

TRAFFIC CALMING EVALUATION CONSIDERATIONS

Traffic Calming Measure	Advantages	Disadvantages	Safety Improvement	Speed Reduction	Traffic Diversion	Fuel Consumption	Pollution	Cost Effectiveness	Emergency Services	Projected Costs
Speed Humps	Reduces speeds in the vicinity of the hump. Self enforcing. Relatively inexpensive.	May create additional noise. May be a problem for emergency vehicles. Can not be used on grades greater than 8%. Should not be placed within severe horizontal or vertical curves that might result in substantial lateral or vertical forces on a vehicle traversing the hump. Drivers may speed up between humps. May increase volume on other streets. Difficult to properly construct. Requires signage that may be considered unsightly	YES	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	LOW TO MEDIUM	POSSIBLE PROBLEMS	Portland, OR = \$ 2,000 - 2,500 (1997) Sarasota, FL = \$ 2,000 (1998) Seattle, WA = \$ 2,000 (1998) Memphis, TN = \$ 3,200 (1999) Austin, TX = \$ 6,800 (1999) Charlotte, NC = \$ 1,700 (1999)
Raised Crosswalks	Effective speed control at the installation. Effective pedestrian amenity. May be designed to be aesthetically pleasing.	May create additional noise. May be a problem for emergency vehicles. May impact drainage. Drivers may speed up between humps. May increase volume on other streets. Requires signage that may be considered unsightly.	POSSIBLE	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	LOW TO MEDIUM	POSSIBLE PROBLEMS	
Raised Intersection	Slows vehicle in the most critical area and therefore helps to make conflict avoidance easier. Highlights intersection. Excellent pedestrian safety treatment. Aesthetically pleasing if well designed. Effective speed reduction, better for emergency vehicles that speed humps.	Increases difficulty of making a turn. Increased maintenance. Requires adequate signage and driver education.	POSSIBLE	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	MEDIUM TO HIGH	POSSIBLE PROBLEMS	Sarasota, FL = \$ 12,500 (1998)
Textured Pavements	May be aesthetically pleasing. May be used to define pedestrian crossing.	Increased maintenance.	POSSIBLE	POSSIBLE	NO	NO EFFECT	NO EFFECT	LOW TO MEDIUM	POSSIBLE PROBLEMS	
Traffic Circles	Reduces speed at intersection approach. Provides space for landscaping. Cheaper to maintain than a traffic signal. Does not restrict movements, but makes them more difficult.	May require additional signage. Initial safety issues as drivers adjust. Maintenance responsibility if landscaped.	YES	YES	POSSIBLE	NO EFFECT	SMALL INCREASE	LOW TO MEDIUM	POSSIBLE PROBLEMS	Portland, OR = \$ 10,000 - 15,000 (1997) Sarasota, FL = \$ 3,500 (1998) Seattle, WA = \$ 6,000 (1998) Austin, TX = \$ 13,000-21,300 (1999)
Roundabouts	Reduces crashes when compared to 2-way or 4-way stops by reducing the number of conflict points at the intersection. Reduces speed at intersection approach. Longer speed reduction influence zones. Provides space for landscaping. Cheaper to maintain than a traffic signal. Effective at multi-leg intersections. Provides equal access to intersection for all drivers. Provides good environment for cyclists. Does not restrict movements, but makes them more difficult.	May be restrictive for larger vehicles if designed to low speed. May require additional lighting and signage. If left turns by large vehicles are to be accommodated then ROW must be purchased. Initial safety issues as drivers adjust May increase volumes on adjacent streets. Maintenance responsibility if landscaped.	YES	YES AT INTERSECTION	POSSIBLE	NO EFFECT	SMALL INCREASE	HIGH	POSSIBLE PROBLEMS	

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Chicanes	Imposes minimal inconveniences to local traffic. Pedestrians have a reduced crossing distance. Provides large areas for landscaping. Provides a greater visual obstruction. Cost of device is limited by length. A very effective method of changing the initial impression of the street. If done correctly drivers will not be able to see through. Appears as a road closure yet allows through movement. Accepted by public as speed control device. Aesthetically pleasing. Reduces speed without significantly impacting emergency response.	Increases the area of landscaping to be maintained by the residents. Cost is greater than many other devices, therefore better to be installed in conjunction with street reconstruction or initial design. May create opportunities for head-on conflicts on narrow streets.	POSSIBLE	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	MEDIUM TO HIGH	POSSIBLE PROBLEMS	Sarasota, FL = \$ 14,000 Austin, TX = \$ 22,500 - 37,000 (1999)
Realigned Intersections	Reduces vehicle speed. Necessary to enforce changes in priority from one street to another. May provide space for landscaping.	Can cause confusion regarding priority movements. Increased maintenance if landscaped.	YES	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	MEDIUM TO HIGH	POSSIBLE PROBLEMS	
Neckdowns	May be aesthetically pleasing, if landscaped. Good for pedestrians due to shorter crossing distances. Can be used in multiple applications or on a single segment of roadway.	Unfriendly to cyclists unless designed to accommodate. Landscaping may cause sight line problems. Increased maintenance if landscaped.	POSSIBLE	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	MEDIUM TO HIGH	NO EFFECT	
Center Island Narrowings	Provides a refuge for pedestrians and cyclists. May improve streetscape if landscaped. Provides barrier between lanes of traffic. May produce a limited reduction in vehicle speeds.	May reduce sight lines if over landscaped. Increased maintenance. Impairs access and may encourage wrong-way drivers.	POSSIBLE	NO	POSSIBLE	NO EFFECT	NO EFFECT	VARIES	POSSIBLE PROBLEMS	Portland, OR = \$ 8,000 - 15,000 (1997) Sarasota, FL = \$ 5,000 (1998)
Chokers	Minor inconvenience to drivers. Minimal inconveniences to local traffic. Good for pedestrians due to shorter crossing distances. Provides space for landscaping. Slows traffic without seriously affecting emergency response time. Effective when used in a series. Single lane narrowing reduces vehicle speed and through traffic.	Double lane narrowing not very effective at reducing speeds or diverting through traffic. Only partially effective as a visual obstruction. Unfriendly to cyclists unless designed to accommodate. Conflict between opposing drivers arriving simultaneously could create problems.	POSSIBLE	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	MEDIUM TO HIGH	NO EFFECT	Sarasota, FL = \$ 7,000 - 10,000 (1998)

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Angle Point	Reduces vehicle speed. More effective when used in a series. Imposes minimal inconveniences to local traffic. Pedestrians have a reduced crossing distance. Provides space for landscaping. Provides a visual obstruction.	Landscaping needs to be controlled to ensure visibility is reduced. Contrary to driver expectation of unobstructed flow. Can be hazardous for drivers and cyclists if not designed properly. Confrontation between opposing drivers arriving simultaneously could create problems. Double lane application is less effective in controlling speeds than single lane because drivers can create a straighter through movement by driving over centerline. Increases area of landscaping to be maintained by residents.	POSSIBLE	YES	POSSIBLE	SMALL INCREASE	SMALL INCREASE	MEDIUM TO HIGH	POSSIBLE PROBLEMS	

VOLUME CONTROL MEASURES

Full Closures	Eliminates through traffic. Reduces speed of the remaining vehicles. Improves safety for all the street users. Pedestrian and bike access maintained.	Reduces emergency vehicle access. Reduces access to properties for residents. May be perceived as inconvenient by some neighbors and an unwarranted restriction by the general public. May increase trip lengths. May increase volume on other streets.	POSSIBLE	YES	YES	SMALL INCREASE	SMALL INCREASE	LOW TO MEDIUM	POSSIBLE PROBLEMS	Seattle, WA = \$ 120,000(1998)
Half Closures	Reduces through traffic in one direction and possibly in the other. Allows two way traffic in the remainder of the street. Good for pedestrians due to the shorter crossing distance. Provides space for landscaping. Can be designed to provide two way access for bicycles.	Reduces access for residents. Emergency vehicles are only partially affected as they have to drive around partial closure with care. Compliance with semi-diverters is not 100%. May increase trip length for some residents. Maintenance responsibility if landscaped.	YES	POSSIBLE	YES	SMALL INCREASE	SMALL INCREASE	LOW TO MEDIUM	POSSIBLE PROBLEMS	Portland, OR = \$ 40,000 (1997) Seattle, WA = \$ 35,000 (1998)
Diagonal Diverters	Eliminates through traffic. Provides space for landscaping. Reduces traffic conflict points. Increases pedestrian safety. Can include bicycle path connection.	May inconvenience residents gaining access to their properties. May inhibit access by emergency vehicles. May divert through traffic to other local streets. Altered traffic patterns may increase trip length.	POSSIBLE	YES	YES	SMALL INCREASE	SMALL INCREASE	MEDIUM	POSSIBLE PROBLEMS	Seattle, WA = \$ 85,000 (1998)
Forced Turn Islands	Changes driving patterns. May reduce cut through traffic. May be attractive if landscaped.	May increase trip length for some residents. Can be aesthetically unattractive if not landscaped. May increase response time for emergency vehicles. Maintenance responsibility if landscaped.	POSSIBLE	POSSIBLE	YES	SMALL INCREASE	SMALL INCREASE	LOW TO MEDIUM	POSSIBLE PROBLEMS	

SOURCES : "Nashville Neighborhood Traffic Management Pilot Program" - Gresham, Smith and Partners 1998
"Traffic Calming, State of the Practice" - Reid Ewing 1999