

Traffic Calming Program



City of Roeland Park
2/27/2020

TABLE OF CONTENTS

| | |
|--|-----------|
| I. INTRODUCTION | 3 |
| II. NEIGHBORHOOD TRAFFIC STUDY | 3 |
| III. EDUCATION | 5 |
| IV. ENFORCEMENT | 5 |
| V. ENGINEERING | 6 |
| TRAFFIC CALMING TREATMENTS | 6 |
| <i>a. Background</i> | <i>6</i> |
| <i>b. Qualification</i> | <i>8</i> |
| <i>c. Concept</i> | <i>9</i> |
| <i>d. Final Ballot</i> | <i>9</i> |
| <i>e. Council Approval</i> | <i>9</i> |
| <i>f. Priority</i> | <i>9</i> |
| <i>g. Design</i> | <i>9</i> |
| <i>h. Construction</i> | <i>9</i> |
| <i>i. Modification/Removal</i> | <i>9</i> |
| VI. CONCLUSION | 10 |
| | |
| APPENDIX A. NEIGHBORHOOD TRAFFIC SAFETY PROGRAM FLOW CHART | 11 |
| APPENDIX B. ROELAND PARK STREET CLASSIFICATION MAP | 12 |
| APPENDIX C. TRAFFIC CALMING TOOLBOX | 13 |
| APPENDIX D. FAQ | 27 |

CITY OF ROELAND PARK TRAFFIC CALMING PROGRAM

I. INTRODUCTION

The City of Roeland Park's Traffic Calming Program reflects the City's commitment to the safety and livability of its residential neighborhoods. This policy was developed through a joint endeavor by two city departments: Public Works and Police. Under this policy, the Public Works Department will work with the Police Department and residents in a unique, cooperative and comprehensive effort to identify traffic problems in their neighborhoods and seek appropriate solutions. Citizen participation is encouraged, as it is an important part of all traffic safety programs. Experience in other cities has shown that traffic safety related initiatives that are implemented without involving the neighborhood are frequently unsuccessful.

The purpose of the Traffic Calming Program is to address neighborhood traffic concerns on residential streets. The goal is NOT traffic displacement onto other residential streets. The goal of the Traffic Calming Program is to promote safe and livable neighborhoods by reducing the negative impact of traffic in residential areas through education, enforcement and engineering. Although "livable" in terms of a neighborhood does not have a precise definition, a livable neighborhood can be described as having the following characteristics:

- Ability to feel safe and secure when using the street.
- Opportunity to interact with neighbors.
- Ability to experience a sense of home and privacy.
- A sense of community identification.
- Attractive streets.

Action(s) taken to address neighborhood traffic concerns are identified through a Neighborhood Traffic Study that can be initiated through several avenues, including resident request.

II. NEIGHBORHOOD TRAFFIC STUDY

Requests for a Neighborhood Traffic Study may be initiated by any of the following:

- Residents or property owner/neighborhood associations may request a Neighborhood Traffic Study by submitting a written request at City Hall. Upon receipt of a valid request, staff will prepare a survey for the applicant to distribute that lists the property ownerships facing the street segment(s) on which the request reported areas of concern. A street segment is defined as that part of a street between successive intersecting streets. The survey must be returned with at least sixty percent (60%) support. Surveys will be reviewed by city staff for validity by verifying signatures to property ownership. If 60% is not reached the process will end at that point.
- Police Department, Fire Department, schools or other similar service agencies may request that studies be undertaken to solve a specific concern with respect to traffic and pedestrian safety.
- City staff may initiate a Neighborhood Traffic Study to solve a specific concern with respect to traffic, pedestrian or operations. This concern may be identified through data collection and monitoring.

- The City's goal is to address the request for a Neighborhood Traffic Study and provide a survey for use by the applicant within 30 days of receiving the request.

At a minimum the request should identify: the purpose of the study; location; description of the perceived problem (i.e. excessive traffic speed or time of day the problem occurs, where, etc.); and a neighborhood representative (person of contact for the neighborhood). The neighborhood representative may be the applicant, or someone designated by the residents to represent the community. This person will also be responsible for the organization of any surveys and coordination with the City.

Each request is recorded into the City's database of traffic calming requests. Upon receipt of a Neighborhood Traffic Study request, City staff, including a representative of the Police Department (when applicable) will define boundaries of the impact area. The impact area includes properties which may be affected by actions taken to mitigate the concerns expressed in the request. Impact areas may include a single street segment or multiple streets depending on the nature of the concern. City staff will contact the neighborhood representative, if necessary, to clarify the nature and extent of the perceived problem (e.g. excessive speed, high traffic volume, cut-through traffic, and whether the problem is at mid-block or at an intersection).

After discussion with the requesting party and/or neighborhood representative, additional information will be gathered to help recognize the concern, rank the priority in relation to other traffic calming requests, and identify what action and treatment(s), if any, should be implemented. Information collected may include street width, street classification, crash records, travel speeds and other appropriate information to assist in addressing the concern.

When the necessary information has been acquired and it is determined a street is eligible for traffic calming, a Neighborhood Traffic Study will be completed by City staff to determine which course of action or combination of actions should be taken: education, enforcement, and/or engineering. The City may, at any point, bring in a third-party consultant to help with any or all portions of the study and recommendations. The results and recommendations of the Neighborhood Traffic Study will be conveyed to the neighborhood representative.

Neighborhood Traffic Studies will be completed as prioritized and directed by City Staff based on complexity and funding availability. The City's goal is to complete the study within 6 months of determining that a street is eligible. Study completion may be complicated by the need to obtain engineering data including traffic volumes, vehicle speeds, pedestrian activity and other data. Traffic data is not typically obtained during summer months, inclement weather, or holiday periods.

The Three E's of Neighborhood Traffic Safety

Education: Radar Trailer, Message Boards, Neighborhood Newsletters, Informational pamphlets, City Web-Site;

Enforcement: Assigned enforcement areas are conducted by the Police Department, planned return enforcement of completed program areas, random enforcement of areas with a low volume of violators;

Engineering: Review areas for atypical circumstances, investigate geometric modifications to the street which may include construction of traffic calming measures presented in the traffic calming toolbox, Appendix C.

III. EDUCATION

If the Neighborhood Traffic Study reveals traffic calming criteria has not been met, City staff will attempt to raise public awareness and convey reasonable traffic expectations in the impact area through education. The local traffic conditions will be explained to the residents and sources of neighborhood traffic safety information will be presented (city web-site, informational pamphlets, etc.). Another application into the program for the same area may not be submitted within two years from the date the traffic study was completed, unless City staff determines there have been significant changes to the transportation system that would impact the recommendation.

If there is an occasional problem that doesn't warrant enforcement or engineering measures, means of improving neighborhoods by reducing the negative impact of traffic through education will be discussed. Typically, most of the vehicles using residential streets are people who reside in the neighborhood. The City in conjunction with the Police Department will attempt to educate the residents on non-invasive methods of deterring traffic problems within a neighborhood. These methods may include neighborhood traffic safety campaigns, message boards, and radar speed display units. Neighborhood traffic safety campaigns usually consist of personalized letters or general flyers that are distributed to all residents in the neighborhood. The letters and flyers may cite statistics on speeding, or other findings summarized in the neighborhood traffic study for the area and appeal for compliance with traffic laws. Message boards may be used to raise driver awareness regarding neighborhood traffic concerns. Radar speed display units can be used to remind drivers that they are speeding, thus encouraging compliance with the speed limit. If an education approach is recommended in the Neighborhood Traffic Study, but not an engineered treatment or planned enforcement, another application into the program for the same area may not be submitted within two years from the date the traffic study was completed, unless City Staff determines there have been significant changes to the transportation system that would impact the recommendation.

If the problem is severe enough that enforcement and/or engineering treatments are recommended, the education techniques described above will still be discussed. The combination of education with enforcement and/or engineering is a benefit to the residents and an important aspect of the program. Since enforcement and engineering treatments may be recommended and not be supported, education could be the only initiative explored.

IV. ENFORCEMENT

City staff may coordinate with the Police Department to pursue an increased presence and traffic enforcement in the area.

Enforcement in assigned areas is conducted by the Police Department with planned return enforcement of completed program areas and random enforcement of areas with a low volume of violators.

Upon completion of any applied enforcement technique another application to the program for the same area cannot be submitted within two years from the date the traffic study was completed, unless City Staff determines there have been significant changes to the transportation system that would impact the recommendation.

V. ENGINEERING

TRAFFIC CALMING TREATMENTS

a. Background

If all education and enforcement initiatives are unsuccessful or inappropriate due to the nature of the concern the use of traffic calming treatments may be considered. Traffic calming treatments are physical measures that reduce the negative effects of motor vehicles, alter driver behavior, and improve conditions for non-motorized street users. It is the retrofitting of physical measures into the roadway to reduce traffic speeds, thereby generally making the street environment more safe and pleasant for pedestrians, other drivers, and residents.

The Manual on Uniform Traffic Control Devices (MUTCD), issued by the Federal Highway Administration, specifies the standards that traffic engineers follow for the design, installation and use of traffic signs, pavement markings, and traffic signals. It should be noted that the MUTCD specially states that YIELD or STOP signs “should not be used for speed control”. The installation of STOP signs and SPEED LIMIT signs are not considered traffic calming measures. If City Staff receives a request for the installation of a STOP sign, and determines an engineering study needs to be completed, the following criteria per the MUTCD will be evaluated:

1. Stop Sign Applications:
The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:
 - A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;
 - B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or
 - C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway.

2. Multi-Way Stop Applications:
The following criteria should be considered in the engineering study for a multi-way STOP sign installation:
 - A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
 - B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

C. Minimum volumes:

1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
 3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.
- D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option: Other criteria that may be considered in an engineering study include:

- A. The need to control left-turn conflicts;
- B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

Traffic calming measures are intended to be self-enforcing. Traffic calming, by its nature, will impact neighborhoods and residents within the neighborhood the most. Thus, the implementation of any traffic calming treatment without overwhelming local support can have significant backlash. Traffic calming has several potential benefits as well as some potential disadvantages. Summarized below are a few benefits and disadvantages of traffic calming.

Benefits of Traffic Calming:

- Reducing speeds.
- Reducing collision frequency and severity.
- Increasing the safety for non-motorized users of the street.
- Enhancing the street environment (streetscape).
- Increasing the quality of life.
- Incorporating the preferences and requirements of people using the area along street(s).
- Reducing the negative impacts of vehicles on the environment and the neighborhood.

Disadvantages of Traffic Calming:

- Slight increase in emergency response time.
- Vehicles may be damaged, and people injured by inappropriate driver behavior (e.g., driving too fast or inattentive).

- Snow removal is more difficult and time consuming.
- Installation cost.
- Additional signage will be required.
- Additional lighting may be required.
- Increased maintenance.
- Annoying to some residents (noise and inconvenience).
- Some treatments can restrict resident access.
- Diverting traffic and causing problems in other areas.
- Could decrease parking.

Traffic calming treatments have been implemented in the United States since the 1980's. In Europe and Australia, some of these same treatments have been used long before the 1970's. Many of the successful traffic calming treatments used are into their second and third generation. There are more than 25 treatments commonly used around the world. Many of these treatments are used in the United States. The most effective traffic calming treatments are those that deflect vehicles vertically, horizontally, or both. Some of the treatments applicable for use in Roeland Park are shown in the Traffic Calming Toolbox, Appendix C. These techniques range from street chokers and chicanes to traffic circles. City staff may determine to use of one or more of these treatments as a possible solution for traffic concerns. However, the Neighborhood Traffic Study must show there is a need for traffic calming and that the street is suitable for treatment.

b. Qualification

Traffic calming treatments are typically the most expensive means of mitigation and have the most significant impact to residents.

Not all streets are suitable for traffic calming treatments. Suitability is based on speed, volume, street classification and several other criteria. To be qualified for traffic calming treatments a street must meet the all the following requirements and score more than 30 points on the point rating system described in Table 1-1:

- The street must be classified as either a “2nd Collector Street” or a “residential Street” by the City of Roeland Park in Appendix B.
- No more than 2 travel lanes or 40-foot pavement width.
- Posted speed limit of 25 mph or less.
- No more than 5 percent long wheel-base vehicles.
- Greater than 500 AADT (Average Annual Daily Traffic) and less than 3,000 AADT (based on a weeklong study).
- The measured 85th percentile speed exceeds 25 mph by 6 mph or more.

Table 1-1

| Criteria | Basis |
|----------|---|
| Speed | 5 Points assigned for every mph greater than 5 mph above the posted speed [(85 th percentile speed – 5 mph – posted speed limit) x 5 points] |
| Volume | Average daily traffic volumes (weekday) 1 point for every 100 vehicles [AADT/100] |

c. Concept

If (1) the data confirms the project meets the requirements for traffic calming treatments and (2) treatments are recommended by City staff and approved by Emergency Personnel, then a conceptual traffic calming plan and cost will be developed. The conceptual traffic calming plan and cost are anticipated to largely be contained within the Neighborhood Traffic Study, with some additional information, and the goal is to provide the plan within 30 days of Neighborhood Traffic Study completion. The conceptual plan is staff's recommendation but should not be considered the only solution nor binding. This recommendation will be reviewed by the residents in the impact area at a meeting with the date and time coordinated between the City staff and the neighborhood representative. Upon discussion, residents may request alternative treatments, suggest modifications to the recommendation or no improvements at all. Revisions may be made by the City because of this dialogue.

d. Final Ballot

Following the neighborhood meeting, staff will prepare a survey to be mailed to the property ownerships facing the street segment(s) on which the request reported areas of concern. The survey must be returned with at least sixty percent (60%) support. Surveys will be reviewed by city staff for validity by verifying signatures to property ownership. If 60% is not reached the process will end at that point.

e. Council Approval

The proposed plan will be presented to the City Council for approval.

f. Priority

Traffic calming projects are anticipated to be implemented on an annual basis. Implementation is based on a ranking system and available City funding. The ranking system prioritizes projects based on the rating score received.

g. Design

The project will be designed according to City standards, generally conforming to practices set forth by the Institute of Transportation Engineers (ITE) and any signage will be compliant with the Manual on Uniform Traffic Control Devices (MUTCD).

h. Construction

The project will be let, constructed, managed, and inspected in accordance with City standards.

i. Modification/Removal

Traffic calming measures may be removed or modified, at the discretion of the City, for any of the following reasons:

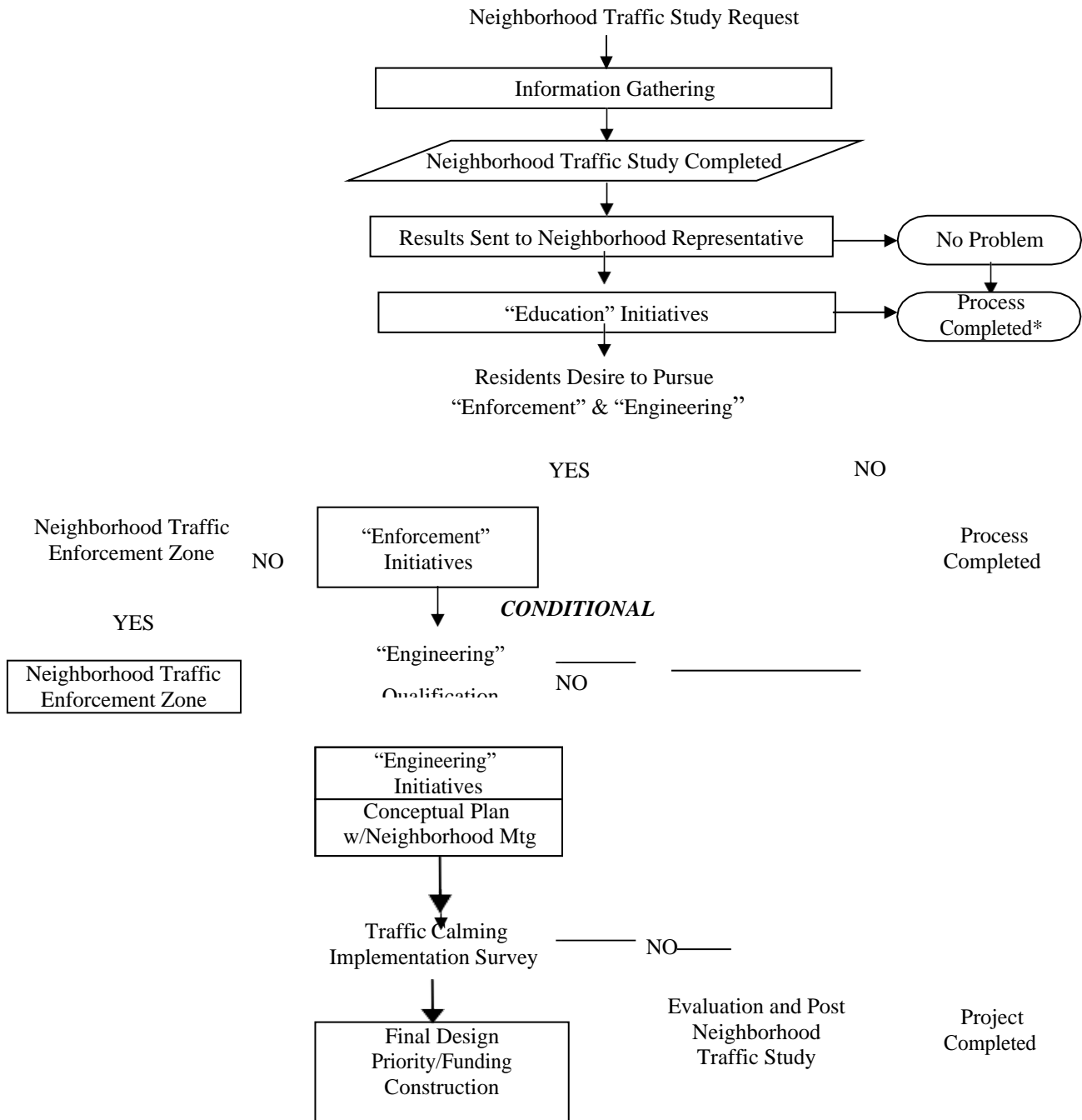
- If unacceptable impacts are identified through a subsequent traffic study.
- If a significant amount of traffic has been diverted to another street as determined by staff.
- Data collected indicates that the traffic calming goals have not been achieved.

VI. CONCLUSION

Any part of this program may be modified or altered by staff to help achieve the desired outcome of traffic behavior modification. This program is not intended to divert traffic to adjacent streets or affect traffic volumes.

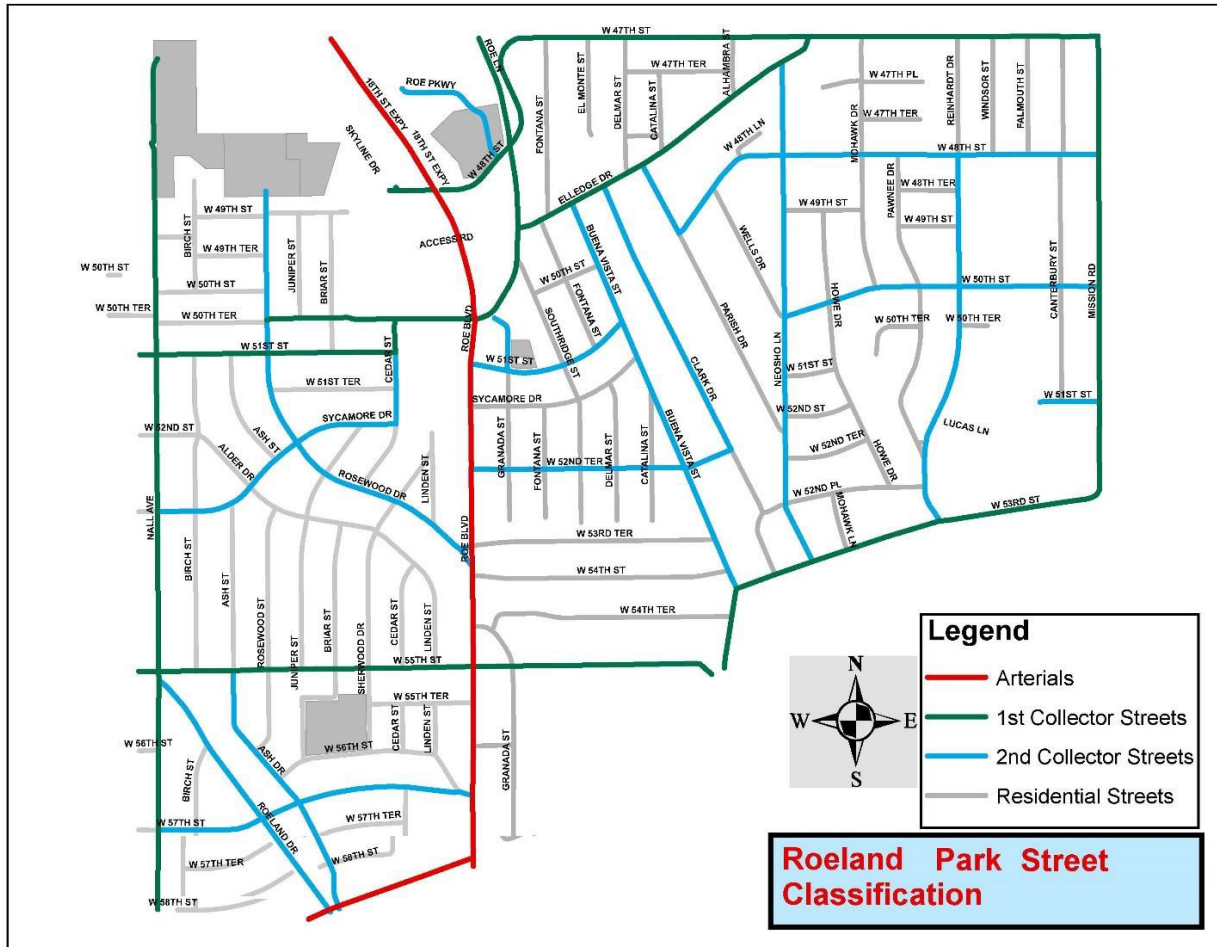
All parts of this program will abide by recognized design standards including the Manual of Uniform Traffic Control Devices (MUTCD) and others adopted by the City of Roeland Park, KS.

APPENDIX A. Neighborhood Traffic Safety Program Flow Chart



*After the process has been completed another application for the same area cannot be submitted for two years

APPENDIX B. Roeland Park Street Classification Map



APPENDIX C. Traffic Calming Toolbox

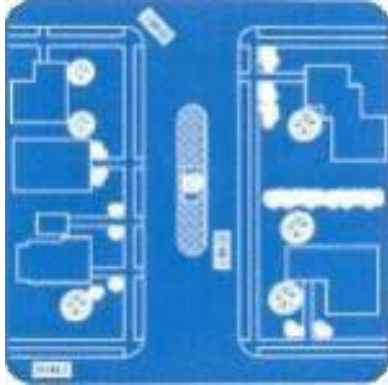
HORIZONTAL DEFLECTION

- Center Island Narrowing
- Chicanes
- Chokers
- Median Barriers
- Traffic Circle
- Roundabouts
- Realigned Intersection
- Neckdowns
- Forced Turn Islands

VERTICAL DEFLECTION

- Raised Crosswalks
- Raised Intersections
- Speed Tables
- Textured Pavement

CENTER ISLAND NARROWING



Description: A center island narrowing is a raised island located along the centerline of a street that narrow the travel lanes at that location. Center island narrowing are often landscaped to provide a visual amenity. Placed at the entrance to a neighborhood, and often combined with textured pavement, they are often called "gateway islands." Fitted with a gap to allow pedestrians to walk through at a crosswalk, they are often called "pedestrian refuges."

Purpose: To reduce traffic speed by narrowing the roadway with a median, and to increase pedestrian safety by providing a refuge halfway across the street, so that only one direction of traffic need be crossed at a time.

Advantages:

- Center Island Narrowing increase pedestrian safety;
- If designed well, they can have positive aesthetic value;

Disadvantages:

- Their speed-reduction effect is somewhat limited by the absence of any vertical or horizontal deflection;
- They may require elimination of some on-street parking.



CHICANES



Description: Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curves. Chicanes can also be created by alternating on-street parking, either diagonal or parallel, between one side of the street and the other. Each parking bay can be created either by restriping the roadway or by installing raised, landscaped islands at the ends of each parking bay.

Purpose: To slow vehicle speed mid-block using horizontal deflection.

Advantages:

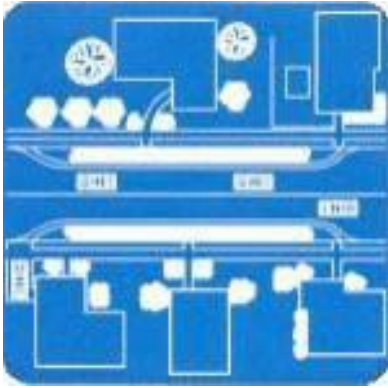
- Chicanes discourage high speeds by forcing horizontal deflection;
- They are easily negotiable by large vehicles (such as fire trucks) except under heavy traffic conditions.

Disadvantages:

- They must be designed carefully to discourage drivers from deviating out of the appropriate lane;
- Curb realignment and landscaping can be costly, especially if there are drainage issues;
- They may require the elimination of some on-street parking



CHOKERS



Description: Chokers are curb extensions at midblock locations that narrow a street by widening the sidewalk or planting strip. If marked as crosswalks, they are also known as safe crosses. Two-lane chokers leave the street cross section with two lanes that are narrower than the normal cross section. One-lane chokers narrow the width to allow travel in only one direction at a time, operating similarly to one-lane bridges.

Purpose: To reduce vehicle speed mid-block and to increase pedestrian safety.

Advantages:

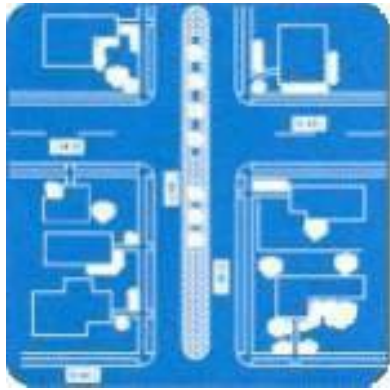
- Chokers are easily negotiable by large vehicles (such as fire trucks);
- If designed well, they can have positive aesthetic value;

Disadvantages:

- Their effect on vehicle speeds is limited by the absence of any vertical or horizontal deflection;
- They may require bicyclists to briefly merge with vehicular traffic;
- They may require the elimination of some on-street parking.



MEDIAN BARRIERS



Description: Median barriers are islands located along the centerline of a street and continuing through an intersection so as to block through movement at a cross street.

Purpose: To prevent cut through traffic.

Advantages:

- Median Barriers can improve safety at an intersection of a local street and a major street by prohibiting dangerous turning movements;
- They can reduce traffic volumes on a cut-through route that crosses a major street.

Disadvantages:

- They require available street width on the major street;
- They limit turns to and from the side street for local residents and emergency services.



TRAFFIC CIRCLE



Description: Traffic circles are raised islands, placed in intersections, around which traffic circulates.

Purpose: To slow vehicle speeds at intersections using horizontal deflection and a visual deterrent to higher speeds.

Advantages:

- Traffic Circles are very effective in moderating speeds and improving safety;
- If designed well, they can have positive aesthetic value;
- Placed at an intersection, they can calm two streets at once.

Disadvantages:

- They are difficult for large vehicles (such as fire trucks) to circumnavigate;
- They must be designed so that the circulating lane does not encroach on the crosswalks;
- They may require the elimination of some on-street parking;
- Landscaping must be maintained, either by the residents or by the municipality.



ROUNDBABOUTS



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 between competing movements.

Purpose: Slows traffic and reduces injury crashes at high volume intersections.

Advantages:

- Roundabouts can moderate traffic speeds on an arterial;
- They are generally aesthetically pleasing if well landscaped;
- They enhanced safety compared to traffic signals;
- They can minimize queuing at the approaches to the intersection;
- They are less expensive to operate than traffic signals.

Disadvantages:

- They may be difficult for large vehicles (such as fire trucks) to circumnavigate;
- They must be designed so that the circulating lane does not encroach on the crosswalks;
- They may require the elimination of some on-street parking;
- Landscaping must be maintained, either by the residents or by the municipality.



REALIGNED INTERSECTIONS



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. While not commonly used, they are one of the few traffic calming measures for T-intersections, because the straight top of the T makes deflection difficult to achieve, as needed for Traffic Circles.

Purpose: To slow vehicles as they pass bulb out.

Advantages:

- Realigned Intersections can be effective reducing speeds and improving safety at a T-intersection that is commonly ignored by motorists.

Disadvantages:

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



NECKDOWNS



Description: Neckdowns are 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. They also tighten the curb radii at the corners, reducing the speeds of turning vehicles.

Purpose: To reduce speeds and provide pedestrian safety in areas with substantial pedestrian activity (downtown areas, etc.)

Advantages:

- Neckdowns improves pedestrian circulation and space;
- Through and left-turn movements are easily negotiable by large vehicles
- They create protected on-street parking bays;
- They reduce speeds, especially for right-turning vehicles.

Disadvantages:

- Effectiveness is limited by the absence of vertical or horizontal deflection;
- They may slow right-turning emergency vehicles;
- They may require the elimination of some on-street parking near the intersection;
- They may require bicyclists to briefly merge with vehicular traffic.



FORCED TURN ISLANDS



Description: Forced Turn Islands are raised islands that block certain movements on approaches to an intersection

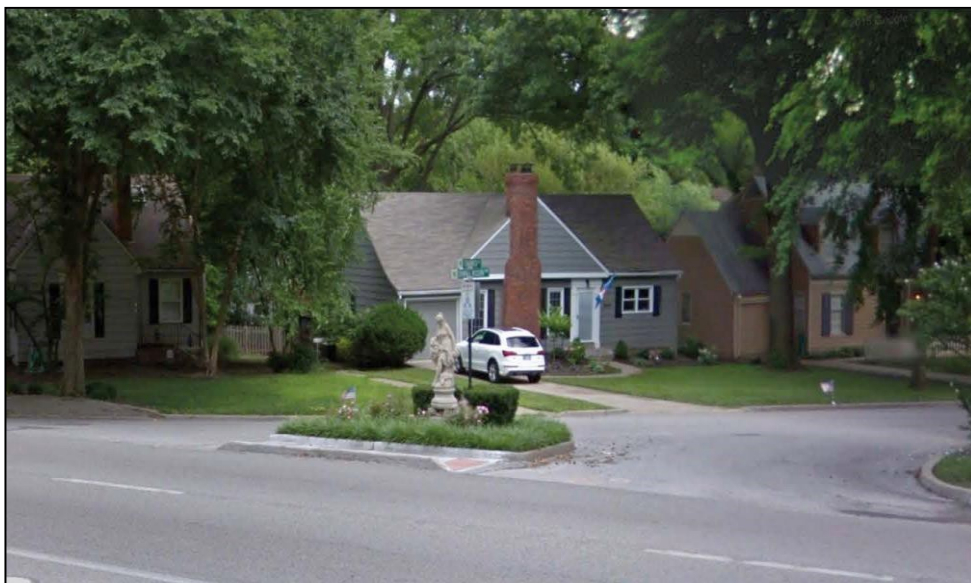
Purpose: To slow vehicle speeds at intersections using horizontal deflection and a visual deterrent to higher speeds.

Advantages:

- Forced Turn Islands can improve safety at an intersection of a local street and a major street by prohibiting dangerous turning movements;
- They reduce traffic volumes.

Disadvantages:

- If designed improperly, drivers can maneuver around the island to make an illegal turning movement;
- They may simply divert a traffic problem to a different street.



RAISED CROSSWALKS



Description: Raised crosswalks are Speed Tables outfitted with crosswalk markings and signage to channelize pedestrian crossings, providing pedestrians with a level street crossing. Also, by raising the level of the crossing, pedestrians are more visible to approaching motorists

Purpose: To reduce vehicle speeds at crosswalks and to improve pedestrian safety.

Advantages:

- Raised Crosswalks improve safety for both pedestrians and vehicles;
- If designed well, they can have positive aesthetic value;
- They are effective in reducing speeds, though not to the extent of Speed Humps.

Disadvantages:

- Textured materials, if used, can be expensive;
- Their impacts on drainage needs to be considered;
- They may increase noise and air pollution.



RAISED INTERSECTIONS



Description: Raised intersections are flat raised areas covering an entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section. They usually raise to the level of the sidewalk, or slightly below to provide a "lip" that is detectable by the visually impaired. By modifying the level of the intersection, the crosswalks are more readily perceived by motorists to be "pedestrian territory".

Purpose: To slow vehicle traffic at an intersection.

Advantages:

- Raised Intersections improve safety for both pedestrians and vehicles;
- If designed well, they can have positive aesthetic value;
- They can calm two streets at once.

Disadvantages:

- They tend to be expensive, varying by materials used;
- Their impact to drainage needs to be considered;
- They are less effective in reducing speeds than Speed Humps, Speed Tables, or Raised Crosswalks.



SPEED TABLES



Description: Speed tables are flat-topped speed humps typically long enough for the entire wheelbase of a passenger car to rest on the flat section. Their long flat fields, plus ramps that are sometimes more gently sloped than Speed Humps, give speed tables higher design speeds than Speed Humps. The brick or other textured materials improve the appearance of speed tables, draw attention to them, and may enhance safety and speed-reduction.

Purpose: To reduce vehicle speed.

Advantages:

- They are smoother on large vehicles (such as fire trucks) than Speed Humps;
- They are effective in reducing speeds, though not to the extent of Speed Humps.

Disadvantages:

- They have questionable aesthetics, if no textured materials are used;
- Textured materials, if used, can be expensive;
- They may increase noise and air pollution.



TEXTURED PAVEMENT



Description: Textured and colored pavement 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.

Purpose: To reduce vehicle speed.

Advantages:

- Textured Pavements can reduce vehicle speeds over an extended length;
- If designed well, they can have positive aesthetic value;
- Placed at an intersection, they can calm two streets at once.

Disadvantages:

- They are generally expensive, varying by materials used;
- If used on a crosswalk, they can make crossings more difficult for wheelchair users and the visually impaired.



APPENDIX D. FAQ

What is the effect of traffic calming on property values?

According to a study by the Institute of Transportation Engineers (ITE) "it cannot be demonstrated that installing speed humps will affect property values in any predictable way" (ITE, *The Economic Impact of Speed Humps on Housing Values*, January 2000). In addition, Horizontal treatments with landscaping are seen as an asset because of lower speeds and improved aesthetics.

What is the effect of traffic calming on emergency response?

The City, as well as its residents and businesses, place a very high priority on minimizing emergency response times. Emergency response personnel are generally not in favor of vertical deflection treatments because they are required to slow down. Horizontal treatments slow emergency vehicles to a varying degree. Studies show the following average delays to emergency vehicles for certain types of devices:

| TYPE OF DEVICE | AMBULANCES | FIRE TRUCKS |
|-----------------------|-------------------|--------------------|
| Speed Hump | 2.3-9.7 seconds | 3-5 seconds |
| Traffic Circle | Not Available | 1.3-10.7 seconds |

Source: City of Portland

Any proposal of a traffic calming device along a roadway will be discussed with local emergency agencies for endorsement.

What is the effect of traffic calming on adjoining non-project streets?

Diversion of traffic to other streets following the installation of traffic calming treatments can be a positive or a negative result. A positive result involves diversion of traffic to collectors or arterials that are better able to handle traffic. An unacceptable variety of diversion sends traffic to adjacent residential streets.

Are there any impacts to transit and utility vehicles?

Some of the traffic calming options could potentially impact bus routes and utility vehicles such as trash trucks. Providers of these services will have to be consulted whenever neighborhoods are considered for traffic calming treatments.

Are there any impacts for other roadway users?

Traffic calming actions must consider other users such that there are no unintended negative safety impacts. These users are bicyclists, roller skaters, skate boarders, joggers, pedestrians, etc.

What about noise?

The noise resulting from vehicles braking and going over or around traffic calming devices may have an impact on the acceptability of these devices by residents living closest to them. The support of residents living immediately adjacent to locations where physical changes are proposed will be essential to the success of any project.

Will there be loss of parking?

It is often necessary to prohibit on-street parking in the immediate vicinity of the traffic control measure in order to accommodate realigned vehicle path or sight distance issues.

What about visual impacts and aesthetic concerns?

While some traffic calming devices can have favorable aesthetic impacts, others can be, by their nature, unattractive. Devices such as speed humps and diverters most often pose little opportunity for the incorporation of aesthetics and can have negative visual impacts. Some traffic calming actions require reflective devices, signs and striping which may negatively affect the aesthetics of a neighborhood.

Will there be an increased maintenance cost?

City maintenance costs will increase in two areas. Snow removal around the devices will increase cost and service time. In addition, devices such as speed humps will have to be reinstalled each time a residential street is overlaid.

Will landscaping be included?

The City will include landscaping in the design (if applicable). Maintenance of the landscaping will become the responsibility of the residents or the home association. Landscaping that is not maintained will be replaced with low or no maintenance items.

What are the liabilities of traffic calming?

While members of the public have a right to use public highways without obstruction and interruption, this right is subject to the power of local governments to impose reasonable restrictions for the protection of the public. The legal issues surrounding traffic calming fall into three categories: *statutory authority*, *constitutionality*, and *tort liability*. First, the local government must have legal authority to implement a given set of traffic calming measures on a given class of roadways. Second, the local government must respect the constitutional rights of affected landowners and travelers on the roadways. Finally, the local government must take steps to minimize the risk to travelers from the installation of such measures.

What is the effect on police enforcement?

The Police generally support traffic calming measures for their potential to control speeding and reduce collision severity. Engineering measures are self-enforcing, which takes some of the pressure off police officers to enforce traffic laws. Speed humps quietly enforce speed limits 24 hours a day. The police also support certain measures, those restricting access, for their potential to reduce crime. While traffic calming measures must have some effect on police response times, it does not seem to be an issue. Use of vehicles with small wheelbases and good suspensions makes the difference. New patrol cars can maintain speeds of 25 mph over 12- foot speed humps. The advantage of small wheelbases is also realized on the tight curves of traffic circles and chicanes.