

City of Eureka
Neighborhood Traffic Calming Program
supplement to
Transportation Safety Action Plan

**The Mission of the Transportation Safety Action Plan is to make Eureka safe
for all modes of transportation.**



Developed in partnership with the City of Eureka Engineering, Public Works, Fire and Police Departments, Eureka City Council, and the City of Eureka Transportation Safety Commission.

NEIGHBORHOOD TRAFFIC CALMING

Traffic control devices are those official signs and striping placed in the public right-of-way and recognized by the public such as STOP signs, curve warning signs, centerline striping, etc. These devices have been officially approved by the Manual on Uniform Traffic Control Devices (MUTCD) as supplemented by the State of California Department of Transportation pursuant to legislative authority provided for in the California Vehicle Code.

Traffic calming measures, however, have evolved to include features that are not officially approved through legislative action by the State of California. Commonly referred to as "tools", traffic calming measures or features (e.g., tools) are available in the traffic calming "toolbox".

Each tool in the toolbox of options is unique and has a specific purpose for addressing residential street traffic concerns requiring some form of traffic calming. Tools have their limitations on effectiveness, advantages and disadvantages and a range of costs. More than just a structural feature on the street, traffic calming tools include the components of education, enforcement, engineering, and enhancement.

The following pages identify various tools within the traffic calming toolbox. They were chosen for:

- appropriateness to address traffic concerns in Eureka
- acceptability to stakeholders, including the Fire Department
- suitability for use in neighborhoods

Each traffic calming measure is briefly described, application for use is listed and the advantages and disadvantages of the tool are provided. Estimated costs have been provided where the cost of the measure was able to be determined. However, actual costs depend on many factors, including: dimensions of the device, construction materials, and actual construction costs.

PROGRAM PHILOSOPHY

Residents of all Eureka city streets have the right to a safe environment; right to a fair share of law enforcement resources; and, protection from disproportionate increases in undesirable traffic conditions. When using city streets to travel between destinations or for purposes of recreation, city residents have the right to safe travel and crossing of these public facilities.



- Creating clear, open and available lines of communication through several means will lead to improved feedback to staff regarding City traffic safety issues and will improve the effectiveness of the response to these issues.
- Citizen involvement in collecting traffic and street condition data and providing input on traffic calming measures or other solutions is an effective means of ensuring clear communication and efficiently resolving neighborhood traffic safety concerns.
- Facilitating the calming of adverse and unsafe behaviors of all types of traffic on City roads to promote the safety of all residents, while ensuring that emergency vehicles and normal levels of traffic can continue to function on City streets is critical for continued transportation network functionality. This includes consideration of traffic impacts on adjacent streets in every case.
- Stable residential neighborhood traffic requires efficient arterial and collector traffic flow to minimize incentives to cut through residential neighborhoods.
- Streets are a community resource. Denial of public access by closing streets is not a consideration of the Transportation Safety Action Plan except in cases of over-riding safety concerns.
- The Neighborhood Traffic Calming Toolbox is not intended to modify traditional traffic patterns within a neighborhood or between neighborhoods.

Traffic Tools Not Recommended in the Program

Stop Signs are not traffic calming devices. Studies have shown that vehicle speeds after the vehicle has passed through the stop controlled intersection are as high, and occasionally higher, than without a stop sign, as motorists try to “make up” time lost at the stop sign.

Stop signs are traffic control devices that are only used when appropriate to assign right-of-way to conflicting traffic movements. Stop signs should be installed only at locations where conditions meet established criteria, which has been the practice of the City. Studies have shown that stop signs that do not meet established criteria have a higher violation rate. Unwarranted stop sign also create disrespect of traffic control devices in general which may affect behavior at other stop controlled intersections.

Rumble Strips are a series of pavement bumps that create a “rumble” effect as vehicles drive over them. Due to the noise they generate, they are inappropriate to use within neighborhoods.

Children at Play Signs are not standard traffic control devices and they can create a false sense of security, which can increase the potential for collisions and injuries.

TRAFFIC CALMING MEASURE CATEGORIES

Depending on the nature of the request, City staff and the Transportation Safety Commission (TSC) will recommend and/or assist the community in identifying appropriate traffic management measures. Selection of measures will be from one of three categories depending on the type and extent of the investigated issues. These three categories are as follows:

Level I

Level I measures include education and enforcement initiatives that are relatively low in cost and simple in their implementation. These measures do not require a process for initiation and can be requested directly of EPD or the Traffic Division.

Level II

Level II measures include engineering measures that are relatively low in cost and simple in their implementation. These engineering measures could be signing, striping, curb marking and improvement in street lighting as listed.

Level III

Level III measures are more restrictive traffic management features that may divert traffic and impact access to properties. Measures under this category are generally higher in cost. It should be noted that while Level II measures can produce immediate improvement in reducing speed, reducing traffic volumes and reducing the need for police enforcement, there are also potential consequences associated with many of these measures such as loss of parking, traffic diversion and added emergency response times. Advantages and disadvantages of each measure is included within the toolbox. A table of traffic calming devices showing their effectiveness, cost, and location for use is included in the TRAFFIC CALMING MEASURES TABLE.

Notes: For both Level II and Level III measures.

*These items may require additional research to accumulate evidence legally warranting these changes.

** These items that must go before the TSC and require Council approval.

*** These items may cause significant traffic diversion to other roadways. These features are prohibited by the program philosophy statement barring use of the TSAP to modify traditional traffic patterns, except in cases of over-riding safety concern.

All other measures can be implemented upon staff recommendation.

TRAFFIC CALMING TOOLBOX

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Education

Level I

Description:

Conversations, meetings, e-mails, letters and handouts to residents regarding neighborhood traffic and pedestrian safety issues.

Application:

Traffic education is intended to make residents aware of local residential speed limits and other neighborhood traffic and safety concerns.



Advantages:

- Allows residents to express views and obtain answers.
- Identifies issues of concern and solutions.

Disadvantages:

- Effectiveness may be limited.
- Potentially time consuming.
- Limited audience.

Special Considerations:

Meetings need to stay focused on specific traffic issues.

Qualifying Criteria:

Citizen request

Estimated Cost:

Varies (staff time and published materials).

Police Presence

Level I

Description:

Police vehicles drive through or stop for a few minutes on residential streets to observe driver behavior.

Application:

Police presence is used to make a visual showing in residential neighborhoods to help discourage speeding.



Advantages:

- Shows an enforcement presence.
- May help slow vehicle speeds.

Disadvantages:

- Presence without enforcement has limited effectiveness.
- Limited police resources.

Special Considerations:

- Typically only effective when officer is present.
- Used on residential streets with complaints of speeding.

Qualifying Criteria:

Citizen request

Estimated Cost:

N/A

Radar Speed Feedback Signs

Level I

Description:

A portable trailer equipped with a radar unit that detects and displays the speed of passing vehicles on a reader board located next to a speed limit sign.

Application:

Radar trailers help discourage speeding along neighborhood streets by showing drivers their current speed.



Advantages:

- Effective educational tool.
- Good public relations tool.
- Encourages speed compliance.
- Can reduce speeds temporarily.

Disadvantages:

- Not an enforcement tool.
- Less effective on high volume streets.

Special Considerations:

Can be placed where a resident indicates a speeding problem is located.
Typically only effective in reducing speeds when sign is present.
Some motorists may speed up to try to register a high speed.

Qualifying Criteria:

Citizen request

Estimated Cost:

Staff time to place and remove the signs.

Police Enforcement

Level I

Description:

The Police Department deploys motorcycle or automobile officers to perform targeted enforcement on residential streets.

Application:

Targeted police enforcement used to make drivers aware of local speed limits and to reduce speeds by issuing citations. Targeted enforcement may also be used in conjunction with new neighborhood traffic management devices to help drivers become aware of the new restrictions.



Advantages:

- Effective, visible enforcement.
- Driver awareness increased.
- Can be used on short notice.
- Can reduce speeds temporarily.
- Does not physically slow emergency vehicles

Disadvantages:

- Temporary measure.
- Requires long-term use to be effective.
- Limited police resources.

Special Considerations:

Typically only used on residential streets with documented speeding problems.

Typically only effective while officer is actually monitoring speeds.

Benefits are short-term without regular periodic enforcement.

Qualifying Criteria:

Citizen request

Estimated Cost:

N/A

Speed Limit Signs

Level II

Description:

25 mile per hour speed limit signs are installed on neighborhood residential streets.

Application:

Speed limit signing encourages slower vehicle speeds along residential streets. Signs are only installed along streets where speeding is a problem.



Advantages:

- Clearly indicates prima facie speed limit.
- Helps reduce speeds.
- Usually popular with residents.
- Low cost of installation.

Disadvantages:

- Not effective by themselves.
- May add to sign clutter.
- Increased cost of sign maintenance.

Special Considerations:

Typically only installed on streets where speeding is a documented problem.
Requires police enforcement to be effective.

Qualifying Criteria:

Excessive speed. The 85th speed must be in excess of the speed limit by more than 5 mph.

Estimated Cost:

\$125 per sign.

Speed Limit Pavement Legends

Level II

Description:

Painting of speed limit legends on the roadway adjacent to speed limit signs.

Application:

Speed limit pavement legends increase driver awareness of the speed limit to help reduce speeding. They may be placed at major entry points into residential areas.



Advantages:

- Supplement to speed limit signs.
- May help reduce speeds.
- Usually popular with residents.
- Helps reinforce a change in speed limit.
- Does not slow emergency vehicles.

Disadvantages:

- Increase in maintenance cost.

Special Considerations:

Should only be installed on streets where speeding is a documented problem. Requires 25 MPH signs.

Qualifying Criteria:

Excessive speed and existing 25 mph speed limit sign. The 85th speed must be in excess of the speed limit by more than 5 mph.

Estimated Cost:

\$75 per legend.

Parking Prohibition

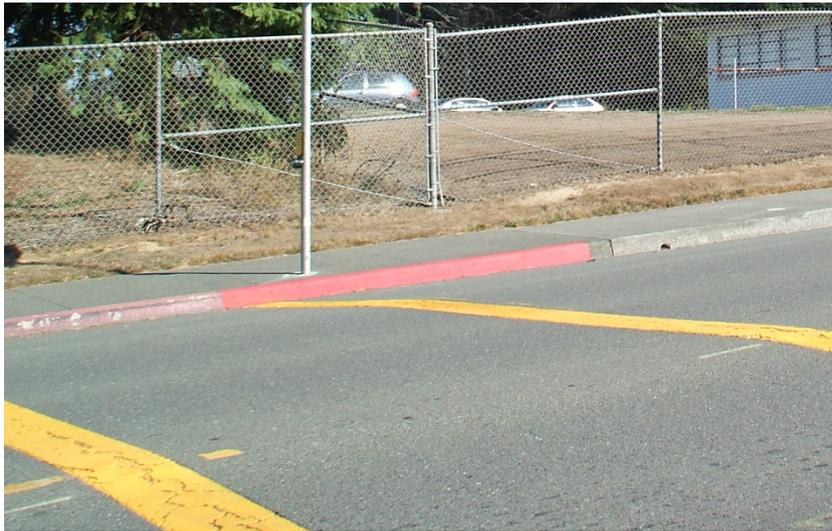
Level II

Description:

Removal of on-street parking via red curb paint.

Application:

Red curbs prohibit parking at intersections, driveways, and crosswalks to increase visibility.



Advantages:

- Self enforcing.
- Low cost of installation.
- Increased sight distance at intersection.

Disadvantages:

- Loss of on-street parking for residents.
- Increased cost of maintenance.

Special Considerations:

Long sections of parking removal require Transportation Safety Commission and City Council approval.

Qualifying Criteria:

Must meet sight visibility triangle requirements or demonstrate a visibility need. Staff judgment.

Estimated Cost:

\$25 per linear foot.

Warning Signs

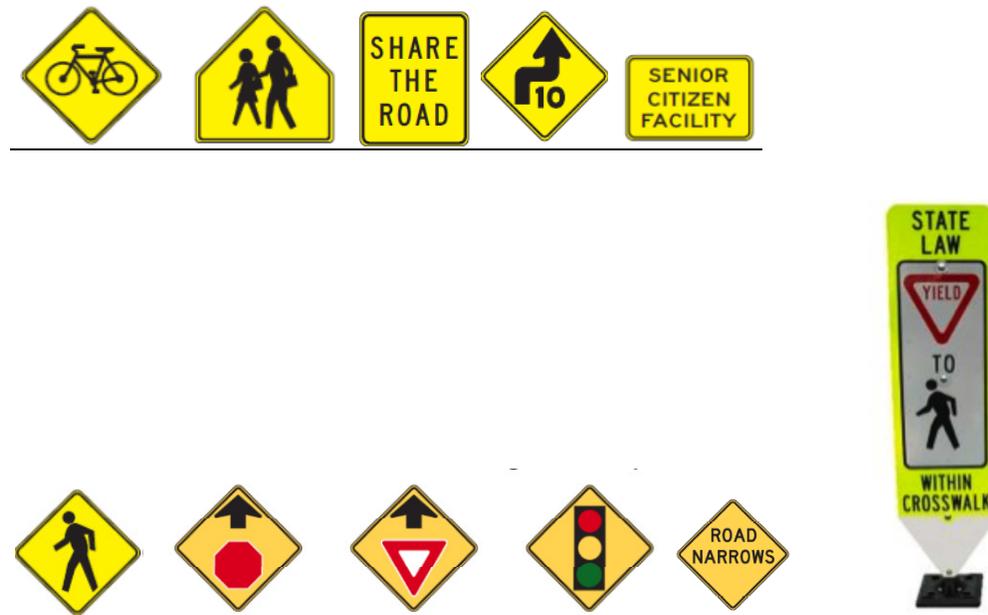
Level II

Description:

Standard warning signs give drivers advanced notice of roadway conditions.

Application:

Warning signs may advise motorists to reduce their speed, yield to pedestrians in a crosswalk, share the road with cyclists, and to be aware of school or senior citizen zones.



Advantages:

- Informs motorists of roadway conditions.
- Low cost of installation.
- Does not slow emergency vehicles.

Disadvantages:

- May add to sign clutter.
- Increased cost of sign maintenance/replacement.
- Not a regulatory sign.

Special Considerations:

Advisory only, cannot be enforced.

Qualifying Criteria:

Demonstrated need for advanced warning. Excessive speeds, high pedestrian volumes, collision history.

Estimated Cost:

\$125 and up, per sign.

Neighborhood Signs

Level II

Description:

Neighborhood signs involve the use of special yard signs to increase motorists' awareness.

Application:

Neighborhood signs help reduce speeding on residential streets.



Advantages:

- May increase driver awareness.
- May cause drivers to slow down.
- Low cost of installation.

Disadvantages:

- May have no lasting effect.
- Can create false sense of security.
- Adds to sign clutter.
- Not a standard Caltrans sig

Special Considerations:

Installed on resident's lawns, by residents.

Qualifying Criteria:

Neighborhood meeting to discuss placement locations and size requirements.

Estimated Cost:

Varies. To be purchased and placed by neighborhood making the request.

High Visibility Crosswalk Markings

Level II

Description:

High visibility crosswalks established by painting stripes between the crosswalk's outer boundary stripes.

Application:

High visibility crosswalks increase crosswalk visibility to drivers.



Advantages:

-More visible to the driver than traditional crosswalks.

Disadvantages:

- May give false sense of security to pedestrians.
- Higher maintenance costs.
- Increase resurfacing cost.

Special Considerations:

Pedestrians may place too high a reliance on its ability to control driver behavior.
Can be used at high pedestrian volume crossing locations.

Qualifying Criteria:

Existing crosswalk markings. High pedestrian activity or adjacent generator.

Estimated Cost:

\$1,000 to \$5,000 each.

Street Lighting

Level II

Description:

Street lights are normally placed at all intersections of City streets.

Application:

Street lights are installed in consideration of pedestrian and motorist safety, per the City's Policy and Procedure Memorandum, dated January 2, 1997. Street lights shall be placed at a minimum interval of 300 feet in residential areas. Additional street lights may be installed by PG&E through private means.



Advantages:

- Low cost.
- Improved night visibility for motorists and pedestrians.

Disadvantages:

- Light trespass.

Special Considerations:

City-installed street lights are not intended for private residence security. Street light locations are subject to existing power pole locations.

Qualifying Criteria:

City funded streetlights must meet City's policy criteria for location and wattage.

Estimated Cost:

\$8-10 per month per light

Street Trees

Level II

Description:

The City of Eureka encourages the planting of trees along public streets.

Application:

A no-fee encroachment permit is required from the Engineering Department, and certain restrictions on sidewalk width, and tree type apply.



Advantages:

- Increase property values
- Calm traffic
- Improve air and water quality

Disadvantages:

- Requires property owner maintenance and responsibility

Special Considerations:

Sidewalk repairs due to root damage are the responsibility of the property owner.
Tree well locations are at the City's discretion.

Qualifying Criteria:

Must meet City's street tree planting guide and procedure.

Estimated Cost:

Minimal

Flashing Beacons

Level II

Description:

Flashing beacons are used as supplemental emphasis to warning signs.

Application:

Flashing beacons are installed where the street geometry prevents adequate sight distance to a warning sign where special conditions exist. Beacons should be operated only during the time period when the condition exists.



Advantages:

-Can be installed as part of a pedestrian activated lighted crosswalk system.

Disadvantages:

-Continuous flashing may lose its effectiveness
-Maintenance and installation cost

Special Considerations:

Some devices are solar powered that require adequate sunlight exposure. Some devices require an AC power source be installed.

Qualifying Criteria:

Demonstrated need for advance warning due to roadway geometry. Excessive speeds, high pedestrian volumes, collision history.

Estimated Cost:

\$5,000

Pedestrian Activated Signs and Lights

Level II

Description:

Pedestrian activated signs and lights include LED lighted crosswalk signs and in-pavement light modules placed along marked crosswalks.

Application:

Lighted crosswalk systems are used to warn motorists, in advance, of a pedestrian's intent to cross the street.



Advantages:

- System is activated only when pedestrians are present.
- Lights provide good visibility in low light conditions

Special Considerations:

Some devices are solar powered that require adequate sunlight exposure. Some devices require an AC power source be installed.

Qualifying Criteria:

Excessive speeds, high pedestrian volumes, collision history. One or two lane roadways.

Estimated Cost:

\$20,000 - \$50,000

Disadvantages:

- Cost
- Overuse may lead to disrespect

Gateway/Entry Treatment

Level II

Description:

Entry treatments consist of raised landscaped median islands and textured pavement features and are located at entries to neighborhoods.

Application:

Entry treatments help reduce speed. They provide visual cues to drivers that they are entering a residential area or that surrounding land uses are changing.



The new gateway island at Balboa & Funston | Photo: Patty Phleger

Advantages:

- May reduce vehicle speeds.
- Creates an identity for the neighborhood.
- May reduce cut-through traffic.
- Opportunity for landscaping.

Disadvantages:

- Increase in noise.
- May require removal of parking.
- Can impede truck movements.
- Creates physical obstruction.
- Increased maintenance.

Special Considerations:

Entry treatments have minimal influence on drivers' routine behavior. Overall speeds and volumes are usually only minimally affected. Entry treatments make drivers more aware of the neighborhood environment. Care should be taken not to restrict pedestrian visibility at adjacent crosswalk.

Qualifying Criteria:

Neighborhood funded?

Estimated Cost:

\$10,000 to \$20,000 each.

Turn Restrictions

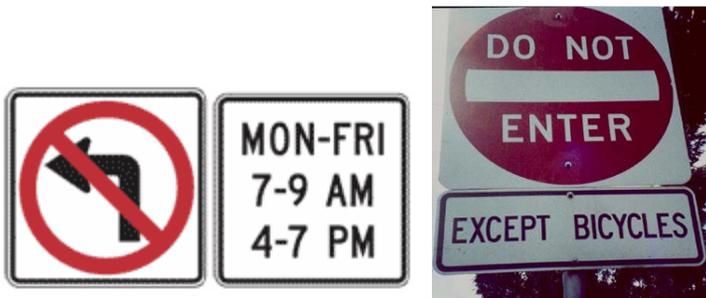
Level III

Description:

Standard "No Left Turn", "No Right Turn", or "Do Not Enter" signs used to prevent undesired turning movements onto residential streets.

Application:

Turn restriction signing used to reduce cut-through traffic on residential streets.



Advantages:

- Redirects traffic to main streets.
- Reduces cut-through traffic.
- Low cost.

Disadvantages:

- May divert traffic to other streets.
- Enforcement required.
- Adds to sign clutter.
- Violation rates can be high without enforcement.

Special Considerations:

Installed at entry points of a neighborhood to prevent traffic from entering.

Has little or no effect on speeds for through vehicles.

Most effective if limited to peak hours.

With active enforcement, violation rates can be reduced.

Qualifying Criteria:

Excessive cut-through traffic, staff judgment.

Estimated Cost:

\$125 per sign.

Speed Humps

Level III

Description:

Speed humps are rounded raised areas placed across the roadway. They are generally 10 to 14 feet long (in the direction of travel), making them distinct from the shorter "speed bumps" found in many parking lots, and are 3 to 4 inches high. The profile of a speed hump can be circular, parabolic, or sinusoidal. They are often tapered as they reach the curb on each end to allow unimpeded drainage.

Application:

Used to slow traffic.



Advantages:

- Relatively inexpensive.
- Relatively easy for bicycles to cross if designed appropriately.
- Very effective in slowing travel speeds.

Disadvantages:

- Cause a "rough ride" for all drivers (severe pain for people with certain skeletal disabilities).
- Force large vehicles (emergency vehicles) to travel at slower speeds.
- May increase noise and air pollution.
- Questionable aesthetics.
- May divert traffic to other neighborhoods.

Special Considerations:

Careful attention needs to be made to drainage issues.

Qualifying Criteria:

Excessive speeds, staff judgment.

Fire Department Evaluation:

This measure is least acceptable to the Fire Department and its use requires extensive evaluation of the specific location and impacts to emergency response times.

Cost Estimates:

\$2,000-\$2,500

Raised Crosswalk

Level III

Description:

Raised crosswalks are constructed 3 to 4 inches above the elevation of the street. They have ramps on the approaches with a flat section in the middle.

Application:

Raised crosswalks help reduce vehicle speeds at pedestrian crossing locations.



Advantages:

- Reduces vehicle speeds.
- Enhances pedestrian safety.
- Access not affected.

Disadvantages:

- May increase noise.
- Drainage modifications may be required.
- Requires special signing and markings.
- Emergency response times affected.

Special Considerations:

Careful attention needs to be made to drainage issues.
Work well in combination with curb extensions and curb radius reductions.

Fire Department Evaluation:

This measure is least acceptable to the Fire Department and its use requires extensive evaluation of the specific location and impacts to emergency response times.

Qualifying Criteria:

Excessive speeds, high pedestrian activity.

Estimated Cost:

\$5,000 to \$10,000 each.

Bulb-Out

Level III

Description:

Intersection bulb-outs narrow the street by extending the curbs toward the center of the roadway.

Application:

Used to narrow the roadway and to create shorter pedestrian crossings. They also influence driver behavior by changing the appearance of the street. Works best as part of a corridor enhancement.



Advantages:

- Improve pedestrian visibility.
- Shorter pedestrian crossing distance.
- May reduce vehicle speeds.
- Opportunity for landscaping.
- Creates on-street parking bays.

Disadvantages:

- May require parking removal.
- May create hazard for bicyclists.
- May create drainage issues.
- Impacts large vehicle turns.

Special Considerations:

Intersection bulb-outs at transit stops enhance service.
May require landscape maintenance to preserve sight distances.

Qualifying Criteria:

Excessive speeds, high pedestrian volumes, collision history.

Estimated Cost:

\$10,000 to \$20,000 each.

Median

Level III

Description:

Islands, either raised or flush with the street level, along the roadway cross-section, intended to narrow the roadway, channel traffic, control turning movement, and provide pedestrians with a mid-road safe refuge.

Application:

Islands are installed on wide streets to help lower speeds and/or to prohibit left-turning movements. They also provide a mid-point refuge area for pedestrians. Median barriers reduce cut-through traffic.



Advantages:

- Reduces vehicle speeds.
- Can reduce vehicle conflicts.
- Reduces pedestrian crossing distance.
- Landscaping opportunity.
- Redirects traffic to other streets.
- Reduces cut-through traffic.
- Provides pedestrian refuge area.

Disadvantages:

- May require parking removal.
- May reduce driveway access.
- May impact emergency vehicles.
- May divert traffic to other streets.
- Increases trip lengths.
- May impact emergency response.
- Creates physical obstruction.

Special Considerations:

When used to block side street access, may divert traffic. May visually enhance the street with landscaping. Should not be used on critical emergency response routes. Landscaping needs to be carefully designed to not restrict visibility for motorists, bicyclists and pedestrians.

Fire Department Evaluation:

This measure requires extensive evaluation of the specific location and impacts to emergency response times.

Qualifying Criteria:

Excessive speeds, high pedestrian counts.

Estimated Cost:

\$10,000 to \$50,000 each.

Chicanes

Level III

Description:

A chicane is a series of two or more staggered curb extensions on alternating sides of a roadway. The horizontal deflection causes motorists to reduce speed.

Application:

Generally not used in areas with many driveway entrances.



Advantages:

- Effectively reduces vehicle speeds.
- Low impact on emergency vehicles.
- Opportunity for landscaping.

Disadvantages:

- Loss of parking.
- Increased maintenance.
- May impact driveways.
- May be expensive.

Special Considerations:

- May require removal of substantial amounts of on-street parking.
- Most effective when traffic volumes are approximately equal in both directions.
- May increase conflicts with pedestrians and bicyclists.
- Provide landscaping opportunities.
- Most residents would have their driveways affected.

Qualifying Criteria:

Excessive speeds.

Estimated Cost:

\$30,000 to \$60,000 each.

Half Street Closure (one way)

Level III

Description:

Half street closures are barriers that block travel in one direction for a short distance on otherwise two-way streets.

Application:

Good for locations with extreme traffic volume problems and where non-restrictive measures have been unsuccessful.



Advantages:

- Able to maintain two-way circulation beyond barrier.
- Effective in reducing traffic volumes.

Disadvantages:

- Causes circuitous routes for local residents.
- May limit access to businesses.
- Drivers may try to circumvent the barrier.

Special Considerations:

Requires strong community support

Qualifying Criteria:

Collisions, excessive cut-through traffic, staff judgment.

Estimated Cost:

\$10,000

Full Street Closure

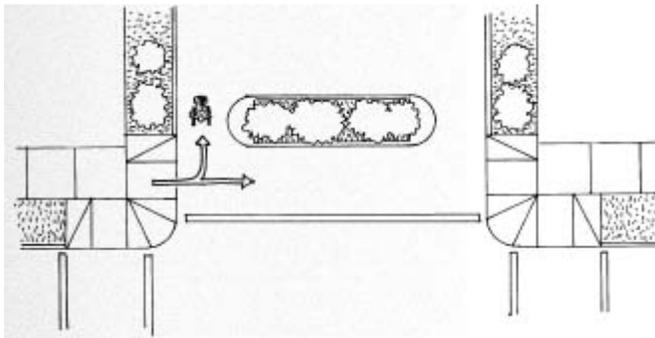
Level III

Description:

Full street closures retroactively installed to previously open streets creating a dead end.

Application:

Closure used when all other calming attempts have failed. Street is closed to through traffic with pathways for pedestrians and bicyclists.



Advantages:

- Eliminates cut-through traffic
- Lowers traffic volume
- Landscaping opportunity

Disadvantages:

- Circuitous travel
- Diverted traffic

Special Considerations:

Requires strong community support

Qualifying Criteria:

Collisions, excessive cut-through traffic, staff judgment.

Estimated Cost:

\$15,000 - \$25,000

Striping / Markings/ Channelizers

Level III

Description:

Striping used to narrow traffic lanes. Centerline striping may not be replaced following asphalt surface treatments.

Application:

Narrowing lanes with striping used to help slow vehicle speeds. Bike lane striping adds cycling facilities. Removal of centerline striping may slow vehicles.



Advantages:

- Can be quickly implemented.
- May reduce travel speeds.
- May improve safety.
- Can be easily modified.
- Does not slow emergency vehicles.

Disadvantages:

- Increases regular maintenance.
- Devices placed in the roadway require constant replacement.
- Not always accepted as an effective tool.
- Increases resurfacing costs.

Special Considerations:

Narrowed travel lanes create "friction" to help slow vehicle speeds.
Can be installed quickly.
Designated bicycle lanes and/or parking lanes can be created.

Qualifying Criteria:

Collisions, excessive speed, staff judgment, and MUTCD requirements.

Estimated Cost:

\$2 -\$10 per linear foot

Traffic Circles

Level III

Description:

Traffic circles are raised circular islands of varying dimensions installed in an existing intersection requiring motorists to slow down to maneuver around the circle.

Application:

Traffic circles provide speed control.



Advantages:

- Reduced speeds can reduce frequency and severity of crashes.
- Flexible installation allows retrofit to existing intersections without costly re-alignment.
- Visually appealing/opportunity for landscaping
- Can provide gateway to a neighborhood.

Disadvantages:

- May impact emergency response.
- Speed reduction limited to circle's immediate vicinity.
- May limit truck and bus access.
- Maintenance responsibility if landscaped.

Special Considerations:

Suitable for residential streets with low traffic volumes, level terrain, and good visibility. Best if used in a series or as part of a coordinated system. Additional on-street parking may have to be removed near intersection.

Qualifying Criteria:

Collisions, excessive speed, staff judgment.

Estimated Cost:

\$15,000-\$25,000 each

Roundabouts

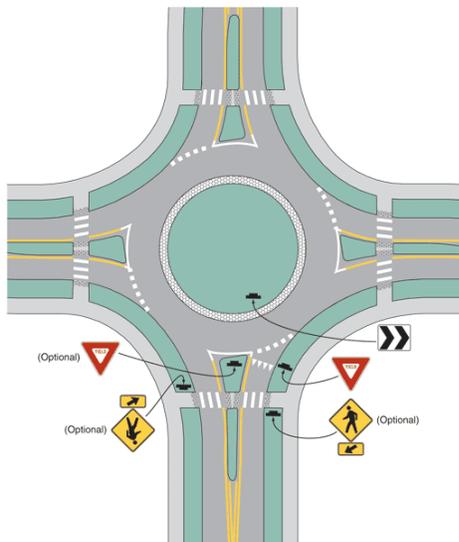
Level III

Description:

Roundabouts are large radius raised islands installed in the center of an intersection in place of traffic signals.

Application:

Roundabouts reduce vehicle speeds and delay at intersections.



Advantages:

- Effectively reduces speeds.
- Reduces collision potential.
- Opportunity for landscaping.

Disadvantages:

- Requires substantial right-of-way.
- Expensive
- May be difficult for large vehicles to navigate.

Special Considerations:

Requires the installation of extensive pavement markings and signs. Acquiring additional right-of-way is expensive and difficult especially in already built-out areas. Caltrans Policy Directive 13-02 requires evaluation of impacts to all intersection traffic for proposed future traffic control improvements to all intersections.

Qualifying Criteria:

Collisions, excessive speed, staff judgment, and available right-of-way.

Estimated Cost:

\$50,000-\$100,000 each (construction only, not including right-of-way costs)

TRAFFIC CALMING TOOLBOX MATRIX		LEVEL I				LEVEL II											LEVEL III											
Neighborhood Concern	Performance Objective	Education	Police Presence	Radar Speed Feedback Signs	Police Enforcement	Speed Limit Signs	Speed Limit Pavement Legends	Parking Prohibition	Warning Signs	Neighborhood Signs	High Visibility Crosswalk Markings	Street Lighting	Street Trees	Flashing Beacons	Pedestrian Activated Signs/Lights	Gateway/Entry Treatments	Turn Restrictions	Speed Humps	Raised Crosswalk	Bulb-out	Median	Chicanes	Half Street Closure (one way)	Full Street Closure	Striping / Markings	Traffic Circles	Roundabouts	
Speeding	Reduce speeding	P	•	•	•	•	•		•	•			•					•	•	•	•	•	•	•	•	•	•	•
Collisions	Reduce motorist collisions	•	•	P	•			•	•			•		•									•	•	•	•	•	
	Reduce pedestrian collisions	•	•		•			•	•		•	•	•	•	•	P	•		•	•	•					•	•	
	Reduce bicyclist collisions	•	•		•				•	•		•				P							•	•	•	•	•	
Pedestrian Safety	Shorten street crossing distance															P			•	•	•					P	P	
	Improve motorist yielding behavior	•	•		•				•	•	•	•		•	•	P			•	•	•				P	P	P	
	Improve visibility								•		•	•			•	P			•	•	•				P		P	
Bicycle Safety	Improve bike facility															P					P		•	•	•		P	
	Improve motorist yielding behavior	•	•		•				•	•						P									•		P	
Traffic Volumes	Reduce cut-through traffic					•	•			•							•	•	•	P	P	•	•	•	P	•		
Quality of Life/Esthetics	Beautification									P		P	•		•					P	P	P	P	P		•	P	
	Increase property values											P	•		•								P	P		P		
On-street Parking	Reduce parked car collisions		P		P			•												P		P			•			
\$ = Less than \$5,000	Cost Range	\$	N/A	N/A	N/A	\$	\$	\$	\$	\$	\$	\$	N/A	\$\$	\$\$	\$\$-\$\$\$	\$	\$\$	\$\$	\$\$	\$\$	\$\$-\$\$\$	\$\$	\$\$	\$\$	\$-	\$\$\$	\$\$\$
\$\$ = \$5,000-\$10,000	Local Street	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
\$\$\$ = \$10,000-\$50,000	Collector Street	•	•	•	•	•	•	•	•		•	•	•	•	•										•		•	
	Arterial Street	•	•	•	•	•	•	•	•		•	•	•	•											•		•	
P = Possible	NTCP Page No.	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	