



City of Lacey, Washington
Transportation Committee Agenda

Refer to the bottom of the agenda for meeting information.

Tuesday, November 7, 2023

11:00 AM

Council Chambers and Online

- 1. Call to Order**
- 2. Roll Call**
- 3. Approval of the Agenda**
- 4. Agenda Items**
 - A. Traffic Calming Program**
Martin Hoppe, Transportation Manager
 - B. Construction Update**
Aubrey Collier, City Engineer
- 5. Adjourn**

Attend Remote or In-Person

The public may attend the meeting in-person, or you may view or listen to the meeting using one of the following platforms:

- In-Person: Council Chambers at Lacey City Hall
420 College Street SE, Lacey, WA 98503
- Zoom: <https://us02web.zoom.us/j/86907094242>
- Website: <https://cityoflacey.org/government/public-meetings/>
- YouTube: <https://www.youtube.com/watch?v=R4A84cjhMuY>
- Phone: (888) 788-0099 or (877) 853-5247 (Webinar ID 869 0709 4242)

Land Acknowledgement

We, the City of Lacey, are on the ancestral land of the Tribal People of the Treaty of Medicine Creek, including the Nisqually Indian Tribe and Squaxin Island Tribe. We acknowledge, and remember those Tribal People not recognized today who were absorbed or relocated into other tribes for survival. We recognize the ancestors and their

descendants who are still here. We recognize and respect the Tribal People of the Treaty of Medicine Creek as the traditional stewards of this land since time immemorial and their role today in taking care of these lands in perpetuity. We recognize and have the responsibility to call attention to the histories of dispossession, forced removal, and abridged treaty rights that allowed our nation, state, and city to develop as it has today. We recommend that community members read the Medicine Creek Treaty of 1854.





TRANSPORTATION COMMITTEE
November 7, 2023

SUBJECT: Traffic Calming Program Update

RECOMMENDATION: Briefing on the City of Lacey Traffic Calming Program

STAFF CONTACT: Rick Walk, City Manager *RW*
Scott Egger, Public Works Director *SE*
Aubrey Collier, City Engineer *AC*
Martin Hoppe, Transportation Manager *MH*

ORIGINATED BY: Public Works Department

ATTACHMENTS:

1. Traffic Calming Policy
2. 8th Avenue & Livingston Traffic Calming Plan
3. Petition Boundary for Traffic Calming on 66th SE
4. 66th Avenue Traffic Calming Plan

FISCAL NOTE:

WORK PLAN GOAL AND STRATEGY: Quality Transportation & Infrastructure – (J)

PRIOR REVIEW: Not Applicable

BACKGROUND: In order to address neighborhood traffic calming concerns the City of Lacey developed and adopted a neighborhood traffic calming policy in 1994. The Transportation Manager attended multiple traffic calming courses to learn about traffic calming techniques. Traffic calming policies from multiple agencies were then studied and shared with the Transportation Committee and ultimately amalgamated into Lacey’s Policy.

The City recently completed a traffic calming project on 8th Ave NE and Livingston St NE. The City has been contacted by citizens to consider the installation of traffic calming devices on 66th Ave SE between Sarazen St SE and Bailey St Se

Staff will brief the Transportation Committee on the traffic calming requests noted above.

TRAFFIC CALMING POLICY

In order to address neighborhood traffic concerns, the City of Lacey has adopted the following process to evaluate and/or implement a Neighborhood Traffic Calming Program. This program will address the public's traffic concerns in the following manner:

1. Citizen's request is received
2. The Transportation Department will evaluate the request to see if it meets the minimum requirements for traffic calming devices. Cut through traffic and possible diversions will be evaluated along with any other relevant issues.
3. Results of the study will be shared with the Citizen.
4. If the studies warrant traffic calming devices, options will be presented to the neighborhood association or group for a preferred alternative.
5. Results will be shared with the Transportation Committee if warrants are met to install a traffic calming device and neighborhood wishes to proceed. Neighborhood boundary will be established at this time.
6. The neighborhood association or group will circulate a petition (the petition will identify the pro's and con's of the devices, and identify the cost of the petitioned) to install a temporary traffic calming device. This requires a majority support of 60% of the voting neighborhood.
7. All information will be presented to the Transportation Committee for approval to install a temporary device.
8. The City will install a temporary traffic calming device. The device will be in place for a minimum of 6 months to 1 year to determine its effectiveness.
9. Upon completion of the test period, a ballot will be mailed to the voting neighborhood. This vote will be to install a permanent traffic control device. A 60% majority is required for permanent installation.
10. A public meeting will be held to share the results of the test period and the outcome of the neighborhood vote.

11. These results will also be shared with the Transportation Committee. If there are no adverse effects (i.e. diversion, emergency vehicles, bus routes) from the devices and neighborhood support is evident, the Committee will approve placement of permanent traffic calming. The City share will be paid for from funds budgeted for the neighborhood traffic calming program in the next budget cycle.
12. The neighborhood association or group will sign an agreement to maintain the landscaping areas of the traffic calming devices (if applicable).
13. The neighborhood association or group will contribute the required matching portion of the device. Minimum required match is (50% to 100%) of total project cost. The Transportation Committee will determine minimum required match.
14. Engineering will design and construct the permanent traffic calming device as soon as possible.
15. Engineering will keep neighborhood association or group informed of all progress.

The following criterion for the placement of traffic calming devices has been developed through the last Traffic Calming Policy.

Traffic calming devices should not be installed unless the street meets all of the following criteria:

1. Two Lane Residential roadway
2. Average Daily Traffic (ADT) shall be between 300 and 3000 vehicles
3. 85th percentile speeds shall be greater than 5 mph above the speed limit (for 25 mph road 85th-ile > 30 mph)
4. Approval of Fire District 3 for specific locations
5. Minimum vertical and horizontal sight distance of 150 feet
6. Roadway grade of less than 10%
7. Placement of any traffic calming device will not result in unacceptable diversion of traffic onto another street







TOOLS AND USE MATRIX

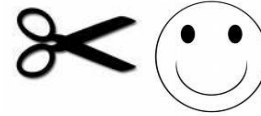
Tool	Reduces Accidents	Reduces Volumes	Increase Bike And/or Ped. Safety	Decreases Speed
Education				
Neighborhood Speed Watch				
Radar Trailer				
Speed Limit Signs				
One Way Streets				
Traffic Circles				
Neckdowns			peds	
Medians			peds	
Traversable Barriers				
Forced Turn Barriers				
Diagonal Diverters				
Deviations				
Lane Narrowing				
Semi-Diverters				
Street Closures				
Turn Prohibitions				
Channelization				
Drop Off Zone For Kids		adj. to school		
Photographic Radar				
Lane Eliminating Chokers				
Choker				
Raised Crosswalk				
Raised Intersection				
"Sidelanes"				
Stop Sign				
Traditional Enforcement				
Speed Humps				
Realigned Intersections				
Psycho Perception				

Primary Purpose of the Tool	
Might Accomplish this as a Secondary Effect	

HOW TO READ THE TOOLS SHEETS

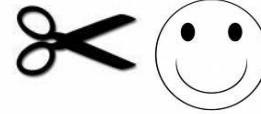
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	<p>Tools are marked with 1 – 4 dollar signs, depending on their cost. A single \$ indicates the tool is relatively inexpensive to install. \$\$\$\$ indicates one of the most expensive tools. Cost effectiveness of projects will be considered. Neighborhoods that want to use very expensive tools may have to contribute a greater share of the cost of the project.</p>
	<p>The fire department and other departments with emergency vehicles may have problems with this mitigation tool. It is a physical tool and can increase emergency vehicle response time to neighborhoods. Consequently, if a neighborhood wants to use this tool, a fire department representative must work with the neighborhood from the beginning.</p>
	<p>This is an experimental tool. It has not been used much and Neighborhood Traffic Mitigation Working Group is not 100% sure that it will work. This tool can be installed temporarily and removed if it does not work.</p>
	<p>The Neighborhood Traffic Mitigation Working Group recommends trying this tool. Tools may be recommended even though their application may be appropriate only to a limited set of conditions and neighborhoods.</p>
	<p>Consideration should be given to whether your proposed application of this tool will increase danger to pedestrians. Pedestrian without circle/slash, indicates tool is a pedestrian amenity.</p>
	<p>Consideration should be given to whether your proposed application of this tool will increase danger to bicyclist. Bicycle without circle/slash, indicates tool is a pedestrian amenity.</p>



EDUCATION

<p><u>Definition:</u> Activities that make changes in people’s minds. Reading informative text, meetings & workshops with city staff, interaction with neighbors, signing campaign, enforcement activities, neighborhood speed swatch, school programs, parent outreach, etc.</p>	<ul style="list-style-type: none"> ➤ Brochures ➤ Letters to the Editor ➤ Newspaper ads & Notices (Did You Know?) ➤ Public Service Announcements ➤ Neighborhood Workshops/Discussions 	
<p><u>Temporary:</u> Education efforts can be flexible in duration.</p> <p><u>Street Types:</u> Education can be applied in almost any situation.</p>	<p><u>Best Used For:</u></p> <ul style="list-style-type: none"> • A traffic problem that includes human behavior. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Can be very effective, is relatively inexpensive, involves and empowers citizens, works well with other mitigation tools. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Has been seriously attempted with no significant results. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • May be difficult to measure effectiveness. • Can be expensive. • Can take a long time to be effective. • May wear off over time.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Neighborhoods should share experiences with education methods. 		




NEIGHBORHOOD SPEED CONTROL PROGRAM

<p><u>Definition:</u> A neighborhood education process in which neighbors become more aware of the specifics of their speeding problems. Neighborhood representatives are loaned radar guns by the Police Department to monitor speed and identify chronic speeders. The City will then send letters to offending drivers calling their attention to their behavior and request them to change it.</p>	<h1>Neighborhood Speed Watch</h1>	
<p><u>Temporary:</u> Should be in place for two months or longer to gain maximum education benefit.</p> <p><u>Streets:</u> More likely to be effective on local streets.</p>	<p><u>Best Used For:</u></p> <ul style="list-style-type: none"> • Neighborhood is willing to participate. • Most traffic is local traffic. • Neighborhood Speed Watch has not yet been attempted. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Can effectively address traffic problems that are caused by neighbors. • Can heighten general awareness of neighborhood traffic concerns. • Can serve to unify neighborhoods. • Can be a good first step toward building consensus on physical mitigation measures. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • No willingness on the part of the neighborhood to participate. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Not likely to be as effective on non-local traffic. • May make neighbors feel "spied on" by one another.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Participation in Neighborhood Speed Watch will be limited to one neighborhood at a time. • Training in use of the radar gun will be provided by the Police Department. • Neighborhoods representatives will be asked to sign an agreement to take proper care of the equipment and to use it only as specified by guidelines. 		

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RADAR TRAILERS

<p><u>Definition:</u> Mobile radar display advises motorist of their speed.</p>	 A photograph of a white radar trailer parked on a road. The trailer has a digital display showing the number '16' in orange LEDs. Above the display is a sign that says 'YOUR SPEED'. Below the display is a speed limit sign that says 'SPEED LIMIT 25'. The trailer is on a paved road with a grassy area and trees in the background.	
<p><u>Temporary:</u> In place for several hours or days in given location.</p> <p><u>Streets:</u> Acceptable for use of high or low volume two lane streets.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none">• Excessive speeding is occurring. <p><u>Benefits:</u></p> <ul style="list-style-type: none">• An educational tool.• Useful especially in school and construction zones where spot speed reduction is important.• Very good public relations tool.	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none">• Very remote location.• Extremely heavy traffic volume. <p><u>Negatives:</u></p> <ul style="list-style-type: none">• Requires periodic enforcement.• Effective for limited duration.• Units moved frequently which requires manpower.
<p><u>Considerations:</u></p> <ul style="list-style-type: none">• The City of Lacey has only one radar trailer.		

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SPEED LIMIT SIGNS

<p><u>Definition:</u> Signs that inform drivers of the maximum safe driving speed under normal conditions.</p>		
<p><u>Temporary:</u> Can be tried for six months to test effectiveness.</p> <p><u>Streets:</u> Any streets, but may be unnecessary on many low volume residential streets.</p>	<p><u>Best Used For:</u></p> <ul style="list-style-type: none">• Clear need to inform drivers of the speed limit. <p><u>Benefits:</u></p> <ul style="list-style-type: none">• Inexpensive.	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none">• Neighborhood doesn't want the "visual pollution." <p><u>Negatives:</u></p> <ul style="list-style-type: none">• Unattractive in neighborhoods.• Does not effect vehicle speed.
<p><u>Considerations:</u></p> <ul style="list-style-type: none">• Posting of artificially low speed limits will require constant enforcement and breed disrespect for traffic control devices.		

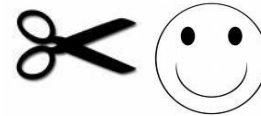
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ONE-WAY STREETS

<p><u>Definition:</u> Self-explanatory.</p>		
<p><u>Temporary:</u> Can implement on temporary basis to ascertain if benefits outweigh disadvantages.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • There is a need for parking on both sides of a narrow street. • Pedestrian safety is a significant concern. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Tend to be safer due to lack of friction from opposing traffic flow. • Can facilitate traffic flow through an area. • Can open up narrow street for more resident parking. • Increases pedestrian safety. • Maintain reasonable access for emergency vehicles. • Maze effect of one-way streets can discourage through traffic. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Generally need to provide one way streets in pairs, which is frequently not possible in a neighborhood setting. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Can lead to increased vehicle speeds. • May result in longer trip length. • May provide problematic for emergency response vehicles.
<p><u>Considerations:</u></p>		

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TRAFFIC CIRCLES

<p><u>Definition:</u> Traffic circles are raised circular areas (like medians) placed in an existing intersection. Drivers travel in counter-clockwise direction around the circle. Traditional circles are “yield upon entry,” meaning that cars in the circle have the right of way and must wait to do so until the path is clear. When a traffic circle is placed in an intersection, no automobile can travel in a straight line.</p>		
<p><u>Temporary:</u> Can be tried on a temporary basis, using essentially “portable” materials. The traffic circle should be made permanent or removed within 12 months.</p> <p><u>Street Types:</u> Traffic circles can be used on high and low volume streets.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Insufficient gaps for cross street traffic to traverse or access the higher volume street. • A speeding problem exists. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Reprioritizes traffic to increase accessibility for local residents. • Cross traffic may become a mitigation tool in itself. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Creation of gaps is the primary motivation for pursuing mitigation. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • May make pedestrian crossing more confusing at the intersection.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Special consideration to bike and pedestrian safety must be given if traffic circles are installed in high volume intersections. • Traffic circles may not reduce speed unless other mitigation tools are present on the street. 		

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NECKDOWNS

<p><u>Definition:</u> Physical reduction of road width at intersection or mid block. Neckdowns differ from chokers in that they are attached to the curb and do not maintain an “at grade” bike lane lateral to the neckdown.</p>		
<p><u>Temporary:</u> Can be tried on a temporary basis.</p> <p><u>Street Types:</u> Appropriate for most street types.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Where speed and/or volume make pedestrian safety a concern. • When used in conjunction with other physical mitigation tools. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Reduce road surface/crossing distance. • Can add aesthetically if landscaped 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • No other mitigation measures planned. • Established bike route. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Can be bad for cyclists if not designed to accommodate them. • Unless the neckdown significantly reduces road width (i.e. not just eliminates parking spaces or bike lanes), neckdowns do not affect speed.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Neckdowns must significantly narrow the roadway to be effective. 		

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MEDIANS

<p><u>Definition:</u> A raised barrier in the middle of the roadway separating lanes and narrowing the width.</p>		
<p><u>Temporary:</u> Medians can be tried on a temporary basis.</p> <p><u>Street Types:</u> Appropriate for most street types.</p> <p><u>Maintenance:</u> Landscaping.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • There is no on-street parking <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Separates opposing vehicle travel lanes • Prevents vehicle from passing other vehicles • May visually enhance the street through landscaping • Can be designed with breaks in the landscaping to provide pedestrian refuge 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • No possibility of eliminating street parking. • Inadequate right-of-way to do a safe, effective treatment. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • May require major parking removal • Not as effective as speed humps or traffic circles in slowing speeds.
<p><u>Considerations:</u></p>		

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TRAVERSABLE BARRIERS

<p><u>Definition:</u> A barrier placed across any portion of a street that is traversable for bikes, pedestrians, roller bladders, and emergency vehicles, but not for motor vehicles.</p>		
<p><u>Temporary:</u> Can be tried on a temporary basis for 6-12 months.</p> <p><u>Street Types:</u> Low volume streets with cut-through traffic.</p> <p><u>Maintenance:</u> Landscaping.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Cut-through traffic on a street that should be low volume. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Reduces cut through traffic. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • No appropriate facility for diverted traffic. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • If not enforced regularly, parked cars may block access. • Depending on design, may be subject to violation by unauthorized vehicles. • Altered traffic patterns may increase trip length.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Diversion onto neighboring streets needs to be analyzed. • Cut-through traffic needs to be evaluated. 		

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FORCED TURN BARRIERS

<p><u>Definition:</u> Traffic islands installed to prevent or ensure certain turning movements at an intersection.</p>		
<p><u>Temporary:</u> Can be tried on a temporary basis for 6-12 months.</p> <p><u>Street Types:</u> Primarily used to direct traffic off of local streets.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Cut-through traffic on a street that should be low volume. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Changes driving patterns. • May significantly reduce cut through traffic. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Emergency response access problems <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • May increase trip length for some drivers.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • If speed reduction is desired, other tools would need to be installed. 		

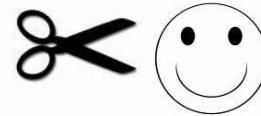
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DIAGONAL DIVERTERS

<p><u>Definition:</u> A barrier placed diagonally across a four legged intersection, interrupting traffic flow across the intersection. These barriers can be used to create a maze-like effect in a neighborhood.</p>		
<p><u>Temporary:</u> Can be tried on a temporary basis for 6-12 months.</p> <p><u>Street Types:</u> Neighborhood (local) streets.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Cut-through traffic on a street that should be low volume. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Practically eliminates cut-through traffic. • Maintains continuous routing opportunities (unless a cul-de-sac or street closure). 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • No reasonable alternate routes available for both emergency response vehicles and through traffic. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • People can take turns at higher speeds because there is no opposing traffic. • May reduce emergency routing opportunities. • May increase trip length for some residents.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • These barriers should be traversable for bikes and pedestrians. • Likely to increase traffic on adjacent streets, so should be considered where appropriate alternatives are available. 		

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DEVIATIONS

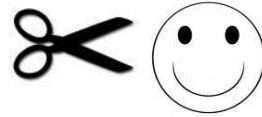
<p><u>Definition:</u> Deviations redraw the path of travel so that the street is not straight (by the installation of offset curb extensions).</p>		
<p><u>Temporary:</u> May be tried on a temporary basis for 6-12 months.</p> <p><u>Street Types:</u> Any with adequate right-of-way.</p> <p><u>Maintenance:</u> Landscape maintenance will constitute an ongoing expense.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Excessive speed. • Adequate right-of-way. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Accepted by public as speed control devices. • Aesthetically pleasing. • Reduce speed without significantly impacting emergency response. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Roadway is already narrow. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Expensive.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Deviations are not very effective unless significant offsets are created. 		

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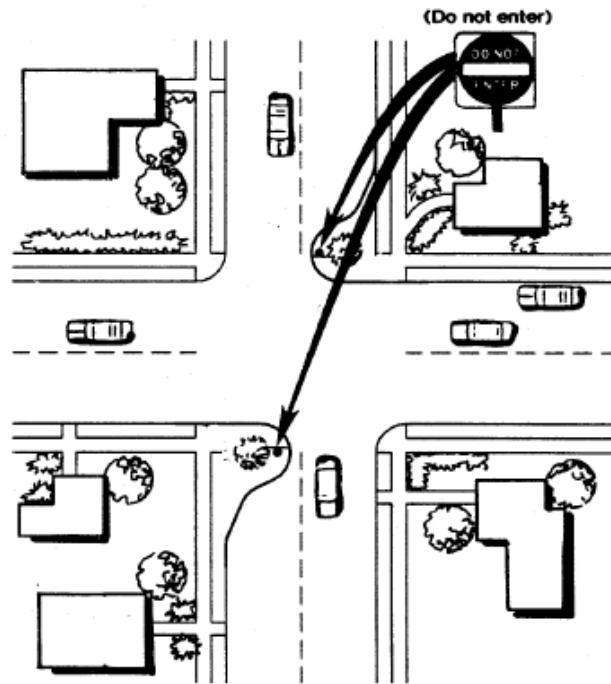
LANE NARROWING

<p><u>Definition:</u> A lane physically narrowed to nine to eleven feet, expanding sidewalks and landscaped areas, adding medians, "sideians," onstreet parking, etc. Small street width.</p>		
<p><u>Temporary:</u> May be tried on a temporary basis for 6-12 months.</p> <p><u>Street Types:</u> Appropriate for most street types.</p> <p><u>Maintenance:</u> Landscape maintenance.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> Excessive speed due primarily to street width. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> Good for pedestrians due to shorter crossing distance. Slows traffic without seriously affecting emergency vehicle response time. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> No possibility of eliminating street parking. Inadequate right-of-way to do a safe, effective treatment. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> Can be dangerous for bikes. Narrower lanes may increase risk of accidents (unless accomplished by a median installation).
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> For lane narrowing to slow down cars there must be visual distractions, such as medians, bushes, trees, transverse markings, and other psycho perception techniques. May increase accident potential because opposing vehicle streams are closer. Physical restrictions must be installed. Simply restriping streets is not effective. 		



SEMI-DIVERTERS

Definition:
Physical blockage of one direction of traffic at one point on an otherwise two way street. The open lane of traffic is signed "One Way," that is, traffic from the blocked lane is not allowed to go around the barrier through the open lane.



Temporary:
Semi-diverters can be tried on a temporary basis.

Street Types:
Better on low volume streets.

Best Used If:

- Neighborhoods have cut-through traffic and there is an appropriate alternative route for blocked cut-through traffic.

Benefits:

- Do not present a significant obstacle to emergency vehicles.
- Good for limiting one-way cut-through traffic.
- Can be designed to provide two-way access for bicycles.

Don't Use If:

- No cut-through traffic.
- No good alternate route for diverted traffic.

Negatives:

- Compliance with semi-diverters is not 100%.
- May increase trip length for some residents.

Considerations:

- If speed reduction is desired, additional tools should be utilized.

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CHICANE

Definition:

Alternating constrictions build curbside to create a bend in a formerly straight street, forcing vehicles to negotiate the narrowed street in a snake-like fashion.



Temporary:

Can be tried on a temporary basis for 6-12 months.

Street Types:

Low volume streets with cut-through traffic.

Maintenance:

Landscaping.

Best Used If:

- Cut-through traffic on a street that should be low volume.

Benefits:

- Reduces speeds.

Don't Use If:

- No appropriate facility for diverted traffic.

Negatives:

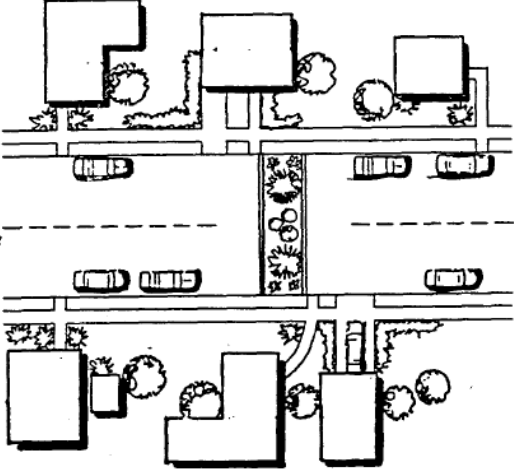
- Limited to divided roadways.
- Potential drainage problems.

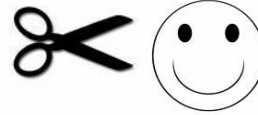
Considerations:

- Diversion onto neighboring streets needs to be analyzed.
- Cut-through traffic needs to be evaluated.



STREET CLOSURE

<p><u>Definition:</u> Street closed to motor vehicles using planters, bollards, or barriers, etc. Pedestrian and bike access maintained.</p>		
<p><u>Temporary:</u> Can be installed temporarily.</p> <p><u>Street Types:</u> Low volume streets where alternative access to homes can be provided (i.e., by alleys) and a desirable and feasible route exists.</p> <p><u>Maintenance:</u> Landscaping.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Other mitigation devices, i.e., speed humps, diverters would be inadequate. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Eliminates cut-through traffic. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Residents of immediate and adjacent neighborhood will not support restricted access. • Can not substantially, adversely impact emergency vehicle response time. • Conversion of street from public to private requires legal action; may need to grant easement for utilities, municipal service, etc. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • May be perceived as inconvenience by some neighbors and an unwarranted restriction by general public.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • A large percentage of immediate neighborhoods must want it. Adjacent neighborhoods must be willing to accept diverted traffic. 		




TURN PROHIBITIONS

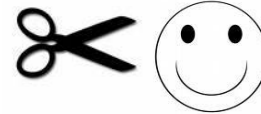
<p>Definition: Physical barriers or signs (“No Right Turn,” “No Left Turn,” “Do Not Enter”) that prohibit a particular turning movement.</p>		
<p>Temporary: Can be installed temporarily experimentally or used during limited hours, such as rush hours or school hours.</p> <p>Street Types: Local streets or major, paired arterials.</p>	<p>Best Used If:</p> <ul style="list-style-type: none"> • Significant cut-through traffic. • Need to eliminate two-way conflicts. <p>Benefits:</p> <ul style="list-style-type: none"> • Reduces cut-through traffic in neighborhoods. 	<p>Don't Use If:</p> <ul style="list-style-type: none"> • Neighborhood unwilling to limit its own access. • No appropriate alternative facility. <p>Negatives:</p> <ul style="list-style-type: none"> • May increase trip length due to revised trip pattern.
<p>Considerations:</p>		



DROP-OFF ZONES FOR SCHOOLS

<p><u>Definition:</u> A zone placed at least two blocks from a school for parents to drop their kids off, in order to reduce traffic congestion around the school. Each school should have several zones to disperse traffic.</p>		
<p><u>Temporary:</u> May be tried on a temporary basis.</p> <p><u>Street Types:</u> Streets surrounding schools.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Problems with traffic congestion around schools. • Feasible, safe drop off locations. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Would decrease congestion immediately adjacent to the school, increasing safety. • Would encourage walking. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • No drop off areas available that don't pose significant hazards for children or drivers. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • If not well considered, could simply displace congestion/hazards to another location.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Adequate communication and support for parents and kids to make the change would be essential to the success of this concept. 		

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LANE ELIMINATING CHOKER
(mid-block)

<p><u>Definition:</u> Large lamb chop shaped island placed mid block on either side of a street to reduce street width to one lane. Cars may travel in either direction but must queue and take turns. Bike lanes are maintained on the outer sides of the choker.</p>		
<p><u>Temporary:</u> Chokers can be tried on a temporary basis for 6-12 months.</p> <p><u>Street Types:</u> Chokers will work best on low volume neighborhood streets.</p> <p><u>Maintenance:</u> Care needs to be taken by maintenance workers to keep snow out of bike and pedestrian areas.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Low volume neighborhood streets with speed and/or cut-through traffic problems. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Straight access for bikes. • Crossing distance is reduced for pedestrians. • Likely to reduce cut-through traffic and speed. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • High volume location. • The street is a snow route. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Expensive if draining issues involved.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Adequate public information should be provided. • Bike lanes and choker should be well marked. • The bike lanes should be wide enough for bike trailers. 		

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CHOKERS: (TRAVEL BOTH WAYS)

<p><u>Definition:</u> Large lamb chopped-shaped islands installed at the intersection to reduce speed. Two lanes of travel are maintained, but lanes are narrow. Bike lanes are maintained outside of the choker, on both sides.</p>		
<p><u>Temporary:</u> Chokers can be tried on a temporary basis for 6-12 months.</p> <p><u>Street Types:</u> Chokers will work best on low to medium volume neighborhood streets.</p> <p><u>Maintenance:</u> Care needs to be taken by maintenance workers to keep snow out of bike and pedestrian lanes.</p>	<p><u>Best For:</u></p> <ul style="list-style-type: none"> • Neighborhood that desires significant slowing at an intersection. • Pedestrian safety concern at the intersection. • Bike safety concern at the intersection. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Straight access for bikes. • Crossing distance is reduced for pedestrians. • Traffic is slowed at the intersection, possible reducing accidents. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • The street is a snow route. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Snow removal is complicated, especially in bike lanes.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Bike lanes and choker should be well marked. • The bike lanes should be wide enough for bike trailers. 		

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RAISED CROSSWALKS

<p><u>Definition:</u> A speed hump designed as a pedestrian crossing.</p>		
<p><u>Temporary:</u> No.</p> <p><u>Street Types:</u> Can be used on medium and low volume streets.</p>	<p><u>Best For:</u></p> <ul style="list-style-type: none"> • High volume of pedestrians. • Vehicle speed is a concern. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Effective speed control at the installation. • Excellent pedestrian amenity. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Important emergency vehicle route. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Negative impact on emergency vehicles if on primary emergency vehicle routes.
<p><u>Considerations:</u></p>		

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RAISED INTERSECTIONS


<p><u>Definition:</u> A raised plateau of roadway where roads intersect. The plateau is generally about 4 inches higher than the surrounding streets.</p>		
<p><u>Temporary:</u> No temporary installation of raised intersections.</p> <p><u>Street Types:</u> Can be used on high or low volume streets.</p>	<p><u>Best For:</u></p> <ul style="list-style-type: none"> • High pedestrian volume with significant safety concerns. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Effective speed reduction, better for emergency vehicles than speed humps. • Aesthetically pleasing if well designed. • Excellent pedestrian safety treatment. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Critical emergency vehicle route. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Expensive. • Not as good as a flat street for emergency vehicles.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Transit concerns will need to be identified and worked through. 		



OR




STOP SIGN

<p><u>Definition:</u> Red hexagonal stop signs displaying the word "STOP." Stop signs are used to designate the right of way at intersections.</p>		
<p><u>Temporary:</u> Stop signs can be tried on a temporary basis. Before the signs are installed, the objectives for installation should be clearly defined. After 6 months, if the goals have been met and the neighborhood still wants the sign(s), they installation can be made permanent. If the objectives have not been adequately met, the signs will be removed.</p> <p><u>Street Types:</u> Stop signs are primarily used at low volume street intersections with high volume streets or on all four approaches of an intersection with relatively equal volumes and/or a significant, correctable accident history.</p> <p><u>Maintenance:</u> Low maintenance.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • An unusually high number of accidents involving right of way. • Significant cross traffic at intersection. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Very inexpensive. • If there is a lot of cut-through traffic, stop signs might work as a diversion. • Insignificant traffic volumes. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Steep grades. • Insignificant traffic volumes. • Insignificant history of correctable accidents. • Need and intention is for speed control. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • If there is not a significant amount of cross traffic at the intersection, compliance will not be compelled. Cyclist and pedestrians relying on stop signs can be hurt, and accidents may increase. • Excessive use of stop signs renders them meaningless. • Stop signs don't decrease average speed. • Increase noise and pollution.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Most stop signs that are warranted for right-of-way control are already installed. Neighborhoods can consider an appropriate use of stop signs as a possible mitigation tool in limited circumstances, but widespread installation of stop signs for speed control is ineffective and will not be supported. 		

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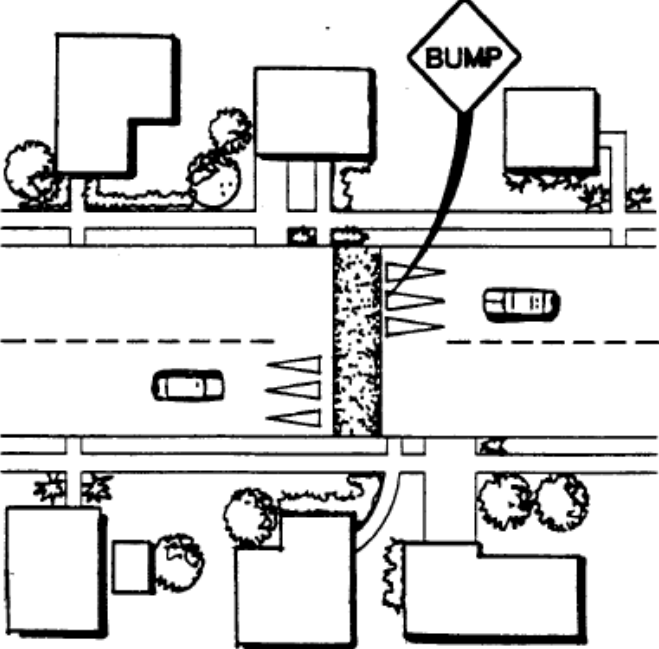


TRADITIONAL ENFORCEMENT

<p><u>Definition:</u> Sporadic monitoring of speeding and other violations by police.</p> <p>Police officers can come out to a neighborhood for short periods of time and issue tickets. Additionally, police officers can “take a neighborhood under their wing,” and monitor traffic on a regular basis.</p>		
<p><u>Temporary:</u> Enforcement is always temporary.</p> <p><u>Street Types:</u> Enforcement can be performed on any street. Logistics make some locations problematic or ineffective, is always temporary, and should not be considered a permanent form of mitigation. Used as a “quick fix” until more permanent mitigation can be initiated.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Excessive speed on a street and there is an urgent need for quick action. • Neighborhood is undertaking a Speed Watch program, is using the radar trailer or has newly installed mitigation measures. • Neighborhood is in design phase and needs interim assistance. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Temporary good public relations tool. • Serves to inform public that speeding is an undesirable behavior for which there are consequences. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Locations where it is physically impossible to pull vehicles over without creating a hazard. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Effect is not permanent. • Enforcement is an expensive tool (currently total cost recovery for enforcement does not exist).
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Enforcement should be regarded as supplemental to other measures, not the sole solution. 		

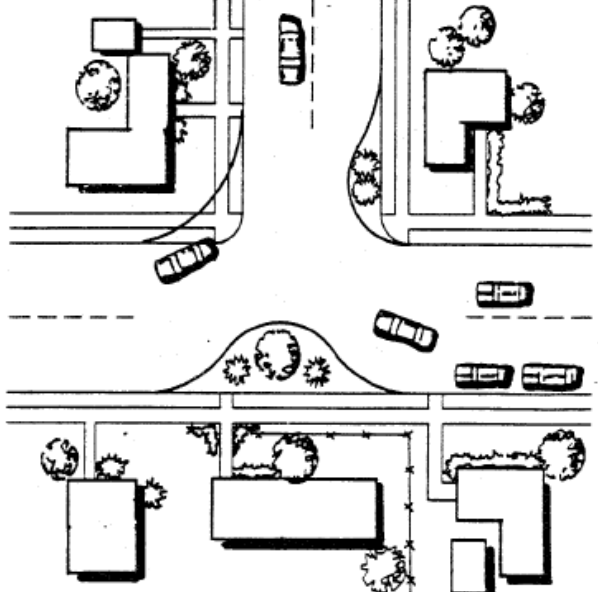


SPEED HUMPS

<p><u>Definition:</u> Speed Humps are wave-shaped paved humps in the street. The height of the speed hump determines how fast it can be navigated without causing discomfort to the driver or damage to the vehicle. Discomfort increases with increased speed.</p>	 <p>The diagram shows a cross-section of a street with a speed hump. A diamond-shaped sign with the word 'BUMP' is positioned above the hump. Two cars are shown on the road, one before and one after the hump. The hump is a raised section of the pavement. Buildings and trees are visible on both sides of the street.</p>	
<p><u>Temporary:</u> Speed humps are impractical to install on a temporary basis.</p> <p><u>Street Types:</u> Speed humps are generally considered local street tools. Application on collector streets needs to be very carefully evaluated.</p> <p><u>Maintenance</u> Well constructed humps should maintain their shape for several years, however the striping associated with them must be maintained biennially.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • The street has a documented speed problem. • “Soft” approaches have proven ineffective. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Slows traffic. Few drivers travel over speed humps with excessive speed more than once. • “Self enforcing.” • Relatively inexpensive. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • The street is on a major emergency vehicle route and no reasonable alternative is available. • Steep grades. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Can increase noise and air pollution by the hump (however, less negative impact than a stop sign).
<p><u>Considerations:</u></p>		


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REALIGNED INTERSECTIONS

<p><u>Definition:</u> Starting with a T intersection of a side street into a larger through street, the realigned intersection interrupts the traffic flow on the larger street by curving it into the side street.</p>		
<p><u>Temporary:</u> Not feasible as a temporary installation.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Enough traffic to reprioritize traffic flow. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Slows traffic when realignment is significant. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • No level of additional traffic on the side street is acceptable. • Low street volume. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Much more expensive than a stop sign. • May encourage increased traffic volume on the affected side street. • If not drastic enough, cyclist and cars may ignore the stop signs at the realigned intersection.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • Treatment is very expensive and probably the most appropriate tool only in rare conditions. 		

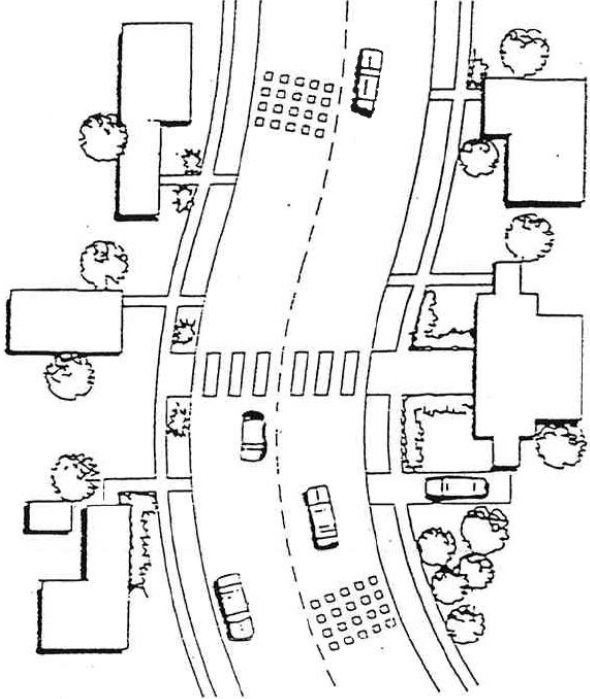


PSYCHO-PERCEPTION

<p><u>Definition:</u> Any material or message placed around or in street that heightens driver response or induces the desired behavior. Example is transverse markings (striping) with inconsistent spacing that gives the illusion of increased speed. Novelty signs and use of landscaping are other examples.</p>		
<p><u>Temporary:</u> Can be tried on any type of street, although not all methods are appropriate to all streets.</p> <p><u>Maintenance:</u> Depends on technique. Low for signs, higher for pavement markings and landscaping.</p>	<p><u>Best Used If:</u></p> <ul style="list-style-type: none"> • Neighborhood desire to try them. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Gives the neighborhood an opportunity to be creative with their response to traffic concerns. • Can be aesthetically pleasing to the neighborhood. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Specific technique has been proven dangerous or ineffective. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Most psycho-perception tools are not likely to be effective in the long run, due to their dependence on novelty.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • It is important that psycho-perception tools make driving fast on the street seem less safe, but that they don't actually increase the danger. 		



RUMBLE STRIPS

<p><u>Definition:</u> Patterned sections of rough pavement which alert drivers to a dangerous condition of traffic control measure.</p>		
<p><u>Temporary:</u> No feasible temporary installation.</p> <p><u>Street types:</u> Use of high or low volume streets.</p> <p><u>Maintenance:</u> Snow removal equipment tends to damage them.</p>	<p><u>Best Used At:</u></p> <ul style="list-style-type: none"> • Concealed stop sign or pedestrian crossing. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Relatively inexpensive to install. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • Rarely will rumble strips be the most appropriate tool. <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • High maintenance. • Adversely impact bicyclist. • Generally ineffective in reducing vehicle speeds. • Rumble strips are noisy by design, and not recommended for neighborhood settings.
<p><u>Considerations:</u></p>		

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NEIGHBORHOOD IDENTIFICATION ISLAND SIGN OR OBELISK

<p><u>Definition:</u> An island in the center of a street that includes a monument identifying a neighborhood and marks the entrance to the neighborhood or a sign, banner or other structure that helps to communicate a sense of neighborhood identity.</p>		
<p><u>Temporary:</u> Can be temporary, but removal unlikely.</p> <p><u>Street types:</u> Collector street or local street neighborhood entrance off of collectors or arterials.</p> <p><u>Maintenance:</u> Depends on type of installation.</p>	<p><u>Best Used At:</u></p> <ul style="list-style-type: none"> • Neighborhood boundary definition is desired. <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Alerts drivers that a change in their driving behavior in being requested. • Can help develop a sense of neighborhood identity. • Allows neighborhoods creativity and participation in design. 	<p><u>Don't Use If:</u></p> <ul style="list-style-type: none"> • <p><u>Negatives:</u></p> <ul style="list-style-type: none"> • Potential for vandalism.
<p><u>Considerations:</u></p> <ul style="list-style-type: none"> • A neighborhood identification island is an entryway treatment that can be used most effectively in conjunction with other tools, if speed reduction desired. 		

15th Ave NE

15th Ave NE

15th Ave NE

15th Ave NE

College Ln NE

Livingston St NE

Westminster Dr NE

Livingston St NE

Livingston St NE

8th Ave NE

8th Ave NE

8th Ave NE

Westminster Dr NE

College St NE

Hall of
nesses

FixPro Appliance
Repair WA

W17-1 Speed Hump
w/ 15mph plaque

W17-1 Speed Hump

W17-1 Speed Hump

W17-1 Speed Hump

W17-1 Speed Hump

W17-1 Speed Hump

W17-1 Speed Hump

W17-1 Speed Hump
w/ 15mph plaque

R2-1 25mph









LEGEND

— TEMPORARY SPEED HUMP

