

# Traffic Calming

T O O L K I T

a community leaders' guide

November 2001

CITY OF SAN JOSE  
Department of Transportation  
4 North Second Street, Suite 1000  
San Jose, CA 95113  
408.277.4304

## PURPOSE

The purpose of the Traffic Calming Toolkit is to assist community leaders with an understanding of the City of San Jose's Traffic Calming Program. It is designed to provide community leaders with a model to guide residents toward a better understanding of the available tools and the necessary steps to seek basic and comprehensive traffic calming services.

The first step towards traffic calming is to contact the City. For traffic enforcement issues contact the Police Department at **277-4341**. For traffic calming issues regarding traffic safety, education, or engineering, contact the Department of Transportation (DOT). The quickest way to contact DOT is to call or e-mail us at:

Phone: **408-277-4304** (ask for Traffic Engineering and give your zip code or city council district)

E-mail: [traffic.calming@ci.sj.ca.us](mailto:traffic.calming@ci.sj.ca.us)

A list of other helpful numbers relating to traffic calming is presented in the traffic calming brochure, included as an attachment to this toolkit.

The following sections of this toolkit give a more detailed description of the different levels of traffic calming and the decision-making and implementation process. If you are already familiar with traffic calming in your neighborhood, please refer to "Section 7—How to Access Traffic Calming Services".

*This toolkit is designed to provide community leaders with a model to guide residents to better understand the available tools and the necessary steps to seek basic and comprehensive traffic calming services.*

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#### ACKNOWLEDGMENTS

#### ATTACHMENTS



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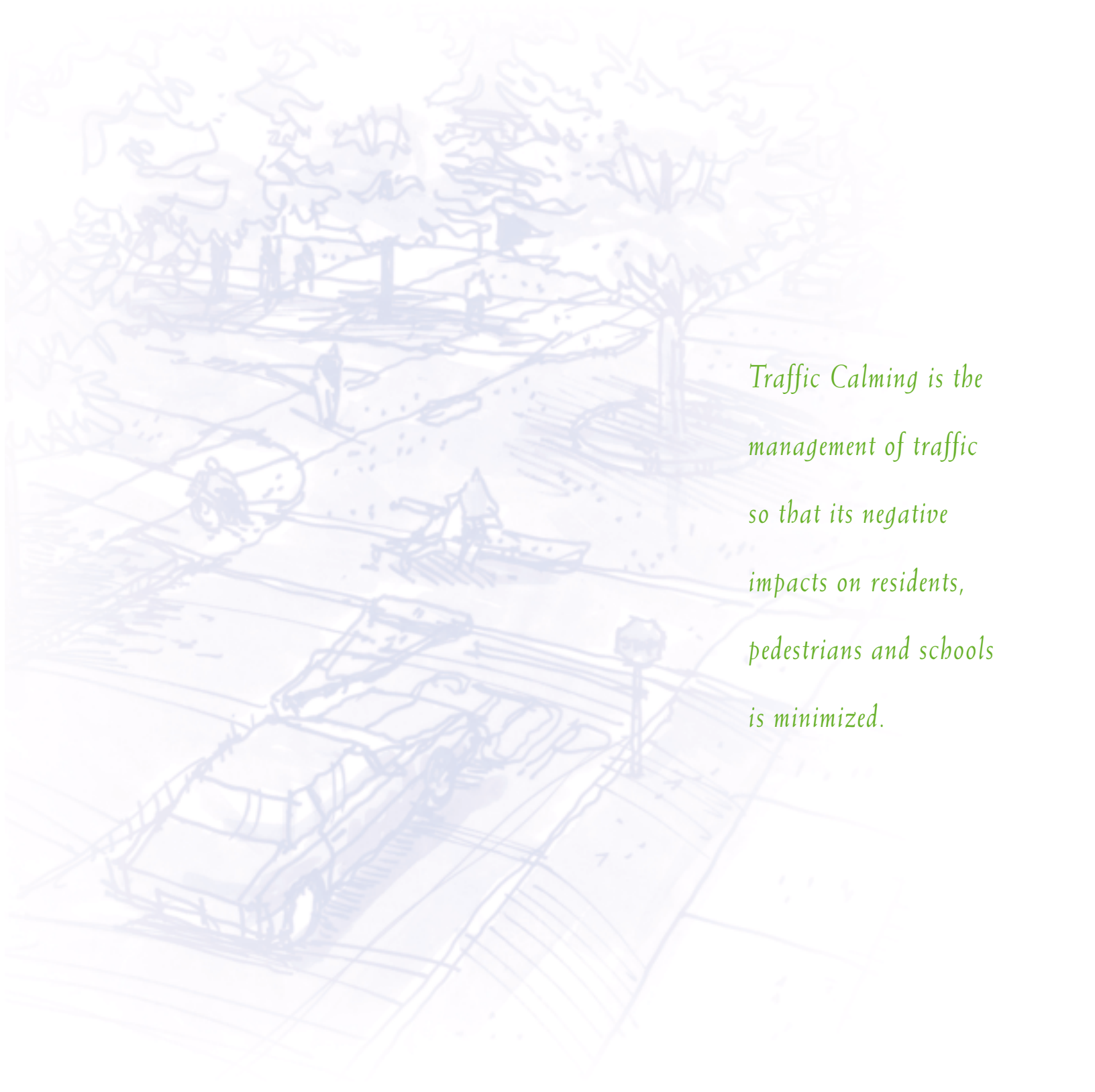
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# 1

## SECTION

### W h a t i s T r a f f i c C a l m i n g ?



*Traffic Calming is the management of traffic so that its negative impacts on residents, pedestrians and schools is minimized.*



Speed, high traffic volumes and discourteous behavior of motorists are adversely impacting a growing number of San Jose residents. These conditions are also having a negative effect on pedestrians and bicyclists, particularly near schools. The City has responded to these conditions with the installation of traffic control devices, roadway features, and pedestrian improvements and through the deployment of resources to enforce traffic and parking regulations. The application of education programs has also been instituted. These efforts are referred to as traffic calming. The City of San Jose's definition as described in its Annual Transportation Report (2000) is "Traffic Calming is the management of traffic so that its negative impacts on residents, pedestrians and schools are minimized".

The City Council's policy on traffic calming describes the general processes and responsibilities related to traffic calming so that interested parties can effectively access this City service. A brochure that summarizes the City's traffic calming program is included as an attachment to this toolkit.

The elements that are part of traffic calming are categorized into three levels:

## BASIC ELEMENTS

Basic traffic calming elements are those traffic control devices and programs implemented on a day-to-day basis to regulate, warn, guide, inform, enforce and educate motorists, bicyclists and pedestrians. They include standard striping and signing elements as found in the State of California Traffic Manual, minor roadway design elements to improve visibility and safety, enforcement by police and photo-radar (NAS COP), and safety education programs. Basic elements are used primarily in those areas where traffic impacts have been found not to be excessive or serious, but where traffic control and/or education has been determined to be appropriate. Some common basic elements include:

Safety Education Programs	High Visibility Crosswalks
Minor Bulb-Outs	Striping Changes
Warning Signs	Curb Markings
Stop Signs	Gateway Signs
Truck Restrictions	High Visibility Signs
Signed Turn Restrictions	Radar Trailer/ Radar Signs
Lighting Improvements	Police Enforcement
Traffic Signal Timing	NASCOP

*The City of San Jose  
has three levels of  
traffic calming: Basic,  
Level I, and Level II.*



## LEVEL I ELEMENTS (SPEED AND SAFETY CONTROLS)

Level I Elements are traffic control devices and roadway design features primarily designed to slow traffic within residential areas. They are employed when the use of Basic Elements cannot effectively address speeding issues and it has been found that speeds and/or accidents have been found to be 10% higher than city wide average for similar streets. Level I Elements are used in conjunction with Basic Elements. Some common Level I elements include:


Traffic Circles	Road Bumps
Medians	Chokers
Chicanes	Raised Crosswalks
Major Bulbouts	

## LEVEL II ELEMENTS (VOLUME CONTROLS)

Level II Elements are traffic control devices and roadway design features primarily designed to discourage cut-through traffic from using residential streets. They are used when it has been found that traffic volumes are at least 10% higher than the citywide average for similar streets. Level II devices can be used by themselves or in conjunction with Basic and Level I Elements. Some common Level II elements include:

Full Street Closure	Partial Street Closure
Diverter	Extended Medians

B a s i c T r a f f i c C a l m i n g  
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*Basic traffic calming elements are those traffic control devices and programs implemented on a day-to-day basis.*



## SAFETY EDUCATION PROGRAMS

Safety education programs are an important element of a comprehensive traffic calming program. Safety education programs include efforts to make the public more aware of their own driving behavior and the impact it has on others. Pedestrian and bicycle safety programs alert and educate pedestrians and bicyclists on road safety. Driver safety information and education on existing laws can help improve driver behavior.

The various safety education programs currently being implemented in the City of San Jose are:

- Street Smarts - a public education program targeting driver, pedestrian and bicyclist behavior (DOT) - *Please see page 16 for more information.*
- School Safety Education Program (DOT)  
Assemblies and Bike Rodeos
- Pedestrian and Bicycle Safety Workshops (PD – School Safety Unit)  
In-Classroom Training
- Safety Patrol Training (PD – School Safety Unit)  
Classroom and field training
- Mikey the Robot (PD – School Safety Unit)  
Classroom training/entertainment

Further information about these programs can be obtained by contacting the School Safety Unit of the Police Department at 277-4553, or the School Safety Program Manager in the DOT at 277-2576.

## POLICE ENFORCEMENT

Police enforcement entails the presence of police to monitor speeds and issue citations. This method is used as an initial attempt to reduce speeds on streets. It is most applicable on streets with documented speeding problems and the need for quick mitigation. It can also be used during the learning period when new devices or restrictions are first implemented. For police enforcement, contact the Traffic Enforcement Unit (TEU) of the police department at **277-4341**.

### Positive Aspects

- Effective while officer is actually present at the location
- Can be targeted to specific time periods that are deemed to be most problematic.

*Further information  
about safety programs  
can be obtained by  
contacting the  
Police Department  
at 277-4553, or the  
DOT at 277-2576.*



- Can be implemented on short notice
- Targets violators without affecting normal traffic

#### Negative Aspects

- It is a temporary measure
- Enforcement may be limited by police availability and other policing duties

### NASCOP ENFORCEMENT

Neighborhood Automated Speed Compliance Program (NASCOP) is photo radar speed enforcement, designed to augment police enforcement that has been implemented by the City with the help of residents. A complete information guide about this program is presented in the NASCOP application included as an attachment to this toolkit.

This program is most applicable for residential streets with speeding problems. Access to this program is available by calling the City's Department of Transportation at 408-794-6216.

#### Positive Aspects

- Speed enforcement with minimal staffing
- May have widespread effectiveness due to mobile nature, difficulty to anticipate, and widespread application
- Does not involve pursuit of speeding vehicle in neighborhoods

#### Negative Aspects

- Public perceptions related to invasion of privacy
- Vehicle owners may receive tickets when they were not driving



### HIGH-VISIBILITY CROSSWALKS

A high visibility crosswalk is a crosswalk that incorporates striped patterns, pavement lights, improved signing or advance flashing beacons to improve the visibility of the crosswalk.

This element is most applicable on local streets where speed control and pedestrian crossing designation is desired. It can also be used to discourage cut-through traffic. This type of crosswalk is most appropriate near schools and recreation facilities.

### Positive Aspects

- Slows traffic
- Increases driver awareness of crosswalk
- Requires minimal maintenance for striped crosswalks

### Negative Aspects

- May require removal of parking in the vicinity of the crosswalk
- May result in significant maintenance for embedded pavement lights or advance flashing lights

## RADAR TRAILER

This is a mobile trailer-mounted radar display that informs drivers of their speed. This element is applicable on any street where speeding is a problem.

### Positive Aspects

- Educational tool
- Good public relations for neighborhoods
- Effective for temporary speed reduction needs

### Negative Aspects

- Not self-enforcing
- Duration of effectiveness is limited
- May require temporary lane closures

## STRIPING

Striping is used to create narrow lanes which give the impression of a narrow street. This makes the motorist feel restricted, which helps reduce speeds. Striping can be at curb end or in the middle of the street to create a median.

It is most applicable to long, wide residential streets where speeding traffic exists.

### Positive Aspects

- Easy to install and modify as necessary
- Low cost of implementation





### Negative Aspects

- May not be self-enforcing

## CURB MARKINGS

Curb markings are special curb paintings that restrict or limit parking along the curb to enhance safety and/or increase visibility of pedestrians and bicyclists. Some applications include:

- Red curb between driveways to increase visibility
- Red curb at crosswalk to increase visibility
- Blue curbs for accessible parking
- Green and yellow curbs for passenger and freight loading
- Red curb at pedestrian ramps

### Positive Aspects

- Provides for safer conditions for motorists, pedestrians and bicyclists
- Easy to install and maintain

### Negative Aspects

- Could result in loss of parking



## STOP SIGNS

Stop signs are intended to assign the right-of-way between motorists, pedestrians and cyclists at an intersection. Although many citizens believe that stop signs help reduce speeds on their street, studies have shown that by mid-block speeds are as high or higher than those locations without stop signs. Stop signs are typically used on non-arterial street intersections.

### Positive Aspects

- Reduces right-of-way conflicts at an intersection
- Increases opportunities for pedestrians to cross the roadway
- May discourage cut-through traffic

### Negative Aspects

- Unwarranted stop signs increases unnecessary delays for the approaches
- Pedestrian safety compromised if motorists do not comply
- Penalizes all motorists on the main street even if obeying the speed limit
- Potential increase in noise and air pollution in the vicinity of the stop

A complete information brochure on Stop Signs is included as an attachment to this toolkit.

## GATEWAY TREATMENTS

A gateway is a special entrance that reduces the width of a travel way, often implementing the use of islands. It is usually placed in a roadway to define the entry to a residential area and/or to narrow each direction of travel and interrupt the view path along the center of the roadway.

### Positive Aspects

- High visibility to motorists to notify change in roadway nature
- May discourage cut-through traffic
- Helps slow traffic

### Negative Aspects

- Will increase need for maintenance
- May necessitate removal of parking

## TRUCK RESTRICTIONS

Restricting the entry of trucks into residential neighborhoods can be achieved through the posting of truck restriction signs. This method is most applicable on residential streets to reduce cut-through traffic of commercial vehicles.

### Positive Aspects

- Redirects commercial traffic through main streets
- Reduces noise and air pollution due to trucks in residential streets







### Negative Aspects

- Not self-enforcing
- Causes an inconvenience for residents in the event of truck services needed for moving, deliveries and other heavy services.

## HIGH-VISIBILITY SIGNS

High visibility signs may include larger speed limit signs on the streets to ensure visibility to motorists. This element is a basic method aimed at slowing traffic through visual reminders of the speed limits or other regulations. It can be applied to most streets that have speeding or other problems.

### Positive Aspects

- Provides a clear definition of legal speed limit or other warnings
- Provides context for enforcement efforts

### Negative Aspects

- Not self-enforcing
- Larger signs provide a negative impact on the aesthetics of the street

## SIGNED TURN RESTRICTIONS

Signs may be installed which prohibit certain movements at an intersection, e.g., “No Left Turn”. This measure is applicable on streets where cut-through traffic exists. This method can be tailored to be applicable during the most problematic times by defining a time period for the restriction.

### Positive Aspects

- Redirects traffic to main streets
- Reduces cut-through traffic
- Addresses time-of-day problems

### Negative Aspects

- Not self-enforcing
- May increase trip length for some commuters
- May redirect traffic to other neighborhood streets



## RESIDENTIAL PERMIT PARKING

This program is administered primarily to address continuous parking shortage in residential neighborhoods where there is a demonstrated parking problem that cannot be resolved through standard parking prohibitions. Under this program, the neighborhood is designated a permit parking area and the residents purchase permits for themselves and their visitors on a bi-annual basis.

Permit parking is designed to keep vehicles from outside the neighborhood from parking in the area. Permit parking is not an appropriate solution when the neighborhood is experiencing a shortage of parking due to its own parking needs.

Residential permit parking zones have been established in the City of San Jose to address severe parking shortages adjacent to the San Jose Arena, San Jose State University, the Convention Center, Civic Center and the Berryessa Flea Market.

### Positive Aspects

- Protects the neighborhood from invading commercial and business traffic
- Preserves parking spaces for residents and guests

### Negative Aspects

- Costly to implement, administer and maintain
- Regular enforcement is necessary for effectiveness
- Could result in unexpected citations issued to guests
- Inconvenient for residents due to the renewal process, guest permits, etc.

# Minor Bulbouts

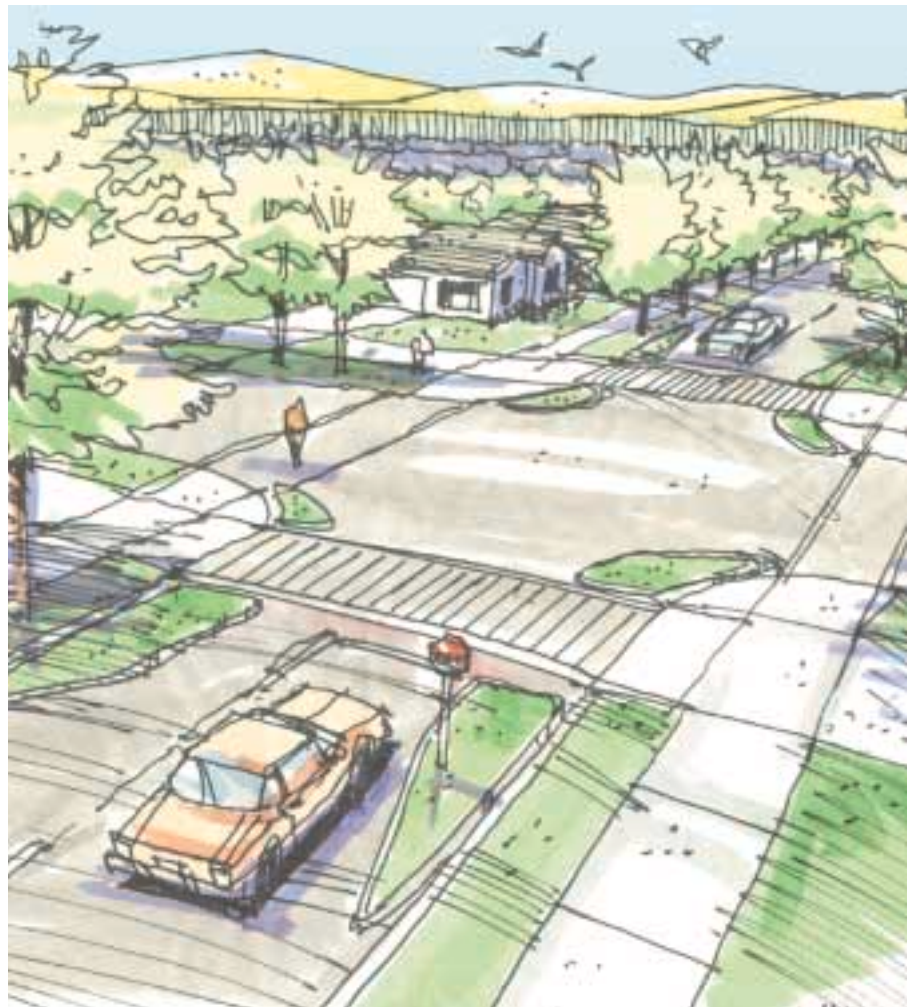
Minor bulbouts narrow the street width at intersections, creating a shorter and safer pedestrian crossing and encouraging drivers to slow down. Bulbouts may be striped or may be curbed islands containing special paving or landscaping which maintain current drainage patterns. Corner bulb-outs are typically used adjacent to intersections where parking is restricted.

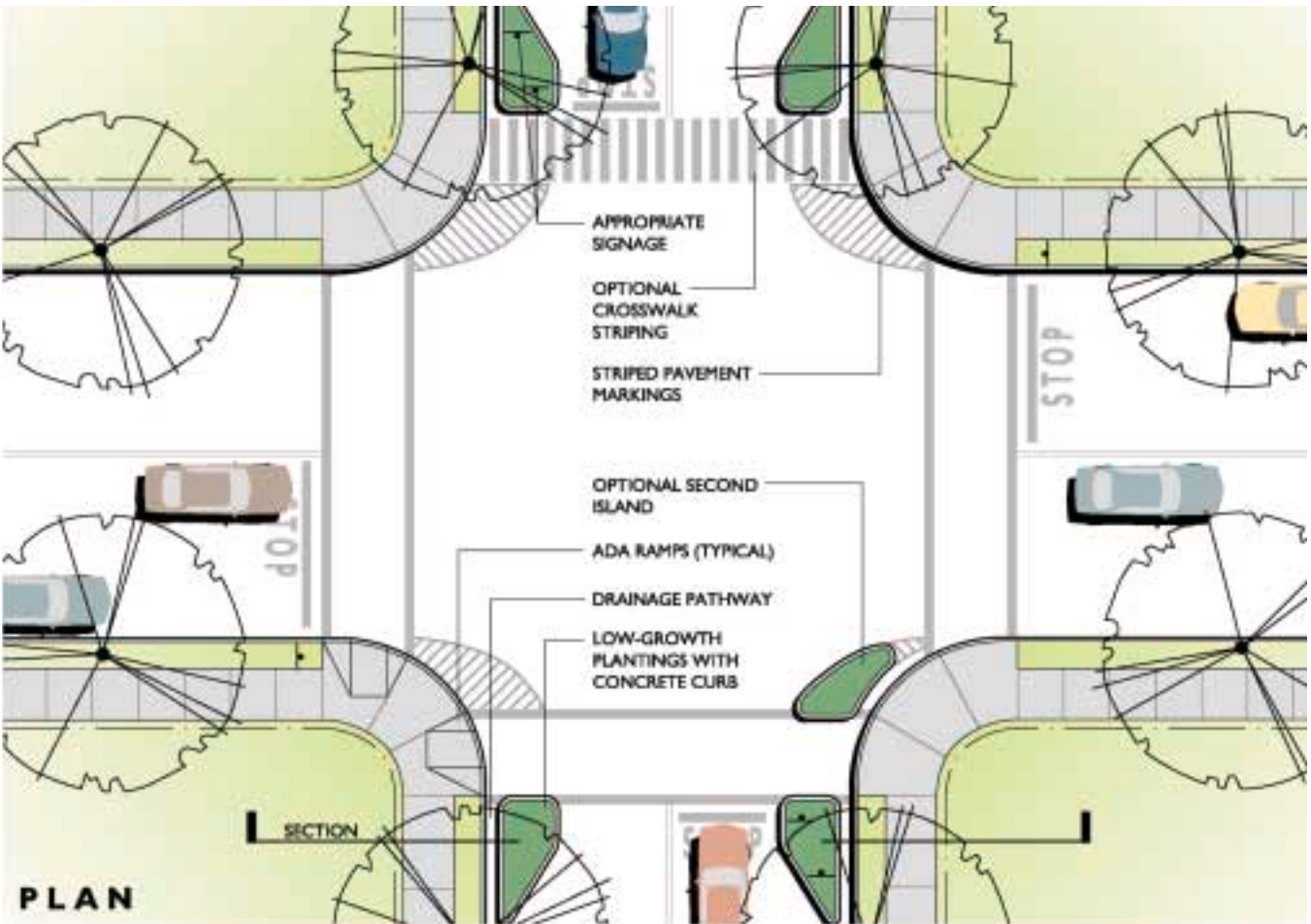
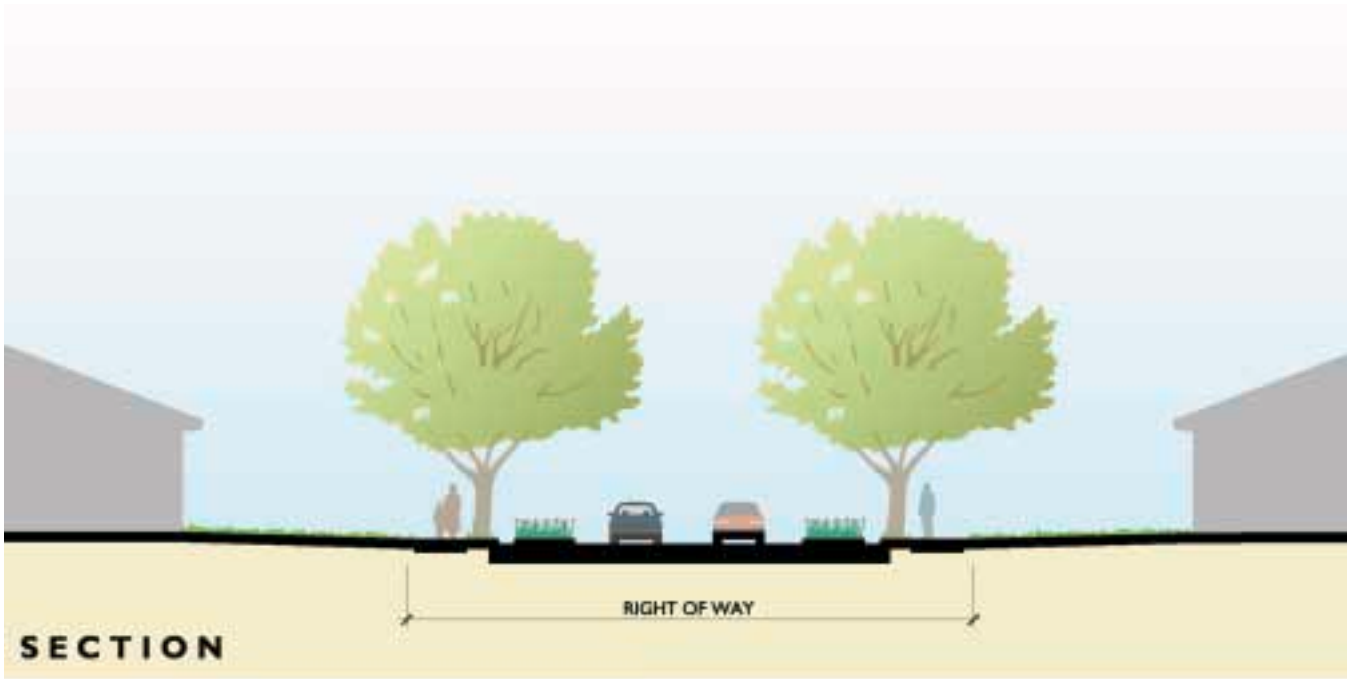
## Positive Aspects

- Pedestrian crossing distance is reduced
- Narrowed roadway section may contribute to reduction of speeds
- Breaks up driver's view path

## Negative Aspects

- May create a hazard for bicyclists who are less visible to turning vehicles and cross traffic
- May require partial or total removal of parking
- Could result in increased maintenance costs
- Care must be exercised to keep motorists from hitting bulbouts







## Traffic Safety Education for Schools & Neighborhoods

Ever run a red light, jaywalk or speed through a school zone? Most of us have, and that's why the City of San Jose created **Street Smarts**, a public education campaign to change driver, pedestrian and bicyclist behavior. These behaviors are often the root cause of many traffic accidents and that is why education has become the latest tool that communities are using, in conjunction with engineering and enforcement, to calm traffic. The **Street Smarts** program brings education about driver, pedestrian and bicyclist behaviors to schools, neighborhoods and businesses to improve safety on San Jose streets.

Classroom Safety Posters, School Safety Flyers, School Fence Banners, Traffic Safety Education Classroom Kits (available on CD ROM) and parent education seminars are available to San Jose schools.

Each neighborhood that adopts the **Street Smarts** program receives approximately three hours of driver, pedestrian and bicycle behavior education, which begins with an interactive and somewhat humorous presentation by City staff. This introductory presentation takes approximately one hour, including a question and answer session.

Following the presentation, a volunteer from the neighborhood is recruited to serve as a **Street Smarts** liaison. This person coordinates getting neighbors together in small groups to watch a video broadcast on the Discovery Channel, entitled "*Deadly Crossings: American Intersections*." The video, which discusses the impacts of behavior and other issues related to traffic safety, lasts about 50 minutes, after which residents participate in a discussion about what steps they might take to improve their own driver, pedestrian and bicyclist behaviors.

In addition, the volunteer receives a **Street Smarts** Neighborhood Kit and coordinates the distribution of materials from the kit to their neighborhood. Each kit contains items to reinforce the **Street Smarts** messages through family participation or discussions.

For more information about the **Street Smarts** Public Education Program, or to schedule a presentation for your neighborhood, school or business, call the City of San Jose Department of Transportation at (408) 277-4499 or visit: [www.GetStreetSmarts.org](http://www.GetStreetSmarts.org).

L e v e l I T r a f f i c C a l m i n g  
E l e m e n t s



*Level I traffic calming elements are intended to address speeding/safety concerns with devices that go beyond basic traffic calming, but do not require city council approval.*

# Road Bumps

Road bumps are areas of pavement raised 3 – 4 inches in height over a minimum of 12 feet in length. The combination of different heights, lengths and approach ramps will affect the speed a vehicle can comfortably go over the hump. Road bumps are marked with signs and pavement markings.

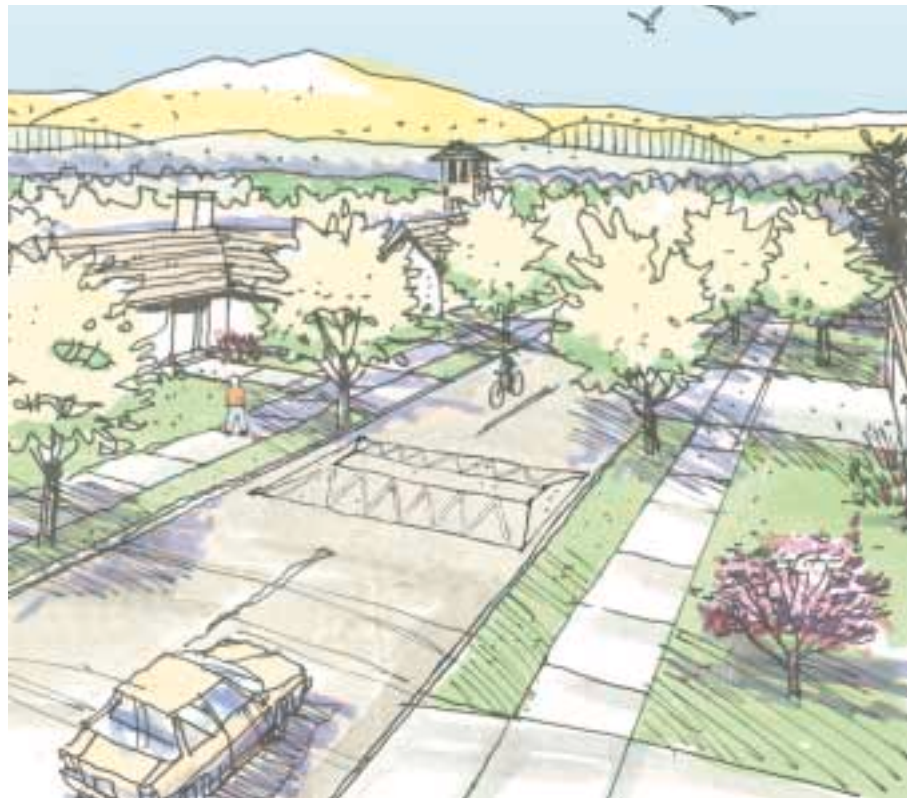
Road bumps are applicable on local streets where speed control is desired or where cut-through traffic is to be discouraged. Typically the City of San Jose Fire Department must approve this feature on selected streets. Road bumps are not used on streets designated as primary response routes for emergency vehicles. For more information, see the City of San Jose Road Bump Brochure included as an attachment to this toolkit.

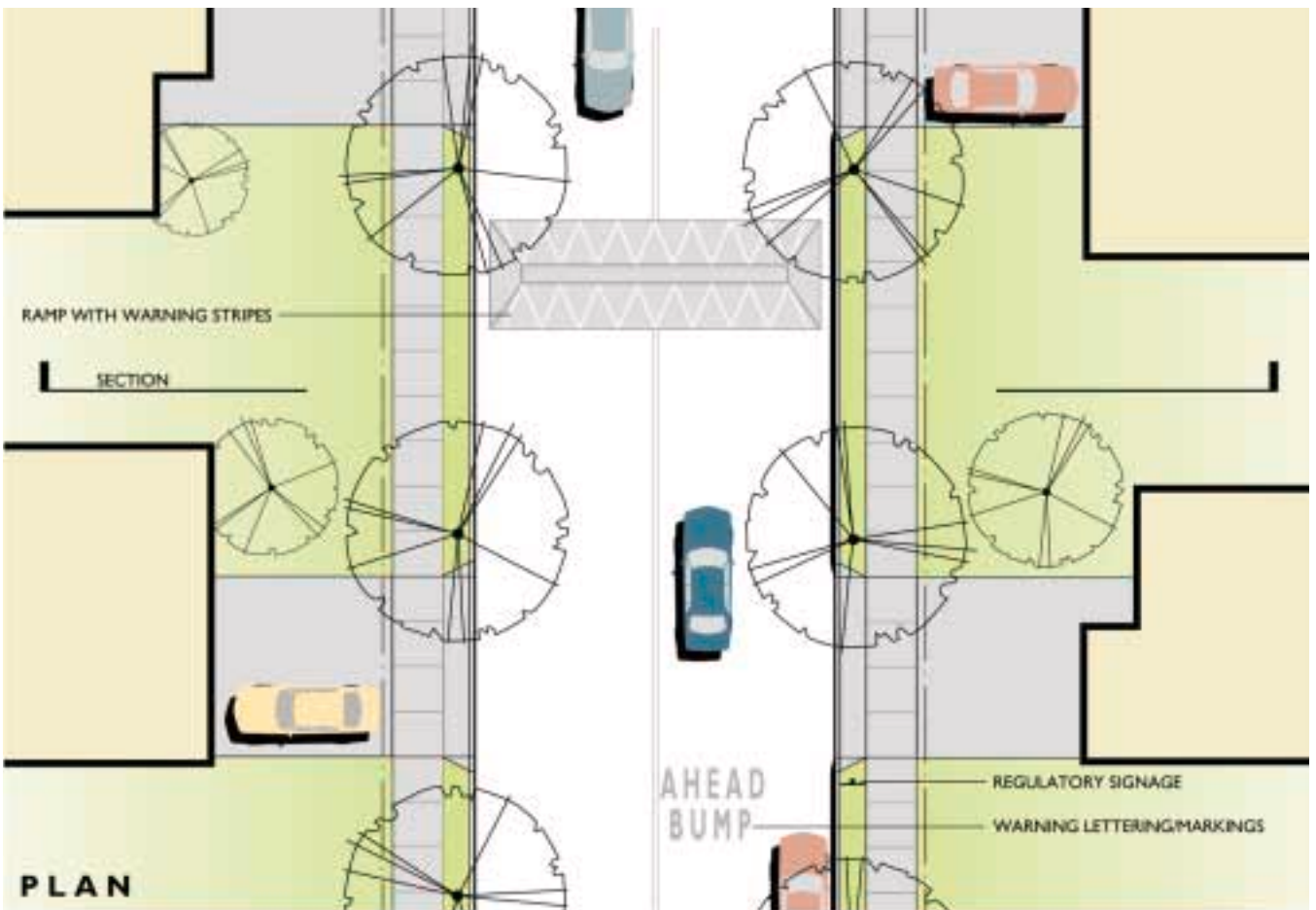
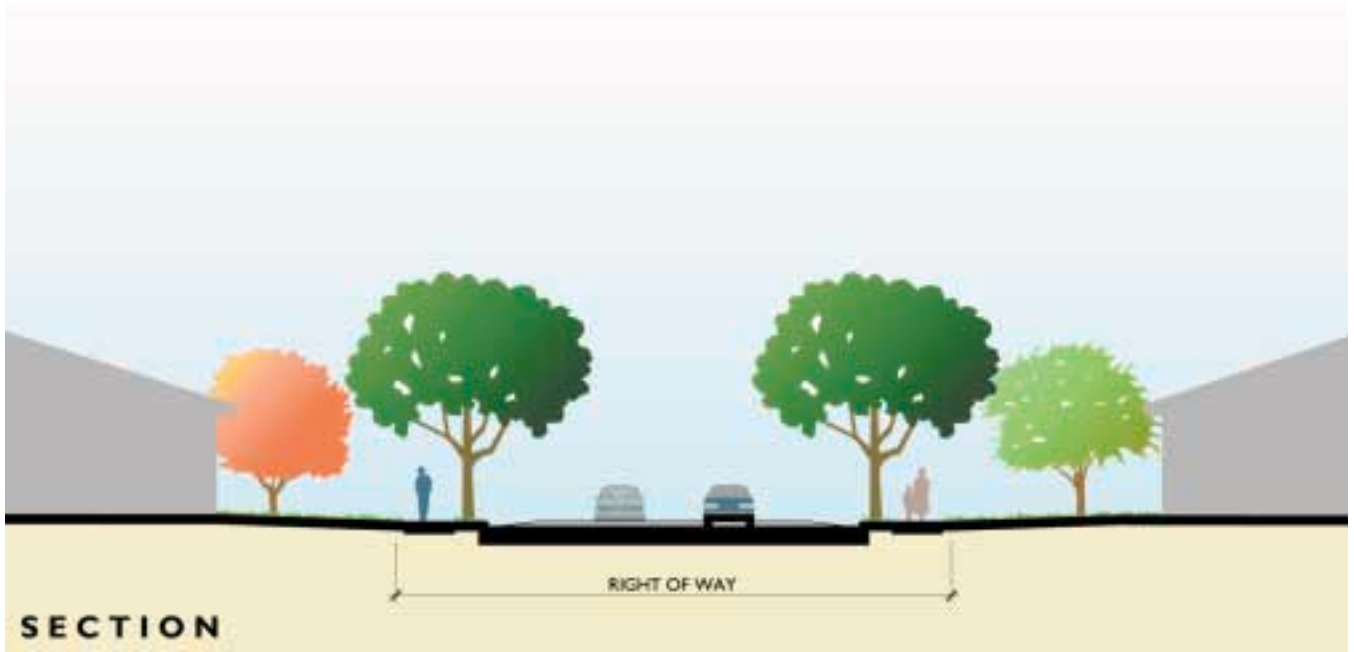
## Positive Aspects

- Slows traffic
- Self-enforcing
- Requires minimum maintenance

## Negative Aspects

- May increase emergency response times
- May damage emergency response vehicles if not carefully designed
- May increase traffic noise in the vicinity of the bump







# Raised Crosswalks

Raised crosswalks are flat-topped road bumps built as a pedestrian crosswalk.

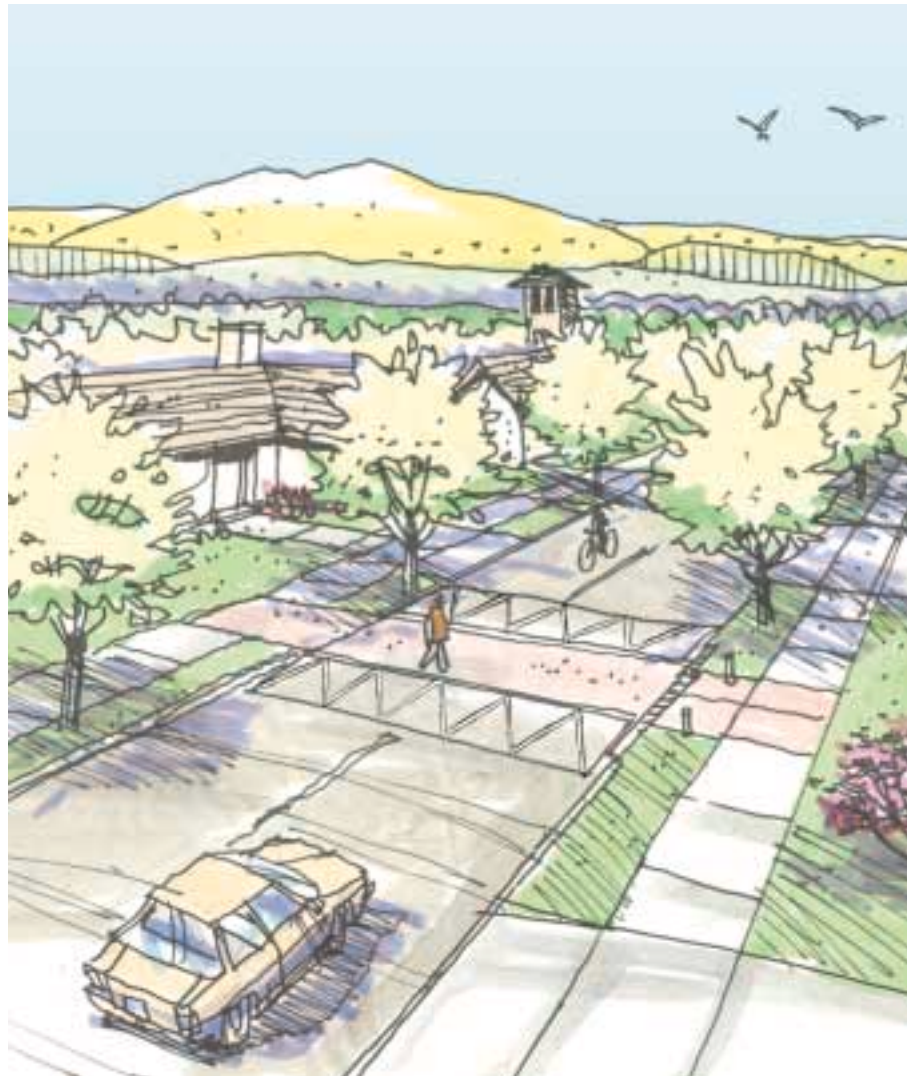
This type of crosswalk is applicable to local streets where speed control and pedestrian crossing designation are desired. It can be an effective safety tool near schools and recreation facilities and can also be used to discourage cut-through traffic. Raised crosswalks are well-marked and may contain special paving or textures.

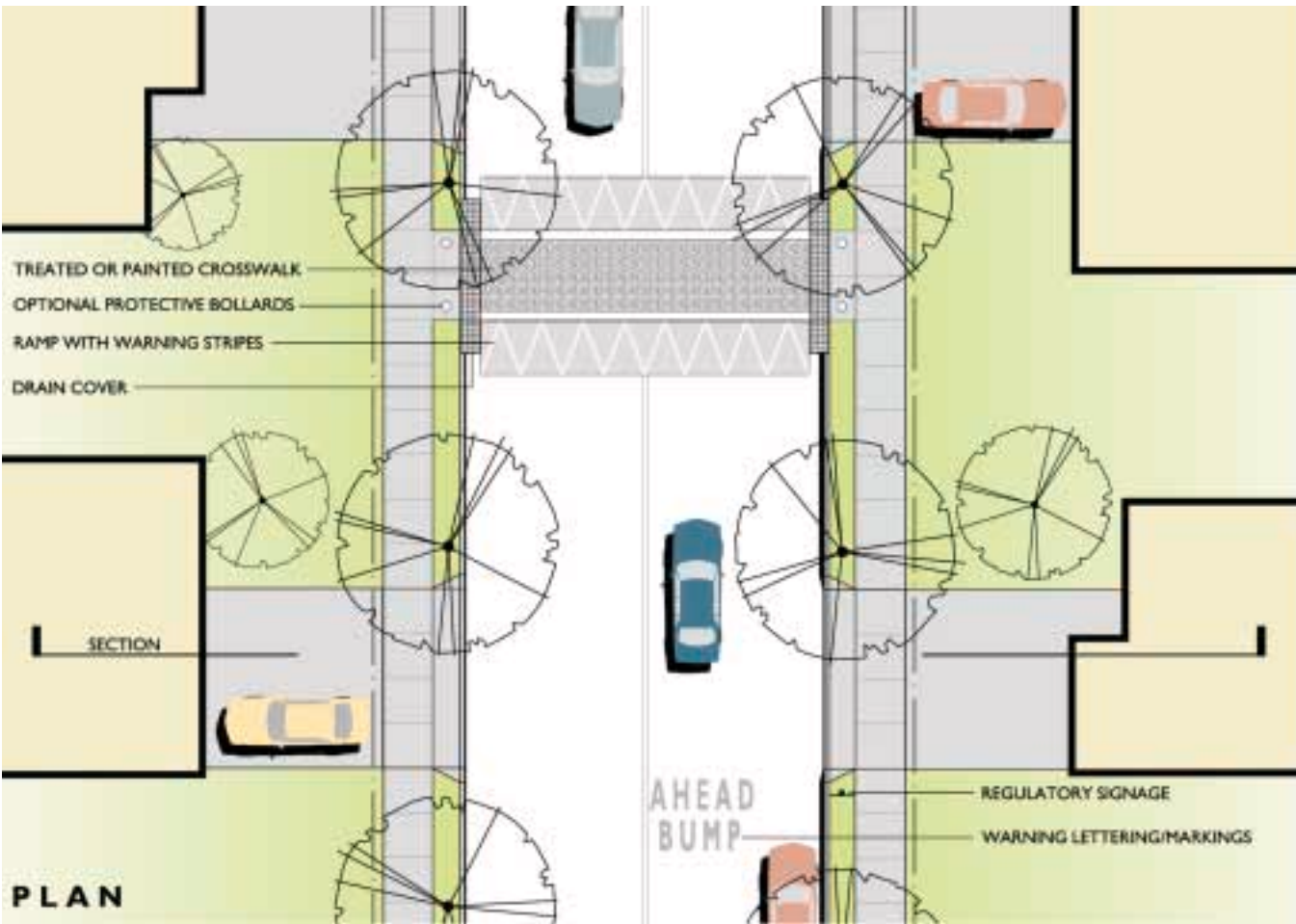
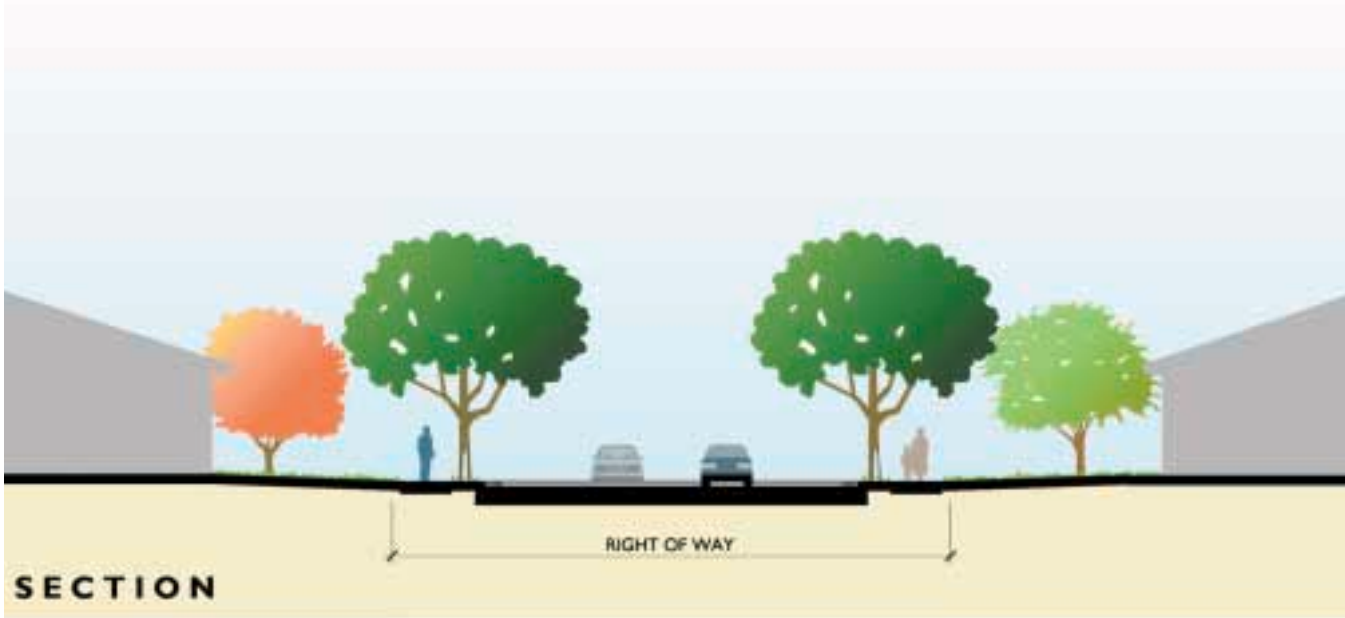
## Positive Aspects

- Slows traffic
- Increases pedestrian visibility in the crosswalks
- Requires minimal maintenance

## Negative Aspects

- May increase emergency response times
- May damage emergency response vehicles if not carefully designed
- May increase traffic noise in vicinity of crosswalk
- May create drainage issues where raised crossing extends from curb to curb
- May require extensive warning signs to be effective





# Minor Traffic Circles

Traffic Circles are raised circular medians that direct counterclockwise traffic flow through an intersection. Vehicles must change their travel path to maneuver around the circle, which may be controlled by "Yield on Entry" on all approaches. In some cases, stop signs can also be used in conjunction with circles.

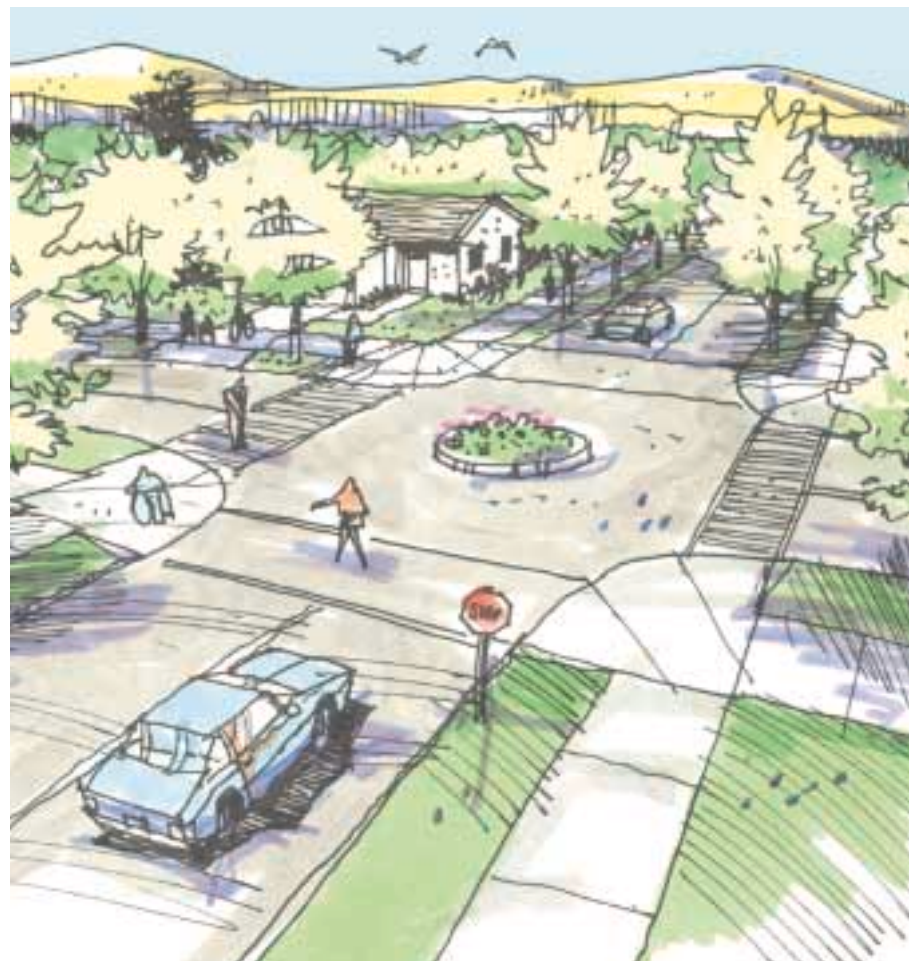
Traffic Circles are applicable to control speed and improve side street access. Two levels of traffic circles are available for the City of San Jose: minor and major. Minor traffic circles may contain low growth landscaping and/or a tree.

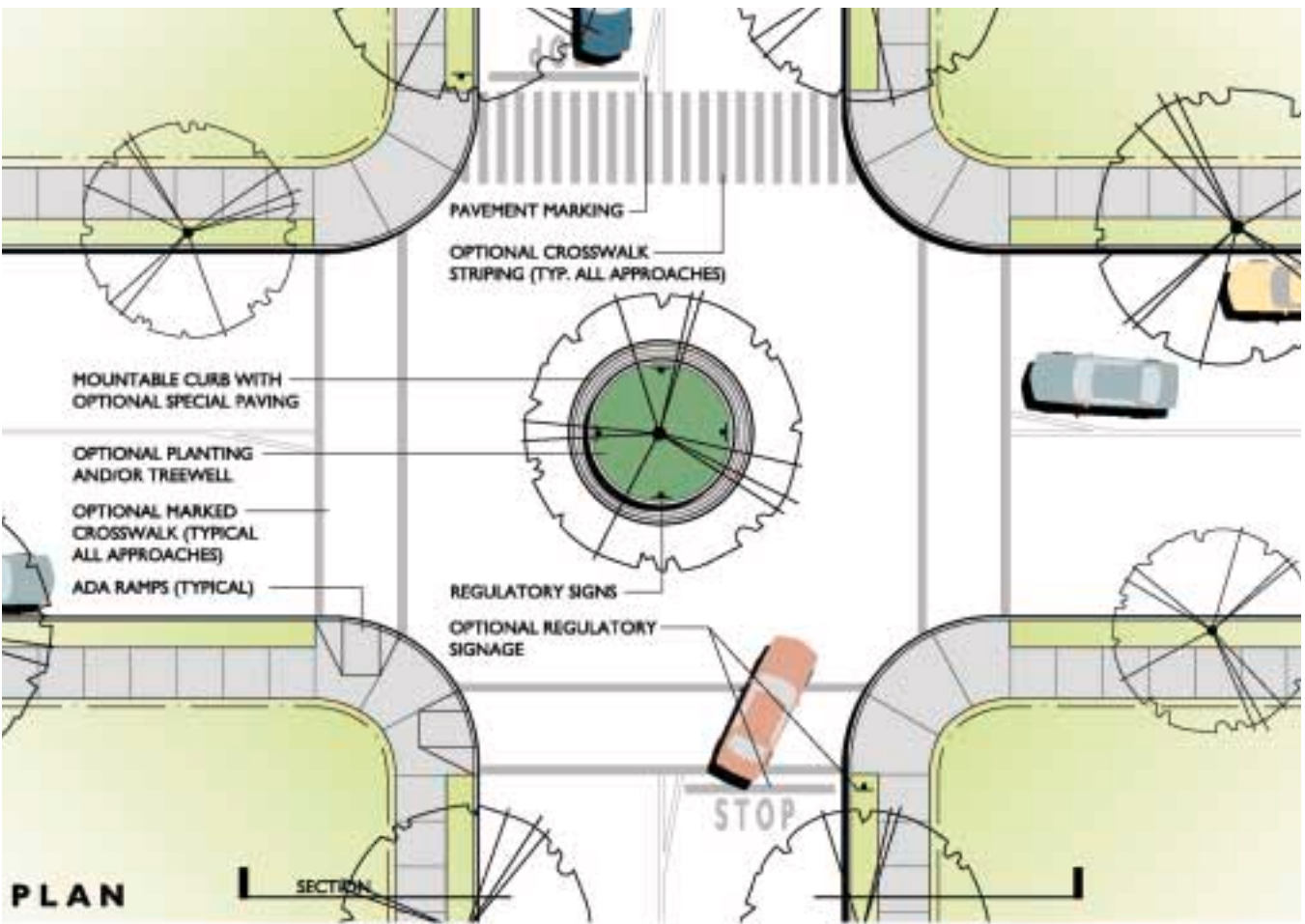
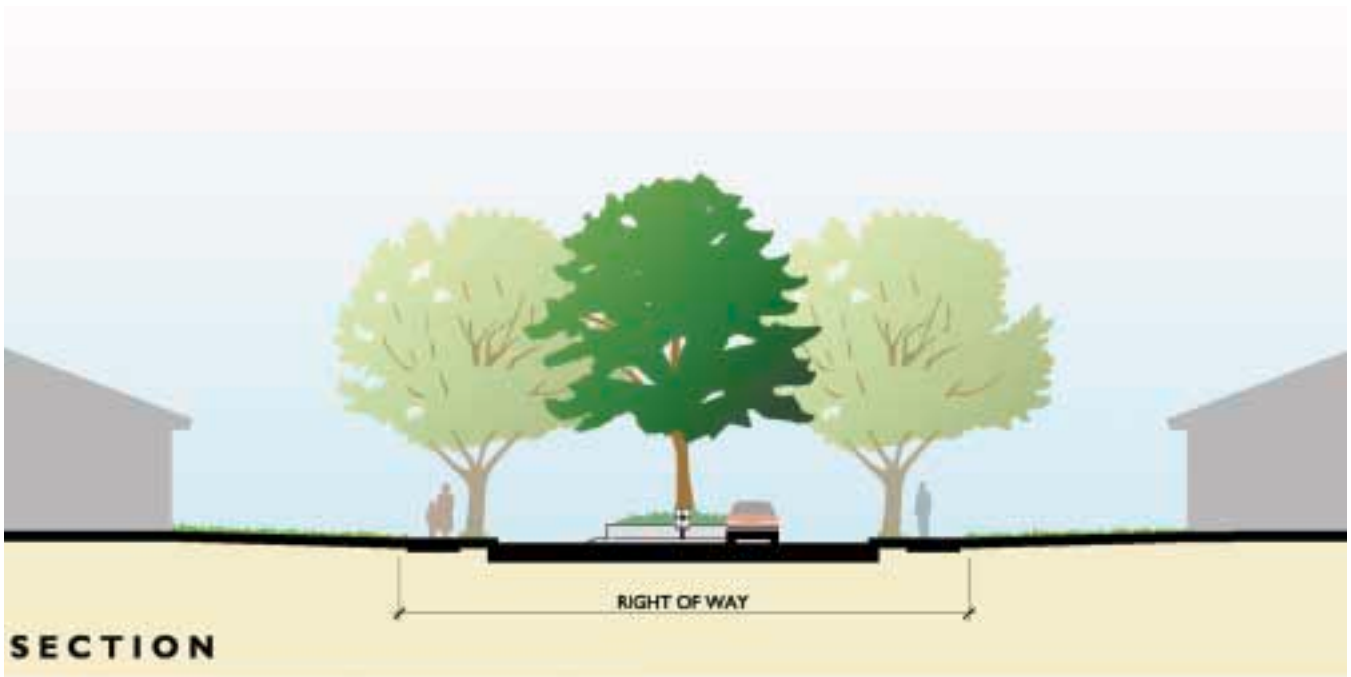
## Positive Aspects

- Provides increased access to street from side street
- Slows traffic as it drives around the circle
- Breaks up sight-lines on straight streets
- Opportunity for landscaping and visual enhancements to the neighborhood

## Negative Aspects

- Definition of right-of-way is contrary to the "Yield to the vehicle on the right" rule
- May impede left turns by large vehicles
- Bicyclists must merge with traffic around circle





# Major Traffic Circles

Traffic Circles are raised circular medians that direct counterclockwise traffic flow through an intersection. Vehicles must change their travel path to maneuver around the circle, which may be controlled by "Yield on Entry" on all approaches. In some cases, stop signs can also be used in conjunction with circles.

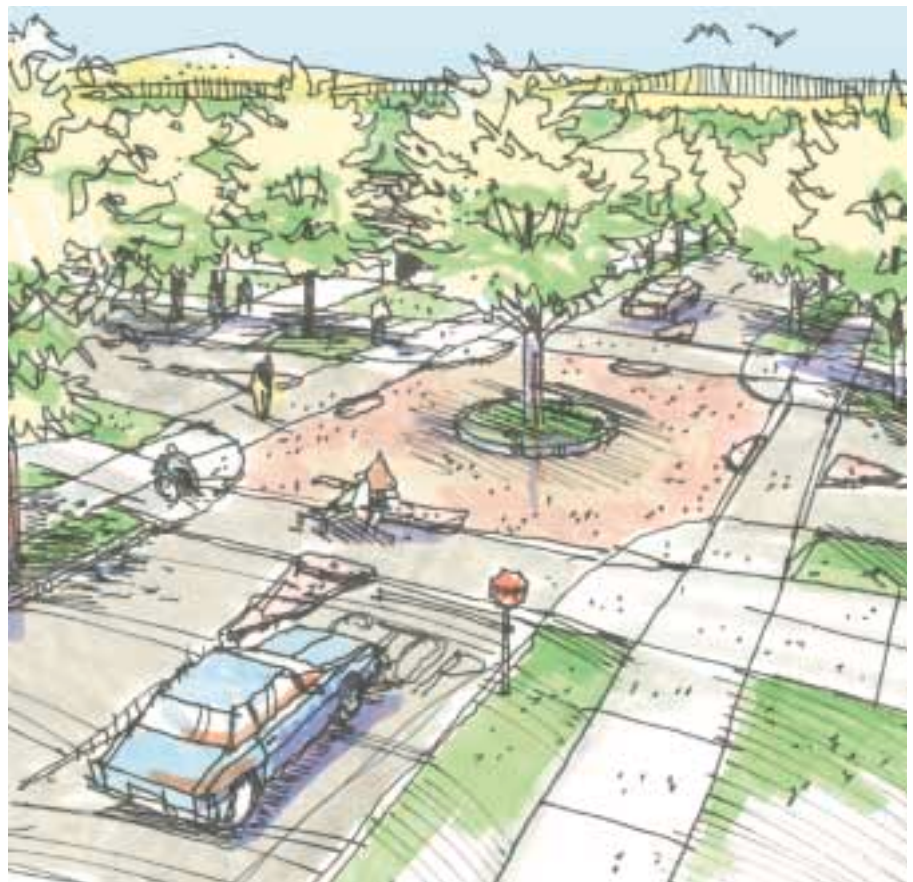
Traffic Circles are applicable to control speed and improve side street access. Two levels of traffic circles are available for the City of San Jose: minor and major. Major traffic circles include curbed approach islands to direct traffic and create a pedestrian refuge. The intersection may contain special paving and the circle may contain landscaping and/or a tree.

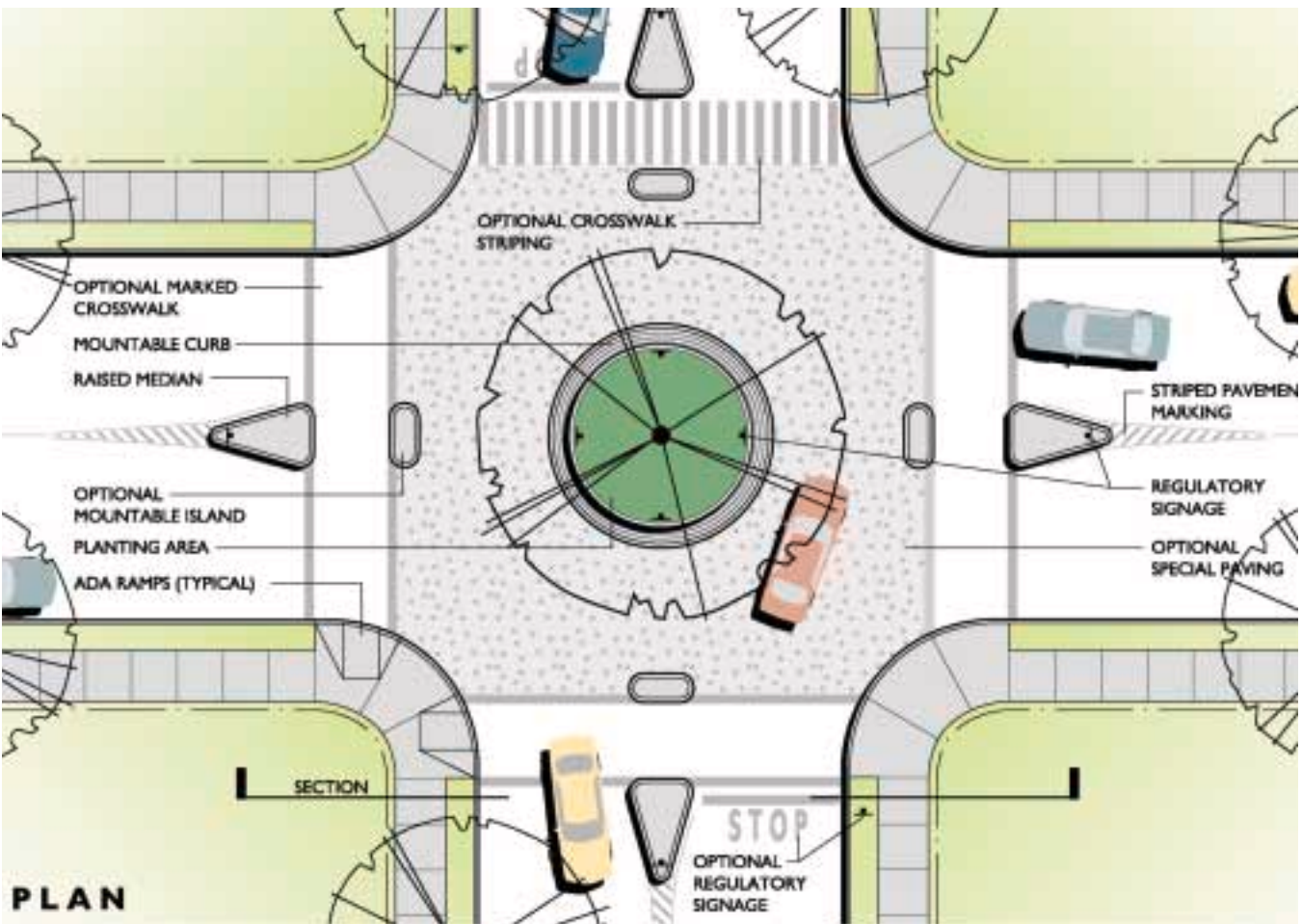
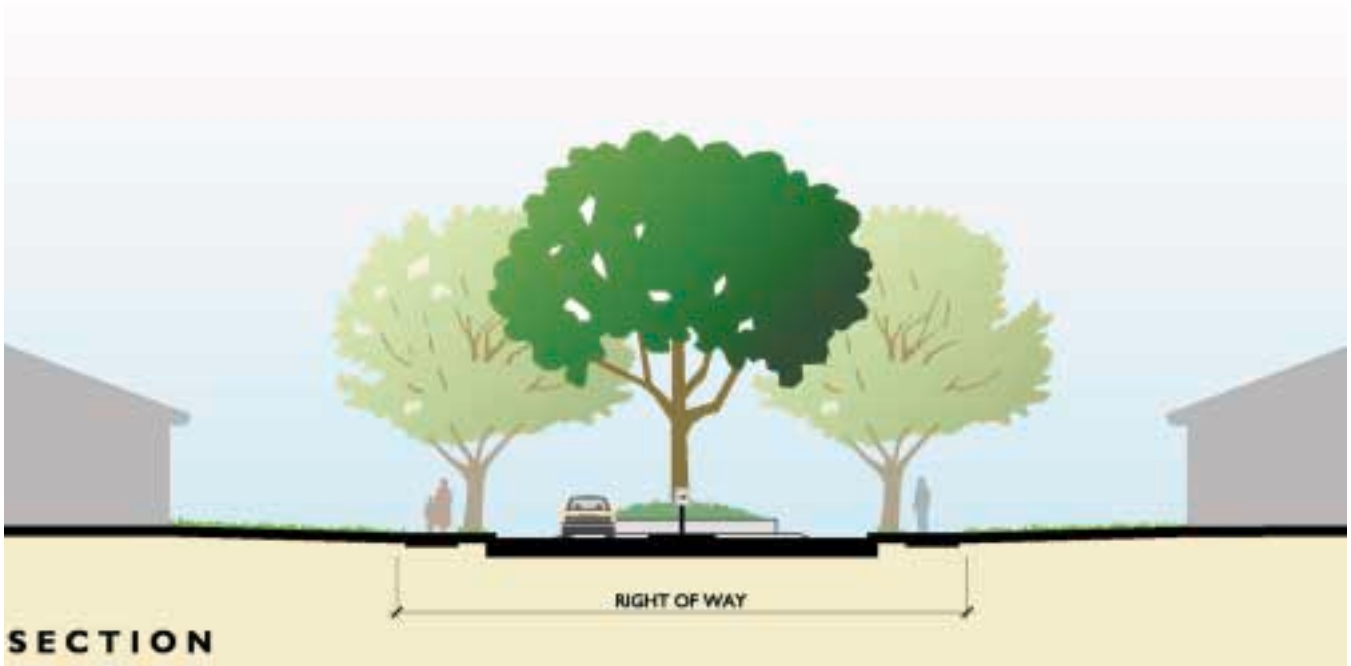
## Positive Aspects

- Provides increased access to street from side street
- Slows traffic as drivers maneuver around the circle
- Breaks up sight-lines on straight streets
- Opportunity for landscaping and visual enhancements to the neighborhood

## Negative Aspects

- Definition of right-of-way is contrary to the "Yield to the vehicle on the right" rule
- May impede emergency response
- May impede left turns by large vehicles
- May impact flow of pedestrians and bicyclists.





# Mid-Block Chokers

Chokers are raised islands in the parking zone that can be detached from the curbline to allow for drainage.

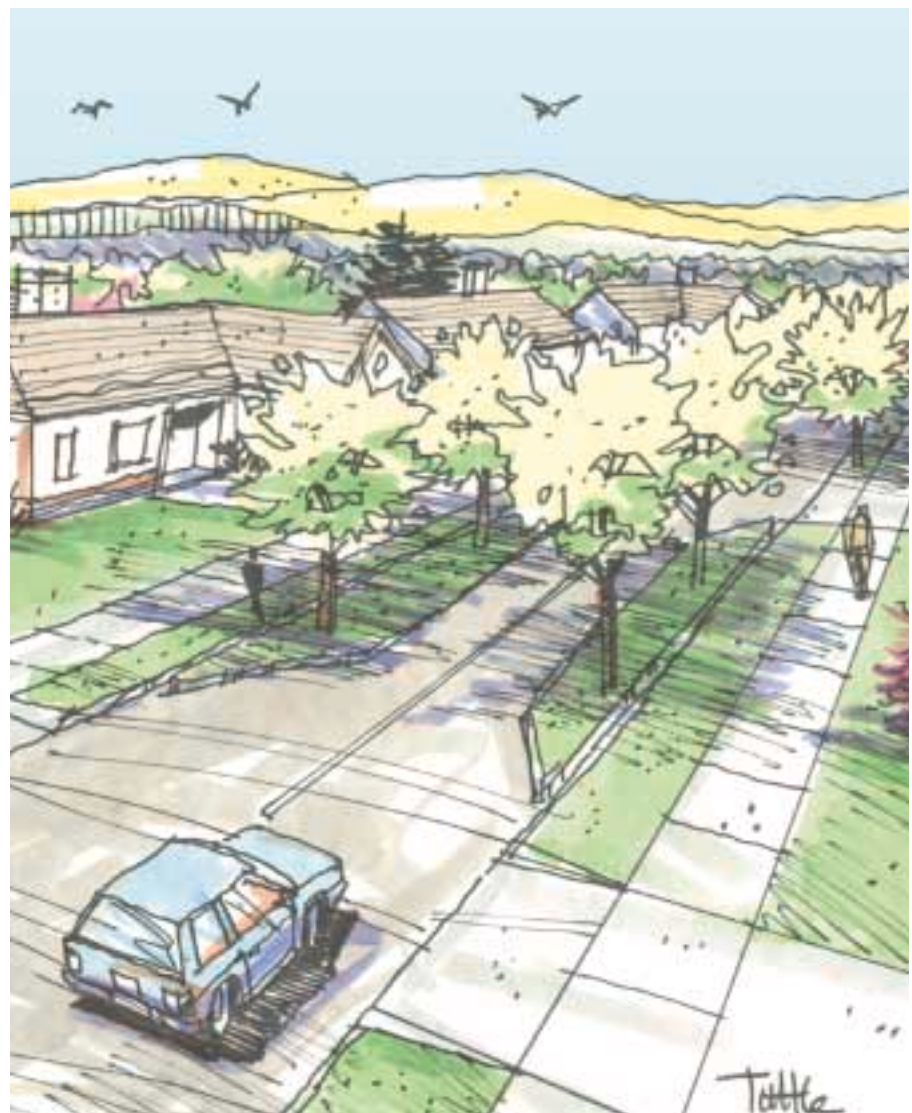
Mid-Block chokers narrow the roadway and are most applicable on wide streets with speeding and cut-through problems.

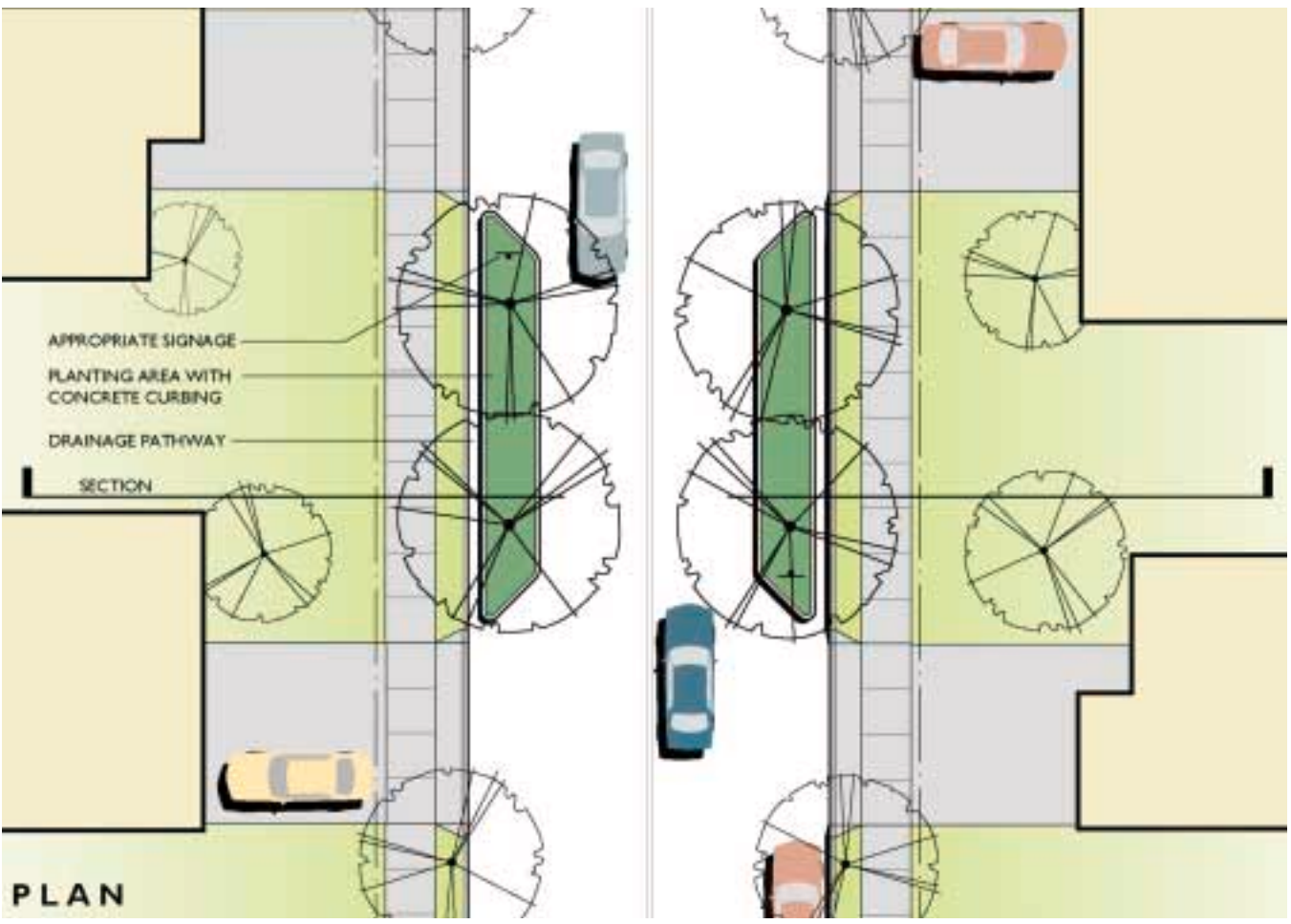
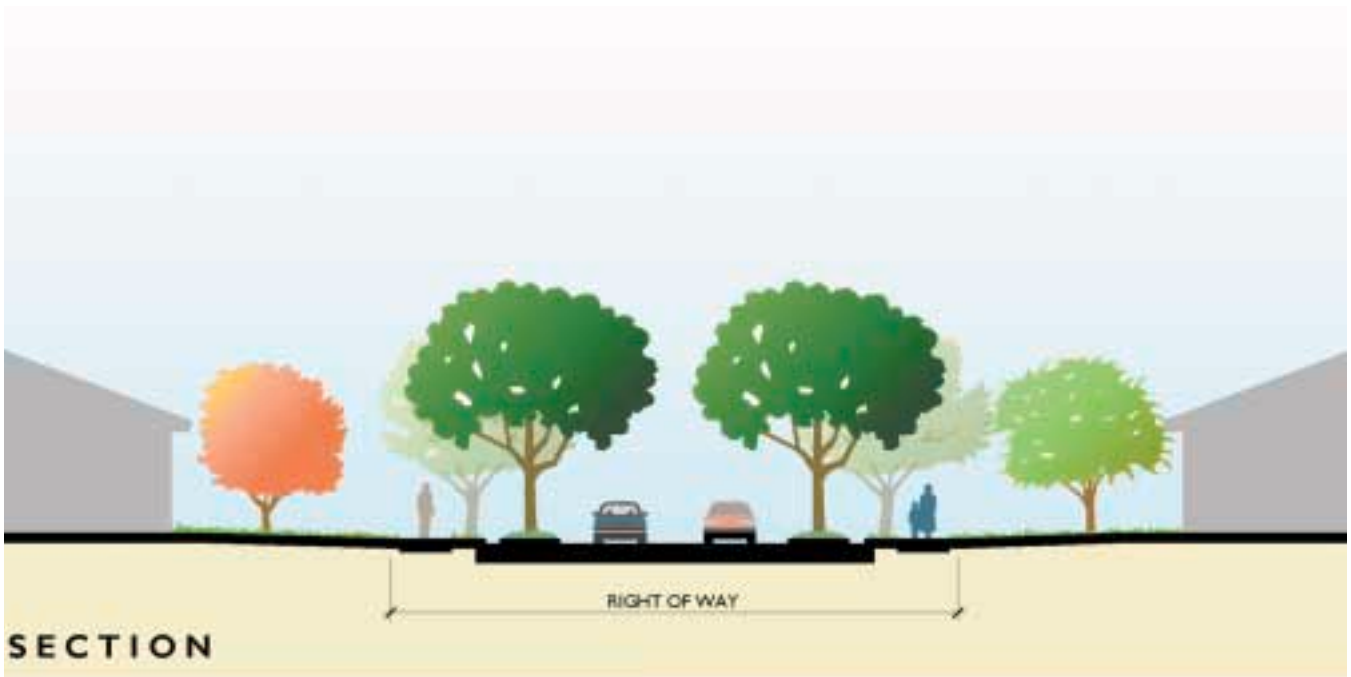
## Positive Aspects

- Speed reduction
- Breaks up driver's sight-line
- Reduces pedestrian crossing
- Increases pedestrian and motorist visibility

## Negative Aspects

- May require partial or total removal of on-street parking
- Increases maintenance for areas where street sweeping equipment cannot reach between the choker and the curbline







# Medians

Medians are raised islands in the center of the roadway that separate traffic directions.

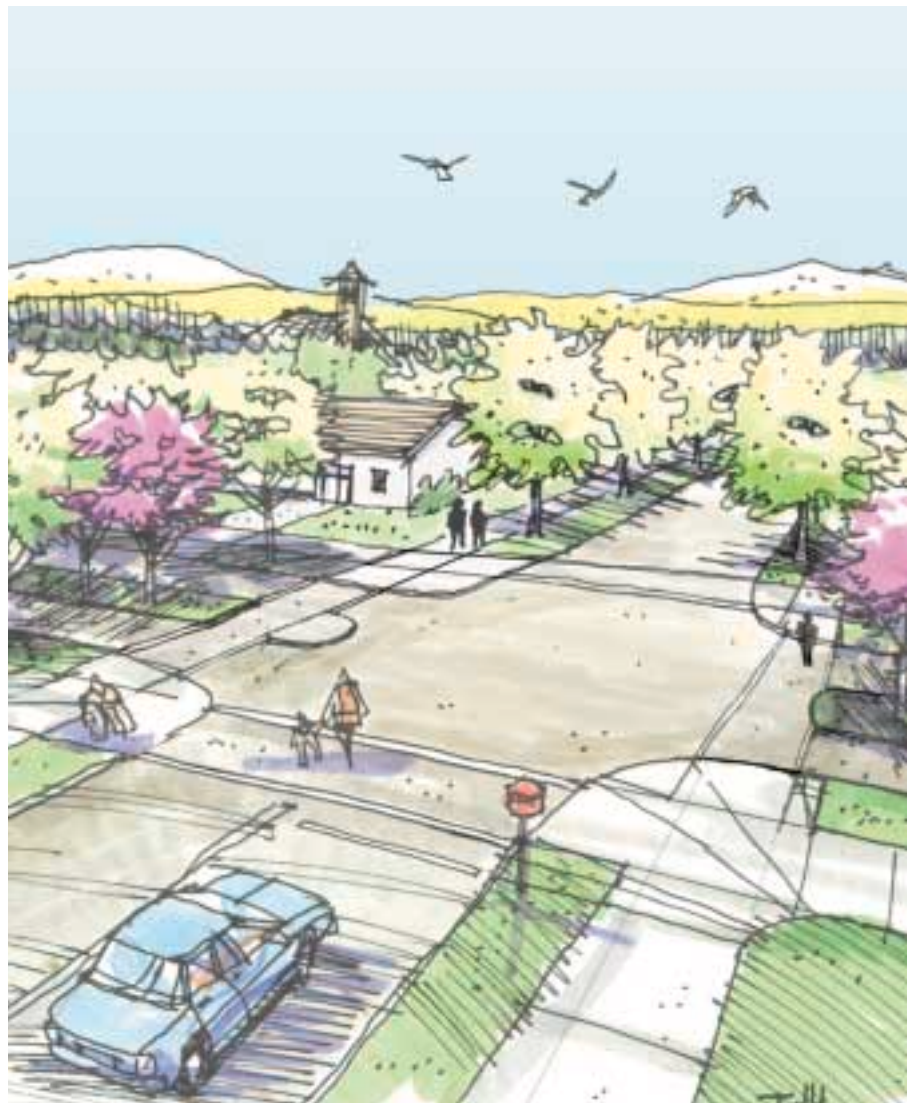
Medians are used on wide streets to narrow the travel lanes, interrupt sight distances down the center of the roadway, and ease pedestrian crossings.

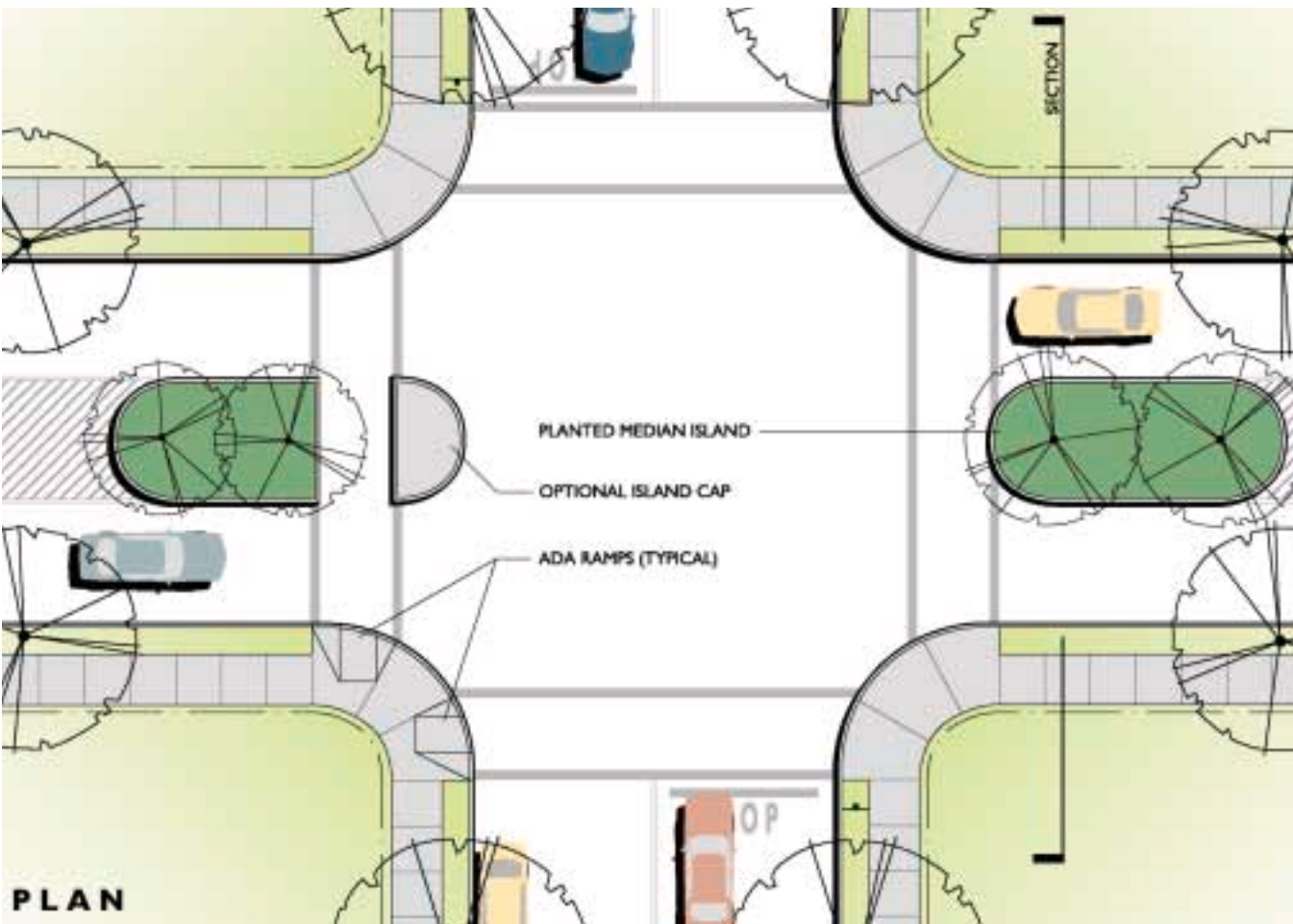
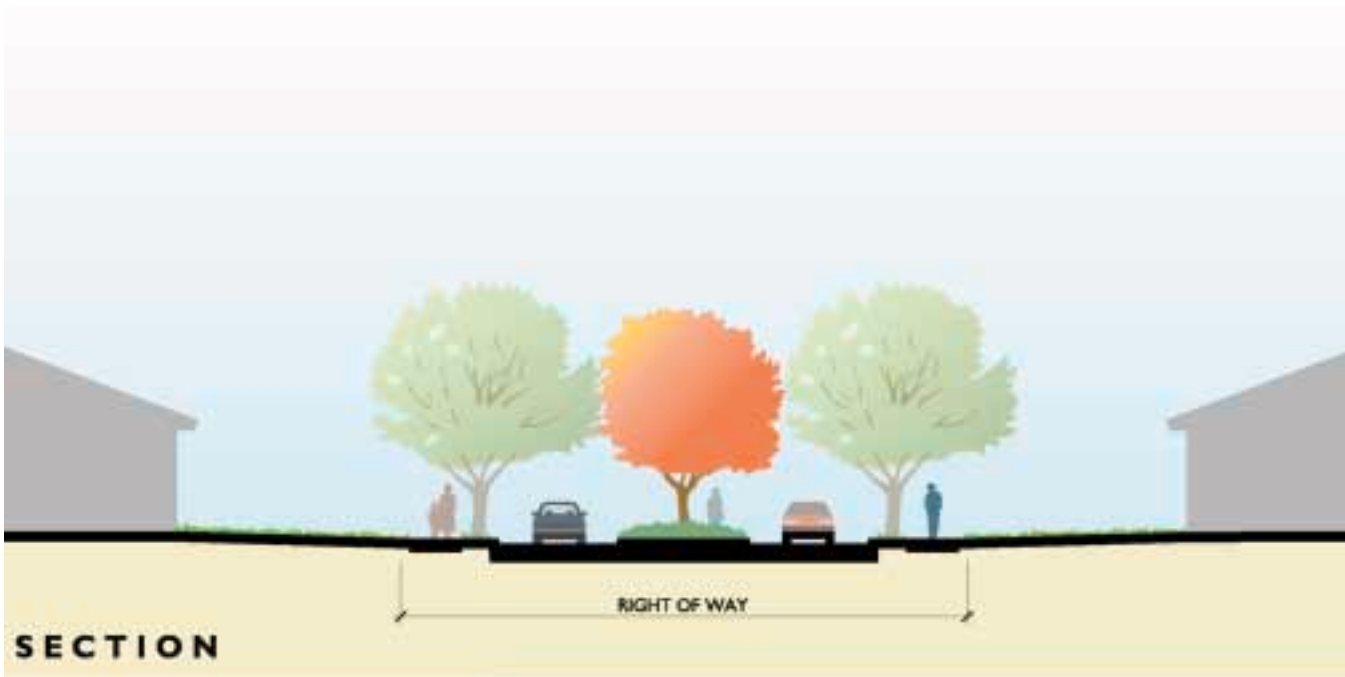
## Positive Aspects

- Narrowed travel lanes can slow vehicle speeds
- Shortens pedestrian crossing
- Opportunity for landscaping and visual enhancements to the neighborhood

## Negative Aspects

- Long medians may interrupt emergency access and operations
- May interrupt driveway access and result in U-turns at the end of medians
- May require removal of parking
- High cost to construct and maintain





# Major Bulbouts

Major bulbouts narrow the street width at intersections, creating a shorter and safer pedestrian crossing and encouraging drivers to slow down.

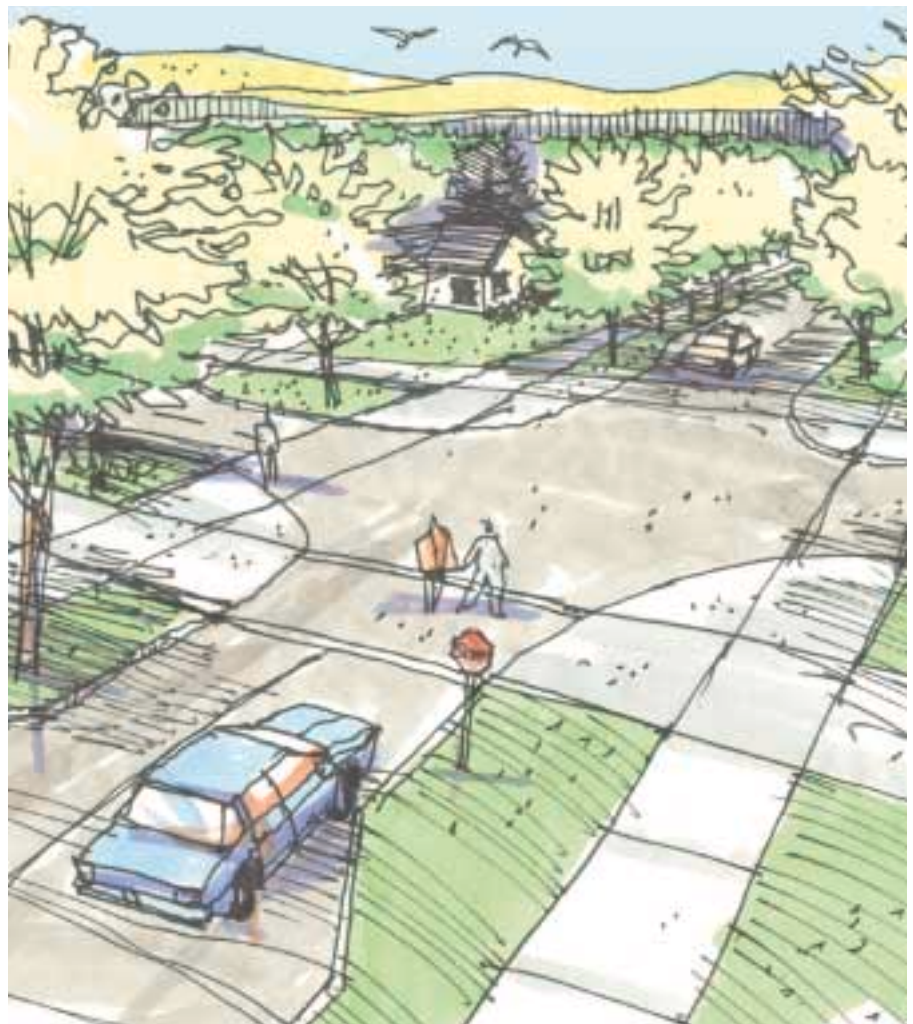
Construction of major bulbouts requires altering the curb, gutter and sidewalk. Bulbouts may contain special paving or landscaping and are generally used at intersections where parking is restricted.

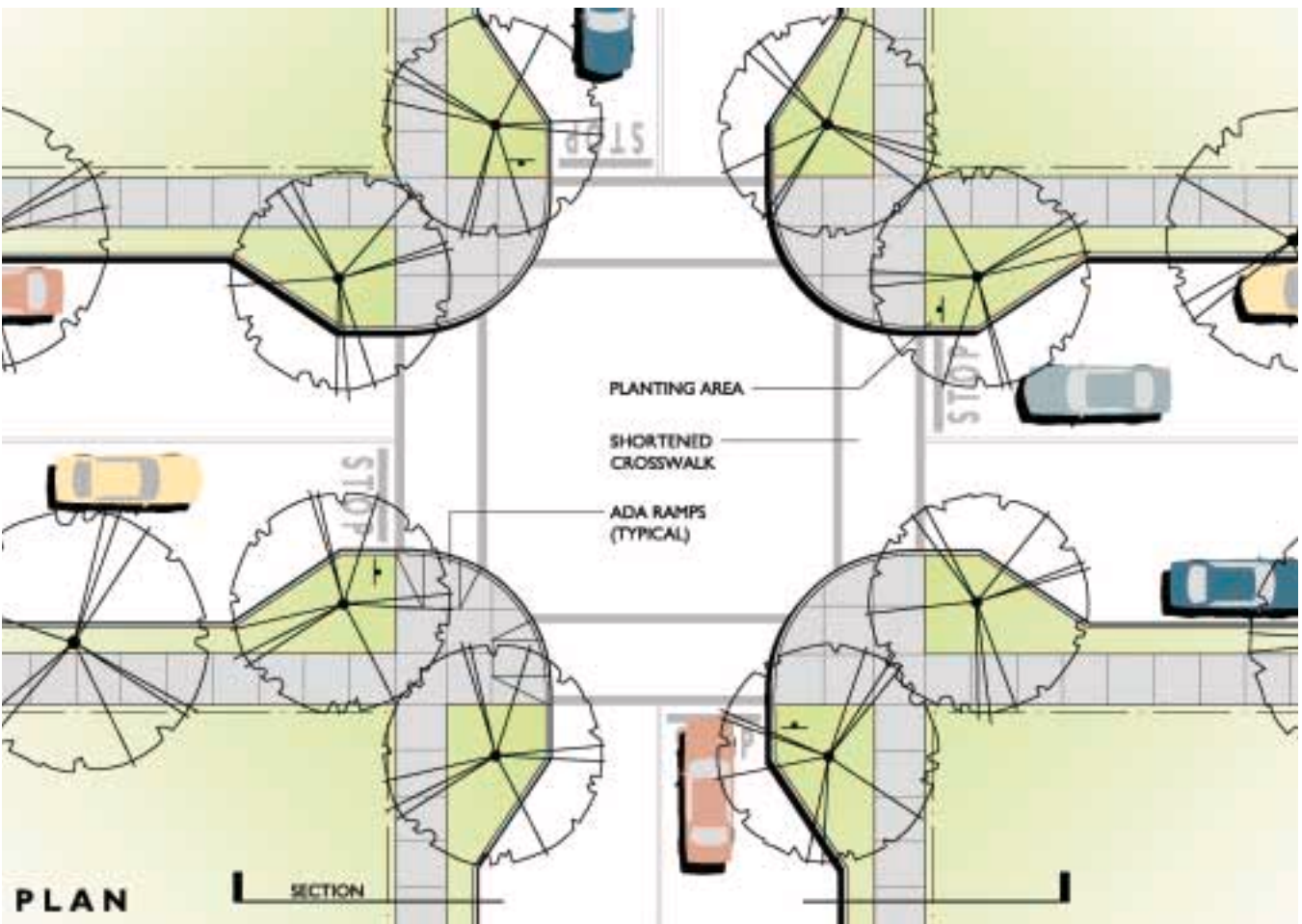
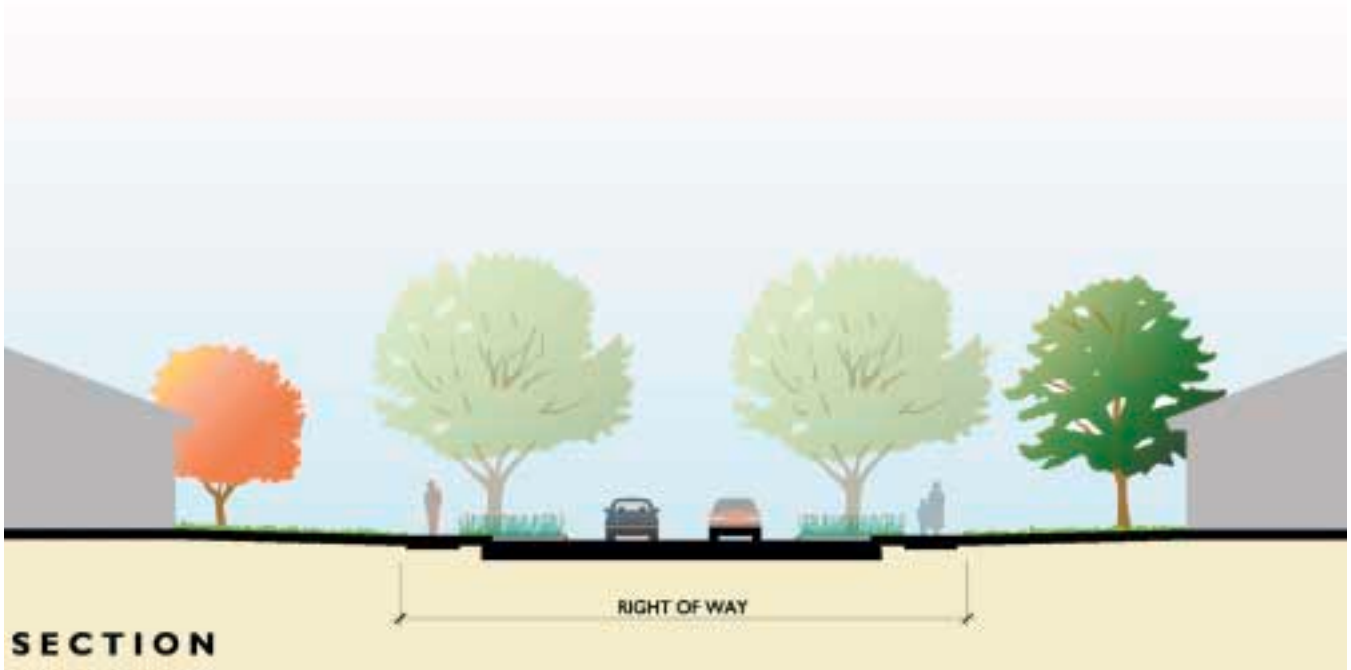
## Positive Aspects

- Pedestrian crossing distance is reduced
- Narrowed roadway section may contribute to reduction of speeds
- Breaks up driver's sight-line
- Opportunity for landscaping and visual enhancements to the neighborhood

## Negative Aspects

- May reduce visibility for cyclists who are less visible to turning and cross traffic
- May require partial or total loss of parking
- Could result in a minor increase on maintenance
- Care should be taken to keep motorists from hitting bulb outs





# Chicanes

A curved street alignment that can be designed into new developments or retrofitted in existing right-of-ways is called a chicane. The curvilinear alignment requires additional maneuvering and shortens drivers' sight-lines, resulting in lower average speeds.

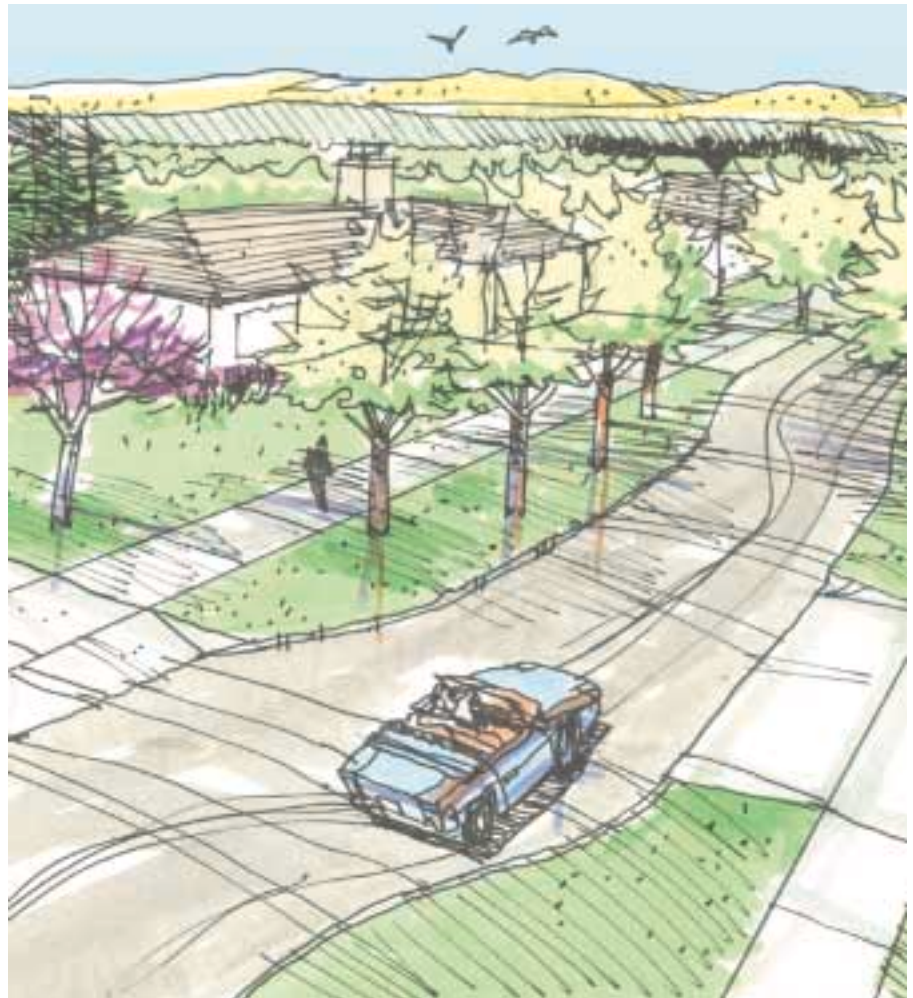
This device can be applied to any street where speed control is desired, provided the street is wide enough to accommodate the curvilinear design.

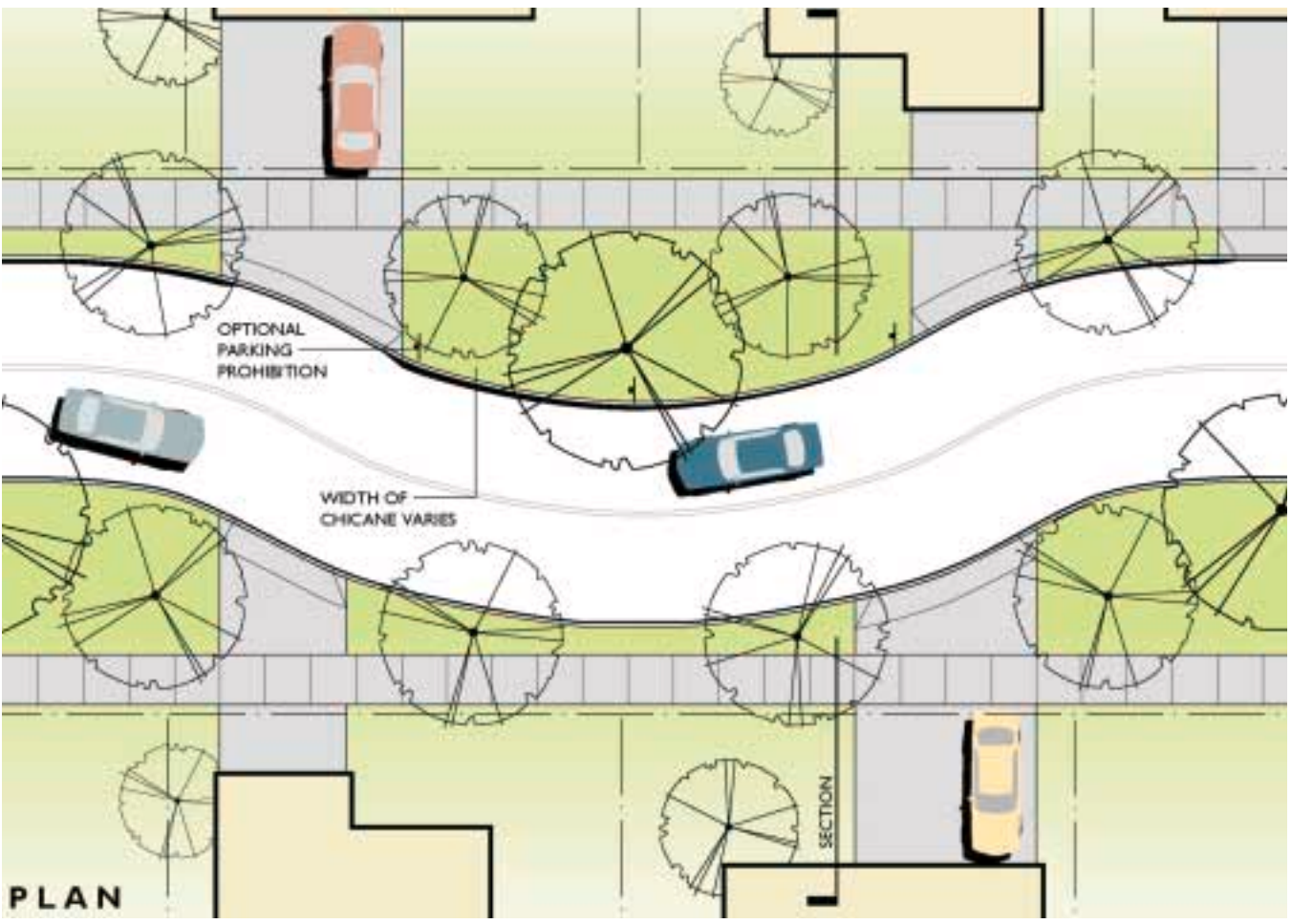
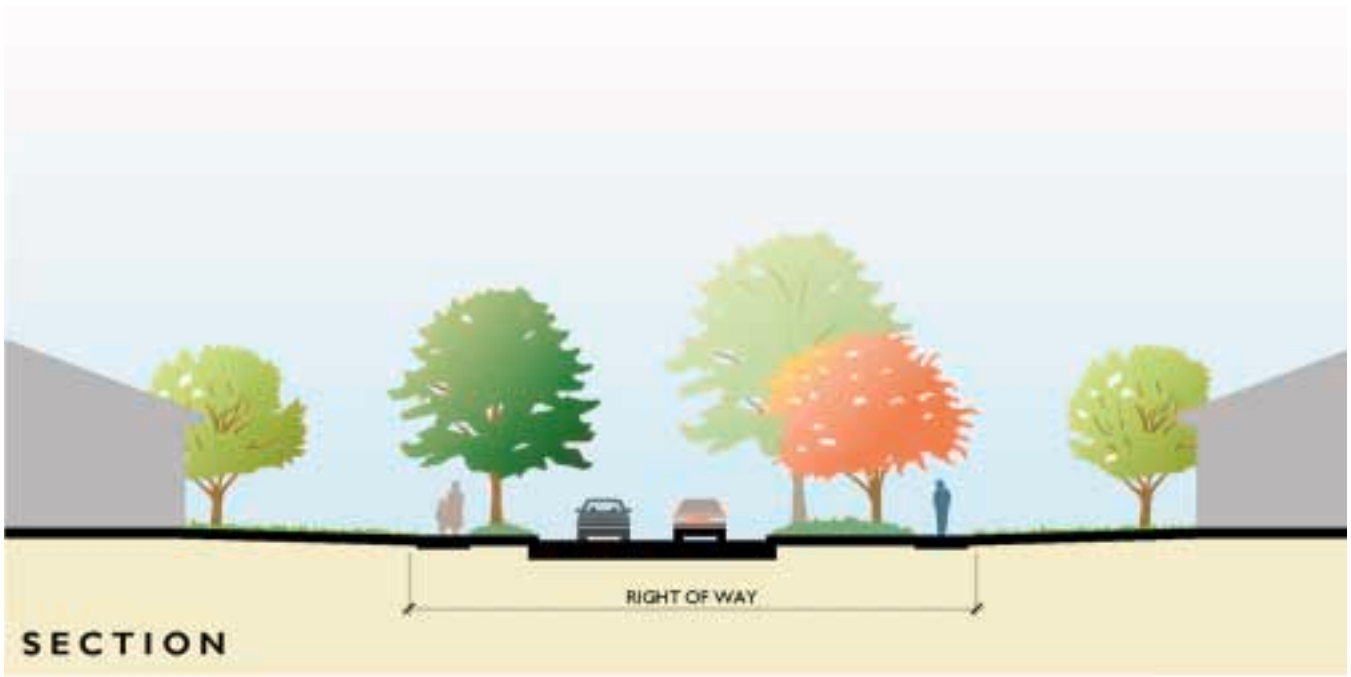
## Positive Aspects

- May slow down traffic
- Changes the look of the street, making it more aesthetically pleasing
- Has minimal impact on emergency response

## Negative Aspects

- Involves extensive design and expensive implementation
- May require partial or total removal of on-street parking
- Additional maintenance for service vehicles to maneuver a curvilinear street
- May have little or no impact on cut-through traffic
- May require modification of drainage features and other utilities







L e v e l   I I   T r a f f i c   C a l m i n g  
E l e m e n t s



*Level II Elements are traffic control devices and roadway design features primarily designed to discourage cut-through traffic from using residential streets.*



# Diverters

Diverters are raised areas placed diagonally across a four-way intersection that restrict through movements and force a turn in all directions.

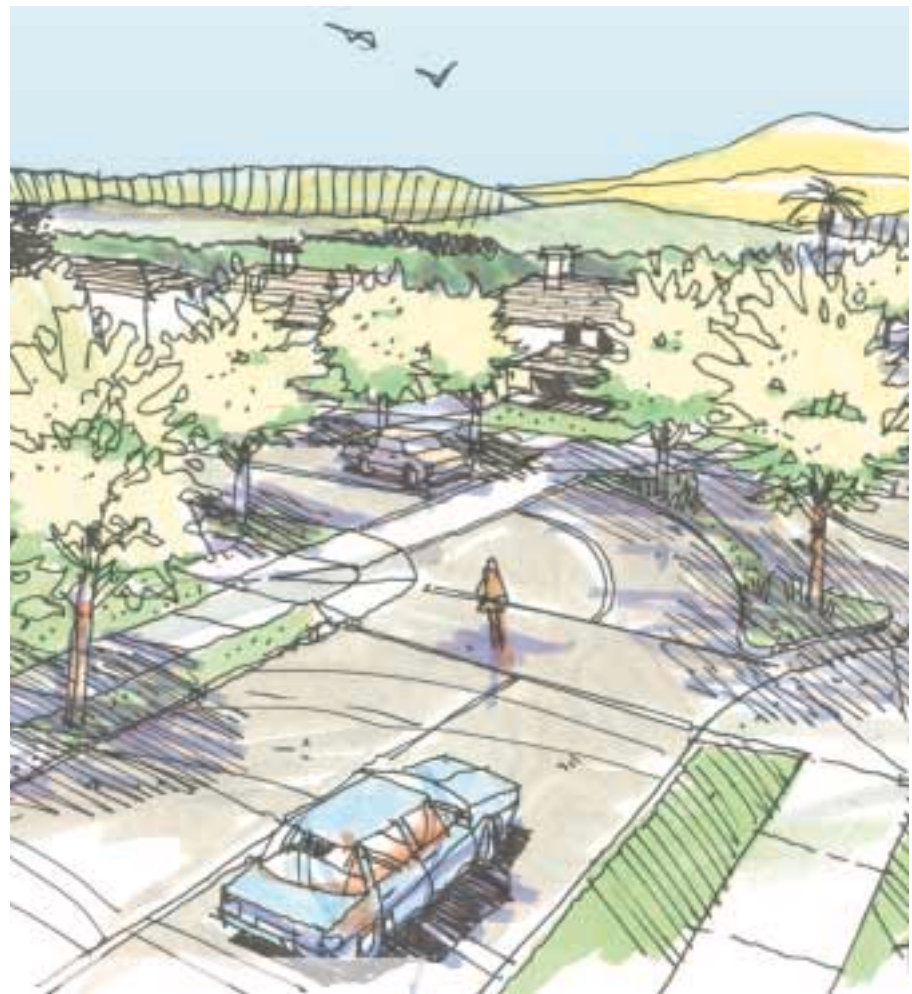
Diverters are most applicable to local streets where cut-through traffic is a major problem.

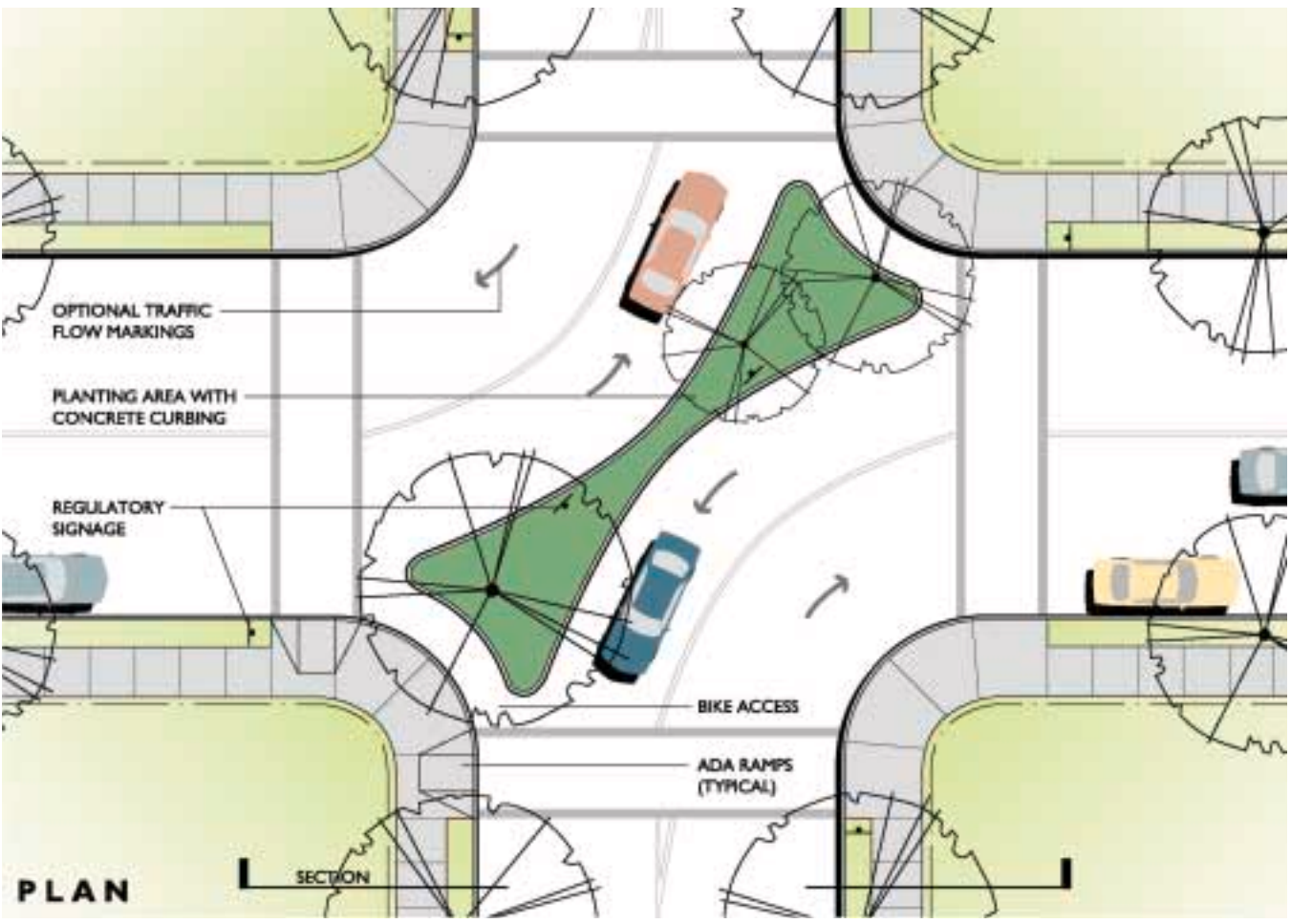
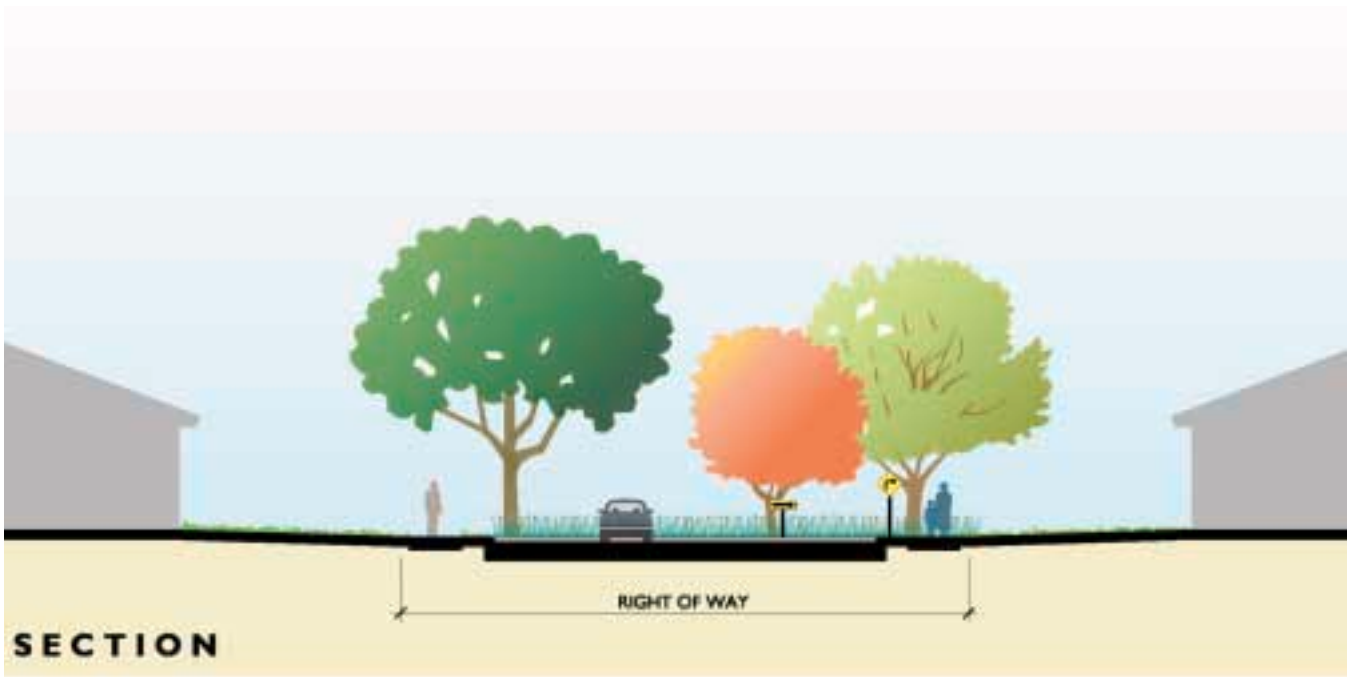
## Positive Aspects

- Reduces cut-through traffic
- Channels traffic flow, thus eliminating conflicts at an intersection
- Can be designed to accommodate emergency vehicles
- Opportunity for landscaping and visual enhancements to the neighborhood
- Can accommodate bicycle traffic through intersection

## Negative Aspects

- Will re-direct traffic to other local streets
- Causes increased travel time for local residents
- Is a permanent measure, even though problem may be limited to certain times of day
- High installation costs
- May require partial or total removal of parking near intersection
- Needs significant warning and guiding signs





# Extended Median

Medians are raised islands in the center of the roadway that separate traffic directions. Extended medians reach beyond cross street(s), thus eliminating left turns and through traffic.

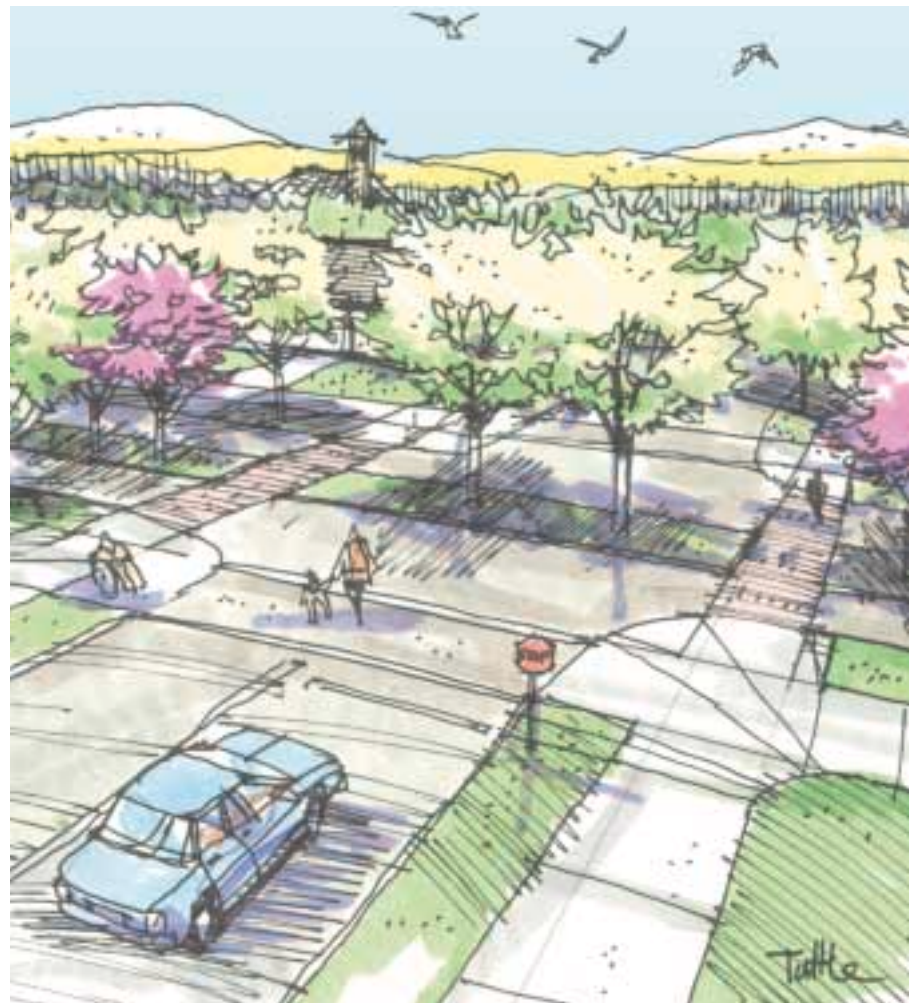
Medians are used on wide streets to narrow the travel lanes, interrupt sight distances down the center of the roadway, and ease pedestrian crossings. Extended medians can be used to discourage cut-through traffic through the neighborhood.

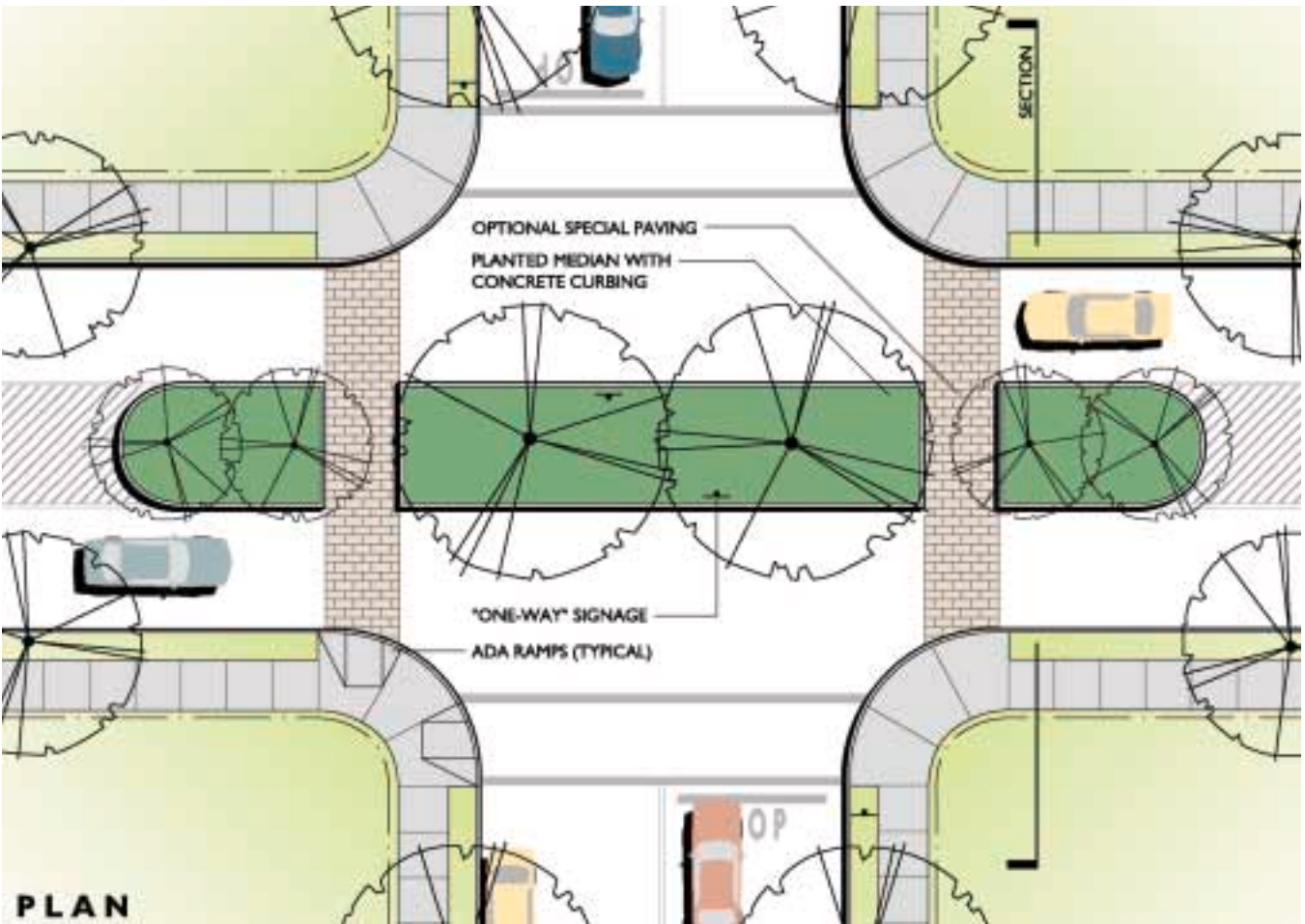
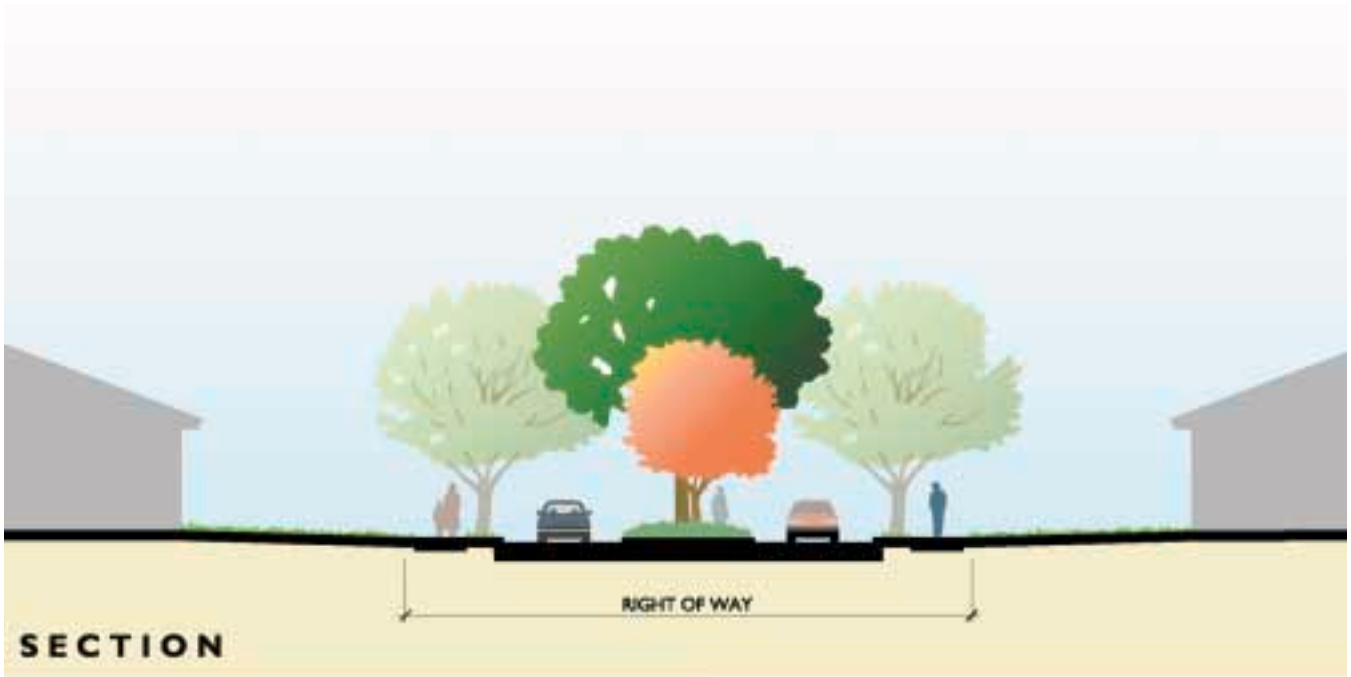
## Positive Aspects

- Narrowed travel lanes can slow vehicle speeds
- Opportunity for landscaping and visual enhancements to the neighborhood
- Reduces cut-through traffic

## Negative Aspects

- Has a significant impact on emergency access and operations
- May interrupt driveway access and result in U-turns
- May require removal of parking
- High cost to construct and maintain





# Partial Closure

A Partial closure is a physical barrier that restricts vehicles from turning into a street, while still allowing for bicycle access. The opposite lane is left open to allow vehicle exits. Two-way traffic is maintained for the rest of the block.

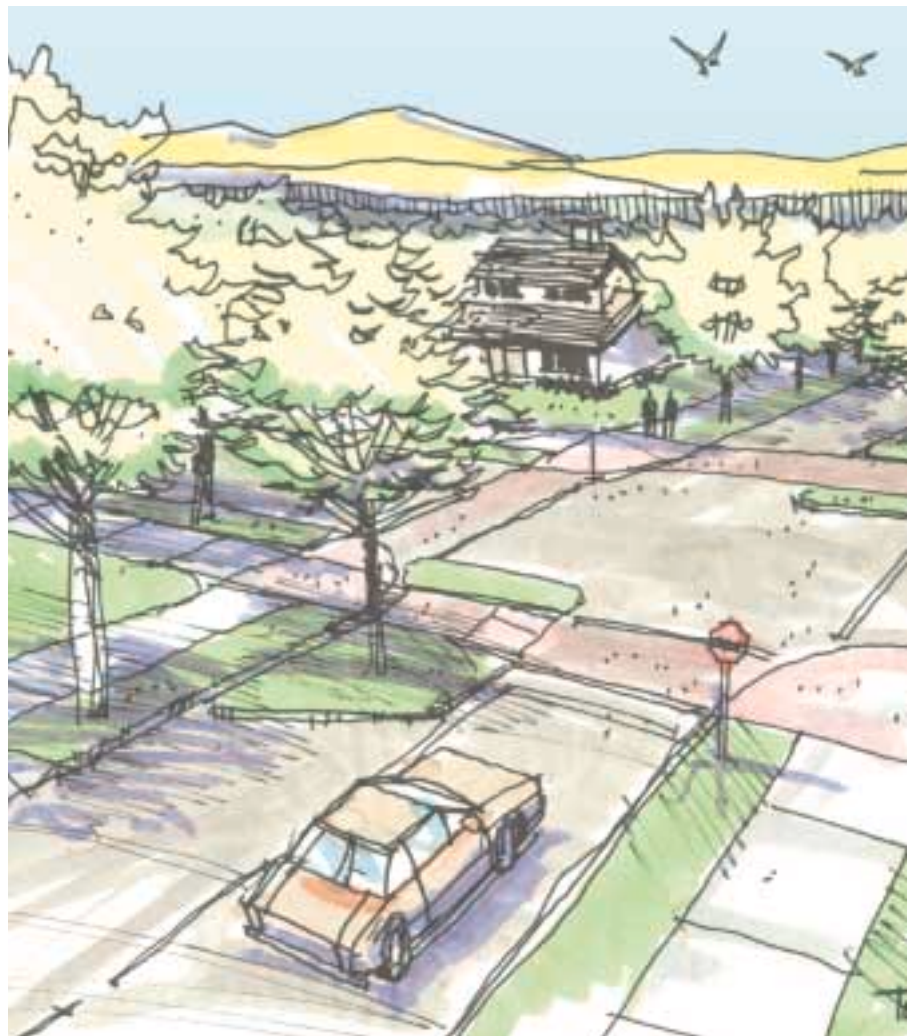
Partial closures are applicable to local streets where cut-through traffic is a concern. It can also be a favorable traffic volume control measure.

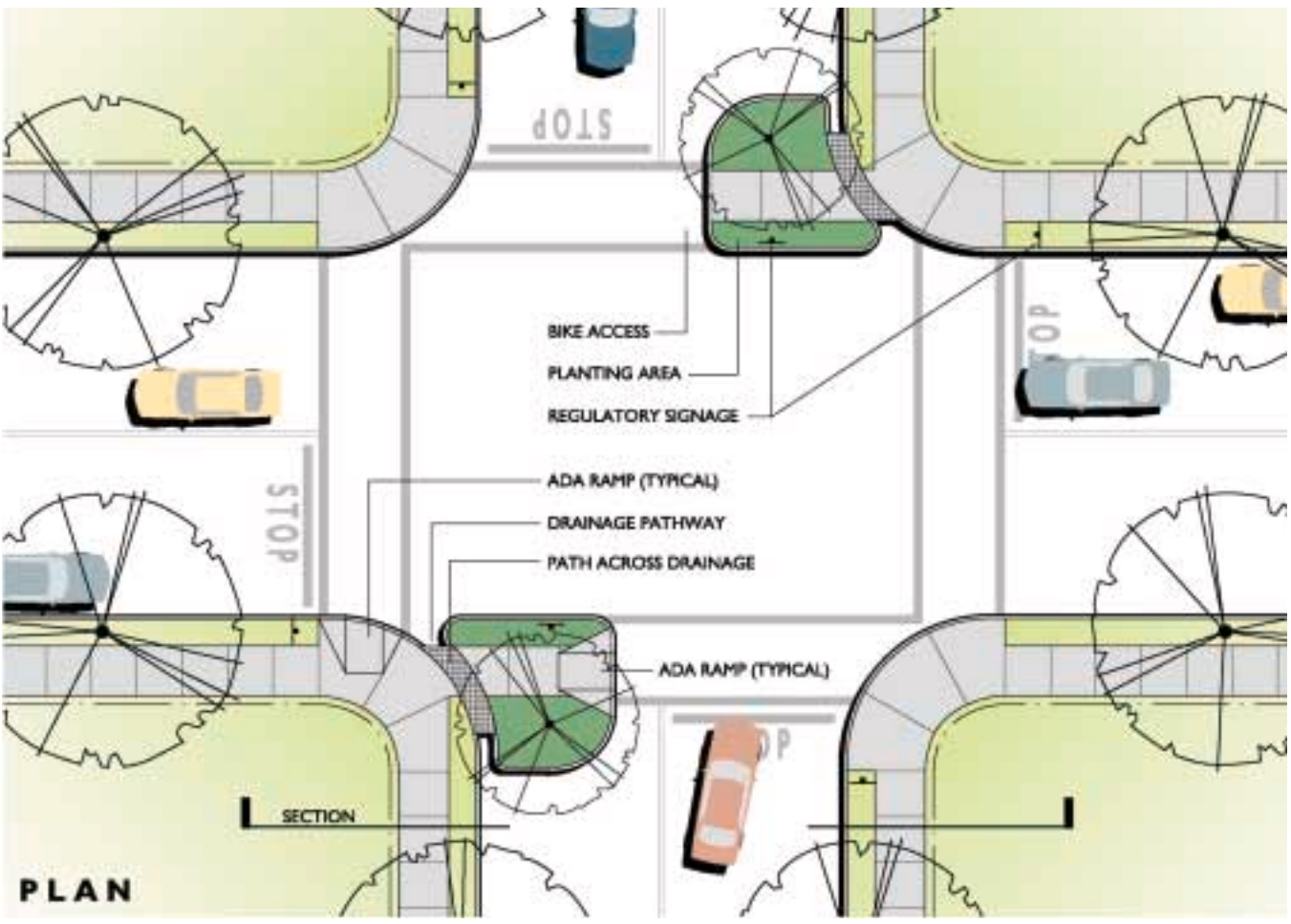
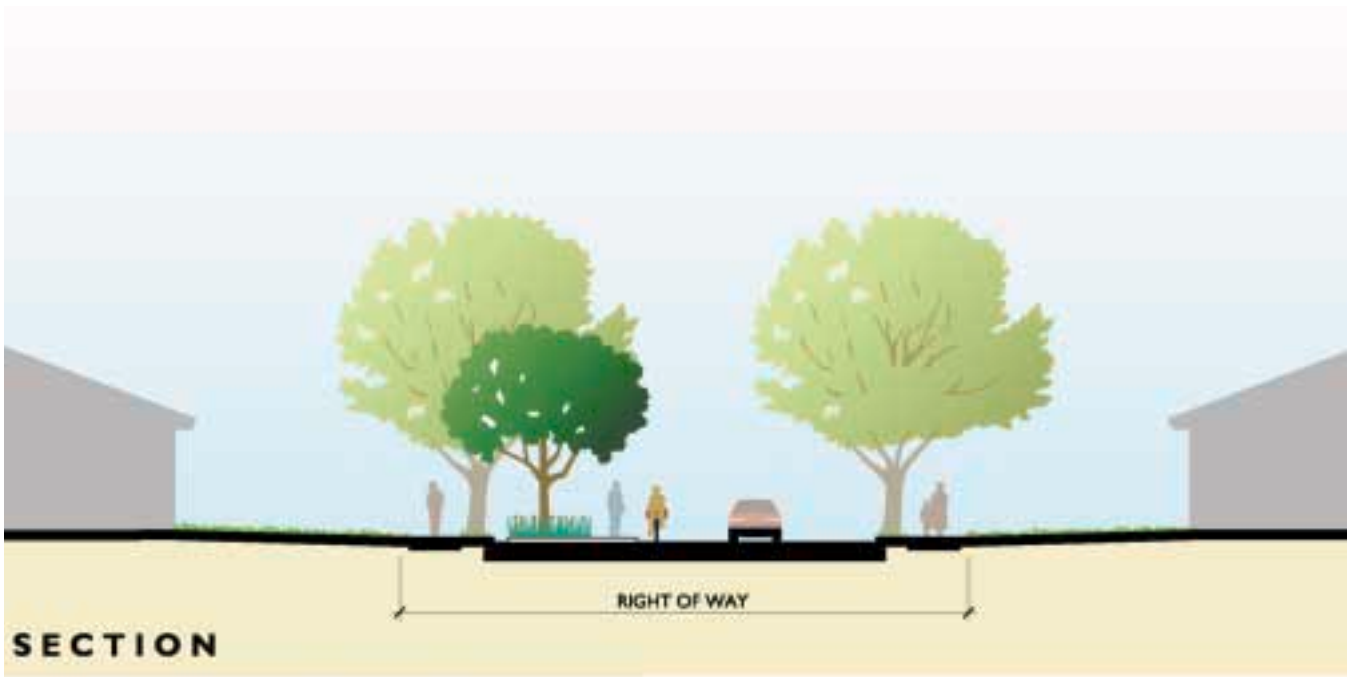
## Positive Aspects

- Restricts movements into a street while maintaining full access and movement within the street block for residents
- Reduces cut-through traffic
- Pedestrian crossing distance is reduced through a closure island
- Creates a space for street landscaping

## Negative Aspects

- May require partial or total removal of on-street parking
- May redirect traffic to other local streets
- May increase trip length for local drivers
- Is in effect at all times, even if cut-through problem exists only at certain times of day





# Full Closure

A complete closure of the street blocks both lanes of travel, so that the street becomes a cul-de-sac. This device eliminates all through traffic and limits street access to local residents.

This device is applicable to local streets with major cut-through concerns where an emergency vehicle response route does not exist.

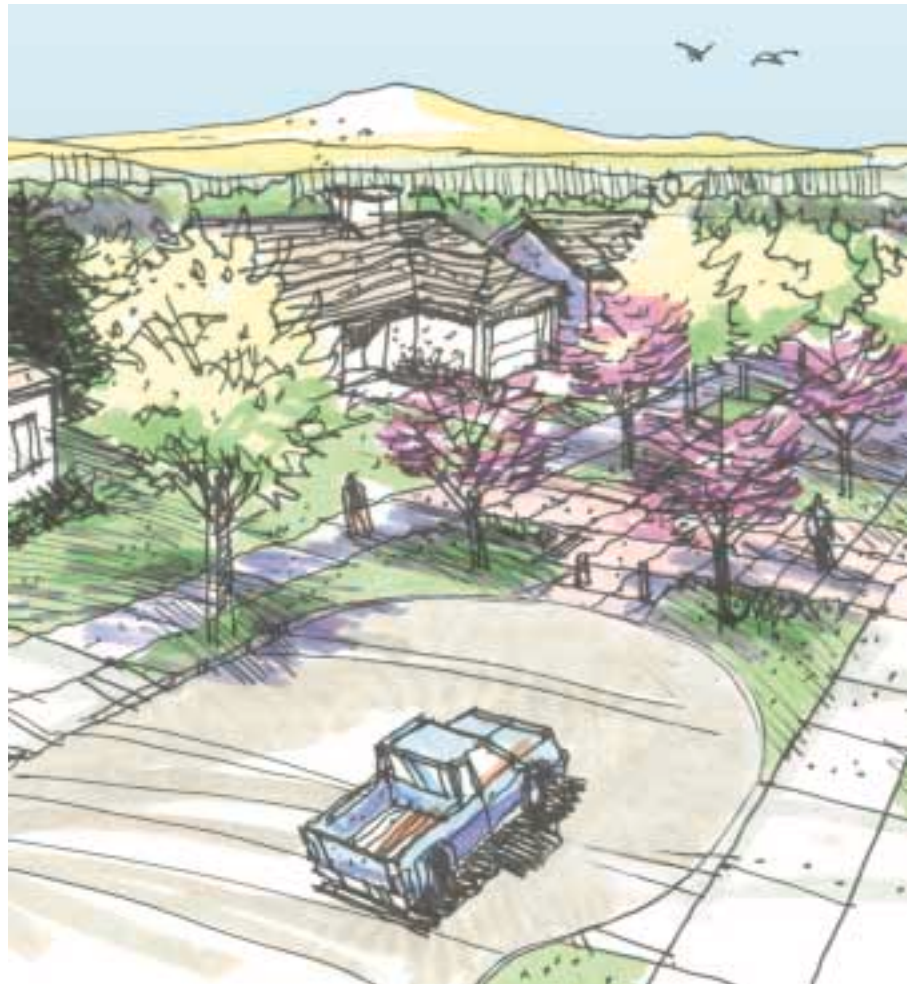
The closure location may be designed as a pocket park with through bicycle and pedestrian access.

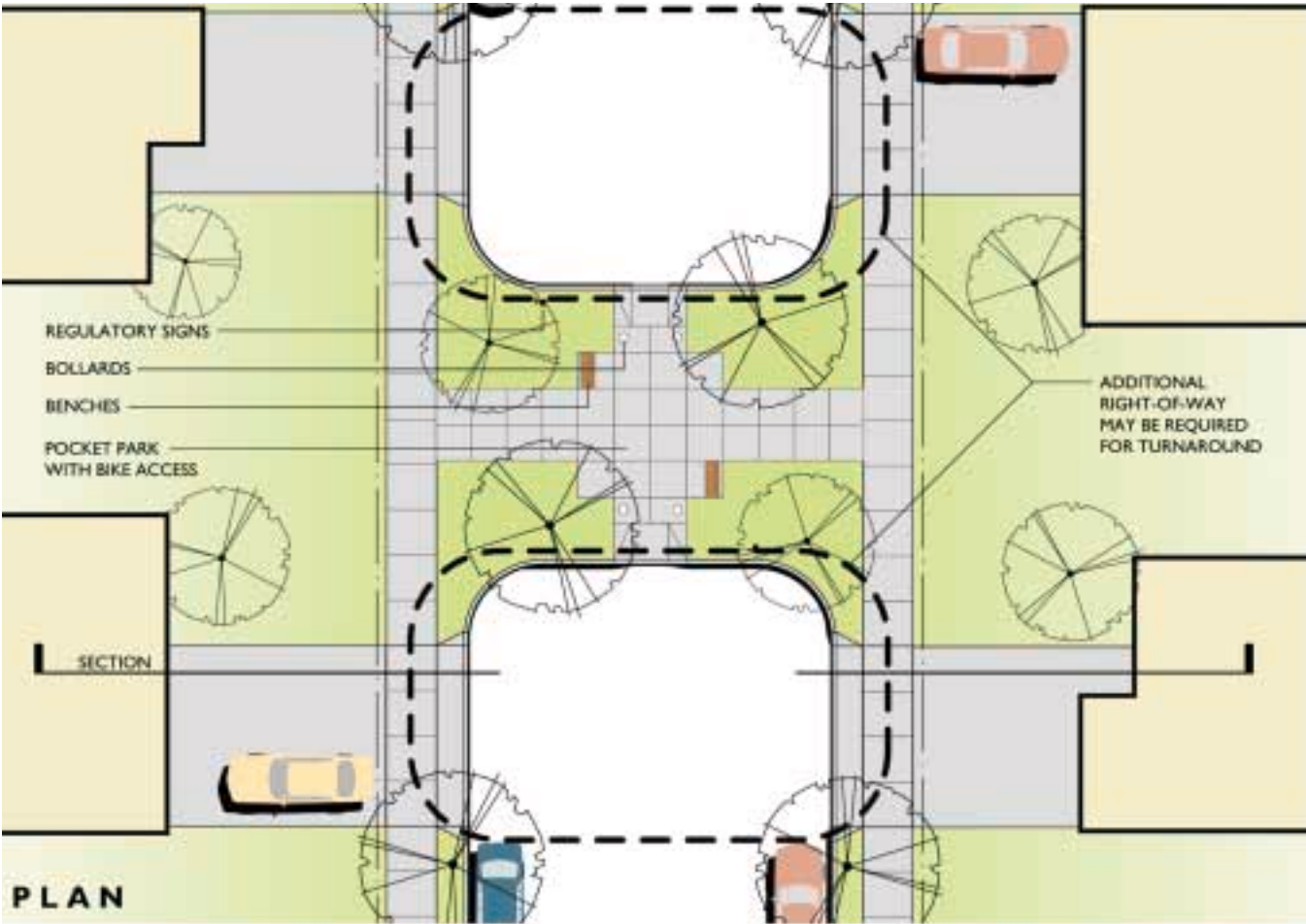
## Positive Aspects

- Restricts all through traffic
- Effective volume and speed control measure
- Improves the aesthetic quality of the street

## Negative Aspects

- May re-direct traffic to other local streets
- May increase trip length for local drivers
- May require partial removal of on-street parking
- Not applicable for designated emergency vehicle response routes
- May result in difficult turn-around conditions





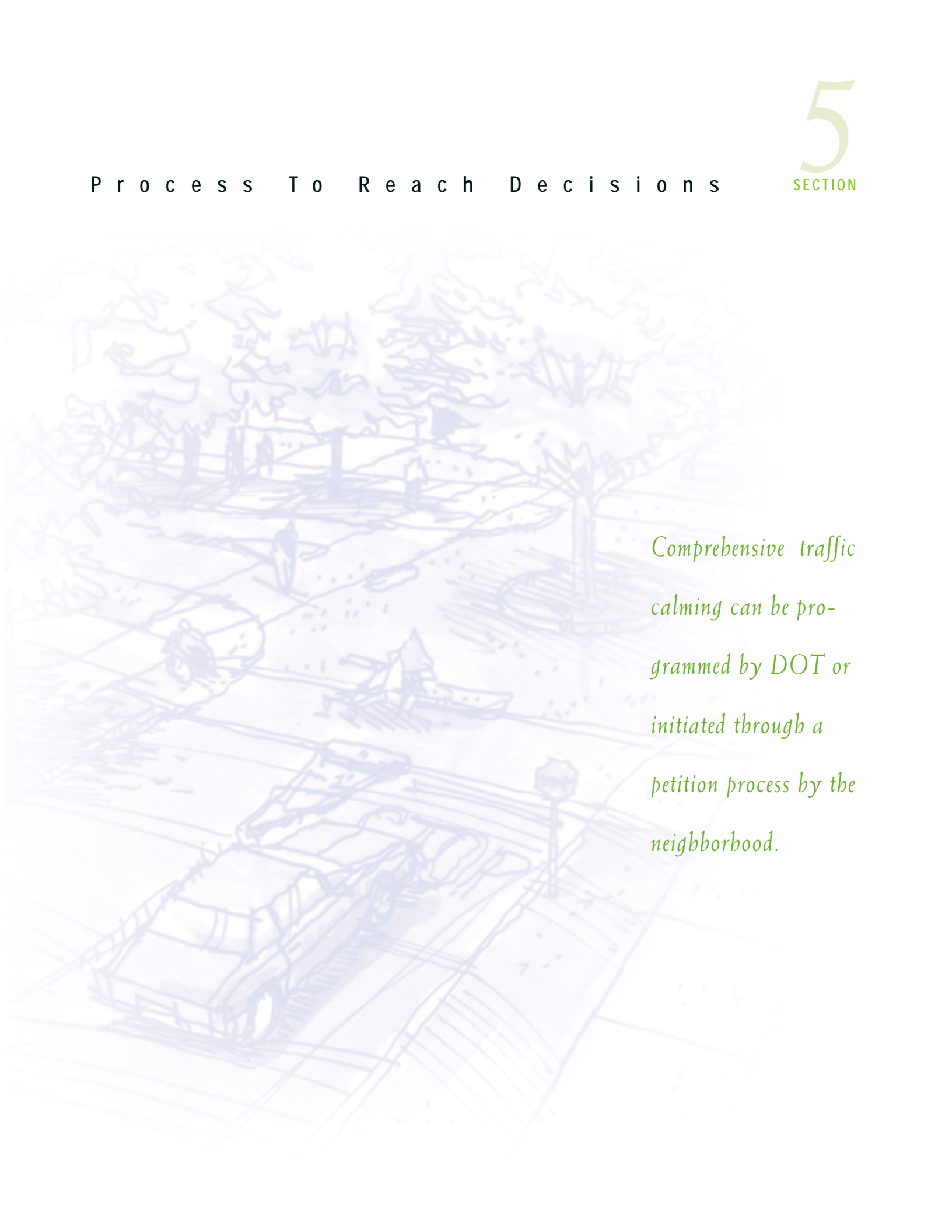




# 5

SECTION

## P r o c e s s   T o   R e a c h   D e c i s i o n s



*Comprehensive traffic calming can be programmed by DOT or initiated through a petition process by the neighborhood.*



Individuals and organizations that are concerned about the negative impacts of traffic may contact DOT at **277-4304** to request a traffic calming analysis. If the concern regards the enforcement of traffic regulations, the requesting party should contact the police department at **277-4341**.

DOT will perform the appropriate study to address the requester's particular concern and situation. Most engineering studies will be completed within two weeks of the receipt of the request. The application of some Basic and Level I devices are subject to independent policies and guidelines, such as those for crosswalks, stop signs, traffic signals, and bike lanes. Some devices (Level II) require city council approval, which will extend the time period before installation.

The traffic calming decision-making process, highlighting the roles played by residents and DOT, is shown in the schematic on the next page.

## BASIC TRAFFIC CALMING SERVICES

For basic traffic calming services that include the installation of traffic control devices (signs and markings), installation will normally be completed within three weeks of the study findings. Traffic enforcement, provided by the police department, generally occurs within two weeks from the date of request. In certain cases where requested by the community and supported by the police department, NASCOP may take approximately five weeks to implement. If education and/or public outreach activities are needed, the requesting party will be informed of the schedule.

## LEVEL I & II TRAFFIC CALMING SERVICES

DOT may program a comprehensive traffic calming analysis whenever an "adverse traffic" condition warrants an analysis. An adverse traffic condition is defined to exist on streets that experience traffic volumes, speeds or crash rates higher than 10 percent above the citywide average for a similar roadway and land use.

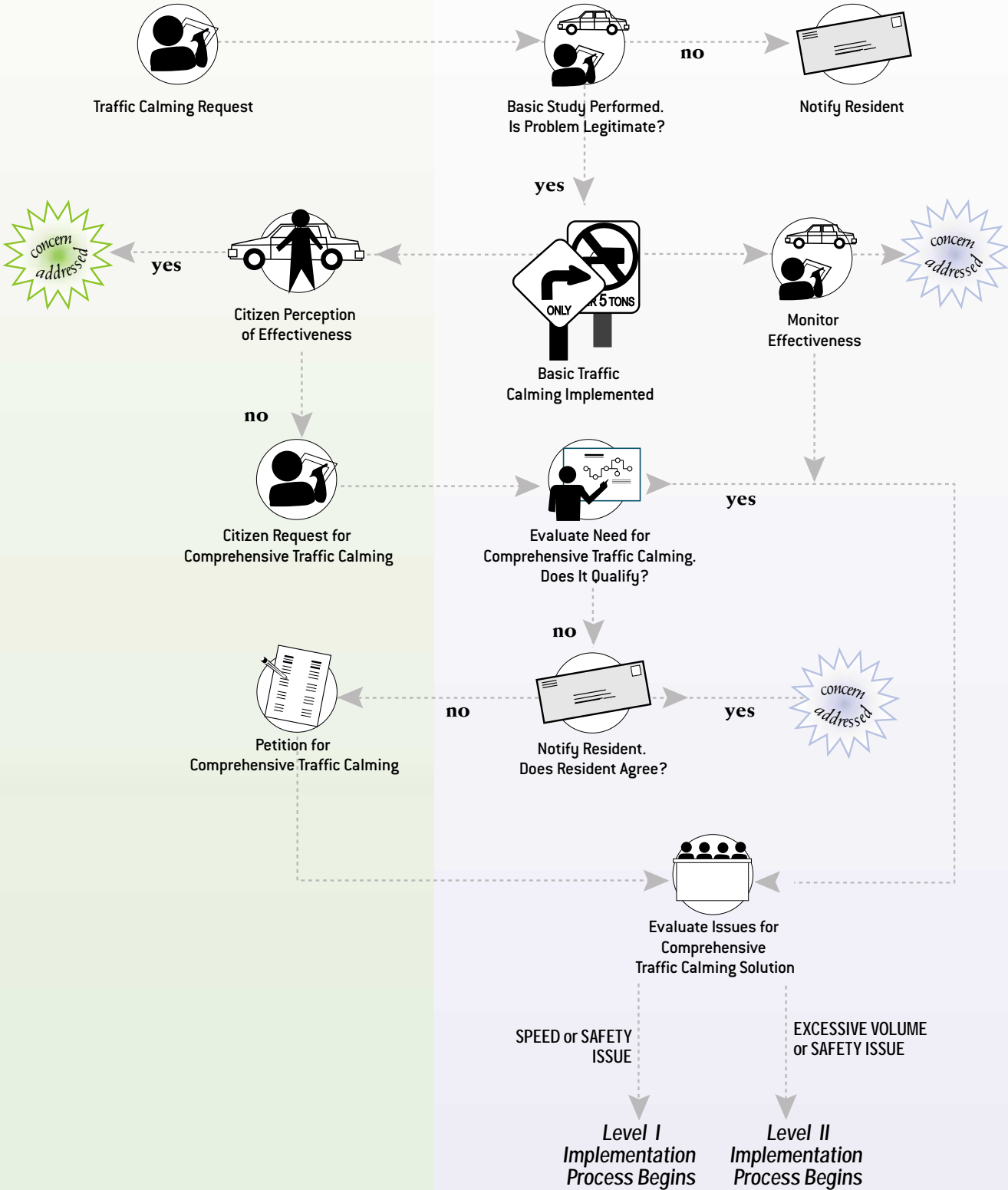
In addition, streets that are deemed to have unusual conditions, like limited visibility of pedestrians, irregular roadway design features, or indications of unreported crashes, will also be considered to have an adverse traffic condition.

*Traffic enforcement  
can be requested  
by calling the  
police department  
at 277-4341.*

# Traffic Calming Decision-Making Process

## RESIDENTS' ROLE

## DEPARTMENT OF TRANSPORTATION ROLE



On streets that do not qualify under the “adverse condition” definitions, a comprehensive traffic calming project may be initiated through a petition process. The petition, which will be supplied by DOT (See Exhibit 7-A, under Section 7.0) must have the support of 50 percent plus one of the households on the section of street(s) that DOT staff determines to be within a project area. Written notices will be sent to any affected business informing them of the proposed action and schedule.

A **Level I** traffic calming project is intended to address pedestrian safety, speeding or other inappropriate driver behavior with devices that go beyond basic traffic calming devices, but does not require City Council approval. DOT will work with interested parties to gain community input on a proposed traffic calming plan. Substantial community support in the project area is needed to finalize a plan. Substantial community support may be demonstrated through community meetings, or other means.

Most Level I traffic calming plans can be permanently installed following finalization of the plan without a trial installation. Some plans, however, may require a trial installation, which will generally occur within four months from the date the plan is finalized. The duration of the trial period will normally be less than three months. During this period city staff will evaluate the plan. The community’s input will be solicited and a final plan will be developed by staff, supported by the community and programmed for construction.


A **Level II** traffic calming project is intended to redirect traffic in order to address excessive traffic volumes and requires City Council approval. Because Level II traffic calming improvements are the most complex, they require more outreach, community input, and review by affected service providers, and therefore take longer to complete. Based upon potential impacts of the proposed project, DOT will determine the affected project area. Level II projects require the active involvement of a Neighborhood Traffic Committee and the support of the affected residents and property owners. The DOT director will solicit volunteers and approve membership on the Traffic Committee. Committee members must own property or reside within the affected project area.

*Substantial community support in the project area is needed to finalize a plan.*

*The petition must have  
"50 percent plus one"  
support of the house-  
holds within the  
project study area  
before a trial  
installation is  
presented to the City  
Council.*

Based on relevant data and community input, the Traffic Committee and DOT staff will develop a proposed traffic calming plan. The Traffic Committee will distribute a city developed petition to all households, businesses and absentee property owners within the project area. The petition must have "50 percent plus one" support of the households within the project study area before a trial installation is presented to the City Council. The duration of the trial will normally be less than six months. During the trial period city staff will evaluate the plan and community input will be solicited. Minor adjustments to the plan may be made based on the input received. Based on all relevant data and community input, DOT, in coordination with the Traffic Committee, will develop a proposed plan that will be presented to the community for its approval. The finalized plan must have the approval of the majority of the affected households (50% + 1). The plan is then presented to the City Council for its consideration. Generally it will take from 8 to 16 months from the initiation of a Level 2 study to the City Council's approval of a permanent plan.

P r o c e s s   T o   I m p l e m e n t  
D e c i s i o n s



*Implementation can take from two weeks to twelve months, depending on the level and complexity of the measure.*





## BASIC TRAFFIC CALMING

Basic traffic calming elements are normally implemented within three weeks of finalizing the plan. Some devices require city council approval, which will extend the time before installation. In some cases capital improvements will require funding, which will further extend the time of completion. Traffic enforcement takes about 2 weeks from the date of request. NASCOP takes 2 months to implement from the time the petition has been approved by the neighborhood.

## LEVEL I AND LEVEL II TRAFFIC CALMING

Once a final plan has been selected, the plan is programmed for design and construction. Depending on complexity of the plan, it is either designed by DOT or contracted out to a consultant to be designed. The traffic calming measure is then constructed either by DOT staff or by a contractor. The entire implementation process for Level I or Level II traffic calming could take anywhere from one to twelve months based upon the complexity of the improvement.

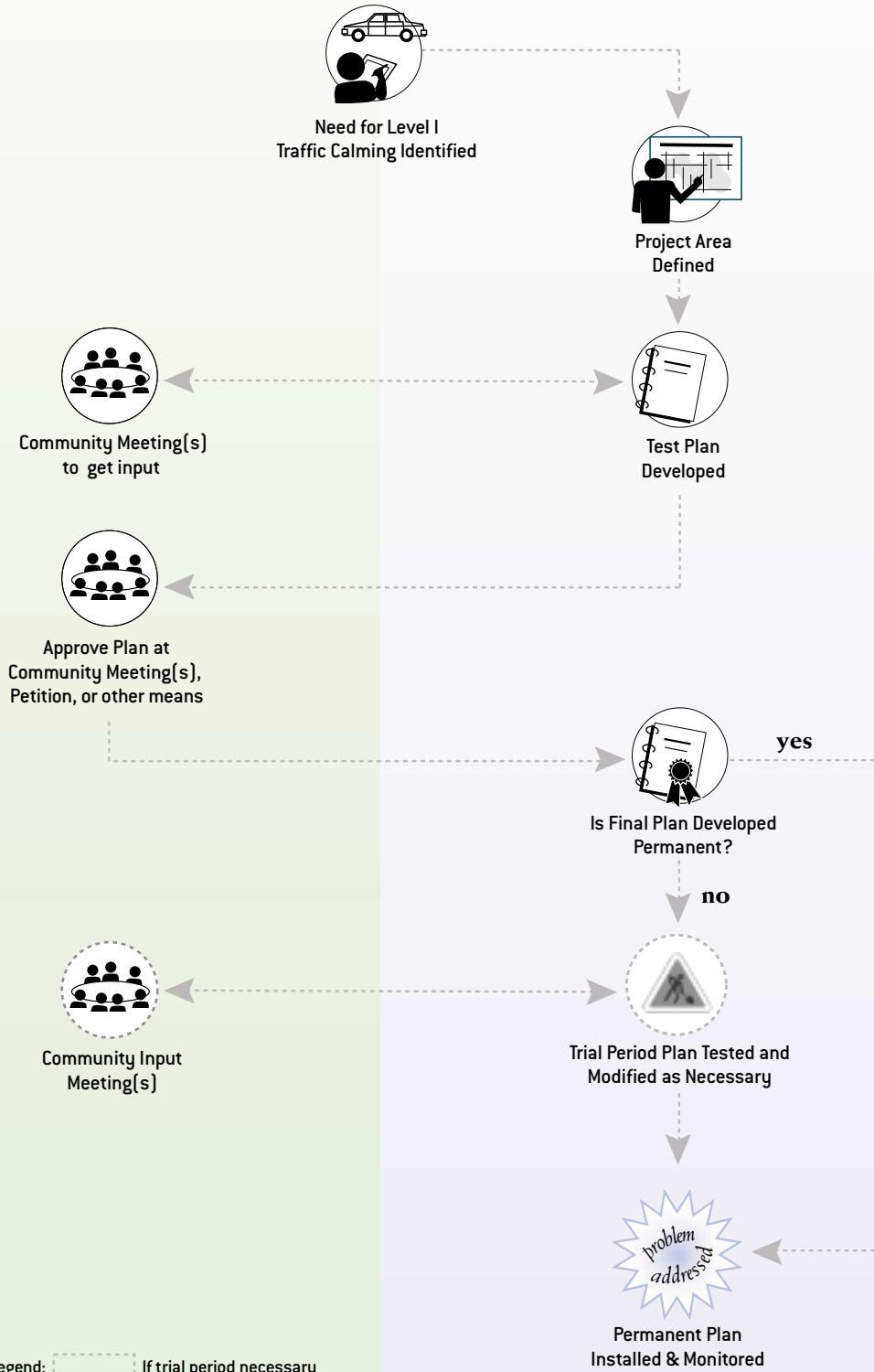
The schematics on the following pages show the implementation processes for Level I (Speed/Safety Controls) and Level II (Volume Control) measures.



# Level I Implementation Process

## RESIDENTS' ROLE

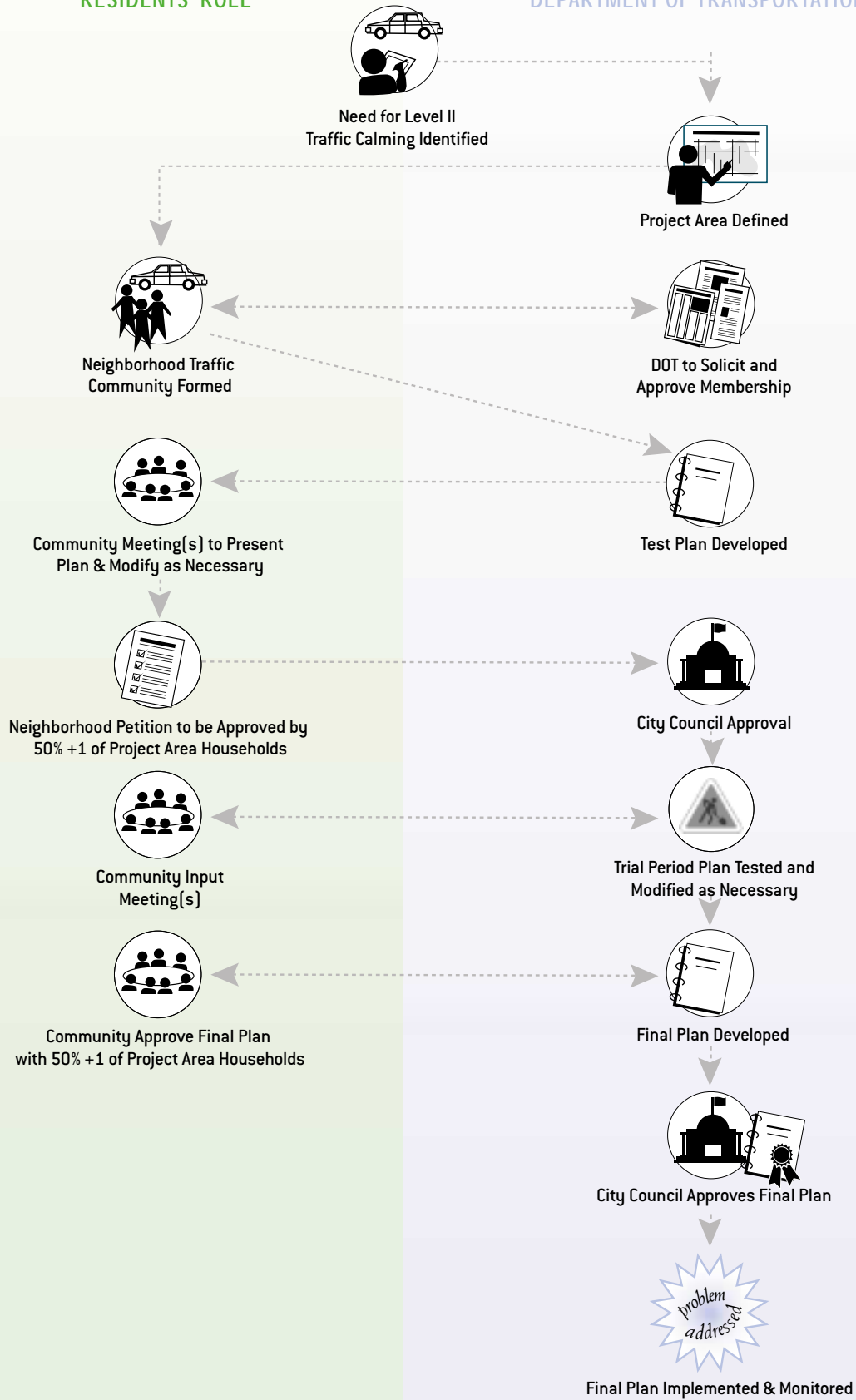
## DEPARTMENT OF TRANSPORTATION ROLE



# Level II Implementation Process


## RESIDENTS' ROLE

## DEPARTMENT OF TRANSPORTATION ROLE





How To Access  
Traffic Calming Services



*The first step towards traffic calming is to contact the City's Department of Transportation and describe the concern or traffic problem.*



The first step towards traffic calming is to contact the City's Department of Transportation (DOT) and describe the concern or traffic problem. The quickest way to contact DOT is to call or e-mail us at

Phone: **408-277-4304** (ask for Traffic Engineering)

E-mail: **traffic.calming@ci.sj.ca.us**

A helpful list of other numbers relating to traffic calming is presented in the traffic calming brochure included as an attachment to this toolkit.

Depending on the concern, the appropriate level of traffic calming for the problem is identified and a program to effectively select an appropriate tool to address the problem is developed.

*Basic traffic calming elements are aimed at day to day regulation, warning, informing, enforcing and educating motorist, pedestrians and cyclists of traffic safety. Basic traffic calming is employed primarily in those areas where speeds, crashes and volumes have been found not to exceed city wide averages.*

**Level I traffic calming for Speed Control is employed when:**

*Basic elements cannot effectively address speeding concerns, and*

*The average speeds and/or crash history in the neighborhood exceed city average by 10%.*

*Level I traffic calming can also be initiated through a neighborhood petition process (See Exhibit 7-A), by checking off "speeding".*

**Level II traffic calming for Traffic Volume Control is employed when:**

*Basic elements are not effective at addressing volume concerns, and*

*The average traffic volumes and/or crash history are at least 10% higher than citywide average for similar street.*

*Level II traffic calming can also be initiated through a neighborhood petition process (See Exhibit 7-A), by checking off "Cut Through Traffic".*

Each tool that has been described in the previous sections has appropriate applications and uses. Each addresses the various objectives of traffic calming more or less effectively than others. Although the application of each device varies by conditions, the following is a general list of traffic calming devices by objective.





## INCREASE SAFETY

- Safety Education (Basic)
- Striping (Basic)
- Stop Signs (Basic)
- Larger Signs (Basic)
- Curb Markings (Basic)
- Warning Signs (Basic)
- High Visibility X-walks (Basic)
- Police Enforcement (Basic)
- Medians (Level I)
- Corner Bulbouts–Minor (Basic)

## REDUCE SPEED

- Police Enforcement (Basic)
- NASCOP Enforcement (Basic)
- Radar Trailer (Basic)
- High Visibility X-Walks (Basic)
- Traffic Circle (Level I)
- Corner Bulbouts–Minor (Basic)
- Medians (Level I)
- Chokers (Level I)
- Road Bumps (Level I)
- Chicanes (Level I)
- Corner Bulbouts - Major (Level I)
- Diagonal Diverters (Level II)

## MITIGATE CUT-THROUGH TRAFFIC

- Signed Turn Restrictions (Basic)
- Gateway Signs/Treatments (Basic)
- Truck Restrictions (Basic)
- Raised X-Walks (Level I)
- Traffic Circles (Level I)
- Diagonal Diverters (Level II)

- Partial Closures (Level II)
- Full Closure (Level II)
- Extended Median (Level II)

## IMPROVE AESTHETICS

- Landscaping (Basic)
- Street Furniture (Basic)
- Corner Bulbouts–Minor (Basic)
- Medians (Level I)
- Traffic Circles (Level I)

Selecting the best tool requires considering proper application and construction and maintenance costs. For example, landscaping generally improves both effectiveness and aesthetics of a device but may be more expensive to install and maintain. Negative impacts of potential devices should be considered. Each device has both positive and negative impacts. These should be carefully considered to ensure that the proposed device will provide a net positive impact on the roadway or system.

A summary of the different elements and their relative effects on achieving the goals of traffic calming is tabulated in Table 7-1.

Once the problem has been identified, the appropriate process for traffic calming as described in Section 5 – Process to Reach Decisions, and Section 6 – Process to Implement Decisions, is followed.

Exhibit 7-A is an example petition that will aid in obtaining neighborhood input for Level I and Level II traffic calming.

## EXCEPTIONS TO IMPLEMENTATION OF TRAFFIC CALMING DEVICES

It is important to remember that traffic calming is primarily oriented to addressing traffic management issues in residential areas and its use on arterial and collector streets is limited. Arterial and major collector streets are intended to carry higher volumes of traffic and accommodate a large



Table 7-1 SUMMARY OF TRAFFIC CALMING ELEMENTS

MEASURE	SPEED REDUCTION	VOLUME REDUCTION	NOISE INCREASE	POLLUTION INCREASE	LOSS OF PARKING	ACCESS RESTRICTION	EMERGENCY IMPACTS	INCREASE MAINTENANCE
<b>BASIC ELEMENTS</b>								
Police Enforcement	Moderate–Major	None	No	No	No	No	None	None
NASCOP Enforcement	Moderate–Major	Possible–Minor	No	No	No	No	No	No
Radar Trailer	Minor	None	No	No	No	No	No	No
Safety Education	Possible–Minor	None	No	No	No	No	No	No
Curb Markings	No	None	No	No	Possible	No	No	Minor
Warning Signs	Possible–Minor	None	No	No	No	No	No	Minor
Striping	Possible–Minor	None	No	No	No	No	No	Minor
Truck Restriction	No	Minor	No	No	No	No	No	No
Signed Turn Restrictions	Possible–Minor	Possible–Minor	No	Possible–Minor	No	Minor–Moderate	No	Minor
High Visibility Signs	Possible–Minor	None	No	No	No	No	None	None
High Visibility X–Walks	Possible–Minor	None	No	No	Possible	No	No	Minor
Stop Signs	Minor	None	Possible–Minor	Minor	No	No	No	Minor
Minor Bulb-outs	Possible–Minor	Possible–Minor	No	No	Possible–Minor	Possible	No	Minor
<b>LEVEL I ELEMENTS</b>								
Road Bumps	Minor–Moderate	Possible–Minor	Minor	Minor	Minor	No	Minor–Moderate	Minor–Moderate
Raised Crosswalks	Minor–Moderate	Possible–Minor	Minor	Minor	Minor	No	Minor–Moderate	Minor–Moderate
Major Bulb-outs	Minor	Possible–Minor	No	No	Minor	No	Possible–Minor	Minor–Moderate
Minor Traffic Circle	Minor–Moderate	Possible–Minor	No	No	Minor	No	Minor	Minor–Moderate
Major Traffic Circle	Minor–Moderate	Possible–Minor	No	No	Moderate	No	Minor	Minor–Moderate
Chokers	Minor–Moderate	Possible–Minor	No	No	Minor–Moderate	No	Minor	Minor–Moderate
Medians	Minor–Moderate	Possible–Minor	No	No	Minor–Moderate	No	Minor	Minor–Moderate
Chicanes	Minor–Moderate	Possible–Minor	No	No	Minor–Moderate	No	Minor	Minor–Moderate
<b>LEVEL II ELEMENTS</b>								
Diverters	Minor–Major	Minor–Major	Minor	Possible–Minor	Minor	Moderate–Major	Minor	Minor–Moderate
Partial Closure	Minor–Major	Minor–Major	Minor	Possible–Minor	Minor	Moderate–Major	Minor	Minor–Moderate
Extended Median	Minor–Major	Minor–Major	Minor	Possible–Minor	Minor	Moderate–Major	Moderate–Major	Moderate
Full Closure	Minor–Major	Minor–Major	Minor	Possible–Minor	Minor	Moderate–Major	Moderate–Major	Moderate

vehicle mix. Therefore, it is important to maintain the capacity of these roads for their operation and the operation of the street system. Where pedestrian and cyclist traffic is to be accommodated on Arterial and Collector streets, some traffic calming measures can be considered.

### IMPACTS TO LOCAL STREETS

One of the most significant concerns with using traffic calming tools on arterial or collector streets is the potential impact on local streets. Aggressive traffic calming devices on arterial streets may have the potential of diverting traffic off the collector and arterial system onto local streets. Local streets should be protected from arterial level traffic and must be considered in light of changes to the adjacent arterial and collector system.

### IMPACTS TO EMERGENCY RESPONSE

In most cases, the arterial and collector street system serves as the major response routes for emergency response vehicles. Concern over the use of traffic calming devices interfering with emergency response or increased response times is generally higher on arterial and collector streets.

### WE HAVE IMPLEMENTED TRAFFIC CALMING—WHAT NEXT?

Once a traffic calming project has been implemented in the neighborhood, the impacts and effectiveness of the device are evaluated to determine if the stated objectives of the plan are being met. These results help determine the effectiveness of the implemented plan and provide information for selecting various devices in the future. A resident satisfaction survey will be conducted to provide feedback on the effectiveness of the measures as perceived by residents.

*With a successful completion of the process, the Community and DOT are on their way to a safer, more livable and 'traffic calmed' city!!!*

*By working together,  
residents and DOT  
can create a safer  
and more livable  
community.*

# Neighborhood Request for Comprehensive (Level I/Level II) Traffic Calming Study

We, the residents of \_\_\_\_\_, would like the Department of Transportation (DOT) to initiate a Comprehensive Traffic Calming Study in our neighborhood to address the following concern(s):

- Speeding
- Cut-Through Traffic
- Commercial Vehicle Restriction
- Pedestrian Safety
- Parking Issues
- Other

We understand that the Comprehensive Traffic Calming Study involves active participation of our community. The decision making process may require us to set and attend neighborhood meetings and conduct further petition campaigns.

*Please sign the attached form and mail it back to:*

**City of San Jose  
Department of Transportation  
Attn: Traffic Operations  
4 North Second Street, Suite 1000  
San Jose, CA 95113**

*Please note: One signature per household only. Make additional copies of Page 2, as necessary.*

NEIGHBORHOOD REQUEST FOR COMPREHENSIVE TRAFFIC CALMING STUDY

Neighborhood/Street: \_\_\_\_\_ Page \_\_\_ of \_\_\_

No.	Name	Address	Phone	Signature <i>(one per household)</i>
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				

## a c k n o w l e d g e m e n t s

The City of San Jose wishes to thank the following for their assistance in the development of the *Traffic Calming Toolkit*:

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Cindy Chavez, *Council Member, CD #3*

Chuck Reed, *Council Member, CD #4*

Nora Campos, *Council Member, CD #5*

Ken Yeager, *Council Member, CD #6*

George Shirakawa, *Vice Mayor, Council Member, CD #7*

David D. Cortese, *Council Member, CD #8*

John Diquisto, *Council Member, CD #9*

Pat Dando, *Council Member, CD #10*

### City of San Jose Staff Members

Del Borgsdorf, *City Manager*

Jim Holgersson, *Deputy City Manager*

Wayne K. Tanda, *Director, Dept. of Transportation*

Jim Helmer, *Deputy Director, Dept. of Transportation*

Henry R. Servin, *Senior Traffic Engineer*

Bhavani Yerrapotu, *Associate Engineer*

And all the other Traffic Calming Team Members

### Consultant

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Larry Wight, *Project Director*

Paul Tuttle, *Illustrations*

Jan Eiesland, *Illustrations/Project Associate*

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### References

City of Santa Clara (CA) Neighborhood Traffic Calming Program

City of Concord (CA) Neighborhood Traffic Calming Program

The Institute of Transportation Engineers and the Federal Highway Administration ("Traffic Calming, State of Practice," 1999)

Fehr & Peers Associates, Inc. ("Your Guide to Traffic Calming Measures," 1999)

Pat Noyes & Associates ("Traffic Calming Primer," 1998)