TRAFFIC CALMING

A report to the Carnegie Borough Planning Commission
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(This report is available online as an Adobe Acrobat file with clickable links, please enter the following into your browser to view this online and click on the links:
http://www.pitt.edu/~kconover/ftp/traffic-calming.pdf)

The problem is people speeding through Carnegie, or a part of Carnegie, to get somewhere else in a hurry.

At least it's a problem for the people who live in Carnegie and are worried about getting hit, and worried about getting across the street safely.

An Introduction

In the beginning, Man made dirt roads. Ox-carts moved from place to place. This was good. In the spring and fall, the road turned to mudholes which swallowed ox-carts up to the axle (and horses and people too).

So Man started paving the roads so they were usable year-round. This was good. Roman armies used the roads to keep a gigantic empire together for centuries. But most of the paving was in towns, to keep the streets from being mudholes.

Much, much later, Man invented the horseless carriage, and the paving *really* took off. This was good. You could drive a Model T across the country!

Later, the Model T gave way to the Bulgemobile, and people could drive much faster. This was good.

Or was it? Lots of people got smushed, either in their Bulgemobile when it collided with another Bulgemobile, or when it ran off the road and hit an immovable object. (There are at least a few things that won't move when impacted by a Bulgemobile at a high rate of speed.)

So Man invented seatbelts, crash dummies, reflective lines on the roads, Bot's Dots (those little reflective bump thingies on the roads), curve-straightening, and Jersey Barriers. This was good.

Or was it? Freeways and "urban renewal" ripped up our cities and divided neighborhoods from one another: new developments had gently-curving streets with no sidewalks; new streets had crosswalks little different from a pedestrian shooting-range at an amusement park; and city neighborhoods were improved with chain-link fences, barbed wire, signs saying "Pedestrians and Bicycles Prohibited," and large expanses of toxic-waste-stained asphalt and concrete littered with the corpses and internal organs of unlucky automobiles and household pets.

Writing in March of 2003, Dom Nozzi talks about "forgiving roads" – how we make it so roads "forgive" careless drivers. We straighten the road, add lanes, move buildings and such out of the way, and put Jersey barriers along it so that drivers can talk on their cellphones, apply makeup, play with the stereo, or even read the paper, without needing to worry about driving off the road or hitting something. His essays on the topic are enlightening.

http://www.walkablestreets.com/

The Problem

Some say that our love for the automobile and for speed endangers our children (and ourselves) and makes our neighborhoods unlivable. I believe this, deep in my heart. But what do we do about it?

Some say the answer is **traffic calming**. But "traffic calming" means different things to different people, as you will read below. Traditional traffic calming has been around for decades, and has its proponents.

The official US Government site related to traffic calming is at

https://www.fhwa.dot.gov/environment/traffic_calming/index.cfm

and it gives the objectives of traffic calming as:

- *To encourage citizen involvement in the traffic calming process by incorporating the preferences and requirements of the citizens,*

- *To reduce vehicular speeds,*

- *To promote safe and pleasant conditions for motorists, bicyclists, pedestrians, and residents,*

- *To improve the environment and livability of neighborhood streets*

- *To improve real and perceived safety for nonmotorized users of the streets,*

- *To discourage use of residential streets by non-citizens cut through vehicular traffic.*

Traditional Traffic Calming

This is a traditional approach to traffic calming, best exemplified by the pictures at

https://www.dot.state.pa.us/public/pubsforms/Publications/PUB%20383.pdf

There are also pictures and schematic diagrams at

https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/

However, as observed by some speakers at conferences devoted to traffic issues, traditional traffic calming is a Bandaid approach to the problem. And, there has been significant public resistance (usually a vocal and stridulous minority) due to the problems caused by traditional traffic calming measures: slowing emergency response, making people drive way out of their way to drive to someplace half a mile away, and the like.

As a result, traffic calming has evolved from the traditional engineering approach to what is known as "second generation traffic calming" or "psychological traffic calming." Certainly, traditional traffic-calming is still used, and may still be appropriate in certain settings, but the smart money is on second-generation techniques as a more robust and sustainable solution.

Second Generation Traffic Calming

https://kottke.org/04/06/traffic-calming

Drivers slow down for two good reasons: *intrigue* and *uncertainty*. Making streets more interesting will make people slow down. Parallel parking along streets creates uncertainty about whether a car might pull out, and thus slows traffic.

Drivers are more careful when streets are narrow, and when there is landscaping such as trees along the street, sidewalks and planted medians. And, when an area just "looks" more like a place where pedestrians walk in the street, and less like a highway, then drivers slow down and pay more attention.

So, making an area "pedestrian-friendly" and "bicycle-friendly" provides traffic-calming without having to obstruct or redirect traffic.

Naked Streets

Some European cities have even gone so far as to remove sidewalks and traffic signs on some streets, allowing pedestrians and cars to mix on the street—which has actually reduced accidents. Some say this move toward "naked streets" is allowing pedestrians to reclaim the street. [I suspect this would only likely work in an area with high pedestrian density, unless significant changes, such as café seating in the street, were to provide visual clues as to pedestrians' "claim" to the area. –KC]

Removing the security of artificial barriers such as curbs, lines, and sidewalks forces drivers to rely on their own perceptions of the area.

A particularly intriguing short article may be found at

https://www.salon.com/2004/05/20/traffic_design/

Which discusses the concept of the "self-reading street," "woonerf" in the Netherlands, and "Home Zones" in the UK.

An interesting observation mentioned in the Salon article is that reducing average vehicle speed, from about 30 MPH to about 15 MPH, actually improves overall speed of city traffic – slower speeds improve performance at intersections, which are the real bottleneck to city traffic, rather than the speed between intersections.

In Wiltshire, England, making the streets "naked" reduced average speeds from over 40 MPH to less than 30 MPH.

Streetscaping: "Mental Speed Bumps"

The idea of designing (or redesigning) streets to use psychology, rather than engineering, to calm traffic has been encapsulated in the term "streetscaping." This seems to be more of an art than a science, and appropriate elements for one street might be different from the next block over. However, some standard elements include:

- Vertical elements close to the street, such as trees or bushes – but not in regular patterns.

- Visually-complex material at street level and close to the street, such as flower beds, or café tables and chairs.

- Interrupting sight lines to shorten the view – uncertainty about what is ahead slows drivers.

- Sidewalks that appear contiguous and at a level with the street, where the distinction between sidewalk and street is blurred.

Interestingly, the idea has caught on in Australia as well, and Brisbane native David Engwicht wrote a book entitled "Mental Speed Bumps.": https://smile.amazon.com/Mental-Speed-Bumps-smarter-traffic/dp/0858812096

What about Carnegie?

A particular advantage of second generation street calming for places like Carnegie – our older infrastructure is like European cities and mostly unlike newer communities that have straight and gently-curving roads that encourage speed, and we have few sidewalks except on main streets. We already have a crowded and complex set of streets; we may be able to use second-generation concepts more cheaply than more modern areas. And, as observed by some, the institution of Mansfield as a thoroughfare with long, unobstructed sight-lines may have sped traffic through the borough but has done little to make it a more vital and livable place.

The following site offers a plan for evaluating proposed traffic calming projects:

https://www.vtpi.org/tdm/tdm4.htm

It offers the following summary of the overall potential effects of traffic calming measures:

> *The following factors influence how much a Traffic Calming project affects travel:*

> - Magnitude of change. *The more Traffic Calming reduces traffic speeds and improves walking and cycling conditions, the more it will affect total travel. Traffic Calming that significantly reduces a barrier to non-motorized travel (for example, by making it easier to walk across an arterial from one major activity center to another or creating a pleasant bicycle travel corridor where none otherwise exists) may have significant travel impacts in an area.*

> - Walking and Cycling Demand. *A Traffic Calming project will have the most travel impacts if implemented near major pedestrian and cycling generators: residential neighborhoods, commercial centers, schools, and recreation centers.*

- Integration with other improvements. *Traffic Calming complements other demand management efforts. Traffic Calming can increase the effectiveness of [Pedestrian and Cycling Improvements](#), [Parking Management](#), [Transit Improvements](#), [New Urbanism](#) and many other TDM strategies.*

- Land use effects. *Traffic Calming supports [Clustered](#), mixed-use, infill, pedestrian-oriented land use development that further reduce automobile use and automobile dependency over the long run.*

So, what should we do? I suspect that if we learn about Streetscaping = "Mental Speed Bumps" we can find inexpensive solutions to our traffic calming needs and will be better able to direct plans to make Carnegie a more vibrant and wholesome place.