CITY OF ALBUQUERQUE

Neighborhood Traffic Management Program (NTMP)

A Summary of Traffic Calming Policy and Neighborhood Traffic Management Strategies

October 2020

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EXECUTIVE SUMMARY

The Neighborhood Traffic Management Program (NTMP) policy manual was developed for the City of Albuquerque (City), as directed by City Council Resolution (R-09-17). The content contained herein is an update of the 2015 Neighborhood Traffic Management manual. The 2015 Manual is based on a review of the preceding Neighborhood Traffic Management manuals that were the governing document for the program as well as traffic calming best practices. The City has developed the 2020 update of the policy manual as a guide for implementing neighborhood traffic calming projects on local and collector streets that are owned by the City of Albuquerque. The 2020 manual has five parts that; include:

- Part 1, (Introductions) describes the Neighborhood Traffic Management Program (NTMP), how to apply for the program and how various traffic issues are evaluated.
- Part 2, (Implementation) discusses the implementation process for the NTMP, including the qualifying criteria for traffic calming measures, and the petitioning process which includes the expectations and responsibilities of the petitioning parties and the NTMP Program.
- Part 3, describes the traffic management strategies and the purpose of typical traffic control devices and the different levels of neighborhood traffic calming measures used by the City.
- Part 4, is a tool box of neighborhood traffic calming measures with detaitled descriptions and photographs of each measure along with the traffic calming benefits and installation costs.
- Part 5, is a glossary of terms, references, and acknowledgments.

This updated manual, along with each update of the previous manuals, represents a collaborative effort between neighborhood leaders and City Departments, including the Department of Municipal Development, which oversees the NTMP, the Albuquerque Police Department Traffic Enforcement Division, the Albuquerque Fire and Rescue Department Field Operations Division, and the Albuquerque City Council. Notable changes from the 2015 NTMP Manaual that were made in the 2020 Manaul update include:

- Adding a provision that replaces the application petition with a signature form signed by 7 residents of the street that the application is for
- Changing responsibility for determining a track from the applicant to the Traffic Engineering Division and moving the explanation of the Standard and Speed Hump Traffic Calming tracks to Part 1.
- Removing Education and Enforcement from being a traffic calming measure part of the NTMP to being a measure that neighborhoods can access any time through the Office of Neighborhood Coordination.
- Adding a new qualifying threshold: "A crash involving a pedestrian or a cyclist in a school zone in the last 5 years."
- Changing the speeding threshold from 7 miles over 25 mph to 7 miles over the speed limit.
- Establishing the procedure for ranking traffic calming for funding: "Funding will be ranked City-wide based on the safety risks posed by the existing traffic patterns in the project area location. The higher a project exceeded the thresholds the higher its ranking in the funding lineup."
- Providing better detail on how traffic calming projects will be prioritized for funding.

PART 1 - INTRODUCTION

This is the instruction manual for a neighborhood resident or group of residents who are requesting traffic calming in their neighborhood. This section of the manual introduces and discusses the subject of traffic calming, the goals and objectives o f this updated Neighborhood Traffic Management Program (NTMP), and how to use this manual to petition for appropriate traffic calming measures in neighborhoods throughout the City. This section also provides an explanation of how various neighborhood traffic issues (e.g., speeding and cut-through traffic) are evaluated, what types of streets are included in the neighborhood traffic calming program, and how traffic management projects are identified, selected, and prioritized.

What is traffic calming?

The Institute of Transportation Engineers (ITE) defines traffic calming as "the combination of physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users."

What are the program's goals and objectives?

The goals of the NTMP are to 1) Improve Neighborhood Traffic Safety, 2) Preserve Neighborhood Character and Livability, and 3) Increase Neighborhood Involvement. The program will identify improvements that meet these goals and identify potetintal solutions to traffic issues and concerns through a collective understanding among the residents and City staff with expertise in addressing neighborhood traffic issues and concerns and identifying potential solutions. Primary goals and objectives of the program include:

- ***Improve Neighborhood Traffic Safety:*** Excessive traffic speeds are a hazard to neighborhood safety and security. The objective is to promote and maintain a safe and pleasant environment for residents, pedestrians, cyclists, and motorists in the City's neighborhoods.
- ***Nreserve Neighborhood Character and Livability:*** Traffic management plays a vital role in determining the character and livability of neighborhoods. The is to reduce the negative effects that automobile use may have in residential areas and increase the livability of neighborhoods throughout the city.
- ***Increase Neighborhood Involvement:*** Because the involvment of residents is a key component in managing neighborhood traffic, the objective is to encourage residents to become actively involved in the decision making process pertaining to the implementionat of traffic calming measures in their own neighborhoods. The NTMP is designed to encourage residents active participtation in idenfitfying traffic issues, developing practical solutions and in supporting the ultimate outcome. As a result, residents can assess the various benefits and trade-offs to implementing these projects within their neighborhoods.

Education and Enforcement

Education and Enforcement is a form of traffic management available to neighborhoods. The NTMP includes an education and enforcement component jointly managed by the City office of Neighborhood

Coordination and the Albuquerque Police Department's Traffic Enforcement Division. The program is available upon request through the City's Office of Neighborhood Services, and does not require a qualification process such as traffic counts or volume thresholds. To participate in the program and to initiate a project contact the Office of Neighborhood Coordination (ONC) at 768-3334 or at onc@cabq.gov. The ONC staff will work with the person(s) making the request to organize a neighborhood meeting(s) or to work with the neighborhood association to form a meeting among the residents who reside on the street for which the request is being made. ONC Staff and the Albuquerque Police Department's Traffic Enforcement Division will work with the meeting participants to develop a plan which may be geared toward drivers, bicyclists, pedestrians, or safe interaction amongst all users. The Plan may include a number of initiatives such as public outreach and enforcement measures and other measures listed below:

- Articles in neighborhood news letters asking residents to slow down when driving in the neighborhood,
- Posting "Slow Down Albuquerque Signs",
- Passing flyers throughout the neighborhood educating resident about the dangers of speeding,
- Public meetings to provide a means for communicating concerns to City staff while allowing residents to share views and form consensus.
- Parking speed trailers in areas where speeding is occurring
- The presence of police officers to monitor speeds and issue citations for law violations such as stop signs, speed limits, turn restrictions, and other traffic law violations. (Note: Visible presence is highly effective, though only while an officer is present).
- Communication between residents and traffic enforcement officers as to the times and locations where speeding is occurring.

These measures are usually low cost and can be implemented rapidly. A NTMP account has been set aside for these measures.

How is this manual used?

This NTMP policy manual was developed as a guide for City staff and to inform residents about the processes and procedures for implementing neighborhood traffic calming measures. This manual includes a summary of the City's goals and objectives for the program, as well as defined processes for implementation and a toolbox of traffic calming measures.

The processed for implementation of neighborhood traffic calming measures are described in Section II Implementation Process. The process described in this section are consistent with the existing City of Albuquerque Neighborhood Traffic Management Program (NTMP). Public participation is highly encouraged as is substantial neighborhood input.

How are traffic problems evaluated?

The Traffic Engineering Division (TED) will collect and evaluate traffic data, identify system needs, and using the guidelines in this manual will identify a range of appropriate solutions based on the data and

engineering judgement. In order of importance, the following lists the most widely used criteria for determining the need for traffic calming on residential streets:

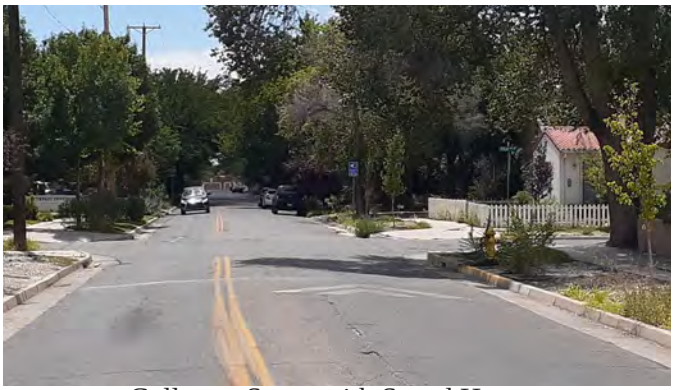
- ***Crash Frequency:*** The number and types of crashes is important in understanding multimodal safety and identifying counter measures.
- ***85th Percentile Speeds:*** The speed that 85% of the vehicles are traveling at on a street and a threshold for the practice of Traffic Engineering for assessing speeding. The 85% speed is the maximum speed that 85 percent of drivers, when driving in free flowing conditions, will travel either at or below. Their decision to drive at that speed accounts for their perception of the visual aspects of and a feel for the road including lane and shoulder configurations and widths, presence of vertical and horizontal curves, sight distance, obstructions and presences and type of surrounding developments to the roadway.
- ***Traffic Volumes and Vehicle Mix:*** Impacts from automobiles and trucks are different and may require different mitigation measures.
- ***Cut-Through Traffic Volumes:*** Understanding the origin and destinations of trips can help tailor traffic calming strategies.
- ***Community/Neighborhood Input and Support:*** This is key to the development, implementation, funding, and maintenance of traffic calming plans and devices.
- ***Bicycle and Pedestrian Activity:*** Protecting these most vulnerable users and providing comfortable environments encourages commuter and recreational use of alternate modes of transportation.
- ***Established and Planned Public Transportation Routes:*** Transit users congregate at public transit stations and stops.

What types of streets are appropriate for neighborhood traffic calming?

This NTMP has been created for City owned streets which are functionally classified as either local or collector roadways. The traffic calming measures presented in this manual are not typically suitable for streets with higher functional classifications such as minor arterial roadways. To learn more about which City streets are collectors and arterials Functional Classification Maps are available at:

https://www.mrcog-nm.gov/DocumentCenter/View/1878/Roadway-Functional-Classification-Systems-and-NHS-Map-PDF?bidId=

Residential Street with Speed Humps
(Delamar Ave.)



Collector Street with Speed Humps
(12th St. South of Lomas)

Residential Street with Vertical Traffic Calming Device
(Dartmouth and Roma)

Collector Street with Vertical Calming Device
(Candelaria west of Rio Grande)

How is it determined what type of traffic calming measures are placed on a street?

The manner in which a street is operated and/or its status will guide the type of traffic calming measures allowed on that street. Within the guiding factors there are three factors that limit the types of traffic calming devices that can be implemented. These limiting factors are:

- ***Designated Emergency Routes:*** On designated emergency response routes, only non-physical control measures and those physical control measures that do not slow emergency vehicles will be considered.
- ***Collector Streets:*** collector streets, only non-physical control and narrowing measures will be considered on roadways with daily traffic exceeding 3,000 vehicles per day.
- ***Roadways with Extra Geographical or Operational Features:*** When implementing a project the NTMP staff will consider unique street characteristics, such as curves, grades (slopes), or other features. Only non-physical control measures and those physical control measures that do not exacerbate known existing conditions caused by such characteristics will be considered.

How will the effectiveness of projects be measured?

Though many streets will be subject to these three limiting factors but many will not. Recognizing this, the NTMP staff, upon qualifying a street for an NTMP project, will assign it to one of two tracks. For streets that have one cause for an NTMP Project is cut through traffic, the **DMD Staff will assign the project to a standard track.** For those roads that are not subject to one of the above factors, or the primary traffic issue is not cut through traffic, the applicant will be provided the option of either following a **Standard Track** or the **Speed Hump Track**.

The **Standard Track** allows for the use of any of the traffic calming measures in the NTMP Manual Tool Kit, including speed humps. This track is for all streets eligible for the NTMP. Even roadways that qualify for an NTMP project and are subject to the three limits above are assigned to the standard track; except in these cases speed humps are excluded as an eligible traffic calming device for the project. The standard track is

also recommended for streets where reducing and managing cut-through traffic is the primary reason for the application.

The **Speed Hump Track** only includes one type of traffic calming device, speed humps, and is used where speeding is the primary traffic issue. Speed humps are effective, relatively inexpensive, and can be flexibly located. As such, this track requires fewer approvals and steps.

The Speed Hump Track is only for those streets where a speed hump can effectively work and will not create a nuisance or hazard. The roadway cannot be impacted by one of the three limiting factors and especially cannot be an emergency response route, cannot have the extra-geographical feature of being located on a hill, and the street must have curb and gutter. The reasons for this are as follows:

1. The roadway cannot be an emergency access route so as not to overly reduce response times. Emergency response routes are frequently used by emergency vehicles responding to a call or transporting patients to a hospital , and vehicles must pass over the humps at 5 miles and hour, so as not to harm the patients that are being transported. Speed humps are allowed on streets that are not emergency access routes and are only the final destination point for a service call or the origination point an ambulance bound from a call location to a hospital. On these streets, the ambulance only has to traverse the few speed humps on the street to reach the call. If you wish to verify if your roadway is an emergency route before sum submitting the application, you can do so by sending an e-mail to the Neighborhood Traffic Management Program at NTMP@cabq.gov or contacting Traffic Engineering at 857-8680 Otherwise the NTMP staff will verify the roads status during the application review process.
2. The City's Drainage Section will determine if speed humps may be placed during design. speed humps may not be placed on a hill, as fast flowing water can geyser off the hump and erode or flood landscaping in adjacent yards. If the water flow precludes speed humps, the applicant will be notified that Track 1 is the appropriate track.
3. The roadway must have a curb and gutter. Errant motorists will drive around speed humps that do not have curbs onto the abutting shoulder. Though driving around the speed hump can somewhat slow a vehicle, this is unsafe and a nuisance because shoulders are used as pedestrian walkways, contain parked cars, and can be landscaped.

Speed Hump Track Stand Alone Funding Source: The project must have a funding source to implement the project is from a source other than the Neighborhood Traffic Calming Program.

How will the effectiveness of projects be measured?

Once projects are complete and operational, a post implementation evaluation may be conducted by the NTMP Staff within two years of implementation. This evaluation will consist of a technical memorandum that determines whether the traffic calming measures or devices have been effective, whether any changes or additional measures are required, or whether due to ineffectiveness or other undesirable effects, devices

should be removed. If the NTMP staff are testing new devices as part of the project or the project is the first time that a device listed in the NTMP manual has been used by the NTMP Program, the evaluation will also seek to answer the following questions about the project:

1. Has the desired goal been accomplished?
2. Have there been any undesirable adverse effects?
3. If implemented on a trial basis, should a more permanent traffic calming measure be constructed?
4. Are additional measures needed to enhance effectiveness?

How will previous requests for traffic calming be handled?

Once a qualifying project is on the priority list it will remain and will be reprioritized bi-annually (in odd years to correspond with the bond cycles which provides the vast majority of funding for these projects) with all previously approved projects and newly submitted projects.

How will projects be prioritized and funded?

Standard or Non-Speed Hump Only Projects: For projects where the identified issues are not limited to speeding, the highest-ranking projects will be implemented as funding is available. The number of implemented projects will depend on City fiscal resources. A project will be ranked based on crash frequency and time in queue. The project applicants will be notified of the resulting project priority ranking after evaluation, although the project may be superseded if another road with more crashes qualifies. Previously qualifying projects will not have to be reevaluated and will remain on the priority list. Projects will continue to be ranked for up to 5 years, at which point they will no longer be considered. This time condition is to ensure that projects do not become outdated due to changes in resident concerns and traffic conditions.

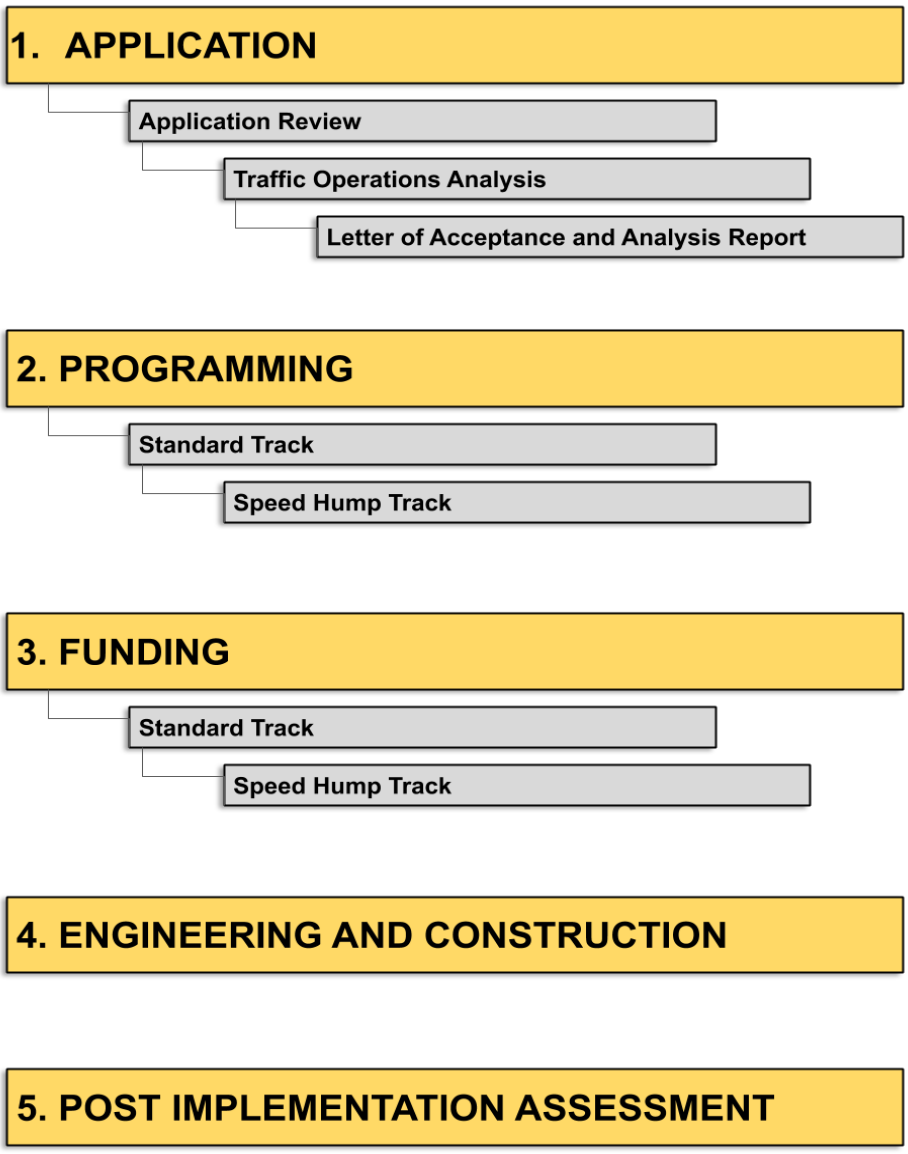
Speed Hump Only Projects: Projects that only include speed humps have their own track for review, programing and implementation. Projects that qualify for the speed hump program will require a funding source independent of the funding source for the Non-Speed Hump Projects. These projects will be processed and implemented as funding becomes available.

How will projects be maintained?

Maintenance requirements and estimated life cycle costs will be considered as part of the evaluation, prior to acceptance and implementation of traffic calming measures. Any new infrastructure within the City requires regular and sustained maintenance. Many traffic calming measures are unique in that more frequent maintenance may be required to maintain effectiveness. As an example, because of wear caused by vehicles and snow removal equipment high-visibility crosswalks have proven to require regular maintenance. In some cases, such as enhanced landscaping, the petitioning residents or neighborhood group may be asked to contribute through organized volunteer efforts to ensure landscaping is maintained and does not become unsightly.

PART II - IMPLEMENTATION PROCESS

This section discusses the implementation process for the NTMP. This includes definitions of the qualifying criteria for traffic calming measures and an outline of the processes residents and neighborhood groups would take to petition for implementing traffic calming measures in their neighborhoods. Additionally, this section highlights the expectations and responsibilities of the petitioning parties and the City's Traffic Engineering Division. See the flowchart below to learn more about the NTMP decision-making process and the roles of both the applicant and the City. The plan development and implementation process includes the following components: 1) Application, 2) Programming, 3) Funding, 4) Engineering and Construction, and 5) Post-Implementation Assessment.



1. APPLICATION

How do I request a project?

All City residents are eligible to apply for participation in the NTMP. The request for traffic calming measures on a City owned local or collector neighborhood street can be initiated by a resident, neighborhood group, or homeowners' association with specific concerns about speeding, traffic volume, cut-through traffic, or other traffic issue. If a resident or neighborhood group believes they have neighborhood traffic issues that may be addressed through traffic calming, they are encouraged to obtain an application and complete it using one of several methods including:

- Using the online form located on the NTMP website: http://www.cabq.gov/traffic/NT (Preferred method).
- Printing the form located at the end of this document and sending the completed application by email to: NTMP@cabq.gov or mail it to:

Attn: Traffic Engineering Division
NTMP Request
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Request an application through the City's 311 number and send the completed application by email or postal mail at the addresses listed above. Before completing the application, the applicant should determine if the roadway meets the minimum criteria for a NMTP project as stated below.

1. List the roadway for which assistance is requested and identify the termini or boundaries of the roadway that requires traffic calming, (e.g. Maple between 5th and 10th streets).
2. List the project contact, name, address, phone number and e-mail.
3. Is the roadway a public roadway located in the City of Albuquerque right of way? Private streets are not eligible for the program. You can verify this by viewing the City of Albuquerque Advanced map vievewer at https://coagisweb.cabq.gov/Html5ViewerGeo482/Index.html?configBase=http: coagis web.cabq.gov/Geocortex/Essentials/geo482/REST/sites/Public_Zoning_Viewer/viewers/Backup_of_Public_Zoning_Viewer-Advanced_Map_Viewer_20/virtualdirectory/Resources/Config Default.
4. Verify the roadway is a local or collector road and not an arterial. Only local and collector roadways can qualify by viewing the long range roadway system map at https://www.mrcog-nm.gov/

DocumentCenter/View/1874/Long-Range-Roadway-System-PDF. If it is not and arteral then. then it is a local or collector road. NOTE: If you are unable to use the online tool to verify criteria 1 and 2, you may contact the traffic management program at NTMP@cabq.gov or 857-8680 for this information.

5. Each project area is a minimum of 850 feet long between stop or signal controlled intersections.
6. The project area has not had a previous NTMP Study in the past 5 years. You can verify this at https://www.cabq.gov/neighborhood-traffic-management-program/studies or by sending an e-mail to the Neighborhood Traffic Management Program at NTM@cabg.gov or contacting the Traffic Engineering Division at 857-8680.
7. The street is not on a dead-end roadway or cul-de-sac less than 850 feet in length.
8. There are no existing vertical traffic calming devices on the roadway.
9. On the application, it is important to note significant land use changes, such as a new adjacent development that have affected traffic within a neighborhood because these changes can be used to determine the applicablity of data that willl be considered as part of staff's review of the application.
10. Fill out the attached signature form. List the on the form the project location, the principle contact person and the primary traffic issues. Print the form and have seven residents of the project area sign the form and list their address. Only one resident per address can sign the form. Mail the form into the NTMP program at:

NTMP
Project Request Signatures
Traffic Engineering Division
City of Albuquerque
P.O. Box 1293

PROJECT QUALIFICATION PROCESS

Every request for traffic calming will be reviewed by City staff who will employ a combination of observations, data collection, and review of historical traffic data to determine if there is a demonstrated need for traffic management. The qualification process will occur in three steps: 1) Application Review, 2) Traffic Operations Analysis, and 3) Letter of Acceptance and Analysis Report.

Step 1: Application Review

The first step is a review of the application by the NTMP staff to verify that the study area meets the criteria for the program as a whole for the traffic calming process track .

Upon receipt of a completed application, the NTMP staff will proceed through the following process to determine the eligibility of the request:

1. Staff will verify that the application has been properly completed. If it has not been completed correctly, the staff will contact the applicant and provide guidance on submitting a corrected application.
2. If the form has been completed correctly the NTMP staff will collect the necessary data to perform the engineering traffic analysis. This analysis will demonstrate whether a traffic issue meets the threshold criteria for traffic calming measures.
3. NTMP staff will verify that the application is a City roadway that and is eligible for speed humps.
4. The NTMP Staff will conduct a search for traffic data including traffic counts, speeds, crash rates, cut-through and other pertinent data. Data is considered applicable if it has been collected by the City Department of Municipal Development (DMD)/TED or a City approved contractor no more than 3 years prior to the application. The NTMP staff will make arrangements for field observations or data collection as necessary, and will inform the applicant of any extra time and/or funds this may require.

Step 2: Traffic Operations Analysis

Because safety and neighborhood livability are the goals for installing traffic calming, the NTMP staff will analyze if the roadway fulfills a series of traffic operations criteria. These criteria are created from the features of vehicle traffic that create safety concerns. Requests for traffic calming can be driven by speeding cars, frequency of crashes on a street or volume of cut-through traffic. Also, streets are designed differently with different dimensions and interaction between traffic, and the adjacent land uses vary depending on the land use. For these reasons, the NTMP Staff, using traffic counts and data research, will evaluate the traffic operations using several different sets of combinations for the criteria, and will qualify a project if the criteria in any of the Threshold Sets are achieved. The criteria thresholds are as follows:

Threshold Set 1: Over a twenty-four-hour period, 15% of the vehicles traveling in the study area exceeded 7 miles per hour over the speed limit.
Threshold Set 2: Three reported crashes in a 5-year period where the police report identified speed as either a primary or contributing cause of the crash
Threshold Set 3: A crash involving a pedestrian or cyclist in a school zone in a five-year period.
Threshold Set 4: Over a twenty-four-hour period more than 800 vehicles were counted traveling travelling through the study area and 15% of the vehicles traveling in the study area exceeded 5 miles per hour over the speed limit.

Threshold Set 5: Over a twenty-four-hour period 15% of the vehicles traveling in the study area exceeded 5 miles per hour over the speed limit and there was at least one reported crash in a 5-year period where the police report identified speed as either a primary or contributing cause of the crash.

T**hreshold Set 6:** Over a twenty-four hour period, 15% of the vehicles traveling in the study area exceeded 5 miles per hour over the speed limit and a field survey conducted by the Traffic Engineering Division determined that 25% of the peak hour traffic was cut-through traffic.

Threshold Set 7: Over a twenty-four-hour period, more than 800 vehicles were counted traveling through the study area and there was at least one reported crash in a 5-year period where the police report identified speed as either a primary or contributing cause of the crash

Threshold Set 8: Over a twenty-four-hour period, more than 800 vehicles were counted traveling through the study area and a field survey conducted by the Traffic Engineering Division determined that 25% of the peak hour traffic was cut-through traffic.

Threshold Set 9: A field survey conducted by the Traffic Engineering determined that 25% of the peak hour traffic was cut-through traffic and there was at least one reported crash in 5 years where the police report identified speed as either a primary or contributing cause.

Step 3: Letter of Acceptance and Analysis Report

Letter of Acceptance/Denial: Upon completing the analysis, the NTMP staff will respond in writing to the applicant. The response will indicate if the minimum criteria, as described in this manual, have been met and the application has been accepted, or if the application has been denied. If the application has met the criteria, the project will proceed to the programming phase. If the application has been denied, a date will be provided as to when the data in the Analysis Report will expire and an application can again be sent for review.

Recommendations Report: The NTMP staff will also summarize the results of the analysis and prepare a recommendations report. The recommendations report will consist of a summary of the scoping public meeting, data collected, analysis conducted, preliminary findings, and recommended traffic calming measures. Staff shall make the report available as a pdf on the City website and provide the report via email to the applicant. The data used in the analysis will be readily available to the applicant.

Track Assignment: In the recommendations report the NTMP Staff will assign the project to a track and will include a brief explanation as to why the project was assigned to the track.

2. PROGRAMMING

Standard Track: If the request qualifies for the standard process the programming steps that will lead to implementation are as follows:

1. The applicant will obtain signatures from the households located within a petition area determined by the NTMP Staff. The petition will be prepared by the NTMP staff and distributed to the applicant.

Staff may modify or expand the petition area beyond that requested in the application to address unique circumstances. Staff will identify these circumstances and provide written explanation to the applicant for any changes to the petition area.

2. The petition area will be separated into three zones, and signatures must be obtained from 55% of the households residing in each zone.
3. Once the appropriate number of signatures have been acquired, the petition will be sent to the NTMP program and the staff will verify the signatures. If the petition does not have the adequate number of signatures or the signatures are not from a resident within the study area, the the petition will be sent back to the applicant with instructions on how to complete the petition.
4. Following verification of the petitions, NTMP staff will conduct two public meetings so as to obtain a consensus on a traffic plan. Meeting notices will be posted as per the New Mexico law and a notice will be sent to the residents who live along the roadway under study and the neighborhood association if the project falls within the boundaries of an association.
5. The first public meeting will be used to gather input from the residents in the study area as to the nature of the traffic issues and preferred solutions.
6. Following the first meeting, NTMP staff will develop a Traffic Management plan. For projects that include physical improvements such as signing and striping or implementation of physical measures such as medians and islands, the NTMP staff will develop a schematic design.
7. Once a traffic management plan has been developed, there will be a second public meeting to present the recommended design and obtain consensus from the project area residents. The meeting will be posted publicly and invitations will be sent to those individuals who signed in at the first meeting. If consensus is reached the project will proceed to step 8. If there is not the Traffic Engineering Division Manager will decide whether to conclude the *project or to develop a second iteration of the plan and resubmit it in a third meeting. The decision will be based on the Traffic Engineering Division's Manager's best judgement if a consensus can be reached through a second iteration. If a second iteration is developed and there is still consensus the project shall conclude unless directed to continue by the Director of the Department of Municipal Development.*
8. *Once a consensus has been reached at the public meeting, if the traffic calming plan includes* devices other than speed humps, a second petition is required from 2/3 of the occupied households in the study area approving the proposed traffic calming plan. The Design will be provided to the applicant as part of a petition form. The applicant will then acquire signatures from 2/3 of the residents within the study area. The petition area will be separated into three zones, and signatures must be obtained from 2/3 of the households in each zone. The purpose of this petition to verify that the residents of the project area agree to the new traffic flow configuration that will be created by the traffic plan.
9. NTMP staff will then identify locations for the physical traffic calming measures and will provide the applicant with approval forms to be signed by the owners of the properties abutting what will be the location of the traffic device. If a property owner does not sign the form, NTMP staff will adjust the

location of the proposed speed measure to allow for the applicant to garner the signature of a different set of property owners. Staff can adjust the location of the traffic calming measure as long the location provides safe and effective traffic calming. When all potential locations are exhausted and the applicant is unable to acquire the signatures, the project will be placed on hold until the signatures are acquired from one of the chosen locations.

10. Following the completion of step 9 the project shall proceed to implementation.

Speed Hump Track: If the request qualifies for the speed hump track the programming steps that will lead to implementation are as follows:

1. The applicant will obtain signatures from the households located within a petition area determined by the NTMP Staff. The petition will be prepared by the NTMP staff and distributed to the applicant. Staff may modify or expand the petition area beyond that requested in the application to address unique circumstances. Staff will provide written explanation to the applicant for any changes to the petition area.
2. The petition area will be separated into three zones, and signatures must be obtained from 2/3 of the households in each zone.
3. Once the appropriate number of signatures have been acquired, it will be sent to the NTMP program where the staff will verify the signatures. If the petition does not have the adequate number of signatures or the signatures are not from a resident within the study area, the petition will be sent back to the applicant with instructions on how to complete the petition.
4. Following verification of the petition the NTMP staff will issue a notification to all the properties l located within the petition area that speed humps will be installed on their street and to contact the NTMP staff with any concerns. **If the petition was signed by 100% of the households in this petition area this step will not be necessary.**
5. *If after 30 days the NTMP staff have not been notified of any concerns, the staff will schedule installation of the speed humps upon funding availability. concerns are received, the NTMP staff will evaluate each concern on its own merits and determine if the project can move forward or if the adjustments to the spacing of speed humps will address the concern or if the application process should be moved to the standard track.*
6. *NTM*P staff will then identify locations for the speed humps and will provide the applicant with approval forms to be signed by the owners of the properties that abut the planned location of the speed humps. If a property owner rejects the speed hump location, NTMP staff will adjust the location of the proposed speed hump to allow for the applicant to garner the signature of a different set of property owners. Staff can continue to adjust the locations as long as the location of the speed hump will provide for safe and effective traffic calming. When all potential locations have been exhausted, and the applicant is unable to acquire the signatures, the project will be placed on hold until the signatures are acquired from one of the chosen locations.

7. Once the above steps have been completed, the project will be considered to have received the necessary approval and can proceed to the funding and implementation stage.

3. REQUALIFICATION OF EXISTING PROJECTS

Projects that had been submitted to the Neighborhood Traffic Management Program in the between August of 2017 and August of 2020 that did not qualify under the criteria and thresholds in place at the time of their application will be revaluated to determine if the projects would be qualified for under the new criteria. This will occur as staffing resources provide. The NTMP staff will determine which track the project fits into and will conduct a qualifying analysis. If a project meets the new criteria and thresholds and requalifies the NTMP staff will issue a letter to the original applicant asking if they desire to proceed with the project under the new thresholds and resident input criteria. If the applicant informs the NTMP program they would like to proceed, then for projects that are speed hump only the applicant will be asked to pursue a funding source and for those that are qualified under the standard track the project will be placed on the implementation list based on its priority rating.

4. FUNDING

The Funding Process has three tracks, one for education and enforcement, one for standard track projects and one for speed hump track projects. The tracks are as follows.

Education and Enforcement: These are usually low-cost measures and a NTMP funding account has been set aside for these measures. Once APD, the Office of Neighborhood Services, and the residents of the project area have agreed to a plan of action, the Office of Neighborhood Services will submit a request for funding to the NTMP Program Staff.

Standard Track: Standard track projects can either receive funding from the NTMP program or from independent sources. *For projects that require funding from the NTMP Program, requests must compete with other requests for traffic calming funding and will be ranked City-wide based on the safety risks posed by the existing traffic patterns in the project area location. The higher a project exceeded the thresholds the higher its ranking in the funding lineup. The highest-ranking projects will be implemented first, and the number of projects executed will depend on the City's resources that are available. Projects will continue to be ranked or up to 5 years, at which point they are no longer considered. This time condition has been set to ensure that projects do not become outdated due to resident and traffic condition changes. Nothing in this section shall prevent earlier implementation if funding is identified for a given project by a City Councilor or other neighborhood representative. Once funding is received projects may proceed to engineering and construction.*

For projects that obtain an independent source of funding from outside the NTMP Program, such as Council Set Aside, State Capital Outlay, or private funding, these projects may proceed to engineering and construction.

Speed Hump Track: Projects that use the Speed Hump Track must provide funding from sources other than the NTMP Program. These sources can include but are not limited to, Non-NTMP General Obligation Bonds, Bernalillo County General Obligation Bonds, Council Set Aside, State Capital Outlay, and private funds.

Once a qualified project has completed the programming funding processes, it may proceed to engineering and construction.

5. ENGINEERING AND CONSTRUCTION

The Department of Municipal Development will assume all responsibility to design, engineer, and maintain the projects (except for any landscaping). The project implementation could vary from 3 months to 3 years to implement, depending on the type of project, the availability of staff resources, the availability of contractors, funding availability, and the time of year. Projects may be implemented on a temporary or permanent basis. Non-physical measures including signage and striping can be quickly implemented because they are easiest to install and are the least expensive. If the effects of a traffic calming measure are uncertain, it may be implemented initially on a temporary basis using testing devices that quickly be installed and moved around to allow adjusting the traffic plan as needed. Once a device or series of devices has proven effective, permanent traffic calming measures may be constructed.

6. POST IMPLEMENTATION ASSESSMENT

Once projects have been constructed and operational for at least 6 months, a post-implementation evaluation process may be conducted. The evaluation will include:

1. Has the traffic calming measure been effective?
2. Has it accomplished the desired goal?
3. Has it created undesirable adverse effects?
4. If implemented on a trial basis, should a more permanent traffic calming measure be constructed?
5. Are additional measures needed to enhance effectiveness?
6. Whether, due to ineffectiveness or other undesirable effects, the devices should be removed.
7. Unanticipated or undesirable effects will be noted, and ineffective devices will be removed.
8. If a device was implemented on a temporary or trial basis, the NTMP Staff will determine if a more permanent traffic calming measure should be constructed.
9. These studies will be reserved for locations that are test cases for new measures or technology.

PART III – TRAFFIC MANAGEMENT STRATEGIES

This section describes the strategies and intent of typical traffic control devices and the different levels of neighborhood traffic calming measures used by the City. It also explains the use of stop signs and pavement markings and discusses the potential removal of unwarranted traffic control devices. For traffic calming measures addressing speed and traffic volumes, an explanation of the expected effectiveness and performance measures is discussed. Three types of traffic management strategies include:

Physical Traffic Management Strategies (Roadway Design): These strategies are overseen by the Traffic Engineering Division and consist of physical changes in the roadway design for the purpose of reducing the average roadway speed (speed management) or daily traffic volume (volume management), improving the vehicle-pedestrian design, or a combination of these elements. Physical strategies may be considered in instances where non-physical strategies have first been implemented, evaluated, and found to be unsuccessful. Physical strategies are discussed below.

Pavement Markings: These include painted roadway guidance features such as various forms of striping and painted markings and raised pavement markers. Painted markings are associated with reminding drivers of regulations such as speed limits, appropriate turn movements, or shared-use facilities They are relatively easy and low-cost to install, maintain, and modify. Markings can reduce speeds, prevent unwanted turn movements, and heighten driver awareness. Ways to deploy them include:

1. *Painted striping and raised pavement markers are used to reduce travel lane widths, making drivers feel more restricted and thereby reducing their speeds.*
2. *Striping for higher visibility for pedestrians at crosswalks and separate bike traffic from vehicle traffic.*
3. *Painted markings and pavement markers may also be used to provide added visibility.*

Signage: May be used for a variety of warnings, regulations, and restrictions to provide clear definitions of legal speed limits or provide other warnings and reminders. Signage is not self-enforcing and may decrease the aesthetics of a neighborhood or increase traffic on unintended streets. The signage used for traffic calming include:

1. *Regulatory signs, such as speed limit signs, to remind drivers of the speed limit in their neighborhood.*
2. *Signed turn restrictions may be installed to prohibit certain movements at an intersection at certain times of day in cases where cut-through traffic is common.*
3. *Signage to restrict certain types of vehicles on neighborhood streets to reduce/restrict unwanted traffic.*

Vertical Traffic Calming: These are the measures most commonly thought of as traffic calming and include devices that are constructed on the roadway, including speed humps and traffic circles, etc. It is for these devices that the criteria and thresholds in the manual have been mostly established. These devices force motorists to slow down but are the most expensive form of traffic calming and so as not to replace one safety issue (speed or cut through traffic) with another, these devices require proper planning design and maintenance.

Toolbox Summary

See detailed device pages for more information

Very Good · Good · Fair · Poor · Not Applicable

Effectiveness of traffic control measure at addressing concern

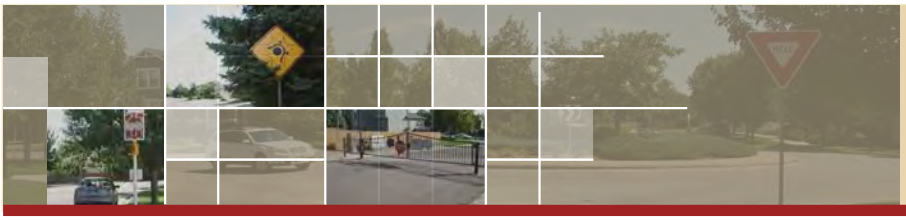
Traffic Management Strategy	Speed	Volume	Cut Through	Crashes	Emergency Vehicle	Pedestrian	Bicycle	Noise	Cost
Non-Physical Control Measures									
Targeted Police Enforcement	Very Good	Poor	Fair	N/A	Very Good	Very Good	Very Good	N/A	$$
Radar Speed Trailer	Very Good	Poor	Poor	N/A	Very Good	Very Good	Very Good	N/A	$$
Permanent Radar Speed Sign	Very Good	Poor	Poor	N/A	Very Good	Very Good	Very Good	N/A	$$
Centerline / Edgeline / Laneline Striping	Fair	Fair	Poor	N/A	Very Good	Very Good	Very Good	N/A	$
Speed Reduction Markings	Fair	Poor	Poor	N/A	Very Good	Very Good	Very Good	N/A	$
Speed Limit Signage	Fair	Poor	Poor	Fair	Very Good	Very Good	Very Good	N/A	$
Speed Limit Pavement Markings	Fair	Poor	Poor	N/A	Very Good	Very Good	Very Good	N/A	$
Raised Pavement Markers	Fair	Poor	Poor	Fair	Very Good	Very Good	Fair	Poor	$$
High Visibility Crosswalks	Fair	Poor	Poor	Very Good	Very Good	Very Good	Very Good	N/A	$$
Parking Strategies	Fair	Fair	Fair	Fair	Fair	Very Good	Fair	N/A	$$
Education and Community Involvement	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	$
Signed Turn Restriction	Poor	Very Good	Very Good	N/A	Very Good	Very Good	Very Good	N/A	$
Speed Control – Narrowing Measures									
Neckdowns and Bulbouts	Very Good	Fair	Fair	Fair	Fair	Very Good	Fair	N/A	$$
Lane Narrowing with Center Island /Pededstrian Refuge	Fair	Poor	Fair	Fair	Very Good	Very Good	Fair	N/A	$$$
Two-Lane Choker	Fair	Fair	Fair	Fair	Very Good	N/A	Fair	N/A	$$$
One-Lane Choker	Very Good	Very Good	Very Good	Poor	Poor	N/A	Poor	N/A	$$$
Roadside and Median Landscaping	Fair	N/A	N/A	N/A	N/A	Fair	Fair	N/A	$$$
Road Narrowing / Detached Sidewalks	Very Good	N/A	N/A	N/A	Very Good	Very Good	Fair	N/A	$$$
Speed Control – Horizontal Measures									
Traffic Circle	Very Good	Fair	Fair	Very Good	Fair	Fair	Fair	Fair	$$$
Roundabout (Single Lane)	Very Good	N/A	Poor	Very Good	Fair	Very Good	Fair	Very Good	$$$$
Chicane	Very Good	Fair	Fair	N/A	Very Good	Very Good	Fair	Fair	$$$
Lateral Shift	Fair	N/A	Fair	N/A	Very Good	Fair	Fair	N/A	$$$
Realigned Intersection	Very Good	Fair	Fair	N/A	Very Good	N/A	N/A	N/A	$$$
Medians and Partial Medians	Fair	Fair	Poor	Fair	Fair	Fair	Fair	N/A	$$$
Speed Control – Vertical Measures									
Speed Hump	Very Good	Very Good	Very Good	Fair	Poor	Very Good	Very Good	Poor	$
Speed Table	Very Good	Very Good	Very Good	Fair	Poor	Very Good	Very Good	Poor	$
Speed Kidneys	Very Good	Very Good	Very Good	Fair	Very Good	Very Good	Very Good	Fair	$
Raised Crosswalk	Very Good	Very Good	Very Good	Fair	Poor	Very Good	Very Good	Poor	$
Raised Intersection	Very Good	N/A	N/A	Fair	Poor	Very Good	Very Good	N/A	$$$
Volume Control Measures									
Full Closure (gate, midblock cul-de-sac, intersection cul-de-sac)	Very Good	Fair	Very Good	Fair	Poor	Very Good	Very Good	Very Good	$$$$
Partial Closure	Very Good	Fair	Very Good	Fair	Fair	Very Good	Very Good	Very Good	$$$$
Diagonal Diverter	Very Good	Fair	Very Good	Fair	Fair	Very Good	Very Good	Very Good	$$$$
Median Barrier	Fair	Fair	Very Good	Very Good	Fair	Very Good	Very Good	Very Good	$$$$
Forced Turn Island	Fair	Fair	Very Good	Very Good	Fair	Very Good	Very Good	Very Good	$$$
Two-Way Street Conversions	Very Good	Fair	Fair	Fair	Very Good	Very Good	Very Good	N/A	$$$$
One-Way Couplet Conversions	Poor	Fair	Fair	Very Good	Fair	Very Good	Very Good	N/A	$$$

PART IV – NEIGHBORHOOD TRAFFIC CALMING MEASURES TOOLBOX

This section of the manual provides a detailed toolbox of traffic calming measures for use in developing neighborhood traffic calming plans. Each measure includes a brief description, noted positive and negative aspects, and an accompanying illustration or photograph. In selecting the correct set of tools to address an identified and documented problem, it is important to understand these considerations, as well as the initial and long-term costs associated with each tool. The individual devices are grouped so that the reader can compare and identify those measures that best address the traffic issues and are most appropriate for the specific neighborhood. The toolbox is divided into three categories:

1. Non-Physical Measures
2. Speed Management Traffic Calming Measure
3. Traffic Volume Management Traffic Calming Measures

This NTMP manual includes a toolbox of potential devices to address neighborhood traffic management concerns. Each device is described in detail in the following pages of this manual.



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	Very Good
Volume	Poor
Cut-through	Poor
Crashes	N/A
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Very Good
Noise	N/A
Cost	$$

Very Good · Good · Fair · Poor · N/A 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	Very Good
Volume	Very Good
Cut-through	Poor
Crashes	N/A
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Very Good
Noise	N/A
Cost	$

Very Good · Good · Fair · Poor · N/A 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 known as 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.

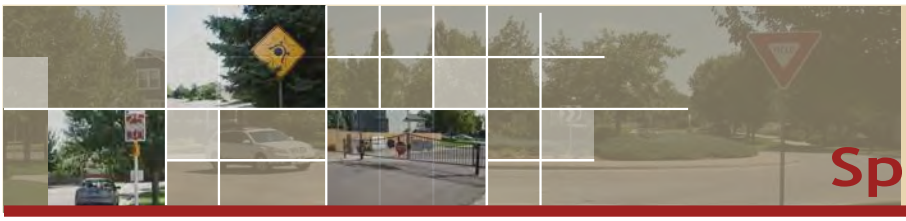
Application of these types of speed reduction markings should conform to the standards and guidance in the MUTCD.

Effectiveness Scorecard

Speed	Fair
Volume	Poor
Cut-through	Poor
Crashes	N/A
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Very Good
Noise	N/A
Cost	$

Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance



Speed Limit Signage

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.

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.

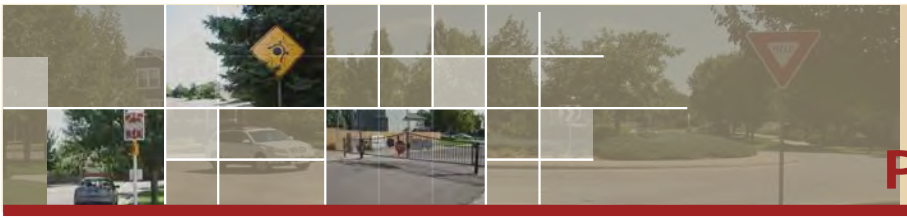
Requests for posting speeds lower than the standard residential speed limit of 25 MPH will be subject to the requirement in the City of Albuquerque Code of Ordinances that an engineering and traffic study be conducted.

Effectiveness Scorecard

Speed	Fair
Volume	Poor
Cut-through	Poor
Crashes	Fair
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Very Good
Noise	N/A
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

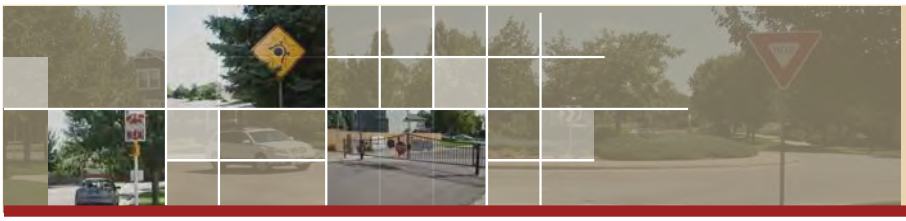
- Regular maintenance is required. RPMs must be replaced as they become dislodged over time.
- RPMs should not be used on any streets, such as in the Northeast foothills, where the roads may be plowed after snowfall.
- Residents may complain of noise from vehicles driving over RPMs.

Effectiveness Scorecard

Speed	Fair
Volume	Good
Cut-through	Good
Crashes	Fair
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Fair
Noise	Good
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

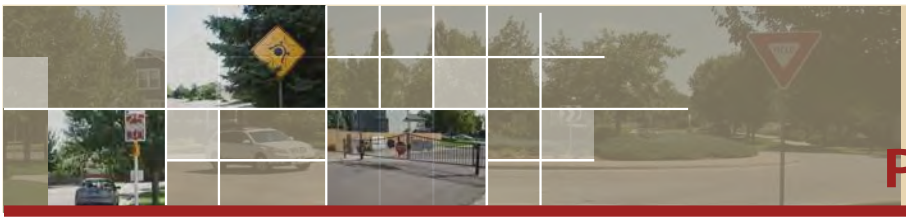
- May give pedestrians a falsely high sense of safety.
- More complex installations (lights, pavement treatments) can be costly.
- May result in increased maintenance costs for pavement treatments, beacon systems, and in-pavement lights.

Effectiveness Scorecard

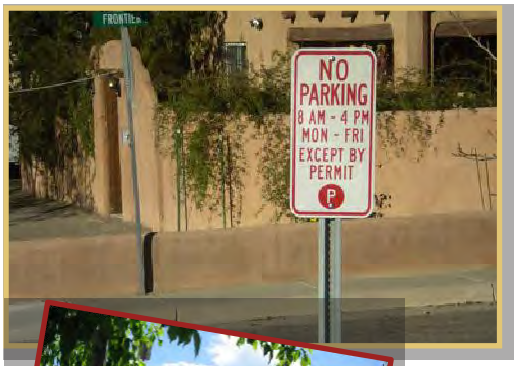
Speed	Fair
Volume	Poor
Cut-through	Poor
Crashes	Good
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Good
Noise	N/A
$	

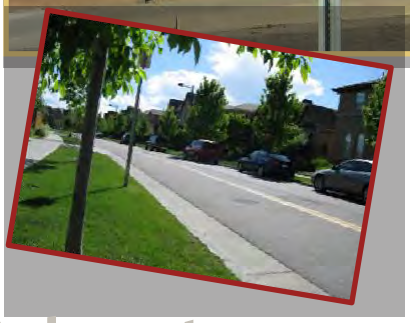
Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance



Parking Strategies





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.

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.

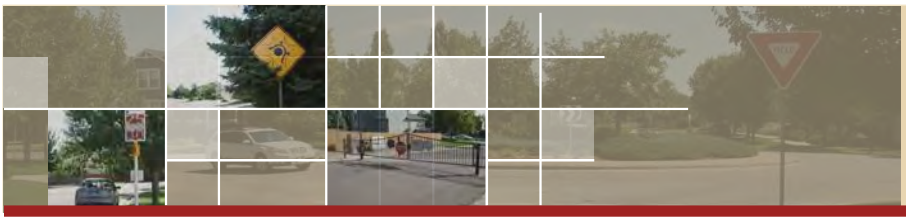
Effectiveness Scorecard

SPEED LIMIT 25	Speed	Fair
	Volume	Fair
	Cut-through	Fair
	Crashes	Fair
	Emergency Vehicle	Fair
	Pedestrian	Good
	Bicycle	Fair
	Noise	N/A
$		

Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance

SPEED LIMIT 25



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 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

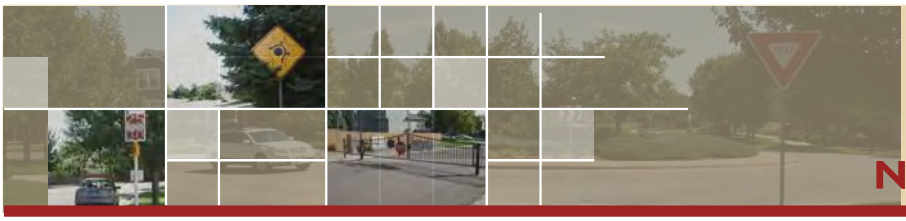
- Compliance is low for signs alone without enforcement.
- May increase trip length for some drivers.
- May adversely affect downstream or adjacent traffic patterns.
- Signs require regular maintenance. Signs must be replaced approximately every 8 years.

Effectiveness Scorecard

Speed	Good
Volume	Good
Cut-through	Good
Crashes	N/A
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Very Good
Noise	N/A
Cost	$

Very Good · Good · Fair · Poor · N/A 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	Very Good
Volume	Fair
Cut-through	Fair
Crashes	Fair
Emergency Vehicle	Fair
Pedestrian	Very Good
Bicycle	Fair
Noise	N/A
Cost	$$

Very Good · Good · Fair · Poor · N/A 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	Good
Volume	Poor
Cut-through	Good
Crashes	Good
Emergency Vehicle	Very Good
Pedestrian	Very Good
Bicycle	Good
Noise	N/A
$	

Very Good · Good · Fair · Poor · N/A 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

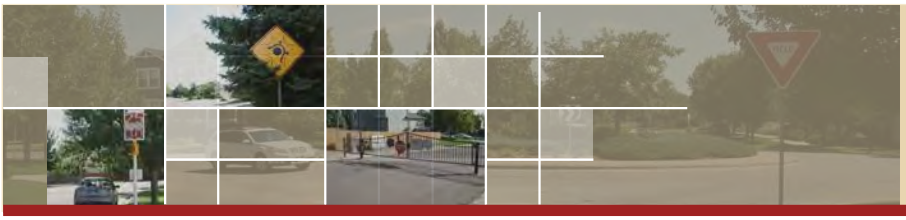
- May reduce on-street parking
- Complicates drainage design
- May require additional maintenance
- Reduces bicycle lane and/or side of road area used by bicyclists

Effectiveness Scorecard

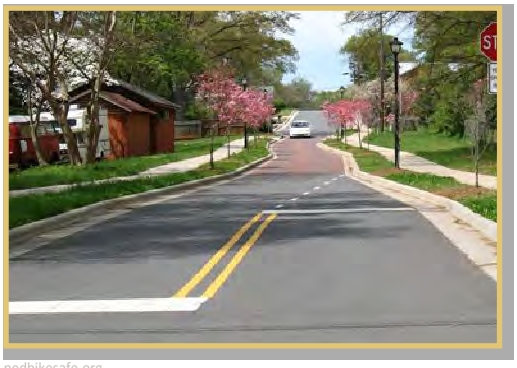
Speed	Very Good
Volume	Very Good
Cut-through	Very Good
Crashes	Very Good
Emergency Vehicle	Good
Pedestrian	N/A
Bicycle	Very Good
Noise	N/A
$	

Very Good · Good · Fair · Poor · N/A 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	Very Good
Volume	Very Good
Cut-through	Very Good
Crashes	Poor
Emergency Vehicle	Poor
Pedestrian	N/A
Bicycle	Poor
Noise	N/A
$	

Very Good · Good · Fair · Poor · N/A 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	N/A
Cut-through	N/A
Crashes	N/A
Emergency Vehicle	N/A
Pedestrian	
Bicycle	
Noise	N/A
$	

Very Good · Good · Fair · Poor · N/A 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

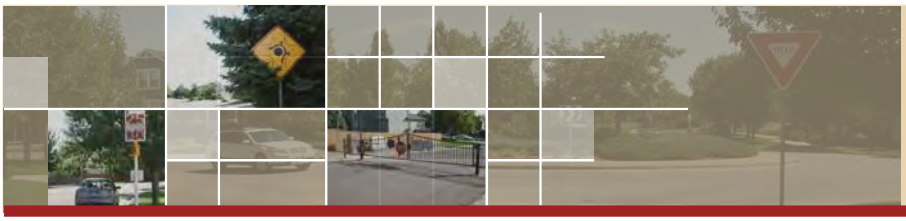
- Landscaping maintenance may be required
- Detached sidewalks are not as effective as physical measures in slowing speeds
- Expensive

Effectiveness Scorecard

Speed	Good
Volume	N/A
Cut-through	N/A
Crashes	N/A
Emergency Vehicle	Good
Pedestrian	Very Good
Bicycle	Fair
Noise	N/A
$	

Very Good · Good · Fair · Poor · N/A 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

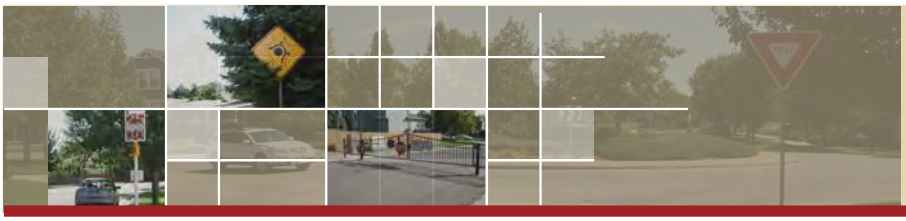
- Slows emergency vehicles and can be difficult for large vehicles to circumnavigate
- May eliminate some on-street parking
- May require modifications to curb, gutter, and sidewalks

Effectiveness Scorecard

Speed	●
Volume	◒
Cut-through	◒
Crashes	◔
Emergency Vehicle	◒
Pedestrian	◒
Bicycle	◒
Noise	◒
Cost	$$$

● Very Good ◔ Good ◒ Fair ◠ Poor N/A 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 forapplication:

- 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

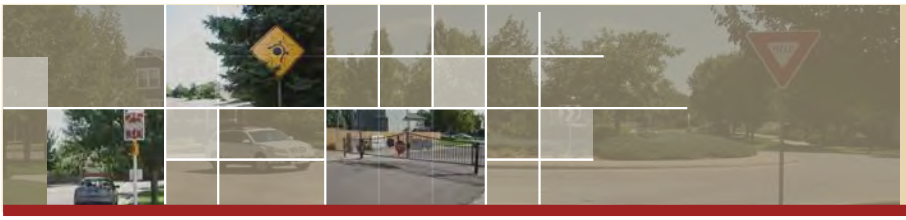
- May be difficult for large vehicles to circumnavigate
- Must be designed so that the circulating lane does not encroach on the crosswalks
- May reduce on-street parking
- Landscaping must be maintained by the residents or by the municipality

Effectiveness Scorecard

Speed	
Volume	N/A
Cut-through	
Crashes	
Emergency Vehicle	
Pedestrian	
Bicycle	
Noise	
Cost	$$$$

Very Good · Good · Fair · Poor · N/A 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

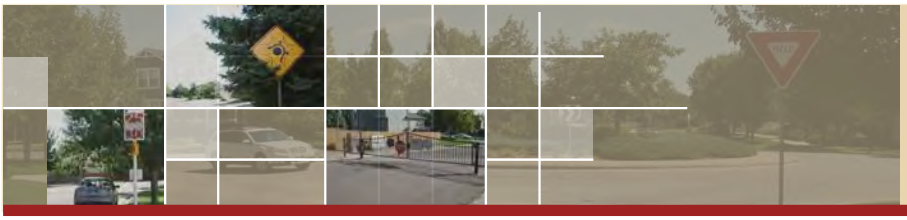
Effectiveness Scorecard

Speed	
Volume	
Cut-through	
Crashes	N/A
Emergency Vehicle	
Pedestrian	
Bicycle	
Noise	
$	

Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance

SPEED LIMIT 25



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

Disadvantages

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

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.

Effectiveness Scorecard

Speed	Fair
Volume	N/A
Cut-through	Fair
Crashes	N/A
Emergency Vehicle	Good
Pedestrian	Fair
Bicycle	Fair
Noise	N/A
$	

Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance

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

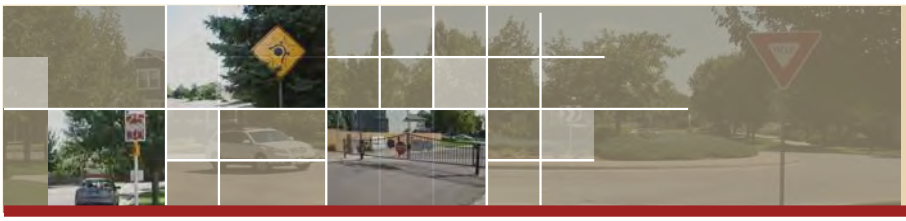
Effectiveness Scorecard

Speed	Very Good
Volume	Fair
Cut-through	Fair
Crashes	N/A
Emergency Vehicle	Very Good
Pedestrian	N/A
Bicycle	N/A
Noise	N/A
Cost	$$$

Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance

SPEED LIMIT 25



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 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

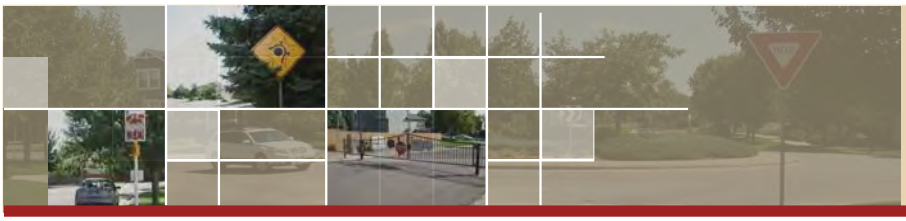
- Potential for increased maintenance if landscaped
- Medians are not as effective as speed humps or traffic circles in slowing speeds
- May interrupt emergency access and operations
- May interrupt driveway/side street access and result in U-turns at the end of medians
- Can create drainage issues

Effectiveness Scorecard

Speed	
Volume	
Cut-through	
Crashes	
Emergency Vehicle	
Pedestrian	
Bicycle	
Noise	N/A
Cost	$$$

Very Good · Good · Fair · Poor · N/A 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

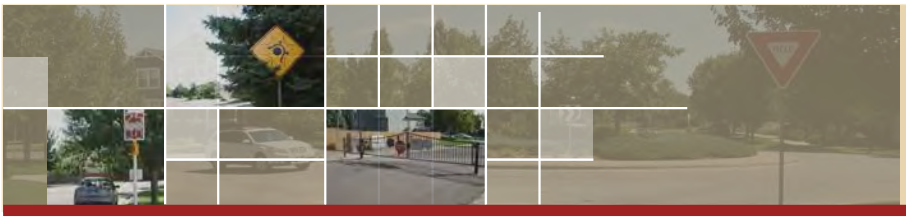
- May cause speeding between humps
- May divert traffic to an adjacent neighborhood street
- May increase noise levels as vehicles decelerate and accelerate

Effectiveness Scorecard

Speed	●
Volume	◕
Cut-through	◕
Crashes	◓
Emergency Vehicle	◠
Pedestrian	◕
Bicycle	◕
Noise	◠
Cost	$

● Very Good ◕ Good ◓ Fair ◠ Poor N/A 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

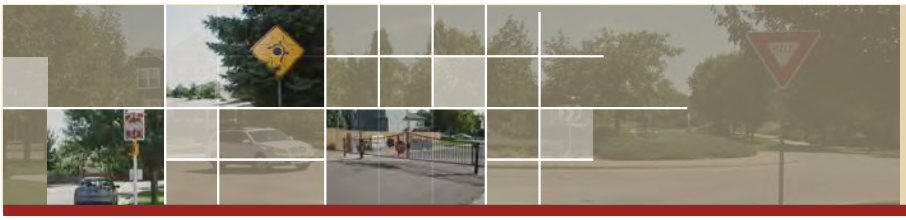
- May inadvertently divert local drivers to another route to avoid the calming measure
- Textured materials can be expensive, if used
- May increase noise and air pollution
- May not be appropriate along bus or emergency routes
- Drainage impacts need to be considered in the design

Effectiveness Scorecard

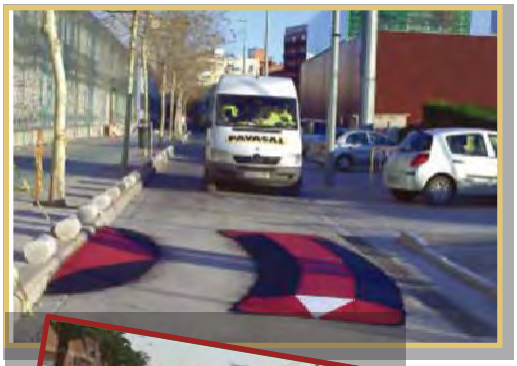
Speed	●
Volume	◕
Cut-through	◕
Crashes	◓
Emergency Vehicle	◠
Pedestrian	◕
Bicycle	◕
Noise	◠
Cost	$

● Very Good ◕ Good ◓ Fair ◠ Poor N/A Not Applicable

Quick Glance



Speed Kidney



Institute of Transportation Engineers Journal December 2012

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.

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

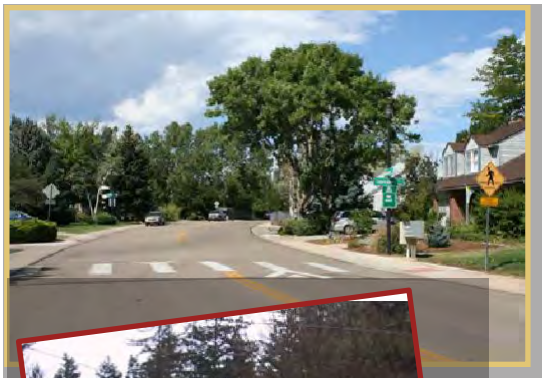
Effectiveness Scorecard

Speed	●
Volume	◒
Cut-through	◒
Crashes	◓
Emergency Vehicle	◒
Pedestrian	◒
Bicycle	◒
Noise	◓
Cost	$

● Very Good ◒ Good ◓ Fair ◔ Poor N/A 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 · N/A 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

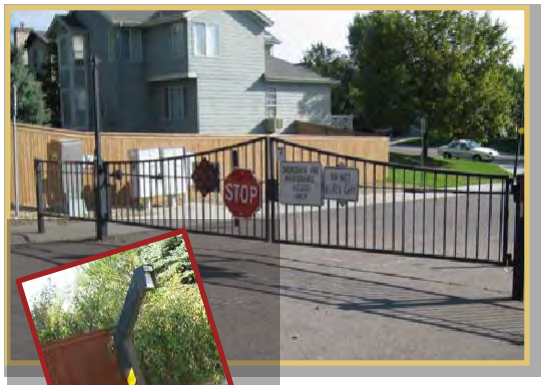
Effectiveness Scorecard

Speed	Good
Volume	N/A
Cut-through	N/A
Crashes	Fair
Emergency Vehicle	Poor
Pedestrian	Very Good
Bicycle	Good
Noise	N/A
Cost	$$$

Very Good · Good · Fair · Poor · N/A 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

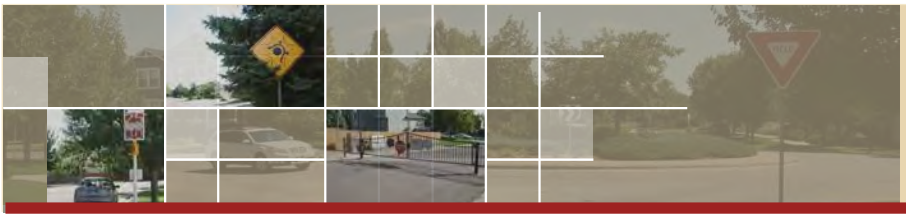
- Statutory actions required for implementation
- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents

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

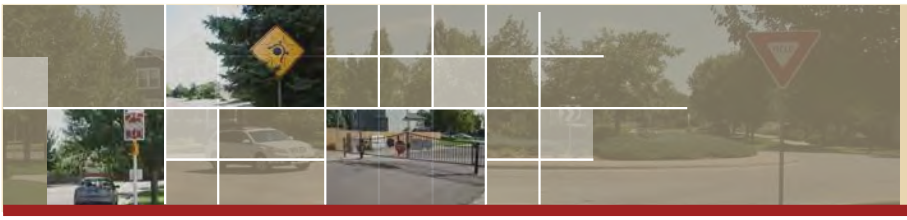
- Statutory actions required for implementation
- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents

Effectiveness Scorecard

Speed	Good
Volume	Fair
Cut-through	Very Good
Crashes	Fair
Emergency Vehicle	Fair
Pedestrian	Good
Bicycle	Good
Noise	Good
$	

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

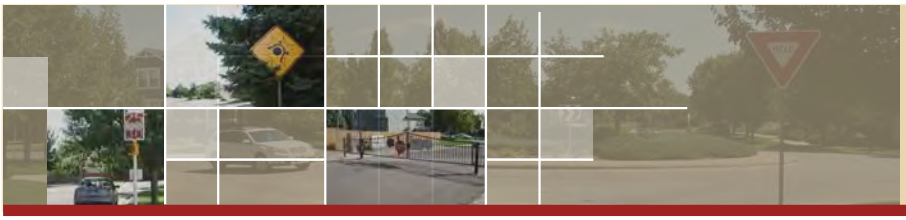
- Statutory actions required for implementation
- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents
- The adjacent corners of the intersection may require reconstruction to maintain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

Effectiveness Scorecard

Speed	Good
Volume	Fair
Cut-through	Very Good
Crashes	Fair
Emergency Vehicle	Fair
Pedestrian	Good
Bicycle	Good
Noise	Good
$	

Very Good · Good · Fair · Poor · N/A 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	Fair
Volume	Fair
Cut-through	Very Good
Crashes	Good
Emergency Vehicle	Fair
Pedestrian	Good
Bicycle	Good
Noise	Good
$	

Very Good · Good · Fair · Poor · N/A 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

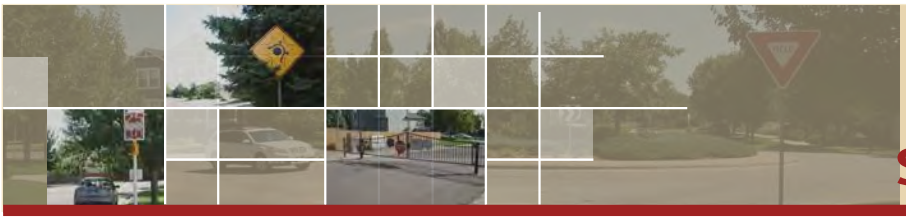
- Delays emergency vehicles
- Traffic diverted to adjacent streets may create new traffic problems
- Increased travel time and out of direction travel for local residents
- May increase u-turning movements and encourage wrong way travel

Effectiveness Scorecard

Speed	◒
Volume	◒
Cut-through	●
Crashes	◕
Emergency Vehicle	◒
Pedestrian	◕
Bicycle	◕
Noise	◕
Cost	$$$

● Very Good ◕ Good ◒ Fair ◓ Poor N/A Not Applicable

Quick Glance



Two-way Street Conversions

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 postive neighborhood or economic development benefit. Two-way street conversions involve the reconstruction of traffic signals, signing, and striping.

Advantages

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

Disadvantages

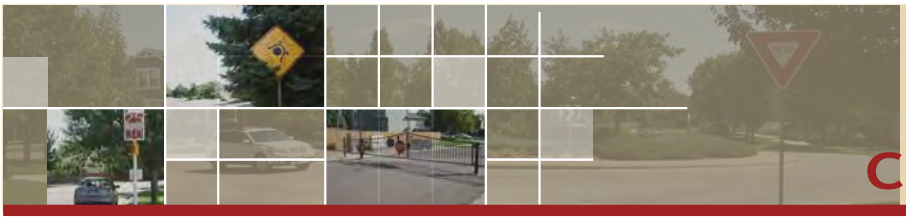
- Introduces more vehicle, bicycle, and pedestrian conflicts
- Reduces through traffic capacity
- May impact bicycle lanes and parking

Effectiveness Scorecard

Speed	
Volume	
Cut-through	
Crashes	
Emergency Vehicle	
Pedestrian	
Bicycle	
Noise	N/A
Cost	$$$$

Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance



One-way Couplet Conversions

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 neededon-street parking.

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

Effectiveness Scorecard

Speed	
Volume	
Cut-through	
Crashes	
Emergency Vehicle	
Pedestrian	
Bicycle	
Noise	N/A
Cost	$$$

Very Good · Good · Fair · Poor · N/A Not Applicable

Quick Glance

GLOSSARY OF TERMS

85th Percentile Speed: the speed at or below which 85 percent of vehicles travel. If the speeds of 100 vehicles were recorded, 85 vehicles would be at or below the 85th Percentile Speed, and exactly 15 percent would be above the 85th percentile speed.

Collector Roadway: A collector road or distributor road is a low-to-moderate-capacity road which serves to move traffic from local streets to arterial roads. Unlike arterials, collector roads are designed to provide access to residential properties or small commercial lots. Jurisdictions differentiate major and minor collector roads, the former being generally wider and busier.

Cul-de-sac: See definition for Dead End.

Dead End: A dead end, also known as a cul-de-sac no through road or no exit road, is a street with only one inlet-outlet.

Designated Emergency Response Routes: A system wide identification of the fastest most efficient routes for emergency response vehicles (police, fire, and ambulance).

Functional Classification: A hierarchical street designation (e.g. major arterial>minor arterial>collector>local) for mobility and access. Higher mobility streets such as arterials tend to have less access. Local neighborhood streets with numerous driveways and cross streets have low mobility but high access.

Local Roadway: A street that is primarily used to gain access to the property bordering it.

ITE: *The Institute of Transportation Engineers*, The Institute of Transportation Engineers is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs.

Life Cycle Costs: A tool to determine the cost to purchase, own, operate, maintain and, finally, dispose of an object or process,

MUTCD: *Manual on Uniform Traffic Control Devices for Streets and Highways*, defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public travel. The MUTCD is published by the Federal Highway Administration (FHWA) under 23 Code of Federal Regulations (CFR), Part 655, Subpart F.

NTMP: *Neighborhood Traffic Management Program,* a program for traffic calming within the City of Albuquerque. This policy document defines the roles, responsibilities, and procedures for implementing traffic calming measures under the NTMP.

ONC: *Office of Neighborhood Coordination,* a section within the City of Albuquerque, City Council Services Department that provides liaison between the City of Albuquerque and Neighborhood Associations

Private Street: A street or route that is designated by a public authority to accommodate a person or a group who need to access land. A private street may or may not cross several properties, or be used by the general public, but primarily benefits those who reside or work on lands that abut the roadway. Private roads are maintained at the expense of the individuals who request the road.

Public Rodway: Any road or street under the jurisdiction of and maintained by a public authority and open to public travel."

Speed Hump: Parabolic vertical traffic calming devices intended to slow traffic *speeds* on low volume, low *speed* roads. *Speed humps* reduce *speeds* to 15–20 mph and are often referred to as "*bumps*" on signage and by the general public.

Traffic Calming: The combinations of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users.

TED: Traffic Engineering Division: The Division within the City of Albuquerque Department of Municipal Development that oversees the operations of the City's Roadways including the NTMP.

Vertical Traffic Calming Measures: These include speed humps, raised crosswalks and raised intersections. These measures have a physical effect on motorists and their vehicles, and are usually the most effective at reducing traffic speeds.

Acknowledgements:

The City would like to thank the following Albuquerque Residents and City Staff who gave their time and effort to Update the NTMP.

City Residents:

- **Tommy Borst,**
- **Eric Griego,**
- **Robert Habiger**
- **Michael Loftis, and**
- **Preciliano (Percy) Ortiz.**
- **David Stauffer,**

City Staff:

- **Tim Brown P.E., Manager Traffic Engineering Division,**
- **Lt. Zachary Cottrell, Traffic Enforcement Albuquerque Police Department,**
- **Lt. Eric Gonzales, Fire Marshalls Office, Albuquerque Fire and Rescue Department,**
- **Amanda Herrera P.E., Manager Neighborhood Traffic Management Program,**
- **Jeff Hertz, Policy Analyst, City Council Service,**
- **Tom Menicucci, Senior Policy Analyst City Council Services, (NTMP Update Project Manager).**
- **Shanna Schultz, Senior Planner, City Council Service, and**
- **Manual Zamora, Fire Marshalls Office, Albuquerque Fire and Rescue Department,**

Neighborhood Traffic Management Program Application Form

Criteria for an NTMP application:

The primary applicant does not have to be a resident on the requesting street segment.
Supporting Applicants must be residents on the requesting street segment.
Street segment cannot be less than 800 feet long.
Must have at least 40% of the homes fronting the street segment.
Dead-ends or cul-de-sacs that only front a few homes are not eligible.
Not eligible if traffic calming measures are already located on requesting street segment.
Not eligible if the roadway has already been studied in the last 5 years.
Must be within COA limits.

Name of Applicant: _____
(Does not have to live on street)
Address of Applicant: _____
Email of Applicant: _____
Phone Number of Applicant: _____
Street for NTMP Request: _____
Address Range of Study Area _____
Supporting Applicants: (Must be residents of street where traffic calming is desired)

Supporting Applicants (7 required)*	Address *	Email

Reason for Request:

- ☐ Safety
- ☐ Speeding
- ☐ Excess Traffic
- ☐ Cut-Through Traffic
- ☐ Bicycle or Pedestrian
- ☐ Commercial Vehicle Restriction
- ☐ Parking
- ☐ Noise
- ☐ Other (Please Describe): _____

Description of Neighborhood conditions or recent changes in traffic, leading to this application:

_____
_____
_____
_____
_____

NEIGHBORHOOD TRAFFIC CALMING PETITION FORM

CITY OF ALBUQUERQUE — NTMP
*** * * NEIGHBORHOOD TRAFFIC CALMING PETITION * * ***

Section I

Date: <INSERT DATE SENT TO NEIGHBORHOOD CONTACT>

Representatives from the <INSERT REQUESTING NEIGHBORHOOD> neighborhood, on <INSERT APPLICATION DATE> requested initiation of a NTMP Study. Based on available data, the households and properties identified in the attached **Exhibit 1** are considered to be in the affected area. An initial assessment of available data has been conducted, and to continue processing the application neighborhood support is required. Two-thirds of the shown households/properties on Exhibit 1 must agree with the application and sign the petition below. The completed petition should be submitted to the City of Albuquerque Traffic Engineering Division (*P.O. Box 1293, Albuquerque, NM 87103* or *NTMP@cabq.gov*)

Section II **(ONLY ONE SIGNATURE PER ADDRESS)**

Name (print)	Address	Telephone	Email	Signature
Name (print)	Address	Telephone	Email	Signature
Name (print)	Address	Telephone	Email	Signature
Name (print)	Address	Telephone	Email	Signature
Name (print)	Address	Telephone	Email	Signature
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Name (print)	Address	Telephone	Email	Signature
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(PLEASE COPY THIS PAGE FOR ADDITIONAL SIGNATURE