

Traffic Calming: What's It All About?

Lower Merion Township is preparing recommendations for Montgomery Avenue traffic calming measures, based on the traffic study completed earlier this year. A public presentation of these recommendations has been scheduled for Monday, October 26, at 6 p.m. in the boardroom of the township administration building, 75 East Lancaster Avenue, Ardmore, PA 19003.

Community input is critical! Traffic calming measures can be controversial. Some may view a measure as a necessity; others may view it as a nuisance that interferes with their commute; still others may fear that residential streets will be used for short cuts.

The following provides information about traffic calming measures to help HCA members provide input to township staff on the upcoming traffic calming recommendations.



What Is Traffic Calming?

“Traffic calming is the strategic application of engineering and design measures aimed at reducing vehicle speeds and improving safety for all road users. Its primary objective is to create safer, more livable environments by encouraging more responsible driver behavior.”
(PennDOT Technical Information Sheet #238, 2025)

Why Speed Matters!

Speed reduction is a major focus of traffic calming because minor changes in vehicle speed significantly affect pedestrian survival rates. A pedestrian has a:

- **90 percent** chance of surviving a collision at **20 mph**.
- **60 percent** chance at **30 mph**.
- **20 percent** chance at **40 mph**.

Source: Institute of Transportation Engineers, Speed as a Safety Problem

<https://www.ite.org/technical-resources/topics/speed-management-for-safety/speed-as-a-safety-problem/>

Challenges in Selecting Traffic Calming Measures

- It is complicated! Context is everything. There is no “one size fits all” approach. Frequently, a combination of approaches works best.
- Selecting appropriate measures depends on the type of road (residential or arterial), the setting (rural, suburban, urban), the types and volumes of road users, average speeds, levels of pedestrian activity, specific road segments and intersections, the road’s role in the larger transportation network, and many other factors.
- Making tradeoffs! Finding a balance between ensuring an efficient transportation network and maintaining safe roads for all users.
- Taking chances! Not all traffic measures are backed by strong data supporting their effectiveness, although limited data may suggest their potential.
- Wait time! Many measures must go through a lengthy state approval process.

Challenges of Implementing Traffic Calming Measures on Montgomery Avenue

Montgomery Avenue is an **arterial** road expressly designed for efficiently moving vehicular traffic through the corridor at speeds and volumes higher than those of residential streets.

- It is part of a regional transportation network.
- It has thirty-five intersections, including three unsignalized intersections. The high number of vehicle turning movements at intersections increases the potential for pedestrian and car crashes.
- It passes through dense residential and commercial districts and school zones.
- Motorists, pedestrians and bicyclists, fire engines, emergency response vehicles, police vehicles, buses, large trucks, and delivery vehicles all use it.

- Measures must consider emergency vehicle response times, large vehicle mobility, lane capacity/volumes.
- It has varying levels of pedestrian activity due to the presence of educational institutions, dense residential stretches, and commercial districts.

Traffic Calming Measures Used on Arterial Roads

Measures used on one or more **road segments** include:

- Road diets.
- Focused police enforcement on high-risk road segments.
- Coordination of traffic signals to maintain the desired average speed along a corridor.
- Speed cameras and red-light cameras.
- Narrowing or reducing travel lanes and/or adding bulbouts at intersections and mid-block chokers to compel drivers to slow down and reduce pedestrian exposure when crossing the street.
- Automated signage promoting speed awareness.
- Median islands at the street centerline to separate opposing lanes of traffic, reduce lane widths, and provide a pedestrian refuge.
- Center or edge line rumble strips to reduce lane departures.
- Visual cues such as clearly marked lanes, crosswalks, and intersections.
- Traffic-activated lighting on signs.

Measures used at **intersections** and **crosswalks** include:

- Roundabouts and mini roundabouts.
- Traffic signals to separate pedestrian and vehicle movements, e.g., leading pedestrian intervals so pedestrians can begin crossing intersections before turning vehicles receive a green light.
- Smaller turning radii to decrease speed of turning vehicles.
- Raised intersections and crosswalks.
- High visibility markings, including texture and color pavement treatments.
- Bulbouts to narrow lanes and reduce pedestrian exposure, chokers at mid-block crossings.
- Pedestrian refuge islands for two-stage crossings.
- Pedestrian-activated flashers at mid-block crosswalks.
- Gateways.
- Intersection control spacing.

- Diagonal diverters.
- Right-in/right-out islands.

Definitions of Traffic Calming Measures

The three Es of traffic calming are **E**ngineering, **E**ducation and **E**nforcement. While Education and Enforcement remain important, Engineering and design offer a rich array of tools to increase safety for all road users, while supporting an efficient transportation network. See descriptions of traffic calming measures below.

- **Horizontal deflection strategies** slow drivers down by preventing them from driving in a straight line on a road. They include:
 - **Roundabouts** and **mini roundabouts**.
 - **Curb extensions** at intersections (known as bulbouts) and mid-block (chokers).
 - **Chicanes**, also known as serpentine or reversing curves.
 - **Gateways** to slow traffic when drivers are transitioning from a higher speed road to a slower, more pedestrian-friendly area.
 - **Pedestrian refuge islands** to permit pedestrians to cross wide or busy streets in two stages.
- **Vertical deflection strategies** slow drivers down by introducing changes in road levels, using:
 - **Raised crosswalks** and **intersections**.
 - **Speed humps**, **speed tables**, and **speed cushions**.
- **Physical obstruction strategies** use barriers or diverters to restrict certain vehicle movements while allowing pedestrian or bicycle access. They include:
 - **Partial closure** of lanes to permit bicycle access.
 - **Diagonal diverters** at intersections to block through movement of vehicles, while allowing pedestrians and/or bicyclists.
 - **Traffic bollards** are installed on roads, sidewalks, or traffic islands to guide vehicle movement and prevent drivers from entering restricted or protected areas. They are short, lightweight, movable vertical posts—typically made of plastic or light-gauge steel—engineered for high visibility at all hours.
 - **Right-in/right-out islands** are raised concrete curbs or painted traffic barriers placed in intersections or driveways that force drivers to only turn right when entering or exiting the road. They eliminate left turns, U turns, and driving straight across.
- **Signage and pavement marking strategies** slow drivers and reduce conflicts between drivers, pedestrians, and bicyclists by:

- **Reducing lane widths.**
- Establishing **separate bicycle lanes.**
- **Reducing** the number of **lanes.**
- Using “**road diets**” that typically reduce a four-lane road to two through lanes and a two-way turning lane. This allows space for bicycle lanes, sidewalks, or on-street parking.
- Using **high visibility markings** for lanes, crosswalks, and speed limit signage.
- Installing **automated signage**, e.g., speed awareness signs, pedestrian-activated flashers at mid-block crosswalks and traffic-activated sign lighting.
- Using **smaller turning radii** to decrease speeds of turning vehicles.
- Using **texture and color** on intersection/crosswalk **pavements** to alert drivers
- **Other strategies** include:
 - Modifying traffic signal timing and phasing
 - **Leading pedestrian intervals:** timing traffic signals to allow pedestrians to begin crossing intersections before turning vehicles receive a green signal.
 - **Coordinating signals:** timing traffic signals to encourage drivers to maintain the desired average speed along a corridor.
 - **Intersection control spacing:** Establishing optimal distances between signals, stop signs, or roundabouts needed for safe and efficient traffic flow.
 - Installing **speed cameras** and **red-light cameras.**
 - **Rumble strips:** Center or edge line grooves or bumps that produce noise and vibrations to alert drivers to lane drift.
- **Temporary Measures** may be used when:
 - A measure’s **effectiveness** must be determined before investing in a permanent feature.
 - **Insufficient funds** are available for a permanent feature.
 - There is a desire to gauge **community reaction** to a measure.

Temporary traffic calming materials include delineators, precast concrete curbing, removable rubber speed humps, precast or wood planters, rolled asphalt, pavement markings, and signage.

See pictures of how these traffic calming measures are implemented in the next section.

Pictures of Traffic Calming Measures



Roundabout



Mini roundabout



Bulbouts



Chicane



Gateway



Pedestrian refuge island



Raised intersection



Speed cushion



Diagonal diverter with bollards



Right-in/right-out island

Four Lanes w/o center turn lanes

**center turn lanes, bike lanes,
ped refuge island at bus stop**



Road diet



Automated speed signage



Colored pavement

Want to Dive Deeper into Traffic Calming?

Want a more detailed overview? PennDOT offers that and more in Chapter 18, “Traffic Calming,” in Publication 13 Design Manual Part 2 Contextual Roadway Design at: [https://www.latwp.org/Documents/Departments/Public%20Works/Pub13%20Design%20Manual%202%20-%20Contextual%20Roadway%20Design Chapter%2018.pdf](https://www.latwp.org/Documents/Departments/Public%20Works/Pub13%20Design%20Manual%202%20-%20Contextual%20Roadway%20Design%20Chapter%2018.pdf).

To learn about the intended outcomes of specific traffic calming measures, see Chapter 18’s “Exhibit 18.4.1 Intended Outcome.” To learn about the effectiveness of traffic calming measures in different contexts, see “Exhibit 18.4.2 Posted Speed and Context Classification.” Page through Chapter 18 to see photographs of different traffic calming interventions.

Need more information on specific calming measures? The Institute of Transportation Engineers (ITE) offers a series of fact sheets on common traffic calming measures, with illustrations, at: <https://www.ite.org/technical-resources/traffic-calming/>.