

2 Minus 1 Roads Means Improved Mobility

- Security and Safety of Pedestrians and Bicyclists on Roads through Small Towns and Villages**

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Background

- Small towns and villages
- Travel by car, both longer and shorter trips
- Bicyclists and pedestrians
- Different demands from different road users
- Narrow road sections, private owned land
- Lack of funding separating vulnerable road users and motor vehicles
- Designs of roads through small towns and villages

The measures

- Traffic planning in non-urban or rural areas for pedestrians and bicyclists
- Sites with low vehicle flows but with motor vehicle speeds higher than desired

Aim this study

- Describe the effect of the new types of design regarding
 - *Safety, mobility and security of pedestrians and bicyclists*
 - *Motor vehicle speeds*

Method

Summer of 2006 and spring and summer of 2007

Vehicle speeds and flow

- Automatic tube data provided by Swedish Road Administration Consulting , data from at least one week

Questionnaires (n=263)

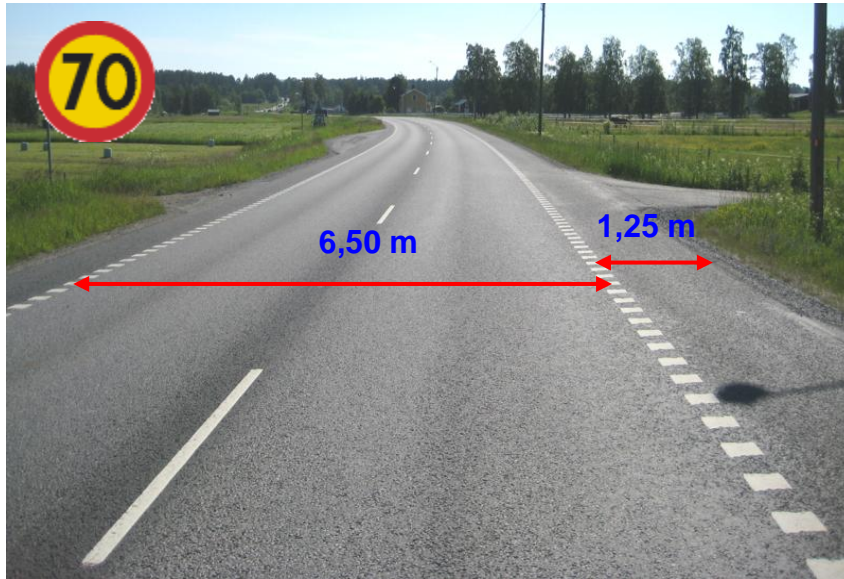
- School-aged children
- Adults
- Village's local interests groups

Method...

Road user behaviours

- Description of pedestrians and bicyclists (n=731)
- Encounters from the pedestrians or bicyclists point of view
- Description of motor vehicle (n=2980)
- Encounters from the motor vehicle driver's point of view

Both-sided markings with intermittent line



Gäddvik

2,5 km, total width 9 m

Flow 10 000 vehicles/day

70 km/h

Both-sided markings with intermittent line



Rognäs

600 m, total width 9 m

Flow 2000 vehicles/day

90 km/h

Both-sided markings with intermittent line



Both-sided markings with intermittent line

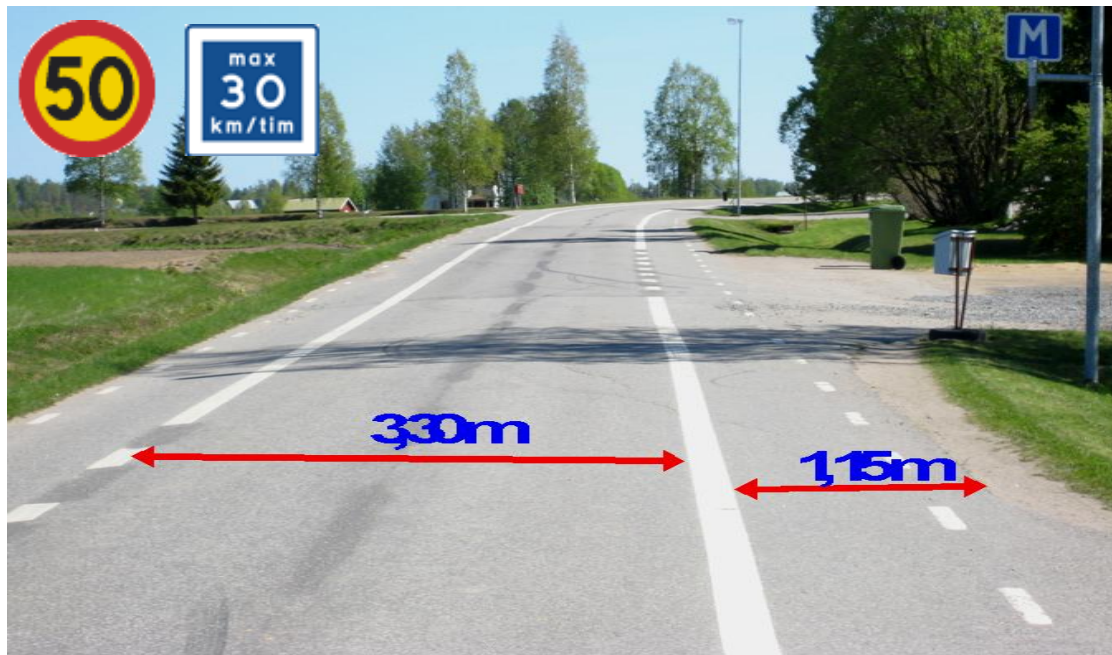
Advantage:

- Needs of pedestrians and bicyclists taken into account
- Pedestrians and bicyclists express improvements
- Continuously safe regarding conflicts and accidents
- Vehicle drivers drive obey the markings

Disadvantage:

- Too high vehicle speeds to be safe for vulnerable road users
- Pedestrians and bicyclists express insecurity
- Continuously high vehicle speeds

Both-sided continuously markings



Roknäs

4,7 km, total width 5,5 m

Flow 700-1200 vehicles/day

50 km/h, recommended 30 km/h

Both-sided continuously markings with 21 areas for passing



Both-sided continuously markings

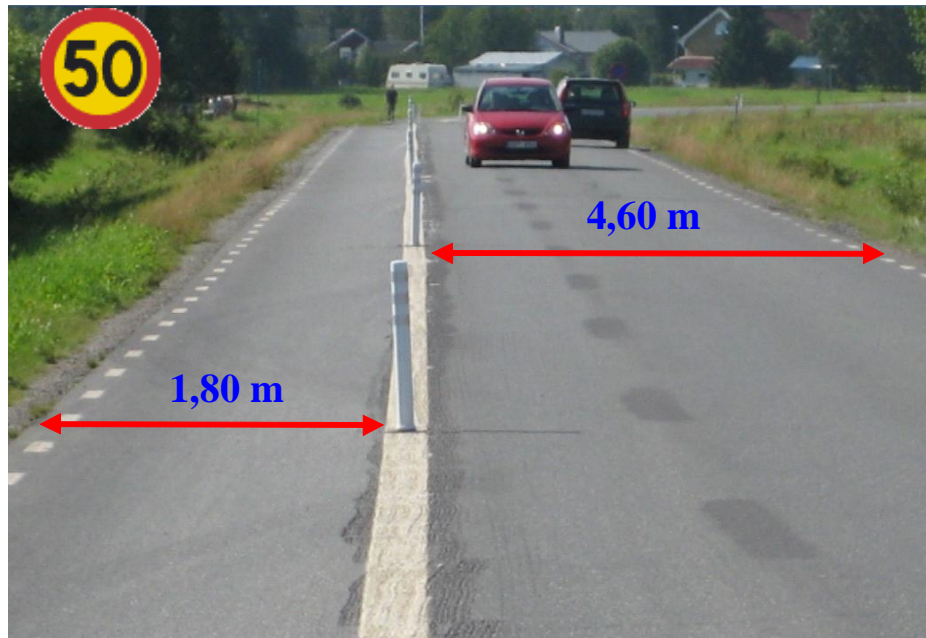
Advantages:

- Needs of pedestrians and bicyclists taken into account
- Lowered vehicle speeds
- Pedestrians and bicyclists express improvements
- Continuously safe regarding conflicts and accidents

Disadvantages:

- Too high vehicle speeds to be safe for vulnerable road users
- Pedestrians and bicyclists express insecurity
- Continuously high vehicle speeds
- Markings not respected by vehicle drivers
- Length of the link

Single-sided continuously markings with posts



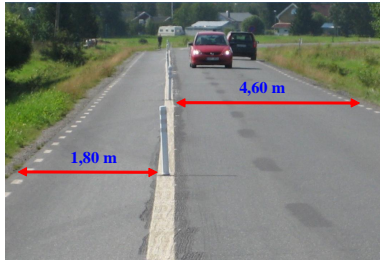
Björnsbyn

1 km, total width 6,5 m

Flow 1200 vehicles/day

Lowered from 70 km/h to 50 km/h

Single-sided markings with posts



Single-sided continuously markings with posts

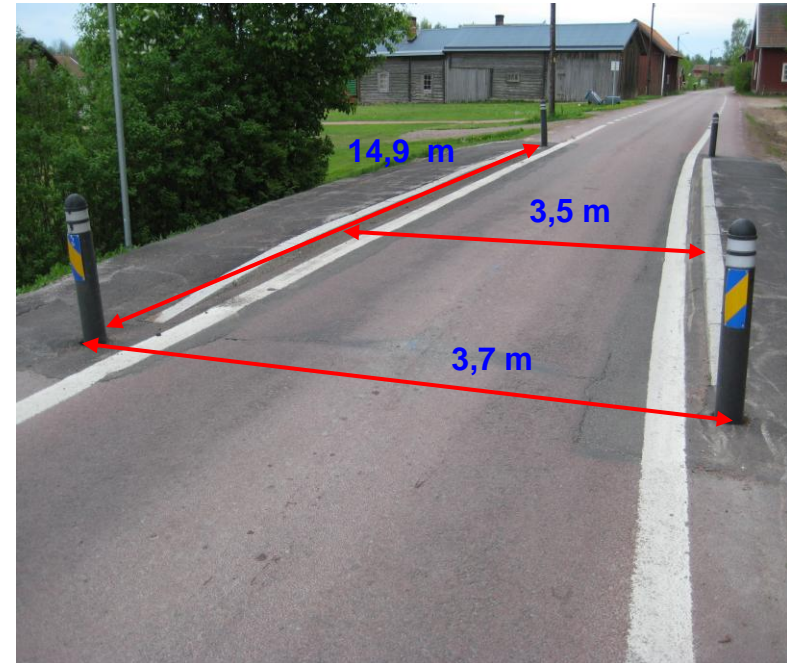
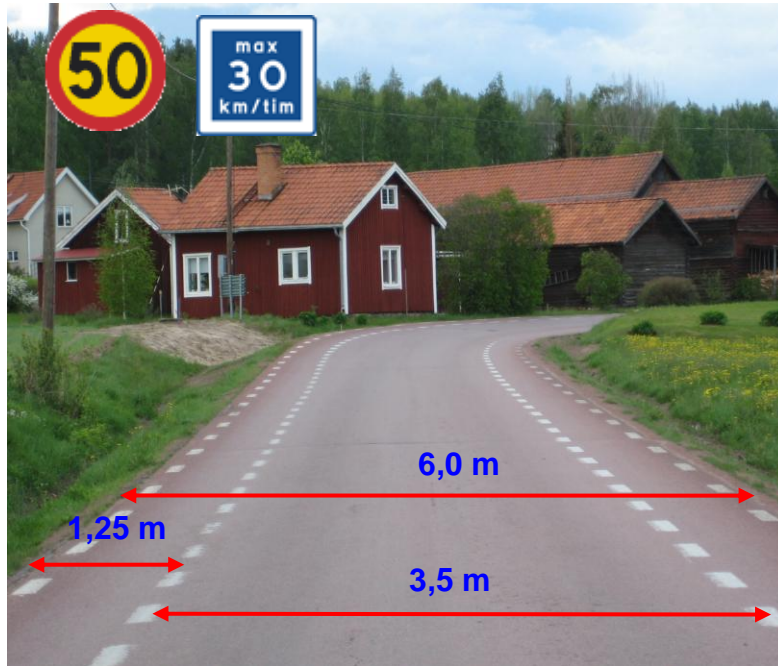
Advantages:

- Needs of pedestrians and bicyclists taken into account
- Lowered vehicle speeds
- Pedestrians and bicyclists express improvements
- The posts separate vehicles from vulnerable road users
- Continuously safe regarding conflicts and accidents

Disadvantages:

- Too high vehicle speeds to be safe for vulnerable road users
- Pedestrians and bicyclists express insecurity
- Continuously high vehicle speeds
- Markings not respected by vehicle drivers

Both-sided markings with intermittent line and hourglass bus stops



4,2 km, total width 6 m

Flow 1950 vehicles/day

50 km/h, recommended 30 km/h

Both-sided markings with intermittent line and hourglass bus stops



Both-sided markings with intermittent line and hourglass bus stops

Advantages:

- Needs of pedestrians and bicyclists taken into account
- Lowered vehicle speeds
- Pedestrians and bicyclists express improvements
- The bus stops
- Continuously safe regarding conflicts and accidents

Disadvantages:

- Too high vehicle speeds to be safe for vulnerable road users
- Children express insecurity
- Continuously high vehicle speeds
- Length of the link

Summary all measures

Advantages:

- Cheap and quick measures
- Needs of pedestrians and bicyclists taken into account
- Lowered vehicle speeds
- Pedestrians and bicyclists express improvements
- Continuously safe regarding conflicts and accidents

Disadvantages:

- Vulnerable road users not separated from the vehicles
- Too high vehicle speeds to be safe for vulnerable road users
- Pedestrians and bicyclists express insecurity
- Continuously high vehicle speeds
- Markings not respected by vehicle drivers