Public Works Agency
Alameda County

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ALAMEDA COUNTY

NEIGHBORHOOD

TRAFFIC CALMING PROGRAM

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ALAMEDA COUNTY PUBLIC WORKS AGENCY

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Preface

The original guidelines for the Alameda County Neighborhood Traffic Calming Program were adopted in 1997. The program was established as a neighborhood-initiated process that would require neighborhood support, cooperation, and consent of each application to initiate the studies and implementation by Public Works Agency.

As noted in the original guidelines, "These guidelines are dynamic and may change throughout the course of the traffic calming program." It is the intent of this program that these guidelines remain dynamic. As traffic calming techniques develop and our experiences with traffic calming broaden, changes will be incorporated into these guidelines. The Traffic Calming Program will continue to evolve based on our evaluations and input from Alameda County Fire Department, California Highway Patrol, Alameda County Sheriff's Office, and the community.

ALAMEDA COUNTY
NEIGHBORHOOD TRAFFIC CALMING PROGRAM

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I. Introduction

The Alameda County Neighborhood Traffic Calming Program, a set of traffic calming guidelines for local and collector roadways, employs traffic engineering practices, neighborhood involvement, education, and physical measures to help relieve the negative impact of vehicles on residential neighborhoods. This program attempts to address residential neighborhood impacts such as excessive speeding or using residential roadways as a bypass to more congested major routes.

Alameda County frequently receives requests from residents to address traffic issues related to excessive speed, bypass traffic and other safety concerns on their residential roadways. In response to these requests, Public Works Traffic Engineering staff conducts traffic studies and makes recommendations for measures to address these traffic concerns. Depending on the roadway conditions and traffic characteristics, either the installation of a traffic control device or increased enforcement of existing laws may often mitigate the traffic safety concern.

Sometimes residents feel that additional measures are needed to address their traffic concerns and request that alternative measures be considered to reduce motorist speeds or vehicle volumes in their neighborhoods. These alternative measures are commonly referred to as traffic calming measures. Their application and implementation on Alameda County roadways is consistently evaluated by the Public Work Agency's Traffic Engineering Section as part of the *Alameda County Neighborhood Traffic Calming Program*.

Traffic safety must be the priority before any traffic calming measure can be considered for implementation. The implementation of traffic calming measures is divided into four "levels." The levels start with passive measures and gradually increase to more physically restrictive vehicle control measures. The level of traffic calming measures depends on roadway conditions, traffic characteristics, potential impacts to the surrounding neighborhood, impacts to emergency response time by first responders, and the degree of effectiveness.

II. Objectives

The program described herein applies primarily to local and minor collector residential roadways. This is because the sensitivity to maintain the character of these roadways, and because the primary function of these types of roadways is for property access rather than to accommodate larger volumes of through (bypass) traffic in a free-flowing manner.

The following objectives have been identified for *the Alameda County Neighborhood Traffic Calming Program*:

1. Increase motorist awareness of the residential character of the neighborhood
2. Reduce motorist speed
3. Discourage bypass traffic
4. Reduce traffic collision frequency and severity
5. Improve the livability of the community and quality of life

In addition, the following are auxiliary objectives of the program:

1. Involve local residents in developing the appropriate traffic calming measure for their neighborhood
2. Provide a step process, which is streamlined and well-defined, to address residents' requests for traffic calming measures.
3. Establish consistent screening criteria for implementing traffic calming measures where applicable.
4. Establish design guidelines for installing traffic calming measures.
5. Provide for prioritized, cost effective implementation of traffic calming measures.

III. Step Process

The process for determining and implementing traffic calming measures in a neighborhood involves the participation of the community and governmental entities. The following steps are included in the process for implementing traffic calming measures (the responsible party for each step is identified by *italics*):

1. Define the neighborhood in terms of surrounding roadway network, circulation boundaries, and connections to arterial and collector roadways. *(Public Works and the neighborhood)*

2. Communicate the Neighborhood Traffic Calming Program to residents and/or property owners to identify traffic issues and determine objectives for the neighborhood. *(Public Works and the neighborhood)*

3. Study traffic conditions (traffic volumes, motorist speed, on-street parking demands, typical travel routes, emergency service, etc.) and identify types of measures that may be applicable and effective in achieving neighborhood objectives. *(Public Works)*

4. Determine the level of community support for the Neighborhood Traffic Calming Program (generally in the form of a petition form from residents and property owners representing 2/3 of the neighborhood's properties). *(Public Works and the neighborhood)*

5. Develop a preliminary implementation plan of traffic calming measures and present to the neighborhood. *(Public Works)*

6. Revise implementation plan to assimilate comments from the neighborhood and commitments obtained from affected property owners and/or residents, if necessary. *(Public Works)*

7. Implement approved traffic calming measures. *(Public Works)*

8. Perform follow-up evaluation of whether neighborhood objectives were met. *(Public Works)*

9. Repeat steps 5 through 10 if necessary.

When a physical traffic calming measure is approved, installation of the device will be installed after all appropriate steps are completed (environmental review, preparation of plans and specifications, construction, and inspection).

IV. Removal of Traffic Calming Measures

Upon request by the community, Public Works may consider removal of previously installed traffic calming measures. The request to remove traffic calming measures must be supported by the community in the form of a petition form representing 2/3 of the neighborhood's properties.

V. Guidelines for Design and Installation

As part of the process in developing the design guidelines for *the Neighborhood Traffic Calming Program*, applicable roadway safety criteria from the following design manuals were considered:

- AASHTO (American Association of State Highway and Transportation Officials) - **A Policy on Geometric Design of Highways and Streets**
- Caltrans - **Highway Design & Traffic Manuals**
- **California Manual on Uniform Traffic Control Devices**
- ITE (Institute of Transportation Engineers) Design Criteria
- ACPWA (Alameda County Public Works Agency) Design Criteria

The following are design guidelines for application of the Traffic Calming Program:

1. A step process will be used to apply traffic calming measures in communities. Generally, lower level measures will be applied and assessed for effectiveness before higher level measures are considered.

2. The device must be located on relatively straight, level roadway sections

3. Some traffic calming measures (e.g. speed humps) may not be located near roadway intersections.

4. For speed humps, the roadway must have a gradient of less than five percent (5%) for a minimum of 750 feet between intersections in the traffic calming area. Road humps may be used on roadways up to eight percent (8%). The minimum roadway section length may be increased for vehicle control considerations for steep grades adjacent to the roadway section under consideration.

5. Roadway illumination is desirable near the traffic calming device

6. Devices must be installed entirely within the County's right-of-way

7. Devices should avoid conflicts with existing infrastructure: utilities, storm-drain facilities including gutter flow, landscaping and driveways

8. Landscaping ownership and associated maintenance responsibilities must be agreed to by the adjacent property owners

VI. Prioritization (Screening) Criteria

The eligibility of roadways for the traffic calming program will be determined by the following criteria:

1. ADT (Average Daily Traffic)

   maximum volumes for 3-inch speed hump: < 4,000 vehicles per day (vpd)

   maximum volumes for 2-inch road hump: < 10,000 vehicles per day (vpd)

   maximum volumes on rural roadways: 10,000 vehicles per day (vpd)

2. Roadway Grade:

   - Speed hump and speed table: less than 5%
   - Road hump: less than 8%

3. Max speed limit

   - Urban roadways: 30 mph
   - Rural roadways: 45 mph

3. The Critical (85th percentile) Speed is 7 miles per hour (mph) above the posted speed limit (typically 25 mph) for speed humps.

4. Presence of speed-related collisions based on recent collision history.

5. Documented evidence that the roadway is being used as bypass route during peak commute periods.

6. An assessment of existing roadway facilities will be conducted. Existing roadway facilities that are near schools, parks, community centers, senior housing, retail establishments or other pedestrian generators will be given special consideration.

7. Roadways should be of residential characteristics.

VII. Factors and Constraints Affecting the Selection of Traffic Calming Devices

Below are common factors and constraints that may affect the selection of traffic calming devices:

1. Maintaining access for pedestrians, bicyclists, and other non-motorized users

2. Potential loss of on-street parking in areas with high parking demand

3. Increase in noise levels associated with deceleration and acceleration of vehicles

4. Available sight distances

5. Presence of transit buses

6. Impact to emergency response time

VIII. TYPICAL TRAFFIC CALMING MEASURES

The following table of traffic calming measures outlines the different levels of traffic calming and the required approval process for each designated level. These traffic calming measures can be implemented individually or in combination. However, not all measures will be feasible or acceptable in all locations.

Additional information about these traffic calming measures are available on the Institute of Transportation Engineers website:

https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/

Level 1 *Traffic Calming*:

Requires no physical roadway modifications.
Approval authority: Traffic Engineering

- Roadway Centerline Removal
- Residential Neighborhood Gateway

Level 2 *Traffic Calming*:

Requires minor physical roadway modifications (e.g., raised ceramic tiles, painted legends, striping).
Approval authority: Traffic Engineering

- Rumble Strips
- Highlighted Pedestrian Crossings
- Speed Display Signs
- Travel Way Edgelines

Level 3 *Traffic Calming*:

Requires major physical roadway modifications (e.g., curb extensions, uneven roadway surface).
Approval authority: Director of Public Works

- Bulb-outs
- Chicanes
- Single-lane Slow Points
- Road Humps
- Speed Humps
- Speed Tables
- Roundabouts
- Traffic Circles

Level 4 *Traffic Calming*:

Measures physically prohibit vehicular travel to a certain degree (e.g., detours to parallel routes). These are not applicable on collector roadways.
Approval authority: Board of Supervisors Resolution

- Diverters/Forced Turn Channelization
- Half (one-way) Roadway Closure
- Full Roadway Closure