TRAFFIC CALMING (Part 1)
Best Practices

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BEST PRACTICES

- Identify the devices for the toolbox
- Develop a manual
- Consider a tiered approach
- Establish a clear consensus process
- Consult all stakeholders
- Identify funding mechanism
- Secure commitment for maintenance
- Be aware of tort liability consequences
- Develop a good technical library
ESTABLISH OBJECTIVES

Establish a clearly defined process to:

- Reduce traffic speeds
- Reduce cut through traffic
- Increase safety for all road users
- Reduce traffic related noise
- Enhance aesthetics of the streets
- Consider needs of all stakeholders
- Improve how residents feel about their streets
- Redefine the image of the whole neighborhood!

POLICY CONSIDERATIONS

- What will be the planning approach?
- Will program be compatible with adopted plans?
- Agency staff or contract consultant?
- Which priorities govern – residents/other interests?
- How will the program be funded?
- How will primary impacts be addressed?
- Will emergency response times be affected?
- What will be the measures of effectiveness?
- Who will maintain landscaping enhancements?
- Will City Council/County Board be required?
DEVELOP A TOOL BOX

CITIZENS WILL NEED TO KNOW TOOLBOX OPTIONS

Example:

- Original Curb area
- Added Curb area
DEVELOP NTMP MANUAL

TABLE OF CONTENTS FOR MANUAL

- Toolbox
- The NTMP Process
- Qualifying Criteria
- Affected Area Boundaries
- Community Outreach
Tools to address SPEEDING

**Focused information**

**Speed Humps**
- Volume reduction
- Speed Reduction
- Change in % Trucks
- Environmental Changes
- Safety – Peds, Vehicles, Bikes
- Emergency Service Access
- Dependence on Enforcement
- Level of Violation
- Streets to use on – Collector, Local
- Impacts on Arterials
- Use on Bus Route
- Use with Curbs and Gutters
- Cost
- Maintenance Cost
- Aesthetics and Landscaping
- Spot or Area wide use

Schematic

- Temporary Version
- Permanent Version

**Consider a Tiered Approach**
DEVELOP MULTI-LEVEL OPTIONS

- Level 1 - No traffic flow changes
- Level 2 - Some traffic flow changes
- Level 3 - Significant traffic flow changes
- Level 4 - Street closures

Level 1 Options
Enforcement

Advisory signing
Vandalized in one month!

Striping to narrow travel lanes
Level 2 Options

Raised crosswalks - need tactile warnings
Web Site: www.rediweld.co.uk

Speed cushions

Level 3 Options
Curb Bulges

Choker
New roundabout installed as a mitigation measures

Level 4 Options
Street closure in the Netherlands

Diverter in Berkeley
ESTABLISH A CLEARLY DEFINED PROCESS FOR INVOLVING THE PUBLIC

OVERVIEW OF THE PROCESS

1. **Citizen Complaint**
   - Record, Send Brochure, and Citizen Action Request
   - Citizen Action Request Form Received
   - Review Request & Determine Response
   - Define Problem, Build Alliances, Collect Data

2. **Solutions - Meeting with Residents**
   - Discuss Problem, Collect Field Data
   - Implement Step2 Action Plan & Prepare Report
   - Install Demonstration Devices

   - Public Information
   - Alliance Toolbox
   - Handbook Solutions
OVERVIEW OF THE PROCESS

INITIAL STEPS IN NTMP PROCESS

- Resident contacts Agency about traffic concerns
- Resident is briefed about NTMP process
- Resident provided brochure and NTMP Action Request Form
- Agency schedules a neighborhood meeting, defines affected area boundaries
Informational brochure

Neighborhood action request form
**AFFECTED AREA DEFINITION**

- Natural boundaries - freeways, arterials railroad tracks, rivers etc.

- Supporters want smaller - Opponents want larger

- Include all streets impacted by changes

- Develop using an independent committee
STREET QUALIFYING GUIDELINES

- Local residential type street
- Volumes: 500 – 3,000 per day
- No emergency response/transit agencies objections
- No liability exposure/compliant with State law
- No diversion to other residential streets

INITIAL PUBLIC MEETING

- Staff members should be ready to listen to residents concerns and not be the experts
- Issues need to be clearly identified
- Applicable toolbox measures described
- Budget/funding constraints discussed early on
PURPOSE OF NEIGHBORHOOD MEETING

- Identify concerns and issues
- Schedule a walkabout/site visit
- Form neighborhood action committee
- Identify data to be collected

Public workshops
NEXT STEPS IN NTMP PROCESS

- Agency completes data collection
- Agency identifies potential measures
- Neighborhood forum is convened to arrive at consensus for trial implementation
- Trial installations are constructed

NEIGHBORHOOD FORUMS

- Use charrette approach
- Breakup residents into groups
- Provide maps and symbols for available toolbox devices
- Identify cost of each device and total budget

(Experience shows groups develop similar plans and take ownership for addressing the issues)
PETITION REQUIREMENTS  
(Levels 2/3/4)

- Project coordinator determines affected area boundary to be petitioned
- Neighborhood circulates petitions
- At least 90% of the community must be contacted (Santa Ana Lawsuit by ACLU – cannot exclude renters)
- Must be supported by at least 67% of the community

FINAL STEPS IN NTMP PROCESS

- Agency completes “After” study
- Results used to determine if trial installations to remain or be changed
- Agency will convene neighborhood forum to discuss and finalized next actions
- Permanent installations are constructed and evaluated after six months
IDENTIFY MEASURES OF EFFECTIVENESS
MEASURES OF EFFECTIVENESS

- Reduce the 85th percentile
- Flattening the speed profile
- Reduced the ADT or peak hour volumes
- Reduce collisions
- Increase use of streets by non-motorized users

Speed Hump Impacts on Speed
Source: Urban Transportation Monitor

Portland found that speed bumps were effective in slowing traf-
Speed Hump Impacts on Crashes
Source: Urban Transportation Monitor

The City of Portland conducted research to evaluate the effectiveness of speed bumps.

GOOD DESIGN PRACTICES
CRITICAL ASPECTS

- Area wide approach – avoid single devices
- Use combination or system of devices
- Horizontal deflection has less negative impacts
- Use well established design guidelines
- Spacing: 400-600 feet
- Landscaping enhancements are essential
- Maintaining drainage flow lines
Australian Impeller uses horizontal deflection

Speed humps about 500 feet apart
Combination or system of devices

Roundabouts and slow points
Median Island should provide for 15’ lane on either side for fire trucks

Slow point design
LANDSCAPING ENHANCEMENTS

- Alter street character – more residential feeling
- Create a visual impact – less of a “speedway”
- Change driver behavior approaching the device
- Soften the streetscape
- Beautify the neighborhood
Landscaping enhancement

Landscaping enhancement
Landscaping enhancement in Florida

WHO ARE THE OTHER STAKEHOLDERS?
Other Stakeholders

- Emergency Response Vehicle
- Transit Vehicles/School Buses
- Trash Trucks/Delivery Trucks
- Street Sweepers
- Non-motorized Users
- Adjacent Public Agencies

Emergency Response

- Response times impacted
- Greatest impact with speed humps (Up to 9” per hump)
- Speed cushions designed to minimize impact to emergency response vehicles
Fire fighters need to test proposed changes

Emergency Response Delay

<table>
<thead>
<tr>
<th>Device</th>
<th>Boulder, CO</th>
<th>Portland, OR</th>
<th>Austin, TX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Circle</td>
<td>7.5 to 10 seconds</td>
<td>1.3 to 10.7 seconds</td>
<td>N/A</td>
</tr>
<tr>
<td>Speed Hump</td>
<td>2.8 to 4.7 seconds</td>
<td>0 to 9.4 seconds</td>
<td>1.8 to 9.8 seconds</td>
</tr>
</tbody>
</table>

Source: Traffic Calming Primer
Transit Vehicles

- Travel times impacted
- Potential for injury to transit passengers
- Potential for damage to vehicles
- Speed humps should be avoided
- Speed cushions minimize impacts
Trash and Delivery Trucks

- Travel times impacted
- Potential for damage to vehicles
- Potential for damage to goods
- Speed humps should be avoided
- Speed cushion minimize impacts
Trash trucks need to be able to get through

Disabled Community

- Serious challenges raised against speed humps
- Speed humps cause problems for people with spinal injuries
- British have studied discomfort issues
- DFT web site URL where references can be found: http://www.dft.gov.uk
Adjacent Public Agencies

- May raise objections if their streets impacted
- Streets may cross into agencies that do not have traffic calming programs
- Adjacent agencies feel threatened unless consulted early in process

Pedestrians and Bicyclists

- Early installations ignored other road users
- Installations should allow for pedestrian and bicycle circulation
- Greatest potential impact with road closures or diverters
Dunning street with two existing connections to Mall parking lot

Residents required full closure of both as a part of EIR process for Mall expansion and a cul-de-sac

Residential street with no connections to Mall parking lot
Closure with no pedestrian/ bicycle access

Diverter with pedestrian and bicycle access
Parallel residential street impacted by diverted traffic!
Funding

- Agency pays all costs (Residents lobby for this)
- Agency pays for trial installations/residents pay for final installations
- Trial and final installation costs shared between residents and agency
- Residents pay all trial and final installation costs

Source: Traffic Calming Primer – available at www.patnoyes.com
TORT LIABILITY
CONSEQUENCES

LEGAL LIABILITY

- Agencies are not sued for installing traffic calming measures
- Suits related to lack of adequate maintenance have occurred
- Important to maintain warning signs and markings in good condition
Warning signs must be clearly visible

(This sign is from Australia)
SPEED HUMP CASE

- Speed humps installed on road leading to park off state highway
- Visitor to city loses way and turns onto road at night in foggy conditions
- Signs and markings are faded or obscured
- Driver crosses humps at speed in excess of 30 mph

SPEED HUMP CASE

- Vehicle is a imported camper minivan type vehicle with a bouncy suspension system
- Driver’s head hit the roof of the vehicle
- Spinal injuries leave driver a quadriplegic
- City settles out of court for unknown sum
DEVELOP A COMPREHENSIVE TECHNICAL LIBRARY

References from list
Canadian Guide to
Neighbourhood Traffic Calming

Transportation Association of Canada
Association des transports du Canada
December 1996

www.ite.org

Traffic Calming Primer
Pat Neyes & Associates

Available at patnoyes.com
Nashville has a comprehensive program on its web site:
www.nashville.go\n\nv/pw/mntmp/

Salt Lake City Program

WORKSHOP PROBLEM
TRAFFIC CALMING PART II
(Lessons learned)

- What are the pitfalls?
- What are the implementation issues?
- Pros and cons of trial installations
- Why do backlashes happen?
- Traffic Calming in new subdivisions
- Case Study – established neighborhood
- Case Study – infill development
- Recent survey results from 21 agencies
QUESTIONS?