CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

Date: December 1, 2006

To: City Council
C/O City Clerk, Room 395
Attention: Honorable Wendy Greuel, Transportation Committee

From: Gloria J. Jeff, General Manager
Department of Transportation

Subject: **SPEED HUMP PROGRAM (C.F. 04-1281-S2)**

RECOMMENDATION

That the City Council Note and File this report, as it is submitted for information only.

SUMMARY

This is in response to the Motion (Smith/Greuel) presented on February 3, 2006, in which the Department of Transportation (DOT) was requested to report on the overall status of the City's Speed Hump Program, including, but not limited to, data on the success of speed humps in slowing traffic and improving pedestrian and vehicular safety in local neighborhoods; updates on any improvements to the petition process; the expected number of speed humps to be completed this fiscal year; anticipated annual expenditures; existing resource allocation; the current project prioritization process; and current community outreach efforts.

This report indicates:

- Speed humps reduce critical speeds by nearly 9 mph, from 37 mph to 28 mph on the average.
- There is no conclusive evidence that they significantly reduce or divert traffic when used alone.
- Speed humps remain the most popular and cost-effective method of reducing excessive speeding on residential streets.
- Funding has varied widely, from $330,000 to $1,105,000 in recent years.
- All available speed hump funding for Fiscal Year 2006-07 has been encumbered as of December 1, 2006.
- If funding were approved at $1,660,000 in Fiscal Year 2007-08 and at $1,120,000 for each year thereafter, the public's uncertainty and anxiety associated with large construction backlogs could be avoided.
- If steady, sustainable funding cannot be provided, then DOT will need to consider raising the qualification thresholds, thus artificially reducing the number of residential streets that would be able to seek relief from speeding traffic.

DISCUSSION

Background

Speeding on local, residential streets is a common complaint reported by concerned citizens. While speeding is a moving violation, police officers cannot always be present to cite blatant

speeders. Accordingly, LADOT often is requested to implement measures that are intended to influence speeds. A popular measure is the use of speed humps.

Speed humps are somewhat like flattened versions of the speed bumps commonly found in parking lots and are 12 feet long by 2-5/8 inches in height. Experience has shown that speed humps are effective in reducing excessive speeds on local, residential streets. Speed humps can be considered on streets that have a documented speeding problem, have 500 or more motorists per day, do not have adverse geometric features and are supported by 75% of the fronting property owners. Support by the greater majority of fronting property owners is required, as they would have to bear the daily inconvenience of traveling over the humps.

Effectiveness in Speed Reduction

The primary measure of the effectiveness of speed humps is speed reduction. The goal of the program is to lower the critical speed closer to or within 5 mph of the speed limit. DOT has conducted a comparison study (see Exhibit A, "Speed Hump Before and After Studies") of conditions at 13 locations where speed humps were installed. A comparative analysis of data before and after speed humps were installed indicates that speed humps consistently and effectively reduce incidences of speeding, as evident in the following findings:

- The 85th-percentile speeds decreased by an average of 9 mph or 23%, with the average speed decreasing from 37 mph before the installation to 28 mph after the installation.
- The 85th-percentile speeds were decreased by 2 mph to 16 mph, or 7% to 38%.
- At all sampled locations (13 out of 13), the 85th–percentile speed dropped to 30 mph or less.

The results support the conclusion that the existing design of the speed humps in combination with standard warning signs and pavement markings are effective.

Traffic Volume

The data analysis shows an overall reduction of 6% in traffic volume. However, the data is not conclusive, and there is a wide range of volume change, probably because of the small data sample size. The traffic volume data showed both increases and decreases in traffic volume. Since data was taken only on one day before the installation and on one day after the installation, the traffic volume data sample size is not sufficient to use as a representative of traffic volume on a "typical" day. The largest reduction occurred on Benton Way, where speed humps were a component of a larger overall Neighborhood Traffic Management (NTM) plan.

Pedestrian and Vehicular Safety

A review of collision data before and after speed hump installations at the same locations in the comparison study yielded inconclusive results, primarily because on most of the sampled streets, there were no reported collisions or very few reported collisions. Local residential streets tend to have few reported collisions compared to arterial streets. Police Department records do not include collisions that involved only property damage (except in cases involving City property or an alleged crime, e.g., hit and run).

Existing Construction Allocation

Since Fiscal Year 2000-2001, an amount of $330,000 has been allocated annually exclusively for speed hump construction. In recent years, non-routine annual allocations for traffic calming measures have been utilized for speed hump construction as well, resulting in total allocations of $730,000 to $1,105,000. However, the level of citywide funding continues to be insufficient to

meet the annual demand, resulting in the accumulation of significant construction backlog locations at the end of each year. (See Exhibit B, "History of the General Fund's Construction Budget.")

Also, developer funding in varying amounts has been made available for constructing traffic calming measures, including speed humps, to address traffic volume increases on neighborhood streets adjacent to new development sites. The amount of developer funding has had little impact on meeting the citywide demand for speed humps.

At a handful of locations over the last three years, petitioners volunteered to fully finance the construction of approved speed humps. This method of financing is currently accomplished through Council actions, which authorize DOT to receive the private funds to build the humps on a case-by-case basis. Petitioners volunteer to contribute the full construction cost when they learn that there are insufficient City funds to build all of the approved speed humps, and that the speed humps they requested were assigned a low funding priority based on DOT's prioritization factors. At this point in time, voluntary contributions, whether as full funding or partial funding, do not appear to become a significant source of funding in the near future.

Construction in Fiscal Years 2005-06 and 2006-07

For the Fiscal Year 2005-06, $1,105,000 was budgeted for speed humps. With these funds, speed humps were constructed at 208 locations (no relation to the baseline demand prediction), which left a year-end backlog of 88 locations. (A location is a street with one or more speed humps installed along it.) Only $97,548 of the $1,105,000 remains unexpended because of a purchasing system glitch, and is expected to be re-appropriated.

For the Fiscal Year 2006-07, $1,103,000 was budgeted for speed humps. With these funds, speed humps will be constructed at 223 locations (135 new locations plus 88 locations from the prior year's backlog), which will leave an estimated year-end backlog of 100 locations due to insufficient funding. As of December 1, 2006, 117 locations have been built or are under construction, including all of the prior year's 88 backlog locations. The remaining 106 locations (223 minus 117) will be constructed by the end of Fiscal Year 2006-07. In fact, this year's total allocation of $1,103,000 has already been encumbered for construction.

Anticipated Construction Needs in Fiscal Year 2007-08

Last year, petitions for 204 locations were approved. Based on the current petition receipt rate, 208 locations are expected to be approved during Fiscal Year 2006-07. In order to construct the prior year's backlog of 100 locations and the anticipated baseline 208 locations, the anticipated expenditure needs for Fiscal Year 2007-08 is approximately $1,660,000. This cost is calculated assuming an average of three (3) humps per location and the current average pricing of $5,387 per location. Construction costs have increased significantly, and are expected to rise further (due to oil and labor costs). If $1,660,000 is provided for Fiscal Year 2007-08, then in the subsequent year, funding at a reduced level of $1,120,000 (208 locations) could provide a sustainable program where the authorized locations match the available funding.

The infusion of funding over the past two years enabled DOT to significantly reduce year-end construction backlogs and clear out old requests. However, if the proposed budget is not approved, under-funding will again cause the accumulation of a large year-end backlog and create significant delay in service delivery. Exhibit C compares the predicted backlog levels based on the level of funding.

If the funding identified above is not approved, DOT will be forced to consider raising the qualification thresholds, which would artificially reduce the number of locations authorized and therefore reduce the number of residential streets that could be relieved from speeding traffic.

Effect on the Department of Public Works

Since the City's contract with a speed hump vendor expired in FY 2003-04, DOT and the Bureau of Street Services (BOSS) signed a Memorandum of Understanding (MOU) in June, 2004, in which BOSS would construct approximately 180 new speed humps (60 locations) each year, utilizing the Speed Hump Program budget. However, since Fiscal Year 2005-06, BOSS constructs speed humps only on an overtime basis (weekends) due to the lack of staffing. This process requires a full year to construct the annual program, which otherwise would take only 30 normal work days to complete.

DOT, in partnership with the General Services Department, established an as-needed asphalt vendor contract in June, 2006 to install speed humps, in which the vendor may be requested to construct additional quantities beyond BOSS' capacity. This back-up capacity would enable DOT to achieve construction goals, especially when unanticipated funds outside of the annual budget are made available.

The Bureau of Contract Administration issues "A" permits and provides inspection services for humps constructed by contractors (not by BOSS), and is reimbursed by the Speed Hump Program for costs prorated by the number of locations and the number of humps inspected.

The continuing construction of new speed humps increases the maintenance workload for the City, as the number of established speed humps and related traffic control devices increases. The estimated number of locations of constructed speed humps is 1,122 (as of June 30, 2006). Hence, maintenance resources for the asphalt humps, signs, and pavement markings have to be provided, especially after street resurfacing and slurry seals. The reinstallation of asphalt humps is considered a resurfacing activity, and is therefore funded by BOSS' Resurfacing Program.

Effect on Department of Transportation

Along with asphalt installation, speed hump warning signs and pavement markings are required. The existing DOT sign installation and pavement marking staffing level could absorb the fluctuating scope of speed hump construction work. However, in order to ensure coordination, DOT relies on as-needed vendors to supply and install the related warning signs and pavement markings for new speed hump installations.

Community Outreach

Concerning the disclosure to the public regarding the proposed speed hump placement, DOT employs a procedure (since 2003) in which the potential petitioners are given the approximate location of the speed humps BEFORE they decide whether or not to sign the petition. The material includes information regarding the advantages and disadvantages of speed humps, for which the petition circulator is instructed to disseminate to all potential petition signers.

Concerning the general access to the program's information, general information is available on the Department's webpage at www.lacity.org/LADOT/dottips.htm (see Attachment D). Interested persons can call the District office to initiate a speeding traffic study. If the speeding study indicates that speed humps may be feasible and appropriate, the matter is referred to the

NTM Section for a comprehensive speed hump feasibility study. If speed humps are found to be justified and feasible, the NTM Section will initiate the speed hump petition process.

Concerning the petition process, DOT considers petitions valid for approval up to three years from the date of the earliest petition signature. That is why it is vital that the backlog never exceed three years' of available annual funding.

Speed Hump Removal

Concerning the desire for the speed hump removal, DOT offers residents the ability to petition to remove constructed speed humps. The cost of removal is very significant (roughly twice the cost of installation), and there is no excess funding to afford elective removal. Therefore, if a valid removal petition is presented within five years of construction, the speed humps can be removed only if the petitioners volunteer to finance the removal costs or if scheduled street resurfacing work provides an opportunity to eliminate the speed humps without incurring removal costs. During the last three years, five speed humps have been authorized at two locations.

Public Concerns

As demonstrated by the continuing popularity of the program, residents have an avid desire to control speeding in their neighborhoods, which is perceived as a threat to their safety and quality of life.

DOT very seldom receives requests from petitioners to remove existing speed humps or refrain from installing the approved humps. Petitioners do change their minds on occasion, despite the fact that they were provided the information on the advantages and disadvantages before signing the petition, and despite the fact that by signing they are acknowledging the highlighted statement that the speed hump, signs, and pavement markings may be placed in front of their homes. The common reasons for their objections include the visual and noise effects, or more seldom the added delay when using low-bodied vehicles. For these reasons, a 75% approval petition is required for qualifying locations. Also, drivers who do not live on the affected block sometimes raise objections due to concerns about the wear and tear on vehicles, inconveniences, traffic diversion to other streets, etc. Those occasional reports of problems that constructed speed humps are too high or abrupt, resulted in corrections to the height and profile of the humps.

Concerns have also been raised on occasions about the delay to emergency service response time, although the incremental delay at each hump is insignificant. When the Speed Hump Program was approved by the City Council in 1994, the Fire Department reviewed the program features and guidelines, and expressed support as long as changes were brought to their attention. However, the proliferation of speed humps may draw more concerns that emergency vehicle response times would be lengthened. Emergency service providers have to slow down somewhat so as not to damage sensitive equipment.

DOT also receives complaints that the speed humps are too low, and that the installation becomes less effective over time (alleging wear of the asphalt and reduced height). However, DOT's after-studies at almost every one of these locations receiving complaints show the humps continue to be effective in maintaining a 85th percentile speed of 30 mph or less. Unfortunately, very little can be done to rein in the behavior of the most offensive violators (the top 15%), except by increasing police enforcement significantly or raising the height of the speed humps to an untenable height. The latter would unacceptably impact emergency

response providers and penalize the majority of the (compliant) drivers by forcing them to go over the humps at an unreasonably low speed.

Project Prioritization Process

Because funding for speed hump construction has not been provided at a steady, sustainable level, DOT had to periodically resort to a prioritization system which programmed funds as they become available. The prioritization factors include: speed, volume, special facilities, collision history, roadway conditions (lack of sidewalks), age of the petition, etc. When this occurred, it was not uncommon for certain qualified, low-priority locations to remain on the construction waiting lists indefinitely and made it difficult to plan for or justify a dedicated City crew or an outside contractor to construct the humps expeditiously. However, DOT believes that a steady, sustainable program where funding matches the demand is the best way to reduce uncertainty and anxiety.

Time Frame

The chart below shows the average timeline from the time the initial speeding complaint is submitted to DOT to construction, assuming the current study backlog, no funding delay, and no petition signature deficiencies (which could extend timeline significantly):

Task	Average Duration (months)	Percentage of Total Time	Responsible Party
Pre-screening	1	6%	DOT
Application for study	2	11%	Residents
Speed hump study	4	22%	DOT
Petition signatures	4.5	25%	Residents
Petition approval	0.5	3%	DOT
Construction preparation	1.5	8%	DOT
Construction by contractor	4.5	25%	Contractor
Total	**18.0**	**100%**	

Of the total average duration of 18 months, 6.5 months (36%) of the timeline occurs under the residents' control, and 11.5 months (64%) occurs under DOT's control.

c: William A. Robertson, Bureau of Street Services
William T. Fujioka, City Administrative Officer
William R. Bamattre, Fire Department

Attachments
Exhibit A. Speed Hump Before and After Studies
Exhibit B. History of the Construction Budget
Exhibit C. Backlog Scenarios
Exhibit D. LADOT TIP sheet—Residential Street Speeding

EXHIBIT A

SPEED HUMP BEFORE AND AFTER STUDIES
Last Data Update: June 19, 2006

	Street Name	Limits	Length of Zone (ft)	No. of Hps		Rdwy Width (ft)	Speed Limit	Dir[1]	24-Hour Volume (vpd)				85th% Speed (mph)				95th% Speed (mph)			
				Type I	Type II				Before	After	Change	% Chng	Before	After	Change	% Chng	Before	After	Change	% Chng
1	3rd Av	36th to Jefferson	930	2		40	25	NB	973	814	-159	-16%	41.0	29.1	-11.9	-29%	53.5	32.8	**-20.8**	-39%
2	3rd St	Gaffey to Grand	633	1		40	25	WB	1179	1075	-104	-9%	36.4	28.0	-8.4	-23%	43.1	31.5	-11.6	-27%
3	Benton Wy	Reservoir to Scott	1097		2	30	25	SB	5391	3699	**-1692**	**-31%**	33.7	30.1	-3.6	-11%	40.4	41.3	**0.9**	2%
4	Colgate Av	Crescent Hts to La Jolla	788	2		36	25	EB	1432	1604	172	12%	37.6	29.5	-8.1	-22%	40.5	32.8	-7.7	-19%
5	College Vw Av	Av 45 to Langdale	453	1		36	25	SB	334	364	30	9%	29.9	23.7	-6.2	-21%	41.7	26.9	-14.8	-36%
6	Drexel Av	Crescent Hts to Fairfax	898	2		40	25	WB	1333	1210	-123	-9%	36.5	29.9	-6.6	-18%	41.1	33.6	-7.6	-18%
7	Eagle Vista Dr	Hill to Lunsford	919	3		48	25	SB	2089	1901	-188	-9%	36.1	24.8	-11.3	-31%	43.2	28.4	-14.8	-34%
8	Greenbush Av	Kittridge to Victory	1271	2		36	25	NB	921	861	-60	-7%	41.2	27.9	-13.3	-32%	47.3	31.4	-16.0	-34%
9	Haddon Av	Montague to Osborne	1836		3	36	25	SB	4186	3453	-733	-18%	38.0	28.7	-9.4	-25%	45.3	34.4	-11.0	-24%
10	Midvale Av	Charnock to Venice	1618	4		30	25	SB	3066	3239	**173**	6%	30.3	28.2	**-2.1**	-7%	37.2	32.5	-4.7	-13%
11	Sharp Av	Chamberlain to Fox	1071	3		35	25	NB	850	961	111	**13%**	41.0	25.4	**-15.6**	-38%	47.1	30.3	-16.9	-36%
12	Gower St	Franklin to Scenic	1726	5		23	25	NB	1856	1847	-9	0%	38.7	30.3	-8.4	-22%	42.7	34.0	-8.7	-20%
13	Mullen Av	9th St to Olympic	855	2		30	25	NB	542	442	-100	-18%	39.7	30.1	-9.6	-24%	51.1	43.0	-8.1	-16%
							Averages		1858	1652	-206	-6%	36.92	28.13	-8.8	-23%	44.18	33.28	-10.9	-25%

Notes

[1] The direction with the higher 85th percentile speed before speed hump installation was chosen.

Exhibit B

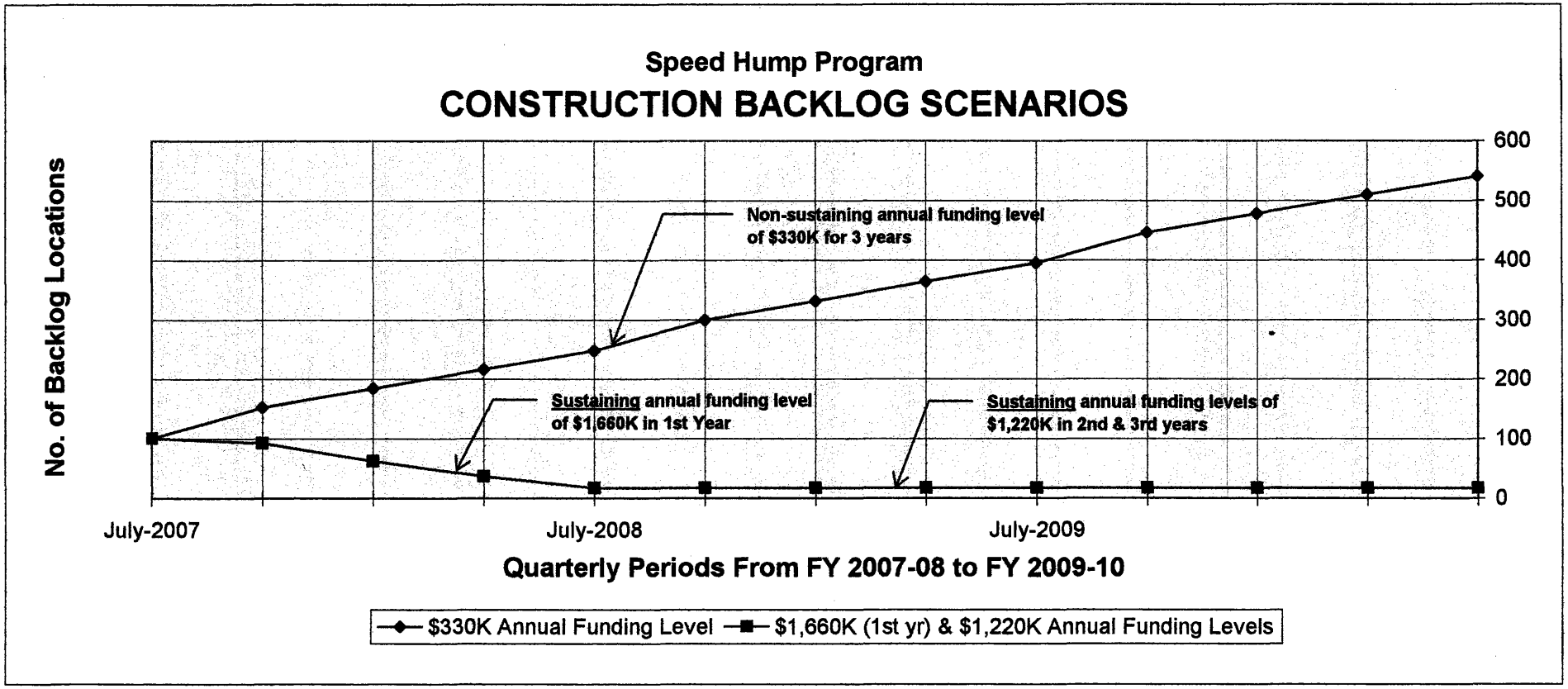
Speed Hump Program
HISTORY OF THE CONSTRUCTION BUDGET
(GENERAL FUND)

Fiscal Year	Routine Speed Hump Allocation	Other GF Allocation	Total Allocation
1994-1995	$191,600	---	$191,600
1995-1996	$151,556	---	$151,556
1996-1997	$224,300	---	$224,300
1997-1998	$212,734	---	$212,734
1998-1999	$233,981	---	$233,981
1999-2000	$347,135	---	$347,135
2000-2001	$330,000	---	$330,000
2001-2002	$330,000	$400,000[1]	$730,000
2002-2003	$330,000	$585,230[1]	$915,230
2003-2004	$330,000	$585,000[1]	$915,000
2004-2005	$330,000	---	$330,000
2005-2006	$330,000	$775,000[2]	$1,105,000
2006-2007	$330,000	$773,000[3]	$1,103,000
Total			**$6,789,536**
2007-2008			$1,660,000[4]

n/a—data not available

[1]Allocations for Neighborhood Traffic Management (NTM) measures (not exclusively for speed humps).
[2]Consists of $575,000 of CIEP funds plus $200,000 of Proposition 72 replacement funds.
[3]Consists of an estimated $773,000 of CIEP funds for NTM measures (not exclusively for speed humps).
[4]LADOT's budget proposal.

EXHIBIT C


Speed Hump Program
CONSTRUCTION BACKLOG SCENARIOS
No. of Backlog Locations
600
500
400
300
200
100
0
Non-sustaining annual funding level of $330K for 3 years
Sustaining annual funding level of $1,660K in 1st Year
Sustaining annual funding levels of $1,220K in 2nd & 3rd years
July-2007
July-2008
July-2009
Quarterly Periods From FY 2007-08 to FY 2009-10
$330K Annual Funding Level
$1,660K (1st yr) & $1,220K Annual Funding Levels

Residential Street Speeding

Exhibit D

Speeding on local, residential streets is a common complaint reported by concerned citizens. While speeding is a moving violation, police officers cannot always be present to cite blatant speeders. Accordingly, LADOT often is requested to implement measures that are intended to influence speeds. Although they may not be as effective as police enforcement, they can have some impact on speeds. These measures consist of:

Stop Sign Pattern

Often, Stop signs, especially four-way Stop sign control, are viewed as an easy cure-all for solving residential speeding problems. As a general rule, four-way Stop sign control should be used only where there is high safety risk or high-to-moderate volumes on all approaches. Otherwise, motorists may coast through a Stop sign and show a general disrespect for this most important device. Such a general disrespect could have traffic safety consequences at locations where the need for four-way Stop control is truly justified. As a more appropriate alternative, LADOT has pioneered the concept of a pattern of two-way Stop control, where local streets in a residential area have a Stop sign at every other intersection. This pattern provides needed intersection right-of-way control, avoids creating routes attractive to commuters and manages excessive speeds.

Speed Humps

Speed humps are somewhat like flattened versions of the speed bumps commonly found in parking lots and are 12 feet long by 2 5/8 inches in height. Experience has shown that where a speeding problem exists, speed humps can lower speeds by approximately 5 miles per hour on local, residential streets. Speed humps can be considered on streets that have a documented speeding problem, have 500 or more motorists per day, do not have adverse geometric features and are supported by 75% of the fronting property owners. Support by the greater majority of fronting property owners is required, as they would have to bear the daily inconvenience of traveling over the humps.

Other Traffic Calming Measures

Other measures may be considered in special cases where the above measures are not feasible, or where a network of local, residential streets is documented to be used by an inordinate amount of bypass traffic. These measures may include striping modifications, signal timing modifications, turn restrictions, one-way streets, street width modifications and channelization islands. Also see "Neighborhood Traffic Management (NTM) Plans".

For information on specific locations, the appropriate District Office may be contacted.