



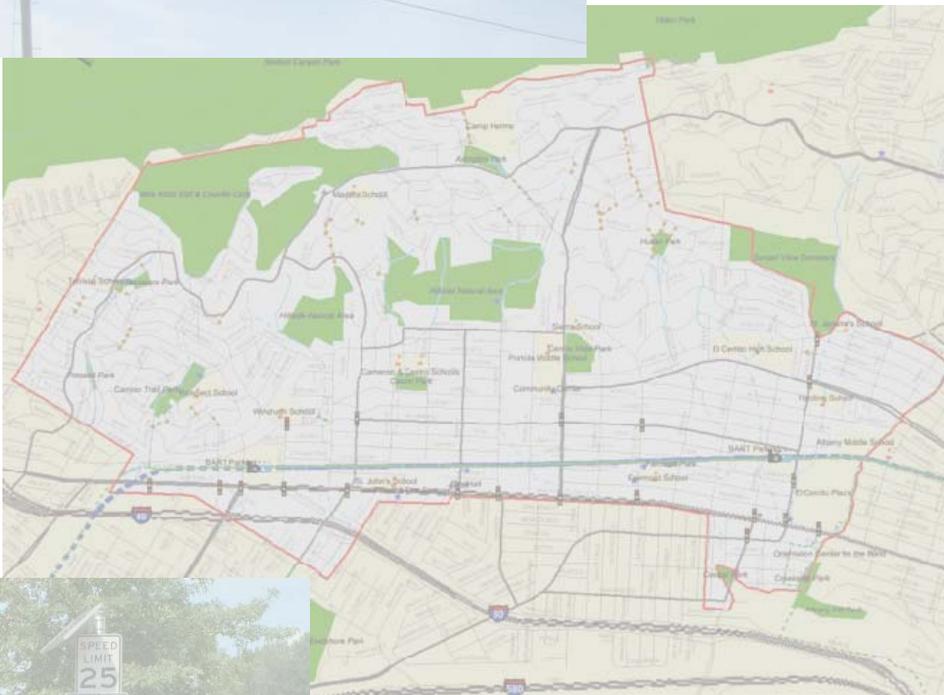
City of El Cerrito

**Neighborhood Traffic Management Program (NTMP)**

FINAL REPORT

September 2010

Adopted by the  
El Cerrito City Council on  
September 20, 2010



Pleasanton  
Fresno  
Sacramento  
Santa Rosa

---

City of El Cerrito

**Neighborhood Traffic Management Program (NTMP)**

FINAL REPORT

September 2010



[www.tjkm.com](http://www.tjkm.com)

Prepared by:  
TJKM Transportation Consultants  
3875 Hopyard Road  
Suite 200  
Pleasanton, CA 94588-8526  
Tel: 925.463.0611  
Fax: 925.463.3690

In Consultation with:  
City of El Cerrito Public Works Department  
10890 San Pablo Avenue  
El Cerrito, CA 94530

## Table of Contents

<b>1. Introduction .....</b>	<b>1</b>
1.1. Background .....	1
1.2. Program Development.....	2
1.3. Program Objectives .....	3
<b>2. Neighborhood Traffic Management Framework .....</b>	<b>5</b>
2.1. Primary Neighborhood Concerns.....	5
2.2. Balancing User Needs.....	6
2.3. Roadway Classification.....	6
2.4. Initial Traffic Request.....	7
2.5. Qualifying Criteria .....	9
2.6. Project Prioritization: .....	9
2.7. Types of NTMP Measures.....	10
Tier I Measures (Non-Physical).....	10
Tier II Measures (Physical).....	12
2.8. General Impacts and Requirements.....	13
<b>3. NTMP Process .....</b>	<b>14</b>
3.1. Procedures for Tier I Measures.....	14
3.2. Procedures for Tier II Measures.....	16
<b>4. NTMP Measures Toolbox.....</b>	<b>20</b>
4.1. Typical Measures .....	20
4.2. Internet Resources .....	20
<b>5. Program Implementation.....</b>	<b>21</b>
5.1. City Resources and Funding .....	21
5.2. Program Review .....	21
<b>6. Study References .....</b>	<b>22</b>
6.1. TJKM Personnel.....	22
6.2. City Staff Consulted.....	22
6.3. El Cerrito City Council (July 2009).....	22
6.4. Other Agencies.....	22
6.5. References.....	22

## List of Appendices

Appendix A – El Cerrito Roadway Classification, Pedestrian Route and Bikeway Maps

Appendix B – Initial Traffic Request Form and NTMP Flow Chart

Appendix C – NTMP Petition Request Form

Appendix D – Prioritization Worksheet

Appendix E – NTMP Petition Form II

Appendix F – Portland Impact Threshold Curve

Appendix G – NTMP Measures Tool Box

Appendix H – NTMP Measure Web Resources

Appendix I – Comparable Speed and Volume Thresholds



## List of Tables

Table I: Sample of Traffic Calming Effectiveness .....	13
Table II: Composite Voting System – Approval Rating* .....	17

## I. Introduction

This Neighborhood Traffic Management Program (NTMP) represents the City of El Cerrito's commitment to enhance the safety and livability of El Cerrito and relies on the active participation of community members. This Program provides City staff and community members the resources to work together in addressing neighborhood traffic concerns such as speeding, high traffic volumes, and pedestrian and bicycle obstacles. The NTMP provides citywide guidelines, procedures and a toolbox of potential traffic management measures to create neighborhoods in El Cerrito that are safer for residents living in these neighborhoods and all modes of travel through them.

### I.1. Background

An increasing number of El Cerrito residents are concerned about vehicular speeds, traffic volumes, and pedestrian and bicycle comfort and safety in their neighborhoods. The City of El Cerrito has employed enforcement, education, and engineering measures to address these concerns. The mission of the Public Works Department is to design, construct, and maintain public facilities and infrastructure that enhance the quality of life for the citizens of El Cerrito. A major goal of the Department is to plan and construct safe, efficient, and accessible facilities for all modes of travel in the City, including pedestrians, bicycles, persons with disabilities, automobiles and transit. The Public Works Department has regularly responded to neighborhood traffic concerns by installing standard traffic control devices such as warning and regulatory signs, pavement markings, striping and curb markings.

The Public Works Department has traditionally responded to traffic requests in the order they were received. In 2005, this process was formalized with the development of a tracking system to help organize and follow-through on requests. This traffic request process will remain in place and work hand-in-hand with the Neighborhood Traffic Management Program (NTMP) to respond to conditions that do not meet the threshold for the NTMP process.



To more fully address concerns regarding speeding on local streets, the City established the Speed Hump Program in 1996. To date, speed humps have been installed on 10 street blocks in various parts of the City. Most of these were installed within the first five years. More recently, to address pedestrian and bicycle safety as well, the Public Works Department began installing high-visibility signs and pavement markings including fluorescent pedestrian signs, double-sided signs, in-street pedestrian crossing signs, "ladder" crosswalks, advance warning symbol markings, and white edge lines.

Enforcement and education tools are regularly applied by the Police Department. The City established the Traffic Safety Unit of the Police Department in 2003 to focus its efforts on a variety of traffic safety matters including speed enforcement, pedestrian and bicycle safety and driving under the influence (DUI) suppression and education, among others. The mission of the Traffic Safety Unit is to gain voluntary compliance with the traffic laws and to increase safety for the motoring, pedestrians and bicyclists. More specifically, it is a goal of the Traffic Safety Unit to



decrease speed-related collisions. The Traffic Safety Unit also conducts directed enforcement for pedestrian safety-purposes, such as the “Pedestrian in the Crosswalk” campaign that utilizes a police decoy to detect and cite drivers failing to yield to pedestrians in marked crosswalks. Although the Traffic Safety Unit understands that no driver likes to receive a citation, the increased enforcement efforts have led to a positive reduction in injury and non-injury collisions. The Traffic Safety Unit also conducts pedestrian and bicycle safety classes. As an additional education measure, the Traffic Safety Unit regularly deploys the speed feedback radar trailer to make drivers more aware of their speed. Finally, as of 2008, the Police and Public Works Departments meet on a monthly basis to discuss on-going and potential efforts to address the traffic safety concerns of El Cerrito residents.

Because many residential streets did not meet the prior qualifying criteria established by the Speed Hump Program and the Traffic Safety Unit cannot target all streets at all times, the Public Works Department has implemented other engineering measures to manage neighborhood traffic concerns. The measures implemented included intersection median treatments, one-way streets, traffic circles and speed tables. Because the City previously had no formalized process to verify the need for these types of measures, City staff addressed resident requests on a first-come/first-serve basis – with each request becoming a unique process and each involving extensive City resources. The major problem with this method was that requests were not put into the proper context – which ones have priority and which ones represent “normal” traffic conditions on residential streets. Another problem with this method was its inability to systematically evaluate impacts on surrounding local streets when a traffic modification is considered.



## 1.2. Program Development

Many jurisdictions face problems similar to those described above, and they often develop a program to systematically address traffic issues involving the livability and safety of residential neighborhoods. The City of El Cerrito NTMP was prepared to best meet the needs of El Cerrito based on past efforts in the City, guidance provided by the City’s General Plan and City Council, policies and lessons learned from other jurisdictions, practices published by the transportation industry, and community input regarding traffic concerns and ideas for improvements.

The development of a NTMP for El Cerrito serves as the implementation measure for various transportation-related policies in the City of El Cerrito General Plan. General Plan, Transportation and Circulation Element - Goal T3 calls for a transportation system, including safe and adequate streets, sidewalks, street trees, and signs, that not only maintains, but also improves the livability of the City. The following policies under Goal T3 are being addressed by this Program:

- *Policy T3.2 Streets as Public Spaces.* Recognize the role of streets not only as vehicle routes but also as part of an extensive system of public spaces where people live, city residents meet, and businesses reside;
- *Policy T3.3 Residential Streets.* To discourage cut-through traffic on residential streets, maintain the existing system of arterial and collector streets. Where necessary, employ

traffic management techniques to control the speed of vehicles traveling on residential streets, including residential portions of arterial and collector streets; and

- *Policy T3.4 Street Closures.* Keep all neighborhood streets open unless there is an existing or potential safety or cut-through traffic problem and there are no acceptable alternatives, or unless the closure would increase the use of alternative transportation modes.

The City Council, in a study session held in July 2009, provided initial guidance on the framework for the NTMP. Specifically, Council discussed traffic concerns that should be addressed by the Program, potential criteria for qualification and prioritization of requests, and the types of traffic management measures that should be explored. The NTMP was drafted based on the discussion at City Council Study Session, the lessons learned from other jurisdictions (for the most part, in the Bay Area), City staff's insight regarding the types and locations of traffic concerns on residential streets based on the existing traffic request database, and practices published by the Institute of Transportation Engineers (ITE) and Federal Highway Administration (FHWA), among others.

To continue development of a NTMP Program, two community meetings were held in March 2010 (March 25 and 31). The meetings were publicized via the City's website, a press release and the Community Calendar section of the El Cerrito Journal (Contra Costa Times). Meeting notifications were also sent to over 900 residences on a representative sample of street segments for which City staff had received requests concerning speeding and traffic volumes over the past two and half years. The purpose of the community meetings was to obtain public comments on the draft program specifically to determine if it adequately captured the most important neighborhood traffic concerns and potential strategies to address those concerns, as well as, garner other ideas on how to improve traffic conditions and livability in El Cerrito neighborhoods. In April 2010, information on the NTMP was posted on the City's website to solicit additional public comments. The public input received from about 40 residents either in attendance at the meetings or via phone conversations and email was used to craft a NTMP tailored to meet the needs of El Cerrito residents.

### **1.3. Program Objectives**

The basic goal of any Neighborhood Traffic Management Program (NTMP) is to maintain and enhance residents' sense of well-being and improve safety on residential streets. The objectives of the NTMP are as follows:

- Promote safe and convenient travel by pedestrians, bicyclists and vehicles.
- Encourage compliance with designated speed limits.
- Encourage through traffic to take more appropriate travel routes based on roadway classification, but limit impacts to other local streets.
- Maintain capacity and facilitate traffic flow on the City's arterial and collector streets.
- Closely collaborate with Police and Fire to balance neighborhood traffic management needs with public safety needs, specifically emergency response.
- Provide a well-defined process that is responsive to all neighborhoods in El Cerrito and avoids neighborhood divisiveness.
- Provide objective criteria to help City staff prioritize requests.
- Provide a process that maximizes neighborhood participation and decision-making, and obtains measureable consensus from the neighborhood throughout.

- Use the least restrictive measure that will address neighborhood concerns, and test any physical measures before permanent installation when appropriate and possible.
- Maintain and enhance existing routes for accessibility.
- Provide for effective and timely implementation of needed traffic management measures.

The City Engineer will continue to initiate projects separately from the NTMP.

## 2. Neighborhood Traffic Management Framework

The framework of the Neighborhood Traffic Management Program (NTMP) is designed to provide well-defined, citywide guidelines for addressing neighborhood traffic concerns in an equitable and effective manner. Guidelines regarding primary concerns to be addressed by the NTMP, balancing user needs, the affect of roadway classifications, qualifying criteria, and types of measure to be considered are discussed below.

### 2.1. Primary Neighborhood Concerns

High speeds and volumes are usually the two most worrisome traffic safety factors to residents, so the NTMP must deal with these at a minimum. Many El Cerrito residents are concerned about traffic speeds more so than traffic volumes. Almost all of El Cerrito streets have a posted or prima facie speed limit of 25 miles per hour (mph). Many factors influence a driver's selection of travel speed. For example, the width and length of a street affects the driver's sense of what is an appropriate speed for the environment. The number of people visible, amount of landscaping, weather conditions, number of parked cars, and other factors are quickly processed by the driver's mind to select a speed. The driver's temperament, trip purpose and schedule are other considerations. The result is that many drivers do not adhere to the legal speed limit. And, unfortunately many times speed limit signs/pavement markings and periodic enforcement do not guarantee full compliance.

The majority of traffic collisions occur away from local streets in most cities. However, speed plays an important role in traffic collisions on all types of roadways. Speed affects the probability of being in a collision, although collisions are complex events that can rarely be attributed to a single factor. Speed is most directly linked to severity of a collision. More specifically, the probability of severe injury increases sharply with the impact speed of a vehicle in a collision. The risk is even greater when a vehicle strikes a pedestrian, the most vulnerable of road users.

El Cerrito residents are upset by drivers who exceed the speed limit of 25 mph on residential streets because they reason that the faster a vehicle goes on a residential street, the harder it is to stop in time for a child darting into the street to chase a ball or to cross to see a friend. As a result, these residents request that traffic be calmed on their streets. As traffic volumes increase on a residential street, the number of imprudent drivers likewise increases as does the noise from passing traffic. At some threshold volume, the number of residents who dislike traffic on their street is larger than those who ignore it. Studies show that this volume lies between 1,000 and 4,000 vehicles daily depending on the function of the street. This is the "environmental capacity" of a residential street – not the traffic carrying capacity which can be four or five times higher.

High speeds and volumes also contribute to the sense that it is unsafe to walk or bike in a neighborhood. Other key concerns involve obstacles to convenient and safe walking and bicycling. These concerns involve either the lack of protected crossings and pathways or discontinuous facilities. Finally, residents are concerned that the street patterns in or around certain neighborhoods create short-cuts that attract drivers who are trying to avoid delays at traffic signals or stops signs. The traffic using these short-cuts is typically referred to as cut-through traffic. Some El Cerrito residents feel their neighborhoods are experiencing cut-through traffic that has created excessively high traffic volumes on their streets. Related concerns include difficulty getting out of driveways and parked cars getting hit by passing vehicles.

## 2.2. Balancing User Needs

The Neighborhood Traffic Management Program (NTMP) must carefully balance the needs of all who share El Cerrito streets. Users of the street include pedestrians of various ages and abilities, bicyclists and the motoring public. The NTMP seeks to reconcile the desire for quiet, low-speed streets versus efficient and convenient mobility by designing a street environment that functions well for pedestrians, bicyclists and the motoring public. A key element in balancing user needs is to design pedestrian-friendly neighborhood streets. In a pedestrian-friendly environment, people feel safe walking, the environment is comfortable, and access to destinations is logical and convenient. The intent is that, in pedestrian-friendly areas, children and others who do not drive automobiles will be less reliant on others for their transportation and those who do drive will drive less. Bicyclists also share streets and must also be considered during the process of developing neighborhood traffic management strategies.

The NTMP must also address the needs of those traveling via motor vehicles. Because community members place a high value on maintaining reliable vehicular access to streets that carry them to work, freeways and other regional destinations, the NTMP strives to maintain efficient and convenient routes for vehicles along collector and arterial streets. The NTMP also strives to maintain the traditional use of residential streets for traffic circulation within a neighborhood and between adjacent neighborhoods. However, neighborhood traffic management measures may be used to discourage extraordinary amounts of cut-through traffic utilizing local streets and instead guide this traffic to collector and arterial streets. This is consistent with the roadway classifications identified in the City's General Plan as described below.

Schools, transit nodes, and other activity centers such as churches, parks, senior centers, libraries, and shopping areas provide important services to the community and require special consideration. City staff and residents must collaborate with the operators of these facilities so that streets will continue to provide the functionality needed by these facilities for access, circulation and loading/unloading. Finally, the NTMP must meet the needs of those who provide various other neighborhood services, including the occasional moving van, garbage and recycling services, and, most importantly, emergency service providers.

## 2.3. Roadway Classification

The Transportation and Circulation Element of the General Plan provides general guidance on the uses and functions for each street within the City. In terms of motor vehicles, the street hierarchy ranges from a principal/major arterial that provides the greatest mobility for through traffic to a local access street that provides the lowest mobility function. As such, the NTMP evaluation process will consider the functional classification of streets.

The NTMP, initially intended to be limited to local and collector streets, will also address minor arterial streets. This is because many of them are residential in nature and generate numerous requests concerning speeding from residents. Only principal/major arterial streets, which are limited to only a few streets in El Cerrito, will be excluded from the NTMP. However, educational and enforcement measures in the NTMP can be applied to these streets as well.

Typically, each street classification is defined as follows:

Local streets are low-speed, low-volume roadways that provide direct and full access to abutting land uses. They typically have two travel lanes with parking on both sides and daily traffic volumes of less than 1,000 vehicles per day (vpd).

Collector streets are relatively low-speed, low-volume roadways that collect and distribute local traffic moving between local and minor arterial streets. They typically have two travel lanes with parking on both sides. Collector streets often carry some amount of through traffic and may carry transit. They are designated as emergency response routes.

Minor arterial streets interconnect with principal/major arterials. Typically, minor arterial streets have greater right-of-way and paved widths, including wider travel lanes, than collector streets. Minor arterial streets carry through traffic providing intra-city mobility. Minor arterials are emergency response routes and typically transit routes as well.

Principal/major arterial streets carry traffic to regional routes and freeways. Principal/major arterials typically have multiple lanes of traffic in each direction. They are also emergency response and transit routes. Principal/major arterials typically carry traffic volumes in excess of 10,000 vpd.

The City's Circulation Plan for Bicyclists and Pedestrians designates bicycle and pedestrian routes that connect with each other and key destinations in the City. Evaluation methods in the NTMP will also consider these pedestrian and bicycles routes. Appendix A of this report provides the roadway classification, pedestrian routes, and bikeways maps for the City of El Cerrito.

## **2.4. Initial Traffic Request**

The first step in initiating a potential NTMP process is for a resident to contact the Public Works Department and describe the concern. The Public Works Department can be contacted in several ways:

- Calling (510) 215-4382;
- Writing 10890 San Pablo Avenue, El Cerrito, CA 94530; Attn: Engineering Manager
- Emailing [engineer@ci.el-cerrito.ca.us](mailto:engineer@ci.el-cerrito.ca.us); or
- Visiting <http://www.el-cerrito.org/engineering/pdf/rampimpvmtform.pdf>

An initial traffic request form is provided in Appendix B. Staff will identify the specific problem and first evaluate if it can be solved through the regular traffic request process, which generally produces solutions that are less likely to adversely affect neighboring streets. This will be the case for concerns such as those regarding unsafe speeds or limited visibility at an isolated curve or intersection that could possibly be addressed through the installation of straightforward solutions such as centerline striping, red curb markings or warning signs. These types of requests will be evaluated in the order they are received. If the traffic problem persists, or a straightforward solution is not available, the resident will be directed to follow the NTMP process in the next section of this report.

Before or after contacting the Public Works Department regarding speeding concerns, residents are also highly encouraged to contact the El Cerrito Police Department's Traffic Safety Unit to request the deployment of the Speed Feedback "Radar Trailer". The Radar Trailer is an effective visual reminder to drivers to stay within the speed limit. A computer inside the radar trailer tracks the speed and the time all of the vehicles that pass the trailer during the time it is deployed. This

traffic flow and speed data is then reviewed by a police officer. As a follow-up to the request for the trailer, an officer will often conduct traffic enforcement at the same location. The Traffic Safety Unit can be contacted in several ways:

- Calling (510) 215-4436; or
- Visiting <http://www.el-cerrito.org/police/traffic.html>

Note that the Police and Public Works Departments meet on a monthly basis to discuss on-going and potential efforts to address traffic concerns in El Cerrito neighborhoods.

## 2.5. Qualifying Criteria

Requests regarding neighborhood traffic concerns such as speeding, high traffic volumes, and pedestrian and bicycle issues can be numerous from residents across the City. The problem is how to place these requests in context – which ones have priority and which ones represent “normal” traffic conditions on residential streets. The criteria for when a street qualifies for the evaluation of neighborhood traffic management measures are based on thresholds for which research shows a majority of residents would likely agree that there is a problem as discussed in Section 2.1. For conditions that do not exceed one of the thresholds, the NTMP process will not be implemented. However, the resident may resubmit the request at a later date.

Requests for neighborhood traffic management must be for a street not classified as a principal/major arterial and satisfy at least one of the thresholds listed below.

1. The 85<sup>th</sup>-percentile speed\* must be in excess of the posted speed limit by more than 2 to 4 miles per hour (mph) as follows:
  - a. Local Streets or Pedestrian Routes - 27 mph
  - b. Other Collector or Minor Arterial Streets - 29 mph

\*Note: When the speeds of all motorists at one location are ranked from slowest to fastest, the 85<sup>th</sup>-percentile speed separates the slower 85 percent from the fastest 15 percent, who typically pose the greatest safety hazard.
2. Average daily vehicular traffic volume must exceed the amount of traffic that would typically be generated by land uses with direct access on that block and the following:
  - a. Local Streets - 1,000 vehicles per day (vpd)
  - b. Collector Streets - 2,500 vpd
  - c. Minor Arterial Streets – 4,000 vpd
3. Collision data during the last available 36 months demonstrates that the numbers of collisions are above the City-wide average for a similar type of street/intersection.

## 2.6. Project Prioritization:

NTMP request meeting the qualifying criteria will be prioritized based on the following:

- Travel Speeds - The greater the 85th percentile speed exceeds the designated speed limit by more than 2 mph, the higher the priority ranking up to 15 points.
- Traffic Volumes - The greater the vehicular traffic volume, the higher the priority ranking, up to 10 points.
- Collision History – Locations with a larger number of preventable collisions will receive a higher priority ranking up to 15 points.
- Pedestrian/Bicycle Facilities – Locations that lack pedestrian paths or sidewalks, or a bicycle or pedestrian route designated in the El Cerrito Circulation Plan, will receive a higher priority ranking up to 12 points.
- Pedestrian/Bicycle Activity – Locations near schools, activity centers and transit facilities will receive a higher priority up to 12 points.

A ranking list of these NTMP requests will be established on an annual basis.

## 2.7. Types of NTMP Measures

City staff will recommend and/or assist the community in identifying the specific concerns that need to be evaluated and potential traffic management measures that may be appropriate to address those concerns. Neighborhood traffic management measures consist of various types of measures used to influence the behavior of drivers. The Institute of Transportation Engineers (ITE) defines traffic calming as “the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users.” Generally, traffic calming is a set of physical measures, while an NTMP is the program to evaluate and implement various types of measures consisting of not only physical devices, but also education, enforcement, and low-cost engineering measures.

Selection of measures will be based on one of two categories depending on the type and extent of the investigated issues as described below. The least restrictive measure that will address the neighborhood concerns will be implemented first. Tier I measures are non-physical measures that typically do not require City Council approval except for certain regulatory signs. Tier II measures are physical measures that may be more controversial and the City Engineer may request City Council approval on a case-by-case basis or as required by code. Refer to Section 4 for more detailed information on the toolbox of NTMP measures.

### ***Tier I Measures (Non-Physical)***

Tier I measures include education and enforcement initiatives combined with relatively low-cost engineering measures. An NTMP request would likely include several of these engineering measures at one or more locations unlike a regular traffic request, which would involve only one of these measures at a single location. The latter types of requests will be handled through the regular traffic request process and evaluated in the order they are received as previously described. The Tier I measures listed below are anticipated to provide effective solutions for most of the neighborhood traffic concerns in El Cerrito.

#### Educational Measures

- Speed “Radar Trailer”
- Neighborhood Pace Car/Pledge Program
- Neighborhood Speed Watch Program
- Pedestrian and bike safety classes
- Public information (flyers, newsletters, website)

Educational and enforcement measures, which are typically led by the Police Department, can be used independent of other measures. In these instances, the entire NTMP process will not need to be undertaken.

#### Enforcement Measures

- Speed Enforcement
- Crosswalk Enforcement
- Parking Enforcement

### Engineering Measures

- Regulatory signs
  - Speed Limit signs
  - Truck restriction signs
  - Parking prohibition signs\*
  - Turn Prohibition signs\*
  - Residential Street Multi-way Stop signs\*
- Static warning and specialty signs
  - High-visibility signs (fluorescent, double-sided, in-street)
  - Pedestrian and Bicycle signs
- Special striping and markings
  - Reduced lane width (edge lines and centerlines)
  - Marking of intersection narrowing features (cross-hatching)
  - High visibility crosswalks (ladder markings)
  - Advance warning symbol markings
  - Delineators/Botts' Dots



### Additional Measures

- Changes in lane configuration
- Changes in traffic signal timing
- Changes to street trees and landscaping
- Street lighting improvements

\*Note: These regulatory signs require City Council approval. Also, as part of this program, new warrants for multi-way stop signs on residential streets are proposed. Preliminary warrants are contained in Appendix F. However, an ordinance and separate resolution will need to be adopted by the City Council.

### ***Tier II Measures (Physical)***

Tier II measures are mostly physical engineering measures and thus a more restrictive form of traffic management. These measures are generally higher in cost and have more significant impacts than Tier I measures. Commonly-used measures that are anticipated to be appropriate for the needs of El Cerrito neighborhoods are listed below.

#### All Streets

- Textured pavement
- Speed feedback signs
- Crosswalk Warning Systems
- Speed Cushions
- Medians/Pedestrian Refuge and Gateways
- Speed Tables/Raised crosswalks
- Reduced Corner Radius at Intersections
- Bulb-outs, Chokers and Curb Extensions
- Traffic Circles
- Sidewalk/pathway construction



#### Local Streets Only

- Speed Humps\*
- Chicanes
- Forced-turn Channelization/Diagonal Diverter
- Raised Intersection
- Half-street Closure
- One-way Street
- Full Closure

\*Note: The existing Speed Hump Program is being integrated into this NTMP.



Examples of the effectiveness of some of these Tier II measures are shown in Table I below.

**Table I: Sample of Traffic Calming Effectiveness**

Measures	Speed			Volume		
	After Measure (mph)	Change (mph)	% Change	After Measure (vpd)	Change	% Change
12' Humps	27.4	-7.6	-22	1,617	-355	-18
14' Humps	25.6	-7.7	-23	1,876	-529	-22
22' Tables	30.1	-6.6	-18	3,043	-415	-12
Circles	30.3	-3.9	-11	5,567	-293	-5
Narrowing	32.3	-2.6	-4	2,367	-263	-10
Half Closures	26.3	-6	-19	2,225	-1611	-42
Diverters	27.9	-1.4	-4	930	-501	-35

## 2.8. General Impacts and Requirements

The pros and cons associated with engineering measures, more specifically Tier II measures are listed below.

### Pros

- ▀ Safer residential streets (due to lower vehicle speeds and volumes)
- ▀ Less anxiety
- ▀ More cycling and walking comfort
- ▀ Less traffic noise (effect varies with volumes and traffic calming plan)
- ▀ Opportunity for streetscaping/landscaping
- ▀ Physical measures are generally self-enforcing

### Cons

- ▀ Inconvenience to motorists
- ▀ Cost to design, construct & maintain
- ▀ Diversion to other local streets
- ▀ Arterial street delays and queues
- ▀ Emergency response delays
- ▀ On-street parking loss



Tier I and II measures must comply with applicable state and federal regulations on traffic control and standard guidelines for roadway design features including the following documents: El Cerrito Municipal Code, California Vehicle Code, California Manual on Uniform Traffic Control Devices (California MUTCD), and the American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets. It is important to emphasize that all measures must comply with the Americans with Disabilities Act and that any implemented measures must not create impediments in routes that currently provide accessible travel alternatives. Refer to Section 4 for more information on NTMP measures.

### 3. NTMP Process

The NTMP process involves well-defined procedures and active neighborhood participation to evaluate neighborhood traffic concerns in an efficient, fair, and timely manner. Neighborhood stakeholders include homeowners, residents, business owners and other property owners. A successful NTMP process will include a submission of NTMP request petition(s), preliminary evaluation, project prioritization, neighborhood meeting(s), engineering analyses, and neighborhood consensus to implement traffic management solutions that are uniquely tailored to each neighborhood.

The NTMP process is described below and shown on the NTMP flow chart in Appendix B. All requests will initially be treated as Tier I and then elevated to Tier II for only the most severe traffic conditions. The process is intended to be completed under one year and, after funding has been approved by City Council, the initial measures implemented as appropriate.

#### 3.1. Procedures for Tier I Measures

Implementation of Tier I measures will follow the steps described below.

1. **NTMP Petition Request:** A resident submits an NTMP Petition Request Form to alert the City about a neighborhood problem that involves speeding, large volumes of traffic, and/or obstacles to walking/biking. The NTMP Petition Request Form is contained in Appendix C. The form requires a written description of the location and nature of reported concerns and 60 percent approval from the addresses on the project street, which is the block or blocks on which the neighborhood traffic management is being requested. Once the request is submitted, it will be processed in the order it is received. The resident submitting the request form will become the “neighborhood lead” and serve as the primary contact for City staff.

The neighborhood lead should make a reasonable effort to contact the property owner and the current resident/business at each address. Multiple responses from one address will be counted as one response. Multi-family buildings will be counted as one to initiate the NTMP process, but each individual unit will be contacted for input during the remainder of the process. Also, if the responses from a property owner and resident of an address are in conflict, they will not be counted. If the project street crosses jurisdictional boundaries, the neighborhood lead should also make a reasonable effort to contact both the property owner and the current resident/business at each address in that jurisdiction. However, those addresses may not necessarily be included in the tally. Also, for a project street that includes extra long blocks (i.e., longer than 900 feet), the approval percentage may be reduced to 55 percent.

City staff will review the completed NTMP Petition Request Form to ensure that 60 percent of the addresses would like to pursue NTMP measures. If not, City staff will inform the requestor that the traffic issues will be addressed through the regular traffic request process. If the form has a 60 percent approval, City staff will prepare an initial response to the neighborhood lead with information regarding the next steps in the NTMP process.

2. **NTMP Criteria Evaluation:** City staff will review the reported concerns including any available collision, traffic volume and speed data. This is to determine if raised traffic issues meet the NTMP qualifying criteria. If City staff determines that the reported traffic issues do not meet the criteria, staff will inform the contact resident that no further action will be taken at this time. However, the resident may resubmit the request at a later date.

If the criteria are met, City staff will also identify boundaries of the study area in consideration of the nature of reported traffic issues, any potential corrective measures and areas potentially affected, impacts to emergency response or other consequences. At a minimum, the study area will include the project street, which is the block or blocks on which the neighborhood traffic management is being requested, and adjacent streets within one block. Multiple requests for nearby locations may be combined by staff into a single request for a neighborhood project. If the potentially affected area includes streets under other city or county jurisdictions, efforts will be made to coordinate with the other jurisdiction if appropriate to evaluate the plan impacts.

3. **Project Prioritization:** City staff will rank NTMP requests meeting the qualifying criteria based on the aforementioned priority criteria using the worksheet contained in Appendix D. A ranking list of qualifying NTMP requests received by September 1st will be established on an annual basis. Those submitted after September 1st will be ranked the following year along with any carry-over requests. City staff will inform the neighborhood lead regarding the timeline for moving ahead based on their priority ranking and availability of City staff.

4. **Initial Neighborhood Meeting:** City staff will notify the property owners and current residents/businesses within the study area regarding an initial neighborhood meeting and post a meeting notice on the City's website. Notifications will be sent via U.S. mail and/or door-hangers as determined by City staff.

The initial neighborhood meeting will be held to discuss reported traffic concerns and the Neighborhood Traffic Management Program. It is important that everyone involved hears the different views and experiences of other neighbors, as well as, the results of the preliminary evaluation by City staff. City staff and residents together will explore the various NTMP measures available to address the neighborhood traffic concerns. The need to revise the study area, if appropriate, and funding options will also be discussed. Through this process, a shared definition of the reported issues can be developed, along with desired outcomes and applicable solutions that can be further investigated. In the process, staff can recommend an alternative course of action, such as the Tier II procedures, or continue on with the Tier I procedures.

5. **Engineering Analysis:** City staff will conduct an engineering analysis, and determine the most appropriate Tier I measures to address neighborhood concerns and any special parameters identified at the neighborhood meeting. The analysis will be based on roadway classification, multi-modal traffic data, results of traffic control warrant analyses, land uses within the impacted area, emergency service response, public transit routes and compliance with existing regulations. This review is essential to reduce the potential for plans being advanced that are not feasible or warranted, or the implementation of measures that may need to be removed at some future time.

6. **Second Neighborhood Meeting:** City staff will notify the property owners and current residents/businesses within the study area regarding a second neighborhood meeting using the same notification procedures for the first meeting and accounting for any changes in the study area. The purpose of the notification and second meeting is to present the City staff findings regarding the measures to be implemented. City staff will confirm that all of the property owners immediately adjacent to the traffic management measure agree with the measure. Community members disagreeing with staff decisions may appeal to the City Manager.

7. **City Council Approval, if appropriate:** City staff will present its recommendations for certain regulatory signs, if required by the El Cerrito Municipal Code, to City Council for approval. The Council can deny or recommend revisions to staff recommendations.

8. **Implementation of Tier I Measures:** Tier I measures will be implemented by the City Engineer upon identification of a funding source. Work order(s) will be prepared and forwarded to the Public Works Maintenance Division for installation.

9. **Follow-Up Review, if appropriate:** City staff will conduct a follow-up review to evaluate the effectiveness of the measures within a six-month period. The evaluation will include, at a minimum, a review of traffic volumes and vehicle speeds. Based on the evaluation, staff will retain, modify or remove the Tier I measures and may also recommend that the neighborhood continue the process on a Tier II basis.

### 3.2. Procedures for Tier II Measures

Implementation of Tier II measures will follow Steps 1 through 5 above and the procedures described below.

6. **NTMP Petition Form II:** Since Tier II measures impact many people in a neighborhood and the measures tend to be costly, it is necessary to determine if there is a high-level of support from the project street for the process before continuing. If it is determined that Tier II measures may be appropriate, City staff inform the neighborhood lead that completion of a NTMP Petition Form II is required. A NTMP Petition Form II is contained in Appendix E. The neighborhood lead will be responsible for completing a NTMP Petition Form II indicating 70 percent approval from the addresses on the project street which is the block or blocks on which the neighborhood traffic management is being requested. The same procedures provided for the first NTMP Petition Form must be followed.

7. **Draft Neighborhood Traffic Management Plan (Plan):** City staff will review the NTMP Petition Form II to ensure that 70 percent of the households/businesses would like to pursue NTMP measures. If the petition does not achieve the required approval from the addresses on the project street, the neighborhood may resubmit an NTMP Request Form after a minimum of one-year lapse from the submittal of this petition. If the petition does achieve 70% approval, City staff with the help of qualified consultants, if needed, will proceed with developing a draft Neighborhood Traffic Management Plan based on public input from the first meeting and second petition.

The development of the plan will first require detailed data collection that may include speeds, volumes, collision history, and other information needed to define the problem and later measure the success of the plan. The City may approach neighborhood representatives for volunteers to assist with the data collection. Enough data will be collected and evaluated to provide an accurate picture of the current conditions throughout the neighborhood.

A detailed analysis will help determine which Tier II measures are warranted based on the NTMP Framework in Section 2.0 of this report. This analysis will be based on roadway classification, existing and project traffic conditions, multi-modal travel counts and facilities, land uses within the impacted area, emergency service routes, public transit routes, potential for traffic diversion to other residential streets, and compliance with existing local and state regulations.

Consultation with Police and Fire Departments will take place to determine if the street is a critical emergency vehicle response route, and therefore not eligible for certain features. Consultation may also include transit agencies, the school district, individual schools, and any other service provider affected by the requested traffic management plan. The Planning Division will also be consulted to determine the requirements for environmental clearance at a later stage in the process.

**8. Second Neighborhood Meeting:** Once a draft Plan is prepared, City staff will notify the property owners and current residents/businesses within the study area regarding a second neighborhood meeting using the same notification procedures for the first meeting and accounting for any changes in the study area. The purpose of the notification and second meeting is to present City staff recommendations for measures to be implemented, and obtain input on the level of the acceptance from the neighborhood and needed plan changes. Additional neighborhood meetings may be held as necessary.

**9. Resident Survey for Trial Installation (Initial Ballot):** City staff will distribute a survey with mail-in ballot to property owners and current residents/businesses throughout the study area. The survey will include a description of the analysis and proposed Plan including detailed description, advantages, disadvantages, previous community input, and estimated cost for plan implementation. Approval for the trial installation will require support based on the Composite Voting System shown in Table II.

**Table II: Composite Voting System – Approval Rating\***

<i>Project Street</i>	<i>Neighboring Streets</i>
70 to 80%	50%
80 to 90%	40%
90 to 100%	30%

Note: Generally modeled after the City of San Leandro Composite Voting System.

The Composite Voting System gives all the study area a vote, but offers greater weight to the project street than to the neighboring streets (which include streets surrounding the project street where traffic may be altered as a result of implementing the traffic measures). For example, if a 90% to 100% approval rate is obtained on the project street, the project would pass if at least a 30% approval rate is obtained on the neighboring streets. However, if a 70% approval rate is obtained on the project street, the project would not pass unless at least a 50% approval rate is obtained from the neighboring streets.

The approval percentage for the project street will be based on all addresses including individual units in multi-family buildings. The response from the neighboring streets will be evaluated using a protest vote method. The protest vote method will count no-votes and compare them to the entire neighboring streets to determine the approval percentage.

**10. City Council Approval, if appropriate:** If the plan is approved by the neighborhood, City staff may present it to City Council for approval of a six-month trial installation if appropriate. The Council may approve, deny or make revisions to the plan.

**11. Temporary Installation:** Subject to Council approval of the plan and funding source, Tier II measures will be installed using temporary materials for a trial period of six months if appropriate

and possible. If necessary, emergency response access will be tested for various design options in the field using a response apparatus.

Depending on the type of traffic management feature, temporary materials may not be available that sufficiently replicate the permanent measure. Therefore, the trial installation may be constructed of permanent materials with the provision that it they be removed at the end of the trial period.

**12. Follow-up Studies:** Follow-up studies will be conducted within six months of the installation of temporary features. These studies should be comparable with the initial data collection and may include speed surveys, volume counts, and, if necessary, a traffic operations analysis. These follow-up studies will be conducted to evaluate the impacts of the Tier II measures and to learn more about how they affect drivers' behavior. This information can be used to determine whether the desired outcomes have been achieved. The follow-up studies will also be used to determine if the traffic problem has shifted to other neighborhood streets.

On local streets, the Portland Impact Threshold Curve will be used to determine acceptability of diverted traffic. Acceptability will be based on the net diverted traffic from the current project plus all preceding projects under the NTMP. If the current project causes the net cumulative diverted traffic on any street to exceed the limit, the installation of temporary features will be modified to reduce the cumulative diversion to within acceptable limits. An exhibit of the Portland Impact Threshold Curve is contained in Appendix F. On arterial and collector streets, the levels of service at stop-controlled and signalized intersections will be measured to ensure acceptable levels of service are being maintained per the General Plan.

**13. Resident Survey for Permanent Installation (Final Ballot):** At the conclusion of the trial period, City staff will distribute a survey with mail-in ballot to property owners and current residents/businesses throughout the study area. The purpose of the survey is to determine whether they consider the Tier II traffic management plan measures to be successful and if they wish them to be implemented on a permanent basis. Results of the follow-up studies, including numerical results, will be conveyed to assist them in making this decision. The survey language will explain and graphically show the location and nature of proposed changes. Support based on the Composite Voting System above must be demonstrated through this survey process prior to considering permanent implementation. A second survey may be distributed to those addresses that do not respond to the first survey.

**14. City Council Final Approval, if appropriate:** If community consensus is reached in favor of the permanent implementation of Tier II measures and when any necessary environmental clearances have been obtained, City staff will present the results and recommendations to City Council for final review if appropriate. City Council may decide to approve, deny or make revisions to the permanent establishment of Tier II measures. Based on the Council's decision, the temporary traffic management features will be either removed or replaced with permanent features.

**15. Permanent Implementation:** If permanent implementation is decided and a funding source is identified, detailed design drawings will be prepared either in-house or by a qualified consultant. The final engineering drawings will be made available to the neighborhood prior to the actual construction. This is important to ensure that there are no surprises once construction starts. Residents also need to be aware in advance of the impacts of construction (noise, dust, potential traffic rerouting, etc.) and the anticipated construction schedule to minimize frustrations during the

actual construction. Permanent construction of the Tier II measures will most likely be completed by a contractor hired by the City.

## 4. NTMP Measures Toolbox

As traffic management has evolved in the past few decades, it is generally considered to consist of a combination of educational, enforcement and engineering measures that reduce the negative effects of motor vehicle use, alter driver behavior, improve safety for non-motorized street users, and improve neighborhood livability.

### 4.1. Typical Measures

Appendix G contains typical traffic management measures that may be used in El Cerrito. A description, illustration, application and limitation, advantages and disadvantages, and typical costs are provided for various measures. The measures listed are not meant to be comprehensive and some of the measures need additional development and/or City Council approval, such as the residential street multi-way stop signs. Furthermore, for a variety of reasons, not all measures will be acceptable or desirable in all situations. For example, some physical measures are not acceptable for use on streets designated as emergency response routes. The determination of which measures best suit which application will be worked out between neighborhood residents and City staff, including the Public Works, Police, Fire and Community & Economic Development Departments, following the NTMP guidelines in Section 2. Many of the measures described herein may be used in combination with each other, and there are also many design variations of each measure. Residents are encouraged to see and experience traffic calming measures that are already in place in El Cerrito and nearby communities.

The traffic management measures in this inventory are listed generally in order of increasing effectiveness at reducing speeds and/or the volume of shortcutting traffic. The least restrictive measures are usually “passive,” meaning that drivers can choose whether or not to obey them. The most typical examples of passive measures are traffic signs and striping. The next level is the “active” measures that physically constrain the driver to certain paths or areas in the roadway. The most effective active measures are those that force drivers into horizontal or vertical movement, therefore causing drivers to reduce speed--the primary objective of traffic management. Reduced speed translates into increased travel time that, in turn, may decrease traffic volumes because drivers may abandon a slower route. Some examples of these measures are traffic circles and speed humps. The most restrictive of these measures are those that partially or completely block traffic movements, with dramatic effects on traffic volume and the incidence of speeding. Half street closures are examples of this type of measure.

The most restrictive measures will generally not be encouraged except in cases of overriding concerns. Furthermore, their use will likely require an environmental impact analysis or other forms of detailed investigation and approval requirements.

### 4.2. Internet Resources

Appendix H list website resources that provide information on additional traffic management measures including detailed descriptions and illustrations.

## **5. Program Implementation**

### **5.1. City Resources and Funding**

The ability of the City to evaluate and implement NTMP projects in any given year will be limited by the availability of City staff and funding for such purposes. The NTMP process for Tier I projects are generally less resource intensive than Tier II projects. However, both Tier I and II projects will require data collection of speed and volumes and collision analysis. As such, funding for the evaluation and implementation of NTMP projects will be prioritized by City staff as a part of overall City's annual budgeting and Capital Improvement Program (CIP) process and will be subject to the approval of City Council. If staff determines that a project will be too large for the available budget, the project may be phased. Also, if a neighborhood desires high-aesthetic measures including landscaping and irrigation, the potential funding of these improvements by individuals or groups of property owners will be explored. Finally, staff may also seek outside funding, such as state and federal grants, for the project, including landscaping if desired.

### **5.2. Program Review**

Based on the experience of various jurisdictions throughout the Bay Area, the success of a Neighborhood Traffic Management Program depends on its adaptability. There is no one program or process that works perfectly for all cities and for that matter all neighborhoods. Therefore, as the City changes, new problems and solutions are discovered, and the procedures are tested, City staff will periodically review the NTMP and identify appropriate changes that would improve its responsiveness to El Cerrito residents.

## 6. Study References

### 6.1. TJKM Personnel

Christopher Thnay, PE, AICP	Project Manager
Steve Au, PE	Design Chief
Jeffrey Lacap, EIT	Project Engineer
Vishnu Gandluru	Transportation Engineer
Margie Pfaff	Word Processing

### 6.2. City Staff Consulted

Jerry Bradshaw, PE  
Yvetteh Ortiz, PE  
Lt. Stephen Bonini

### 6.3. El Cerrito City Council (July 2009)

Sandia Potter  
Janet Abelson  
Ann Cheng  
William C. Jones III  
Greg Lyman

### 6.4. Other Agencies

See Appendix I for agencies consulted including Mountain View, Santa Clara, Los Altos, San Leandro and San Mateo.

### 6.5. References

*Traffic Calming: State of the Practice*, ITE/FHWA, August 1999

*State of the Art: Residential Traffic Management*, FHWA, 1980

*Street Design Guidelines for Healthy Neighborhoods*, Local Government Commission, Center for Livable Communities, January 1999.