Traffic Calming Program

The City of Edmonds Traffic Calming Program is designed to assist residents and City staff in responding to neighborhood traffic issues related to speeding, cut-through traffic, and safety. Implementation of a traffic calming program allows local traffic concerns to be addressed consistently, and traffic calming measures to be efficiently developed and put into operation.

In establishing a neighborhood traffic calming program, the City must take into account the restriction that no deviation from Washington State Department of Transportation (WSDOT) design standards is permitted on principal arterials, minor arterials and collector streets without express approval of the WSDOT local programs engineer (RCW 35.78). This limitation does not apply to local access streets, which are defined by RCW 35.78.010 as streets "…generally limited to providing access to abutting property… tributary to major and secondary thoroughfares… generally discouraging through traffic…" Therefore, the City's traffic calming program focuses on local access streets.

The Traffic Calming Program consists of a three-phase process:

- **Phase 1 – Petition and Review for Qualification:** To begin the process, residents submit a petition for local street traffic concerns, and the City reviews the application and investigates the site to determine if the application qualifies for the Traffic Calming Program.
- **Phase 2 – Education and Enforcement:** Focuses on education and enforcement solutions that could include educational flyers, police enforcement, a neighborhood speed watch, signing, and/or striping modifications. If those solutions are not effective in reducing speed or cut-through traffic, then the process moves on to Phase 3.
- **Phase 3 – Installation of Traffic Calming Device:** Consists of working with residents to identify the appropriate traffic calming device to be installed. If approved by residents in the affected area, the device is planned for installation.

Exhibit A illustrates the three-phase process. Each phase of the Traffic Calming Program is summarized in the following sections.

Due to economic considerations, city streets that are ineligible for the Traffic Calming Program include:

1. Streets classified other than local streets, including dead-end streets.
2. Streets scheduled for resurfacing within the next two years.
3. Streets with grades, curvatures or other physical conditions where addition of any device would create unsafe conditions.
4. Streets not meeting average daily traffic requirements (see Phase 1 Qualification section).

Phase 2 – Education and Enforcement

Phase 2 of the program focuses on solutions that include education of drivers of existing traffic regulations, and a focus on enforcement of those regulations. During this phase, neighborhood concerns are addressed by informing drivers of safety issues by applying traffic enforcement techniques, or by adding signs or pavement markings to change driver behavior. These solutions can be an effective way to address speeding within neighborhoods by residents themselves. The City can implement these less restrictive solutions more easily and quickly than physical traffic calming devices. It is recognized, however, that these solutions may produce benefits that are only temporary, and that conditions need to be monitored. Phase 2 consists of the following steps.

Development of Education and Enforcement Strategies

If the application is qualified for the program, then City staff will use the baseline traffic data, along with insights and suggestions from area residents, to determine which solutions will be used to improve the traffic issues.

Table 1 provides a summary of potential education and enforcement strategies, and a comparison of their advantages, disadvantages, and potential effectiveness.

Implementation

Once appropriate education and enforcement strategies are identified, they will be implemented with the assistance of the neighborhood residents. The solutions will be implemented for at least six months to provide a traffic adjustment period and to allow adequate time to evaluate the effectiveness.

Evaluation

Six to 12 months after the Phase 2 strategies have been implemented, City staff will re-evaluate conditions. The results will be compared with the previous data to measure the effectiveness of these traffic calming solutions, with three possible outcomes:

- If the daily 85th percentile speed is ≤ 8 mph over the posted limit; or if peak hour (AM or PM) cut-through traffic is ≤ 25% of the total traffic or < 15 cut-through vehicles, no further action will be taken.
- If the daily 85th percentile speed is 8 – 10 mph over the posted limit, or cut-through traffic very close but still over the threshold, another Phase 2 solution may be considered for implementation. The City staff will meet with the requestor and neighborhood residents to review if other solutions might be more effective.
- The application will move to Phase 3 if it meets the following conditions:
  - The daily 85th percentile is ≥10 mph over the posted limit; or
  - The peak hour (AM or PM) cut-through traffic is >25% of the total traffic and >15 vehicles per hour.

- The average daily traffic volume on the subject street must be between 500 and 3,000 vehicles per day; AND
- One of the following three conditions is present:
  - If the traffic concern is related to **cut-through traffic**, the peak hour (AM or PM, whatever is higher) cut-through traffic is >25% of total traffic and >15 vehicles per hour; or
  - If the traffic concern is related to **speeding**, the daily 85th percentile speed (the speed that 85% of the cars are traveling at or below, as determined through a speed study) is >8 mph over the posted speed limit.

If the baseline traffic data show that these criteria are not met, process will not move on to Phase 2. The City will notify the requestor by letter that the street does not qualify for the Traffic Calming Program. If the criteria are met, the process will move on to Phase 2.

Table 1. Potential Education and Enforcement (Phase 2) Traffic Calming Strategies

Possible Solution	Advantage	Disadvantage	Safety Improvement	Speed Reduction	Volume Reduction	Cut-through Traffic Reduction	Cost	Emergency Service
Educational Campaign	▪ Low cost. ▪ Can be relatively effective. ▪ Involves and empowers citizens.	▪ May take time to be effective. ▪ Effectiveness may decrease over time. ▪ Not likely to be as effective on non-local traffic. ▪ Can be time consuming.	(1)	(1)	No Effect	Potential	Low	No Effect
Pavement Markings	▪ Remains effective on occasional users. ▪ Delineation of the parking area and bicycle lane creates the impression of a narrowed roadway, reducing speed. ▪ Discourages vehicles from driving in or along the parking lane. ▪ Fewer lane conflicts. ▪ More defined driving patterns, reduced potential for accidents of the pedestrian, passing on the right, sideswipe, and parked vehicle variety. ▪ Positive community reaction.	▪ Effectiveness may decrease over time. ▪ May result in less parking due to driveway and intersection sight distances. ▪ The use of raised buttons as striping may interfere with snow removal activities. ▪ Increased maintenance costs for striping inspection and re-striping requirements.	(2)	(2)	No	Not Likely	Low	No Effect
Police Enforcement	▪ Good temporary public relations tool. ▪ Serves to inform public that speeding is undesirable behavior for which there are consequences.	▪ Effect is not permanent. ▪ Potentially expensive. ▪ Budget and manpower constraints.	Yes, Temporarily	Yes, Temporarily	Not Likely	Yes, Temporarily	Medium to High	No Effect
Portable Radar Trailer	▪ Heightens motorists' awareness of driving behavior and its impact on the residents. ▪ Potentially reduce vehicle speed by 1 to 6 mph in the vicinity of the sign.	▪ May take time to be effective. ▪ Effectiveness may decrease over time. ▪ Stationary radar signs must be near power source.	Yes, Temporarily	Yes, Temporarily	No	Yes, Temporarily	Low to Medium	No Effect
Raised Pavement Markers	▪ Relatively inexpensive to install. ▪ Creates driver awareness. ▪ May reduce speeds.	▪ May adversely impact bicyclists. ▪ Raised pavement markers are noisy by design, therefore placement in front of residences should be carefully	(3)	(3)	Not Likely	Not Likely	Medium to High	No Effect

Possible Solution	Advantage	Disadvantage	Safety Improvement	Speed Reduction	Volume Reduction	Cut-through Traffic Reduction	Cost	Emergency Service
		considered. ▪ May interfere with snow removal activities.						
Signing	▪ May provide needed information to the driver that was not provided already on the street. ▪ Typically safety improves in the long run when unwarranted signs are removed.	▪ Removal of temporary stop signs is often very difficult to accept for residents used to having them there, even when the signs are unwarranted. ▪ Over-signing an area can create a loss of effectiveness. ▪ Increased maintenance costs.	Potential	Potential	Not Likely	Not Likely	Low	No Effect
Speed Watch Program	▪ Promotes neighborhood involvement to address traffic issues (excessive speed as well as other community concerns). ▪ Heightens motorists' awareness of driving behavior and its impact on the residents. ▪ Provides the Police Department with specific times for selective enforcement. ▪ Determines if traffic is cut-through.	▪ Time consuming for neighborhood residents. ▪ May take time to be effective. ▪ Effectiveness may decrease over time.	(4)	(4)	No	Yes, Temporarily	Low	No Effect

(1) Temporary improvements will occur if the majority of speeders in the neighborhood are neighborhood residents.

(2) Improvement will depend on the existing road and the type of striping. This will have to be determined on a case-by-case basis.

(3) Improvement will depend on how device is used.

(4) Temporary improvements are possible when all of the speeders receive letters from the Police Department.

Phase 3 – Installation of Traffic Calming Devices

Phase 3 of the program involves modifying the physical geometry of the roadway by installing a traffic calming device. Traffic calming devices are more expensive and more restrictive to local traffic than the Phase 2 education and enforcement strategies. Because of this, traffic calming devices require a much greater level of resident involvement and agreement for implementation. Phase 3 consists of the following steps.

City Staff Review

City staff will define the study area to ensure it includes all residents who could be affected by a traffic calming device. Staff will conduct a preliminary review and complete the following tasks:

- Staff will score the petition by using the Scoring Criteria shown in Table 2. Because traffic calming devices are more expensive to implement than Phase 2 solutions, the City will use the score to decide the priority to fund a traffic calming device. Applications will be processed in order of priority, in accordance with available funding.
- Staff will identify the technical feasibility and constraints of potential traffic calming devices. The following are technical aspects that will be considered when reviewing the proposed placement of a traffic calming device:
  - Traffic rerouting. It must be assured that the problem will not shift to adjacent streets.
  - Adequate provisions should be made for school buses, garbage collection, moving vans, construction equipment, pedestrians, and bicyclists, where traffic calming devices are installed.
  - Emergency response times and access for emergency vehicles must be considered. Staff will coordinate with emergency service providers to ensure that a device does not interfere with adequate access and response times, either by itself or cumulatively with other devices.
  - Drainage. It must be assured that a device will allow adequate drainage.
  - If curbs and gutters are not present, the design of an individual device may need to be modified to restrict drivers from using the shoulders to avoid the device.
  - Proximity to other traffic calming devices and intersections.
  - Roadway surface conditions. Traffic calming devices should be installed on paved roadways with good surface conditions.
  - Roadway grade. Some traffic calming devices should not be used on grades exceeding 8%.
  - Effect of the devices on street sweeping and other maintenance activities.
  - Potential loss of on-street parking.
  - Potential changes to community character.
  - Sight distance obstructions related to landscaping, fences, roadway alignment, grade, etc.
  - Potential impact to residential driveways.

Table 2. Scoring Criteria for Traffic Calming Devices

Criterion	Points
Average Weekday Daily Traffic (AWDT)	
500 – 1,000 vehicles/day	1
1,001 – 2,000 vehicles/day	2
2,001 – 3,000 vehicles/day	3
Traffic Speed (85th Percentile)	
5.1 – 8.0 mph above posted limit	2
8.1 – 10.0 mph above posted limit	4
More than 10 mph above posted limit	6
Cut-Through Traffic	
25% - 49% of AWDT	1
50% - 74% of AWDT	2
More than 74% of AWDT	3
Accident History of Past 3 Years	
1 accident/year	3
2 accidents/year	4
3 accidents/year	5
More than 3 accidents/year	7
Parks / Schools	
Greater than 6 blocks	1
Between 3 and 6 blocks	2
Within 3 blocks	3
Street Conditions	
Sidewalks on both sides of street	1
Sidewalks on one side of street	2
No Sidewalks	3

Development of Traffic Calming Solutions

The City will hold a public meeting for all residents within the study area. In conjunction with neighborhood volunteers, staff will organize the meeting and ensure the neighborhood residents are notified of the meeting. The meeting may include following discussions.

- Review the effectiveness of Phase 2 strategies.

- Discuss the funding and priority of the application among other traffic calming applications within the City.
- Discuss possible traffic calming devices and advantages, disadvantages, and special concerns related to them.
- Discuss the entire process for Phase 3 implementation.
- Establish workgroups to allow residents to work out the solutions with the help of City staff.

The workgroups will discuss the problems and alternative solutions with their neighbors and report their findings to the rest of the group and City staff. The City staff will evaluate technical feasibility of the traffic calming devices that are selected by the neighborhood workgroups. The City staff will then determine the preferred traffic calming device with the approval from the Fire and Police Departments.

Table 3 provides a summary of traffic calming devices that could be considered, and a comparison of their advantages, disadvantages, and potential effectiveness.

Approval for Preferred Device

When a preferred traffic calming device is selected, the City staff will send out a voting sheet to each of the affected residents. For a traffic calming device to be implemented, 60% of the households, based on returned ballots, must approve the installation of the proposed traffic calming device.

Installation of Traffic Calming Device

Once funding is available for the application, the City will begin the design and construction of the approved traffic calming device. This step includes the following elements.

Baseline Data Collection

Before the installation of the device, City staff will collect baseline traffic data within the study area for future comparison and effectiveness evaluation. This traffic data will be used to evaluate whether traffic shifted from the subject street to adjacent streets and to what extent the traffic shifted after a device was installed. The baseline data will also be used to evaluate the effectiveness of a device by comparison to future traffic data.

Possible Installation of Temporary Device

A temporary device may be installed for traffic calming measures, such as diverter, full closure, and partial closure. If appropriate, the City will install a temporary device for up to 6 months to provide a trial period.

Staff will evaluate the effectiveness of the device and examine whether it results in a shift in traffic from the subject street to adjacent local streets. If it is determined that the device results in a shift of the problem to another street, the City will modify the traffic calming strategy to address this issue before installing a permanent device.

Maintenance of Landscaping

Landscaping can be included in the installation of some traffic calming devices. However, neighborhood volunteers must sign up to maintain the landscaping. Otherwise, decorative paving will be used. In some areas of the City, landscaping is provided through the flower program.

Evaluation

If proposed by the City, 6 to 12 months after the traffic calming device has been installed, City staff will collect traffic data on surrounding streets to ensure the device did not shift traffic from the subject street to adjacent local access streets.

Table 3. Comparison of Potential Phase 3 Traffic Calming Devices

Possible Solution	Advantage	Disadvantage	Safety Improvement	Speed Reduction	Volume Reduction	Cut-through Traffic Reduction	Cost	Emergency Service
Bulb-Outs	▪ Reduces pedestrians' crossing distance. ▪ Narrowed lanes can slow vehicles. ▪ May increase sight distance at intersections.	▪ May require removal of some on-street parking. ▪ May limit marked bicycle lanes. ▪ Increased maintenance for landscaping, street sweeping, and curb repair. ▪ May limit possible new transit routing options.	Yes	Yes	Potential	Potential	Medium to High	No Effect
Diverter	▪ Eliminates cut-through traffic. ▪ Reduce conflicts at intersections. ▪ Provides area for landscaping. ▪ Increases pedestrian safety. ▪ Pedestrian and bike access can be maintained.	▪ May redirect traffic onto other local streets. ▪ Increased travel time for local residents. ▪ Reduction in volume may increase speeds. ▪ Reduces emergency vehicles' access unless specially designed. ▪ Increased maintenance costs for landscaping.	Yes	Potential	Yes	Yes	Medium to High	Possible Problems
Full Closure	▪ Eliminates cut-through traffic. ▪ Effective volume control measure. ▪ Improves aesthetic quality of the street. ▪ Pedestrian and bike access can be maintained. ▪ Improves safety for all the street users.	▪ May redirect traffic to other streets. ▪ May increase trip length for local drivers. ▪ Not applicable for designated emergency response vehicle routes. ▪ May result in difficult turn around conditions. ▪ Increased maintenance costs for landscaping.	Yes	Yes	Yes	Yes	Low to Medium	Possible Problems
Medians	▪ Narrowed lanes can slow vehicles. ▪ Prevents passing. ▪ Opportunity for landscaping and visual enhancement. ▪ Separates opposing traffic.	▪ May reduce sight lines if over-landscaped. ▪ May require removal of some on-street parking. ▪ May prohibit or limit driveway access. ▪ May affect emergency response during inclement weather, if installed on a grade. ▪ May limit marked bicycle lanes. ▪ Increased maintenance for landscaping, street sweeping, and curb repair.	Slight	Potential	Slight	Slight	Medium to High	Possible Problems

Possible Solution	Advantage	Disadvantage	Safety Improvement	Speed Reduction	Volume Reduction	Cut-through Traffic Reduction	Cost	Emergency Service
Partial Closure	▪ Reduces cut through traffic. ▪ Pedestrian crossing distance reduced. ▪ Landscaping opportunity.	▪ May affect emergency response. ▪ May redirect traffic onto other local streets. ▪ May increase trip length for local drivers. ▪ Maintenance responsibility if landscaped.	Yes	Potential	Yes	Yes	Low to Medium	Possible Problems
Speed Cushions	▪ Reduces vehicle speeds in the vicinity of speed cushion.. ▪ Self-enforcing. ▪ Relatively inexpensive. ▪ May divert traffic if adjacent arterial street exists.	▪ May create noise. ▪ Increases sign maintenance costs. ▪ May cause diversion of traffic to adjacent local streets.	Potential	Yes	Yes	Potential	Low to Medium	Less Effect
Traffic Circles	▪ Speed reduction near intersection. ▪ May divert traffic if adjacent an arterial street exists. ▪ Opportunity for landscaping and beautification. ▪ May reduce collisions at the intersection.	▪ May affect emergency response. ▪ May cause diversion of traffic to adjacent local streets. ▪ May affect transit service. ▪ Some potential loss of on-street parking at corners. ▪ Increased maintenance for landscaping, street sweeping, and curb repair.	Yes	Yes	Potential	Potential	Low to High	Minor Constraints

Note: Speed humps and chicanes are excluded from the program, because the City has determined that they are often detrimental to emergency vehicle access and response times.

Removal of a Traffic Calming Device

An installed device may be removed by the City at no cost to residents if:

- It is determined to result in a safety issue,
- It is determined to be ineffective, or
- It interferes with the installation of future traffic control devices.

However, if residents wish to remove a traffic calming device after it is installed, without any of these conditions in place, they must provide a petition that indicates 60% agreement with a removal decision, and pay for the removal.