Twinning Exercise

Discussion on road safety best practices

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European Transport Safety Council

Focus Area 1

Evaluation and assessment of results

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Methodology and best practices in road safety cost benefit analysis

Calculate value of preventing road deaths

- a standard methodology assessing the costs and benefits of road safety measures is not yet in place
- estimate the level of resource currently allocated to road safety across all sectors of Government
- EU 28 value of €1.94 million for the prevention of a road fatality
- investment in prevention is not commensurate with the high socioeconomic value of its prevention either at EU or national levels
- Starting point – Risk Assessment and Road Safety Strategy Goals

Cost-Benefit Analysis

- Useful when:
  - there are multiple policy objectives (e.g. safety, environment and mobility)
  - some objectives are in conflict (which is well-known in the case of safety or environment versus mobility)
  - the objectives refer to goods that do not have market prices (which actually is the case for aspects of safety, environment and mobility)
  - CBA is necessary if different levels of injury severity are to be considered.

However…estimations can prove difficult to make

Performing a Cost-Benefit Analysis

- Policy Objectives must be clear enough to make it possible to value their attainment in monetary terms.
- Trade-offs between multiple policy objectives are legitimate
- A policy programme will be judged acceptable to a cost-benefit analysis only if benefits are greater than costs

Risk Assessment and cost-benefit analysis

- Set objective of reducing inequalities in risk
- Set objective to prioritise measures that provide the largest reductions of the number of road accident deaths
- Give high priority to measures benefiting pedestrians and cyclists

Good practice examples

- Swedish National Road Administration - CBA used for decision making in transport planning
- Calculations based on official statistics and state road data base.
- Traffic safety is one of the valued components of the EVA tool:
  - vehicle and transport costs
  - environmental costs of emissions
  - maintenance and investment costs
  - comfort costs
  - accident costs
  - road deaths and injuries, property damages are monetized.

Methodology and best practices in evaluation of road safety effects and impact: efficiency of road safety measures

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What should be evaluated?

- Interventions and strategies should be subject to impact assessment and periodic independent review

- Monitoring the outcomes of road safety policies – based on performance indicators (e.g. target for reducing road deaths)

Examples of Key Performance Indicators

Risk exposure indicators
Vehicle/ person kilometres of travel
Number of registered vehicles
Number of licensed drivers
Gross Domestic Product levels
Population levels and age-group distribution
Final outcome indicators
Number of deaths
Numbers of deaths per 100,000 population
Number of deaths per 100,000 vehicle/person kilometres of travel
Number of serious injuries (≥ MAIS 3)
Number of serious injuries per 100,000 population
Number of serious injuries per 100,000 vehicle/person kilometres of travel

Examples of Key Performance Indicators

Intermediate outcome indicators
% of motor vehicles travelling within the speed limit by road type
Average speeds of motorised vehicles by road type
% of drivers and riders over the limit at roadside checks
% of fatally injured drivers and riders with excess alcohol
% of seat belt and child restraint use in front and rear seats by motor vehicle occupants
% of rural roads with Euro RAP 4* (TEN-T and secondary network)
% of the vehicle fleet with the highest Euro NCAP rating
% of passenger cars fitted with seat belt reminders in front and rear seats
% of motor vehicles using daytime running lights
% of motorcycles fitted with anti-lock braking systems
% of crash helmet use by motorcyclists and moped users
% of crash helmet use by school-aged pedal cyclists
% of correct fitment of crash helmets by motorcyclists and moped users

Examples of Key Performance Indicators

Institutional output indicators
Hours of Police enforcement targeting high risk behaviours
% of roadside alcohol breath tests per 1000 inhabitants
% of numbers of speeding tickets per 1000 inhabitants
% of numbers of seat belt checks per 1000 inhabitants

Good practice examples

Evaluation and assessment of results in the EU

- **The Slovenian Traffic Safety Agency has been created** in order to implement **"vision zero"**. (regulatory and technical tasks, research and prevention). The local level is in charge of measuring and analysing the key risk factors and the causes of accidents.

- Dedicated governement bodies in **Estonia** and **Ireland** - The Road Safety Authority – were created to implement and evaluate the road safety strategy

- **Spain** - Road Safety Observatory (under the auspices of the Ministry of Interior)

Focus Area 2

Speed Management

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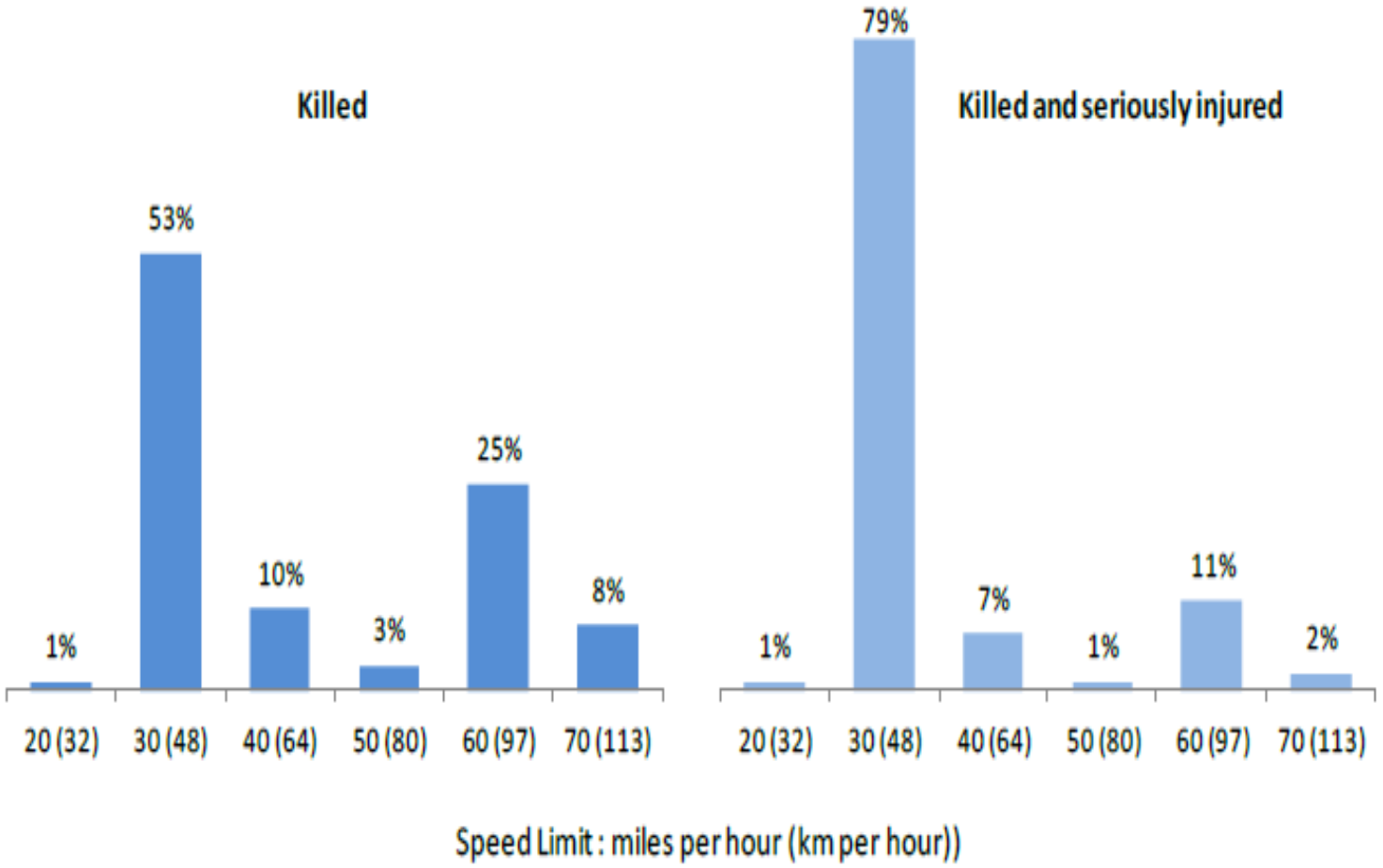
What is a safe travelling speed?

Road types combined with allowed road users	Safe speed (km/h)
Roads with possible conflicts between cars and unprotected road users	30
Intersections with possible transverse conflicts between cars	50
Roads with possible frontal conflicts between cars	70
Roads with no possible frontal or transverse conflicts between road users	≥100

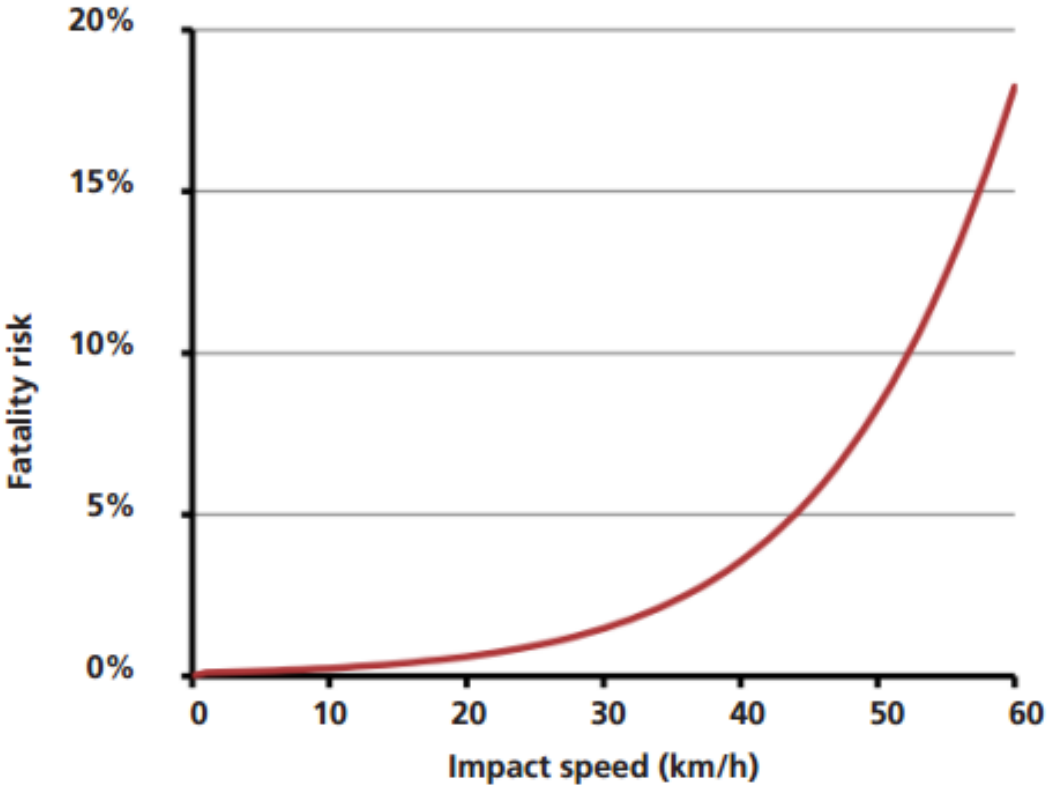
Safe travelling speeds according to possible conflicts between road users travelling on the roads. Source: SWOV, Advancing Sustainable Safety p.14

Speed Management as Hidden Infrastructure



Percentage of cyclists killed, or killed and seriously injured, at different speed limits in the UK for the year range 2005-2007 (data from Knowles et al., 2009) in OECD 2012.

Safety potential of 30km/h zones



Pedestrian fatality risk as a function of impact speed for adult pedestrian in a frontal collision with a passenger car

Reducing speeding

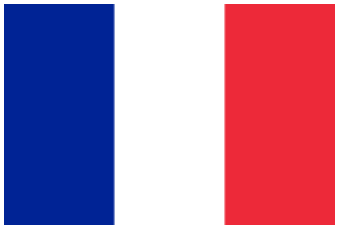
- No silver bullet for managing speed.
- Police Enforcement
- Fixed and Mobile Safety Cameras
- Priority for High risk sites
- Self-explaining roads
- Intelligent Speed Assistance – now part of Safety ratings at EuroNCAP

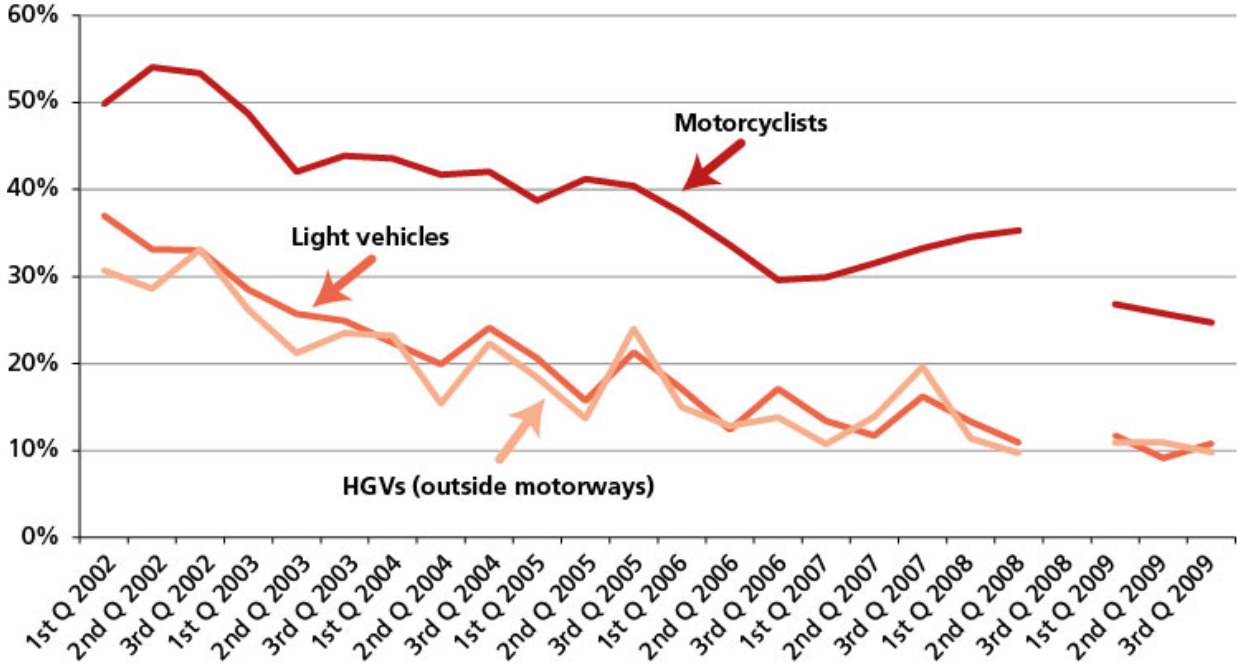
Enforcement

- Rapid reduction in deaths and serious injuries.
- Contribution to EU 2020 Target.
- Long lasting effect on driver behaviour.
- Cost effective: applying best practice in enforcement to the whole of the EU exceeds the costs by a factor of 4 to 10.

Speed enforcement: best practices

Automated methods saves lives





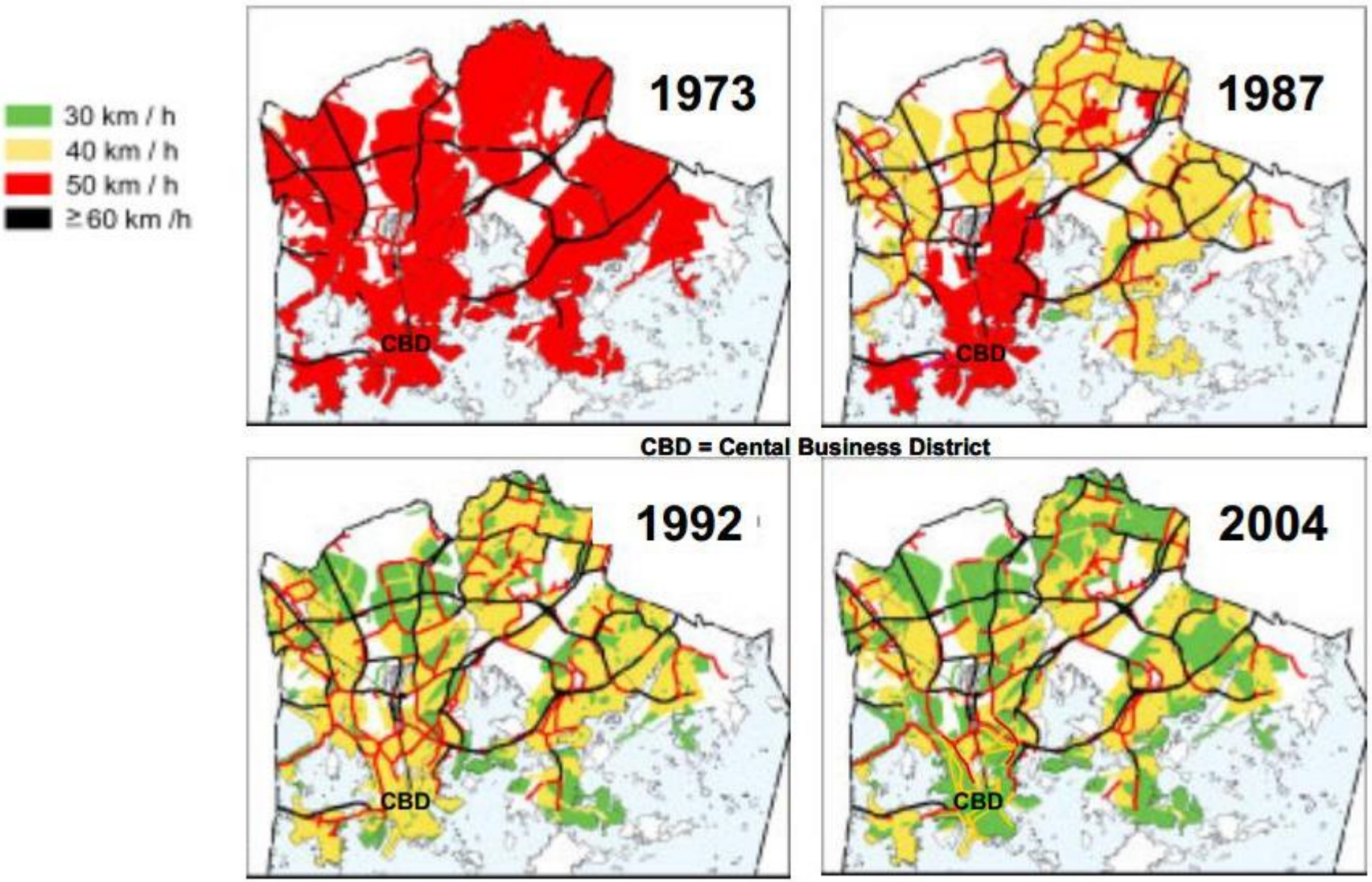
- **75%** of the massive drop in deaths can be attributed to improve speed management between 2002-2005.
- Vehicles travelling at 10 km/h and more above the legal limit decreased from **35% to 10%.**

% of vehicles travelling at 10km/h above the legal limit in France

Why 30k(20m/h) limits?

- Speeding is a primary factor in about one third of fatal accidents and an aggravating factor in all accidents where it occurs (OECD, 2006).
- Increase safety of vulnerable road users,
- Effective instrument in mitigating CO2 emissions,
- Reduce dust pollution,
- Reduce noise pollution,
- Encourage alternative means of transport.

Helsinki


30 km / h
40 km / h
50 km / h
≥ 60 km /h
1973
CBD
1987
CBD
CBD = Cental Business District
1992
CBD
2004
CBD

Reggio Emilia, Italy

2005 to 2013 road collisions down by about 40%

Main infrastructural changes:

- Implementation of mini roundabouts
- New pedestrian crossings
- Larger pedestrian paths
- New pedestrian paths

Donastia - San Sebastian, Spain

Focus Area 3

Safe Infrastructure for Vulnerable road users

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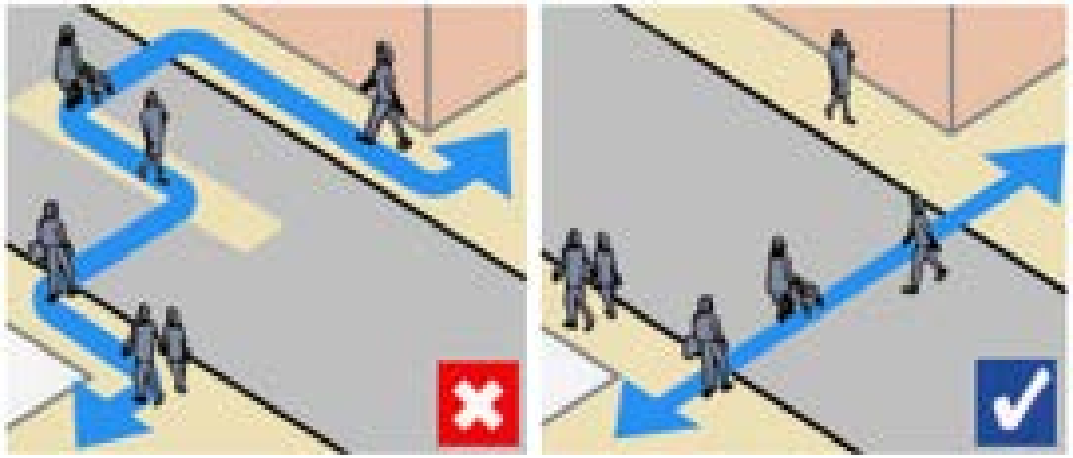
Infrastructure safety and urban design

Pedestrian crossings

- Comfortable
- Frequent and safe
- Clear Signage
- Accompanied by traffic calming
- At high risk sites

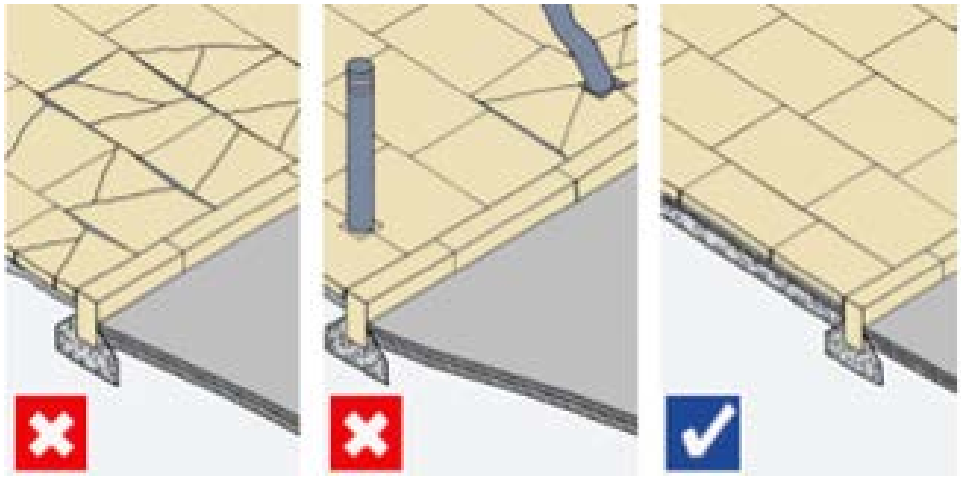


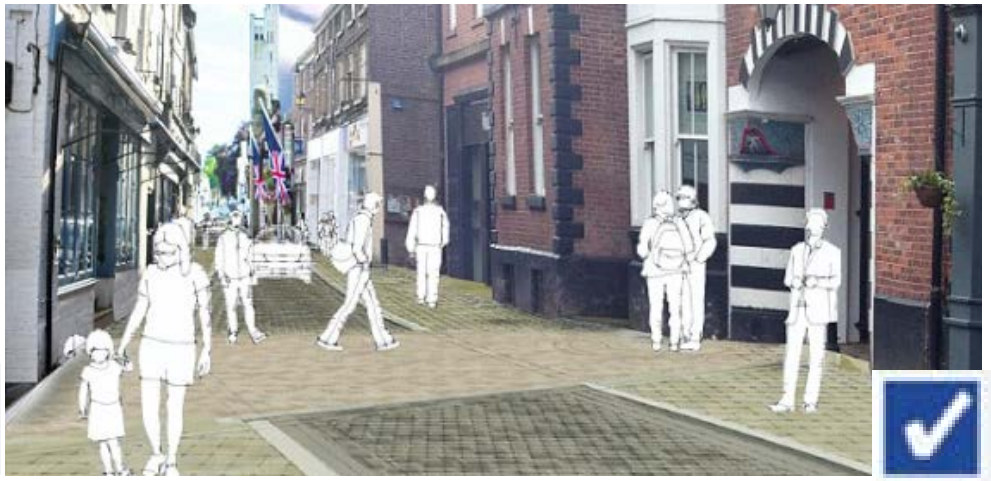
Courtesy crossing

Pedestrian refuges

Pavements

- Safe, robust and wide pavements





Bicycle lanes/tracks

- Physical separation

-High speeds-intensity and a lot of heavy traffic

-Design: separation using a verge, barrier and/or height difference

-Road: Alongside main roads, separate bus lanes.

Stockholm, Sweden

Munich, Germany

- Visual separation

-Speed between 30 and 50 km/h in built up area and 60km/h in rural area

-Design: separation by dashed or solid line, lane preferably red, must have bicycle symbol

-Road: access roads to residential areas

Bicycle lanes/tracks

- Mixed profile

-Low speed-intensity. Suitable for 30km/h zones. Outside urban area maximum 60km/h

-Roads: residential area

Oudorp, The Netherlands

Berlin, Germany

- Use of colour

-To denote cycle lanes/tracks and cycle routes across junctions

-Indications that cyclists are to be expected

Intersections

- Advanced stop lanes

-Full width box in front of all traffic lanes at signalised junctions

-Simple forward extension of nearside cycle lane/track ahead of the vehicle stop line

-Place cyclists more visibility in the line-of-sight of drivers

-Early start signals

Stockholm, Sweden

Berlin, Germany

Cycle friendly roundabouts

- With cycle markings

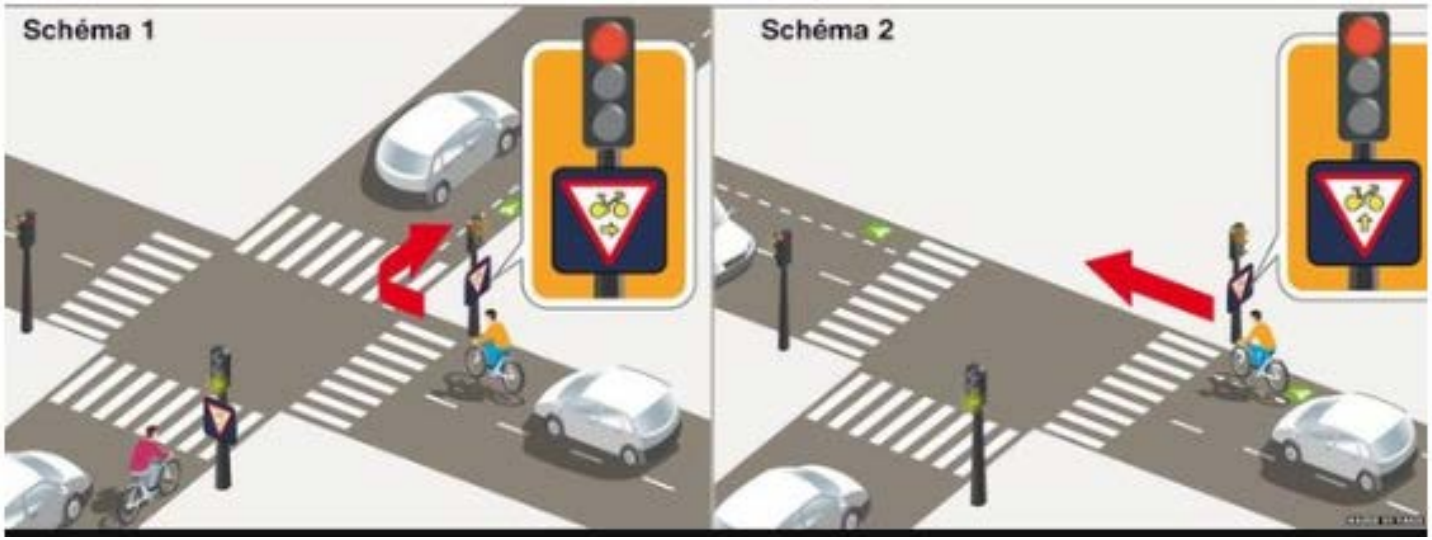
Nantes, France

Amsterdam, The Netherlands

External bicycle tracks with priority over junction entries and exits

Cycle exemptions

- Cyclists can take advantage of this rule: traffic permitted to turn right on red, but give way to traffic on the main road.
- Permitting to go through red signals, but give priority to pedestrians



Useful References

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'Sustainable mobility for everyone' - 16 & 17 June 2015, Politehnica University of Bucharest, Romania

Presentations: http://www.eltis.org/participate/events/2nd-european-conference-sustainable-urban-mobility-plans-sumps

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