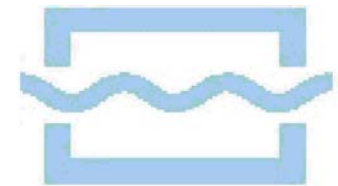




THE PROMISING CONTRIBUTION OF SUSTAINABLY-SAFE 60 KM/H-ZONES TO RURAL ROAD SAFETY IN THE NETHERLANDS

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Improvement Safety Minor Rural Roads

We aim to show what a structural area oriented approach to this road network can mean for a cost-effective improvement of traffic safety.

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1. introduction

The Dutch Sustainable Road Safety Programme aims to reduce the number of casualties by 40% in 2020, compared with 2002.

This programme is concerned with all roads. We focus on the *minor rural roads* (47,500 km).

This is important because:

- 30% of all traffic fatalities (225)
- almost 2000 injured (hospitalized)

occur on Dutch minor rural roads.

Minor rural road

MRRs consist of one narrow carriageway for two-way traffic and a mix of vehicles, including vulnerable traffic participants



Minor rural road

Speed measurements show a frequent violation of the speed limit (80 km/h)



Minor rural road: mixed traffic



The casualty risk per million motor vehicle kilometres on MRRs is high: 0.64
(motorways: 0.07 and arterial highways: 0.31)



2. Safety measures

On MRRs a mix of vehicles is largely inevitable!

Safety: pursuing low driving speeds on MRRs, therefore:

1. all minor rural roads in connected areas are designated as so-called 60 km/h-zones, with zone-boards along all entrances
2. additional measures within a so-called simple design

Entrance to a 60 km/h-zone



Additional: speed hump & edge marking



non compulsory suggested cycle lanes

Additional: raised level at intersection



The division of the carriageway is adjusted

Additional: edge markings only



3. Research method

- 20 sub-areas in total and a road length of 850 km; road stretches and intersections are differentiated.
- The pre-change period covers 5 years in all 20 sub-areas; the post-change period is on average almost 3½ years.
- In a control study, about 2100 km of road were covered; a pre-change period of 8 years and a post-change period of 4 years.

4. Impacts 1 - casualty accidents & casualties

Cross comparison of the measurements taken pre- and post-change in the research area and control area:

- *Casualty accidents*
 - at intersections -31% (*)
 - on stretches of road -4%
- *Number of casualties:* -19%

(*) this effect is achieved or exceeded in 95% of the cases

4. Impacts 2 – nature of accidents

- a decline for the average of all researched accident characteristics
- a significant difference for the individual accident characteristics is shown only for the flank casualties at intersections.

4. Impacts 3 – costs & cost-effectiveness

Costs:

- Average over all 20 areas : €10,106 km⁻¹
- Simple design measures : € 6,430 km⁻¹

Cost-effectiveness (cash value per prevented casualty):

- Average over all 20 areas : €17,600.
- Areas with a simple design only : €11,000.
- Previously expected value : €18,000.

5. Conclusions

The research shows:

- Establishing (simple) 60km/h-zones is a cost-effective traffic safety measure
- Large improvements can be achieved with relatively modest investments in mostly small-scale technical traffic measures.

Traffic safety on the network of minor rural roads, a category of roads with a high risk of accidents, can get a considerable stimulus through the innovative concept of the Sustainable Road Safety Programme.