City of Mountlake Terrace
Traffic Calming Guide

A Guide For Managing Traffic in Mountlake Terrace Neighborhoods

July 2017

City of Mountlake Terrace
Department of Community and Economic Development
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Introduction

Traffic Calming

The Mountlake Terrace Traffic Calming Program has been developed at the request of the City Council to assist residents and staff in responding to neighborhood traffic issues in a consistent and uniform manner. Traffic calming objectives include:

- achieving slow speeds for motor vehicles,
- reducing collision frequency and severity,
- increasing the safety and the perception of safety for non-motorized users of the street(s),
- increasing access for all modes of transportation, and
- reducing cut-through motor vehicle traffic.

“Mountlake Terrace is a community of neighborhoods”, and traffic conditions on local streets are a key measure of neighborhood livability. When our streets are safe and pleasant, the quality of life is enhanced. When traffic problems are a daily occurrence, our sense of community and personal well-being are threatened. With your help and the City’s efforts in education, engineering, and enforcement, we can work together to address traffic problems on local streets.

What is the Traffic Calming Program?

Mountlake Terrace’s Traffic Calming Program is part of the City’s commitment to the safety and livability of our neighborhoods, and it incorporates the goals and objectives of the City’s Comprehensive Plan. It is a collaborative effort of local residents and City staff to reduce the impacts of traffic on local streets. Through active participation by you and your neighbors, we can identify the problem, plan the approach, understand the tradeoffs of possible measures, implement the solutions, and evaluate the effectiveness. Therefore, this program not only seeks out citizen involvement, but also requires it in every aspect of the planning and decision-making process. Traffic calming for residential areas seeks harmony between automobiles and people.

How does the program work?

The program works in two phases. Phase I focuses on passive, less restrictive measures like educational programs, police enforcement, pavement markings, and signage. Should the Phase I measures prove ineffective at reducing excessive speeds or traffic volumes within a given time frame, then we proceed to Phase II of the program, which includes more restrictive methods.

Limitations

The City’s Traffic Calming Program has been adopted in furtherance of the Public health, general safety and welfare. It is not intended to create nor to benefit a special class of individuals, nor does it create any third party rights or beneficiaries. Implementation of the program, in whole or in part, is subject to available funding, City resources, and other variables.
**Program Flowchart**

**Phase 1**

- **Receive Citizen Action Request Form & Petition**
  - To validate request, resident must circulate a city provided flyer to neighbors and obtain a minimum of 10 adult resident signatures from 10 separate addresses that agree with the request prior to the program moving forward

- **Analysis by City**
  - Define Study Area
  - Use ITE Trip Generation for local travel estimate (10 trips per household)
  - Count traffic to determine actual traffic volume (non-local traffic must be greater than 25% of total traffic)
  - Speed Study (15% of traffic must be traveling at or above 5 mph over the posted limit)

- **Develop Phase One Plan With Residents**
  - Education, Enforcement, Enhancements

- **Evaluation by City in 4 Months**
  - Traffic Counts
  - Speed Studies
  - Accident Analysis

- **SPEED IS LESS THAN 10MPH OVER THE POSTED LIMIT**
- **SPEED IS LESS THAN 5MPH OVER LIMIT AND/OR NON-LOCAL TRAFFIC LESS THAN 25%**
  - No Further Action Taken

- **SPEED IS AT OR ABOVE 10MPH OVER THE POSTED LIMIT OR NON-LOCAL TRAFFIC IS AT OR ABOVE 25%**
  - No Further Action Taken

**Phase 2**

- **Develop Phase 2 Plan with Residents**
  - City recommends Phase 2 options based on problems identified

- **Survey by City**
  - 60% to 90%* approval of plan from households within the Study Area (depending on the proposed treatment)

- **Design and Bid Phase 2 Improvements**

- **Construct Phase 2 Improvements**

- **Evaluation by City in 4 Months**
  - Traffic Counts
  - Speed Studies
  - Accident Analysis

- **SPEED IS AT OR ABOVE 10MPH OVER THE POSTED LIMIT OR NON-LOCAL TRAFFIC IS AT OR ABOVE 25%**

- **SPEED IS LESS THAN 5MPH OVER THE LIMIT OR NON-LOCAL TRAFFIC IS LESS THAN 25%**

- **No Further Action Taken**

*Disclaimer: Approval rates may vary depending on specific circumstances and proposed treatments.
Program Timeline

<table>
<thead>
<tr>
<th>Task</th>
<th>TIME (MONTHS)</th>
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<tbody>
<tr>
<td><strong>Phase 1</strong></td>
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<td>Validation Survey Received from Citizen</td>
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<tr>
<td>Analysis by City &amp; Traffic Safety Campaign</td>
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<td>Develop &amp; Implement Phase 1 Plan</td>
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<tr>
<td>Traffic Adjustment Period</td>
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<tr>
<td>Evaluate Effectiveness of Phase 1 Plan</td>
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<tr>
<td><strong>Phase 2</strong></td>
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<tr>
<td>Develop Phase 2 Plan with Residents</td>
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<td>Approval Survey</td>
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<td>Phase 2 Design</td>
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<td>Construct Phase 2 Plan</td>
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<tr>
<td>Traffic Adjustment Period</td>
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<tr>
<td>Evaluate Effectiveness of Phase 2 plan</td>
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The timeline shown is approximate and subject to change based on things like the type of traffic issue, existing staff workload, contractor obligations, weather and availability of funds.
Phase I

INITIATING A TRAFFIC CALMING STUDY

Phase I of a Traffic Calming Program begins when you or your neighbor turns in a “Traffic Calming - Citizen Action Request Form” (Attached). The action request form identifies the type of traffic concerns present in the neighborhood. and includes a petition for you to complete that indicates neighborhood consensus that the traffic concern should be studied. A minimum of 10 adult resident signatures from 10 separate addresses in the immediate area will be required prior to going forward with the program. Please identify one person who can be a point of contact for staff to contact for further coordination.

TRAFFIC ANALYSIS STUDY

Once the petition is returned to the City showing neighborhood support, the study area will be defined and data collected from speed studies, accident histories, and traffic counts.

The study area will be determined by City Staff and will be influenced by the following factors:
- Configuration of the street system in the area,
- Location of arterial streets
- Potential alternative routes for local traffic
- Location of elementary schools and designated school walk routes
- Location of local parks and travel routes to them
- Potential parallel local street routes
- Subarea Boundaries as defined in the City’s Comprehensive Plan

Example of Study Area
The traffic and accident data will be used to determine the severity of the traffic concern and if developing a plan is warranted. To qualify for a Phase 1 plan, the following criteria must be met:

- EITHER 15% of the traffic will be traveling above 5 mph over the posted speed limit
- OR 25% of the traffic is determined to be non-local on a local neighborhood street, based on ITE trip generation guidelines.

**DEVELOPING AND IMPLEMENTING A PHASE 1 PLAN**

When qualified, the data, along with insights and suggestions from area residents, will be used to determine which of the Phase 1 solutions to recommend to improve safety on your street. Resident volunteers will be invited to attend meetings to help develop a plan.

Once the plan is finalized, it will be implemented, which will likely involve the assistance of the residents of the area.

**EVALUATING THE EFFECTIVENESS OF THE PLAN**

Within three months after the plan has been implemented, it will be evaluated by City staff. New traffic and accident data will be obtained and analyzed. The results will be compared with the previous data to measure the effectiveness of the Phase I plan. There are three possible outcomes based on the results.

- IF less than 15% of the traffic travels above 5 mph over the posted limit, no further action will be taken.
- IF less than 15% of the traffic travels above 10 mph over the posted speed limit but above 5 mph over, another Phase I plan will be developed and implemented.
- IF more than 15% of the traffic travels above 10 mph over the posted limit OR non-local traffic is at or above 25%, the traffic calming program will move to Phase 2.
Phase I Solutions

Examples of Phase 1 actions include:

TRAFFIC SAFETY CAMPAIGN

It’s often the case that many problem drivers in a neighborhood actually live in the immediate area. Conducting a Traffic Safety Campaign can be a good way to reach these inattentive drivers. An informational letter is prepared by the City and mailed to your neighbors. The letter explains traffic volumes and speed study results in your area. Recommended traffic calming measures, along with information about traffic laws, pedestrian and bicycle safety are included in the letter. The goal is to heighten traffic safety awareness within the neighborhood. This is also a good way to help develop consensus amongst neighbors regarding the options available.

SIGNAGE

Posting appropriate traffic control signs is a Phase I solution. Signs may include speed limit, parking, dead-end, school signs, etc.

Signs We Don’t Use

Municipalities often get well meaning requests from homeowners for signs with messages like “Slow, Children At Play” or other signs attempting to alert drivers to the presence of children nearby. While at first these signs seem like a good idea, in practice they have proven to be ineffective at modifying driver behavior and can create a sense of complacency from parents.
PAVEMENT MARKINGS

Painting legends and other markings on local streets can also be a Phase I solution. Pavement markings can include centerlines, fog lines, identification of school crossings, speed limits, parking lines, and pavement hatching.

TRIMMING VEGETATION

Obscured lines of sight can create hazardous conditions. Sight distance can be improved when brush is trimmed and vegetation is cleared by homeowners or City crews.

TARGETED POLICE ENFORCEMENT

Increased enforcement by the Mountlake Terrace Police Department can be a part of a recommended Phase I solution.

Can We Get A Lower Speed Limit?

Studies done on driver behavior over time have consistently shown that a majority of motorists tend to choose speeds that are reasonable and safe for a given set of conditions. This self-regulating behavior persists in spite of the particular posted speed of a roadway. Setting a speed limit that seems consistent with the driving environment helps to reinforce this behavior. A reasonable speed limit also allows the Police to target exceptional cases of speeding instead of making violators out of safe and prudent drivers.

Studies have indicated that posting a speed limit that appears arbitrarily low to motorists will cause them to disregard the speed limit entirely, and can actually decrease the safety of the roadway.
RADAR SPEED TRAILER

A portable trailer equipped with a radar unit detects the speed of passing vehicles and displays it on a digital reader board. This device shows the driver their “actual” speed versus the posted speed limit. This information raises awareness of the posted speed and helps to promote compliance.

Why Stop Signs Are Not Used for Speed Control

One of the most common requests we receive is for the installation of stop signs to slow cars down. It seems like an obvious, inexpensive way to reduce vehicle speeds. However, what seems to be a perfect solution can actually create a less desirable situation.

When stop signs are used as “nuisances” or “speed breakers,” there is a high incidence of drivers intentionally violating the stop. When vehicles do stop, the speed reduction is effective only in the immediate area of the stop sign, since a large percentage of motorists then increase their speed to make up for lost time. This results in increased mid-block speeds.

For these reasons, we do not use stop signs as speed control devices. Instead, they are used to improve safety at intersections where traffic volumes or accidents require their installation.
Phase 2

Phase 2 solutions generally involve modifying the physical geometry of the roadway and are much more expensive than Phase 1 solutions. Phase 2 solutions require preparation of plans and contracts for construction by contractors and may also require the involvement of the City Council.

DEVELOPING AND IMPLEMENTING A PHASE 2 PLAN

Once a traffic issue qualifies for Phase 2, a plan is developed with input from the residents volunteers. When the plan is complete, the City surveys the residents of the study area. For a project to be implemented, 60% to 90% (depending on the proposed solution) of the households must approve the Phase 2 plan.

Upon approval of the Phase 2 plan, the City prepares plans and contracts documents, bids and awards a contract, and constructs the project.

EVALUATING THE EFFECTIVENESS OF THE PLAN

Four months after the plan has been implemented, it will be evaluate by City staff. New traffic and accident data will be obtained and analyzed. The results will be compared with the previous data to measure the effectiveness of the Phase 2 plan. There are three possible outcomes based on the results.

- IF the speed is 5 or less mph over the posted limit, no further action will be taken.
- IF the speed is 10 or less mph but above 5 mph over the posted limit more another Phase I plan will be developed and implemented.
- IF the speed is above 10 mph over the posted limit OR non-local traffic is at or above 25%, the traffic-calming program will return to Phase 2.
Phase 2 Solutions

The concept upon which a Phase 2 Plan is developed is based on the use of more active physical treatments to address traffic calming concerns.

Examples of Phase 2 improvements include:

**CURB EXTENSIONS / RADIUS REDUCTIONS**

Curb Extensions are used to narrow the roadway and increase sight distance at selected locations along a street corridor.

**SPEED HUMPS**

A raised area of road, approximately 3 inches high and either 12 or 22 feet long. This treatment is used to slow vehicles by forcing them to decelerate in order to pass over them comfortably. Installation of speed humps can slow emergency vehicle response times.

**SPEED TABLES / RAISED CROSSWALKS**

A raised crosswalk or speed table is a raised area of roadway pavement approximately 3 inches in height with a travel length of 22 feet. A 10-foot wide crosswalk is marked on top of the raised pavement to form a Raised Crosswalk. Installation of speed tables and raised crosswalks can slow emergency vehicle response times.

**TRAFFIC CIRCLES**

Traffic Circles are built in the center of intersections or at mid-block locations that slow traffic by forcing it to keep to the right and travel in a counter-clockwise direction in order to continue on their traveling path. Installation of traffic circles can slow emergency vehicle response times.
**MEDIANS**

Medians are raised islands that separate the traffic lanes and narrow the travel path, causing the traffic to slow down.

**CHICANES**

Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curves causing traffic to slow down. Installation of chicanes can slow emergency vehicle response times.

**STATIONARY RADAR SIGNS**

Similar to the Radar Speed Trailer, Stationary Radar Signs can be used to draw a driver’s attention to their actual speed and the local speed limit. Since many people do not realize how fast they are traveling in residential neighborhoods, these devices are installed to alert motorists of their traveling speed.

**DIVERTERS**

Diagonal diverters are barriers placed diagonally across an intersection, blocking through movements and creating two separate, L-shaped streets. Partial diverters can also be constructed that can continue to allow right-turns for all roadways.
TURN RESTRICTIONS / PARTIAL CLOSURES

Partial Closures involve closing down one lane of a two-lane roadway along with a “Do Not Enter” sign, in order to reduce cut through traffic.

FULL CLOSURES

Full Closures are exactly that, closing the whole road to prevent all cut through traffic. Sidewalks and bike lanes can be kept open. Also, access for emergency vehicles will need to be provided at these locations. This is an extreme measure to be used only when all other measures have failed.

Each of the treatments is unique and specific guidelines have been established for when and where they may be used. Refer to Phase 2 Treatment Descriptions in the Appendix for installation guidelines.

Based on the data collected and the topography of the area, a treatment or combination of treatments may be recommended. Of course, any recommended action will be based on sound engineering and planning principles. Safety remains paramount in the decision-making process, including consideration to emergency response by police, fire, and paramedic crews.
## City of Mountlake Terrace

### Traffic Calming Program

### City-Wide Traffic Calming Characteristics

#### Summary

<table>
<thead>
<tr>
<th>Qualification Requirements</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
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<tbody>
<tr>
<td>15% of traffic traveling at or above 5 MPH over the posted limit</td>
<td></td>
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<tr>
<td>OR</td>
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<tr>
<td>25% of peak hour traffic is non-local</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>PHASE 1</th>
<th>PHASE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>15% of traffic traveling at or above 10 MPH over the posted limit</td>
<td></td>
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<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>25% of peak hour traffic is non-local</td>
<td></td>
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<tr>
<td>AND</td>
<td></td>
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<tr>
<td>At least 50% of households are supportive of moving into Phase 2</td>
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</tbody>
</table>

### Treatment Options

- Traffic Safety Campaign
- Signage
- Pavement Markings
- Trimming Brush
- Target Police Enforcement
- Speed Watch Program
- Radar Speed Trailer

- Curb Extensions / Radius Reductions
- Speed Cushions
- Speed Tables / Raised Crosswalks
- Traffic Circles / Speed Dots
- Medians
- Chicanes
- Stationary Radar Signs
- Diverts
- Turn Restrictions / Partial Closures
- Full Closures
## Project Prioritization Scoring

(To be used when more than 1 Study Area is under consideration for funding)

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>POINTS</th>
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<td><strong>Average Daily Traffic (ADT)</strong></td>
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<td>500-1000</td>
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<td>1001-2000</td>
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<tr>
<td>2001-3000</td>
<td>3</td>
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<tr>
<td><strong>Traffic Speeds (85th Percentile)</strong></td>
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<td>5-7 mph above posted</td>
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<td>8-10 mph above posted</td>
<td>4</td>
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<tr>
<td>More than 10 mph above posted</td>
<td>6</td>
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<tr>
<td><strong>Non-Local Traffic</strong></td>
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<tr>
<td>25%-49%</td>
<td>1</td>
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<tr>
<td>50%-74%</td>
<td>2</td>
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<tr>
<td>More than 74%</td>
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<tr>
<td><strong>Parks / Schools</strong></td>
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<td>Greater than 6 blocks</td>
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<td>Between 3 blocks and 6 blocks</td>
<td>2</td>
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<tr>
<td>Within 3 blocks</td>
<td>3</td>
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<tr>
<td><strong>Accident History (Accidents / Year)</strong></td>
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<tr>
<td>1</td>
<td>3</td>
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<td>5</td>
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<td>More than 3</td>
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<td><strong>Street Conditions</strong></td>
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<td>Sidewalks both sides</td>
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<tr>
<td>Sidewalks one side</td>
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<tr>
<td>No Sidewalks</td>
<td>3</td>
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</table>
**Tips**

**How can you make your local streets safer?**

**AS A DRIVER:**

**DRIVE SLOWER**

The maximum legal speed on a local street is 25 mph (unless otherwise posted). Driving at a speed of 25 mph or less gives you more time to react to the unexpected, such as a child darting out from between parked cars or to a car backing out of the driveway. Unless you are consciously aware of your speed, you may be driving faster than you should on a residential street.

Remind neighbors to drive 25 mph. Make sure that others who use your vehicle drive 25 mph. It is important to note that driving at a lower, more responsible speed on local streets has very little effect on the time it will take you to get to your destination. Besides, IT IS THE LAW.

**AVOID USING LOCAL STREETS AS SHORT CUTS**

The more we use residential streets as short cuts, the more we disrupt the quality of life in neighborhoods. Neighborhood cut-through traffic increases noise and pollution in residential areas and results in a greater threat to the safety of children.

**OBSERVE THE RULES OF THE ROAD**

Don’t take chances, even on short trips. Statistics show that most accidents occur close to home. In particular, make sure that you and all your passengers always buckle up, it’s the law.

**CHANGE YOUR DRIVING PATTERNS ON LOCAL STREETS**

Learn to adopt a different attitude! You should expect the unexpected, especially on local streets. Imagine the pain you would be living with were you to have an accident and injure a child or an elderly pedestrian, even if it isn’t your fault. Stop for pedestrians. Crosswalks exist at every intersection whether or not they have been painted on the street.
How can you make your local streets safer?

AS A PARENT:

EDUCATE YOUR CHILDREN

Ensure that your children know and understand the rules of the road. Children are the primary pedestrians on local streets. Children are the most likely victims of careless drivers.

Studies have shown that younger children have difficulty making safe judgments about traffic dangers. Do not let your children play in the street. Warn them about darting into the road after pets or toys. Select bright clothing for children who will be near traffic. Teach your children to stop, look both ways, and listen before crossing the street.

Make sure that they know that even though cars are supposed to stop, they may not.

SET A GOOD EXAMPLE

Drive the speed limit. Be a courteous driver. Let children off on the correct side of the road when delivering or picking them up from school. Ensure that your kids are equipped with a safety helmet when riding their bikes.

DON’T RUSH

Do not rush while driving. Be organized and leave a little earlier. In particular, do not rush getting children to and from school. Your urgency may cause them to disregard traffic safety and run headlong into the street.

GET INVOLVED AND DO YOUR PART TO IMPROVE TRAFFIC SAFETY!

We look forward to working with you to make your local streets safer!
Appendix
Traffic Calming - Citizen Action Request Form

We, the Residents of ________________________, would like the City of Mountlake Terrace to initiate a Comprehensive Traffic Calming Study in our neighborhood to address the following concerns:

- Speeding
- Cut-Through Traffic
- Pedestrian Safety
- Parking Issues
- Other: ___________________________________________________________

We understand that the Comprehensive Traffic Calming Study involves active participation of our community. The decision making process may require us to set and attend neighborhood meetings and conduct further petition campaigns.

Please send this completed form and petition with 10 or more household signatures to:

Traffic Engineer  
City of Mountlake Terrace  
6100 219th St SW, Suite 200  
Mountlake Terrace, WA  98043

Phone: 425.776.1161  
www.cityofmlt.com

Note: One Signature per household only. Make additional copies of Page 2, as necessary.
TRAFFIC CALMING - CITIZEN ACTION REQUEST
FORM PETITION

Neighborhood/Street _______________________________ Page ______ of ________

*Please circle the index number for the primary point of contact should City staff have any questions.

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>PHONE</th>
<th>SIGNATURE (1 per household)</th>
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<tbody>
<tr>
<td>1</td>
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Phase 2 Design Criteria

Technical Feasibility, Constraints, Guidelines, and Factors Affecting Design

The following technical aspects would be considered when a physical treatment is considered:

- It must be determined that the treatment will work for the defined problem
- Impact to nearby streets needs to be considered and addressed
- Stopping sight distance standards need to be evaluated
- Adequate provisions for buses (school, transit) garbage collection, moving vans, construction equipment, pedestrians and bicyclists need to be made
- Ensuring that the treatment will allow adequate drainage
- If curbs and gutters are not present, the design of individual traffic control treatments may need to be modified to restrict drivers from using the shoulders to avoid them
- The proximity to other calmed areas and intersections
- Physical treatments would only be installed on paved roadways with good surface conditions
- Appropriate spacing between treatments
- Roadway grade considerations. Some treatments will not be used on steep roadways.
- Effect of treatment on street sweeping and other maintenance activities
- The cumulative effect of physical treatments on emergency vehicle response times would be considered
- Potential loss of on-street parking
- Increase in concentration of noise and air pollution levels due to the physical treatment
- Sight distance obstructions related to landscaping, fences, roadway alignment, grade, etc.
- Impact on driveway access to adjacent properties
PHASE 2 TREATMENT DESCRIPTIONS

Curb Extensions / Radius Reductions
Speed Humps
Speed Tables / Raised Crosswalks
Traffic Circles/Speed Dots
Medians
Chicanes
Stationary Radar Signs
Diverters
Turn Restrictions / Partial Closures
Full Closures
Curb Extensions/Radius Reduction

APPLICATION

• At intersections to increase sight distance and narrow roadway
• Mid-block to narrow roadway and shorten pedestrian crossings

QUALIFICATIONS

• 15% of the traffic is traveling at or above 10 mph over the posted limit-OR-
• 25% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates - AND-
• 60% of the households within the study area approve the use of this treatment based on returned ballots

ADVANTAGES

• Reduces pedestrians’ crossing distance
• Narrowed lanes can slow vehicles
• May increase sight distance at intersections

DISADVANTAGES

• May require removal of some on-street parking
• Effective curb extension design may limit marked bicycle lanes

SPECIAL CONSIDERATIONS

• Consideration of marked bicycle lanes and roadway widths
• Landscape Maintenance

COST - Moderate to High
**Speed Humps**

**APPLICATION**

- In the neighborhood where speed control is desired
- Neighborhood streets where cut-through traffic is to be discouraged

**QUALIFICATIONS**

- 15% of the traffic is traveling at or above 10 mph over the posted limit-OR-
- 25% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE *Trip Generation* rates - AND-
- 60% of the households within the study area approve the use of this treatment based on returned ballots-AND-
- 100% of property owners within 150’ of the hump approve of its placement
- Traffic volume is less than 2,000 vehicles per day

**ADVANTAGES**

- Slows traffic - potentially 5-10 mph decrease in the vicinity of the speed cushion
- May divert traffic if adjacent arterial street exists
- Self-enforcing

**DISADVANTAGES**

- May cause diversion of traffic to adjacent neighborhood streets
- Acceleration/deceleration noise adjacent to speed cushion

**SPECIAL CONSIDERATIONS**

- Adjacent to school zones or neighborhood parks
- Use of 22-foot design on higher volume roadways
- Minimum of two cushions per project site for speed control

**COST - Low to Moderate**
Speed Tables/Raised Crosswalks

APPLICATION

• In the neighborhood where speed control is desired
• Neighborhood streets where speed control at pedestrian crossings is desired

QUALIFICATIONS

• 15% of the traffic is traveling at or above 10 mph over the posted limit-OR-
• 25% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates -AND-
• 60% of the households within the study area approve the use of this treatment based on returned ballots
• Traffic volume is less than 2,000 vehicles per day

ADVANTAGES

• Slows traffic - potentially 5-10 mph decrease in the vicinity of the raised crosswalk
• Heightens driver awareness to the crosswalk
• May divert traffic if adjacent arterial street exists
• Self-enforcing

DISADVANTAGES

• Emergency response delay between 1 and 8 seconds
• Acceleration/deceleration noise adjacent to raised crosswalk

SPECIAL CONSIDERATIONS

• Adjacent to school zones or neighborhood parks

COST - Moderate
Traffic Circles

APPLICATION

- In the neighborhood where speed control is desired
- Neighborhood intersections where right-angle accidents are occurring

QUALIFICATIONS

- 15% of the traffic is traveling at or above 10 mph over the posted limit-OR-
- 25% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates - AND-
- 60% of the households within the study area approve the use of this treatment based on returned ballots
- Traffic volume is less than 2,000 vehicles per day

ADVANTAGES

- Slows traffic with potentially 5 mph decrease
- May divert traffic if adjacent arterial street exists
- Opportunity for landscaping and beautification

DISADVANTAGES

- Emergency response delay between 1 and 9 seconds
- May cause diversion of traffic to adjacent neighborhood streets
- May require removal of some on-street parking

SPECIAL CONSIDERATIONS

- Adjacent to school zones or neighborhood
- parks
- Landscape Maintenance

COST - Moderate to High
Medians

**APPLICATION**

- In the neighborhood where speed control is desired
- In conjunction with a pedestrian crossing to provide a refuge area

**QUALIFICATIONS**

- 15% of the traffic is traveling at or above 10 mph over the posted limit-OR-
- 25% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE *Trip Generation* rates - AND-
- 60% of the households within the study area approve the use of this treatment based on returned ballots

**ADVANTAGES**

- Narrowed lanes can slow vehicles
- Prevents passing
- Opportunity for landscaping and visual enhancement
- Separates opposing traffic

**DISADVANTAGES**

- 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

**SPECIAL CONSIDERATIONS**

- Roadway grades
- Consideration of bicycle lanes and roadway width
- Landscape Maintenance

**COST - Moderate to High**
Chicanes

APPLICATION

• In the neighborhood where speed control is desired
• Mid-block locations

QUALIFICATIONS

• 15% of the traffic is traveling at or above 10 mph over the posted limit-OR-
• 25% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates - AND-
• 60% of the households within the study area approve the use of this treatment based on returned ballots
• Traffic volume is less than 2000 vehicles per day

ADVANTAGES

• Slows traffic with potentially 5-10 mph decrease
• Narrowed lanes can slow vehicles
• Prevents passing
• Opportunity for landscaping and visual enhancement

DISADVANTAGES

• 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

SPECIAL CONSIDERATIONS

• Roadway grades
• Consideration of bicycle lanes and roadway width
• Landscape Maintenance

COST - Moderate to High
Stationary Radar Signs

APPLICATION

• In the neighborhood where speed control is desired

QUALIFICATIONS

• 15% of the traffic is traveling at or above 10 mph over the posted limit-OR-
• 25% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates - AND-
• 60% of the households within the study area approve the use of this treatment based on returned ballots

ADVANTAGES

• Heightens driver awareness to the posted speed limit
• Does not impact emergency response vehicles
• Slows traffic - up to approximately 5 mph decrease in the vicinity of the sign
• May be installed on roadways, which do not qualify for other devices due to roadway slopes, volumes, or other characteristics

DISADVANTAGES

• Installation sites must be near power source
• Effectiveness may decrease over time

COST - Moderate to High
Diverters

APPLICATION

- To restrict through movements and force a turn in all directions. Diverters are generally used only in neighborhoods with a girded street system.
- Must be installed on a temporary basis for evaluation before moving to a permanent installation.

QUALIFICATIONS

- 75% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates - AND -
- Based on returned ballots for both temporary and permanent installation, 60% of the households within the study area and 90% of the households whose only access is provided by the street proposed for this treatment approve the use of this treatment.
- Traffic volume is less than 2000 vehicles per day.

ADVANTAGES

- Reduces cut-through traffic.
- Channels traffic flow, eliminating conflicts at intersections.
- Opportunity for landscaping and visual enhancements.

DISADVANTAGES

- May redirect traffic onto other local streets.
- Increased travel time for local residents.
- High installation costs.
- May require removal of parking.
- Not applicable for emergency response routes.

COST - Moderate to High.
Turn Restrictions / Partial Closures

APPLICATION

- To close down either the entrance or exit lane of a street
- Must be installed on a temporary basis for evaluation before moving to a permanent installation

QUALIFICATIONS

- 75% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates - AND-
- Based on returned ballots for both temporary and permanent installation, 60% of the households within the study area and 90% of the households whose only access is provided by the street proposed for this treatment approve the use of this treatment
- Traffic volume is less than 2000 vehicles per day

ADVANTAGES

- Slows traffic with potentially 5 mph decrease
- Reduces cut through traffic
- Pedestrian crossing distance reduced
- Landscaping opportunity

DISADVANTAGES

- May require removal of on-street parking
- May redirect traffic onto other local streets
- May increase trip length for local drivers

COST - Moderate to High
Full Closures

APPLICATION

- Blocks both lanes of traffic, eliminating all through traffic
- Must be installed on a temporary basis for evaluation before moving to a permanent installation

QUALIFICATIONS

- 75% of the traffic is determined to be non-local traffic based on a license plate study of the peak hour or comparison to ITE Trip Generation rates -AND-
  - Based on returned ballots for both temporary and permanent installation, 60% of the households within the study area and 90% of the households whose only access is provided by the street proposed for this treatment approve the use of this treatment
  - Traffic volume is less than 2,000 vehicles per day

ADVANTAGES

- Slows traffic with potentially 5 mph decrease
- Restricts all through traffic
- Effective volume control measure
- Improves aesthetic quality of the street

DISADVANTAGES

- May redirect traffic to other streets
- May increase trip length for local drivers
- May require partial removal of on-street parking
- Not applicable for designated emergency response vehicle routes
- May result in difficult turn around conditions
- High Installation Costs

COST - Moderate to High