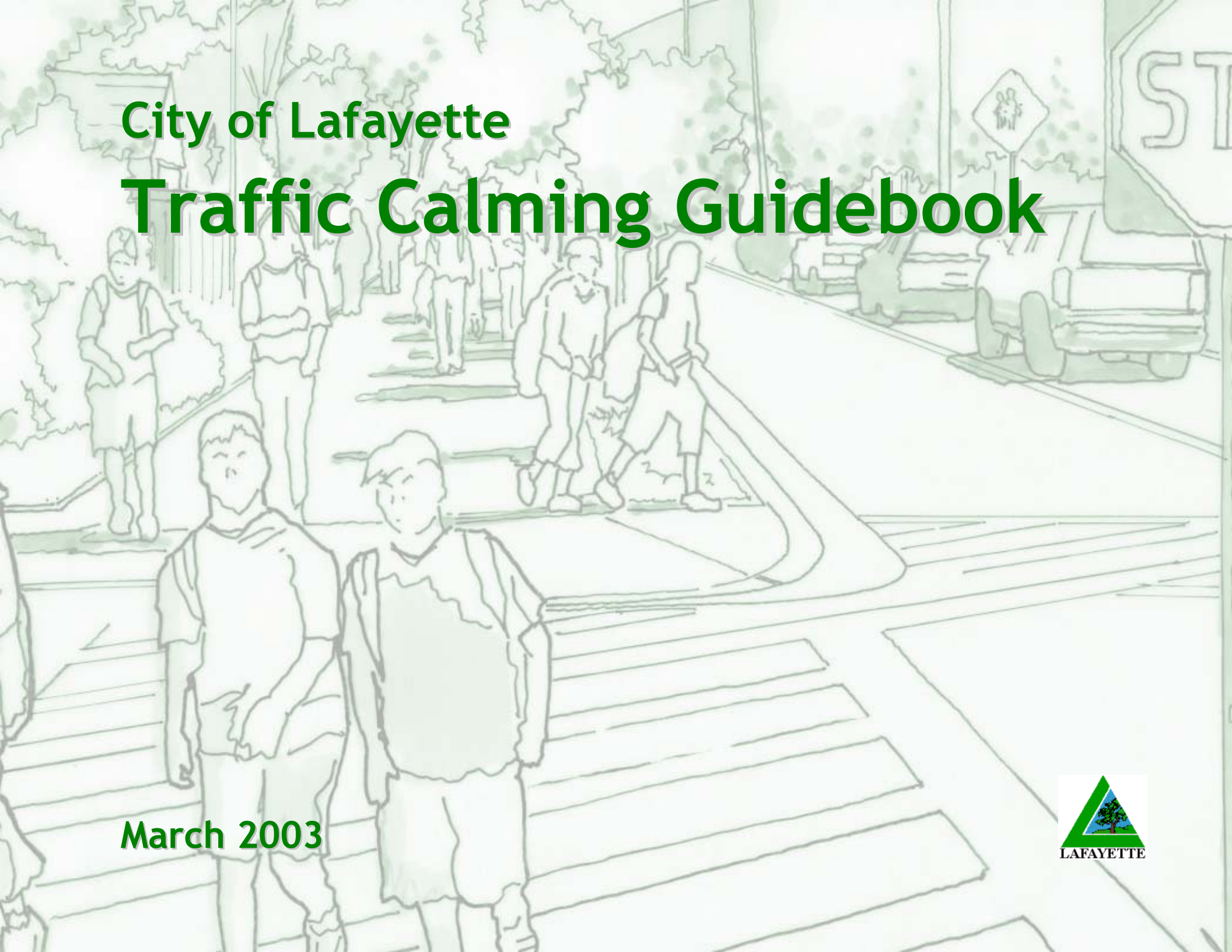

City of Lafayette

Traffic Calming Guidebook

March 2003

LAFAYETTE

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Traffic calming (traf'ik kal'm-ing, *n.*)

The management of inappropriate vehicular traffic speeds and volumes through educational, enforcement and/or engineering measures so that their negative impacts on residents, pedestrians, bicyclists and schools are minimized.

Source: City of Lafayette

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1. INTRODUCTION

Today, many of us live overscheduled and fast-paced lives. Our vehicles are engineered to insulate us from the effects of traffic noise and the impact of bumpy roads. They even allow us to negotiate the curving roads of Lafayette better and at higher speeds. These factors, and others, have resulted in a recurring concern by Lafayette residents that more people appear to be driving faster on neighborhood streets. Residents feel that speeding vehicles threaten the safety, peace and character of their neighborhoods.

Balancing an efficient multi-modal transportation system while maintaining the safety of Lafayette's streets and respecting the tranquility of its neighborhoods creates a constant challenge. Lafayette's Traffic Calming Program was created as a tool to help address this challenge. The program's goal is to restore and maintain a balance between mobility and neighborhood quality of life. In the process, we also hope to make safety and appropriate driving behavior a higher priority for all users of Lafayette's roadways.

This guidebook was prepared to introduce and explain the City's Traffic Calming Program. It presents to residents the required steps to implement traffic calming measures within their neighborhood and offers a range of options that can be considered.

Lafayette has a long tradition of citizen volunteerism and community participation in local decision-making. Building upon this history, the City of Lafayette's Traffic Calming Program relies heavily on community effort and action. Residents work together closely to identify existing problems, define neighborhood goals, develop an action plan and gain community support.

Purpose of Traffic Calming

The City of Lafayette defines traffic calming as the management of inappropriate vehicular traffic speeds and volumes through educational, enforcement and/or engineering measures so that their negative impacts on residents, pedestrians, bicyclists and schools are minimized.

The immediate purpose of traffic calming is to reduce the speed and/or volume of traffic to acceptable levels. Reductions in traffic speed and volume, however, are just means to other ends

such as traffic safety and active street life. Generally, municipalities undertake traffic calming for many different reasons, including:

- Reducing accidents
- Reducing excessive speeding
- Reducing inappropriate through traffic
- Reducing noise, vibration and air pollution

Goals and Policies

By carrying out the provisions of the Traffic Calming Program, the City of Lafayette hopes to fulfill the following goals:

- Improve driver attention, awareness, and behavior;
- Promote safe and pleasant conditions for residents, motorists, pedestrians and bicyclists on neighborhood streets;
- Preserve and enhance pedestrian and bicycle access to neighborhood destinations;
- Encourage citizens to be directly involved in neighborhood traffic management activities;
- Facilitate social interaction among neighborhood residents; and
- Provide a process that will equitably address requests for action by neighborhood residents and will balance resident needs with all users of City streets.

As discussed later, many different traffic calming tools are available to achieve the above goals. In pursuing these goals, the City supports the following policies:

- To the extent feasible, traffic flowing from one arterial that is contiguous to another should not make use of local or collector streets as a bypass;
- Emergency vehicle access should be preserved at levels that meet City response standards;
- The City will cooperatively work with its citizens to employ a variety of measures that help reduce traffic speeds and/or volumes on local and collector streets;

- Permanent traffic calming measures will be designed in conformance with sound engineering and planning practices and should complement the residential character of the neighborhood;
- Traffic calming measures employed along particular street corridors should not create substandard traffic conditions on other streets. In other words, solve the problem; do not shift it elsewhere;
- Traffic calming measures will be developed while being cognizant of their impacts on others who have no reasonable alternative routes; and
- Residents and property owners within an area where traffic-calming features are installed should be prepared to share in the cost of their installation.

Balancing the E's: Education, Enforcement and Engineering

Education, enforcement and engineering – the "3Es" -- are commonly accepted elements needed for the successful implementation of a traffic-calming program. The experience of other similar programs has shown that when applying only one of these Es without the other two, the end result may be less than satisfactory. For instance, some communities have rushed to install physical devices engineered for the area, only to find that the initial problem doesn't magically disappear and secondary problems may arise.

After the identification of a neighborhood problem, an integrated approach is used to develop measures that consider the "3 E's": Education, Enforcement and Engineering.

Education

Residents are provided with information and tools through a variety of outlets to make informed decisions about neighborhood traffic concerns and to influence driving behavior. Educational aspects of the program also promote community building which in and of itself promotes respect for one's neighborhood.

In a small city such as Lafayette, education plays a critical role in traffic calming. Due to budgetary and staffing limitations, educational efforts are often the most readily implementable means of modifying driver behavior. This program takes a unique approach towards education, incorporating the principles of successful marketing and advertising to effectively communicate our message. Some of the educational tools promote face to face interaction with old and new

neighbors with the belief that people will be more inclined to drive responsibly and appropriately when they feel connected by a sense of community with their neighborhood.

Enforcement

Community identified strategies can be put into effect through targeted police enforcement. By enlisting the help of the police department, focused enforcement efforts serve to increase community awareness of speeding problems. While enforcement requires significant staffing and budgetary resources, one of its key benefits is responsiveness. The police department utilizes its available resources to respond to areas experiencing traffic problems as identified by collision analysis, residents complaints, and conditions observed by enforcement officers.

Engineering

Through a resident, Circulation Commission and City staff partnership, traffic calming strategies involving physical features are developed recognizing sound engineering principles, community input, and financial constraints. A variety of engineering options helps to ensure that the cumulative negative impacts associated with one traffic calming feature do not multiply and/or result in a large-scale, city-wide problem.

Elements of one or more of the "3 E's" are incorporated into all of the traffic calming measures considered by the City. These fall into three different program tiers, each with increasing levels of neighborhood participation and community review.

Levels of Traffic Calming

Level 1 measures are all community-driven and allow residents to take immediate action to address concerns. In other words, residents can work together immediately to educate themselves and their neighbors about driving behaviors and ways to calm traffic. Residents take the initiative in undertaking program measures such as distributing educational materials, forming a speed watch group, taking neighborhood pledges, maintaining landscaping to improve the street environment, conducting neighborhood education workshops etc. Additionally, residential groups can request use of the City's radar speed display unit and ask for targeted police enforcement.

Level 1 tools can be extremely effective in creating a more livable street environment at a low cost and without the potentially negative impacts resulting from implementing higher-level plans. Furthermore, Level 1 tools do not require any lengthy debate or approval process by City boards, so they may be quickly implemented.

Level 2 measures focus on easily implementable and still relatively low-cost features. These may include enhancing the visibility of crosswalks, striping narrow lanes, providing speed limit signing, installing new high visibility crosswalks, providing additional informational signage, and installing new stop signs where they meet commonly-accepted traffic engineering warrants.

Because implementation of Level 2 measures is often less controversial and affects fewer people than Level 3 measures, the Level 2 process is streamlined. Circulation Commission review and City Council approval is only required for those items that require conformance to traffic or safety standards and/or warrants prior to their installation, i.e., stop signs and mid-block crosswalks. A neighborhood action team approves neighborhood plans with input and guidance from the designated Circulation Commission representative to the team and City staff, however, all plans developed by the neighborhood action team need to conform with standard engineering practices.

Level 3 measures typically alter the configuration and potentially the visual and functional character of neighborhood streets, so they often require detailed engineering, are expensive, and require substantial community input. Because of the potential impacts, the Level 3 process is designed to have more opportunities for review in the neighborhood, as well as by City boards. Neighborhood acceptance, as well as Circulation Commission review and City Council approval, is a prerequisite prior to the implementation of any Level 3 traffic calming measure.

Applicable Streets

Level 1 and Level 2 traffic calming measures can be applied to any local, collector or arterial roadway within Lafayette. Level 3 measures, because of their potential traffic congestion, safety and diversion impacts, may not be appropriate on all streets. Level 3 measures are not appropriate through this traffic calming process for the following roadways classified as arterials in the General Plan: Pleasant Hill Road, Moraga Road, Deer Hill Road, St. Mary's Road, Mount Diablo Boulevard, First Street between Deer Hill Road and Mount Diablo Boulevard, Glenside Drive/Reliez Station Road/Olympic Boulevard, and Oak Hill Road between Mount Diablo

Boulevard and Deer Hill Road. Consideration of Level 3 options could be done through a supplemental process not envisioned by this plan.

In addition, the following roads may be constrained in the type of Level 3 features than can be installed: Acalanes Road, El Nido Ranch Road, Happy Valley Road, Hidden Valley Road, and Reliez Valley Road. Certain Level 3 tools on these and other streets may not be appropriate considering grades, sight distance and other factors. City staff will provide guidance on what Level 3 measures may be appropriate for these roadways.

2. IMPLEMENTATION PROCESS

The City of Lafayette's traffic calming program begins with an "initiation" step, which all requests undertake, then follows one of three levels of implementation, depending on the level of traffic calming requested by the community. A chart illustrating the implementation process is shown on the next page.

Initiation

Community Petition

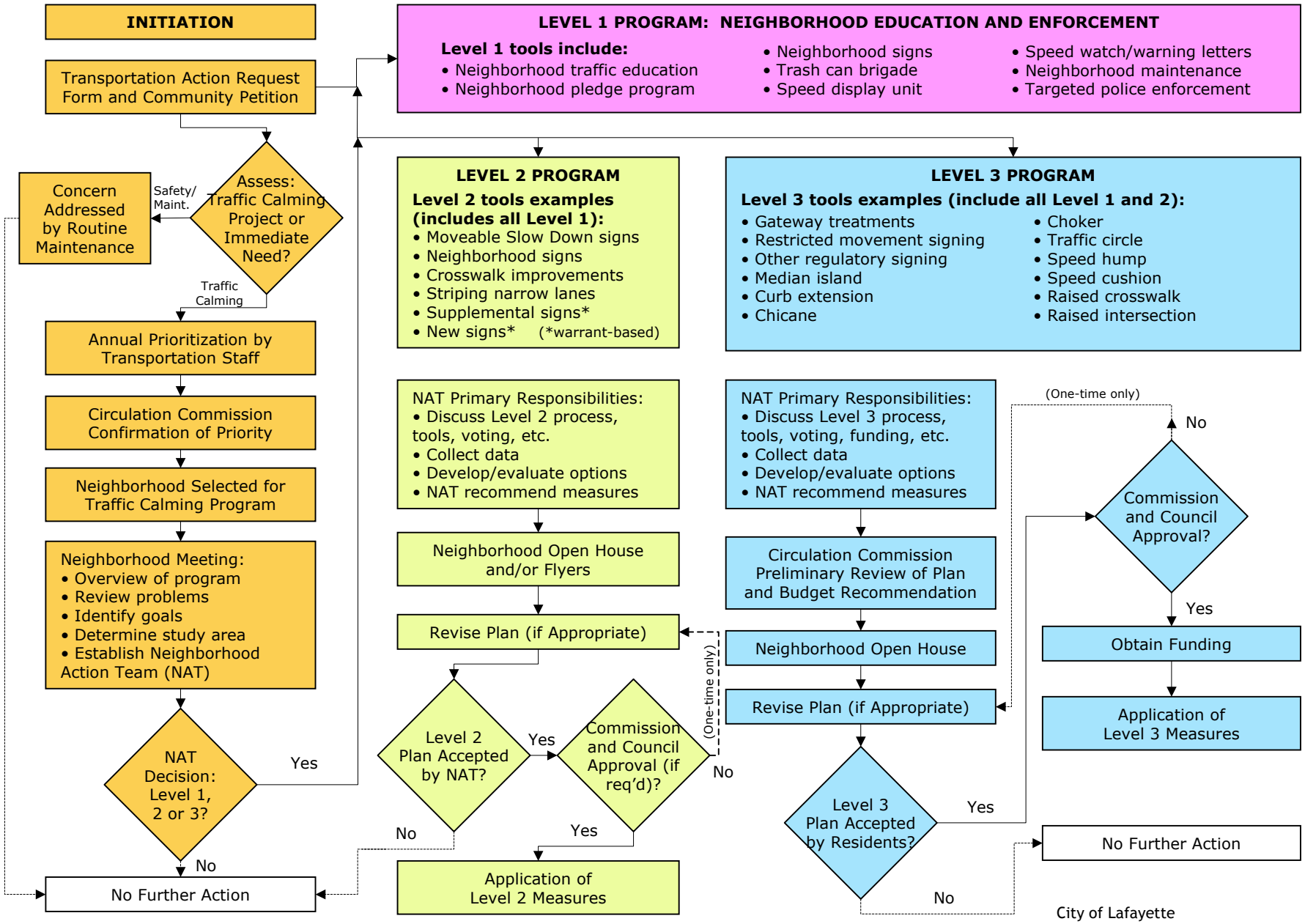
The traffic calming process begins once the City receives a request from a group of concerned residents to initiate a traffic calming study. A Transportation Action Request Form must be submitted to the City (this form is available at the City's offices). The completed form should include a discussion of the current traffic problem and identify a potential neighborhood coordinator. If staff determines the request would best be solved via the traffic calming program, then staff will provide the applicant with a petition that will also need to be submitted. A completed petition needs to include the names, addresses and signatures of at least fifteen (15) owners or tenants, of separate affected properties, who support the request to initiate a traffic calming study.

Some requests may be able to be addressed immediately, without the need of a formal traffic calming process. These include issues related to safety, e.g., trimming of shrubs that obstruct driver sight distance, replacement of worn or missing signs, restriping lane lines and shoulders, etc. City staff will determine whether a concern should be addressed immediately or qualifies as a potential traffic calming project and follow the process discussed in this guidebook.

Neighborhood Education and Enforcement (Level 1) Program

When the City receives a completed Transportation Action Request Form and petition, or when otherwise requested, the City will forward Neighborhood Education and Enforcement Traffic Calming materials to a designated person or community group. These materials enable a neighborhood to take the initiative in responding to local traffic issues. As discussed below, all of the Level 1 techniques and tools provided in the package can be deployed almost immediately and most may be implemented by the neighborhood itself without City action.

LAFAYETTE TRAFFIC CALMING PROCESS



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It should be noted that although Level 1 program materials enable residents to voluntarily conduct traffic calming education, the Level 1 program must be implemented by a neighborhood as a part of any Level 2 or Level 3 Traffic Calming Program plan.

Assessment of Problem by Transportation Staff

If City staff determines that the identified issue could potentially be addressed only through the application of traffic calming tools, staff will flag the request. City staff will maintain a cumulative log of all pending requests. If City staff determines that the identified issues could be readily addressed through other safety or maintenance measures, the request will not proceed as a traffic calming project but the City will issue a work order or agendize it for a Circulation Commission meeting as soon as practicable. (If an applicant believes that their request should be addressed through a different process than that recommended by City staff, an applicant may submit in appeal in writing to the Circulation Commission and/or appear at one of its meetings during the Public Comments portion of the agenda.)

Once each year, the City will collect traffic, safety and land use information to prioritize the requests. Staff will complete Traffic Calming Priority Worksheets to accomplish this task. Key inputs to the worksheet include traffic volumes, collision history, travel speeds, high pedestrian activity areas, and each neighborhood's prior involvement in a traffic and safety education program. A sample worksheet is shown to the right. Staff presents the newly prioritized list to the Circulation Commission annually.

Annual Prioritization of Neighborhoods

The City's prioritization process allows the City to manage its limited resources effectively and appropriately when dealing with citywide traffic calming needs. Once each year, based on

Neighborhood Traffic Calming Program Prioritization Worksheet

This worksheet will be completed by City of Lafayette staff in accordance with the City of Lafayette's Neighborhood Traffic Calming Program. It will be used to prioritize the potential initiation of specific neighborhood traffic calming processes. Note that the highest scoring "street" will be used if multiple streets are included in the study area.

Date: _____

Name of neighborhood: _____

Limits of study area: _____

1. Traffic Volumes (mid-week volumes within last two years)
Greater than 2000 vehicles per day = 8 points
1,500 to 2,000 vehicles per day = 6 points
1,000 to 1,500 vehicles per day = 4 points
Less than 1,000 vehicles per day = 0 points _____

2. Collision History on Local Streets
More than 5 collisions in a 3-year period = 12 points
2 to 4 collisions in a 3-year period = 9 points
1-3 collisions in a 3-year period = 6 points _____

3. Travel Speeds
85th percentile speed ≥ 10+ mph over speed limit = 10 points
85th percentile speed ≥ 5+ mph over speed limit = 6 points
85th percentile speed ≥ 3+ mph over speed limit = 3 points _____

4. Pedestrian Facilities
There is essentially no pedestrian space available = 5 points
The pedestrian space needs improvement = 3 points
The pedestrian space is substantially usable = 1 point _____

5. Schools and Activity Centers
Is the school used as a primary access route to school, transit community facilities, etc.? 3 points for each school, 2 points for each other activity center destination. 10 points total. _____

6. Involvement in Level I Program
Extent of involvement in Level I program = 0 to 5 points _____

Total Score: ☐

Prepared by: _____

the results of the Traffic Calming Priority Worksheets, City staff will prepare a prioritized listing of all active traffic calming requests. The prioritized listing will be presented to the City's Circulation Commission for review and confirmation of priorities for the coming year. The Circulation Commission will either confirm the priority assigned or if needed adjust the priority appropriately. The Commission also has the flexibility to make modifications such as recommending combining two neighborhood programs into one or addressing different issues within a single neighborhood at different times. The Circulation Commission will finalize each year's prioritized listing.

Selection of Neighborhood for Traffic Calming Process

When a particular neighborhood reaches the top of the traffic calming priority list and appropriate City resources are available, neighborhood representatives will be notified that a Level 2 or Level 3 traffic calming process can commence. City staff will arrange an initial neighborhood meeting with the assistance of the neighborhood coordinator designated on the original Transportation Action Request Form.

On occasion, staff may recommend to the Circulation Commission that certain neighborhood requests that have reached the top of the priority list not be considered for the Level 2 or 3 Traffic Calming Program because the traffic problem does not reach a minimum threshold desired to undertake Level 2 or 3 activities.

Initial Neighborhood Meeting

Once a neighborhood request has reached the top of the priority list, staff will work with the neighborhood coordinator to schedule an initial neighborhood meeting. Based on the extent of the perceived traffic issue, City staff will identify the preliminary study area boundaries. Staff may determine that the study area should consist of just one street segment or extend beyond those locations of initial concern. As the traffic calming process continues, study area boundaries may be changed due to potential benefits and impacts. Through a collaborative effort between City staff and those residents who petitioned the study, all households in the identified preliminary study area will be invited to the initial neighborhood meeting.

At the neighborhood meeting, City staff will present an overview of the City's traffic calming program, including the toolbox of potential measures and the implementation requirements for each of the Level 1, 2 and 3 programs. The results from the initial field investigation and data

collection phase, including traffic volumes, collision history, travel speeds, street type(s), and level of pedestrian activity will be presented. The original petitioners may be asked to assist in preparing for this meeting.

Neighborhood representatives will provide additional input on existing issues, such as the results of a resident-conducted radar speed survey or vehicle cut-through study, identification of potential constraints, photographs, etc.

Residents will be asked to identify potential goals for the traffic calming study. Depending upon community input, the traffic calming study area may be redefined.

A Neighborhood Action Team (NAT) will be formed. The initial NAT will consist of residents, City staff, and a Circulation Commission representative. Additional representation may be needed if Level 3 actions are pursued so that all parties potentially impacted by the actions may provide input. The purpose of the NAT is to develop equitable, pragmatic and affordable solutions to the identified traffic issues.

NAT membership will be established by City staff in consultation with the Circulation Commission Chair and with the assistance of the initial petitioners. NAT membership will be developed with the intent of providing fair and equitable representation of the study area and community interests. In order to keep the group to a workable size, NATs generally range from 5-15 people with a minimum of five people including one Circulation Commissioner and one city staff person. Refer to "Neighborhood Action Team Responsibilities" included in both the Level 2 and 3 Process discussions for additional information regarding NATs.

Neighborhood Decision to Pursue Process

The NAT will meet to discuss the outcome of the initial neighborhood meeting. Based on existing issues and concerns, as well as neighborhood goals, the NAT will decide whether or not to pursue Level 2 or 3 traffic calming actions. It is also possible that the NAT may decide to revert to a Level 1 program or not undertake any action at all.

Selection of an initial traffic calming level does not preclude a NAT from pursing an alternative level if the NAT eventually determines a different level would better suit the neighborhood's needs.

Level 1 Process

Either during or after the Initiation step, neighborhoods may begin using Level 1 measures. Level 1 measures are all neighborhood-driven and allow residents to take immediate action to address its concerns, i.e., residents can work together immediately to educate themselves and other residents about driving behaviors and ways to calm traffic. Residents take the initiative in forming a speed watch group, taking neighborhood pledges, maintaining landscaping to improve the street environment, conducting neighborhood education workshops, and undertaking other measures. Additionally, residential groups can request use of the City's radar speed display unit and ask for targeted police enforcement. The Level 1 toolkit describes these options in further detail.

Level 1 tools can be very effective in creating a more livable street environment at a low cost and without the potentially negative impacts resulting from implementing higher level plans. Furthermore, Level 1 tools generally do not require lengthy debate or approval process by City boards, so they may be quickly implemented.

Level 2 Process

After undertaking the Initiation step previously described, a traffic calming request may begin the Level 2 program. Level 2 measures focus on easily implementable and still relatively low-cost features such as enhancing the visibility of crosswalks, striping narrow lanes, providing speed limit signing, installing new high visibility crosswalks, providing additional informational signage, and installing new regulatory signs. New installations and speed limit changes require fulfillment of established or commonly accepted traffic engineering standards and warrants. The traffic calming program anticipates that residents will incorporate Level 1 measures into Level 2 plans.

Because implementation of Level 2 measures is often less controversial and affects fewer people than Level 3 types of measures, the Level 2 process is streamlined. Circulation Commission review and City Council approval is only required for those items that require meeting traffic or safety standards and/or warrants prior to their installation. The NAT approves neighborhood plans with input and guidance from the designated Circulation Commission representative and City staff. Traffic calming solutions developed by the NAT need to conform with standard engineering practices.

Neighborhood Action Team (NAT) Responsibilities in Level 2

Encouraging volunteerism and public participation are two key characteristics of the Lafayette community and its City government. Subsequently, the Traffic Calming Program places a great deal of responsibility on residents in order to ensure that the plan being developed is appropriate for their neighborhoods. It is expected that the resident participants on the NAT will serve as a resource and contribute significantly to the overall effort of the team.

The NAT will generally meet from two to four times to develop a Level 2 traffic calming plan. The NAT will be responsible for reviewing the Level 2 implementation process, discussing the pro's and con's of available Level 2 tools, assist in collecting appropriate data, developing and evaluating alternative plans, and recommending a Level 2 plan for consideration by the potentially affected neighborhood. While some NAT meetings may be conducted without Circulation Commission and/or City staff members in attendance, these members will serve as resources to ensure consistency with standard practices and compliance with prevailing laws.

Examples of traffic data that may be collected for Level 2 and Level 3 programs:

Roadway geometry: Street widths, lane widths, roadway curvature, grades, and locations of stop signs and traffic signals.

Roadway users: Traffic volumes during peak hours, the entire day, and any particular periods when the problem occurs; pedestrian and bicycle volumes; truck volumes; existence of regional bus routes; designation as a primary emergency response route, and origin-destination studies.

Performance and behavior: Travel speeds, stop sign violations, noise levels, rates of unsafe driving practices, unsafe pedestrian and bicyclist travel behavior, and accident records.

Neighborhood Review of Level 2 Plan

The NAT will present the proposed Level 2 traffic calming plan to residents and property owners at a neighborhood open house and/or through a newsletter, flyer or other type of informational material. Neighborhood Action Team members shall host the open house and will be responsible for preparing presentation materials and assisting with distribution of materials. Open houses may be held in private homes or local community rooms such as clubhouses, schools or other public meeting spaces. The City's Traffic Calming Program will cover reasonable costs for photocopying and other supplies. As discussed previously, residents will play a significant role in developing and implementing the plan. It is expected that resident participants on the NAT will serve as a resource and contribute substantially to the overall effort of the team.

Revising Level 2 Plan

The intent of presenting the recommended plan to the neighborhood is to confirm goals and issues to the affected residents and to solicit input regarding the traffic calming tools suggested. The NAT will use any feedback obtained to revise the Level 2 plan, as appropriate.

Neighborhood Approval of Level 2 Plan

Level 2 traffic calming plans require approval from a simple majority (51%) of all of the NAT members plus one. All NAT members must cast a vote on the Level 2 plan.

Circulation Commission Review and City Council Approval of Level 2 Plan

As stated previously, some Level 2 traffic calming tools (e.g., new regulatory signing, new crosswalks, etc.) require fulfillment of established or commonly-accepted traffic engineering standards and warrants in order to justify installation. The Circulation Commission must review and City Council must approve the installation of such features.

Application of Level 2 Measures

Upon neighborhood acceptance and City approval (when necessary), the recommend Level 2 traffic calming measures will be installed. The City will arrange for the installation and bear the cost for the installation of Level 2 measures.

Level 3 Process

This section describes the procedure used to potentially implement Level 3 traffic calming tools. Level 3 measures typically alter the configuration and potentially the visual character of neighborhood streets. They often require detailed engineering, are higher cost, and require substantial community input. The study area may need to be expanded in order to accommodate the area potentially impacted by Level 3 measures. Because of the potential impacts, the Level 3 process is designed to have more opportunities for review in the neighborhood, as well as by City boards. Neighborhood acceptance, as well as Circulation Commission review and City Council approval, is a prerequisite prior to the implementation of any Level 3 traffic calming measure.

The traffic calming program anticipates that residents will incorporate Level 1 and 2 measures into Level 3 plans.

Neighborhood Action Team (NAT) Responsibilities in Level 3

Neighborhood participation and promoting volunteerism are core principles of the Lafayette community and its City government. Therefore this program's success is based on placing a great deal of responsibility on residents in order to ensure that the plan being developed is appropriate for their neighborhoods. It is expected that the resident participants on the NAT will serve as a resource and contribute significantly to the overall effort of the team.

The NAT will generally meet from four to eight times to develop a Level 3 traffic calming plan and the team will require a larger number of residents (minimum of seven residents) than a Level 2 NAT. In addition to residents, City staff, and a Circulation Commission representative, the Neighborhood Action Team may include a traffic engineer, emergency service providers, and representatives of other entities that may be directly impacted by the implementation of Level 3 measures. While some NAT meetings may be conducted without Circulation Commission and/or City staff members in attendance, these members will serve as resources to ensure consistency with standard practices and compliance with prevailing laws.

The NAT will be responsible for reviewing the Level 3 implementation process, discussing the potential benefits and impacts of available Level 3 tools, collecting appropriate data, developing and evaluating alternative plans, consider private financing, and recommending a Level 3 plan for consideration by the potentially affected neighborhood. Thorough neighborhood notification and input is necessary for the successful implementation of a Level 3 plan.

Each NAT shall develop its own protocol for gaining consensus on key decisions throughout the development of the Level 3 plan. The NAT will decide what tools will be incorporated into a plan for neighborhood vote and Circulation Commission and Council approval. The neighborhood voting process is described in more detail under "Neighborhood Approval of Plan."

Circulation Commission Review of Preliminary Level 3 Plan

The NAT will present its preliminary plan to the Circulation Commission for an informal review. The Circulation Commission will provide guidance and constructive feedback. The NAT should consider the Circulation Commission's preliminary comments in refining or revising its Level 3 traffic calming plan prior to its public debut at a neighborhood open house. At this time, the Circulation Commission will also make a preliminary budget recommendation

for the plan. The budget recommendation will take into account the severity of the problem, the ability of a neighborhood to match funds, the needs of other neighborhood traffic calming plans as well as other factors.

Neighborhood Open House for Level 3 Plan

The NAT will present the proposed Level 3 traffic calming plan to residents and property owners at a neighborhood open house. Open houses may be held in private homes or local community rooms such as clubhouses, schools or other public meeting spaces. Resident NAT members shall host the open house and will be responsible for preparing all presentation materials and assisting with any mailings. Prior to the open house, City staff shall review all materials for public distribution in order to assure that proposed plans are fairly depicted. The City's Traffic Calming Program will cover reasonable costs for photocopying, miscellaneous supplies and mailing, as appropriate. It is expected that resident participants on the NAT will serve as a resource and contribute substantially to the overall effort of the team.

Revising Level 3 Plan

The intent of presenting the recommended plan at a neighborhood open house is to confirm goals and issues and to solicit input regarding the traffic calming tools suggested. The Neighborhood Action Team will use any feedback obtained during the neighborhood open house to revise the Level 3 plan, as appropriate.

Neighborhood Approval of Level 3 Plan

Level 3 traffic calming plans may have benefits and impacts that extend beyond the location of the proposed features themselves. Thus, Level 3 plans require a higher level of approval than Level 2 plans. The approval process for a Level 3 plan is based on fairness to all regular users in proportion to their proximity from the proposed traffic calming measures, as well as the potential for some tools to divert traffic.

City staff will determine the voting area based on the project study area. The voting area will consist of two groups: Voting Group A will be comprised of property owners and residents that live on streets or portions of streets that could be directly affected by the traffic calming plan, and Voting Group B will consist of property owners and residents that live on "feeder" streets

that connect to or that could be significantly impacted by traffic diverted from the proposed traffic calmed street(s).

The following approval standards apply to Level 3 traffic calming plans:

- Two-thirds approval from all property owners immediately abutting a physical feature, and
- Any combination of voting percentages of Group A or B that falls on or above the line depicted in the chart to the right.

City staff will distribute one ballot to the registered owner (as shown in the latest County Assessor's records) of each property in Voting Groups A and B. Staff will also distribute one ballot to each property, or unit when there is more than one unit on the property, occupied by a non-property owning household in Voting Groups A and B. These latter properties will be identified through Assessor's records, Registrar of Voters records, Post Office information and/or field surveys. A letter will accompany each ballot. This letter will explain that each voting age resident of the household may submit one ballot and that additional ballots may be requested from the City. From the returned ballots, City staff will count the votes and determine if the needed minimum voting percentages of returned ballots were reached. See the voting guidelines for approval to the right.

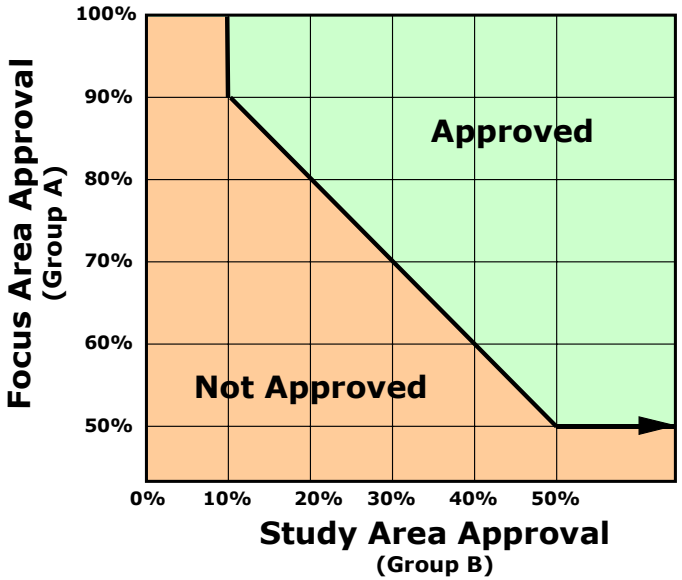
If the proposed Level 3 traffic calming plan is not approved by the property owners and residents, no traffic calming features will be implemented. Under this scenario, a neighborhood request for a new or future traffic calming study will not be considered by the City for at least 13 months.

Circulation Commission Review and City Council Approval

If approved by the neighborhood, all Level 3 traffic calming plans next require Circulation Commission review via a public hearing and City Council acceptance. Proposed plans will be agendized as meeting schedules allow.

If either the Circulation Commission or City Council reject the proposed

Level 3 Voting



Examples on how to use the Level 3 voting chart

Example 1: Of the returned ballots, 70% of Group A approves of plan and 50% of Group B approves of plan. If two-thirds of the property owners who would be immediately adjacent to a proposed physical feature also approve, the Level 3 plan is accepted.

Example 2: Of the returned ballots, 80% of Group A approves of the plan but only 10% of Group B approves. Therefore, the plan is not accepted.

Example 3: Of the returned ballots, 40% of Group A approves of the plan. Since at least 50% of Group A must approve the plan, the plan is not accepted.

Level 3 plan, the Neighborhood Action Team have one opportunity to revise the plan. The revised plan must be approved, through a vote, (as outlined above) by the neighborhood within six months after the original plan's disapproval by the City. The Circulation Commission must review and the City Council must accept the revised plan before it can be implemented. If the Circulation Commission does not recommend a Level 3 plan to City Council, the neighborhood may request that the City Council consider its plan. If the City Council does not accept the revised plan, no traffic calming features will be implemented. Under this scenario, a neighborhood request for a new or further traffic calming study will not be considered for at least 13 months.

Obtaining Funding for Level 3 Plans

Funding for the implementation of a Level 3 traffic calming plan should be considered throughout the plan development process. If funding limitations impact the range of options available, this needs to be identified early in the process and the variety of appropriate tools should reflect these limitations. Level 3 measures are generally expensive.

The City has a yearly funding allocation for traffic calming and these funds may be divided among several neighborhoods. Neighborhood groups should consider the limited funds available when developing their plans. The Circulation Commission will make a preliminary budget recommendation when it initially reviews the proposed traffic calming plan. This will give the neighborhood a sense for any fundraising effort that they may need to undertake. Based on the Commission's preliminary budget, the neighborhood may want to revise the plan to be consistent with budget issues.

Private funding will be expected for Level 3 traffic calming plans. Neighborhoods pursuing Level 3 measures should be prepared to contribute financially to the approved plan. Neighborhood participants of the NAT should be prepared to organize and conduct fundraising activities. A typical model used in financing resident-requested projects involves the City matching one dollar for every one or more dollars raised by the residents, depending on the circumstance and the breadth of public benefit of the project.

Certain Level 3 measures may qualify for outside grants. Grant sources are scarce, often small in value compared to the project cost, and difficult to obtain. City staff should be able to give a neighborhood guidance on what type of grant funding may be available and how well a neighborhood's project may compete for those funds. The NAT should not rely solely on the

potential for grant funding when developing a Level 3 plan. If a neighborhood should receive grant funding, the grant would be credited towards the neighborhood's financial contribution to the project and any excess funds would be credited towards the City's contribution.

Application of Level 3 Measures

Upon having neighborhood acceptance, City approval, and funding availability, the recommend Level 3 traffic calming measures will be scheduled for installation.

Monitoring and/or Removal of Level 3 Measures

City staff will evaluate conditions in the study area to determine the impact of the features and their effectiveness no sooner than 180 days (excluding summer months) but within one year of the installation of Level 3 traffic calming features. The City will make low cost adjustments, where appropriate and practical. City staff may extend the monitoring period when the initial results are inconclusive, adjustments need to be evaluated, or when unanticipated changes in traffic conditions have occurred.

In the unlikely event that a feature creates a potentially hazardous condition, the City's Engineering Services Manager may order modifications to or removal of a traffic calming tool at City expense. The NAT will be notified of the reasons for this action.

At any time after the monitoring period, any city resident may request that traffic calming features be modified or removed by completing a Transportation Action Request Form.

3. TRAFFIC CALMING TOOLBOX

This chapter describes traffic calming tools that are available to address a variety of residential traffic and safety issues. The traffic calming "toolbox" will be updated as new features emerge or experience better defines the effectiveness of a traffic calming tool.

Application of Tools

Traffic calming tools come in all shapes and sizes, from the subtle to the very aggressive. Each tool has appropriate applications, limitations on its use, advantages, disadvantages, and costs associated with it. Before considering any traffic calming tool or a combination of tools, it is important to clearly understand the resident's concerns and the factors or conditions that generated those concerns. For example, sometimes all that is needed to alleviate high speeds along a residential street is increased neighborhood awareness or enforcement of existing speed limits. Physical features such as speed humps are often effective for speed control, but may result in a host of other negative consequences, such as increased noise; therefore, if residents are concerned with both speed and noise, the installation of speed humps may not be the best choice at particular locations. It is important to understand all of the issues associated with each tool to identify the most appropriate one for the circumstances.[1]

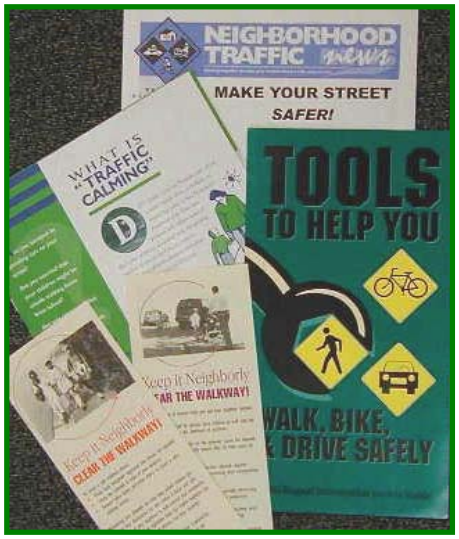
Using the right tool in the right place under the right set of circumstances is critical to a successful traffic calming plan. For example, it is important to recognize that cut-through traffic suggests one set of measures while speeding suggests another.

Level 1 Tools

Level 1 measures are all neighborhood-driven, and allow a neighborhood to take immediate action to address its concerns. Residents take the initiative in forming a speed watch group, taking neighborhood pledges, maintaining landscaping to improve the street environment, conducting neighborhood education workshops, and undertaking other measures. Additionally, residential groups can request use of the City's radar speed display unit and ask for targeted police enforcement. The following are examples of Level 1 traffic calming measures.

[1] "Traffic Calming Primer," Pat Noyes & Associates, 1998.

1.1 Neighborhood Traffic Education



Neighborhood traffic safety campaigns include: personalized letters, flyers, and newsletters; and meetings, workshops, specific school programs, and neighborhood speed awareness signs or banners. Campaigns focus on subjects such as pedestrian safety, enforcement and speeding impacts in order to heighten community awareness both consciously and subconsciously.

Advantages -

- Allows residents to discuss views
- Information aimed to a specific audience
- Can be applied quickly without a formal review process

Disadvantages -

- Effectiveness may be limited
- Potentially time consuming
- Enforcement still likely required

1.2 Neighborhood Pledge Program

This program promotes safe and courteous driving through the use of two elements: a pledge and a bumper sticker. Residents are asked to sign a pledge and implement it into their own driving habits and lifestyles. A bumper sticker promotes courteous driving and identifies the person as a "pace" car driver. By setting the example for proper driving, the vehicle sets the pace or speed for other vehicles on the road by requiring cars behind the pace car to also drive within the speed limit. The intended benefit of a neighborhood pledge program is to get residents to recognize that their driving behavior impacts the livability of other residents' streets.

Advantages -

- Heightens awareness of vehicle travel speeds
- Residents set the "pace" for drivers behind them
- Demonstrates neighborhood support for courteous driving habits

Disadvantages -

- Effectiveness may be limited
- Might create ill will or tension among neighbors

1.3 Neighborhood Sign Campaign

The City loans yard signs to a neighborhood on a short-term basis to encourage motorists to respect the neighborhood and to drive responsibly. Every few days, residents move the signs around the neighborhood to different yards so drivers and pedestrians notice the newly placed signs.

Advantages -

- Novelty of new signs draws attention to the message
- Requires multiple neighbors to support, therefore broadening the reach of the message
- Short duration of sign placement helps keep the message fresh

Disadvantages -

- Signs could be vandalized
- Effectiveness will diminish with repeat usage

1.4 Trash Can Brigade

Residents place stickers encouraging proper driving on their curbside garbage and recycling containers. Large format stickers remind motorists to obey the speed limit, drive responsibly, or other desired behavior. Once each week, when the containers are placed at the curb, residents and passerbys are reminded, en-masse, of the safety message.

Advantages -

- Limited appearance of stickers heightens impact
- Demonstrates a neighborhood's values and support for appropriate driving behavior
- Message may reach motorists driving through the neighborhood who aren't usually reached by education efforts

Disadvantages -

- Messages appear only one day a week
- Receptacles left at the curb for long periods may diminish effectiveness of the message
- Overtime stickers will need to be replaced
- May require coordination with trash and recycling companies

1.5 Speed Display Unit

The most common form of radar speed display unit is a portable trailer equipped with a radar unit that detects the speed of passing vehicles and displays it on a reader board, often with a speed limit sign next to the display. The primary benefit of speed display units is to discourage speeding along neighborhood streets.

Advantages -

- Effective educational tool and good public relations tool
- Encourages speed compliance and can reduce speeds temporarily
- Provides immediate feedback to drivers on their driving speed
- Allows residents to see how fast vehicles are traveling

Disadvantages -

- Not an enforcement tool
- Less useful on multi-lane roadways and less effective on high volume streets
- Subject to vandalism
- Requires City staff set-up and removal

Can we get a lower speed limit?

A common belief is that posting a speed limit will influence motorists to drive at that speed. The facts indicate otherwise. Research conducted over several decades has shown that drivers are influenced more by the appearance of a roadway itself and prevailing traffic conditions than by the posted speed limit.

Certain speed limits are established by law and include the 25 MPH limit in business and residential districts, the 15 MPH limit at blind intersections, and a part-time 25 MPH limit in school zones when children are going to and from school. These speeds are not always posted but California motorists are still required to know them.

Speed limits may be established by local authorities on the basis of traffic engineering surveys. These surveys include an analysis of roadway conditions, accident records, and the prevailing speed of prudent drivers. If speed limits are posted for a lower limit than is needed to safely meet these conditions, many drivers will simply ignore the signs. As such, artificially lowering the speed limit does not produce a traffic calming effect.

Furthermore, the police department cannot legally use radar to enforce speed limits that are not justified by a traffic engineering survey. When artificially low speed limits are posted, word spreads quickly that tickets cannot be issued along that stretch of road. Therefore, posting such a speed limit may actually lead to an increased incidence of speeding.

1.6 Speed Watch and Warning Letters


Neighborhood Speed Watch Report Form

Residents deliver brochures to their neighbors to raise awareness of how safety and quality of life are affected by speeding. Several trained residents then borrow a radar gun from the City to conduct their own speed study and, if available, the City will set up a speed display unit. License plate numbers of speeding vehicles and time of day can be recorded and given to City staff. The City sends the owners of the most egregious speeding vehicles a letter stating when, where and by how much their vehicle was observed speeding. The owners also receive educational information about the problems generated by speeding.

Advantages -

- High-speed vehicles identified and owners receive educational information
- Letter from local law enforcement may increase driver awareness and compliance
- May allow parents to become aware of a child's driving habits

Disadvantages -

- Registered vehicle owner who receives letter may not be the high-speed driver
- Program requires monitoring by staff to avoid potential abuse or harassment
- Requires accurate notation of vehicle license number

1.7 Neighborhood Maintenance

Residents organize a neighborhood maintenance day to prune overgrown vegetation that may block signs, sidewalks or obstruct vision of pedestrians, bicyclists and motorists. The City would provide guidelines for proper pruning, when requested.

Advantages -

- Residents work together to make changes at locations they determine are problematic
- Provides early action to correct or prevent problems

Disadvantages -

- Some residents with overgrown vegetation at critical location may choose not to participate
- Some residents may be physically unable to participate
- If a problem is identified, the City may require additional pruning
- Volunteer pruners may not have the skills needed to prune vegetation appropriately

1.8 Targeted Police Enforcement

The Police Department deploys officers to perform targeted enforcement on residential streets. The intended benefit of targeted police enforcement is to make drivers aware of local speed limits and to reduce speeds. Experience has shown that residents as well as non-residents receive citations.

Advantages -

- Visible enforcement very effective, especially when combined with other actions
- Driver awareness increased
- Can be used on short notice
- Can reduce speeds temporarily
- May influence the behavior of other drivers by seeing a citation being issued

Disadvantages -

- Temporary measure
- Requires repeated use to be effective
- Disrupts traffic on high volume streets
- Subject to officer availability

Level 2 Tools

Level 2 measures focus on easily implementable and still relatively low-cost features such as enhancing the visibility of crosswalks, striping narrow lanes, providing speed limit signing, installing new high visibility crosswalks, additional signage, and new stop signs, where they meet commonly-accepted traffic engineering warrants. The following are examples of Level 2 traffic calming measures.

2.1 Moveable/Temporary Slow Down Signs

Permanent signs often lose their effectiveness, yet the novelty of a new sign may draw a motorist's attention. As appropriate, the City could install on existing sign posts, on a short-term basis, signs to heighten driver awareness to a particular concern. These short-term, specialized signs may draw attention to the need to observe pedestrian laws, drive more slowly, or some other desired behavior.

Advantages -

- Novelty of new signs attracts the attention of motorists
- Avoids long-term sign clutter

Disadvantages -

- Long-term benefit may be negligible
- Existing sign posts may not accommodate added signage or be located in proper location
- More sign clutter in residential area
- Requires City staff to install and remove

Can we get a "Children at Play" sign installed?

Neighborhoods often request "SLOW – CHILDREN AT PLAY" signs. Parental concern for the safety of children in the street near home, and a misplaced but widespread public faith in traffic signs to provide protection, often prompt these requests.

Although these signs have been used in the past, there is no factual evidence to support any success in reducing pedestrian accidents, operating speeds or legal liability. If such signs encourage parents and children to believe they have an added degree of protection, which the signs do not and cannot provide, a great disservice results.

Because of these concerns, California law does not recognize the use of "Children at Play" signs.

2.2 Neighborhood Signs

Neighborhood signs are custom made signs placed at or near local streets leading into the neighborhood. They notify drivers that they are entering a neighborhood. Supplemental information may contain messages regarding pedestrian and bicycle presence, or the posted speed limit.

Advantages -

- Notifies drivers that they are entering a neighborhood or residential area
- Signifies to drivers that residents are concerned about driving behavior

Disadvantages -

- Are not standard signing and could cause some confusion
- Could have minimal impact on speeding
- Could be vandalized

2.3 Crosswalk Improvements

These can consist of new crosswalks or providing higher visibility crosswalks. Higher visibility crosswalks can be created by painting "zebra" stripes in lieu of or between the crosswalk's outer boundary stripes. New crosswalks, when warranted, designate pedestrian crossing areas. The primary benefit of higher visibility crosswalks is to increase crosswalk visibility to drivers.

Advantages -

- Indicates preferred crossing location
- When pedestrians are present, may slow travel speeds
- High visibility crosswalks are more visible than traditional crosswalks
- Focuses crossing pedestrians at a single location

Disadvantages -

- Pedestrians may be lulled into a false sense of security
- Must be carefully applied at mid-block locations and requires City Council approval
- High visibility crosswalks require more maintenance than traditional crosswalks

2.4 Striping Narrow Lanes and/or Centerlines

For this measure, striping is usually used to create narrow lanes -- often about 10 feet wide. This may be accomplished by striping white "fog" lines or edgelines and/or yellow centerline striping. A centerline stripe helps drivers stay on the "right" side of the road and not use the entire roadway width as a travel lane. On wide roadways, the "unused" pavement created by restriping can sometimes be used to stripe a bicycle lane, a parking lane, or a pedestrian shoulder. The primary benefit of narrowing lanes through striping is to delineate lanes and to slow vehicle speeds.

Advantages -

- Can be quickly implemented
- Can slow travel speeds
- Improves safety by clearly designating travel paths for vehicles

Disadvantages -

- Not always perceived as effective tool
- Adds striping to neighborhood streets

2.5 Supplemental Signs and Pavement Markings

On some streets, additional signage or pavement markings could assist in drawing motorist's attention to particular roadway conditions. Advance warning signs (e.g., pedestrian crossing ahead), supplemental regulatory signs (e.g., an added speed limit sign), and pavement markings (e.g., "Keep Clear", "Ped Xing") can be used, when warranted based on engineering studies.

Advantages -

- May highlight lesser-known roadway features
- Increases awareness
- Inexpensive to install

Disadvantages -

- Adds additional signage or markings
- Potential sign clutter
- Pavement markings could be slippery when wet for bicyclists

2.6 New Regulatory Signing

New regulatory signs such as stop signs and speed limit signs can be installed when warranted based on engineering studies. In other words, traffic engineering analysis must be conducted by the City and the installation of a certain regulatory sign must be based on applicable implementation standards. It should be noted that this category does not include restricted movement signing (see Level 3 measures).

Advantage -

- Can improve safety if warranted

Disadvantage -

- May degrade safety if not warranted

What's involved in getting a new "Stop" sign?

A stop sign is one of our most valuable and effective traffic control devices when used at the right place and under the right conditions. It is intended to help drivers, pedestrians and bicyclists at an intersection know who has the right-of-way.

A misuse of stop signs is to arbitrarily interrupt through traffic, either by causing it to stop or by causing such an inconvenience as to force the traffic to use other routes. Where stop signs are installed as "nuisances" or "speed breakers," there is a high incidence of intentional violation. Often, those vehicles that do stop only slow down in the immediate vicinity of the stop sign and make up for lost time by driving faster between intersections. Misplaced stop signs can also create a false sense of security for pedestrians and an attitude of contempt in a motorist.

National guidelines, or warrants, have been developed to indicate when new stop signs should be installed. The warrants take into consideration, among other things, the probability of vehicles arriving at an intersection at the same time, the length of time traffic must wait to enter, and the availability of safe crossing opportunities.

Level 3 Tools

Level 3 measures typically alter the configuration, and potentially the visual character, of neighborhood streets, so they often require engineering, are higher cost, and require substantial community input. The following are examples of Level 3 traffic calming measures.

3.1 Gateway Treatment

Gateway entrance treatments may consist of physical, textural and visual changes to streets and are located at key entryways into a neighborhood. They often consist of design features, like planted medians or chokers, that narrow a street in order to reduce the width of the travelway. The primary benefit of gateway treatments is speed reduction. They provide visual cues that tell drivers they are entering a local residential area or that the surrounding land uses are changing.

Advantages -

- Can reduce vehicle speeds
- Announces a difference in driving environments
- Creates identity for neighborhood
- Can discourage cut-through traffic
- Opportunity for landscaping

Disadvantages -

- Maintenance and irrigation needs
- May require localized removal of parking
- May create physical obstruction

3.2 Restricted Movement Signing

Turn prohibition signs involve the use of standard "No Left Turn", "No Right Turn", or "Do Not Enter" signs to prevent undesired turning movements onto residential streets. They may include peak period limitations. The primary benefit of restricted movement signing is to reduce cut-through traffic volumes along residential streets.

Advantages -

- Redirects traffic to main streets and reduces cut-through traffic
- Can address time-of-day problems
- Low cost

Disadvantages -

- May divert traffic to other neighborhood streets
- Requires enforcement
- Usually not effective all day

3.3 Other Regulatory Signing

There may be a limited number of situations where site conditions, historical traffic movements and driver behavior indicate a need for the application of selected regulatory traffic control devices even though traditional traffic control warrants are not satisfied. Where recommendations are made to install regulatory traffic control devices at these locations, City staff shall document the special circumstances and conduct such studies as necessary to justify the recommendation presented to the Circulation Commission.

Advantages -

- Can improve safety if justified

Disadvantages –

- May degrade safety if misused
- Could expose City to additional liability

3.4 Median Island

Median islands are raised islands in the center of a street that can be used to narrow lanes for speed control and/or to create a barrier to prohibit left-turns into or from a side street. They can also be used for pedestrian refuges in the middle of a crosswalk.

Advantages -

- Can reduce collision potential
- Shortens pedestrian crossing distance
- Opportunity for landscaping
- Serves as an entrance feature

Disadvantages -

- Could require parking removal
- Could impact emergency vehicles
- May divert traffic volumes, if turning movements are restricted

3.5 Intersection Curb Extension

Curb extensions narrow the street by extending the curbs toward the center of the roadway or by building detached raised islands to allow for drainage and bike lanes passage. They are used to narrow the roadway and to create shorter pedestrian crossings. Curb extensions also improve sight distance and influence driver behavior by changing the appearance of the street.

Advantages -

- Better pedestrian visibility
- Shorter pedestrian crossing distance
- Can decrease vehicle speeds
- Opportunity for landscaping and entrance feature

Disadvantages -

- Can require removal of parking
- May create hazard for bicyclists
- Can create drainage issues
- Difficult for trucks turning right

3.6 Chicanes, Chokers and Slow Points

A chicane is a series of two or more staggered curb extensions on alternating sides of a roadway. Horizontal deflection influences motorists to reduce speed through the serpentine roadway. The primary benefit of chicanes is speed control without a significant impact to emergency vehicle mobility.

Chokers and slow points are intersection or mid-block curb extensions that narrow a street by extending the sidewalk or widening the planting strip. The remaining cross-section can consist of one lane or two narrow lanes. Chokers and slow points are intended to reduce traffic volumes and speeds by making the roadway narrow so vehicles slow down. Chokers reduce the roadway width so that only one car at a time can pass through it, while slow points allow two cars to pass very slowly in opposite directions.

Chicanes and chokers are generally placed on streets with speed limits that are lower than 35-mph.

Advantages -

- Effectively reduces vehicle speeds
- Low impact on emergency vehicles
- Does not restrict resident access
- Opportunity for landscaping

Disadvantages -

- Can require removal of parking
- May create hazard for bicyclists
- Can create drainage issues
- Increased maintenance
- May require additional signage

3.7 Traffic Circle

Traffic circles are raised circular islands in a residential intersection. They are modest in size, unlike a rotary or modern roundabout, and are appropriately scaled for the intersection of neighborhood streets. Traffic circles require drivers to slow down to a speed that allows them to comfortably maneuver around the circle in a counterclockwise direction. The primary benefit of traffic circles is speed control and reduction in angle and turning collisions. Traffic circles are generally not located on steep road ways or on streets with speed limits of 35 mph or more. Traffic circles are appropriate on streets with low to moderate traffic volumes.

Advantages -

- Effectively reduces vehicle speeds
- Can reduce collision potential
- May reduce collision severity
- Provides better side-street access
- Opportunity for landscaping
- May alleviate need for stop signs
- Provides visual interrupt on long, straight streets

Disadvantages -

- Parking removal may be required
- Can increase bike/auto conflicts
- Can impede emergency vehicles
- Can restrict large vehicle access
- Crosswalk location may need to be modified

What's the difference between a traffic circle and a roundabout?

It is important to understand the difference between traffic circles and roundabouts. Traffic circles have smaller diameters than roundabouts and therefore match the scale of a residential neighborhood. Traffic circles can change a driver's visual perception of a local roadway and are primarily intended as traffic calming devices to help reduce speeds and cut-through traffic along neighborhood streets. Roundabouts are primarily intended for use on arterial streets, with relatively higher volumes and speeds, as an alternative to traffic signals at intersections. Traffic circles can be controlled by stop or yield signs, while roundabouts are most often controlled by yield signs.

3.8 Speed Humps and Speed Cushions

Speed humps are typically asphalt mounds constructed on residential streets. They are usually placed in a series and spaced 300 to 600 feet apart. Speed humps are typically 14 feet long and 3 inches high and extend across the entire width of the street. Their vertical deflection encourages motorists to reduce speed.

Speed cushions consist of smaller mounds, raised about three inches in height. The length of the cushion is about ten feet. Speed cushions are only as wide as a standard passenger car's axle-width. Several speed cushions are placed across the road. The spaces between the cushions allow emergency vehicles (with their wider axle-width) to partially straddle the feature.

Speed humps and cushions both require good approach sight distance -- therefore these traffic calming tools are not typically found on winding roadways. Streets considered for these features typically have speed limits of 30 mph or less and have low traffic volumes. Additionally, these tools are typically not installed on streets with steep grades so as not to create additional safety concerns.

Advantages -

- Effectively reduces vehicle speeds
- Does not require parking removal
- Cushions have less impact to emergency vehicles than speed humps
- Impact on bicyclists may be minimized through design

Disadvantages -

- Impacts all drivers, even those driving appropriately
- Increases noise near speed humps or cushions
- May divert traffic to parallel streets
- Not esthetically pleasing
- Adds more signs to neighborhood
- Impacts emergency vehicle response time
- Effects people with certain disabilities
- Impacts school buses and transit

3.9 Raised Crosswalks

Raised crosswalks are crosswalks constructed 3 to 4 inches above the elevation of the street. They are usually about 22 feet long in the direction of travel, with a flat section in the middle (approximately 10 feet long) and ramps on the ends. Sometimes the flat portion is constructed with brick or other textured materials. Raised crosswalks are intended to reduce vehicle speeds specifically where a high amount of pedestrians cross the street. Raised crosswalks are typically placed in high visibility locations on streets without steep grades, moderate vehicle volumes and speed limits less than 35 mph.

Advantages -

- Effectively reduces vehicle speeds
- Good pedestrian safety treatment
- Improves pedestrian visibility
- May ease street crossings for disabled
- Does not affect access
- Flat portion can be textured

Disadvantages -

- May generate increased noise
- Can require drainage modifications
- Often require signage and markings
- Impacts emergency vehicle response time
- Affects people with certain disabilities

3.10 Raised Intersection

A raised intersection is a flat, raised area covering an entire intersection. There are ramps on all approaches. The plateau is usually about 4" high. Often, the raised intersection is finished in brick or other textured materials. Raised intersections are used to reduce through movement speeds and provide safer street crossings for pedestrians. Raised intersections are generally not placed on streets with speed limits greater than 35 mph, streets with steep grades or high volume streets.

Advantages -

- Effectively reduces vehicle speeds
- Creates a level crossing for pedestrians
- Can be aesthetically pleasing
- Does not affect access

Disadvantages -

- Expensive to construct and maintain
- Requires drainage modifications
- Affects emergency vehicle response time
- May require bollards to define corners
- Affects people with certain disabilities

Use of Temporary Measures

Generally, the City of Lafayette avoids installing temporary Level 2 or Level 3 traffic calming features. Due to the minimal amount of funds and staff resources available for traffic calming, the City wants to use its limited funds primarily for permanent features. The cost of designing and installing a temporary feature can be significant and may not be materially less than the cost of installing a permanent tool. Temporary features may also create false impressions since they may be less aesthetically appealing than their permanent counterpart. Often residents will criticize the temporary feature's appearance instead of its effectiveness in calming traffic.

Occasionally, the installation of delineators or stanchions may be allowed, however, their use would be subject to Circulation Commission review and City Council approval.

APPENDIX

CITY OF LAFAYETTE
Transportation Action Request Form

Before filling out this form, read the back of this sheet. Please print. Return form to:
Engineering Services Division, City of Lafayette, P.O. Box 1968, Lafayette, CA 94549

Name _____ **Organization (if applicable)** _____

Date _____ **Day Tel. (___)** _____ **Eve. Tel. (___)** _____ **E-mail** _____

Mailing Address _____ **City** _____ **ZIP** _____

Location of Problem (Give street name and cross street or other locational information.) Please include a simple map showing the location.

_____

_____

Description of Problem (s **s, on-street parking, etc.) Attach a sketch, if n**

_____

_____

_____

THIS IS A SAMPLE

Please submit a full version of this form, available at the City's offices or on the City's web site, at www.ci.lafayette.ca.us .

Suggested Change or Improvement (signs, guard rails, traffic signal, pruning, pavement marking, speed enforcement, prohibit parking, etc.)

_____

_____

_____

_____

❑ **Location Map Attached** ❑ **Sketch of Problem Area Attached** ❑ **Petition Attached (if required)**

FOR STAFF USE ONLY **Date Received** _____ **Tracking Number** _____

Staff Review Action: ❑ **Administrative** ❑ **Forward for Engineer Review** ❑ **Forward to Circulation Commission**

Action Taken: ❑ **Staff Action** ❑ **Circulation Commission Action** ❑ **City Council Action**

_____

_____

_____

_____

_____

W/O Requested on: _____ **Applicant Notified of Outcome:** _____ **Completed on:** _____

Form: Revised 12/2002

CITY OF LAFAYETTE
Transportation Action Requests

Engineer Services Division
P.O. Box 1968, Lafayette, CA 94549 – (925) 284-1951
www.ci.lafayette.ca.us

HOW TO MAKE A TRANSPORTATION ACTION REQUEST
Thank you for your interest in vehicle, bicycle and pedestrian safety improvements. The form on the reverse side is used to request review of your transportation concern, such as changes in parking regulations, installing stop signs, installing crosswalks, constructing walkways, implementing traffic calming measures, etc. If this is a maintenance request, such as filling a pothole, replacing a damaged sign, or re-striping the street, please call the 24-hour Maintenance Hotline at (925) 299-3259.

HOW ARE YOUR REQUESTS REVIEWED AND ACTED UPON?
Once you turn in your request, Engineering Services staff will review it to see if it can be handled administratively, or if it needs to be forwarded on to the Circulation Commission. Requests forwarded to the Circulation Commission will be scheduled on an upcoming meeting as the agenda load permits. If your request is handled administratively, but not to your satisfaction, you still have the option to appeal in writing to the Circulation Commission or appear at one of its meetings during the Public Comments portion of the agenda.

The Circulation Commission hears requests that cannot be handled directly by Engineering Services staff. The Commission is responsible for recommending actions to City Council such as the installation of traffic control devices, changes in parking, placement of roadway markings, installation of walkways and requests for various signs within the right-of-way. The Circulation Commission seeks public input from interested parties prior to making its recommendation. Once the Commission makes a recommendation, staff issues a work order if the work reinforces an existing regulation. If it recommends the installation of a new walkway or a new regulation such as a new stop sign or a change in the speed limit, staff will forward the Commission's recommendation on to City Council for final consideration.

Many Circulation Commission recommendations that are forwarded to the City Council are included on the Council's agenda under the "Consent Calendar," which means "non-controversial" and, normally, require no further discussion. Items needing discussion by the City Council are listed under "New Business." Once City Council has taken an affirmative action on a matter, staff issues a work order or arranges the appropriate follow-up work.

HOW WILL YOU BE NOTIFIED OF THE STATUS OF YOUR REQUEST?
When a request is handled directly by staff, staff will contact you to inform you of the City's recommended action. When an item is scheduled for the Circulation Commission's agenda, the City will send you a postcard notifying you of the upcoming meeting. Prior to the Circulation Commission meeting, the City will also send postcards to the property owners within at least 300 feet of the location of your request. Additionally, the City may post signs near the location of the request announcing the meeting. For subsequent meetings of the Circulation Commission and the City Council, the applicant is responsible for tracking meeting dates. You may look up meeting dates and agendas on the City's web site at www.ci.lafayette.us.ca.

WHO PAYS?
As a general rule, the City will pay for a solution to a problem where the area affected by the solution is within a public right-of-way. Adjoining property owners are generally responsible for the cost of solutions or parts of solutions located on private property. However, walkways and certain traffic calming measures and control devices are governed by special City policies regarding installation and responsibility of cost.

WHEN SHOULD A PETITION BE SUBMITTED AND WHO NEEDS TO SIGN IT?
If your request will impact a number of people, the City encourages you to submit a petition showing support for your request from those affected by it. Requests that require financial contribution other than by the City (such as some traffic calming measures), require a petition. Additionally, walkways, stop signs, traffic control devices, and changes in parking regulation should be supported by petitions. For an effective petition, the applicant should canvas at least 300 feet, about one block length, in each direction of the area that would be impacted by the request. For example, for a stop sign request at an intersection, the area canvassed should cover about one block length on both sides of the street on all legs of the intersection. You should collect a list of names, addresses and phone numbers of petitioners. Petition forms are available from City staff.

STOP SIGNS, CROSSWALKS AND TRAFFIC CONTROL DEVICES: A FEW THINGS TO KEEP IN MIND
According to the Caltrans Traffic Manual, a stop sign is not a cure-all and is not a substitute for traffic enforcement. Generally, stop signs should not be used for speed control. Many times the need for a stop sign can be eliminated if the sight distance is increased by removing an obstruction.

Installation of a crosswalk does not automatically change the level of safety of a pedestrian crossing. A marked crosswalk should be used to direct pedestrians *where* to cross rather than as a safety or protection device. To improve the safety of crossing a street additional remedies may be required.

QUESTIONS?
Please visit the City's web site at www.ci.lafayette.ca.us or contact the Transportation Planner at (925) 284-1951.

NEIGHBORHOOD TRAFFIC AUDIT

Neighborhood _____

Date / Time of Audit _____

Name of Observer _____

Where Do You Live? _____
(Indicate street and cross street)

Age: 15 & under 16-20 21-40 41-65 65+

Are you a: Pedestrian Bicyclist Motorist Business Owner/Employee
(Circle all that apply)

For the list below, circle the number that best describes the conditions in your neighborhood:

	Not a Problem		→ → →		**Serious Problem**
Motorist courtesy toward pedestrians	1	2	3	4	5
Traffic safety for children and elderly	1	2	3	4	5
Volume of motor vehicles	1	2	3	4	5
Speeding	1	2	3	4	5
Motorists obey stop signs	1	2	3	4	5
On-street parking available	1	2	3	4	5
Pedestrians can cross streets easily	1	2	3	4	5
Traffic noise	1	2	3	4	5
Visibility of pedestrians	1	2	3	4	5
Quality of pedestrian experience	1	2	3	4	5
Other (list):	1	2	3	4	5
1. _____	1	2	3	4	5
2. _____	1	2	3	4	5
3. _____	1	2	3	4	5

Please describe specific traffic issues in your neighborhood and the locations where they occur:

Adapted from Dan Burden's Streets and Sidewalks, People and Cars, the Citizens' Guide to Traffic Calming, April 2000.

STREET INVENTORY FORM

Street / Cross Street(s) _____ **Neighborhood** _____

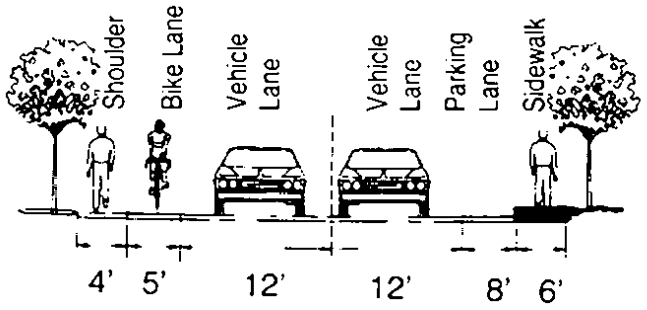
Date, Day & Time of Audit _____ **Name of Observer** _____

Please circle or write in your responses: **Posted Speed Limit** _____

Roadway Type	Commercial		Residential		Combination			
Total No. of Vehicle Lanes	One	Two	Three	Four	Five+			
Block Length (feet)	200-300	301-400	401-500	501-800	Over 800			
On-Street Parking	None	One side	Both sides					
Parking Usage	Light	Moderate	Heavy					
Walkway / Sidewalk	None	One Side	Both	Intermittent	Shoulder space next to street			
Type of Walkway	Grass	Soil	Gravel	Concrete	Asphalt			
Walkway Width (feet)	_____							
Striping ***(Circle one or more)***	Centerline		Shoulder stripe		Bike lanes	None		
Marked Crosswalk(s):	Yes	No						
Vehicles per Hour	0-30	31-60	61-120	120-240	240-480	480+		
Perceived Vehicle Speed (MPH)	15-20	20-25	25-30	30-35	35-40	45-50	55-60	60+

Please draw a typical street section below. Indicate dimensions in feet for each element that you draw.

Draw your street here



Sample Elements

Adapted from Dan Burden's Streets and Sidewalks, People and Cars, the Citizens' Guide to Traffic Calming, April 2000.

SPEED EVALUATION FORM

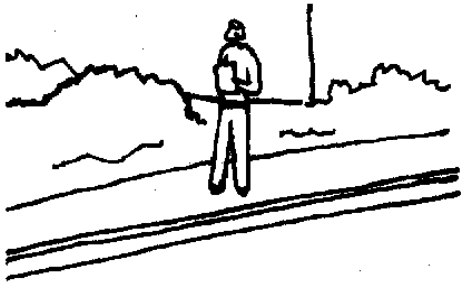
Follow the directions below to measure the speed of vehicles without using a radar gun.

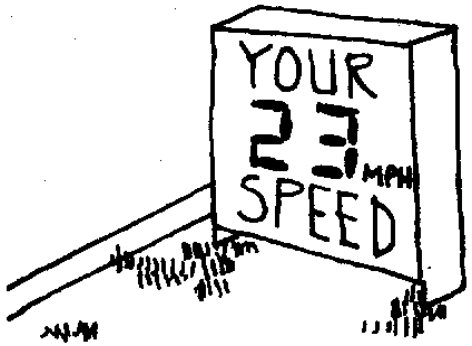
Items Needed:

- ❑ Stopwatch
- ❑ Measuring tape
- ❑ Street chalk or wide tape
- ❑ Pencil & accompanying chart to record field data

Procedure:

1. Determine where you want to measure vehicle speed. This location should be away from STOP signs or curves that would tend to slow vehicles.
2. Measure and mark a distance of 200 feet on the edge of the road. As always, be safe when in the road. Marks must be temporary (tape or chalk works well).
3. Find a comfortable spot off the road near the middle of the marked area where you can see both end marks.
4. Use the stopwatch to measure how long it takes a vehicle to travel the 200-foot distance. Do not measure speeds for vehicles closely following one another, as each vehicle may impact the speed of the other.
5. Use the accompanying chart to record the data. For each vehicle speed measured, place one "X" in a box adjoining the appropriate number of seconds taken to travel the marked distance. The equivalent miles per hour, based on a 200-foot distance, is provided at the far right.
6. Fill out all of the information requested on the chart. There is also space to write comments such as the number of passengers in a vehicle, the age of the driver, the type of vehicle, etc.
7. Repeat steps 4 and 5 for at least one hour. A reasonable sample size, usually at least 25 vehicles in each direction, is required. The larger the number of vehicles sampled, the greater the accuracy of your results.
8. If it appears (based on your study), that a large percentage of the vehicles are traveling more than 10 mph over the posted speed limit, your neighborhood may wish to consider a traffic calming project in which case you would need to submit a Transportation Action Request form.





Adapted from Dan Burden's Streets and Sidewalks, People and Cars, the Citizens' Guide to Traffic Calming, April 2000.

SAMPLE SPEED EVALUATION FORM

SPEED EVALUATION FORM | Name of Observer: Jane Smith | Posted Speed Limit: 25 | Day & Date: M 3/1/03 | Beg. & End Times: 11AM-1:15PM

Street & Cross Street(s): Main between Oak & Pine | Exact Location (Address & Landmarks): # 350 by fire hydrant

For each vehicle speed measured, place one X in a box adjoining the appropriate number of seconds taken to travel the 200 ft. distance. (This table only works for a 200 ft. measured distance.)

Time	Northbound or (Westbound) (circle one)															Total	Southbound or (Eastbound) (circle one)															Total	MPH	Comments:
(Secs.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
< 2.3																																	60+	
2.3																																	59.3	
2.4																																	56.8	
2.5																																	54.5	
2.6																																	52.4	
2.7																																	50.5	
2.8																																	48.7	
2.9																																	47.0	
3.0																																	45.5	
3.1																																	44.0	
3.2																																	42.6	
3.3																																	41.3	
3.4																																	40.1	
3.5																	X															1	39.0	SUV
3.6																																	37.9	
3.7	X															1																	36.9	
3.8																																	35.9	
3.9																																	35.0	
4.0	X															1																	34.1	Sports car
4.1																	X															1	33.3	
4.2																	X															1	32.5	
4.3																																2	31.7	
4.4	X	X														2	X	X															31.0	
4.5	X	X	X													3	X	X	X	X	X											5	30.3	
4.6	X															1	X	X	X	X	X	X	X									7	29.6	Moms with kids
4.7	X	X														2	X	X	X	X												4	29.0	
4.8	X	X	X													3	X															1	28.4	
4.9	X	X	X	X	X	X										6	X	X	X	X												4	27.8	
5.0	X	X	X	X												4	X															1	27.3	
5.1	X	X	X	X												4																	26.7	
5.2	X	X														2	X	X														2	26.2	
5.3																	X															1	25.7	
5.4	X															1																	25.3	
5.5	X															1																	24.8	
5.6	X	X														2																	24.4	
5.7																																	23.9	
5.8	X															1																	23.5	
5.9																																	23.1	
6.0																																	22.7	
6.1																																	22.4	
6.2																																	22.0	
6.3																																	21.6	
6.4	X															1																	21.3	lost
6.5																																	21.0	
6.6+																																	< 20.0	
														Total		35														Total		30		

SPEED EVALUATION FORM	Name of Observer:															Posted Speed Limit:	Day & Date:	Beg. & End Times:
Street & Cross Street(s):																Exact Location (Address & Landmarks):		

For each vehicle speed measured, place one X in a box adjoining the appropriate number of seconds taken to travel the 200 ft. distance. (This table only works for a 200 ft. measured distance.)

Time	**Northbound or Westbound (circle one)**															**Total**	**Southbound or Eastbound (circle one)**														**Total**	**MPH**	**Comments:**
(Secs.)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**			
< 2.3																																	60+	
2.3																																	59.3	
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6.3																																	21.6	
6.4																																	21.3	
6.5																																	21.0	
6.6+																																	< 20.0	
														Total																Total				

Illustration by Ian Moore