

City of Grass Valley Neighborhood Traffic Calming Program

Adopted – November 12, 2002

Revised – February 1, 2006

Background

Grass Valley is a historic gold mining community nestled in the foothills of the Sierras. Consequently, many Grass Valley streets are narrow and follow patterns that were established long before motorized vehicles.

Because of its foothill location, many of the City's streets are narrow and inclined. Some grades are quite steep. Because of its elevation ranges from 2400 to 2800 feet above sea level, snow in the winter is not uncommon and on occasion the accumulation can be significant.

The City has 11,150 residents in its 4 square miles. It serves as the principal commercial and business center for Western Nevada County's 75,000 residents.

The City has intermittent narrow sidewalks and walkways which force users to contend with missing links. There are significant numbers of pedestrians, bicyclists and skateboarders who share City streets with vehicles.

Many of the City's streets are struggling to accommodate the volume of traffic that modern times create. Most of Grass Valley's main thoroughfares are two lane streets and expansion is problematic particularly in older parts of this historic town.

At peak times, some traffic will use local residential streets in an attempt to bypass the congestion of major streets. In traveling through residential neighborhoods, some drivers fail to heed speed limits or drive considerately.

Consequently, neighborhood requests for traffic calming have increased dramatically. This proposed Neighborhood Traffic Calming Program is an attempt to address these concerns within the parameters of Grass Valley's unique streets.

What is Traffic Calming?

The Institute of Transportation Engineer's "Traffic Calming: State of the Practice" defines traffic calming as involving "changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and / or cut-through volumes, in the interest of street safety, livability, and other public purposes. More simply, the City of San Jose suggests that "Traffic Calming is the management of traffic so that its negative impact on residents, pedestrians and schools is minimized."

Listing of possible Traffic Calming Measures

The following is a comprehensive list of alternatives or solutions that are available for traffic calming depending upon the circumstances and situation. Though such measures are listed to specifically address a given objective (i.e. speed control), it may have positive or adverse effects on other issues (i.e. volume or pedestrians).

OBJECTIVE: CONTROL SPEED OF VEHICLES

SIGNS & STRIPING

Posting Signs - Installing regulatory speed limit, radar warning, advisory speed, hazard identification (i.e. pedestrians) or enlarged signs. Speed Reduction - Low. Initial Cost - Low. Ongoing O & M - Low.

Narrow Lane - Striping is used to create narrow 10 foot wide lanes and create parking or bicycle lanes. Existing application: Whispering Pines. Speed Reduction - Low. Initial Cost - Moderate. Ongoing O & M - Low.

Centerline Delineation - Used to keep drivers on the correct side of the road. Should be recessed to avoid snow plow removal. Speed Reduction - Low. Initial Cost - Moderate. Ongoing O & M - Moderate.

TRAFFIC ENFORCEMENT

Police Presence - Position a police vehicle on a street as a visible aspect of enforcement to discourage speeding. Existing application. Speed Reduction - High as long as presence is there. Initial Cost - Low. Ongoing O & M - High.

Police Enforcement - Deploying police personnel to perform radar enforcement and speed pacing on a residential street in response to a form request by a resident. Existing application could be enhanced by addition of a motorcycle unit. Speed Reduction - High. Initial Cost - Low. Ongoing O & M - High.

Radar Trailer - A portable radar speed meter capable of measuring and displaying vehicle speed. Existing application. Speed Reduction - Unknown. Initial Cost - Low. Ongoing O & M - Moderate

Neighborhood Monitoring Program - A hand-held radar gun is made available, with instructions provided by City staff, to neighborhoods to determine the amount of speeding and who is speeding. Letters from the Police can be sent to identified motorists cautioning them about speeding. Speed Reduction - Unknown. Initial Cost - Moderate. Ongoing O & M - Moderate.

Automated Speed Enforcement - Speed camera located in a portable radar unit taking picture of motorist, vehicle and speed for a citation by mail. Controversial and subject to various legal challenges. Speed Reduction - High. Initial Cost - High. Ongoing O & M - High

UNDULATIONS

Rumble Strips - Raised delineation glued to the pavement to create a strip that causes vehicle to rumble as it traverses through them. Noise impact on adjacent residents and subject to destruction by snow plow activity. Speed Reduction - Moderate, but diminishes. Initial Costs - Moderate. Ongoing O & M - Moderate.

Speed Hump - 12 or 14 feet long raised pavement undulation. Speed Reduction - High, reduced 85th percentile speed by 22% to 27.4 mph (7.6 mph decrease). Initial Cost - Moderate. Ongoing O & M - Low

Speed Table - An elongated speed hump (typically 22 feet long). Speed Reduction - Moderate, reduced 85th percentile speed by 18% to 30.1 mph (6.6 mph decrease). Initial Cost - Moderate. Ongoing O & M - Low.

Raised Intersection - An intersection with ramps on all approaches. Speed Reduction - Low, only a 1% reduction in 85th percentile speed 34.2 mph (.3 mph decrease). Initial Cost

- High. Ongoing O & M - Low.

Concrete Valley Gutters - Where needed, an above ground drainage dip across a street. Speed Reduction - High. Initial Cost - High. Ongoing O & M - Low.

INTERSECTION ENHANCEMENTS

Traffic Circle - Islands placed in local street intersection. Speed Reduction - Moderate, reduced 85th percentile speed by 11% to 30.2 mph (3.9 mph decrease). Initial Cost - High. Ongoing O & M - High, if landscaped.

Roundabout - Method of control requiring slowing and right turning movements used for major intersections. Existing application in Grass Valley (Sierra College Drive and Litton Way). Speed Reduction - Moderate. Initial Cost - High. Ongoing O & M - High, if landscaped.

Entry Islands - Small island installed at the entrance to a street. Existing application (Morgan Ranch at Ridge). Speed Reduction - Moderate. Initial Cost - High. Ongoing O & M - Low.

Realigned Intersection - Intersection modifications that change straight approaches into turning movements. Speed Reduction - Moderate. Initial Cost - High. Ongoing O & M - Low.

NARROWING

Chicane - Creating curves in existing roadways with curb lines or staggered parking. Speed Reduction - Moderate. Initial Cost - High with curb lines; moderate with parking. Ongoing O & M - low.

Single Lane Slow Point - Creating one lane traffic in existing roadways with curb lines or parking. Existing application (Race). Speed Reduction - Moderate. Cost - High with curb lines; low with parking. Ongoing O & M - Low.

Neck down / Bulb outs - Curb extensions at intersections that reduce roadway width. Existing application (Mill at Main). Speed Reduction - Moderate. Initial Cost - High. Ongoing O & M - Low.

Center Island Narrowing - Mid-block medians. Possible ongoing landscape maintenance. Speed Reduction - Moderate. Initial Cost - High. Ongoing O & M - Moderate.

Choker - Curb extension that narrows one or both sides of a street. Speed Reduction - Moderate. Initial Cost - High. Ongoing O & M - Low.

Other Speed Measures (Angle Point, Cushion Medians, Lateral Shifts, Split Median, Diagonal or angled parking, etc.)

OBJECTIVE: REDUCE VOLUME OF TRAFFIC

SIGNS & STRIPING

Restricting or Requiring Turns - Signs prohibiting or specifying turning movements at an intersection at problematic times. Existing application: Post Office. Volume Reduction: Low. Initial Cost - Low. Ongoing O & M - Low.

Restriction Change - Change operation of street from two way to one way or one way to two way. Existing application (Walsh between Church and Mill). Volume Reduction: Low. Initial Cost - Moderate. Ongoing O & M - Low.

Prohibiting Commercial Vehicles - Restricts commercial vehicles using street. Existing application (Maryland Drive). Volume Reduction: Low. Initial Cost - Moderate. Ongoing O & M - Low.

DIVERSIONS

Full Closure - Close a street to through traffic with pedestrian traffic only. Existing proposal (Butler Street between Minnie and Brighton). Volume Reduction - High. Initial Cost - High. Ongoing O & M - Low.

Half Closure - Barriers that block travel for a short distance on otherwise two-way streets. Existing application (North Auburn between Main and Richardson). Volume Reduction - Moderate. Initial Cost - High. Ongoing O & M - Low.

Diagonal Diverter - Blocks traffic movement directly through an intersection. Reduced 85th percentile speed to 27.9 mph (1.4 mph decrease). Volume Reduction - High. Initial Cost - High. Ongoing O & M - High, if landscaped.

Median Barrier - Intersection island blocking through movement of a cross street. Volume Reduction - Moderate. Initial Cost - High. Ongoing O & M - Low.

Forced Turn Island - Intersection configuration that block certain movements. Volume Reduction - Moderate. Initial Cost - High. Ongoing Cost - Low.

Other Volume Control Measures (Star Diverter, One Way - Two Way, etc.)

OBJECTIVE: ENHANCE PEDESTRIAN SAFETY

SIGNS & STRIPING

Modified Pedestrian Signs - Fluorescent or increased sizing of pedestrian crossing signs. Existing applications (include Lidster and Hughes). Pedestrian Safety - Unknown. Initial Cost - Low. Ongoing O & M - Low.

High Visibility Crosswalks - Visual differentiation (i.e. A zebra stripes) for pedestrian crossings. Existing application (East Main and Harris). Pedestrian Safety - Unknown. Initial Cost - Low. Ongoing O & M - Moderate.

CROSSWALK ENHANCEMENTS

Textured Crosswalks - Visual differentiation for pedestrian crossings that may improve

aesthetics. Existing applications along Main Street. Pedestrian Safety - Low. Initial Cost - High. Ongoing O & M - Low.

Flashing Warning Lights - Flashing lights to advise motorists of pedestrians. Pedestrian Safety - Moderate. Initial Cost - High. Ongoing O & M - High

Light Actuated Crosswalks - Flashing pavement markers along crosswalk. Pedestrian Safety - Moderate. Initial Cost - High. Ongoing O & M - High.

Crosswalk Markers - Plastic bollards to identify pedestrian crossings. Pedestrian Safety - Moderate. Initial Cost - Low. Ongoing O & M - Moderate

Raised Crosswalk - A speed hump with a pedestrian crossing. Pedestrian Safety - High. Initial Cost - Moderate. Ongoing O & M - Low.

Pedestrian Islands - Small islands in the middle of a street to provide a protected area for pedestrians during crossings. Existing application (East Main and Idaho Maryland). Pedestrian Safety - Some. Initial Cost - Moderate to High. Ongoing O & M - Low.

What about Stop Signs? - The basic purpose of stop signs is to assign right-of-way at intersections. They are installed at intersections where an accident problem is identified, where irremovable visibility restrictions exist, and / or where volumes are high enough that the normal right-of-way rule is unduly hazardous.

Citizen's general expectations are that stop signs will control speed or reduce volumes in residential neighborhoods. The general conclusion from studies on the effectiveness of stop signs as speed control measures is that they have little overall effect on speed, except within approximately 200 feet of the intersection controlled. They are almost universally reported to have little or no effectiveness in controlling speeds at mid-block. They may even increase the rate of rear end accidents and drivers may develop tendencies to ignore the non-warranted installation and create greater safety issues.

The Effect of Traffic Calming on Traffic Safety - Available research shows that properly engineered traffic calming measures in the United States actually reduced the number of collisions on the affected roadways from 21% to 50%.

Liability Issues - The issue of government liability always surfaces in discussions of traffic calming. Lawsuits and damage claims are not nearly the problem commonly assumed. Of nearly 50 cities and counties surveyed including every major program in the United States, only two lawsuits against a traffic calming program have been successful (and one of those is under appeal). Many have had no legal problems at all, and the remainder have experienced more threats than legal actions.

Emergency Response - Traffic calming measures that are effective in slowing or diverting vehicles will have the same effect, or sometimes even a great effect on fire-rescue vehicles. The biggest challenge is to keep the effect on emergency response times within acceptable bounds or to find new ways of slowing and diverting other traffic without substantially impeding emergency response. All proposed traffic calming measures will be reviewed and coordinated with the Grass Valley Police and Fire Departments prior to being recommended to ensure that the City's emergency response times remain within acceptable limits.

Snow Plowing - Research has indicated that humps, circles, chokers and closures have not been reported to prevent snow removal, leave streets unsafe due to residual snow and ice, snowplow damage, or suffer serious damage themselves. But they may add to workload and expense. Plastic posts to mark traffic calming devices may assist snowplow operators as well as identifying these items for motorists.

Education - The TSRC will promote traffic safety and traffic calming through the use of the City's newsletter, reports, news releases, speakers to neighborhood associations, service clubs and media. The TSRC will develop a brochure advising residents about the Traffic Safety Management and Traffic Calming programs for distribution.

Traffic Calming Process - The proposed process for Traffic Calming begins with a request which is reviewed by the Director of Public Works / City Engineer and the Chief of Police. The request is then referred to the Police Department for enforcement activities and, if needed, Public Works for maintenance action. After at least 60 days of enforcement efforts, if the problem is not satisfactorily resolved, the neighborhood must gather and submit a petition showing support of at least fifty percent (50%) of the neighbors along a street segment (between arterial or collector intersections) for a traffic calming measures. Engineering will review the conditions, coordinate with Police and Fire and prepare a report recommending specific measures for that location. The TSRC will hold a public hearing and may recommend the project to the City Council for approval. Projects will be annually prioritized. Once approved and budgeted, the final design will be completed by Engineering and installed by Public Works. Traffic Calming Projects are subject to ongoing monitoring and evaluation after a year of operation.

Outline of Process for Traffic Calming

1. Request by a Resident - This is how traffic calming begins. Contact Engineering at 274-4373
2. Review by Public Works, Engineering & Police Department (2 weeks).
 - ▶ Referral to Police for enforcement and Public Works for maintenance, if needed.Response letter sent to resident.

If Traffic Calming is suggested by at least one of the above departments, the request is forwarded to the TSRC for review. The TSRC will determine the priority level of the request and will determine if a petition will be required.

3. If a petition is required, it shall be submitted with at least 50% of the residents / property owners' signatures showing support along a street segment (between arterial or collector intersections) for Traffic Calming.
4. At the next TSRC, following submittal of a petition (if required), an Engineering Report recommending Traffic Calming Measures will be submitted to the TSRC for review and recommendation.
 - ▶ The Engineering Report will also be sent to the Fire and Police Departments for comments regarding emergency response.

At the same TSRC meeting, a Public Hearing will be held. The hearing may be continued to develop consensus.

5. After receiving approval from the TSRC, Engineering will prepare a cost estimate and improvement plan for the proposed improvements. The traffic calming plan will then be sent to the City Council (at the next regularly scheduled meeting) for approval.

If the project is approved and at or under \$5,000, the project will be prioritized by the TSRC. If Traffic funds are available, the Engineering Department will begin project implementation, otherwise, the project will need to wait for implementation until funds are available. If the project is over \$5,000, the project will need to be added to the CIP list and will then be prioritized against all CIP's.

10. Ongoing Monitoring with Evaluation by Engineering for one year after Installation.

Evaluation Considerations – Engineering, Police, and Public Works staff will evaluate each request for traffic calming and make recommendations to the Traffic Safety Review Committee (TSRC) for application considering the following factors:

- 1) Traffic Volume, Traffic Speeds relationship to Posted Speed Limit, Length of Segment, Slope / Grade and Effect on other nearby Streets
- 2) Severity of Problem - Perceived or Reported versus Actual
- 3) Potential for Speed or Volume Reduction
- 4) Effect on Traffic and Pedestrian Safety
- 5) Functional Classification of Street and Effect on Street Capacity
- 6) Potential for Increased Noise Pollution
- 7) Potential Loss of On-street Parking and Access Restrictions
- 8) Emergency Vehicle Response (or Bus Route) Impacts
- 9) Installation and Ongoing Street Maintenance Costs
- 10) Neighborhood Support
- 11) Effect of Enforcement Actions
- 12) Review of City Ordinances, Plans and Policies

Project Selection

- ▶ Projects will be ranked as needed by the TSRC *based on safety considerations.*
- ▶ Contributions by a neighborhood (including volunteer labor) may expedite the construction of projects exceeding \$5,000.
- ▶ Projects must be within approved budget. Projects with a City expenditure exceeding \$5,000 must be specifically included in the adopted City Budget or added by amendment.



CITY OF GRASS VALLEY ENGINEERING DEPARTMENT

125 East Main Street
Grass Valley, CA 95945
530-274-4373
Fax: 530-274-4399

PETITION FOR TRAFFIC CALMING MEASURES

We, the residents of _____ (street name) between _____
(arterial/collector cross street) and _____ (arterial/collector cross street) do
hereby request that the Grass Valley Traffic Safety Review Committee and the City Engineering
Department develop and propose Traffic Calming Measures for our street.

<u>Primary Reason(s) for this petition</u>	<u>Description, Time of Day and Days</u>
Speed of Vehicles	_____
Volume of Cut-Through Traffic	_____
Pedestrian Safety	_____
Other (please specify)	_____

	<u>Signature</u>	<u>Name (print)</u>	<u>Address</u>	<u>Phone</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
13.	_____	_____	_____	_____
14.	_____	_____	_____	_____
15.	_____	_____	_____	_____
16.	_____	_____	_____	_____
17.	_____	_____	_____	_____
18.	_____	_____	_____	_____
19.	_____	_____	_____	_____
20.	_____	_____	_____	_____