Will "Children at Play" Signs Help Slow Traffic?

Unnecessary signs can confuse and irritate motorists. They often give a false sense of security and can promote disrespect for all signs. Perhaps the best example is the "CHILDREN AT PLAY" sign.

While it may seem that this sign would protect neighborhood youngsters, facts indicate otherwise. Although some communities have posted these signs in residential areas, not one shred of evidence exists to show these signs help reduce pedestrian accidents or lower speeds. Studies have shown that many signs, which warn of normal conditions in residential areas, fail to improve safety.

Signs, which encourage parents and children to believe they have added protection (which the signs do not provide), result in a great disservice and can do more harm than good. Children should not be encouraged to play within the street. Federal Standards reject these signs because they are a direct and open suggestion that this behavior is acceptable.

Since Children live on nearly every residential block, there would have to be signs on each street. Blocks with no signs might imply that no children live there, so it is okay to speed.

Because of these serious concerns, Arizona law does not recognize "CHILDREN AT PLAY" signs. Specific warnings for schools and crosswalks are available for use where they clearly serve a purpose.

Sources: City of Phoenix, City of Tucson, ITE, MUTCD

City of Casa Grande

510 East Florence Boulevard
Casa Grande, AZ 85222
Phone: 520.421.8625
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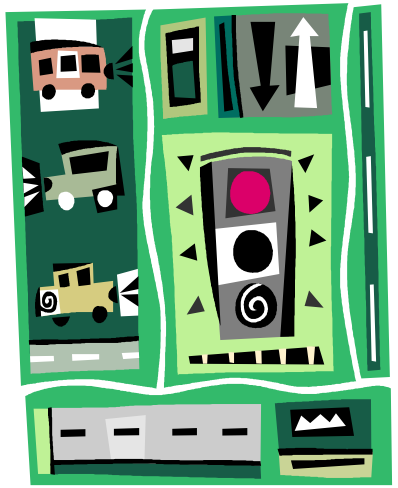
Traffic

Facts About Controlling Traffic in Our Neighborhoods



City of Casa Grande Engineering Department

Will More Stop Signs Slow Traffic On Our Street?

STOP signs installed in wrong places usually create more problems than they solve.

Many requests are received for STOP signs to interrupt traffic or to slow speeding vehicles. However, studies in Arizona, and across the country, show that there are a high number of intentional violations when STOP signs are installed as nuisances or speed breakers. Studies show that speed was reduced in the immediate vicinity of nuisance STOP signs. However, speeds were higher between intersections than before the signs were installed. This is caused by motorists "making up for lost time." So-called nuisance STOP signs also increase air pollution, waste fuel, and create more traffic noise.

State Law ARS 28-771 requires that (without STOP or YIELD signs): When two vehicles enter an intersection from different streets at the same time, the driver on the left shall yield right-of-way to the driver on the right. The only exception is at a "T" intersection where the driver on the through street has the right-of-way.

Low volume streets within neighborhoods tend to operate best under the State Right-of-Way law. This requires drivers to approach an intersection cautiously, and to control their speed to a reasonable level. However, STOP signs on one street tend to increase speeds on the other street since these motorists feel they no longer have to drive cautiously through the intersection. Under the right conditions, STOP signs can play an important role in traffic safety. National standards have been established to determine when STOP signs should be installed. These standards consider traffic speed, the volume of vehicles, sight distance, and frequency of "gaps in traffic" to allow safe vehicle entry or pedestrian crossing. For safety purposes, when STOP signs are used, they should stop traffic on the lower volume street. Four-way stops are only helpful (or useful)when traffic volumes are high and approximately equal on all four approaches.

When confronted with unreasonable and unnecessary restrictions, motorists are more likely to violate them, and they usually develop a contempt for all traffic signs.... Usually with tragic results.

Will A Traffic Signal Reduce Accidents At Our Intersection?

Traffic signals don't always prevent accidents. In most cases, accidents and severe injuries increase after they are installed. When signals are installed, right angle collisions are generally reduced, but total accidents often increase – especially rear-end collisions. Additionally, pedestrians are often lulled into a false sense of security. Traffic engineers consider the following points when deciding if a traffic signal will help more than it will hurt:

- ❑ Does the number of vehicles on intersecting streets create congestion?
- ❑ Is traffic so heavy that drivers on the side street try to cross when it is unsafe?
- ❑ Is pedestrian traffic heavy? If so, is the street they are trying to cross a wide, high speed, and busy street?
- ❑ Will a traffic signal allow for a smooth flow of traffic and avoid gridlock with a nearby signal?
- ❑ Does an intersection's accident history indicate a signal will reduce the possibility of a collision?

Traffic engineers compare existing conditions against standards established after many years of study throughout the country. Under these conditions, a new signal will generally operate effectively. If established standards have not been met, congestion and motorist violations occur which cause more accidents. Traffic signals at collector and local street intersections improve access onto major streets, which can result in more neighborhood cut-through traffic.

NOTE: It is our experience that a properly placed signal can improve the flow of traffic and decrease accidents. An unnecessary one can be a source of danger and annoyance to all that use the intersection, including pedestrians, bicyclists and motorists.

Will A Lower Speed Limit Help Reduce Speeds?

A common myth is that posting a lower speed limit will cause drivers to slow down and will reduce accidents. Facts indicate otherwise. Research conducted throughout the country, over several decades, has shown that drivers are influenced by the type of street, and the prevailing traffic conditions, and not the posted speed limit.

Arizona's Basic Speed Law (ARS 28-701) requires that: *A Person must drive at a speed that is reasonable and prudent under the existing conditions. In every event, speed must be so controlled as to avoid colliding with any object, person, or vehicle on the highway. It is the duty of all persons to exercise reasonable care for the protection of others.*

Under Arizona law, the maximum speed limit in Casa Grande is 55 miles per hour. Other maximum speed limits established by law include the 25 mph limit in residential areas and business districts, and the 15 mph limit in alleys, all motorists are required to know the basic 15 mph, 25 mph, and 55 mph speed laws. Speed limits between 25 mph and 55 mph may be established on the basis of traffic engineering surveys. These surveys include roadway conditions, accident records, and the prevailing speed of prudent drivers. If an unreasonably low speed limit is posted, most drivers will ignore the signs, while a few may try to stay within the posted speed limit.

This causes conflicts between faster and slower drivers, resulting in more accidents. Unrealistically low speed limits also increase the number of violators, and create a bad image for the police and the community. Speed limits approaching yellow school crosswalks are 15 mph when the portable signs are placed on the street. These zones may only be established based on traffic engineering studies, and used only for children going to and from school, when school is in session (ARS 28-797)

NEIGHBORHOOD TRAFFIC MANAGEMENT PROGRAM

INTRODUCTION

The protection of neighborhood environments and quality of life depends in large part on the function of residential streets. The primary function of local and collector streets that serve neighborhoods is to serve the land that abuts them. Neighborhood streets, however, also serve as routes for those who wish only to travel through the neighborhood. As a result, conflict arises between the negative impacts of unnecessary traffic on the neighborhood streets and the quality of life within the neighborhood. This conflict is reflected in virtually all Casa Grande neighborhoods and area plans which contain goal statements that discourage the use of neighborhood streets by nonlocal vehicular traffic. In addition to nonlocal traffic volumes, excessive vehicular speed is another element of the conflict. Independently, or in combination, nonlocal traffic volumes and excessive vehicular speed result in safety, noise, air quality, and visual impacts that detract from neighborhood quality of life.

The overriding consideration in solving traffic problems in neighborhoods must be safety, the impacts of unnecessary traffic on the neighborhood environment, and maintaining emergency vehicle access. Convenience to the motorist is a secondary consideration in neighborhoods.

This program is intended to establish a comprehensive approach to protecting Casa Grande neighborhoods through the management and control of traffic on neighborhood streets.

GOALS

The Intent of the program is to protect neighborhoods and neighborhood quality of life through traffic management and control strategies. The goals are:

1. To promote safe and comfortable travel in neighborhoods for pedestrians, bicycles, and motorized vehicles.

2. To achieve efficient and safe movement of traffic within neighborhoods (including emergency vehicles) consistent with the intended function of the neighborhood street.

3. To provide acceptable levels of accessibility for local traffic, discourage excessive speeds, and encourage opportunities for alternate modes, all in recognition of quality of life and the specific objectives of the neighborhood or area plan.

4. To maintain acceptable levels of service on the City's arterials so as to avoid intrusion/diversion onto neighborhood collectors and local streets.

GUIDELINES

1. Neighborhood streets are defined as local or collector streets, within or adjacent to, designated neighborhoods with abutting land uses that are at least 85 percent residential when considered in segments of one-quarter mile.

2. Traffic volumes on neighborhood streets should be consistent with the density of residential development that is served by a particular neighborhood street. According to data assembled by the Institute of Transportation Engineers, single-family detached residences serve as origins or destination for five to twenty trips on a typical workday. As a general guideline, traffic volumes oN neighborhood streets (total for both directions) should not exceed:

   - Local Street, Low Density – 1,000 vehicles per day or 75 vehicles per hour.
   - Local Street, High Density – 2,000 vehicles per day or 150 vehicles per hour.
   - Collector Street – 8,000 vehicles per day or 800 vehicles per hour.

   Neighborhood streets with traffic volumes near or in excess of these guidelines may benefit from a study to develop, implement, and evaluate possible remedial actions.

3. Vehicle speeds (85^{th} percentile speeds established by radar or equivalent methods) on neighborhood streets generally should be:

   - Local Street – 25 miles per hour.
   - Collector Street – 30 to 35 miles per hour.

   Traffic speeds in excess of these guidelines normally indicate the need for increased police enforcement and/or a study to develop, implement, and evaluate remedial actions.

4. Neighborhoods, areas, or residences experiencing "unwanted" traffic volumes on neighborhood streets may benefit from a study to develop, implement, and evaluate remedial actions. "Unwanted" traffic is defined as (1) traffic using a neighborhood street as a shortcut or detour, (2) an excessive volume of traffic on a neighborhood street that should normally be served by an arterial roadway, (3) traffic operating at excessive speeds, or (4) vehicles with origins or destinations outside of the neighborhood or area.

PROCEDURES

1. Request for a neighborhood traffic study shall be made in writing to the City Engineer and be accompanied by a petition for Study (see Number 3 and 4 below). Requests will be prioritized by the City Engineer based on relative need, and if requests exceed City staff capability, a qualified traffic engineering firm will perform the study. In any event, traffic engineering experts will work with neighborhoods and review any remedial actions prior to implementation.

2. Neighborhood association involvement will be sought for each study undertaken. In the event that a neighborhood association does not exist, the City of Casa Grande should be contacted for details on the formation of a neighborhood association. As an alternative, the involvement of residents and businesses in the petition area should be organized (see Number 3 below). Involvement in the study will be to the maximum extent feasible, and petitions indicating neighborhood consensus and support of proposed remedial actions will be required prior to implementation.

3. The petition area shall be defined by the City Engineer and will generally consist of all businesses and residences abutting (whether facing or not) all street segments radiating out from the intersection or street segment in question, usually for a distance of one block, i.e., to the next intervening four-way intersection. Where the street segment has a "T" Type intersection, the distance shall be at least one block in length. Where an intermediate intersecting street is a cul-de-sac, all residences on the cul-de-sac will be included. The petitioned area for speed humps shall only include the street the speed humps are installed on.

4. A successful Petition For Study will be considered to be one with at least 60 percent of the businesses and residences in the petition area represented on it. Only one signature per business or residence is allowable. When the petition is submitted, the person indicated as the contact person for the neighborhood on the petition will be sent a letter confirming receipt of the petition and indicating either that they obtained an adequate number of signatures or that more signatures are needed.

5. The City Engineer will notify residents of the petition area that the neighborhood has been approved for a study. The objectives of this study are to verify the problem and identify a preferred traffic management, or control plan, for the problem. The preferred plan shall be jointly selected by residents of the petition area and by the City Engineer at a neighborhood meeting.

   If it is determined that local streets or areas outside of the petition area could be impacted, the requesting organization or group may require reorganization to include representatives of the impacted area. Should it be determined by the City Engineer that arterials, or streets other than those covered by the Policy and Procedures Manual warrant correction treatments, this policy and procedure should be discontinued for this application, and the plans should be evaluated by the City Engineer. The City Engineer will then conduct a traffic and emergency vehicle access analysis of the preferred remedial action to determine the potential impact of the preferred plan on the neighborhood, and to assess whether the plan will correct the traffic problems. If

no unreasonable impacts are found, the plan shall be implemented by the City for a test period, generally about 90 days. If unreasonable impacts are found to exist, The City Engineer and the residents of the petition area may select an alternative plan. (Traffic circles and speed humps will go directly to permanent installation).

6. At the end of the test period, the requesting organization or group will recommend to the City Engineer if permanent installation of the plan should proceed. The recommendations shall be based upon information received from residents and businesses of the petition area and the actual impacts of the device on traffic movement, emergency access, and other relevant factors during the test period. The City Engineer shall approve permanent installation of the plan if no more than 40 percent of the residents and businesses in the petition area object, and if there is no unreasonable impact on emergency vehicle access, traffic movement, or any other relevant factors. Upon approval by the City Engineer, the plan shall be constructed and landscaped in accordance with the City of Casa Grande standards. If the project is not approved, the temporary plan shall be discontinued and the project terminated, or revised for a new demonstration and test period.

7. Responsibility for maintaining landscaping in conformance with City of Casa Grande criteria on the permanent devices rests with the benefited neighborhood. A licensing agreement may be required by the City Engineer. The residents(s) who agrees to maintain the landscaping shall be required to obtain a Street-Use permit. If the neighborhood fails to fulfill the responsibility and the landscaping obstructs the view of traffic, becomes unsightly, or is otherwise potentially hazardous, the Department of Public Works shall have the authority to remove the landscaping.

POLICIES

1. The intended traffic service and accessibility functions of neighborhood streets shall be consistent with the hierarchy established in the Major Streets and Routes Plan, as amended.

2. Construction or reconstruction of streets and routes shall be consistent with the right-of-way and design standards established in the Major Streets and Routes Plan, as amended.

3. All actions with regard to implementation of any feature of the Major Streets and Routes Plan, or land use proposals adjacent to any feature, shall consider as a primary goal the protection of existing neighborhood environments, cohesion, and integrity.

4. Both key features and principal arterial routes shall be designed to prohibit, where possible, neighborhood traffic intrusion.

5. Encourage the vehicular use of major streets through the implementation of the Major Streets and Routes Plan, the improvement of safety and capacity at major street intersections, the application of traffic control devices consistent with applicable standards and practices, enhancement and expansion of the computerized synchronization of traffic signals, the proper spacing of traffic signals, the control of access to major streets, and the posing of speed limits consistent with applicable standards and practices. New residential areas and commercial developments shall be planned and constructed to discourage neighborhood traffic intrusion.

6. The City Department of Public Works shall provide technical assistance to neighborhoods and areas to define perceived traffic problems, develop and implement cost effective actions, and evaluate the effectiveness of implemented actions to resolve identified traffic problems.

7. Traffic management and control in neighborhoods shall be consistent with applicable standards and practices, and provide for emergency vehicle access.

8. Traffic management and control in neighborhoods shall be carried out in a systems context to minimize and, if possible, avoid negative traffic impacts on adjacent neighborhoods and areas.

NEIGHBORHOOD SPEED WATCH

Typical Application

Effective in well-delineated subdivisions with limited through traffic and an 85th percentile speed in excess of 10 mph greater than the posted speed limit.

Effects or Impacts

Volume	None reported
Speed	A study of this method in Gwinnett County, Georgia found a significant reduction in both the 85th percentile speed and the maximum speed.
Noise, Energy, Air Quality	None reported
Safety	Reduced speeds have a positive impact on roadway safety in residential areas.
Uniform Standards and Warrants	"Speed Watch" signs are not covered in the Manual on Uniform Traffic Control Devices (MUTCD), however, signing can be integrated with "Neighborhood Watch"
Community Reaction	Studies suggest that this method is perceived to be effective even in areas with no documented impact. Reportedly, the technique can lead to a Vigilante-type atmosphere if abused.

Description

Neighborhood speed watch is reportedly an excellent "self-help" technique to reduce speeding in subdivisions or localities where community action groups, such as neighborhood watch, have been established. Neighborhood speed watch programs depend on community spirit and group pressure to encourage increased compliance with residential speed limits. Typically, the program is built around an existing community action group with assistance from the local Police and Transportation Departments. Typical programs involve communication via letters or telephone calls to area residents informing them of the existence of the speed watch and stating the goals off the program. Special advisory "Speed Watch" signs are posted around the area. Teams are formed and a schedule for observation is established. Using a traffic counter and computer, a team observes the selected street and records the date, time, location, license plate number, vehicle type, and speed of offending drivers. This log is forwarded to the Police or Transportation Department who match the license plate with vehicle registration information. A letter is then sent to the owner of the vehicle, mentioning fines and license points to motorists that receive speeding citations. Repeat offenders are noted and direct police action could be requested if the repeat offender does not reduce his/her speed through the neighborhood.

SEMI-DIVERTER

Typical Application

Effective in areas where the entry of emergency vehicles is a concern, and where neighborhood traffic management is well accepted by the public.

Effects or Impacts

Volume	Reportedly can significantly reduce volume, although subject to a relatively high violation rate of posted traffic signs.
Speed	Although not installed as a speed reduction device, the diversion of through traffic that formerly used the street as a short cut can significantly reduce speed on the street.
Noise, Energy, Air Quality	Noise reduction associated with the energy reduction of through traffic can be expected.
Safety	Generally, no impact on safety except what may be experienced due to reduced traffic volume on local streets. Accident potential may result from high violation rates.
Uniform Standards and Warrants	Not specifically covered in the MUTCD, however, recognized in basic traffic engineering texts and in practice. Signs and pavement markings should comply with the MUTCD.
Community Reaction	While local reaction is generally favorable, focus of community reaction can shift to violation of the diverter device or associated signs along with the lack of enforcement to prevent such violations.

TRAFFIC CIRCLE

Typical Application

Reported to be effective at intersections with relatively high accident experience.

Effects or Impacts

Volume	Reduction of traffic volume is dependent upon the system of residential traffic management techniques and devices in the area. From a distance, the traffic circle may appear as an obstruction to traffic. If diverters have been encountered by drivers in other areas of the city, they may turn away from the circle prior to the circle. Volume reductions are typically limited unless a series of circles and diverters are placed along a route.
Speed	Reduction in speed is generally noted in the area of the traffic circle; however, the device may have only limited impact on mid-block speeds.
Noise, Energy, Air Quality	Noise reduction is associated with the reduction in volume experienced.
Safety	There is evidence that traffic circles are effective in reducing vehicle collisions at intersections. Traffic circles may present a hazard to bicyclists and pedestrians by bringing cars and trucks closer to the curb, but are normally not a problem. Design provisions must be made for emergency vehicles and city service vehicles.
Uniform Standards and Warrants	Traffic circles in neighborhoods are not specifically covered in the MUTCD, however, they are recognized in basic traffic engineering texts and in practice.
Community Reaction	There has been mixed reaction to traffic circles. Residents near the intersection perceive a reduction in traffic speed, others may see them mainly as a nuisance.

FORCED TURN CHANNELIZATION

Typical Application

Effective at the intersection of a collector and/or a local street, where traffic flow on the collector street is basically unaffected (or even enhanced) and through traffic on the local street is prevented.

Effects or Impacts

Volume	Reportedly effective in reducing volume if the turning movement prevented is a significant contributor to overall traffic on the local street.
Speed	Minimal impact on speed, except if the street was formerly used as a high speed through route.
Noise, Energy,	Noise reduction associated with the energy reduction in volume can be expected on the local streets.
Safety	Channelization tends to increase safety of locations where the design is easily understood.
Uniform Standards and Warrants	Similar channelization techniques covered in the MUTCD.
Community Reaction	Although community reaction is generally favorable, complaints do occur if frequent violations occur.

DIAGONAL DIVERTER

Typical Application

Effective as part of a system of devices which discourage or preclude travel through a neighborhood by breaking up traffic patterns associated with a grid street system. Individual or limited use can cause traffic to shift to another street or neighborhood.

Effects or Impacts

Volume	Studies have shown that traffic volumes can be reduced from 20 to 70 percent when used in conjunction with other diverter systems. They are less successful, however, if used with passive techniques such as stop signs, yield signs, or traffic circles.
Speed	Reportedly, speeds are only reduced in the immediate vicinity of the diverter. However, substantial reductions in speed may be noticed if the diverters cause a breakup of high speed through routes.
Noise, Energy, Air Quality	Noise reduction associated with the energy reduction in volume can be expected on the affected local streets.
Safety	Before-and-after studies of accident rates on streets with diverters show a substantial reduction in accidents after the installation of diverters. System-wide accident experience, however, reportedly remains the same
Uniform Standards and Warrants	Not specifically listed in the MUTCD. However, diverters may be considered a channelizing island, being constructed and marked as such.
Community Reaction	Residents of areas where a substantial number of diverter systems are used are generally in favor of them; residents in other areas are generally opposed. This is substantiated by a vote in Berkeley, California. Residents in areas of the city that had few diverters, voted for the removal of them; residents in areas with frequent diverters, voted against their removal.

INTERSECTION CUL-DE-SAC *AND* MID-BLOCK CUL-DE-SAC

Typical Application

Effective in areas near high traffic generators where the residents are less concerned about access by emergency vehicles than they are about excess traffic. Also found to be effective in areas where other diversion methods are frequently violated.

Effects or Impacts

Volume	Reported to be extremely effective in reducing traffic volumes.
Speed	Speeds are reduced if the cul-de-sacs cut off a formerly used through route.
Noise, Energy, Air Quality	Noise is reduced as a function of traffic reduction.
Safety	Safety is enhanced on the local street based upon the reduction in volume.
Uniform Standards and Warrants	Acknowledged in basic traffic engineering texts and in practice.
Community Reaction	Generally favorable on the streets where they are used; disliked by others in the community if traffic is shifted to their street or if long detours are caused. Emergency service access can be provided through removable or flexible barriers, or through tire track passages.

Descriptions

Cul-de-sacing is commonly used and is a very effective way of eliminating non-local traffic on a street. There are inherent problems in closing a street, however. The response time of emergency vehicles may be increased. Residents will have only one way to/from their street, which may be a problem if the street intersects with an arterial. If unwanted through traffic is a persistent problem, and a high violation rate is noted with other traffic devices, cul-de-sacing may be an alternative. Cul-de-sacs can be landscaped to add to the environment of the street and may add to the feeling of community.

SPEED HUMP

Typical Application

Effective as a speed and volume reduction technique on local streets with limited truck traffic.

Effects or Impacts

Volume	We have found the volume of traffic did not change as expected. The same volume of traffic continued to travel through the neighborhood, but at slower speeds, with the exception of some isolated speeding.
Speed	A single hump can reduce the 85th percentile speed between 14 to 20 mph at the device itself, with normal speeds returning soon after the encounter of the hump. A series of humps (undulations) with spacings less than 600 feet will reportedly have an increased effect on speed reductions.
Noise, Energy, Air Quality	Reportedly, some reductions in noise energy levels can be experienced on low volume streets. Noise levels can actually increase if there is substantial truck traffic on the street.
Safety	There has been a great deal of debate and discussion as to the impact undulations have on vehicle safety. While felt by some engineers to be a serious hazard, a study by a subcommittee of the California Traffic Control Devices Committee found that with between 150 and 200 million crossings of the state's 150 to 160 undulations, very few claims for damages had been filed due to the undulations, and less than $20 had been awarded for damages.
Uniform Standards and Warrants	Not covered by the MUTCD, but recently accepted by the Institute of Transportation Engineers.
Community Reaction	Mixed reaction has been noted. Local residents note an apparent decrease in speed, and like them because they feel speed humps are the least expensive approach to their problems.

PETITION

CITY OF CASA GRANDE
NEIGHBORHOOD TRAFFIC MANAGEMENT PROGRAM

Contact Person _____ Phone _____
Address _____ FAX # _____

We, the undersigned residents of _____ are requesting a traffic Study in our neighborhood.

A second petition will be required when a specific traffic mitigation plan is chosen.

Please read before signing

#	Property Address	Signature	Printed Name	Date
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