Transportation Enhancements to Promote Livable Communities
(A Lesson in Traffic Calming)

Heidi Richards, PE
Vanasse Hangen Brustlin, Inc., Watertown MA
What is Traffic Calming?

- Neighborhoods
- Municipal Officials
- Downtown or Village District
- State Agency
- Designers and Public Works
Traffic Calming is:

- The use of mainly physical measures to
  - Reduce the negative impacts of motor vehicle use
  - Alter driver behavior
  - Improve conditions for non-motorized street users.
Traffic Calming Goals

- Increase quality of life
- Incorporate preferences of people using the area along the street
- Create safe and attractive streets
- Reduce negative effects of motor vehicles
- Promote pedestrian, cycle and transit use
Traffic Calming Objectives

• Slow speeds
• Reduce frequency and severity of collisions
• Increase safety for non-motorized users of the street
• Reduce need for police enforcement
• Enhance street environment
• Increase access for all modes
• Reduce cut-through motor vehicle travel
Road Safety in the USA
An international comparison

Fatality Rate per 100,000 Population 1997

- Netherlands
- Switzerland
- Germany
- France
- USA

4
If the USA had the same rate of road fatality as The Netherlands we would have:

20,000 fatalities per year instead of
42,000 fatalities per year
Road Safety in the USA

Improvement in road safety over time (fatalities per 100,000 population)

Change in Fatality Rate 1970-1997


USA
Road Safety in the USA

Improvement in road safety over time
(fatalities per 100,000 population)

**Change in Fatality Rate 1970-1997**

- **USA**
- **The Netherlands**

![Graph showing the change in fatality rate from 1970 to 1997 for the USA and the Netherlands. The USA shows a steady decrease in fatality rates, whereas the Netherlands shows a more dramatic decrease.](image-url)
Pedestrian Safety and Traffic Calming
Percentage of Pedestrians Killed Doubles for Each 5 mph Increase in Speed
(USDOT – National Highway Safety Administration, 1999)

Travel Speed, mph

Percent of Peds Killed

All Peds
Elderly

<20 21-25 26-30 31-35 36-45 46+

0 10 20 30 40 50 60 70
Traffic Calming Design Issues

Gateway

Project Area

Gateway

Transition

Gateway

Transition

Speed Limit 45

Uniform

Speed Limit 25

Speed

Speed Limit 45

Livable Communities & Sensitive Design
## Traffic Calming Toolbox

- Speed Humps
- Raised Intersections
- Raised/Textured Crosswalks
- Median Barriers
- Neckdowns
- Chicanes
- Closures
- Semi & Diagonal Diversers
- Corner Radii

- Parking
- Roundabouts
- Traffic Circles
- Edge Treatment
- Streetscaping
- Transition Zones
- Land Treatments
- Enforcement
Neckdowns
Neckdowns
Chicane
Traffic Calming Techniques

Diagonal Diverter

Semi-Diverter
Speed Hump

Livable Communities & Sensitive Design
Raised Crosswalk

Livable Communities & Sensitive Design
Raised Crosswalk
(Driver’s Eye View)
Raised Intersection
Median Treatment & Traffic Island

Livable Communities & Sensitive Design
Roundabout
Roundabout/Traffic Circle
Textured Treatments

Amesbury, MA (VHB Design)

Miami Lakes, Florida
Enhanced Crosswalk Treatment
Lighting
What is Basis for Successful Project

• Understanding the issue to address
• Consensus on need to and means to address address
• Creating a sensitive design
• Public outreach program (No surprises)
• Supporting authority - Regulations
• Measuring and monitoring
Conclusions

*From the design perspective*

- Clearly identify problem before defining countermeasure
- Plan for public involvement
- Learn from the implementation
Resources:

- *Traffic Calming, State of the Practice*, ITE, U.S. DOT, FHWA
- *Traffic Calming in Practice*, County Surveyors Society, etc.
- *Traditional Neighborhood Development – Street Design Guidelines*, ITE
- *Take Back Your Streets*, CLF
- *Speed Hump Design Guidelines*, ITE
- *Traffic Calming: Devices, Applications & Program Management*, SWRPA
<table>
<thead>
<tr>
<th>Resources for Roundabouts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <em>Roundabouts: An Informational Guide</em>, U.S. DOT, DOT, FHWA</td>
</tr>
<tr>
<td>• <em>Roundabout Design Guidelines</em>, Ourston &amp; Doctors</td>
</tr>
<tr>
<td>• <em>Florida Roundabout Guide</em></td>
</tr>
<tr>
<td>• <em>Roundabout Design Guidelines</em>, State of Maryland Maryland</td>
</tr>
<tr>
<td>• <em>Roundabouts, Guide to Engineering Practice</em>, AUSTROADS</td>
</tr>
</tbody>
</table>