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Why Traffic Calming?

- The faster you go, the higher the probability of an accident, as:
  - Your vision focus narrows with speed
  - For a given reaction time, distance covered is proportional to speed
  - The faster you go, the longer the stopping distance
Why Traffic Calming?

- The faster you go, the higher the seriousness of an accident
  - For instance, the kinetic energy of an automobile (1.2 tons at 35 mph) is at least 150 times higher than the one of a pedestrian (180 pounds at 3 mph)
  - Such a collision at:
    - 20 mph, means bone fractures and concussions
    - In the range 30-40 mph, high probability of either death or permanent disability
Why Traffic Calming?

- To avoid segregation of public spaces and maintain its livability
- Underpasses, skywalks and other “solutions”, do not provide “eyes on the street”
Why Traffic Calming?

- When traffic is tamed, a good walking environment results
- Walkers enjoy a wide range of sensory experiences
- When most people drive, the buildings end up lacking the detail and relief that people need and enjoy
- People attract more people
Traffic Calming: How?

Do you think this is sufficient in spite of its strict precision in Km/hour?
Traffic Calming: How?

- When you drive at 30 mph, you tend to focus your sight far ahead.

- This means that you narrow the sight area.

- You fail to see the surroundings.
But if you drive at 20 mph, you start to see what lies on the sides
Traffic Calming: How?

- The basic idea is to change the perceptions of the driver through the introduction of new physical features.
- These **self-enforcing** features tend to break the infinite continuity that encourages speed with or without speed warnings.
Traffic Calming: How?

- Raised crosswalks
- Narrower pavement widths
- Chicanes with urban furniture or parking
- Changes in the pavement texture
- Mini-roundabouts
- Cul-de-sacs
- Eliminating some movements
- *Civilized* green waves
Traffic Calming: How?

Raised crosswalks

- Double function: good for pedestrians... and cars
- You accommodate to gradient:
  - 7% for 40-45 km/hr
  - 10% for 30 km/hr
  - 12% for 25 km/hr or less
- Every 60-100 meters plus proper warning
- The top table needs a minimum width, specially for buses
- Automatic balancing of the car-pedestrian relationship
Traffic Calming: How?

Raised crosswalks
Traffic Calming: How?
Raised intersections

The automobile finds itself in neutral grounds…
Traffic Calming: How?

Bulb-outs

- **Pros:**
  - Decrease exposure
  - Higher visibility specially for children
  - Easy implementation

Figure by MIT OCW.
Traffic Calming: How?
Narrower pavement widths
Traffic Calming: How?

Narrower pavement widths

MIT
Massachusetts Institute of Technology
Traffic Calming: How?
Narrower pavement widths

Nothing like a bucket of paint
Traffic Calming: How?
Narrowing the pavement

You could rearrange parking
Traffic Calming: How?
Eliminating road lanes
Traffic Calming: How?

Eliminating road lanes

From cages to family outings
Traffic Calming: How?

Mini-roundabouts

They work!
...even for high flows
Traffic Calming: How?
Or all of the above
Traffic Calming: How?

Eliminating some movements (i.e. in a roundabout)
Traffic Calming: How?

Civilized Green Waves

They need low cycles to avoid late-comers driving fast (at night)
They need low cycles to avoid late-comers driving fast (at night)
Traffic Calming: How?

Civilized Green Waves

Plus often changes in horizontal alignment, refuge islands, narrowing the road width...
Traffic Calming: How?

Civilized Pedestrian signals

- Longer phase times for pedestrians
- Lower total cycles
- Green waves for pedestrian movement
Traffic Calming: How?
Narrowing the pavement

Beyond traffic calming to improve public spaces:
- New urban furniture, including trees
Traffic Calming: How?

- Not an end by itself, just the means to an end

- It must be accompanied by other measures to improve the urban environment so as to encourage more pedestrians

- Although the real goal is to bring pedestrians to a stop
Other important issues:

- Location
- Self-enforcement
- Liability
- Reversibility
- Public participation
- Overall traffic scheme
- Traffic deviated to other areas
Sensitive areas:

- Schools
- Transit stations
- Senior citizens
- Areas with high accident rates
- High speeds eg. transition areas from the expressway into the urban network
Some Bibliography

- “Guide Les ralentisseurs de type dos d’ane et trapezoidal” CERTU, 1994

- “Guide Zone 30” CETUR, 1992
- “Pedestrian and City Traffic” Carmen Hass-Klau, 1990
- “City Routes, City Rights” Conserv Law Found, 1998
- “Reduire la Vitesse en Agglomeration” CETUR 1989
- “Voirie Urbaine” CETUR 1988

... plus publications by Jan Gehl, Jane Jacobs, Kevin Lynch, George Whyte, etc..
Traffic Calming: The Process
Look for an easy winner...

- Nothing like a school
Once they try... "Bulb-outs"... everywhere
Today a pedestrianized plaza
…they will ask for more

- There is not enough money to accommodate all the requests
- The best result is the change in behavioral patterns
Always go easy at the beginning...
Always go easy at the beginning...
In a nutshell, ten rules

1. Every change is hard to implement
2. Start by the easiest job
3. You need allies
4. You have to minimize risks
5. Technical competence a must
6. Not isolated measures, but packages
7. Short term results, a must
8. But don’t forget to plant a few seeds
9. Everyone sees things differently
10. Success is hard to measure

But if you want, you can!