

Neighborhood Traffic Management Program Guide

City of Clive, Iowa



www.cityofclive.com

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I. Introduction

Speeding traffic is partially a social issue and behavioral problem in which residents want drivers to drive slowly on their street, however the same residents often speed in other residential areas. Granting the fact that speeding will continue being an issue until the human behavior factor is addressed, some success can be achieved through education, enforcement, and engineered traffic calming programs. Traffic calming is defined as a combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users.

Background

The City of Clive strives to ensure overall safety, protect its neighborhoods, and to enhance the quality of life for its residents. Traffic conditions on residential streets certainly affect those factors of neighborhood livability. Traffic that is traveling at improper speeds and an excessive amount of non-local traffic that is consistently using residential streets can affect a neighborhood's livability, including pedestrian and bicyclist activities.

This Neighborhood Traffic Management Program policy document is designed to serve as a guide for City staff and residents to study, plan, and implement processes appropriate for the particular traffic issues neighborhoods are experiencing. Under this program, specific steps have been developed to provide direction for staff that will allow them to work with residents in identifying traffic issues in and seeking appropriate solutions. It has become ineffective and inefficient to address a traffic problem as though it was a unique and unusual circumstance. Many complaints are of the same nature and similar responses to similar circumstances are appropriate. Staff spends considerable time collecting and analyzing data, communicating with concerned citizens, writing reports to both citizens and the City Council, and conducting follow-up studies. Major considerations in a neighborhood traffic management program include the establishment of policy guidelines, public participation, education and enforcement strategies, recommended traffic control devices and criteria for their use. This document provides such guidance.

Goals, Purpose & Objectives

The goal of the Neighborhood Traffic Management Program is to affect driver behavior in order to improve safety and the quality of life for residents, pedestrians, bicyclists, and motorists. This is to be balanced with providing streets that do not hinder quick response time for emergency service vehicles including fire trucks, police cars, ambulances, and large vehicles such as school buses and trucks used for providing essential City and resident services. Throughout the study process, City staff will work with representatives of neighborhoods to develop workable solutions to problems identified.

Possible enhancement of both the safety and quality of life within residential neighborhoods may be achieved through the following means.

- **Education:** Increase the neighborhood residents' awareness that there are traffic related safety concerns such as excessive speeds, non-local (cut-through) traffic, and accidents.
- **Enforcement:** Encourage compliance with speed limits on local streets through speed reducing tactics provided by the Clive Police Department, which include, but are not

limited to, traditional enforcement, the Pace Car Program, the neighborhood speed watch program, and the use of speed trailers.

- **Engineering:** Evaluate the affected street for speeding, traffic volumes, and accidents to determine if traffic calming measures are warranted.

The program's objectives are as follows:

- Identify problem areas;
- Reduce vehicle speeds on residential streets;
- Reduce number and severity of accidents;
- Discourage non-local or cut-through traffic;
- Encourage pedestrian and bicycle activities;
- Create and/or enhance attractive streetscapes;
- Establish clear guidelines of the process and procedures to evaluate traffic calming requests; and
- Partner with residents for the best overall program for the affected street.

Taking Action

Through this program residents will partner with the City of Clive to evaluate traffic concerns in their neighborhood. While some areas in the City may truly be in need of engineered traffic calming measures, others may be addressed with education or enforcement solutions, and other methods outside the scope of this program. Through the steps outlined in this document, the information gathered will help residents and City staff members determine whether a street qualifies for engineered traffic calming measures. Depending on the situation, the level of community involvement, and budgetary constraints, it could take several months to several years to develop and implement a successful traffic management program in a particular neighborhood.

The Neighborhood Traffic Management Program is divided into three steps. In Step One, Police and/or Public Works staff members work with residents to implement Pre-Traffic Calming Solutions. This step consists of implementing traffic management measures that both educate the public and enforce the current traffic laws. If the pre-traffic calming measures implemented are determined ineffective by the City's Traffic Management Committee, the Committee will advise residents to proceed forward with Step Two. During Step Two, the Engineering and Study Process, the Traffic Management Committee conducts an initial review of the street(s) for eligibility. If eligible, city staff directs neighborhood group to Step 3, the Design and Implementation Process. During this phase, the City Engineer will recommend traffic calming options that best suit the neighborhood's needs, and the Traffic Management Committee will prioritize the project for both funding and installation.

Traffic calming device constructed/installed.

If the neighborhood group is dissatisfied with a decision made by staff during any step of this process, they have the opportunity to request an appeal to the City Council. Appeals will be heard on the recommendations made by and not on any of the policy processes or standards detailed within the Neighborhood Traffic Management Program Guide.

II. Step One — Pre-Traffic Calming Solutions (Education and Enforcement)

There are several initial options residents can pursue to reduce speeding in their neighborhood before requesting that further measures be taken. Residents can request the following speed reduction options for their neighborhood by calling the Police Department at (515) 278-1312.

A. Speed Monitoring Trailer

Residents can request the use of an automated speed monitoring trailer that displays actual speed to drivers to encourage compliance with posted speed limits.

B. Pace Car Program

This is a voluntary program in which residents of a neighborhood are encouraged to participate by signing a pledge to obey the traffic laws and to display a Pace Car cling in the rear window of their vehicle. As more neighbors agree to act in the manner of a pace car, they will automatically slow the traffic behind them by driving the speed limit and making full stops at stop signs.

C. Neighborhood Speed Watch

Residents who live in neighborhoods perceived to have a speeding problem are eligible to participate in this educational program. The program requires that at least two adults from the neighborhood association attend a radar training session with a police instructor. Upon completion of the program, residents are eligible to borrow radar equipment to use in their neighborhood. The residents then provide license plate numbers of vehicles exceeding the speed limit by ten (10) or more miles per hour to the Police Department. Reminder notices regarding speed limits are sent to the registered owners identified as violators via the Police Department. The notices are not citations; rather, reminders to obey the posted speed limit.

D. Traffic Count and Velocity Data Gathering

This is a device used by Clive Public Works to measure the time of day, speed and quantity of vehicles passing a specific location. The unit collects and sorts the data which in turn helps the Police Department to prioritize enforcement and other responsive efforts, as well as to educate the public regarding actual traffic flows versus perceptions.

E. Enforcement

After a traffic analysis is completed, the Police Department may respond with increased enforcement to address the issue. Residents should be specific regarding the days and times of traffic concerns to help determine when enforcement is needed.

F. Other Measures

Other measures available are additional education outreach and a review of the street for appropriate signage, striping, or pavement markings as defined by the Manual of Uniform Traffic Control Devices.

III. Step Two — Engineering and Study Process

Managing traffic issues through education and police enforcement have successfully worked on many streets, but in some cases, this is just a temporary fix and the traffic problems resurface. In these instances, there becomes a need for more permanent engineered traffic calming measures to reduce the speed of vehicles and discourage non-local or “cut-through” traffic on low volume residential streets. If Step One: Pre-Traffic Calming Solutions measures have been pursued and the Traffic Management Committee has determined these initiatives to be ineffective, the Committee will advise the residents to proceed to Step Two—the Engineering and Study Process.

Pre-Qualifications

Qualifying for engineered traffic calming measures requires a multi-step process that may involve evening meetings and will require petitioning door-to-door. **Active citizen participation is key to the success of all traffic calming projects.** Experience in other cities has shown that traffic calming projects installed without strong neighborhood participation is frequently unsuccessful, requiring the removal of some or all measures. This involvement instills a sense of ownership in the project once traffic calming procedures are installed.

Additionally, the street being considered must meet the following pre-qualifications to be eligible for this program:

- Have a speed limit of less than or equal to 30 mph;
- Be classified as a local or collector;
- Be at least 1,000 feet in length;
- Cannot be a cul-de-sac;
- Cannot be along a DART bus route;
- Cannot be used as a critical emergency response route or provide direct access to a fire station or hospital
- The street is not a loop street within a neighborhood or subdivision.

This program applies only to existing streets. It does not apply to future roads or to new subdivision streets under construction. If an existing subdivision street is intended to be extended in the future, then it must be at least 75% complete with the termination point known.

The Process

To begin this process, a neighborhood representative must first submit a letter to the Clive Police Department (which will coordinate the receipt and mailing of information to the Clive Traffic Management Committee) requesting the street be evaluated for engineered traffic calming measures. Upon receipt of this request, the Police Department will forward the request to the Traffic Management Committee. The Committee shall consist of representatives from the City Manager’s Office, Police Department, and Public Works. It will conduct an initial review of the citizens’ information regarding the area. Upon completion of the review, the Committee will advise the residents whether or not they may proceed with this step in the process.

If the area is eligible, the Committee will send the neighborhood representatives a map defining the affected area. The affected area is determined by taking into consideration subdivision

boundaries and alternate travel routes within the subdivision and neighborhood. Determination of an appropriate study area is important because installation of traffic calming devices on one street within a neighborhood can have implications on other through streets within the neighborhood. The study area is generally bounded by the major/minor arterial or network collector street system. The City evaluates entire neighborhoods, or groups of adjacent neighborhoods collectively, rather than independent streets to avoid simply moving a problem to another location within a neighborhood.

After reviewing this information and pursuing other solutions with the Traffic Management Committee, residents may want to take the first step to begin the traffic calming process. Fulfillment of each step must be in place before proceeding to the next step.

A. Meeting with Neighborhood Representatives

After the affected area is determined, the resident that submitted the request will be asked to organize the neighborhood representatives. This should include from one to three residents per subdivision, depending on the size of the study area. Once the neighborhood representatives are established, a meeting will be scheduled with the Traffic Management Committee and the neighborhood representatives to discuss the study, to provide educational materials, and to allow staff to better understand the concerns of the residents. Representatives from the Clive Police, Public Works, and Community Development Departments may be included in the group as well. *The study will not proceed beyond this point until neighborhood representatives with a willingness to actively participate in the process are identified and established.*

B. Circulate Initial Petition

Residents requesting traffic calming measures in their neighborhood will need to circulate an initial neighborhood traffic management petition to be signed by residents in the affected area and submit it to the Police Department. This petition is available in Appendix A and the City of Clive's webpage at www.cityofclive.com. There are two key points regarding the signatures on the petition.

1. In order for the request to proceed, the petition must contain signatures from at least 67% of the households located in the affected area and at least 80% of the households on the affected street.
2. If an apartment complex and/or business is located on the affected street or within the affected area, only the signature of the owner or owner's representative will be accepted for the purpose of achieving the required percentage for the petition. (If needed, the City will provide assistance to neighborhood groups in finding contact information for apartment or business owners.)

C. Review by the Traffic Management Committee

Once the Police Department receives the petition it will then be reviewed by the Traffic Management Committee to ensure its accuracy. If it finds that the petition lacks the necessary signatures, it will be sent back to the residents with an explanation of why it was not approved.

D. Traffic Study

The Public Works Department will conduct a traffic study for the affected area to determine the criteria levels the street meets. If the overall demand for traffic calming exceeds the City's

resources, staff will prioritize the projects. This includes staff time to work on the project as well as construction funding for the actual traffic calming device. A common approach used by other cities to efficiently utilize public resources is to prioritize projects so that the neighborhoods with the greater problems are addressed first. Since most neighborhood traffic problems involve speeding vehicles or a high volume of vehicles relative to the street type, these criteria are weighed heavier in the ranking process. Another factor that is considered in defining the extent of the problem is the average annual reported accidents. Also, the impact traffic will have on a neighborhood depends upon the character of the street in the neighborhood and the amount of pedestrian activity within the neighborhood. These prioritization criteria are also used to determine how the project should be funded. This is discussed in more detail under funding.

In addition to prioritizing projects, it is necessary to provide some minimum criteria that must be met in order for a neighborhood to qualify for traffic calming measures. These minimum criteria ensure that City staff and financial resources are used efficiently by not spending resources on streets that do not have a significant traffic problem and to avoid creating unmet expectations by having a long list of projects that may never get built. These minimum criteria are based on vehicle speeds and volumes.

For the purposes of the minimum and prioritization criteria, the data collected will be rounded up to the nearest whole number.

Minimum Criteria and Prioritization Criteria

The minimum criteria to be used to determine if a street is eligible for traffic calming devices is as follows:

- 85th percentile speed (averaged if measured at more than one location) greater than 35 mph.
- Average daily traffic volume of at least 1,000 vehicles.

The prioritization scoring criteria allows 35 maximum points and is as follows:

Speed

85th percentile speed	Points
35 mph	2
36 mph	4
37 mph	6
38 mph	8
39 mph or higher	10 maximum

Volume (Average Daily Traffic Count)

Local Street	Collector Street	Points
1000 – 1100	2000 – 2200	1
1101 – 1200	2201 – 2400	2

1201 – 1300	2401 – 2600	3
1301 – 1400	2601 – 2800	4
1401 – 1500	2801 – 3000	5
1501 – 1600	3001 – 3200	6
1601 – 1700	3201 – 3400	7
1701 – 1800	3401 – 3600	8
1801 – 1900	3601 – 3800	9
1901 & above	3801 & above	10 max.

Accident History – One point per average annual accident susceptible to correction by traffic calming device, using the average annual accidents over past 3 years (5 points maximum)

Street Frontage Uses (residential, schools, parks, and public facilities)

Percentage of the street that has fronting uses	Points
10% or less	1
11 – 25%	2
26 – 50%	3
51 – 75%	4
76 – 100%	5 max.

Pedestrian Generators (such as parks, schools, public facilities, not including homes)*

Number of pedestrian generators Within neighborhood boundary	Points
1	1
2	2
3	3
4	4
5	5 max.

*elementary, middle, and high schools will be weighted double points

IV. Step Three — Design and Implementation Process

Before discussing the implementation details of the traffic calming measures, it is important to reiterate the definition of traffic calming. The Institute of Transportation Engineers defines traffic calming as the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users. The immediate purpose of traffic calming is to reduce the speed and volume of traffic to acceptable levels. Traffic calming measures are intended to be self-enforcing and rely on the laws of physics rather than human psychology to slow down traffic.

A. Selecting the Appropriate Traffic Calming Measure

The City Engineer will recommend a plan for traffic calming options that will best suit the neighborhood’s needs. Some general points regarding traffic calming measures follow.

- Affected residents will have input on which traffic calming measure(s) they prefer to have installed in their neighborhood.
- Although City staff will present final recommendations to the affected neighborhood, they will certainly take into consideration the measure(s) suggested by residents in the affected area.
- Landscaping, for the purposes of this policy, will only be installed if warranted to function as a traffic calming measure. Additional landscaping/aesthetic treatments will be installed as appropriate and at the direction of the Clive City Council.

The following is a list of design issues common to most traffic calming devices that will be considered before selecting any option. This list is not exhaustive, so all design issues relevant to a specific project will be evaluated independently.

- **Visibility:** Traffic calming measures must be clearly visible and understandable to motorists. Signage (see below), reflectors and reflective paint, and illumination enhance visibility. Another component of visibility is adequate sight distances.
- **Signage:** Advance signs should warn motorists of upcoming measures, and signs should guide the motorist through the proper behavior.
- **Streetscape Aesthetics:** Aesthetically pleasing measures are far more acceptable to residents and users of the street by easily blending into the streetscape.
- **Design for Large Vehicles:** All traffic calming installations should be designed to accommodate emergency vehicles or other emergency plans (signing alternate routes, etc.) must be implemented concurrently.
- **Maintenance:** Long-term maintenance needs must be anticipated within the traffic management project and should be minimized to the greatest possible degree without sacrificing quality.
- **Parking:** Many traffic calming projects eliminate on-street parking.
- **Purpose:** A clear purpose and set of objectives must guide the selection, design, and implementation of traffic calming measures.

B. Neighborhood Consensus

Residents in the affected area will need to sign another petition (Appendix B) agreeing to the installation of the recommended traffic calming measure(s) to be installed in their neighborhood. This petition must contain signatures from 85% of the households (**one signature per household**) in both the affected area and on the affected street.

C. Traffic Calming Installation

Once the necessary second petition has been received, the City Council will consider authorization of the installation. If authorized, staff will place the project on a priority list for funding through the City's Capital Improvement Program (CIP) or a special request to the City Council. Rank order will be determined using the projects' prioritization score.

D. Funding Policies

The construction costs of traffic calming devices may be shared between the affected property owners and the City of Clive. The cost sharing concept has several advantages. It ensures that residents have buy-in and a sense of ownership in the project, ultimately resulting in traffic

calming devices that are less likely to be removed in the future. The residential share of the cost is dependent upon the nature of the traffic conditions in the neighborhood. The more severe traffic problems should receive a greater share of City funds. Since the prioritization criteria quantifies the magnitude of the traffic problem, the higher the prioritization score, the greater the percentage of the project that will be paid by the City.

Points	Proportion of City Funding
0 – 5	0%
6 – 10	25%
11 – 15	50%
16 – 20	75%
21 and above	100%

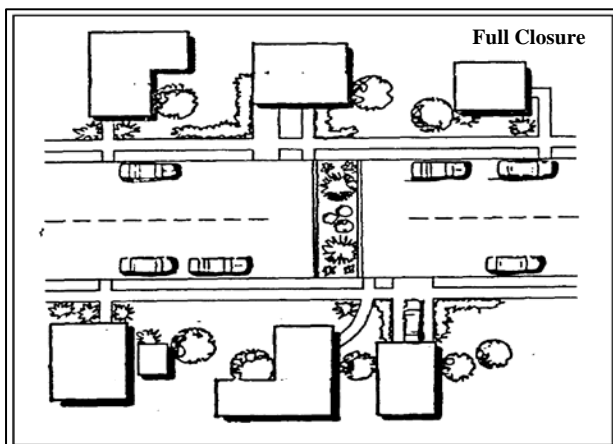
The residents’ share of the traffic calming project is to be collected through an assessment process. The apportionment can be paid as a lump sum or spread over a period of time by adding it to the property owner’s property tax bill.

V. Traffic Calming Tools Recommended for the Program

There are a few basic types of traffic calming devices that have different effects on the motoring public. It is important to understand how each type of device works and its impacts on motorists and emergency vehicles. Although most traffic calming measures have some effect on both volume and speed, they are usually classified according to their dominant effect. Traffic calming measures can be separated into two groups based on the main impact intended: **volume control** and **speed control** measures. The distinction between the two types of measures is not as clear as their names suggest, since speed control measures frequently divert traffic to alternate routes, and volume control measures usually slow traffic.

Volume Control Measures

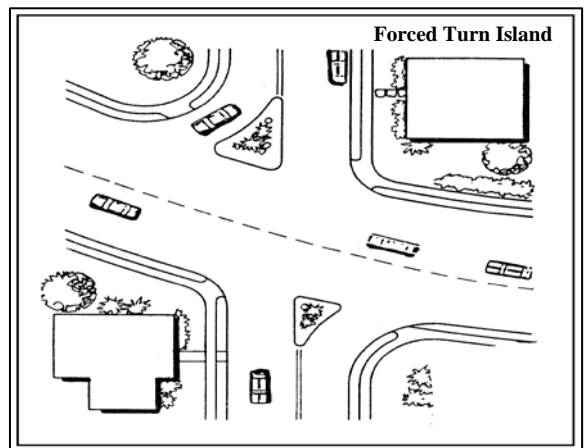
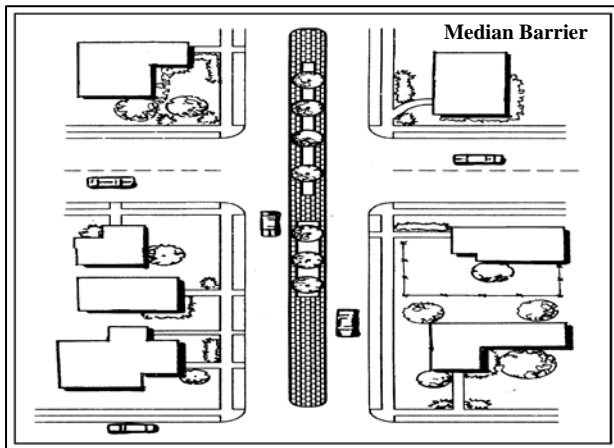
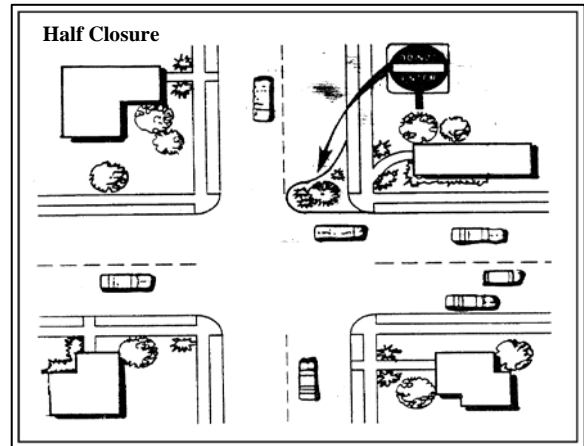
Volume control measures are appropriate on local or neighborhood streets in areas of large volumes of through-traffic or intersections where unsafe turns are common. They are primarily used to address cut-through traffic problems by blocking certain movements and altering the existing transportation circulation system. This can result in diverting traffic to streets better able to handle the larger volume of traffic. In all cases, volume control measures must only be used



where the goal is to restore the residential character of the neighborhood or to the non-motorized users of the street. Some examples of volume control measures are full and half street closures, diverters of various types, median barriers and forced turn islands.

Full street closures include cul-de-sacs and dead ends and act as barriers that close the street completely to through traffic. **Half closures** are barriers that block travel in one direction for a short distance on otherwise two-way streets.

Other volume control measures are much less common. **Diverter**s are barriers placed diagonally across an intersection, blocking through movement. Like half closures, diverters are usually staggered to create indirect routes through neighborhoods. **Median barriers** are raised islands located along the centerline of a street and continuing through an intersection so as to block through movement at a cross street. **Forced turn islands** are raised islands that block certain movements on approaches to an intersection. They are sometimes called forced turn channelizations, pork chops, or right turn islands.



Concerns: Volume control measures

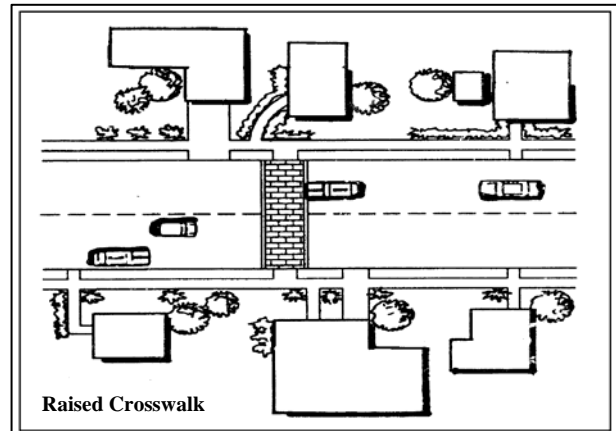
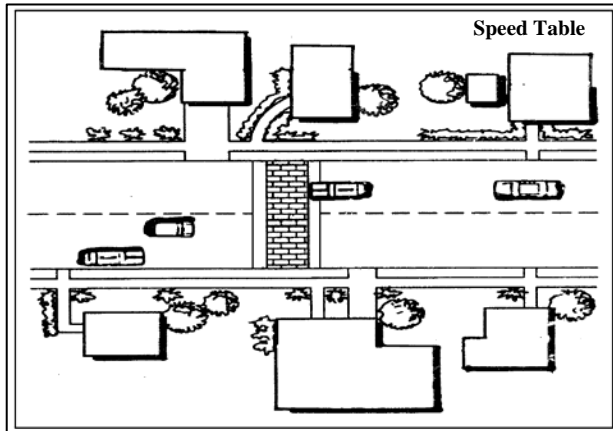
Because of ongoing concerns many cities experience after implementing volume control measures, it is important to emphasize one key point about these solutions. The strategies that serve to alter existing traffic patterns can cause a tremendous amount of traffic diversion over a wide area. Used inappropriately, volume control measures can potentially shift traffic burdens to other neighborhoods. Additionally, these solutions can provide constraint on emergency vehicle access.

Speed Control Measures

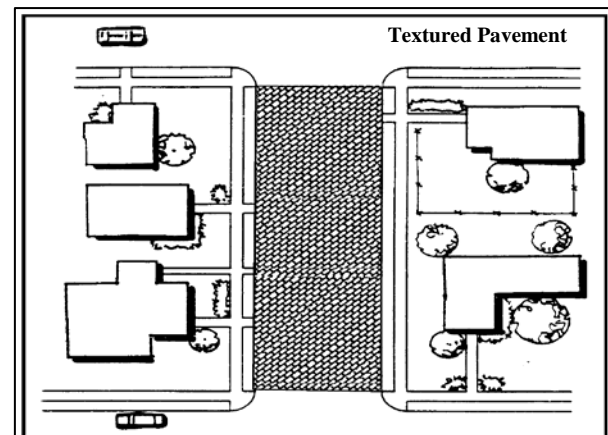
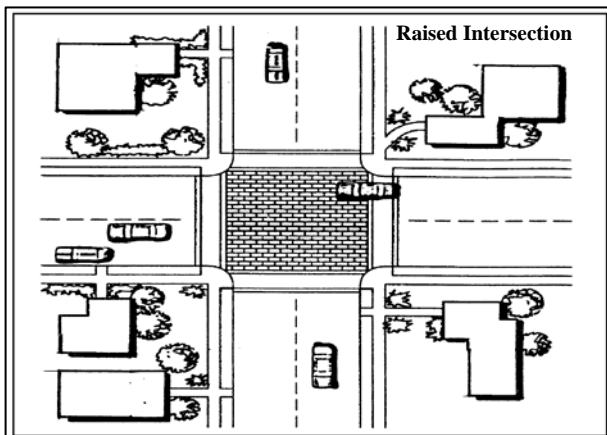
Speed control measures are of three types: *vertical measures*, which use forces of vertical acceleration to discourage speeding; *horizontal measures*, which use forces of lateral acceleration to discourage speeding; and *narrowings or constriction devices*, which use a psycho-perceptive sense of enclosure to discourage speeding.

Vertical Measures

Vertical measures include **speed tables**, **raised crosswalks**, **raised intersections**, and **textured pavements**. **Speed tables** are essentially flat-topped speed humps often constructed with brick or other textured materials on the flat section. If marked for pedestrian crossing, they are also called **raised crosswalks**.



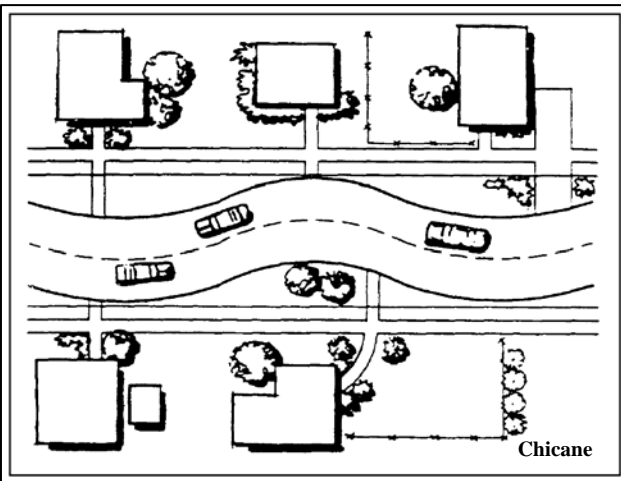
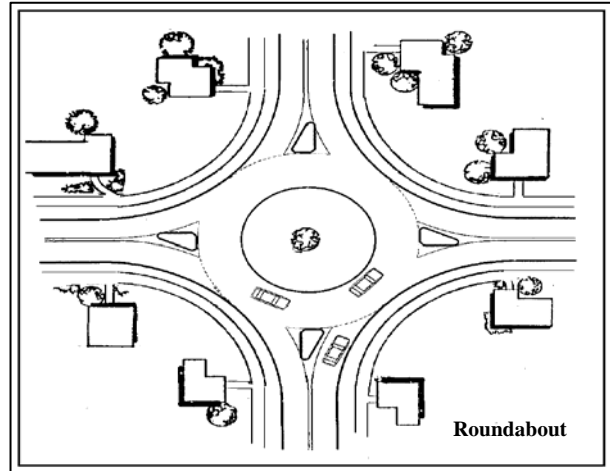
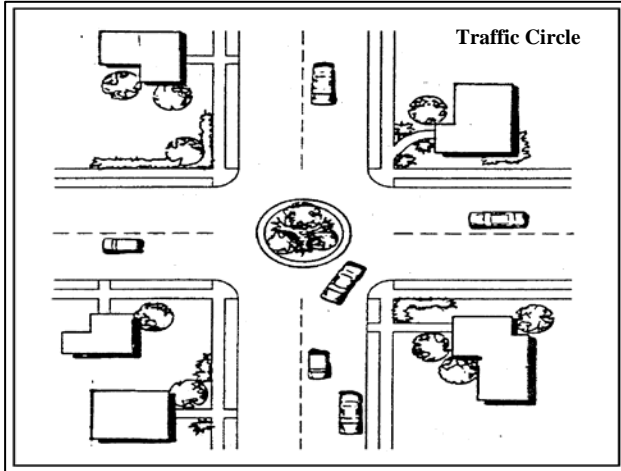
Raised intersections are another vertical measure that consist of flat raised areas covering entire intersections with ramps on all approaches and often with brick or other textured material on the flat section. **Textured pavements** are roadway surfaces paved with brick, concrete pavers, stamped asphalt, or other surface materials that produce constant small changes in vertical alignment.



Horizontal Measures

Horizontal measures achieve their speed reductions by forcing drivers around horizontal curves and by blocking long views of the road ahead. Horizontal measures include traffic circles, roundabouts, and chicanes.

Traffic circles are by far the most common horizontal measure used by traffic engineers. They are raised islands placed in intersections around which traffic circulates. They are typically controlled by YIELD signs on all approaches. Related to traffic circles are roundabouts. Like traffic circles, **roundabouts** require traffic to circulate counterclockwise around a center island.

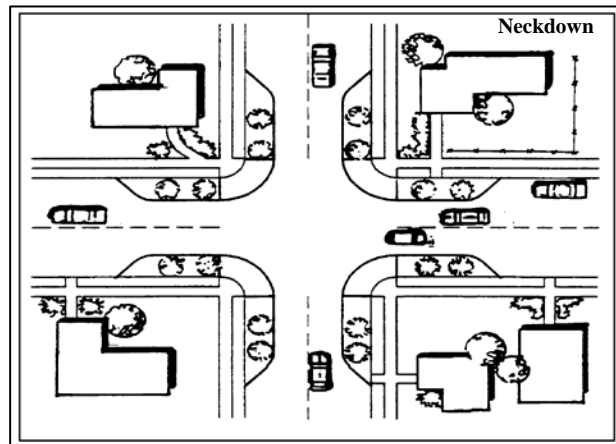


But unlike circles, roundabouts are used on higher volume streets to allocate rights-of-way among competing movements. They are found primarily on arterial and collector streets, often substituting for traffic signals or all-way STOP signs. They are larger than traffic circles and typically have raised splitter islands to channel approaching traffic to the right.

Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curves.

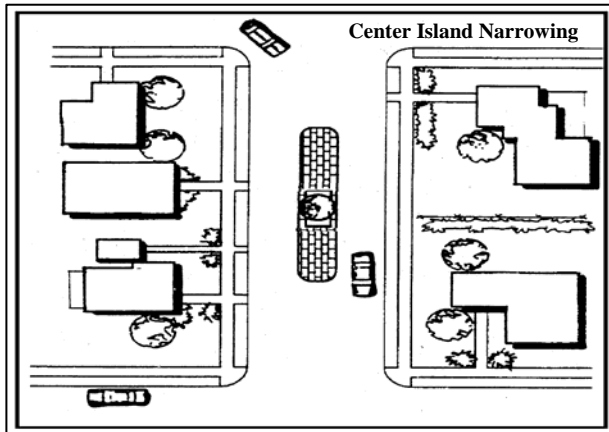
Narrowings or Constriction Devices

The final set of traffic calming measures, **narrowings or constriction devices** use roadway narrowing to achieve speed reductions. These types of measures are usually accompanied by plantings, street furniture, or other vertical elements to draw attention to the constriction and visually bound the space. The use of landscaping within these devices not only enhances the aesthetics of the streetscape but also increases their effectiveness by breaking up the motorist's line of sight, which reduces



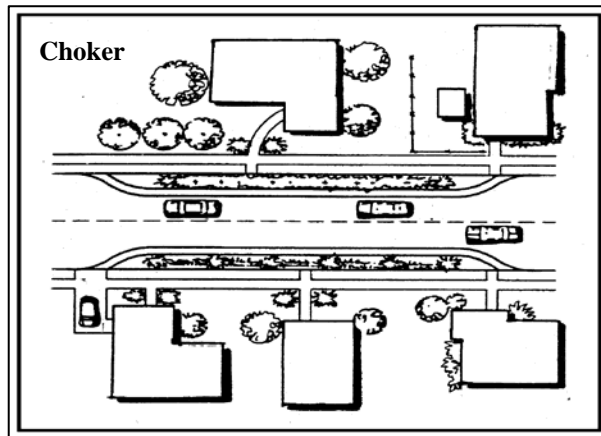
the comfortable speed of travel. Narrowings include **neckdowns**, **center island narrowings**, and **chokers**.

Neckdowns are curb extensions at intersections that reduce roadway width. They are sometimes called bulb-outs or nubs. Their primary purpose is to “pedestrianize” intersections. They do this by shortening crossing distances for pedestrians and drawing attention to them via raised peninsulas. By tightening curb radii at the corner, the pedestrian crossing distance is reduced and the speeds of turning vehicles are reduced.



Center island narrowings are raised islands located along the centerline of a street that narrow the travel lanes at that location. They often are nicely landscaped to provide visual amenity and neighborhood identity. Placed at the entrance to a neighborhood and often combined with textured pavement and monument signs, they are often called gateways.

Chokers are curb extensions at midblock that narrow a street by widening the sidewalk or planting strips effectively creating a pinch point along the street. Chokers can be created by bringing both curbs in, or they can be done by more dramatically widening one side at a midblock location. Chokers can have a dramatic effect by reducing a two-lane street to one lane at the choker point (or two narrow lanes), requiring motorists to yield to each other or slow down.



Concerns: Speed Control Measures

Before discussing concerns, the positives of speed control measures are that when used in conjunction with one another, they are effective for a longer stretch of roadway rather than just in the immediate vicinity of the device. These devices also tend to have relatively lower impacts on emergency response times in that the vehicles can continue to move around the devices without stopping. However, use of these devices usually requires prohibition of on-street parking adjacent to the device. Additionally, horizontal deflection that occurs at circles may force motor vehicles into pedestrian crossing areas on cross streets or into travel paths of cyclists on main streets.

VI. Traffic Calming Device Removal

Although there are many policies and steps incorporated in the program to avoid the scenario whereby a neighborhood requests to have traffic calming devices removed, it is acknowledged

that this may occur. In order for traffic calming devices to be removed from a neighborhood, the same process of neighborhood meetings and consensus requirements are to be met. A neighborhood meeting would be held to discuss the issues and the impacts of traffic calming removal. A petition to garner 60% approval would need to be circulated within the original neighborhood boundary that installed the traffic calming device. The costs of removing traffic calming devices would be paid 100% by the residents through the use of an assessment process.

VII. Traffic Tools Not Recommended in the Program

Stop Signs are not traffic calming devices. Residents often request stop signs in an effort to calm traffic. Although residents believe that stop signs will reduce vehicle speeds, studies have repeatedly shown that vehicle speeds after the vehicle has passed through the stop controlled intersection are as high, and occasionally higher, than without a stop sign, as motorists try to “make up” time lost at the stop sign.

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

Rumble strips are series of pavement bumps that create a “rumble” effect as vehicles drive over them. They are often used to alert drivers as they approach stop signs on highways in isolated areas. Rumble strips are not effective as speed control devices and do little or nothing to discourage cut-through traffic. In addition, due to the noise they generate, they would be inappropriate to use within neighborhoods.

Children at Play signs are commonly requested in neighborhoods, however, they are not standard traffic control devices and have not been found to be effective in improving the safety of children. Residential areas commonly have children and the presence of signs does not change driving behavior in the neighborhood. One of the disadvantages of the Children at Play sign is that they can create a false sense of security, which can increase the potential for accidents and injuries.

VIII. Construction and Post-Construction

Traffic calming device/s will be constructed and/or installed in accordance with the detailed plans and specifications generated by the City Engineer. Following the construction and the City’s acceptance of the traffic calming installation, City staff will collect traffic volume and speed data to evaluate the effectiveness of the devices. The data will be summarized in a brief report and provided to the neighborhood representatives.

IX. Glossary of Terms

85th Percentile	The speed at or below which 85 percent of vehicles surveyed travel. The 85 th percentile speed usually represents the maximum reasonable speed for the traffic and is often one criterion used in determining speed limits.
Access	The ability to enter and/or exit a property, street, or neighborhood; includes both ingress and egress.
Affected Area	The area in which the placement of traffic-calming measures will have an effect. This shall be determined by defining the area significantly affected by street modifications. At a minimum, this will include households, apartments, and/or businesses located on the affected street and any households located on cul-de-sacs attached to the affected street.
Affected Street	The street on which traffic-calming measures are being requested.
Arterial Street	A major street which serves as a thoroughfare for travel between and through the city.
Center Island Narrowing	A raised island located along the centerline of a street that narrows the travel lane at that location. Center island narrowings are often landscaped to provide a visual amenity.
Chicane	An artificial curve added to an otherwise straight street.
Choker	An extension of the curb towards the center of a street, either in the midblock or at the intersection, used to narrow the roadway to slow traffic.
CIP	The City's Capital Improvement Program, used to schedule and budget major capital projects.
Clive Traffic Management Committee	The committee that conducts initial reviews of neighborhood traffic complaints and advises residents whether or not they may proceed with the Neighborhood Traffic Management Program.
Collector Street	A street that provides both access and circulation within a residential neighborhood and commercial or industrial area. This system collects traffic from local streets and disperses it to the arterial system.
Cul-De-Sac	A local street, one end of which is closed and consists of a circular turn around.
Forced Turn Island	Volume control measure used to force traffic to the right or left.
Full Street Closure	Barriers placed across a street to completely close the street to through-traffic, usually leaving only sidewalks open.
Half Street Closure	Barriers that block travel in one direction for a short distance on otherwise two-way streets.
Household	A domestic unit consisting of the members of a family who live together along with non-relatives.
Ingress and Egress	The ability to enter (ingress) and exit (egress) a property, street, or neighborhood, such as a driveway into a parking lot.
Local Street	A street which is primarily residential and is used primarily by residents of a neighborhood.
Median Barrier	Island located along the centerline of a street and continuing through an

	intersection so as to block through movement at a cross street.
Midblock	Any point between successive intersections along a street.
Neckdown	Curb extensions at intersections that reduce the roadway width from curb to curb. They "pedestrianize" intersections by shortening crossing distances for pedestrians and drawing attention to pedestrians via raised peninsulas.
Neighborhood Speed Watch Program	A traffic-related variation of neighborhood watch or crime watch programs that encourages citizens to take an active role in changing driver behavior on their neighborhood streets by helping raise public awareness and educate drivers about the negative impact of speeding.
Non-Local Traffic	Traffic that uses local or collector streets to travel through a residential neighborhood without having an origin or destination within the neighborhood. Also referred to as "cut-through" traffic.
Pace Car Program	A voluntary program in which residents of a neighborhood are encouraged to sign a pledge to act as a "pace car driver" where they obey the speed limit and make complete stops at a STOP sign.
Raised Crosswalks	Speed tables outfitted with crosswalk markings and signage to channelize pedestrian crossings, providing pedestrians with a level street crossing.
Resident	One who resides in a particular place permanently or for an extended period.
Roundabout	Speed control measure that requires traffic to circulate counterclockwise around a center island. Unlike traffic circles, roundabouts are used on higher volume streets to allocate right-of-way between competing movements.
Speed Control Measures	Traffic calming measures primarily used to address speeding problems by changing vertical alignment, changing horizontal alignment, or narrowing the roadway
Sight Distance	The maximum distance at which a driver can clearly see an oncoming vehicle, a stopped vehicle or an obstacle in the roadway; this distance is often reduced by the vertical and horizontal alignment of a roadway.
Speed Table	Speed control measure that consists of flat-topped speed humps often constructed with brick or other textured materials on the flat section.
Speed Trailer	An automated speed monitoring system that displays actual speed to drivers to encourage compliance with posted speed limits.
Streetscape	Elements that make up a street's scenery.
Textured Pavement	Speed control measure that includes the use of stamped pavement or alternate paving materials to create an uneven surface for vehicles to traverse. They may be used to emphasize either an entire intersection or a pedestrian crossing, and are sometimes used along entire street blocks.
Traffic Calming	A technique for reducing the speed and volume of traffic on residential streets that use various traffic control devices.
Traffic Calming Device/Measures	A general category of physical devices used to direct and slow traffic, such as speed tables or traffic circles.
Traffic Circle	A landscaped or hardscaped circular median island placed in the center of an intersection used to slow traffic by requiring a maneuver around the circle.

Traffic Counts	The number of vehicles passing a given point on a street in both directions during a 24-hour period.
Turn Restriction	The prohibition of right and/or left turns from one street to another by means of signage, diverters, or forced channelization.
Volume Control Measures	Traffic calming measures primarily used to address cut-through traffic problems by blocking certain movements, thereby diverting traffic to streets better able to handle it.

X. Resources

All illustrations herein are courtesy of The Institute for Transportation Engineers (ITE) Traffic Calming Library located at <http://www.ite.org/traffic/>. To learn more about traffic calming and view additional photos and illustrations, visit: www.trafficcalming.org.

City of Mankato, MN: Neighborhood Traffic Calming Program, 2007

City of Alexandria, VA: Neighborhood Traffic Calming Program Guide, 2002

City of Citrus Heights, CA: Neighborhood Traffic Management Program, 2001



Appendix A: Initial Neighborhood Traffic Management Petition

We, the undersigned, request the City of Clive, Iowa, to undertake traffic studies for the purpose of developing preliminary recommendations to mitigate existing traffic problems occurring on _____ between _____ and _____ . (Example: on Hawthorn Drive between 149th Street and 152nd Street.)

Name	Address	Telephone	Signature
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Petition Spokesperson:		Spokesperson's Telephone:	



Appendix B: Petition for Implementation of Traffic Calming Measures

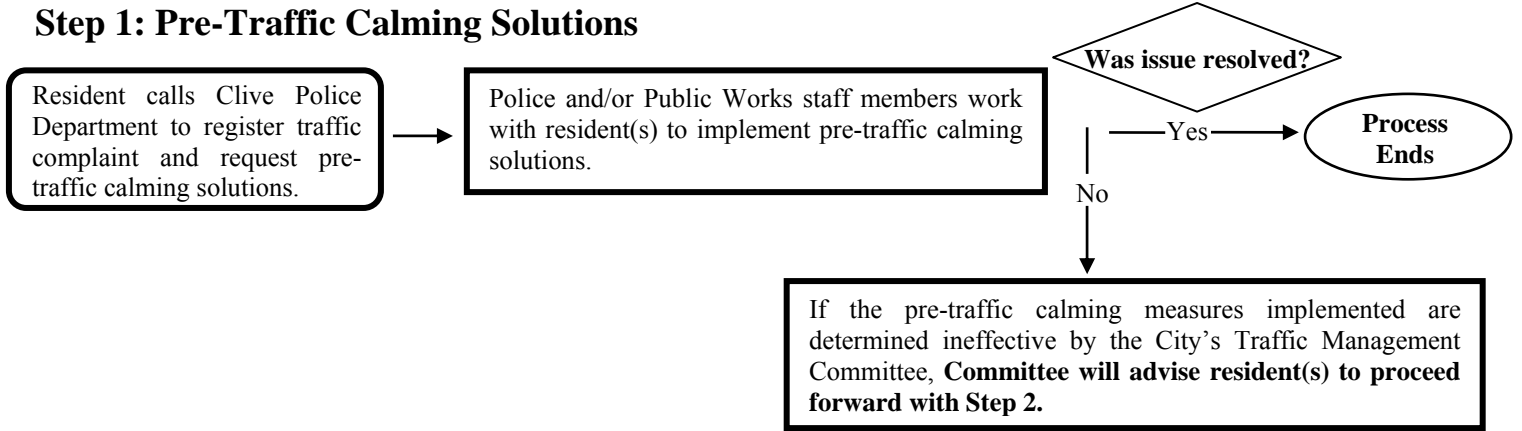
We, the undersigned, desire, agree with, and request implementation of the following traffic calming tool(s): **Example:** Install (*specified traffic calming measure*) on (*subject street*) between (*first cross-street*) and (*second cross-street*) or at (*specified location*) per the attached conceptual plans dated (*month/date/year*).

I understand that the proposed traffic calming measure may have a direct impact on my property. By signing this petition, I acknowledge that I have read the detailed description of the traffic calming measures being proposed.

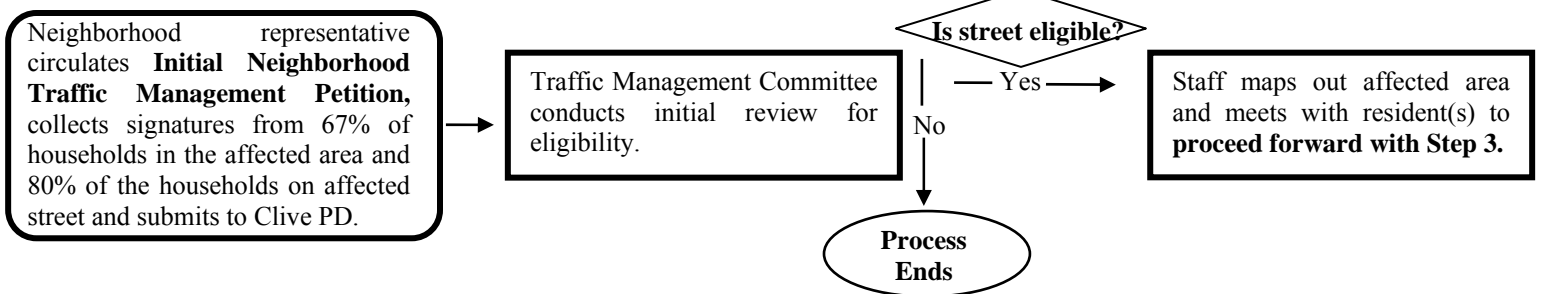
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Petition Spokesperson:		Spokesperson's Telephone:	

Appendix C: Neighborhood Traffic Management Program Flowchart

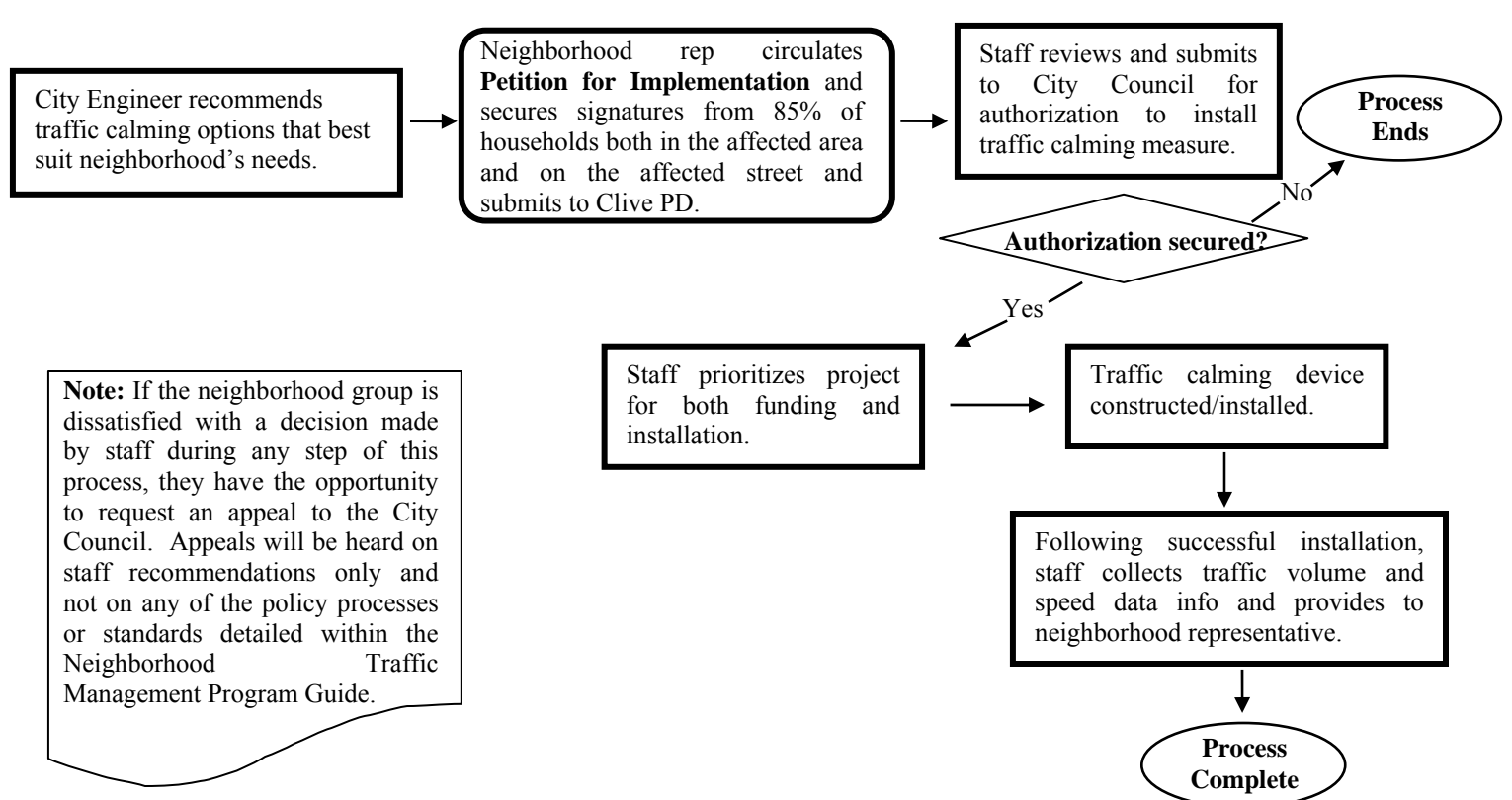
Step 1: Pre-Traffic Calming Solutions



Step 2: Engineering and Study Process



Step 3: Design and Implementation Process



Note: If the neighborhood group is dissatisfied with a decision made by staff during any step of this process, they have the opportunity to request an appeal to the City Council. Appeals will be heard on staff recommendations only and not on any of the policy processes or standards detailed within the Neighborhood Traffic Management Program Guide.