

# **SAGINAW CHARTER TOWNSHIP - NEIGHBORHOOD TRAFFIC CALMING PROGRAM**

## **Section 1.0 – Statement of Purpose**

Traffic conditions on residential streets can greatly affect neighborhood livability. When streets are safe and pleasant, the quality of life is enhanced. When traffic problems become a daily occurrence, they threaten one's sense of community and personal well-being. Saginaw Charter Township's Traffic Calming Program is about livability in neighborhoods. It is a way for neighbors to address quality of life issues such as speeding, cut-through traffic, and parking infiltration.

Citizen involvement is an important part of all traffic calming projects. The people who live and work in the project area have the opportunity to become actively involved in the process. It takes a commitment of time and energy, and the ability to consider diverse points of view.

The primary purpose of traffic calming is to effectively control the speed of vehicles traveling on residential streets. Traffic calming initiatives usually begin with measures involving police enforcement and neighborhood watch programs. These measures can be expanded to include strategic physical changes to residential streets. Traffic calming measures identified in this program are not intended to prevent the general public from using any public street. The program provides several traffic calming measures that may be initiated by and for residents in Saginaw Charter Township to help improve an existing traffic problem.

**The goals of the Traffic Calming Program are to preserve and improve neighborhood livability by:**

- Encouraging positive driver behavior;
- Encouraging safe pedestrian and bicycle use;
- Improving safety of pedestrians, bicyclists, and drivers;
- Involving area residents in solving traffic problems; and
- Making efficient use of taxpayer dollars by prioritizing requests for improvements.

**The objectives of the Traffic Calming Program are to:**

- Positively influence driver behavior through education and design.
- Encourage citizen involvement in all phases of the Traffic Calming Program activities.
- Achieve lower vehicle speeds in neighborhoods with identified speed problems.
- Improve real and perceived safety for motorized and non-motorized users.
- Reduce cut-through traffic in neighborhoods, when applicable.
- Preserve reasonable emergency vehicle access to neighborhoods.
- Enhance the street environment.

- Incorporate the preferences and needs of those living on the street.

## **Section 2.0 – General Policies**

In order to ensure consistency, fairness and safety, the following policies have been adopted for Saginaw Township’s Neighborhood Traffic Calming Program.

All traffic calming projects should conform to the following:

- Encourage through traffic (motor vehicles) to use Collectors and Arterial streets as defined in the Saginaw Charter Township Comprehensive Development Plan.
- Traffic volumes and patterns should be consistent with their functional classification as defined in the Saginaw Charter Township Comprehensive Development Plan.
- Significant traffic volumes should not be rerouted from one neighborhood street to another.
- Traffic calming plans will be reviewed and approved by the Police and Fire Departments prior to being accepted by the Township Board.
- Reasonable pedestrian, bicycle, transit, service, and motor vehicle access to neighborhood destinations must be maintained.
- Traffic control devices must be approved by the Saginaw County Road Commission and must adhere to sound engineering and planning practices.
- Traffic calming devices must follow the Institute of Traffic Engineers latest publication.
- Except in rare instances, a “least–cost, least-restrictive” approach will be required before a commitment to more costly, more restrictive methods is made.

## **Section 3.0 – Evaluation and Eligibility Guidelines**

Traffic calming measures will be considered by the Township and the Saginaw County Road Commission for those streets meeting all of the following criteria:

- 3.1 **Street Type.** Traffic calming devices can be installed only on designated residential Local, Collector or Urban Collector streets, as shown on the Township’s Road Designation Map. Traffic calming devices should not be located in front of commercial property.
- 3.2 **Traffic Volume.** Traffic calming devices may be recommended on streets having traffic volumes between 500 and 4,000 vehicles per day.
- 3.3 **Roadway Visibility.** Traffic calming devices should not be installed on street sections with severe vertical or horizontal curves. Traffic calming devices shall be visible to oncoming motorists for a minimum of 150 feet.
- 3.4 **Roadway Grade.** Traffic calming devices should not be installed on a street segment with a roadway grade greater than five (5%) percent.

- 3.5 **Street Drainage.** Traffic calming devices should not be installed on streets with drainage or flooding problems.
- 3.6 **Number of Lanes.** Traffic calming devices should not be installed on roads striped with more than one through lane in each direction.
- 3.7 **Block or Study Area.** Every project will have a “defined area of potential effect” determined by the Township’s Transportation Engineer.
- 3.8 **Street Use.** Traffic calming devices shall not be installed on designated truck or transit routes or on any street identified as a primary emergency route by any emergency response agency operating within Saginaw Township. Traffic calming devices shall not be installed immediately adjacent to a hospital, fire station or police facility.
- 3.9 **Speed Limit.** Traffic calming devices shall not be installed on streets having posted speed limits greater than twenty-five (25) miles per hour.
- 3.10 **Critical Speed.** The measured critical eighty-fifth (85%) percentile speed shall be greater than thirty (30) miles per hour. The eighty-fifth (85%) percentile is defined as the speed at which fifteen (15%) percent of all vehicles equal or exceed. The eighty-fifth (85%) percentile will be determined using Township or Saginaw County Road Commission traffic counters.
- 3.11 **Physical Conditions.** Traffic calming devices shall not be installed in front of driveways, over underground access covers, or adjacent to catch basins or drainage structures.
- 3.12 **Traffic Diversion.** It is expected that the installation of certain traffic calming devices will divert some traffic onto adjacent streets. A maximum of 150 vehicles per day diverted to an adjacent local street is deemed acceptable. If traffic increases more than 150 vehicles per day on adjacent streets, the Township will take steps to remediate the increase.
- 3.13 **Other Considerations.** The Saginaw County Road Commission will make an engineering evaluation of all pertinent safety factors, including any not specifically addressed here before making a determination on the installation of traffic calming devices within their public road.
- 3.14.1 **Traffic Calming Devices.** Traffic calming measures, which can be implemented in Saginaw Township, include all “official traffic control devices” authorized by the Michigan Vehicle Code. However, the Township encourages traffic calming devices outlined in the Appendix.

The evaluation and eligibility guidelines may be updated and modified periodically to address community needs, while providing for the safe and efficient movement of traffic. The Saginaw County Road Commission is continuing to study the effectiveness of traffic calming devices and reserves the right to experiment with alternate designs and applications.

#### **Section 4.0 - Traffic Calming Process**

The following process will be used by the Township to address traffic concerns:

##### **Phase I**

- Step 1      Neighborhood residents meet with members of the Community Development Department to discuss their traffic concerns. Based upon this discussion, staff determines whether or not the street or area being affected is eligible to participate in the Township's Traffic Calming Program.
  
- Step 2      If the street or area is eligible to participate in the Township's Traffic Calming Program, "A Neighborhood Action Request Form" is then drafted and mailed to one of the concerned residents for circulation.
  
- Step 3      Neighborhood residents must submit "A Neighborhood Action Request Form" to the Community Development Department describing their traffic concerns. The request form must be returned with signatures from at least twenty-five (25%) of property owners along a given street or within a specified area.
  
- Step 4      After receiving a valid "Neighborhood Action Request Form", the Community Development Department will initiate a traffic study to collect speed and volume data. Staff will consult with the Township's Transportation Engineer to determine which streets are directly affected by the traffic problem and/or will be affected if traffic calming measures are implemented. A written plan to gather relevant data is then developed by the Transportation Engineer.
  
- Step 5      The traffic study will begin on a Tuesday and will continue for a minimum of seventy-two (72) hours. When practical, a seven (7) day study will be conducted.
  
- Step 6      Results of the study will be analyzed by the Community Development Department and Transportation Engineer to help identify the type of traffic problem that the neighborhood faces (i.e. speeding problem, cut through traffic or both).

- Step 7           Once the data have been analyzed, the Community Development Department will send a Traffic Calming Newsletter to residents within the affected area. The purpose of the newsletter is to share the results of the traffic study with the neighborhood and to provide it with an introduction to Saginaw Township's Traffic Calming Program.
- The newsletter will also inform the residents of the Tier One (1) Traffic Calming measures that will be implemented.
- Step 8           Tier One (1) traffic calming measures will be reviewed and implemented as determined by the Transportation Engineer and staff.
- Step 9           After the Tier One (1) traffic calming measures have been in place for thirty (30) days; a second traffic study is conducted by the Community Development Department to determine if any significant change in speed has occurred.
- Step 10          If study results do not show any significant improvement to the resident's initial concern, the request moves onto the second phase of the program. (The use of physical treatments / traffic calming measures is considered).
- If study results reflect a significant improvement, the Community Development Department will inform the affected residents and the process is terminated.

## **Phase II**

- Step 1           Results of the second traffic study is shared with the residents within the affected area. Included with the results will be a Street Audit and Survey Form. This form has two purposes. First, it is designed to help evaluate conditions within the affected area that warrant remediation. Second, it will provide the Township with an indication as to whether or not the neighborhood supports further investigation.
- The survey must be returned to the Community Development Department within two (2) weeks. At least fifty one (51%) percent of the property owners within the affected area must return the survey acknowledging that they would like to pursue other traffic calming alternatives.
- Step 2           Returned surveys are tabulated to determine whether or not fifty-one (51%) percent of the residents within the affected area support further measures. If enough support is garnered, staff schedules an informational meeting with the residents lying in the affected area. If there is not enough support garnered, residents will be informed that the process will not move forward.

During the informational meeting, various traffic calming alternatives are discussed. A Neighborhood Committee is formed to develop an overall traffic calming plan for the street or specified area. The committee consists of local area residents and Township staff.

Step 3 The Police and Fire Departments are consulted to determine if the street is designated as an emergency response route, and therefore ineligible for certain traffic calming measures.

Step 4 The Neighborhood Committee meets to develop an overall traffic calming plan for the street or specified area. The Township's Transportation Engineer and representatives of the Saginaw County Road Commission will recommend appropriate alternatives for the group to consider. A preliminary cost estimate, preliminary assessment roll and petition are then drafted by the Community Development Department for the proposed project.

Step 5 The Neighborhood Committee schedules a second informational meeting to present the traffic calming plan to the affected area. Preliminary cost estimates are shared with the neighborhood.

Step 6 Creation of Special Assessment District (Public Act 188 of 1951). The residents within the affected area circulate a petition. The petition must be signed by at least sixty (60%) percent of the record property owners within the proposed district. Each parcel is entitled to one vote.

Step 7 Neighborhood residents submit a completed petition to the Community Development Department for verification of sixty (60%) percent of property owner support.

The petition is forwarded to the Assessing Department for certification. Copies of the petition are also forwarded to the Clerk's Office and Manager's Office for review. The Clerk's Office schedules the project for a public hearing by publishing the required notices in a local newspaper and sending out public hearing notices to the affected property owners.

Step 8 First Township Board Meeting. The project is introduced at a Township Board meeting. A public hearing to designate and approve the special assessment district is scheduled.

Step 9 Second Township Board Meeting. The Township Board conducts a public hearing on establishing a special assessment district. If approved, the Township Board schedules a public hearing to establish a special assessment roll.

- Step 10 Third Township Board Meeting. The Township Board conducts a public hearing on establishing the special assessment roll. If approved, the Township seeks bids on construction.
- Step 11 The Township Board awards the project for construction.
- Step 12 Construction begins.
- Step 13 After construction is complete and traffic has had an opportunity to adjust to the changes, staff conducts a post-construction traffic study for speed and volume. The review may also include opinion surveys. A report, which summarizes the results of the study, is drafted and sent to applicable property owners.

### **Installation of Temporary Devices**

The only traffic calming measure eligible for temporary installation is a speed table. In order to install temporary rubber speed tables, steps one (1) thru ten (10) listed under Phase I of Section 4.0 must be followed. The only exception is that a Neighborhood Action Request Form must be signed by at least fifty one (51%) percent of the property owners within the affected area. The Township will assume the cost of installation and removal of the temporary speed tables.

Temporary speed tables will be installed in accordance with the recommendations of the Township's Transportation Engineer and representatives of the Saginaw County Road Commission.

Temporary devices will remain in place for a minimum of two months and a maximum of four months. Data will be collected before and after installation of temporary devices. Results of the data collection will be shared with the affected residents. The residents will then determine if they wish to proceed with installation of permanent speed tables.

### **Project Funding**

Project funding is dependent upon which Tier the traffic calming measure falls within.

**Tier One Traffic Calming Measures** – These measures are funded by the Township and Saginaw County Road Commission.

**Tier Two Traffic Calming Measures** – These measures are funded equally between the Township and property owners along a given street or within a specified area.

**Tier Three Traffic Calming Measures** – These measures are entirely funded by property owners along a given street or within the affected area.

**Exception:** Streets designated, as Urban Collector Roads on the Township's Road Designation Map and within the Comprehensive Development Plan are eligible for Township participation. Residents' share could range from 0% to 100% of the total cost of the improvements. The Township may, at its discretion, choose to participate in some, or all of the associated costs of a traffic calming implementation plan, especially if it is a type of measure as yet untried in the Township.

The residents' share of the cost will be collected through establishing a special assessment district under Public Act 188 of 1954.

### **Removal of Traffic Calming Devices**

Removal of a Traffic Calming Measure. The process for removing a traffic calming device shall be the same as the installation process specified in Phase II above. Cost of said removal will be specially assessed to the affected residents.

**Exception:** All costs associated with the removal of a temporary speed table will be the responsibility of the Township.

### **Appeals Process**

If Tier One (1), Tier Two (2) or Tier Three (3) traffic calming measures are determined by Township Staff not to be eligible on a specific street, applicants will be notified in writing and given the appropriate reason. The applicants may appeal the decision to the Township Manager within 21 days of the notification date. Such appeal shall be in writing, signed by the persons desiring to appeal, and shall state the reasons and basis of the appeal, listing any errors which formed the basis for staff decision.

The Township Manager will review the determination made by staff and respond to the applicant(s) within 30 days of the appeal request. If the applicants are not satisfied with the Township Manager's decision, they may appeal directly to the Township Board.

### **Section 5.0 - Traffic Calming Measures**

Traffic calming measures are divided into three tiers (or categories). Tier One (1) represents those measures that require no physical changes to the streets. Tier One (1) measures may include a higher police enforcement presence, the use of a radar trailer, evaluation and potential relocation of speed limit signs, stop/yield signs and increased educational or informational efforts. Tiers Two (2) and Three (3) represent traffic measures that require physical changes to the streets including, installation of speed tables, traffic circles, chicanes, curb extensions or traffic islands. **Unless there is a distinct and demonstrated issue of public safety, the Township will not consider closing public streets.**

Studies have shown that much of the traffic concern on residential streets is caused by the residents (and/or their guests) living in the immediate neighborhood. Saginaw

Township's primary goal is to implement the most cost effective measure that will lead to a reduction in speed along a given street. Therefore, Tier one (1) measures will always be considered first. If Tier One (1) measures do not demonstrate a measurable reduction in speed, Tier Two (2) and Tier Three (3) measures will be implemented on a progressive basis.

This policy shall not be deemed to limit the authority of the Community Development Department, the Saginaw County Road Commission and/or the Saginaw Charter Township Board of Trustees to remedy problems on their own initiative.

## Appendix I: Traffic Calming by Tier

### Tier 1: Traffic Calming Options

Neighborhood Traffic Education Program:	Neighborhood traffic safety campaigns include: personalized letters, neighborhood flyers, workshops, neighborhood speed awareness signs or banners.
Brush Trims:	The trimming and removal of brush by homeowners or Road Commission crews to allow better sight distance
Citizens Police Academy Enforcement Team:	Members of the Citizens Policy Academy Traffic Enforcement Team will check out a radar unit and record the speed of vehicles traveling in a specific neighborhood. The registered owners of the vehicles are identified (through the Department of Motor Vehicles) and sent a warning letter asking them to reduce their speeds. The letters are not violations, but reminders about the posted speed and the community's concern for safety.
Radar Trailer:	A portable trailer equipped with a radar unit, which detects the speed of passing vehicles and displays it on a digital reader board is placed in a specific area. This device shows drivers their "actual speed" versus the posted speed and encourages their compliance.
Pavement Markings:	The painting of legends upon the pavement. These may include centerlines, crosswalks, and school crossings.
Signing:	Posting or relocation of appropriate traffic control signs. These may include speed limit, stop, yield parking, dead-end, school signs, etc.
Rumble Strips:	The installation of four (4") inch raised buttons placed in a design sequence across the roadway, causes a vehicle to vibrate, alerting the motorist to an upcoming situation. These may be used in conjunction with curves, crosswalks, pavement legends, and speed signs. (Must have adjacent residents written permission).
Target Enforcement:	Increased enforcement by the Saginaw Charter Township Police Department.

## Tier 2: Traffic Calming Options

Narrowing Lanes  
With Striping:

Striping is usually used to create narrow lanes, often about 10 feet wide. The “unused” pavement can be used to stripe parking lanes, bicycle lanes or service lanes.

Higher Visibility  
Crosswalks:

Using paving blocks can create higher visibility crosswalks or contrasting colored concrete or painting “zebra” stripes in lieu of or between the crosswalk’s outer boundary stripes.

Textured Surface:

Installation of textured surfaces such as stamped concrete or pavers tend to alert drivers that they are in a residential area and have a tendency to reduce speed. Motorists tend to drive slower over these surfaces.

### Tier 3: Traffic Calming Options

Traffic / Median Island:	Traffic / Median islands are raised islands in the center of a street that can be used to narrow lanes for speed control. Sometimes they are called mid-block medians, median slow points, or median chokers.
Gateway Island:	Gateways are treatments consisting of physical and textural changes to streets. They can be located at key entryways into a neighborhood or at any point in a street that does not prevent property access. They often consist of features that narrow a street in order to reduce the width of the travel lanes.
Curb Extension:	Curb extensions narrow the street by extending the curbs toward the center of the roadway or by building detached raised islands to allow for drainage and bike lanes.
Choker:	This is the name given to build-outs added to a road to narrow it. There are various configurations of chokers, but the philosophy is to narrow a road to change its perception to drivers. When narrowing is carried out at an intersection the term bulb-out or curb extension is usually used.
Speed Table / Raised Crosswalk:	Speed tables and raised crosswalks are typically constructed three inches above the elevation of the street. They are typically between 14 and 22 feet long, with a flat section in the middle and ramps on both ends. Sometimes the flat portion is constructed with brick or other textured materials.
Traffic Circle:	This device is a raised circular island located most commonly at four-legged intersections. The traffic circle slows traffic using the intersection and can also provide an attractive gateway to a neighborhood.
Chicane:	This device consists of a series of narrowing or curb extensions that alternate from one side of the street to the other forming S-shaped curves.

# Tier 1 - Traffic Calming Options

## Neighborhood Traffic Education Campaign

**Description:** Neighborhood traffic safety campaigns include: personalized letters, neighborhood flyers, workshops, neighborhood speed awareness signs or banners. The Township Citizen's Police Academy will also participate in the education campaign by documenting speeding vehicles and sending the owner of the vehicle a warning letter.

**Application:** The intended benefit of conducting neighborhood traffic safety campaigns is usually to make residents aware of local speed limits and other traffic and safety concerns.

### Advantages

- Allows residents to discuss views
- Identifies issues of concern
- Enables staff to see concerns; and
- Reduces speed temporarily

### Disadvantages

- Effectiveness may be limited
- Meetings need to stay focused
- Potentially time consuming
- Enforcement or other changes likely still needed

**Cost:** Varies

## **Speed Display Unit**

**Description:** The most common form of radar speed display unit is a portable trailer equipped with a radar unit that detects the speed of passing vehicles and displays it on a reader board, often with a speed limit sign next to the display.

**Application:** The primary benefit of a speed display unit is to discourage speeding along neighborhood streets.

### **Advantages**

- Effective educational tool
- Good public relations tool
- Encourages speed compliance
- Can reduce speeds temporarily

### **Disadvantages**

- Not an enforcement tool
- Ineffective on multi-lane roadways
- Less effective on high volume streets
- Subject to vandalism

**Cost:** \$250 per day

## Traffic Signing Adjustments

**Description:** All residential or neighborhood streets are 25 mile per hour zones. Speed limit, stop and yield signs may be installed or relocated in neighborhoods for better sight clearance, practicality or other reasons.

**Application:** The primary benefit of installing or relocating speed limit signing is to encourage slower vehicle speeds along residential streets.

### Advantages

- Clearly defines legal speed limit
- Can reduce speeds if enforced
- Usually popular with neighborhood
- Low cost installation

### Disadvantages

- Not effective solely by themselves
- Adds additional signs in the neighborhood

**Cost:** \$200 per sign

## Targeted Police Enforcement

**Description:** The Police Department deploys motorcycle or automobile officers to perform targeted enforcement on residential streets for at least one (1) hour a day.

**Application:** The intended benefit is to make drivers aware of local speed limits and to reduce speeds.

### Advantages

- Visible enforcement very effective
- Driver awareness increased
- Can be used on relatively short notice
- Can reduce speeds temporarily

### Disadvantages

- Temporary measure
- Requires long-term use to be effective
- Fines are lower than enforcement costs and are not returned to the Township

**Cost:** Approximately \$75 per hour

## Tier 2 - Traffic Calming Options

### Narrowing Lanes

**Description:** Striping is usually used to create narrow lanes, often about 10 feet wide. The “unused” pavement can be used to stripe parking lanes or service lanes.

**Application:** The primary benefit of narrowing lanes through striping is to slow vehicle speeds.

#### Advantages

- Can be quickly implemented
- Slows travel speed.
- Improves safety
- Can be easily modified

#### Disadvantages

- Increases regular maintenance
- Not always perceived as an effective tool
- Adds striping to neighborhood streets
- Increases resurfacing costs

**Cost:** Approximately \$1,000



## Higher Visibility Crosswalks

**Description:** Using paving blocks can create higher visibility crosswalks or contrasting colored concrete or painting “zebra” stripes in lieu of or between the crosswalk’s outer boundary stripes.

**Application:** The primary benefit of higher visibility crosswalks is to increase crosswalk visibility to drivers. Useful only in areas of existing, pedestrian traffic.

### Advantages

- More visible than traditional crosswalks
- Indicates preferred crossing location
- Can slow travel speeds
- Can be aesthetically pleasing

### Disadvantages

- Pedestrians may ignore traffic more
- Only used at uncontrolled crosswalks
- Usually require more maintenance than traditional crosswalks

**Cost:** Approximately \$1,000 to \$5,000



## Temporary Installation of Tier 3 Options

**Description:** Temporary installation of a Tier 3 device permits the Township to install a temporary speed table or speed tables.

**Application:** Temporary measures should be considered only after other alternatives have been implemented and proven relatively ineffective, with the exception provided for streets classified as subcollectors. Temporary installation of such devices may reveal a need to install permanent Tier 3 options. On the other hand, it may be concluded that Tier 3 options do not have a significant impact in reducing speed or volume.

### Advantages

- Slows travel speeds
- Improves safety
- Can be easily modified

### Disadvantages

- Can generate controversy, especially if there is cut through traffic
- If removed, eventually volume and speed will most likely return to earlier levels

**Cost:** Approximately \$2,500

## Tier 3 - Traffic Calming Options

### Median Islands

**Description:** Median islands are raised islands in the center of a street that can be used to narrow lanes for speed control.

**Application:** Median islands are used on wide streets to lower travel speeds. They can also be used to provide a mid-point refuge area for pedestrians crossing the street.

#### Advantages

- Effectively reduces vehicles speeds
- Can reduce collision potential
- Reduces pedestrian crossing distance
- Opportunity for landscaping

#### Disadvantages

- May require removal of on street parking
- May reduce driveway access
- May divert traffic volumes
- Requires ongoing maintenance for landscaping

**Cost:** Approximately \$6,000 to 10,000

## Mini Traffic Circle

**Description:** This device is a raised circular island located most commonly at four-legged intersections. The traffic circle slows vehicles using the intersection and can also provide an attractive gateway to a neighborhood.

**Application:** Traffic circles are best used at four-legged intersections.

### Advantages

- Effectively reduces vehicle speeds
- Can reduce collision potential
- Can reduce vehicular volumes
- Does not require parking removal
- Opportunity for landscaping

### Disadvantages

- May generate increased noise
- Can require drainage modifications
- May divert traffic volumes
- Requires ongoing maintenance for landscaping

**Cost:** Approximately \$15,000 to 20,000

## Gateway or Median

**Description:** Gateways are treatments consisting of physical and textural changes to streets and can be located at key entryways into a neighborhood or at any point in a street.. They often consist of features that narrow a street in order to reduce the width of the travel lanes.

**Application:** The primary benefit of a gateway treatment is speed reduction. They provide visual cues that tell drivers they are entering a local residential area or that the surrounding land uses are changing.

### Advantages

- Can reduce vehicle speeds
- Creates identity for neighborhood
- Can discourage cut-through traffic
- Opportunity for landscaping

### Disadvantages

- Maintenance and irrigation needs
- May require the removal of on street parking
- Can impede truck movements
- Creates a physical obstruction

**Cost:** Approximately \$6,000



## Curb Extension

**Description:** Curb extensions narrow the street by extending the curbs toward the center of the roadway or by building detached raised islands to allow for drainage and bike lanes.

**Application:** Curb extensions are used to narrow the roadway and to create shorter pedestrian crossings. They also improve sight distance and influence driver behavior by changing the appearance of the street.

### Advantages

- Better pedestrian visibility
- Shorter pedestrian crossing
- Can decrease vehicle speeds
- Opportunity for landscaping

### Disadvantages

- Most likely requires removal of parking
- May create hazard for bicyclists
- Can create drainage issues
- Difficult for trucks to turn right.

**Cost:** Approximately \$5,000 each



## Speed Table/Raised Crosswalk

**Description:** Speed tables and raised crosswalks are typically constructed three (3") inches above the elevation of the street. They are typically between 14 and 22 feet long, with a flat section in the middle and ramps on both ends.

Sometimes the flat portion is constructed with brick or other textured materials.

**Application:** The primary purpose of this application is to control speed. When a crosswalk is used, it improves safety for pedestrians.

### Advantages

- Effectively reduces speeds  
Does not require parking removal
- Can reduce vehicular volumes

### Disadvantages

- May generate increased noise
- Can require drainage modifications
- Must be reviewed by emergency services
- Requires signage and markings

**Cost:** Approximately \$10,000 each



## Chokers

**Description:** This is the name given to build-outs added to a road to narrow it. There are various configurations of chokers, but the philosophy is to narrow a road to change its perception to drivers. When narrowing is carried out at an intersection the term bulb-out or curb extension is usually used. These constructed “pinch points” require traffic to slow to move through the more narrow sections of the road.

**Application:** Chokers are used to narrow the roadway. At intersections this type of application is called a curb extension. They improve sight distance and influence driver behavior by changing the appearance of the street.

### Advantages

- Better pedestrian visibility
- Can decrease vehicle speeds
- Opportunity for landscaping

### Disadvantages

- Most likely requires removal of parking
- May create hazard for bicyclists
- Can create drainage issues

**Cost:** Approximately \$5,000 each

## Chokers/Curb Bulbs



38th Avenue South

## Chicanes

**Description:** These are features added to the roadway to create a serpentine or winding road. This forces vehicles to slow to maneuver between the alternating road extensions. They are only effective when used in a series.

**Application:** The primary purpose of this application is to control speed.

### Advantages

- Effectively reduces speeds
- Can reduce vehicular volumes

### Disadvantages

- Can require drainage modifications
- Must be reviewed by emergency services
- Requires signage and markings
- Requires parking removal

**Cost:** Approximately \$5,000 each





# Signature Page

**Signature**

**Address**

**Phone (Day)**

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## AREA MAP

Area of Concern: Please provide a sketch of the area showing crossroads, etc.

