

# Targeted Police Enforcement



## DESCRIPTION:

Targeted police enforcement is the deployment of officers to specific streets or neighborhoods for a period of time to conduct radar speed enforcement and enforcement of traffic laws. The presence and actions of police has the immediate effect of reducing speeding, aggressive driving, stop sign violations, turn-restriction violations, and other traffic law violations but is likely not long term unless a sustained effort occurs.

## APPLICATION:

On neighborhood streets where speeding, other traffic law violations, and/or related crashes have been documented, the City of Albuquerque, Traffic Engineering Division may respond by submitting a request to the Albuquerque Police Department Metro Traffic Division for focused enforcement at the specified

locations. Because APD resources are limited, the duration of the targeted enforcement may be for a limited time. Targeted enforcement may also be requested in conjunction with new neighborhood traffic-management strategies to help drivers become aware of new restrictions or measures, such as turn prohibitions. The level of deployment can vary from one motor unit officer for a low-volume street to a team of patrol units at higher-volume locations.

Repeated short-term deployments over a longer term may be more cost-effective and results in a greater effect than one longer deployment (for example, eight 1 hour periods scattered over a few weeks rather than one 8 hour day). If regular drivers on a street see police enforcement at different times at the same location, they may be conditioned to anticipate enforcement in the future. If a radar speed trailer is deployed placing a police unit beyond a radar speed trailer, this may cause motorists to associate enforcement actions with the trailer, resulting in greater effectiveness of the radar speed trailer at a location.

## Advantages

- Highly effective in reducing speeding and other traffic law violations including stop sign running and illegal turns.
- Can be deployed on short notice and for the specific hours for which problems have been identified.
- Results are immediate.
- Can reduce crashes related to speeding and other violations.
- Low cost if used temporarily.
- Does not affect emergency vehicles.
- Targets violators without affecting normal traffic.
- Where neighborhood traffic-management measures have been recently deployed, the officers can issue warnings or citations at their discretion. This can promote public education regarding the new devices or restrictions.

## Disadvantages

- Effectiveness may be temporary, especially if the enforcement is deployed only once.
- Enforcement is limited to APD availability.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Radar Speed Trailer

## DESCRIPTION:

Radar speed trailers are mobile units placed on the side of the road that use radar to sense an oncoming vehicle's speed and display that speed back to the approaching driver. This is intended to give the driver an external visual indication of their speed, which if excessive, may remind them to slow down. The radar speed trailers have no cameras and do not take any photos of offending drivers for enforcement purposes.

## APPLICATION:

The Albuquerque Police Department (APD) maintains a fleet of radar speed trailers, distributed among the several area commands. The Metro Traffic Division also maintains radar speed trailers.

On neighborhood streets where speeding has been documented, the City of Albuquerque, Traffic Engineering Division may respond by submitting a request to APD for deployment of a radar speed trailer(s) at the specified locations. Because these APD resources are limited, the number and duration of the trailer deployment may be limited.

Radar speed trailers must be deployed on the side of the road where they will be safe from traffic, not block sidewalks or bicycle lanes, and not obstruct sight distance at intersections and driveways. The radar speed trailers must also be positioned so that they are not blocked by parked vehicles.



## Advantages

- Have been shown to be effective in prompting some speeding drivers to slow down.
- Can be deployed on short notice and easily moved.
- Results are immediate.
- Deployment is low cost.
- Does not slow emergency vehicles.
- Alerts violators without affecting normal traffic.

## Disadvantages

- Effectiveness may be temporary once removed.
- Limited to APD availability.
- Requires enough space to set up, and may reduce available parking.
- Units are subject to vandalism.
- Some drivers may try to register a high speed.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Permanent Radar Speed Sign

## DESCRIPTION:

Permanent radar speed signs, also called driver feedback signs, are post-mounted signs installed on the side of the road that use radar to sense an oncoming vehicle's speed and display that speed back to the approaching driver. They are usually installed with a regulatory speed limit sign on the same post. This is intended to give the driver an external visual indication of their speed, which if excessive, may remind them to slow down. The radar speed signs have no cameras and do not take any photos of offending drivers for enforcement purposes.

## APPLICATION:

On neighborhood local or collector streets where a problem of speeding traffic has been documented, radar speed signs may be installed to help reduce traffic speeds. A location must be selected where there is enough room within the City right-of-way to install the radar speed sign so that it is visible for enough distance to be effective.

City of Albuquerque standards are used for the construction of the concrete foundation and pole. The radar speed signs are available from a number of manufacturers. The signs can be hard-wired for electrical power where service is available, or they may include a photovoltaic panel for solar electric power. Some radar speed signs are available with the ability to record traffic-speed data for later download and analysis. Drivers may not understand the difference between the two units, and assume that the radar speed trailers may issue them an automated citation. This misunderstanding may lead to increased effectiveness of the radar speed trailers.



## Advantages

- The visual reminder of drivers' speeds has been shown to be effective in prompting some speeding drivers to slow down.
- Radar speed signs do not slow emergency vehicles.
- Radar speed signs alert violators without affecting normal traffic.
- Can be implemented with metered electric service or solar powered.

## Disadvantages

- Effectiveness may reduce over time as regular drivers become desensitized.
- Some drivers may ignore, knowing that the radar speed signs do not include automated enforcement.
- Some drivers may try to register a high speed.
- Units and solar panels are subject to vandalism and theft.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$

Very Good Good Fair

Poor Not Applicable



## Quick Glance





# Centerline / Edge Line / Lane Line Striping



## DESCRIPTION:

While most local neighborhood streets exist without any traffic striping, centerline, edge line, and lane line striping can be used to create designated travel lanes, bicycle lanes, parking lanes, and/or medians. As a neighborhood traffic calming measure, striping is positioned to reduce travel lane widths, making drivers feel more restricted and thereby inducing them to lower their speeds.

## APPLICATION:

On neighborhood local or collector streets where a problem of speeding traffic has been documented, traffic stripes may be painted where there was previously none, or existing stripes may be removed and new stripes painted in the new desired configuration. This installation is most suited to long, straight, and wide streets where drivers feel unconstrained and speeds are high. On curvilinear streets, striping can reinforce lane designations, causing drivers to slow in order to maintain their travel within their lane.

Centerlines, edge lines, and lane line markings should be installed according to the guidance provided in Chapter 3: Markings of the MUTCD.

The City standard lane width is 12 feet wide. Travel lanes may be reduced to 11 feet to provide more of the street for bicycles and/or parking. Reduction of the travel lanes to the minimum 10 foot width may be considered in special cases.

Caution should be used in applying centerline striping alone, as it may give drivers a sense of ownership of their half of the road and thereby increase speeding. A better treatment may be to provide edge lines with no centerline, indicating to drivers that they must share the two-way space with all traffic.

## Advantages

- Striping is relatively easy and low-cost to install and modify.
- Traffic striping does not slow emergency vehicles.

## Disadvantages

- Regular maintenance is required. Stripes must be repainted approximately every 4 years.
- Removal of pre-existing traffic stripes or of recent striping in order to change the configuration may leave unsightly scars on the pavement surface.
- Effectiveness may be low.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance

SPEED  
LIMIT  
**25**



# Speed Reduction Markings



## DESCRIPTION:

Speed reduction markings are a series of various shapes of transverse pavement markings set at progressively reduced spacing, intended to enhance the driver's perception of speed. Essentially, gradually decreasing distance between markings gives the driver the illusion of traveling faster than they actually are and thus ideally causing them to slow down. Such markings are most appropriate for unexpected curves and may be short transverse markings placed along each edge of the lane, as described in MUTCD Section 3B.22. Transverse markings are placed within the lane, as described in MUTCD Section 3B.26 as advance speed hump markings. Both these types of markings are also called Optical Speed Bars. Some jurisdictions have used chevron-shaped in-lane markings, otherwise known as Converging Chevron Markings.

## Advantages

- Markings are relatively easy and low cost to install.
- Traffic striping does not slow emergency vehicles.

## Disadvantages

- Long-term effectiveness is undocumented.
- Regular maintenance is required. Markings must be reapplied approximately every 6 years.

## APPLICATION:

On neighborhood local or collector streets where a problem of speeding traffic has been documented, speed reduction markings may be applied. Because optical speed bars and converging chevron markings are placed in the tire paths of vehicles, they are subject to increased wear. For this reason, thermoplastic marking material is usually used instead of paint.

Application of these types of speed reduction markings should conform to the standards and guidance in the MUTCD.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance

SPEED  
LIMIT  
**25**



# Speed Limit Signage

## DESCRIPTION:

Regulatory Speed Limit signs (MUTCD R2 1) are installed along streets to notify and remind drivers of the legal speed limit.

## APPLICATION:

The standard speed limit on residential streets per the City of Albuquerque Code of Ordinances is 25 MPH:

Because by default, the 25 MPH speed limit applies on all residential streets, the City does not post regulatory Speed Limit signs on every such street. However, where a problem of speeding traffic has been documented, signs may be installed to remind drivers to check their speed.

If used, the City will install Speed Limit signage in conformance with the City of Albuquerque Code of Ordinances and the MUTCD. Speed Limit signs of nonconforming designs or colors, or nonconforming speed values (other than multiples of 5 MPH) will not be installed.

Requests for posting speeds lower than the standard residential speed limit of 25 MPH will be subject to the requirement in the City of Albuquerque Code of Ordinances that an engineering and traffic study be conducted.



## Advantages

- Speed Limit signs provide a clear indication of the speed limit and undisputable basis for enforcement.
- Speed Limit signs are relatively easy and low-cost to install.
- Speed Limit signs do not slow emergency vehicles.

## Disadvantages

- Signs alone do not guarantee responsible driving behavior.
- Overuse of unnecessary signs creates visual clutter that detracts from the conspicuity of other important signs and leads to loss of effectiveness.
- Posted speed limits that are below 25 MPH, below the 85th percentile speed for a roadway, or at an unrealistically low speed will not be respected by most drivers, and will breed disrespect for speed limits in general.
- Signs require regular maintenance. Signs must be replaced approximately every 8 years.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Speed Limit Pavement Markings



## DESCRIPTION:

Speed limit pavement markings are numerals applied in the traffic lane to remind drivers of the regulatory speed limit. In addition, a "SLOW" word legend may be applied with the speed legend.

## APPLICATION:

Where a problem of speeding traffic has been documented, speed limit pavement markings may be installed to remind drivers to check their speed.

On residential streets, the standard speed limit is 25 MPH (see discussion on the sheet for Speed Limit Signs). On these streets, speed limit pavement markings may be used alone without posting a regulatory speed limit sign.

On streets where the speed limit is greater or less than 25 MPH, speed limit pavement markings must be placed in conjunction with regulatory signs, as the pavement markings alone are not enforceable under state traffic laws or City of Albuquerque ordinances.

## Advantages

- Provides a clear indication of the speed limit to drivers who are watching the road.
- Do not become obscured by street-side vegetation growth, parked trucks, or other obstructions.
- Relatively easy and low cost to install.
- Do not slow emergency vehicles.

## Disadvantages

- Used alone do not guarantee responsible driving behavior.
- Used alone have not been shown to significantly reduce traffic speeds.
- Require regular maintenance. Markings must be reapplied approximately every 6 years.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Raised Pavement Markers



## DESCRIPTION:

Raised pavement markers (RPMs), also known as “Botts’ Dots,” are 4 inch diameter by 3/4 inch high nonreflective round ceramic or plastic markers that are epoxied to the pavement to supplement or substitute for painted markings.

Retroreflective raised pavement markers (RRPMs) are typically 4 inch-square raised markers that have one- or two-way retroreflective faces that make them visible to traffic at night.

As a traffic-calming device, RPMs can be used to delineate a centerline or lane line, making drivers feel more restricted and thereby inducing them to lower their speeds. Unlike painted stripes alone, RPMs provide tactile feedback to drivers as their tires roll over them, alerting drivers that they are crossing out of their lane.

## APPLICATION:

On neighborhood local or collector streets where a problem of speeding traffic has been documented, RPMs may be installed along a centerline either alone or with a painted line (see the toolbox application for centerline striping). This is most suited to curvilinear streets, where RPMs can reinforce lane designations, causing drivers to slow to maintain their travel within their lane.

RPMs may also be applied to supplement or substitute for painted hatching of pavement areas not open to normal travel, such as where the roadway has been narrowed for traffic calming, or on approach to a bulbout, median, or island.

RPMs and RRPMs should always match the color (yellow or white) of the pavement markings for which they supplement or substitute. The MUTCD guidelines recommend that where RPMs substitute for painted markings, that RRPMs be included at specific spacing and locations for nighttime visibility.

RPMs should not be positioned along bicycle lanes or edge lines on shoulders used by bicycles.

## Advantages

- RPMs/RRPMs are relatively easy and low cost to install.
- RPMs/RRPMs do not slow emergency vehicles.

## Disadvantages

- Regular maintenance is required. RPMs must be replaced as they become dislodged over time.
- RPMs should not be used on any streets, such as in the Northeast foothills, where the roads may be plowed after snowfall.
- Residents may complain of noise from vehicles driving over RPMs.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance







# High Visibility Crosswalks



## DESCRIPTION:

High visibility crosswalks utilize striping patterns, advance markings, raised pavement markers, enhanced signage, activated flashing beacons, and/or activated in-pavement lights to improve the visibility of the crossing. Various special pavement treatments may also be used to create a visual and tactile demarcation of the crosswalk, including colored pavement, pavers, patterned concrete, or applied surfacings.

## APPLICATION:

At locations where safe pedestrian crossings are a concern due to poor visibility, speeding traffic, or vulnerable user types (school children, elderly, vision or hearing impaired pedestrians), the various treatments

listed above may be employed to address the specific deficiencies identified.

The standard crosswalk marking style in the City of Albuquerque is the continental type (a series of 24" x 10' bars), which is highly visible. Enhancements are best applied only where there is a high volume of pedestrian usage.

## Advantages

- Increases driver awareness of the crossing.
- Attracts pedestrians to a single crossing location.
- Pavement treatments can be aesthetically pleasing.

## Disadvantages

- May give pedestrians a falsely high sense of safety.
- More complex installations (lights, pavement treatments) can be costly.
- May result in increased maintenance costs for pavement treatments, beacon systems, and in-pavement lights.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Parking Strategies



## DESCRIPTION:

In many city neighborhoods, parking issues are just as important to the residents as traffic speeding and volume issues. While some parking treatments can themselves serve traffic calming purposes, consideration of parking issues should be made when applying any of the traffic calming tools outlined in this program. Several of the non-physical, narrowing, and horizontal measures may reduce or eliminate available parking, while others may offer opportunities to create additional parking.

## APPLICATION:

As part of any assessment for implementing traffic calming, the parking issues in the neighborhood should be identified at the outset. Is the supply of parking adequate for the demand? Are there parking intrusion issues from nearby land uses? The City of Albuquerque has implemented residential permit parking on some streets around Downtown, the State Fairgrounds, and UNM to address intrusion issues. While parallel parking is the default on most neighborhood streets, streets may be converted to angled or perpendicular parking to increase available spaces.

## Advantages

- Reconfiguring the use of available street width can increase parking where needed.
- No Parking zones near intersections and driveways can improve safety for motorists, pedestrians and cyclists.
- The presence of perpendicular or angled parked vehicles reduces traffic speeds.

## Disadvantages

- Angled and parallel parking preclude bike lanes.
- Frequent driveways limit parking treatment options.
- Angled and parallel parking increase backing-out collision potential.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Education and Community Involvement



## DESCRIPTION:

Educational traffic calming measures include working with neighborhoods to make residents aware of speed limits, traffic laws, and safe driving habits, and enlisting their support in practicing and promoting safe and lawful driving habits. Individual program components may include presentations at neighborhood meetings, local workshops, school programs, yard signs, neighborhood flyers or letters, and individual pledge letters to obey speed limits and traffic laws.

## APPLICATION:

Public education is an important element in any traffic calming program. While most neighborhood traffic problems are perceived to be caused by “outsiders,” the majority of traffic—and problem traffic—in a neighborhood is usually fellow neighbor drivers. Public education programs seek to make all drivers more aware of their own driving behavior and the impact it has on others. As such, it is recommended that neighborhoods applying for traffic calming treatments first attend a traffic calming educational forum with the City.

Staff from the City of Albuquerque, Traffic Engineering Division and the Albuquerque Police Department are available to address neighborhood association meetings or other groups regarding safe driving and the traffic calming program. The Albuquerque Police Department offers “Slow Down Albuquerque” campaign yard signs free to residents who make a personal commitment to not speed on Albuquerque streets. Details are available at <http://www.cabq.gov/police/programs/slow-down-albuquerque>.

## Advantages

- Heightens driver awareness of traffic laws and their own driving behaviors.
- Allows residents to meet, share their views, and move toward consensus on the issues.
- Communicates the identified issues to City staff.

## Disadvantages

- May require considerable City staff time.
- Meetings need to be actively led to maintain focus.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Signed Turn Restrictions



## DESCRIPTION:

Regulatory movement prohibition signs (conforming to R3 1, R3 2, R3 3, R3 4, R3 18, or R3 27 of the MUTCD) are placed at intersections to prevent turning movements associated with cut-through traffic patterns.

## APPLICATION:

On neighborhood streets where a problem of cut-through traffic has been documented, movements at intersections feeding the cut-through route may be restricted by signage so that traffic is routed to a more appropriate collector or arterial. If the problem is documented to occur mainly during a certain period, such as morning or afternoon school drop-off times, the movement prohibition can be posted to apply only during those hours.

Turn prohibitions are most effective when placed on an arterial or collector on the periphery of a neighborhood to prevent cut-through traffic from entering the neighborhood. Wherever posted, an assessment should be made of the resulting downstream route as well as alternate cut-through routes to assure that the problem is not just pushed to another location or neighborhood.

Prohibitions are most effective when limited to posted hours. For full-time movement prohibitions, physical measures are more effective and appropriate.

In other cities, violation rates have been shown to be about 50 percent in the absence of enforcement. The violation rate can be lowered 20 percent with active enforcement.

## Advantages

- Effective in addressing time-of-day cut-through traffic problems.
- Movement prohibition signs are relatively easy and low cost to install.
- Movement prohibition signs do not slow or divert emergency vehicles.

## Disadvantages

- Compliance is low for signs alone without enforcement.
- May increase trip length for some drivers.
- May adversely affect downstream or adjacent traffic patterns.
- Signs require regular maintenance. Signs must be replaced approximately every 8 years.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Neckdowns and Bulbouts



## DESCRIPTION:

Neckdowns are raised curb extensions at intersections that reduce the roadway width from curb to curb. Neckdowns increase pedestrian comfort and safety at intersections by shortening crossing distances for pedestrians and drawing attention to pedestrians via raised peninsulas. They also tighten the curb radii at the corners, reducing the speeds of turning vehicles. The magnitude of speed reduction is dependent on the spacing of neckdowns between points that require drivers to slow.

## APPLICATION:

Neckdowns implemented midblock as a vehicle speed control measure and pedestrian enhancement are most effective when constructed with permanent raised curbs but can be implemented using striping. Bulbouts occur at the corners of intersections using raised curbs to extend the sidewalks and narrow the travel lanes. This slows vehicles by providing visual cues of pedestrian activity as well as by reducing the curb radii. Both the crossing distance and the time pedestrians are exposed to traffic are reduced.

## Advantages

- Decreases vehicle speeds
- Reduces pedestrian crossing distance
- Clearly delineates areas of pedestrian activity

## Disadvantages

- May reduce on-street parking
- Complicates drainage design
- Reduces bicycle lane and/or side of road area used by bicyclists
- May slow right-turning emergency response vehicles

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Lane Narrowing with Center Island/ Pedestrian Refuge



## DESCRIPTION:

The construction of a center island on a wider street can serve to reduce the width of the travel lanes and to provide a pedestrian refuge area. This device has similar effects on speed and pedestrians as the neckdown by providing visual cues to an area of pedestrian activity, reducing vehicle speeds, and shortening the pedestrian crossing distance

## APPLICATION:

A center island can be constructed strictly as a speed reducing measure at a midblock location without the pedestrian refuge. Where pedestrians are present the median island can be designed to serve as a pedestrian refuge. When combined with high visibility signage a center island can encourage pedestrian crossing at a desired location. Another variation of this device is as a neighborhood gateway. At an intersection or entryway, the center island provides an area for neighborhood signage and landscaping.

## Advantages

- Decreases vehicle speeds
- Reduces pedestrian crossing distance
- Clearly delineates areas of pedestrian activity
- Opportunity for landscaping, visual enhancement, and neighborhood

## Disadvantages

- May reduce on-street parking
- Longer islands may impact driveway access and result in u-turns
- May impact snow removal operations

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Two-lane Choker



## DESCRIPTION:

For a two-lane choker, curb extensions are constructed midblock to narrow the travel way but still provide for one lane in each direction. The resultant narrower street cross section decreases vehicle speeds and can reduce cut through traffic.

## APPLICATION:

Similar to neckdowns, two-lane chokers are implemented midblock as a vehicle speed control measure. They are most effective when constructed with permanent raised curbs but can be implemented using signing, striping, and delineators. The raised curb extensions, approach signing, and narrower travel lanes slow vehicles and discourage cut through travel by providing visual cues of a slower speed environment.

## Advantages

- Decreases vehicle speeds
- Can reduce cut through traffic

## Disadvantages

- May reduce on-street parking
- Complicates drainage design
- May require additional maintenance
- Reduces bicycle lane and/or side of road area used by bicyclists

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable

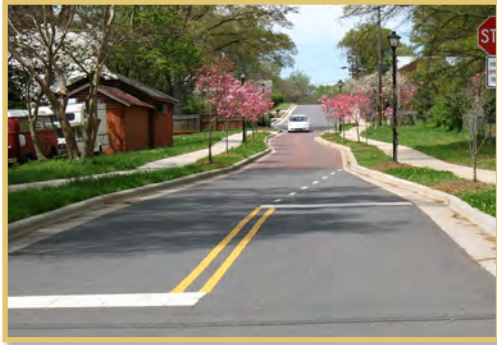


## Quick Glance





# One-lane Choker



pedbikesafe.org

## DESCRIPTION:

For a one-lane choker, curb extensions are constructed midblock to narrow the travel way to a single lane width. This configuration forces vehicles to slow down, yield, and negotiate oncoming traffic. While two-way access is maintained approaching the choker only a single lane is provided at the device. This results in a much narrower street cross section that decreases vehicle speeds and reduces cut through traffic.

## APPLICATION:

One-lane chokers are implemented midblock as a vehicle speed control measure on lower speed and lower volume local streets. They are constructed with permanent raised curbs but can be implemented using signing, striping, and delineators with reduced effectiveness. The raised curb

extensions, approach signing, and narrow single lane travel way slows vehicles and discourages cut through travel by providing visual cues of a slower speed environment and forcing vehicles to negotiate oncoming traffic.

## Advantages

- Decreases vehicle speeds
- Reduces cut through traffic

## Disadvantages

- Perceived to be less safe because oncoming vehicles are required to share a single travel lane
- May reduce on-street parking
- Complicates drainage design
- May require additional maintenance
- Reduces bicycle lane and/or side of road area used by bicyclists

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



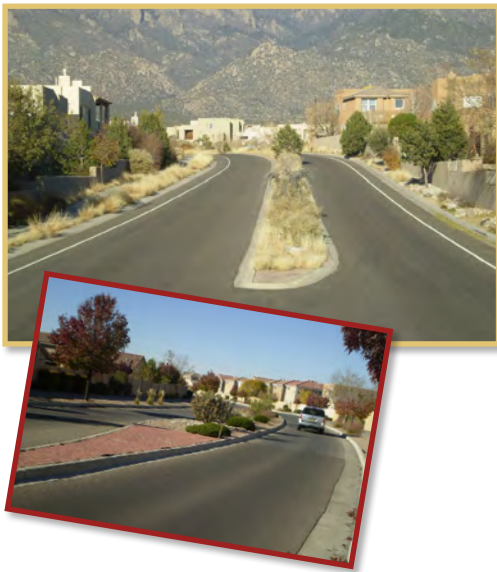
## Quick Glance







# Roadside and Median Landscaping



## DESCRIPTION:

Landscaping involves adding plants, trees, or other vegetation to the roadside and/or medians. Landscaping is used to break long vistas of pavement in order to narrow the appearance of a roadway and add mass to the appearance of median devices. Landscaping also improves the aesthetics of a neighborhood street.

## APPLICATION:

Landscaping is best suited for wide, straight neighborhood roadways with unobstructed views and a history of speeding. Landscaping may be used in conjunction with other traffic calming devices, such as medians and detached sidewalks, or it may be added to the roadside as an isolated source for reducing speed.

## Advantages

- May reduce vehicle speed
- May improve pedestrian safety
- Enhances neighborhood appearance
- Provides an opportunity to partner with citizens committed to maintaining landscaping

## Disadvantages

- Requires regular maintenance
- May be difficult to establish and maintain certain plantings
- Increases water usage in a semi-arid climate

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Road Narrowing/ Detached Sidewalks



## DESCRIPTION:

A detached sidewalk is a sidewalk that is separated from a curb by grass, trees, landscaping, street lights, or other streetscape elements. Narrowing the roadway in order to detach sidewalks physically narrows the travel lanes. The use of vertical elements in the streetscape further reduces the optical width of a roadway, and discourages speeding.

## APPLICATION:

Detached sidewalks are a useful application for residential streets with wide travel ways, a history of high speeds, and pedestrian traffic.

## Advantages

- Increases pedestrian safety and reduces the width of pedestrian crossings
- Enhances streetscape
- Reduces vehicle speeds

## Disadvantages

- Landscaping maintenance may be required
- Detached sidewalks are not as effective as physical measures in slowing speeds
- Expensive

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Traffic Circle



## DESCRIPTION:

Traffic circles are raised islands, placed in intersections, around which traffic circulates. Yield signs can be used as traffic controls at the approaches of the traffic circle. Circles prevent drivers from speeding through intersections by impeding through movements and forcing drivers to slow down to yield.

## APPLICATION:

Traffic circles are effective at neighborhood and local street intersections where large vehicle traffic is not a major concern but speeds, volumes, and safety are recorded problems.

## Advantages

- Effective at slowing travel speed
- Improves safety
- Provides increased access to main street from side street

## Disadvantages

- Slows emergency vehicles and can be difficult for large vehicles to circumnavigate
- May eliminate some on-street parking
- May require modifications to curb, gutter, and sidewalks

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Roundabout (single-lane)



## DESCRIPTION:

Roundabouts require traffic to circulate counterclockwise around a center island. Unlike traffic circles, roundabouts are used on higher volume streets to allocate right-of-way among competing movements. They are larger than neighborhood traffic circles, have raised islands to channel approaching traffic to the right, and do not have stop signs. Roundabouts provide inexpensive-to-operate traffic control as an alternative to a traffic signal.

## APPLICATION:

Roundabouts are typically substituted for a traffic signal. They are most appropriate for new developments, due to the right-of-way requirements and construction cost. If being considered in an established location the following should be considered as criteria for application:

- Locations with a history of accidents
- Intersections where queues need to be minimized
- Intersections with irregular approach geometry
- Intersections that have a high proportion of U-turns
- Locations with abundant right-of-way

## Advantages

- Enhanced safety compared to traffic signals or stop signs
- Minimize queuing at approaches
- Less expensive to operate than traffic signals
- Generally aesthetically pleasing if well landscaped

## Disadvantages

- May be difficult for large vehicles to circumnavigate
- Must be designed so that the circulating lane does not encroach on the crosswalks
- May reduce on-street parking
- Landscaping must be maintained by the residents or by the municipality

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Chicane



## DESCRIPTION:

Chicanes are curb extensions that alternate from one side of the roadway to the other, forming s-shaped curves. Chicanes insert curvature in an otherwise straight stretch of roadway. They generally fall into two categories: single-lane and two-way. Single lane chicanes consist of staggered build outs narrowing the road so that traffic in one direction has to give way to opposing traffic. Two-way chicanes use build outs to provide curvature, but the lanes are separated by road markings or a central island.

## APPLICATION:

On a neighborhood street with a recorded speed problem, chicanes may be installed to reduce speeds in order to negotiate the lateral displacements in the vehicle path. They are most effective when placed on existing streets that have long, straight, flat roadway sections. They are also most effective when used in a series. They are useful at locations where speed is a problem, but the noise associated with speed humps and related measures would be unacceptable.

## Advantages

- Offer visual traffic calming effect by reducing line of sight
- Can reduce pedestrian crossing distance
- Reduces travel speeds
- Negotiable by emergency vehicles
- Provide opportunities for streetscaping

## Disadvantages

- May divert traffic to adjacent roadways
- The effect on vehicle speeds is limited
- May require bicyclists to merge with vehicular traffic for a short distance
- May require removal of some on-street parking
- Curb realignment and landscaping can be costly, especially if there are drainage issues

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Lateral Shift

## Advantages

- Community acceptance is generally higher
- Fewer maintenance issues than a comparable method
- Does not reduce traffic volumes unless design includes a lane reduction
- Negotiable by emergency vehicles

## DESCRIPTION:

A lateral shift consists of curb extensions along straight streets that cause travel lanes to jog. It is like a chicane, however the roadway alignment only shifts once. Relative to chicanes, speeds remain higher since the configuration does not include a series of alternating curb extensions.

## APPLICATION:

Lateral shifts may be used on neighborhood collectors where high traffic volumes and high posted speeds prevent more abrupt measures.

## Disadvantages

- Impacts snow maintenance
- May require additional effort to properly design
- May reduce on-street parking

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance

SPEED  
LIMIT  
**25**



# Realigned Intersection



## DESCRIPTION:

Realigned intersections are changes in alignment that convert T-intersections with straight approaches into curving streets that meet at right-angles. A former “straight-through” movement along the top of the T becomes a turning movement. They are one of the few traffic calming measures available for T-intersections since the straight top of the T makes deflection difficult to achieve, which is necessary for traffic circles.

## APPLICATION:

Re-alignment can be an effective treatment at neighborhood T-intersections where a speeding problem has been documented.

## Advantages

- Realigned intersections can effectively reduce speeds and improve safety at T-intersections that are commonly ignored by motorists.

## Disadvantages

- The curb realignment can be costly
- They may require some additional right-of-way to cut the corner

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Medians and Partial Medians



## DESCRIPTION:

A median is a raised curb island placed at the center of a roadway. Medians are typically concrete and may include landscaping to provide additional visual enhancement. They provide physical separation between on-coming traffic lanes, narrow the travel lanes, and can create the perception of a narrower roadway. They can also act as a refuge for pedestrians in certain applications.

## APPLICATION:

Medians may be used for speed reduction, turn restrictions, enhanced safety, or a mix of all three. Medians are best suited for wide residential streets with a history of high speeds to narrow the travel lanes, interrupt sight distances, and reduce pedestrian crossing distances.

## Advantages

- May help reduce travel speed
- Separates opposing traffic lanes
- Shortens pedestrian crossings
- Can improve safety both for vehicles and pedestrians

## Disadvantages

- Potential for increased maintenance if landscaped
- Medians are not as effective as speed humps or traffic circles in slowing speeds
- May interrupt emergency access and operations
- May interrupt driveway/side street access and result in U-turns at the end of medians
- Can create drainage issues

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance







# Speed Hump



## DESCRIPTION:

Speed humps are common traffic management devices that are familiar to most drivers. Speed humps consist of raised pavement placed across the entire roadway width creating a vertical deflection to slow vehicles. The humps are often 12 feet in length and between 3 and 3.5 inches high.

## APPLICATION:

Speed humps are installed on neighborhood streets to address speed, volume, and cut-through traffic. Speed humps are designed and constructed to allow vehicles to travel at or near the posted speed limit. They are spaced close enough together to limit drivers speeding in between them but far enough apart to not cause a nuisance to local residents.

## Advantages

- Decreases vehicle speeds
- Discourages cut through traffic
- Inexpensive and easy to construct

## Disadvantages

- May cause speeding between humps
- May divert traffic to an adjacent neighborhood street
- May increase noise levels as vehicles decelerate and accelerate

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Speed Table



## DESCRIPTION:

Speed tables are trapezoidal shaped speed humps with a flat section in the middle and ramps on the ends. They are sometimes constructed with textured materials on the flat section and are generally long enough for the entire wheelbase of a passenger vehicle to rest on the flat section. The long flat design allows cars to pass without slowing as significantly as with speed humps. Speed tables can also be used in conjunction with curb extensions, curb radius reductions, and textured crosswalks.

## APPLICATION:

A speed table may be appropriate on local residential streets with recorded high traffic speeds and a traffic volume of at least 400 vehicles per day and up to 4,000 vehicles per day. Short streets are unlikely to benefit from the treatment.

## Advantages

- Effective at slowing travel speed
- Possible reduction in traffic volumes depending on available alternate routes
- Possible decrease in collisions
- In cases with crosswalk, increases pedestrian visibility and likelihood that driver yields to pedestrian
- Typically preferred by EMS compared with speed humps

## Disadvantages

- May inadvertently divert local drivers to another route to avoid the calming measure
- Textured materials can be expensive, if used
- May increase noise and air pollution
- May not be appropriate along bus or emergency routes
- Drainage impacts need to be considered in the design

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Speed Kidney



Institute of Transportation Engineers Journal December 2012

## Advantages

- Decreases vehicle speeds
- Discourages cut through traffic
- Inexpensive and easy to construct

## Disadvantages

- May cause speeding beyond the speed kidney
- May divert traffic to an adjacent neighborhood street
- May increase noise levels as vehicles decelerate and accelerate

### DESCRIPTION:

Speed Kidneys are an arrangement of three speed lumps elongated with a curvilinear shape in the direction of traffic. The main speed lumps of the speed kidney are placed in the travel lane, while a complimentary speed lump is placed between the lanes. Passenger vehicle drivers choosing to drive over the speed kidneys in a straight path experience vertical discomfort as two or four wheels traverse the different parts of the speed kidney. Passenger vehicle drivers may also choose to take a curvilinear path to avoid the vertical deflection. In either case, field evaluation has documented speed reductions. The effective width of the speed kidney is narrow enough to allow emergency vehicles and trucks to follow a straight path straddling the in-lane lump

### APPLICATION:

Speed kidneys may be installed on neighborhood streets to address speed, volume, and cut-through traffic and are designed and constructed to allow vehicles to travel at or near the posted speed limit. Speed Kidneys have the advantage over speed humps, speed lumps, and speed cushions in that passenger car drivers may adapt their travel path to the device and avoid any vertical deflection. Bicyclists may also negotiate the device without crossing any vertical deflection. Design parameters should follow those recommended by researchers at the Universitat Politècnica de València and as documented in the December 2012 issue of the ITE Journal.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Raised Crosswalk

## DESCRIPTION:

A raised pedestrian crosswalk is a speed table with crosswalk markings and signage to channelize pedestrians crossing a road. This type of calming measure raises the crosswalk to the level of the sidewalk to improve the visibility of pedestrians to motor vehicle drivers. They are trapezoidal in shape with a flat area for crossing pedestrians and ramps for the vehicle approaches traversing the raised crossing. The crossing often incorporates textured pavement materials.

## APPLICATION:

Neighborhood streets with recorded speeding problems and haphazard pedestrian crossing locations will benefit most from this traffic calming measure. They can be used at intersections, mid-block crossings, and school crossings.



## Advantages

- Improved safety for pedestrians and vehicles
- Effective at slowing travel speed, but not to the extent of speed humps
- Possible traffic volume decreases at locations where cut-through traffic is a problem
- Typically preferred by EMS compared with speed humps

## Disadvantages

- Drainage impacts need to be considered in the design
- May increase noise and air pollution
- Textured materials are expensive, if used
- May inadvertently divert local trips to another route to avoid the calming measure

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Raised Intersection



## DESCRIPTION:

A raised intersection refers to a roadway intersection that is entirely elevated above the travel way. It is essentially a speed table for the entire intersection. They are constructed with ramps on all vehicle approaches and often include textured materials on the flat, elevated section. Typically, they are raised to the level of the sidewalk or slightly below it, creating a pedestrian area that includes the sidewalk and crosswalks.

## APPLICATION:

For neighborhood streets, raised intersections are best suited for intersections with substantial pedestrian activity. A raised intersection may not be appropriate if the street is a bus or emergency route.

Detectable warnings need to be included for those with vision impairment.

## Advantages

- Enhances the pedestrian environment and increases safety at the intersection
- Eliminates need for curb ramps
- Can calm two streets at once
- Can have positive aesthetic value

## Disadvantages

- Impacts to drainage need to be considered in design
- Textured pavement materials can make it difficult for vision impaired to identify detectable warnings
- Less effective in reducing speeds than speed humps, speed tables, or raised crosswalks
- They are expensive

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Full Closure (gate, midblock cul-de-sac, intersection cul-de-sac)



## DESCRIPTION:

Full closures typically involve the placement of temporary barriers or construction of permanent barriers across a street to completely close it to vehicular traffic. The closures vary from concrete barriers and bollards to gates and landscaped islands. Often gaps are left in the barriers to permit bicycle and pedestrian access. Automatic gates or removable bollards are sometimes used to accommodate emergency vehicles.

## APPLICATION:

Full closures are particularly effective at addressing high volume, high speed, and cut through traffic. This device is often seen as a last resort for addressing neighborhood traffic problems because of the high degree of controversy, lengthy implementation time, and legal process needed to allow the closure of a public street.

## Advantages

- Eliminates cut through traffic
- Reduces speeds and volume in immediate area

## Disadvantages

- Statutory actions required for implementation
- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Partial Closure



## DESCRIPTION:

Partial closures, also known as half street closures, typically involve the placement of temporary barriers or construction of permanent barriers across a portion of a street to prevent vehicular traffic in one direction. The partial closure most often occurs at an intersection for a short distance. The closures can consist of curb extensions, concrete barriers, bollards, and signs. Gaps in the barriers permit bicycle and pedestrian access and allow for drainage.

## APPLICATION:

Partial closures are particularly effective at addressing high volume, high speed, and cut through traffic. When paired on multiple streets, particularly in a grid street system, partial closures can make travel through a neighborhood more circuitous.

## Advantages

- Eliminates cut through traffic one direction
- Reduces speeds and volume in immediate area

## Disadvantages

- Statutory actions required for implementation
- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance





# Diagonal Diverter



## DESCRIPTION:

Diagonal diverters involve the placement of temporary barriers or construction of permanent barriers diagonally across an intersection. The barrier connecting the opposing corners of the intersection serves to redirect through traffic movements while allowing turning movements. Gaps in the barriers permit bicycle and pedestrian access and allow for drainage.

## APPLICATION:

Diagonal diverters are particularly effective at addressing high volume, high speed, and cut through traffic. When staggered on multiple streets, particularly in a grid street system, diagonal diverters can make travel through a neighborhood more circuitous.

## Advantages

- Reduces cut through traffic
- Reduces speeds and volume in immediate area

## Disadvantages

- Statutory actions required for implementation
- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents
- The adjacent corners of the intersection may require reconstruction to maintain adequate width for two-way traffic.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$\$

Very Good   
 Good   
 Fair  
 Poor   
 Not Applicable



## Quick Glance







# Median Barrier



## DESCRIPTION:

Median barriers, sometimes called median diverters, involve the construction of permanent raised islands along the centerline of a street. The median islands are extended through an intersection to effectively block cross street through traffic and left turning movements. Gaps in the island can permit bicycle and pedestrian access.

## APPLICATION:

Median barriers are effective at addressing high volume, high speed, and cut through traffic. The median barrier prohibits both through traffic and left turning movements at two of the four intersection approaches. This essentially creates a right in right-in/right-out condition which can make travel through a neighborhood more circuitous.

## Advantages

- Discourages cut through traffic
- Reduces speeds and volume in immediate area
- May improve intersection safety by eliminating vehicular conflict points

## Disadvantages

- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents
- May increase u-turning movements and encourage wrong way travel
- May require additional right of way and/or impact on street parking

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Forced Turn Island



## DESCRIPTION:

Forced turn islands involve the construction of raised islands at intersection approaches to prohibit certain turning movements. They can be implemented on a temporary or trial basis using parking blocks, delineators, and signage; or on a permanent basis with raised concrete curbs, barriers, bollards, and signs.

## APPLICATION:

Forced turn islands are implemented to eliminate undesirable turning movements that allow neighborhood cut through traffic. When used in combination with turn restriction signage, median closures, and partial closures, forced turn islands provide additional means to direct through traffic to the collector roadway network and off neighborhood streets. Like these other devices, forced turn islands are just another way of making travel through a neighborhood more circuitous.

## Advantages

- Reduces cut through traffic
- Reduces speeds and volume in immediate area
- May improve intersection safety by eliminating vehicular conflict points

## Disadvantages

- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents
- May increase u-turning movements and encourage wrong way travel

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance





# Two-way Street Conversions



## Advantages

- May reduce vehicle speed
- May improve neighborhood character
- May create economic development opportunities

## Disadvantages

- Introduces more vehicle, bicycle, and pedestrian conflicts
- Reduces through traffic capacity
- May impact bicycle lanes and parking

### DESCRIPTION:

Two-way street conversions involve changing the operation of a one way street to two way traffic. One-way couplets were historically established to provide greater capacity for traffic moving into and out of downtown areas. As travel patterns have changed and urban neighborhoods have become more established many cities are converting one-way couplets into two, two-way streets.

### APPLICATION:

Two-way street conversions are most appropriate in areas where long established one-way couplets are no longer needed to accommodate the peak hour traffic demand or in areas where changing the character of the street is seen to have a positive neighborhood or economic development benefit. Two-way street conversions involve the reconstruction of traffic signals, signing, and striping.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$\$

Very Good
 Good
 Fair  
 Poor
 Not Applicable



## Quick Glance





# One-way Couplet Conversions



## Advantages

- Higher automobile capacity than equivalent two-way streets
- May reduce pedestrian crossing distances
- Fewer intersection turning movements may increase safety
- Provides opportunities to create bicycle lanes and/or on-street parking

## Disadvantages

- Without other traffic management strategies speeds may increase
- Delays emergency vehicles
- Increases travel time and out of direction travel for local residents

### DESCRIPTION:

One-way couplets consist of a pair of parallel one-way streets that carry traffic in opposing directions. Couplets are established to provide greater capacity for automobiles particularly in areas with heavy peak directional demand. In a grid system, one-way couplets are often separated by a single city block, have fewer turning movements at intersections, and better synchronization of traffic signals.

### APPLICATION:

One-way couplets are most appropriate for core urban areas with an established grid street system where the emphasis on mobility over land access is desired.

Recognizing the need to maintain capacity for peak hour travel, this strategy is meant to manage rather than restrict or redirect vehicles. One-way couplets can be designed and configured to reduce the pedestrian crossing distances, establish bicycle lanes, and/or create needed on-street parking.

## Effectiveness Scorecard

	Speed	
	Volume	
	Cut-through	
	Crashes	
	Emergency Vehicle	
	Pedestrian	
	Bicycle	
	Noise	
	Cost	\$\$\$

Very Good  
 Good  
 Fair  
 Poor  
 Not Applicable



## Quick Glance

