the road while driving over the hump therefore the debris are blown out the side of the sweeper. Extra staff time is therefore required to keep the area clean. Traffic calming measures require occasional maintenance for paint, signs and concrete elements. No extra funds or staffing have been allocated for maintenance and street sweeping. Thus, the measures cause an incremental increase in the City's street maintenance and cleaning workload, and/or maintenance may be inadequate.

Stormwater: The speed humps would not interfere with storm water runoff during a major flood event, since the gutters remain fully open and the humps are only three inches high.

Conclusion: Operationally, the project has been successful in accomplishing the primary and secondary goals of this type of traffic calming project—speed and volume reduction, respectively. The primary negative impact, typical of traffic calming projects employing speed humps, is the potential delay to emergency fire and medical responses. The second negative impact, also typical of most traffic calming projects, is the increase in maintenance cost and workload for City crews.

Prepared by: Ruchika Aggarwal

Reviewed by: Gayle Likens

City of Palo Alto

Department of Planning and
Community Environment

City of Palo Alto Neighborhood Traffic Calming Program: Director's Decision on a Proposed Four-Month Trial Traffic Calming Plan for Waverley Street between East Meadow and El Verano

July 9, 2003

BACKGROUND

The City of Palo Alto Neighborhood Traffic Calming Program was adopted by Council on April 9, 2001. The Program provides for Transportation Division recommendation and Department of Planning and Community Environment Director approval of proposed traffic calming trials of simple spot treatment projects on local streets. Full details on Neighborhood Traffic Calming Program procedures and criteria as adopted by Council are contained in the Neighborhood Traffic Calming Program booklet.

Transportation
Division

On July 9, 2003, the Chief Transportation Official forwarded a recommendation to the Director of Planning and Community Environment in regard to the proposed four-month trial of "Plan A" for the Waverley Street between East Meadow and El Verano as illustrated in the attached exhibit. Plan A was supported by 29 households (or 52%) out of 56 total households in the project area. This plan consists of three speed humps and related signing and striping.

A before and after comparison will be made of vehicle volumes and speeds. After the four-month trial period is completed, households in the project area will be asked to vote on making the trial a permanent installation. The Planning and Transportation Commission will review results of the trial and the project area household ballot, hear public testimony, and forward a recommendation to the Director of Planning and Community Environment. The Director will then decide whether to make the trial permanent.

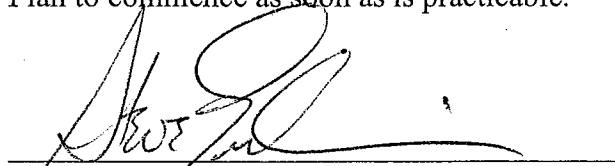
FINDINGS AND DECISION

I find that the proposed Waverley Street Traffic Calming Plan complies with the intent of the Neighborhood Traffic Calming Program as follows:

- 1) A projected reduction of prevailing vehicle speeds from 33 mph to 27 mph, if realized, will enhance safety for vehicles, cyclists, and pedestrians in the project area, without reducing safety or amenity on any nearby streets.
- 2) A projected reduction of average daily vehicular volume of about 100 vehicles, if realized, will add to the safety enhancement achieved through speed reduction. The projected traffic shift of 100 vehicles to adjacent streets is well below the Neighborhood Traffic Calming Program threshold of a 25 percent increase in average daily vehicular volume on any given street.

250 Hamilton Avenue
P.O. Box 10250
Palo Alto, CA 94303
650.329.2520
650.617.3108 fax

Therefore, I approve a four-month trial of the proposed Waverley Street Traffic Calming Plan to commence as soon as is practicable.



STEVE EMSLIE
Director, Department of Planning
and Community Environment

ATTACHMENTS

- A. July 9, 2003 memorandum of recommendation from Carl Stoffel to Joe Kott, with exhibit of Plan A
- B. July 9, 2003 memorandum of recommendation from Joe Kott to Steve Emslie

cc: City Council
Planning and Transportation Commission
Frank Benest, City Manager



TRANSPORTATION DIVISION

Memorandum

Date: July 9, 2003

To: Joe Kott/Chief Transportation Official

From: Carl Stoffel/Transportation Engineer/Traffic Calming Program Manager

Subject: Waverley Street Traffic Calming Project

In accordance with the Neighborhood Traffic Calming Program (NTCP) step #6, a project area survey was conducted to gauge residents' support for a four-month trial traffic-calming plan for the Waverley Street between East Meadow Drive and El Verano Avenue. Following are the survey results, expressed as percentages of survey cards returned out of 56 households surveyed:

| | Number of households | % of Project area households |
|--|----------------------|------------------------------|
| Support Plan-A (3 speed humps) | 24 | 43% |
| Support Plan-B (3 speed humps and 1 pair bulb-out) | 3 | 5% |
| Support either Plan A or B | 5 | 9% |
| Nothing should be installed | 12 | 21% |
| Total survey cards returned out of 56 distributed | 44 | 78% |

Per NTCP step #6(i), the above level of resident support is sufficient for Plan A (43% + 9%) to be considered for approval by City staff. Plan A consists of common traffic calming measure--three speed humps (refer to attached figure). It implements the primary objective of the traffic-calming program—to reduce speeds of local and cut-through traffic. A secondary goal is minor reduction in cut-through traffic volume due to slower speeds caused by the physical measures placed in the roadway. The amount of cut-through traffic diversion will be small and will not noticeably impact any other streets. The proposed plan was developed in accordance with the NTCP procedures and complies with all the NTCP objectives and guidelines. I recommend that it be implemented for a four-month trial.

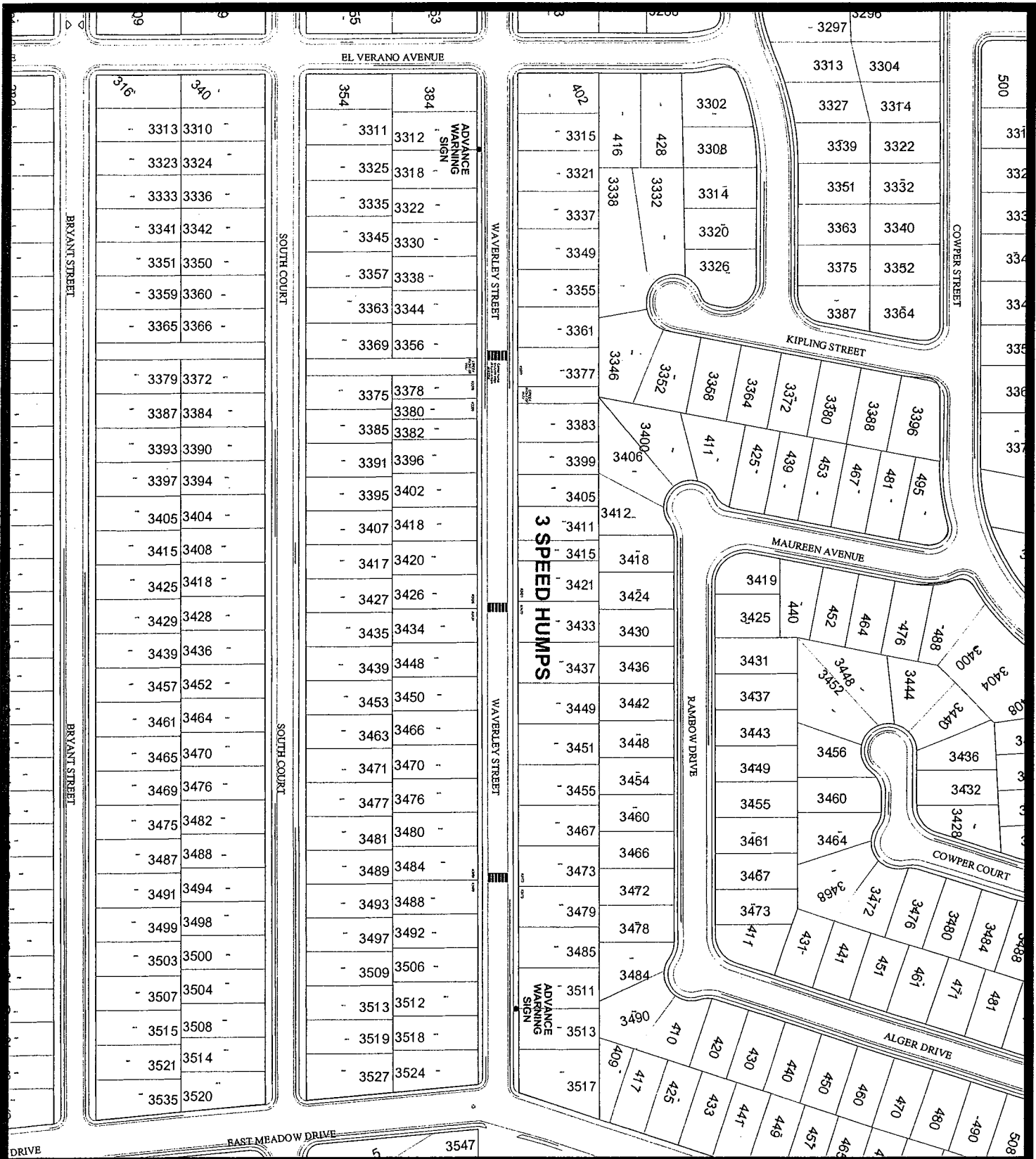
CARL STOFFEL *Carl Stoffel*
Traffic Calming Program Manager

Date: 7/21/03

Approved:

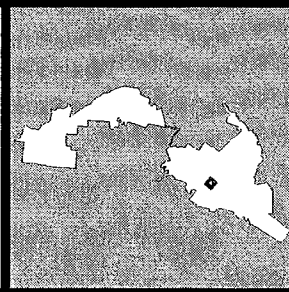
JOSEPH KOTT *Joseph Kott*
Chief Transportation Official

Date: 7/21/03



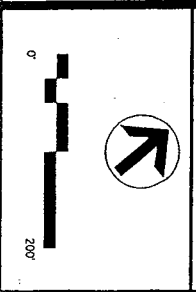
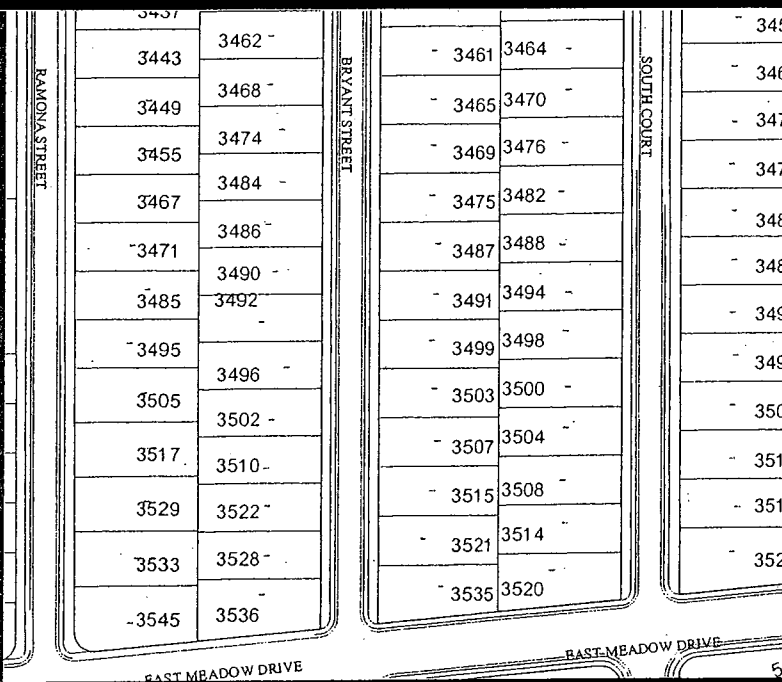
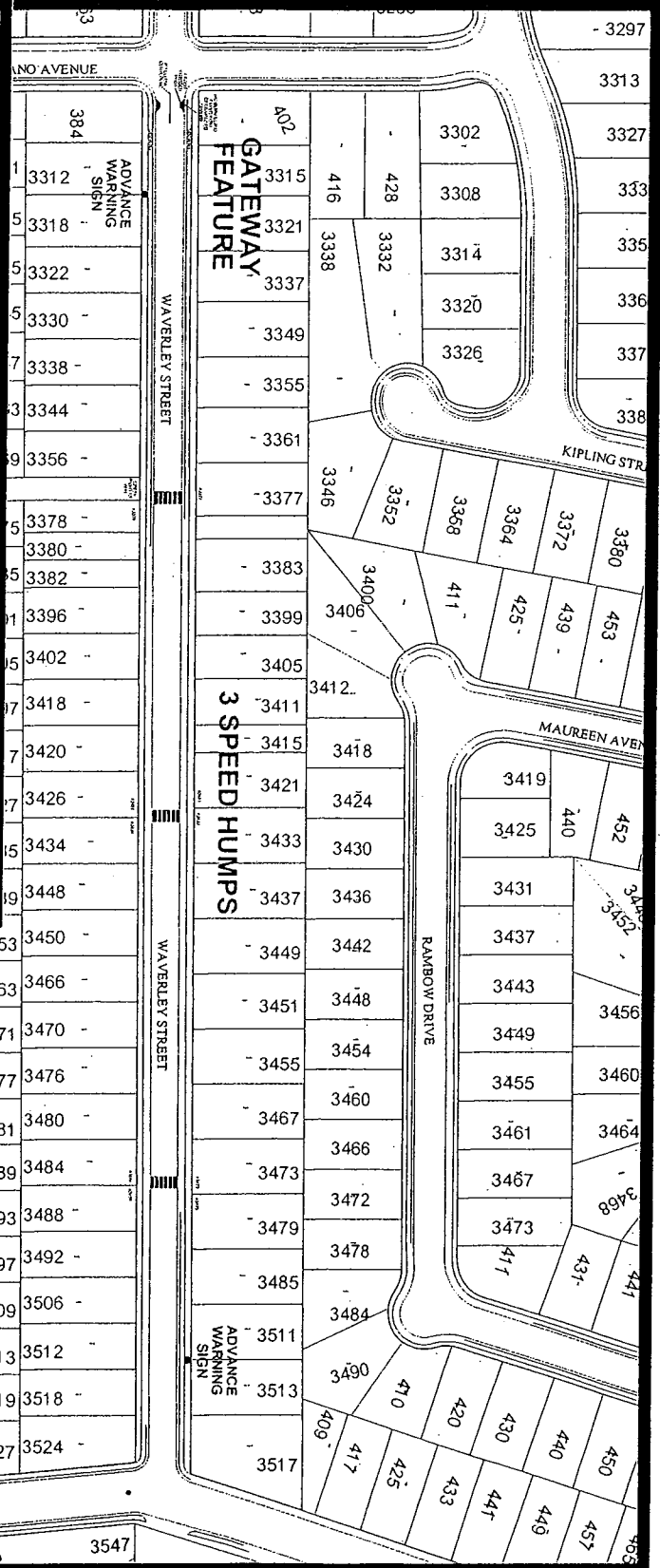
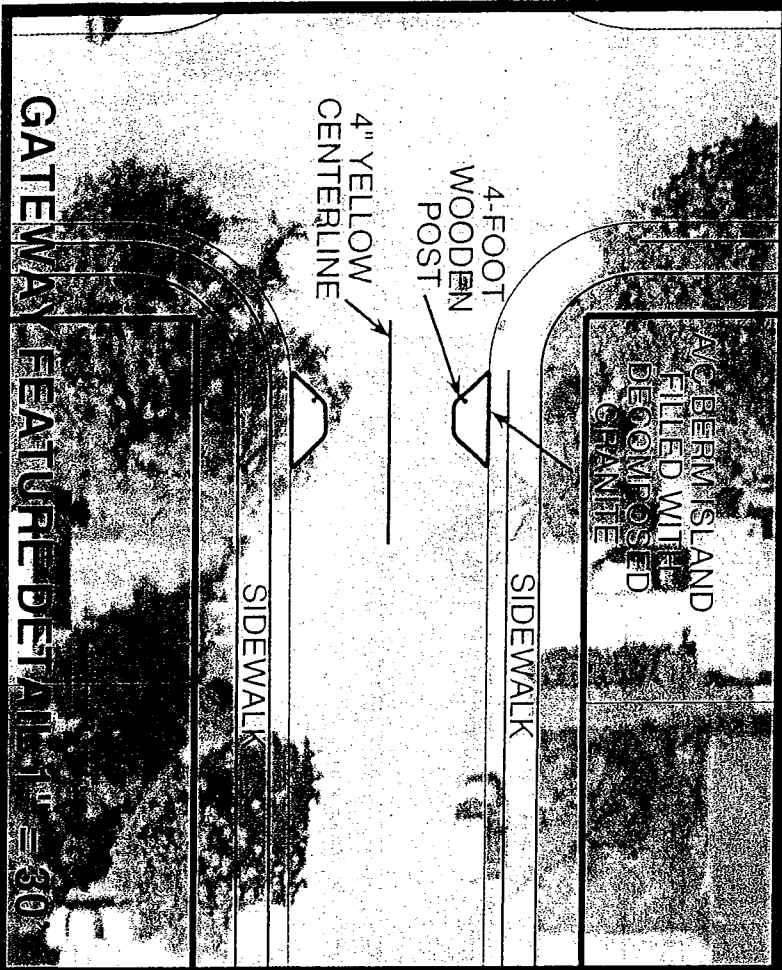
This map is a product of the City of Palo Alto GIS

Waverley Traffic Calming Project Plan A Three Speed Humps



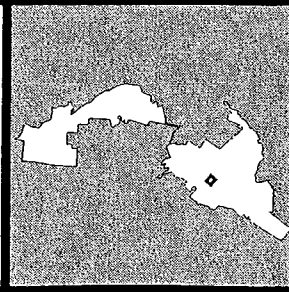
The City of Palo Alto





This map is a product of the City of Palo Alto GIS

Waverley Traffic Calming Project Plan B Gateway Feature + Three Speed Humps



The City of
Palo Alto

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TRANSPORTATION DIVISION

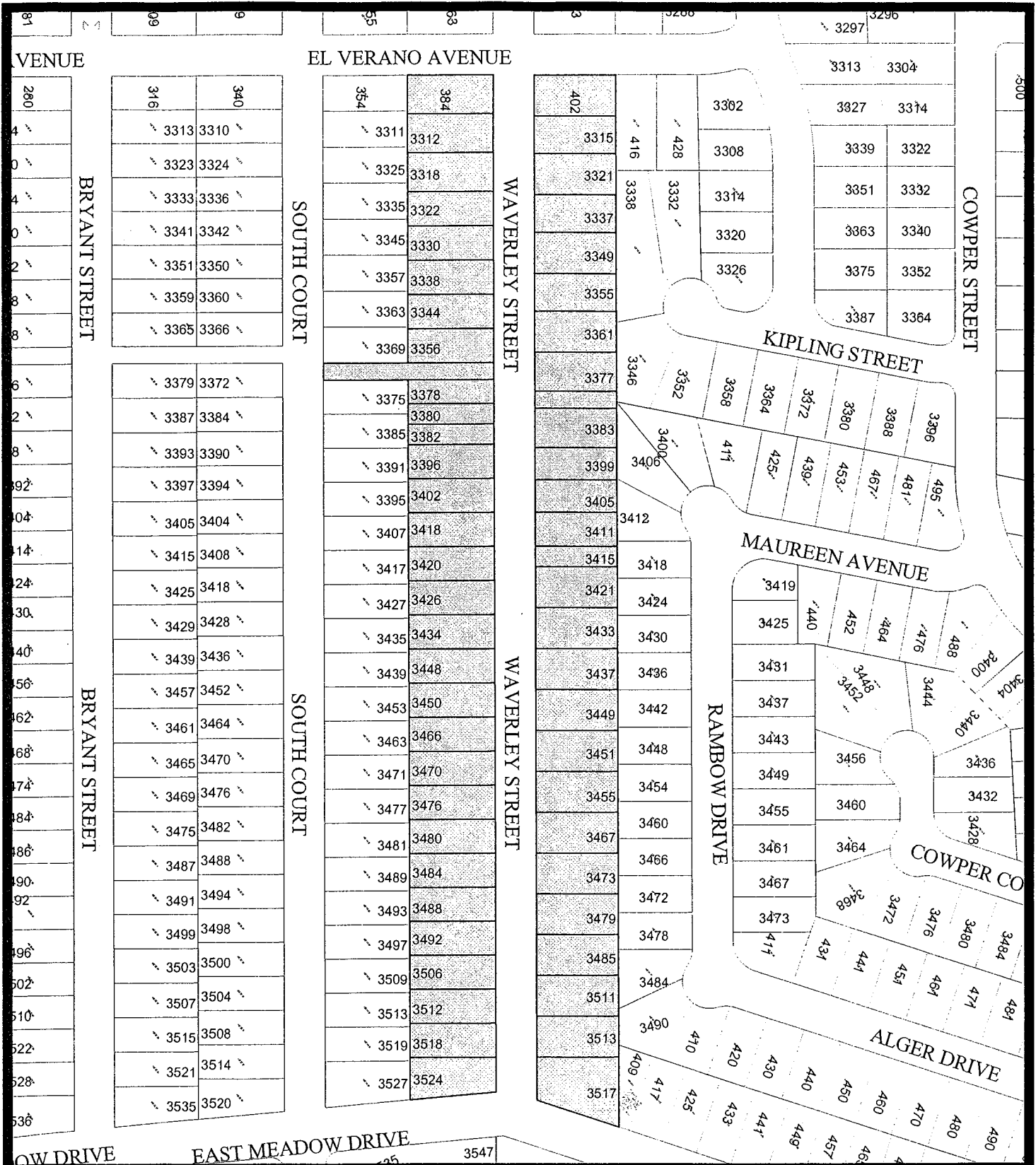
Memorandum

Date: July 9, 2003
To: Steve Emslie
From: Joe Kott
Subject: Approval of Trial Waverley Street Traffic Calming Project

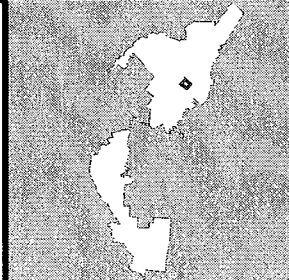
Attached is a memo from Carl Stoffel recommending approval of a four-month trial of the above project. I agree with Carl's recommendation and have so indicated at the bottom of his memo. We request your approval of this project by signing the attached Director of Planning and Community Environment approval form.

Attachments:

Memo from Carl Stoffel
Approval form for Director of Planning and Community Environment



The City of Palo Alto



Waverley Traffic Calming Plan

Survey Areas

This map is a product of the City of Palo Alto GIS



Aggarwal, Ruchika

From: Betten, Zariah
Sent: Wednesday, February 22, 2006 7:45 AM
To: Likens, Gayle; Emslie, Steve; Coe, Andy; Aggarwal, Ruchika; Annette Bialson; Daniel Garber; Karen Holman; Lee Lippert; Patrick Burt; Paula Sandas; Phyllis Cassel
Subject: FW: Speed humps

FYI.

Z. Betten
Ext. 2440

From: Irene Jacobi [mailto:irene.jacobi@gmail.com]
Sent: Tuesday, February 21, 2006 5:57 PM
To: Planning Commission
Subject: Speed humps

Palo Alto Planning Commission

After receiving your letter today concerning the vote of implementing permanent speed humps on Waverley Street, I just wanted to inform you how happy I am that this will occur. I have lived on this street for fifty two years, playing kick the can at age five in the streets. As the years have gone by and I have grown, so has the traffic and the speed in which people travel this street. I raised my own children here with much concern about speeding cars and city buses. Now I watch my grandchildren and feel relieved that the street has again slowed down as it was in my day and my concern has lessened, as well as my stress level. I love seeing the children outside, though they will never play kick the can in the street as I did, they can enjoy riding their bikes with less fear. Please make this a final decision on retaining these speed humps.

Thank You

Irene McDougal Jacobi
3485 Waverley Street
650 804-0512

Aggarwal, Ruchika

From: Betten, Zariah
Sent: Wednesday, February 22, 2006 2:34 PM
To: Emslie, Steve; Likens, Gayle; Coe, Andy; Aggarwal, Ruchika; Annette Bialson; Daniel Garber; Karen Holman; Lee Lippert; Patrick Burt; Paula Sandas; Phyllis Cassel
Subject: FW: traffic claming measures on Waverley nr Meadow

FYI.

Z. Betten
Ext. 2440

-----Original Message-----

From: EMILY YOUNG [mailto:emily_young@sbcglobal.net]
Sent: Wednesday, February 22, 2006 2:00 PM
To: Planning Commission
Subject: re: traffic claming measures on Waverley nr Meadow

Dear planning commission:

We are writing re: the traffic claming bumps on Waverly between El Verano and Meadow. We live on the corner of El Verano and Waverly and we think that the speed humps have helped slow down the traffic and that they should stay on the street.

We have lived here since 1982 and I have witnessed several accidents and near accidents on the corner of El Verano and Waverley. But since the bumps have been installed -- I have not seen as many problems at this end of the street. That may be due to the fact that everyone now knows that there are speed bumps on Waverley and that the traffic in general in this whole neighborhood is going more slowly. I am sure that the slower traffic is better for the school children going to JLS and Fairmeadow. Some of my neighbors in the middle of the street have noticed the dramatic slow down of the traffic on the street.

Please keep the speed humps.

Sincerely,

Emily Young and Stephen Branz 402 El Verano Ave Palo Alto

650-856-9571

Aggarwal, Ruchika

From: Betten, Zariah
Sent: Wednesday, February 22, 2006 2:35 PM
To: Emslie, Steve; Coe, Andy; Likens, Gayle; Aggarwal, Ruchika; Annette Bialson; Daniel Garber; Karen Holman; Lee Lippert; Patrick Burt; Paula Sandas; Phyllis Cassel
Subject: FW: Waverley Street Traffic Calming Project

FYI.

Z. Betten
Ext. 2440

-----Original Message-----

From: Howard Hoffman [mailto:hlh@hiosilver.com]
Sent: Wednesday, February 22, 2006 11:58 AM
To: Planning Commission
Subject: Waverley Street Traffic Calming Project

Dear Planning Commission:

I will be out of town on March 8th, when you consider making the project permanent or removing it. The project has definitely worked well, greatly reducing the number of speeding vehicles I have noticed on our street. I am certainly willing to live with the minor inconvenience of the speed bumps in order to reduce the risk of having someone injured or killed on our street.

Thank you for your consideration.

Howard L. Hoffman
3402 Waverley Street
Palo Alto

26 February 06

Re: Speed Humps on Waverley Street

Dear Mr. Likens,

Our family is completely in favor of the speed humps. They are working - people are actually slowing down!

We have lived on Waverley Street for 30 years, and we now feel safer walking and driving and living on our street.

Also, there are two schools close by: JLS and Fairmeadow. There are over 1000 students traveling back and forth, many on Waverley Street.

We now worry less about them and their families.

Therefore, even though these humps are a bit inconvenient, we are extremely pleased with how they have worked to slow traffic speed.

We strongly urge you to recommend making these humps permanent.

Sincerely,

Edward + Patricia Grange

3480 Waverley Street

494-2487