

A RESIDENT'S GUIDE TO TRAFFIC CALMING

Make places we play safe for all!



Mission

Healthy Park Zones, an initiative of Partners for Active Living, seeks to create safe and healthy places to play by improving conditions for walking and biking to parks, and by implementing park policies that encourage healthy eating.

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Introduction

Spartanburg County, like most of the country, has seen an increase in adult and childhood obesity and the diseases that often accompany a lack of physical activity in the past thirty years. Most experts agree that much of the problem has resulted from the ways we have expanded our communities by focusing our transportation system on moving automobiles, often at the expense of walking and biking. In many places, it simply is not safe to walk and bike to parks, playgrounds and other recreation areas.

Partners for Active Living seeks to make Spartanburg County, South Carolina a healthier, more livable community by promoting walking, bicycling and physical activity as a part of everyday life. We have produced this traffic calming guide in cooperation with the Spartanburg Area Transportation Study (SPATS). Our goal is to educate Spartanburg County residents about the different ways road design can encourage walking and biking. It is through understanding traffic calming, assessing the areas where we seek to slow traffic, and by engaging residents who live close by parks, schools and historic areas that we can make the best changes to roadways and design the best roadways in the future.

Targeting parks for traffic calming measures like signage, lower speed limits, raised crosswalks and the like, and for the addition of bike lanes, sidewalks, and street landscaping can provide safer access to the public play spaces we have already invested in. The measures should be developed on a case by case basis, but our wealth of recreational and historic places would be maximized. We hope that these traffic calming measures will increase the number of pedestrians and bicyclists heading to these places from nearby neighborhoods.

The research supporting walking and biking to parks and other recreation areas is significant. A report issued by the non-profit organization Active Living Research found that “[t]hose who felt that parks and recreation facilities were accessible were almost twice as likely to meet the recommended physical activity levels as those who did not perceive parks as being accessible.”¹ Many of our parks are located on narrow, two-lane roads without sidewalks or side paths. The report goes on to find that “both increased park proximity and higher rates of active transport [i.e. walking and biking] were strongly associated with more frequent use of multiple recreation settings among children and adolescents.”²

There are many benefits of traffic calming:

- Traffic calming measures impose a reasonable speed limit by creating an environment that slows traffic.
- Traffic calming generally involves making physical changes to roads and streets to give drivers the clues they need to slow down.

1. “Parks, Playgrounds and Active Living Research Synthesis.” Active Living Research, February 2010.

2. Ibid.

1. Reaction times for drivers improve as speed decreases.³
 2. Evidence shows that pedestrian fatalities dramatically increase as speed increases. At 20 miles per hour, 5% of pedestrians struck would die. At 30 miles per hour, that rate increases to 40% fatality rate. At 40 miles per hour, fatalities increase to 80%.⁴
 3. Driver focus areas dramatically decrease as speeds increase.⁵ Slower rates of speed result in safer roadways for pedestrians.
- Traffic calming often provides a more aesthetically pleasing roadway because many of the strategies provide additional space for landscaping, another factor that helps drivers determine appropriate speeds.⁶
 - Traffic calming does not simply stop traffic, but creates a safer environment for automobiles to pass through an often congested area.
 1. Constructing a traffic circle at one intersection in Boiling Springs eliminated eight stop signs.
 - Traffic calming has an effect on air quality because automobiles do not need to stop; automobile traffic is often improved by traffic calming.
 1. A 1999 World Health Organization study found that vehicle-related pollution caused more deaths than traffic accidents.⁷
 2. A Federal Highway Administration study found that simply lowering speed limits has no effect on driver behavior.⁸

We in Spartanburg County have invested significantly in our parks, both privately and publicly, resulting in fine facilities. That investment will be maximized by creating safer routes to the parks, which increases use and improves community health. Partners for Active Living has been a leader in seeking to increase activity levels through programs like the Hub Cycle bike lending program and others, and by advocating for allowing for safer travel by adding sidewalks, bike lanes, and multi-use paths. At the urging of Partners for Active Living and others, Spartanburg County has resolved to build streets that allow for walking and biking safely. With this guide we hope to involve residents in that commitment by working with them to make recommendations for changes that will allow for safer access to the county's recreation areas.

3. "Fatal Impact: The Physics of Speeding Cars." Australian Academy of Science, 2000.

4. "Literature Review on Vehicle Travel Speeds and Pedestrian Injuries Among Selected Racial/Ethnic Groups." National Highway Traffic Safety Administration, 1999.

5. "Main Street: When a Highway Runs Through It." Oregon Department of Transportation, 1999.

6. Mundell, Jim, PE. "Constructing and Maintaining Traffic Calming Devices." Seattle (WA) Department of Transportation.

7. Cited in Gies, Erica. "The Health Benefits of Parks: How Parks Help Keep Americans and Their Communities Fit and Healthy." The Trust for Public Land, 2006.

8. "Effects of Raising and Lowering Speed Limits on Selected Roadway Section." Federal Highway Administration, 1997.



Current Conditions Assessment

The first step to slowing traffic around parks involves understanding the current conditions. This assessment will ask a few questions that can be answered in a short walk near the park, or by asking county and state officials specific questions. Some of the answers may not be available (“Is there speed and crash data for the area?”); in that case, ask that the information be collected. If there is a special circumstance, or a specific question about the assessment, use the Notes section.

The answers to these questions give you a good place to start looking at measures that will slow traffic, thus enabling safer walking and biking routes to places to play. The measures described in the rest of this guide all serve to slow traffic, and are appropriate in some, but not all, contexts.

Current roadway speed limit _____

Number of travel lanes each way _____

Sidewalks yes _____ no _____

On both sides of the street yes _____ no _____

Overall Condition good _____ fair _____ poor _____

Handicap access ramps yes _____ no _____

Gaps yes _____ no _____

Vehicles parked on sidewalks yes _____ no _____

Bike Lanes yes _____ no _____

Overall Condition good _____ fair _____ poor _____

Vehicles parked in lanes yes _____ no _____

Existing traffic calming

Pedestrian or other warning signs yes _____ no _____

Crosswalks yes _____ no _____

Pedestrian crossing signals yes _____ no _____

Traffic light/stop sign yes _____ no _____

Other nearby destinations

Church(es) yes _____ no _____

School(s) yes _____ no _____

Commercial center(s) yes _____ no _____

Other yes _____ no _____

Please specify _____

Jurisdiction: Who maintains the road? For this information, see www.scdot.org/getting/streetfinder.shtml.

State _____ County _____ City _____

South Carolina Truck Route Yes _____ No _____

Speed and Crash Data For this information, contact the South Carolina Department of Highway Safety at www.scdps.org/ohs, or call 1-877-349-7187.

yes _____ no _____

Notes

Traffic Calming

Education and Administration Techniques

Some traffic calming measures require few changes to the roadway, but rather seek to educate drivers about potential hazards, and direct traffic by the use of signs or pavement markings, or provide immediate feedback about travel speed. A pedestrian crossing sign, for example, will alert drivers to the possible presence of walkers, thus preparing them to slow. Especially when combined with other roadway markings like crosswalks, these types of changes are often the least expensive means of slowing traffic.

Pedestrian Crossing Sign

Description: A pedestrian crossing sign is a regulatory sign which assigns the right of way to pedestrians at specific crossing locations.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">InexpensiveEarly warnings for driversWhen paired with other measures can be very effective	<ul style="list-style-type: none">Police enforcement requiredMay not slow traffic unless paired with other measures	<ul style="list-style-type: none">Up to 1/4 mile before park entranceMUTCD (Manual of Uniform Traffic Control Devices) staff discretion	<p>Install \$*</p> <p>Maintenance \$</p>

Speed Display

Description: A speed display is a trailer or pole mounted self-contained speed display unit. It notifies the driver in real time of their current speed.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Makes motorists aware of the speed they are traveling and the posted speed limitSelf enforcing where compliance is voluntaryHighly visibleDoes not require a police officer to be present	<ul style="list-style-type: none">Cost of equipment and maintenanceMay require towing, set-up and storagePossible target of vandalismTemporary effectiveness	<ul style="list-style-type: none">Can be used anywhere speeding occursPermanent or nonpermanent	<p>Install \$-\$</p> <p>Maintenance \$</p>

Roadway Markings

Description: Roadway markings are a relatively inexpensive method to promote traffic safety and traffic calming. Recommended markings include, but are not limited to, crosswalks, stop bars at stop signs and traffic signals, delineated bicycle and parking lanes, cross-hatchings at lane narrowing, centerlines and curb lines. Street markings are visual cues to drivers to moderate their speeds.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Inexpensive means to narrow travel lanes and to delineate other roadway users' spaceCan be used in conjunction with other measures	<ul style="list-style-type: none">Police enforcement requiredNeed to maintain (repaint in time)	<ul style="list-style-type: none">Can be used anywhereMUTCD (Manual of Uniform Traffic Control Devices) staff discretion	<p>Install \$</p> <p>Maintenance \$\$\$</p>

Wayfinding Signs

Description: Wayfinding signs are used to advise motorists of major destinations and how to reach these locations using arterial streets, reducing travel on local residential streets. This type of device is most effective in areas where there are alternative routes. This measure serves as a directional sign, not as a regulatory sign and has no enforcement status.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">May reduce excessive traffic by encouraging use of arterial roadway	<ul style="list-style-type: none">May add to sign clutter	<ul style="list-style-type: none">Can be used anywhereHelp to keep traffic on main roads and not side roads	<p>Install \$</p> <p>Maintenance \$</p>

Notes

Traffic Calming

Speed Reduction Measures

Speed reduction measures make physical changes to the roadway to slow and redirect traffic by narrowing lanes or building textured or raised crosswalks to make them more evident to drivers. Often traffic moves more freely though at slower speeds because travel lanes are more evident. These types of changes are more expensive and may take more time to implement.

Speed Hump

Description: A speed hump is a raised area in the roadway pavement surface extending across the travel lane. Speed humps are constructed of asphalt and stretch the entire length of the roadway. A speed hump is wider than the speed bump, which is only appropriate for parking lots.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Speed humps are relatively inexpensiveThey are relatively easy for bicycles to cross if designed appropriatelyThey are very effective in slowing travel speeds	<ul style="list-style-type: none">They cause a “rough ride” for all driversThey may increase emergency response timeThey may increase noise and air pollutionThey are not very attractive	<ul style="list-style-type: none">Best suited for residential roads	<p>Install \$\$</p> <p>Maintenance \$</p>

Speed Table

Description: A speed table is a long, raised speed hump with a flat section in the middle and ramps on the ends, sometimes constructed with brick or other textured materials on the flat section. Speed tables are generally long enough for the entire wheelbase of a passenger car to rest on top.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Speed tables are smoother on large vehicles (such as fire trucks) than speed humpsThey are effective in reducing speeds, though not to the extent of speed humpsSupports safe pedestrian crossing with textured material	<ul style="list-style-type: none">They have questionable aesthetics if no textured materials are usedTextured materials, if used, can be expensiveThey may increase noise and air pollution	<ul style="list-style-type: none">Best suited for residential roadsLocal and collector streetsMain roads through small communities	<p>Install \$\$\$</p> <p>Maintenance \$</p>

Raised Crosswalk

Description: A raised crosswalk is much like a speed table; however it is only as wide as the crosswalk. This allows the pedestrian to be elevated to eye level of the motorist and not have to step down to cross the road.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Raised crosswalks improve safety for both pedestrians and vehiclesIf designed well, they can be attractiveThey are effective in reducing speeds, though not to the extent of speed humps	<ul style="list-style-type: none">Textured materials, if used, can be expensiveTheir impacts on drainage needs to be consideredThey may increase noise and air pollution	<ul style="list-style-type: none">Best used where pedestrian crossings are especially dangerousCan be used at intersections or mid-block crossingsIdeal for residential areas, school crossings, and playground/park areas	Install \$\$ Maintenance \$

Textured Crosswalk

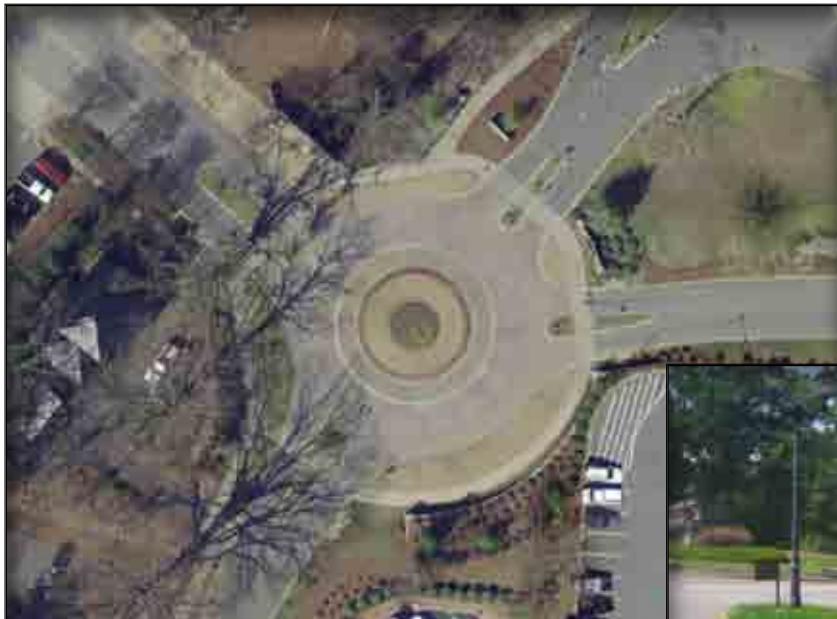
Description: Textured and/or colored concrete is an aesthetic treatment used to make a crosswalk surface more visually attractive and noticeable to vehicles as they drive over them.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Textured pavements can reduce vehicle speedsIf designed well, they can be attractivePlaced at an intersection, they can calm two streets at once	<ul style="list-style-type: none">They are generally expensive, varying by materials usedIf used as a crosswalk, they can make crossings more difficult for wheelchair users and the visually impaired	<ul style="list-style-type: none">Can be used on any road	<p>Install \$\$</p> <p>Maintenance \$</p>

Roundabout

Description: A roundabout is a circular intersection with a center island, usually landscaped, placed in the middle of an intersection on major roads. They do not have traffic signals and are designed to decrease accidents and increase traffic flow.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none"> • Roundabouts can moderate traffic speeds on an arterial • They are generally attractive if well landscaped • They enhance safety compared to traffic signals • They can minimize queuing at the approaches to the intersection • They are less expensive to operate than traffic signals • Can improve pedestrian safety 	<ul style="list-style-type: none"> • 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 • Landscaping must be maintained, either by the residents or by the municipality 	<ul style="list-style-type: none"> • Locations with a history of accidents • Intersections where queues need to be minimized • Intersections with streets entering at odd angles • Providing inexpensive-to-operate traffic control as an alternative to a traffic signal • Handling a high proportion of U-turns • Locations with abundant right-of-way 	Install \$\$\$\$ Maintenance \$\$

Residential Roundabout

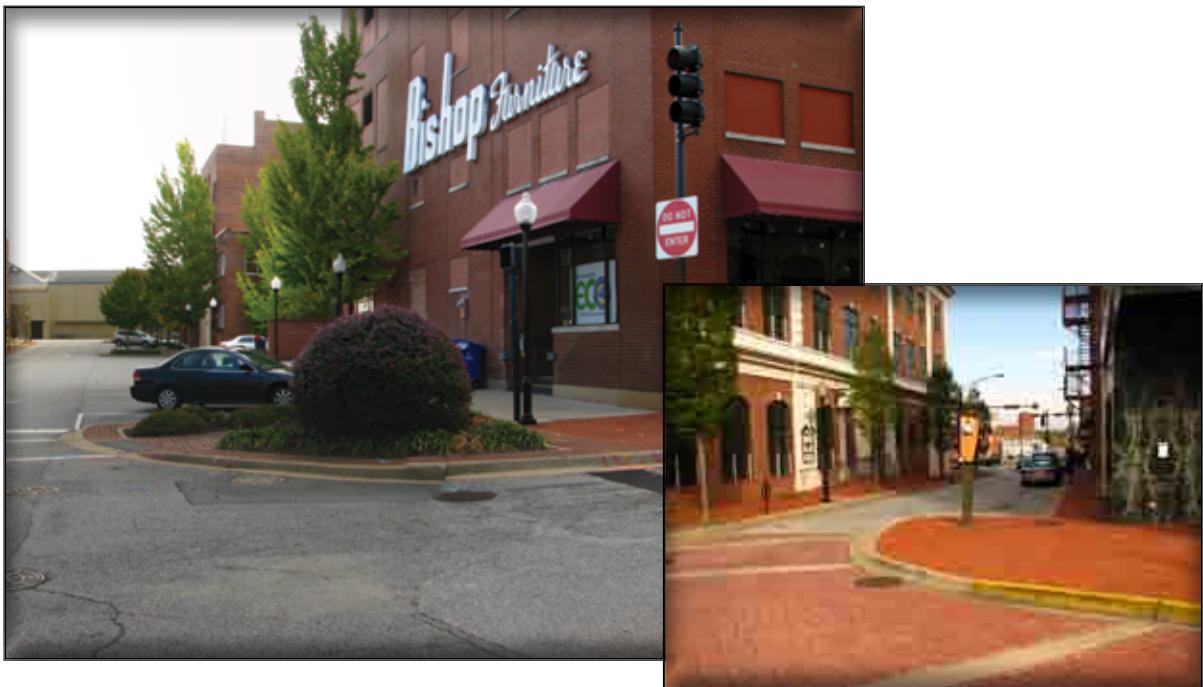
Description: A residential roundabout is a small island, usually landscaped, placed in the middle of an intersection on a neighborhood street. It is most frequently used to address speeding on neighborhood streets and is most effective when built in a series.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none"> Residential roundabouts are very effective in slowing speeds and improving safety If designed well, they can be attractive Placed at an intersection, they can calm two streets at once 	<ul style="list-style-type: none"> 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 Landscaping must be maintained 	<ul style="list-style-type: none"> Intersections of local and collector streets Can be used mid-block Can be landscaped 	<p>Install \$\$\$</p> <p>Maintenance \$\$</p>

Neckdown

Description: A neckdown is a curb extension at an intersection that reduces the roadway width at the corner. This provides a shorter distance for pedestrians to cross and reduces the speed of turning vehicles. Also referred to as bulb outs, intersection narrowings, and nubs.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none"> Neckdowns shorten pedestrian crossing distance Through traffic and left-turns are easily negotiable by large vehicles They create protected on-street parking spaces They reduce speeds, especially for right-turning vehicles 	<ul style="list-style-type: none"> They may slow right-turning emergency vehicles They may require the elimination of some on-street parking near the intersection They may require bicyclists to briefly merge with automobile traffic 	<ul style="list-style-type: none"> Wider local and collector streets Can be used with crosswalks and other such measures. Able to be integrated with crosswalks to provide a safer pedestrian crossing by reducing the crossing distance, improving the line-of-site for pedestrians, and making pedestrians more visible to drivers. Ideal for heavy pedestrian areas, residential areas, commercial areas, and business districts. 	Install \$\$ Maintenance \$\$\$

Median

SPED REDUCTION . MEASURE

Description: A median is an island, which is raised or flush with the pavement level, along the roadway cross section. Its purpose is to narrow the roadway, passively control turning movement, provide pedestrian mid-road safe refuge, and create landscape and streetscape enhancement.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Medians allow pedestrians to cross half of the street at a time (pedestrian refuge)They make pedestrian crossing points more visible to driversThey direct traffic and inhibit prohibited left turnsThey prevent vehicles from passing turning vehiclesThey may result in geometric improvementThey improve streetscape through landscaping	<ul style="list-style-type: none">Potential loss of curb-side parkingSome inconveniences to residents in reaching their driveways	<ul style="list-style-type: none">Can be used on any roadwayCan be landscapedAbility for private sponsorship of landscaping	<p>Install \$\$\$</p> <p>Maintenance \$-\$</p>

Pedestrian Refuge Island

Description: A pedestrian refuge island is a median that is generally between a turning lane and a driving lane. Their purpose is to narrow the roadway, provide pedestrian mid-road safe refuge, and create landscape and streetscape enhancements.



Advantages	Disadvantages	Contexts	Costs
<ul style="list-style-type: none">Pedestrian refuge islands allow pedestrians to cross half of the street at a time (pedestrian refuge)They make pedestrian crossing points more visible to driversThey prevent vehicles from passing turning vehiclesThey may result in geometric improvementThey improve streetscape through landscaping		<ul style="list-style-type: none">Can be used on any roadwayCan be landscapedAbility for private sponsorship of landscaping	Install \$\$\$ Maintenance \$--\$

Next Steps:

This guide is intended to introduce certain measures that can be used to slow traffic around parks. Partners for Active Living is dedicated to helping community residents achieve parks that they can walk or bike to. As part of that dedication, we are available to conduct input meetings with residents to determine the safest routes to parks, and in identifying and advocating for specific changes to roadways to make routes even safer. Please contact Partners for Active Living at (864)598-9638, or by email at info@active-living.org. You can also contact the Spartanburg Area Transportation Study at (864)596-3570, or use the “Contact us” form at www.spatsmpo.org.

Useful contacts:

South Carolina Office of Highway Safety www.scdps.org/ohs/
1-877-349-7187

City of Spartanburg Neighborhood Services www.cityofspartanburg.org
(864) 596-2915

Spartanburg Area Transportation Study www.spatsmpo.org
(864)596-3570

More information on traffic calming

Fehr and Peer Consulting's on-line guide: <http://trafficcalming.org/>
The Institute of Transportation Engineers on-line guide: <http://www.ite.org/traffic/>

Definitions:

Manual of Uniform Traffic Control Devices (MUTCD): The MUTCD guides all jurisdictions in placing and designing signs, roadway markings, and other signals on any public roadway. The MUTCD is published by the Federal Highway Administration, and is reviewed and edited regularly.

Staff discretion: Some of the MUTCD guidelines allow for transportation department staff to decide appropriateness and siting.

Road Classifications:

Arterial: high-speed, high volume roadways, generally used to move traffic from collector roads to highways

Collector: lower speed, volume than arterials; generally allow access to residential areas, used to move traffic from local roads to arterial roads

Local: residential streets, low speed, low volume

Notes

Special Thanks To:

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