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# TRAFFIC CALMING

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PennDOT has acknowledged the importance of traffic-calming by integrating it into its Design Manual "Publication 13 (DM-2), Chapter 18," elevating it from a standalone reference document (Publication 383) to a core design resource. This shift ensures that traffic-calming measures are not only considered to enhance safety on existing roadways, but are also implemented in the planning and design of new highway projects. This transition involves updating policy and shifting from the current Traffic Calming Handbook "Publication 383" to the newly established Chapter 18 in "Publication 13 (DM-2)."


**Traffic-calming measures are used by municipalities to improve safety for all road users. Various measures can slow traffic, divert traffic, and encourage more responsible driver behavior.**

## 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 (see Exhibit 18.1.1). Its primary objective is to create safer, more livable environments by encouraging more responsible driver behavior. The justification for deploying a traffic-calming measure may originate from a site-specific operational or safety concern or be incorporated as an integral part of a comprehensive roadway project. The implementation process typically involves multiple stakeholders, with responsibilities distributed across the planning, engineering, design, construction, and maintenance stages of traffic calming.

**Exhibit 18.1.1 Vehicle Speeds and Pedestrian Fatality Rates**


## Toolbox and Matrices

Chapter 18 contains two decision matrices that are available to aid designers in the initial analysis and screening of traffic-calming measures for a site or project. Exhibit 18.4.1 shows the typical applicability of various traffic-calming measures with respect to intended outcomes. Exhibit 18.4.2 shows the applicability of each traffic-calming measure with respect to the five context classifications and posted speed ranges.

Following an initial screening of potential traffic-calming strategies, practitioners should consult the criteria outlined in "Section 18.5, Toolbox of Traffic-Calming Measures and Design Guidelines," for a more detailed evaluation. This section provides a description and purpose for each traffic-calming measure, including its typical application, advantages and disadvantages, effectiveness, design criteria, and design considerations and context. The traffic-calming measures are separated into five categories in the toolbox: horizontal deflection, vertical deflection, physical obstruction, signing and pavement markings, and other.

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• Horizontal Deflection: Manages vehicle speed through two primary approaches: introducing horizontal shifts in the roadway alignment and reducing the effective width of travel lanes.
    - o Curb extension
    - o Chicane
    - o Gateway
    - o Roundabout
    - o Pedestrian refuge island
• Vertical Deflection: Manages vehicle speed by creating vertical deflection in the roadway causing drivers to reduce speed when crossing the feature.
    - o Speed hump
    - o Speed table
    - o Speed cushion
    - o Raised crosswalk
    - o Raised intersection
• Physical Obstruction: Restricts vehicular movements on local or neighborhood streets, often to enhance safety and prioritize pedestrian and bicycle circulation.
    - o Diagonal Diverter
    - o Right-in/right-out island
    - o Half closure with bicycle pass through
• Signing and Pavements Markings: Manages traffic flow through operational measures rather than permanent geometric modifications to the roadway.


**A raised pedestrian crossing was installed by College Township in Centre County to slow traffic and create safer conditions for a populated area with many pedestrains. Photo provided by the township.**

**An example of a roundabout that was constructed at a four-way intersection in East Rockhill Township in Bucks County. Photo provided by the township.**

    - o Travel lane width
    - o Lane and Parking configuration changes
    - o Lane reduction/Road diet
• Other: Additional strategies and treatments may be employed to achieve traffic-calming objectives.
    - o Traffic signal timing and phasing
    - o Leading pedestrian intervals
    - o Automated enforcement
    - o Intersection control spacing.

## Engineering and Study Process

Implementing traffic-calming measures should be based on an established process which should be evaluated and justified through engineering analysis. Traffic calming engineering and traffic studies can be performed by police officers, roadmasters, maintenance supervisors or traffic technicians per "Title 67, Chapter 212, Section 212.4." Pennsylvania LTAP (Local Technical Assistance Program) can also assist municipalities with the traffic studies. The procedure in "Publication 13 (DM-2), Chapter 18," is for the installation of traffic-calming measures on state highways, a local road with state or federal funding, or a federal aid roadway which requires PennDOT approval. PennDOT approval is not required prior to the installation of traffic-calming measures on a local road with local funding. Exhibit 18.A.1 lists the steps for the study process. PennDOT form "TE-125 Traffic-Calming Measure Engineering and Traffic Study" should be used for documentation.

# Resources

Publication 13 Design Manual Park 2, Contextual Road Design