

City of Port St. Lucie
Capital Improvement Projects (CIP)
Neighborhood Traffic Calming Policy & Guidelines
FINAL – July 7, 2015

INTRODUCTION

The City of Port St. Lucie is committed to ensure the overall safety and livability of residential neighborhoods. One way to meet this commitment is through a collaboration of City staff and property owners in an effort to minimize the impact of traffic on neighborhoods. The City of Port St. Lucie Neighborhood Traffic Calming Policy and Guidelines provides a process for identifying and addressing problems related to speeding, excessive volumes, and safety on neighborhood streets. The policy will provide a procedure to consider, evaluate, and implement requests for traffic calming measures within the City of Port St. Lucie.

Traffic calming presents a new dimension when discussing the use of public rights-of-way. Traditional transportation improvements have focused on capacity, speed and safety. While these are still concerns another dimension is often added, of maintaining or restoring the “livability” of a neighborhood. This new dimension is what is referred to as “traffic calming”. Traffic calming has many names; traffic mitigation, neighborhood traffic management, and neighborhood traffic control to name a few. The City of Port St. Lucie will use the Institute of Transportation Engineers (ITE) definition for traffic calming, which is:

“Traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users.”

Unlike traffic control devices such as stop signs and speed limit signs which require enforcement, traffic calming measures¹ are self-enforcing. Per the FHWA-RD-99-135 “Traffic Calming State of the Practice”, there are three (3) classes of traffic calming measures.

- Class I: measures that preclude through traffic, local traffic only.
- Class II: measures that discourage but still allow through traffic.
- Class III: measures that are neutral with respect to through traffic other than to slow it down.

Since all City streets are public rights-of-way, Class I measures are not preferred and will only be considered under extremely rare circumstances. The City of Port St. Lucie utilizes a Traditional Roadway Network as defined by the “Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways”, commonly referred to as “The Florida Greenbook,” Chapter 19, Section C.2. Some advantages of traditional networks include:

1. Distribution of traffic over a network of streets, reducing the need to widen roads;
2. A highly interconnected network providing a choice of multiple routes of travel for all modes, including emergency services;
3. More direct routes between origin and destination points, which generate fewer vehicle miles of travel (VMT) than conventional suburban networks;
4. Smaller block sizes in a network that is highly supportive to pedestrian, bicycle, and transit modes of travel;
5. A block structure that provides greater flexibility for land use to evolve over time.

Given the nature of the City of Port St. Lucie’s roadway network, Traffic Calming is typically not a desirable treatment in that it can reduce or eliminate many of the advantages realized with a traditional network. So, consideration for installation of traffic calming measures should be very closely studied.

OBJECTIVE

The overall objective of the Traffic Calming Policy and Guidelines include:

1. Promote safe and attractive streets that maintain and/or improve the quality of life in neighborhoods.
2. Promote conditions that provide safe neighborhoods for motorists, bicyclists, pedestrians and property owners of the neighborhood while maintaining access to the neighborhood.
3. Encourage citizen involvement in all phases of neighborhood traffic calming activities.
4. Maintain and/or improve neighborhood livability by mitigating the impact of vehicular traffic on residential neighborhoods.

POLICIES

The following policies are established as part of the Neighborhood Traffic Calming Policy Guidelines:

1. Encourage but not require through traffic to use higher classification streets (i.e. collector² and arterial³ streets).
2. Re-route traffic from one street to another of equal classifications, if and only if the end result is a more equal distribution of the traffic volumes. Shifting a traffic problem from one street to another or one neighborhood to another is not an acceptable alternative.
3. Reduce the average speed of motor vehicles within neighborhoods to acceptable levels.
4. Implement cost-effective measures for solving identified traffic problem(s).
5. Improve safety for non-motorists in the City right-of-way.
6. Preserve reasonable emergency vehicle ingress/egress.
7. Maintain reasonable vehicular access. Traffic calming measures implemented should encourage and enhance pedestrian and bicycle access to and throughout the defined neighborhood.
8. Any public Local Residential Street⁴ can qualify for an investigation to have traffic calming measures implemented. Streets classified as collector and arterial streets in the Transportation Element of the City's Comprehensive Plan will not be considered for traffic calming measures.
9. The City may employ traffic calming measures, including but not limited to the ones listed in this document, to achieve the objectives identified. The City Manager, City Engineer, or designee shall direct the design and installation of all traffic calming measures along with the traffic control devices (signs, markings, etc.) as needed to accomplish the project, in compliance with the standards and specifications.
10. The City shall follow the required procedures to ensure that applicable codes and related policies are adhered to, and that projects are within the limits of available resources. At a minimum, the procedures shall provide for submittal of project proposals; project evaluation and selection; citizen participation; and communication of any findings related to the proposed project.
11. The City shall ensure that all projects receive input from area property owners and affected organizations. All projects will receive City Council's approval before installation of permanent traffic calming devices.

PROCESS

Step 1: Request of Traffic Calming Study

Requests for traffic calming study can be requested through one of the following:

1. **Homeowners Association or neighborhood Contact Person**⁵ – A study may be initiated upon receipt by the Public Works Department of a petition signed by fifty percent (50%) of property owners on the block(s) along the street on which the Traffic Calming Study⁶ is requested. A block includes every developed property having frontage on the street to be studied between successive intersection streets.
2. **Developer** – A study may be initiated because of a request from a Developer to develop a parcel of land that could affect the surrounding neighborhood. The Developer would be responsible for all costs associated with this study and must follow the guidelines. Please note, the Developer may be required by the City to provide this study for regulatory compliance. If traffic calming measures are required as a result of the study, the developer will be responsible for all associated design and construction costs.
3. **City Staff** – A study may be initiated because of an identified public safety issue.

Step 2: Traffic Calming Preliminary Assessment

The Public Works Department will determine the Study Area⁷ and then a preliminary assessment will be completed to evaluate the roadway in question to determine its eligibility for traffic calming measures. The following criteria must all be met:

1. The roadway must be classified as a local residential street as indicated by the Port St. Lucie Comprehensive Plan
2. The roadway cannot be a designated Emergency and Evacuation Route⁸ and requires a concurrence of Public Safety/Emergency Response.
3. The roadway cannot be more than two travel lanes wide.
4. The roadway must be maintained by the City, and its surface must be to current City roadway design standards.

Step 3: Data Collection Phase

Once the defined Study Area is identified, it will be analyzed according to the following criteria:

1. Any roadway for consideration must be at least 1000 feet in length.
2. There must be no drainage conflicts.
3. There must be no driveway conflicts

A traffic study will be conducted. It must include a Traffic Count⁹, Speed Study¹⁰, and classification of vehicles using the roadway. Sight obstructions, speed-related crash records, and other traffic incidents will be reviewed as part of the study.

Step 4: Site Classification and Further Action

The Public Works Department will use the results of the traffic study to classify the Study Area as one of the following designations:

Type I: Minor Excessive Speed and Volume

This designation includes roadways where:

- The measured 85th Percentile Speed¹¹ is between 5 and 8 miles per hour above the posted speed limit and;
- Average Annual Daily Traffic (AADT) is between 300 and 800 vehicles per day (vpd).

If neither of the minimum requirements are met, then no further action will be taken. If the minimum requirements are met, Public Works staff may request the Port St. Lucie Police Department and/or St. Lucie County Sheriff's Office to increase enforcement on a random basis during the hours when the majority of the speeding violations occur. Neighborhood flyers may be issued, if required.

Type II: Excessive Speed or Volume

This designation includes roadways with traffic volumes greater than 800 AADT and one of the following:

- The measured 85th Percentile Speed is 9 miles per hour or greater in excess of the posted speed limit, or;
- The hourly volume is greater than 12% of the average daily traffic, or more than 10 daily trips per household.

For locations that do not meet the Type II criteria, petitioners will be notified of the findings. No additional studies will be conducted within at least three (3) years. Once it has been determined that a given location meets Type II criteria, the following agencies will be notified that traffic calming measures are being considered. Their comment or input will be requested:

- St. Lucie County Fire Rescue
- St. Lucie County Sheriff's Office
- Port St. Lucie Police Department
- St. Lucie County School Board
- Public Works Department

A prevalence of high-speed accidents, prevalence of bus stops, roadway geometry, lack of sidewalks, and other factors may also be considered in addition to the requirements above when identifying streets that may benefit from Traffic Calming. The final decision to proceed to Step 5 based upon the above factors and engineering judgement shall be made by the City Engineer or designee.

Step 5: Public Hearing

A public hearing will be conducted by the Public Works Department to present options for traffic calming measures within the Study Area, and to obtain input from the public on those options.

Property owners within the Study Area will be given notice of a Public Hearing. Means of notification will include:

- Placards – Notice of Public Hearing signs will be posted at least 20 days before the hearing at strategic sites within the neighborhood
- Door Hangers – Placed on applicable properties at least 20 days before the hearing.
- Newspaper advertisements – Notice will be published in a local newspaper by the City’s communication department.

Any property owner who is unable to attend a scheduled Public Hearing may submit their comments in writing to staff of the Public Works Department at any time prior to or during the Public Hearing. Those comments will be considered by the Public Works Department in making their recommendation.

Step 6: Recommendation of Traffic Calming Measures/Designation for Petition

Based upon the information provided by staff and input received from the public in writing and at the public hearing, the Public Works Department will make a recommendation. This recommendation includes the type, number, and location of traffic calming measures appropriate on the roadway within the Study Area.

The Public Works Department will also determine the property owners in the Study Area for petition purposes. The Public Works Department will set forth the basis for determination of the Study Area in their recommendation to City Council.

Step 7: Petition

The following will be issued by the Public Works Department to the Contact Person:

1. A petition form to obtain neighborhood consensus for the proposed traffic calming measure(s).
2. A map highlighting the Study Area, including location of calming devices/structures.

The contact person is responsible for distributing the petition to obtain signatures of property owners in the Study Area. Seventy-five percent (75%) of the property owners within the Study Area must express their approval of the proposed traffic calming measure in order to proceed with implementation/construction.

Step 8: Project Implementation

Only after a calming project is funded will the design phases begin. Several funding options are possible:

1. Private Funding: The Public Works Department will allow private entities to fund the installation of traffic calming devices on the Study Area.
2. Public/Private Funding: The Public Works Department will allow private entities to partner with the City of Port St. Lucie to fund the installation of traffic calming devices
3. The Public Works Department may provide funding for the traffic calming initiatives if and when funded through the Capital Improvement Program, Community Development Block Grants (for neighborhoods located in Community Redevelopment Areas) or with funding allocated to Neighborhood Planning Areas.

Once the plan is established and approved by the property owners, the Public Works Department will provide this plan along with all associated costs identified for City Council consideration. When approval

and final funding have been secured, a construction schedule will be developed and the traffic calming project will be implemented within one year.

Step 9: Project Evaluation

Approximately six (6) months after the traffic calming project is completed, additional data will be collected and compared to the “before” data. The purpose of comparing “after” data to “before” data is to evaluate the effects of the project. If any unacceptable impacts are identified, corrective measures may be taken.

REMOVAL OF TRAFFIC CALMING MEASURES

Traffic calming measures must be in place for a minimum of two (2) years. After this period, they can be removed for any of the following reasons:

1. Emergency response is significantly impacted.
2. Determination by the City Engineer to be in the best interest of public safety.
3. At least seventy-five percent (75%) of the property owners within the defined neighborhood sign a petition to remove the traffic calming measures. (This option will result in complete removal of all measures. All property owners within the defined neighborhood will be assessed for the removal of the traffic calming measures.)
4. The traffic count for the street exceeds 5,000 vehicles per day.
5. City staff recommends the removal of traffic calming measures.

TRAFFIC CALMING MEASURES

For more information regarding the listed traffic calming measures, please see indicated sheets in the Appendix.

Roundabouts: A raised circular structure constructed in an intersection designed to deflect the flow of traffic entering the intersection in a counter-clock-wise direction around the circle. The objectives of roundabouts are to slow traffic and reduce the number and severity of crashes. Roundabouts are designed to accommodate all sizes of vehicles. These features address vehicle speeds and may discourage cut-through traffic. For more information see page 11.

Traffic Circles: Traffic circles are raised islands, placed in intersections, around which traffic circulates. Not intended for high volume or large vehicle traffic. Traffic circles sometimes employ stop or signal control or give priority to entering vehicles. Some traffic circles impose control measures within the circulating roadway or are designed with weaving areas to resolve conflict movement. For more information see page 12.

Speed Humps: Street pavement can be raised and the surface treated; the physical change in the roadway may slow vehicles. Speed humps shall not be used on roadways designated as primary access routes. The objective is to slow traffic and reduce the number and severity of crashes. These features address vehicle speeds and may discourage cut-through traffic. For more information see page 13.

Speed Tables: A type of speed hump with a flat top that may also be used as a raised pedestrian crossing area. They are generally three to four inches high, have a six-foot sloped approach, with a ten-foot top, and a six-foot sloped departure profile. The objective is to slow traffic and reduce the number and severity of crashes. These features address vehicle speeds, increase visibility for pedestrians and may discourage cut-through traffic. For more information see page 14.

Raised Intersections: A raised intersection involves the construction of the entire intersection 3" to 4" above the approaching streets. The intersection is typically constructed of a different material type or the approaches are of different material to indicate a change at the intersection. The objectives are to slow traffic and reduce the number and severity of crashes. Raised intersections are designed to accommodate all sizes of vehicles. These features address vehicle speeds and may discourage cut-through traffic. For more information see page 15.

Raised Crosswalk: Raised crosswalks are Speed Tables outfitted with crosswalk markings and signage to channelize pedestrian crossings, providing pedestrians with a level street crossing. Also, by raising the level of the crossing, pedestrians are more visible to approaching motorists. For more information see page 16.

Less Common Traffic Calming Features (not included in appendix)

Semi-Diverter: Islands installed on the ingress side of the street in which entry is being prohibited. Vehicles are still allowed to exit from the street but entrance is prohibited. This feature discourages (actually prohibits) cut-through traffic.

Mid-Block Islands: Islands constructed mid-block in the center of the roadway separating travel lanes and may reduce lane widths. The objectives of mid-block islands are to slow traffic and reduce the number and severity of crashes. These features address vehicle speeds and may discourage cut-through traffic.

Splitter Islands: These are treatments that may provide landscaping and physical channelization to lanes at the entrances to the neighborhood. The objectives of splitter islands are to slow traffic and discourage cut-through traffic.

Roadway Narrowing: These treatments reduce the width of pavement while maintaining two-way traffic. Landscaping planted in conjunction with the narrowing may further enhance the feature and impact driver

behavior by reinforcing the impression that the pavement area is limited. The objectives of roadway narrowing are to slow traffic and reduce the number and severity of crashes. These features address vehicle speeds and may discourage cut-through traffic.

Chicanes: This feature changes the alignment of the roadway so that the street is not straight. This eliminates driver tendencies to accelerate on a straight street and may add beautification opportunities without significantly impacting emergency services. Two-way traffic and full access for larger vehicles and emergency services is maintained. The objective is to slow traffic. These features address vehicle speeds and may discourage cut-through traffic.

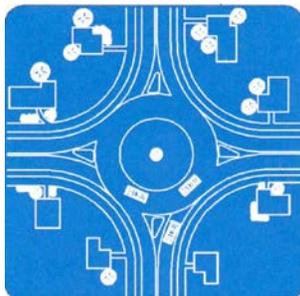
DEFINITIONS

1. Traffic Calming Measure - an element of a traffic calming plan selected from among those devices authorized herein for use within the city.
2. Collector Street - any two or four lane street which links an arterial street with another collector street or local street.
3. Arterial Street - a heavily traveled street of considerable continuity used primarily as a main traffic artery. Ideally, an arterial street would have restricted access and provide a high degree of mobility and continuity.
4. Local Residential Street - any two lane street with a primary purpose of providing direct access to abutting residential properties.
5. Contact Person – a property owner from within the Study Area who has submitted a request for the Traffic Calming Study and serves as a liaison between the City and the community.
6. Traffic Calming Study - an appraisal of traffic conditions and the development of a plan for implementing one or more traffic calming devices in a residential neighborhood.
7. Study Area - the defined area which has been determined to be impacted by proposed traffic calming measures. The Study Area may cross traditional neighborhood boundaries.
8. Emergency & Evacuation Routes - routes identified, usually with a classification of a collector or above, that are identified as key routes for emergency response.
9. Traffic Count - a manual or automated count of the number of vehicles traversing a particular street in a given time period.
10. Speed Study - a study using equipment to measure, collect, and statistically analyze the speeds of vehicles.
11. 85th Percentile Speed - that speed at which 85% of the free flowing vehicles are traveling at or below.

APPENDIX

Examples of Traffic Calming Measures

Roundabouts



a.k.a. rotaries

Roundabouts require traffic to circulate counterclockwise around a center island. Unlike Traffic Circles, roundabouts are used on higher volume streets to allocate right-of-way between competing movements.

Good for:

- Locations with a history of accidents;
- Intersections where queues need to be minimized;
- Intersections with irregular approach geometry;
- Providing inexpensive-to-operate traffic control as an alternative to a traffic signal;
- Handling a high proportion of U-turns; and
- Locations with abundant right-of-way.

Advantages:

- Roundabouts can moderate traffic speeds on an arterial;
- They are generally aesthetically pleasing if well landscaped;
- They enhanced safety compared to traffic signals;
- They can minimize queuing at the approaches to the intersection; and
- They are less expensive to operate than traffic signals.

Disadvantages:

- They may be difficult for large vehicles (such as fire trucks) to circumnavigate;
- They must be designed so that the circulating lane does not encroach on the crosswalks;
- They may require the elimination of some on-street parking; and
- Landscaping must be maintained, either by the property owners or by the municipality.

Cost Estimate:

Varies (\$150,000 - \$500,000)

Effectiveness:

- Average 29% reduction in accidents, with a reduction from 9.3 to 5.9 accidents per year (from a sample of 11 sites; source: *Roundabouts: An Informational Guide*).

Similar Measures:

- By constructing a small island in a neighborhood intersection and leaving the existing curbs, you have a Traffic Circle.

Traffic Circles



a.k.a. rotaries, intersection islands

Traffic circles are raised islands, placed in intersections, around which traffic circulates.

Good for:

- Calming intersections, especially within neighborhoods, where large vehicle traffic is not a major concern but speeds, volumes, and safety are problems.

Advantages:

- Traffic Circles are very effective in moderating speeds and improving safety;
- If designed well, they can have positive aesthetic value; and
- Placed at an intersection, they can calm two streets at once.

Disadvantages:

- They are difficult for large vehicles (such as fire trucks) to circumnavigate;
- They must be designed so that the circulating lane does not encroach on the crosswalks;
- They may require the elimination of some on-street parking; and
- Landscaping must be maintained, either by the property owners or by the municipality.

Cost Estimate:

Varies (\$25,000 - \$150,000)

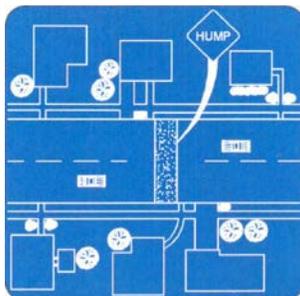
Effectiveness:

- Average of 11% decrease in the 85th percentile travel speeds, or from an average of 34.1 to 30.2 miles per hour (from a sample of 45 sites).
- Including a large sample from Seattle, an average of 73% decrease in accidents, or from an average of 2.2 to 0.6 accidents per year (from a sample of 130 sites).
- Excluding the large sample from Seattle, an average of 29% decrease in accidents, or from an average of 5.9 to 4.2 accidents per year (from a sample of 17 sites).

Similar Measures:

- By placing a raised island in a midblock location, you have a Center Island Narrowing.
- By enlarging the intersection and the center island, inserting splitter islands at each approach, setting back the crosswalks away from the circulating lane, and implementing yield control at all approaches, you have a Roundabout.

Speed Humps



a.k.a. road humps, undulations

Speed humps are rounded raised areas placed across the roadway. They are generally 10 to 14 feet long (in the direction of travel), making them distinct from the shorter "speed *bumps*" found in many parking lots, and are 3 to 4 inches high. The profile of a speed hump can be circular, parabolic, or sinusoidal. They are often tapered as they reach the curb on each end to allow unimpeded drainage.

Good for:

- Locations where very low speeds are desired and reasonable, and noise and fumes are not a major concern.

Advantages:

- Speed Humps are relatively inexpensive;
- They are relatively easy for bicycles to cross if designed appropriately; and
- They are very effective in slowing travel speeds.

Disadvantages:

- They cause a "rough ride" for all drivers, and can cause severe pain for people with certain skeletal disabilities;
- They force large vehicles, such as emergency vehicles and those with rigid suspensions, to travel at slower speeds;
- They may increase noise and air pollution; and
- They have questionable aesthetics.

Cost Estimates:

\$5,000 - \$12,000 each

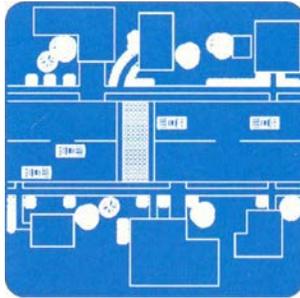
Effectiveness:

- For a 12-foot hump:
 - Average of 22% decrease in the 85th percentile travel speeds, or from an average of 35.0 to 27.4 miles per hour; (from a sample of 179 sites).
 - Average of 11% decrease in accidents, or from an average of 2.7 to 2.4 accidents per year (from a sample of 49 sites).
- For a 14-foot hump:
 - Average of 23% decrease in the 85th percentile travel speeds, or from an average of 33.3 to 25.6 miles per hour (from a sample of 15 sites).
 - Average of 41% decrease in accidents, or from an average of 4.4 to 2.6 accidents per year (from a sample of 5 sites).

Similar Measures:

- By lengthening the hump with a flat section in the middle, you have a Speed Table.
- By turning an entire crosswalk into a speed hump, you have a Raised Crosswalk; and
- By raising the level of an entire intersection, you have a Raised Intersection.

Speed Tables



a.k.a. trapezoidal humps, speed platforms

Speed tables are flat-topped speed humps often constructed with brick or other textured materials on the flat section. Speed tables are typically long enough for the entire wheelbase of a passenger car to rest on the flat section. Their long flat fields, plus ramps that are sometimes more gently sloped than Speed Humps, give speed tables higher design speeds than Speed Humps. The brick or other textured materials improve the appearance of speed tables, draw attention to them, and may enhance safety and speed-reduction.

Good for:

- Locations where low speeds are desired but a somewhat smooth ride is needed for larger vehicles.

Advantages:

- They are smoother on large vehicles (such as fire trucks) than Speed Humps; and
- They are effective in reducing speeds, though not to the extent of Speed Humps.

Disadvantages:

- They have questionable aesthetics, if no textured materials are used;
- Textured materials, if used, can be expensive; and
- They may increase noise and air pollution.

Cost Estimates:

\$10,000 - \$15,000 each

Effectiveness:

- For a 22-foot speed table:
 - Average of 18% decrease in the 85th percentile travel speeds, or from an average of 36.7 to 30.1 miles per hour; (from a sample of 58 sites).
 - Average of 45% decrease in accidents, or from an average of 6.7 to 3.7 accidents per year (from a sample of 8 sites).

Similar Measures:

- By removing the flat section in the middle, you have a Speed Hump.
- By placing a crosswalk on the flat section, you have a Raised Crosswalk; and
- By raising the level of an entire intersection, you have a Raised Intersection.

Raised Intersections



a.k.a. raised junctions, intersection humps, plateaus

Raised intersections are flat raised areas covering an entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section. They usually raise to the level of the sidewalk, or slightly below to provide a "lip" that is detectable by the visually impaired. By modifying the level of the intersection, the crosswalks are more readily perceived by motorists to be "pedestrian territory".

Good for:

- Intersections with substantial pedestrian activity; and
- Areas where other traffic calming measures would be unacceptable because they take away scarce parking spaces.

Advantages:

- Raised Intersections improve safety for both pedestrians and vehicles;
- If designed well, they can have positive aesthetic value; and
- They can calm two streets at once.

Disadvantages:

- They tend to be expensive, varying by materials used;
- Their impact to drainage needs to be considered; and
- They are less effective in reducing speeds than Speed Humps, Speed Tables, or Raised Crosswalks.

Cost Estimate:

\$25,000 - \$50,000

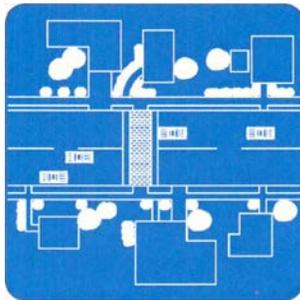
Effectiveness:

- Average of 1% decrease in the 85th percentile travel speeds, or from an average of 34.6 to 34.3 miles per hour; (from a sample of 3 sites).

Similar Measures:

- By raising only a single crosswalk, you have a Raised Crosswalk.
- By raising only a short section to a flat level (without a crosswalk), you have a Speed Table; and
- By raising an even shorter section and constructing it without a flat top, you have a Speed Hump.

Raised Crosswalks



a.k.a. raised crossings, sidewalk extensions

Raised crosswalks are Speed Tables outfitted with crosswalk markings and signage to channelize pedestrian crossings, providing pedestrians with a level street crossing. Also, by raising the level of the crossing, pedestrians are more visible to approaching motorists.

Good for:

- Locations where pedestrian crossings occur at haphazard locations and vehicle speeds are excessive.

Advantages:

- Raised Crosswalks improve safety for both pedestrians and vehicles;
- If designed well, they can have positive aesthetic value; and
- They are effective in reducing speeds, though not to the extent of Speed Humps.

Disadvantages:

- Textured materials, if used, can be expensive;
- Their impacts on drainage needs to be considered; and
- They may increase noise and air pollution.

Cost Estimate:

\$10,000 - \$15,000

Effectiveness:

- For a 22-foot Speed Table (the most similar device for which data is available):
 - Average of 18% decrease in the 85th percentile travel speeds, or from an average of 36.7 to 30.1 miles per hour; (from a sample of 58 sites).
 - Average of 45% decrease in accidents, or from an average of 6.7 to 3.7 accidents per year (from a sample of 8 sites).

Similar Measures:

- By removing the crosswalk markings and signage, you have a Speed Table; and
- By removing the crosswalk and the flat section in the middle, you have a Speed Hump.
- By raising the level of an entire intersection, you have a Raised Intersection.