



Samenwerkingsverband
Regio Eindhoven

Grip on speed

A multi-stakeholder approach to road safety

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- » Eindhoven urban region aimed at getting '**Grip on Speed**' as part of their traffic safety policy, with focus on:
 - » Locations where people drive too fast
 - » Locations where there has also been an above-average number of victims in traffic accidents
- » Method has been developed to select locations
 - » 2.800 km main roads → 60 km in 41 locations
- » Method to determine the most suitable package of measures for the short and midrange/long term
 - » Broad support
 - » Integral manner
 - » All parties involved



Situation in The Netherlands

- » In The Netherlands, a situation of 'accident thinning' has arisen
 - » Traffic safety approach based on traffic accidents data has become more and more difficult
 - » Policy: '*vision zero*' is coming up
 - » Responsible citizens demanding security
 - » Medical costs & congestion costs rise due to accidents
- ➔ a search for new, innovative methods
= a search for new data
- » The successful traffic safety policy and modified means of recording accidents have ensured that the approach to traffic safety must now be based on more than traffic accidents alone

- » Eindhoven Urban Region (SRE)
 - » 21 municipalities of varying sizes
 - » 730.000 inhabitants
 - » 2.800 km main roads (excl. highways) and heavily burdened main road structure



Traffic safety approach

- » SRE is characterised by innovative projects
 - » Wishes to improve traffic safety through an approach regarding speed problems
 - » Number of road traffic victims can be reduced by 20-30% if all road users keep to the maximum speed
 - » Safety approach can only be effective if this is set up in an integral manner: three E's
 - » Broad support is also important, in particular where speed checks by the police are concerned
- ➔ grip on speed, based on a multi-stakeholder approach to road safety

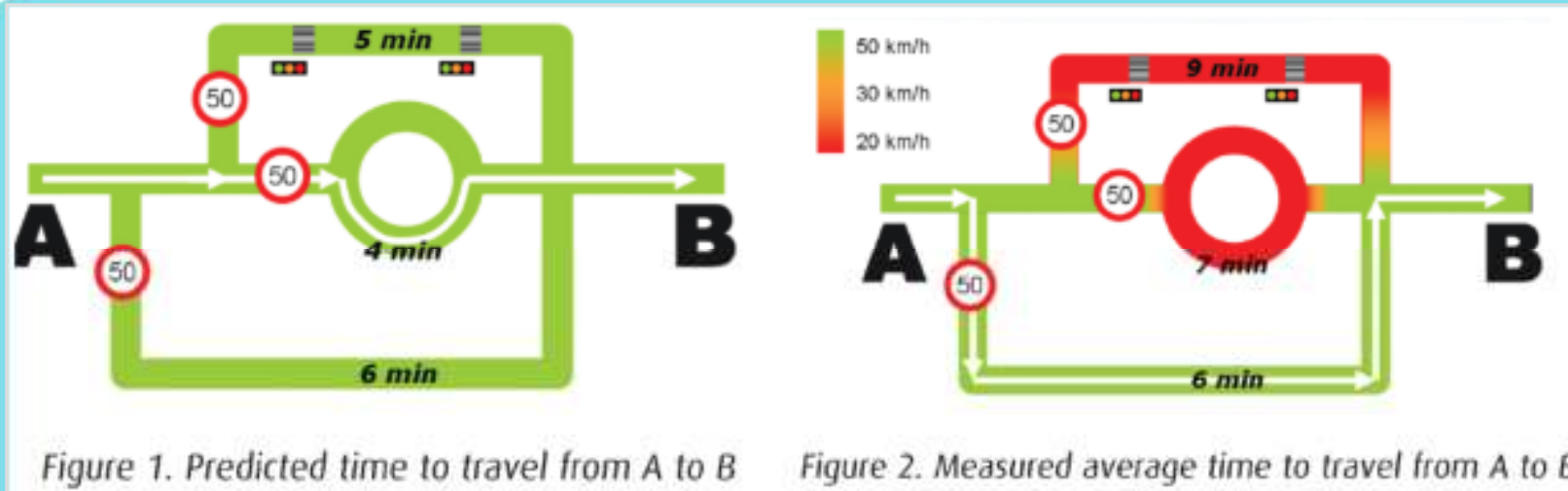
Options available

- » Traffic accidents database
 - » Severity of injuries in traffic accidents
 - » Relations with speed not sure
- » Speed Profiles
 - » Data from TomTom (navigation specialist)
 - » By logging billions of GPS measurements
- » Safe Speeds and Credible Speed Limits (SaCredSpeed)
 - » Developed by SWOV (Dutch national road safety research institute)
 - » Method based on road features
- » ViaStat
 - » A web-based GIS-system that incorporates the national road traffic database & the Speed Profiles
 - » Provides a range of standard methods and reports such as SaCredSpeed

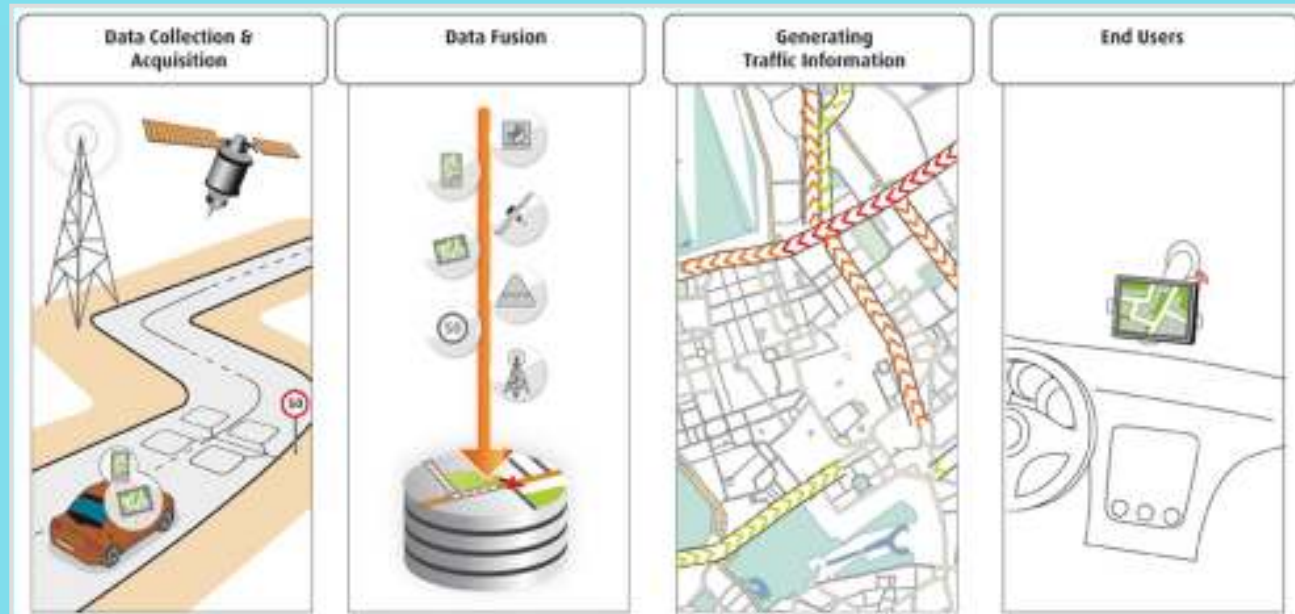
The national road traffic database

- » Detailed database linked to a digital road network
- » Main roads divided in streets and junctions
- » Accident rate in number of victims per kilometre road

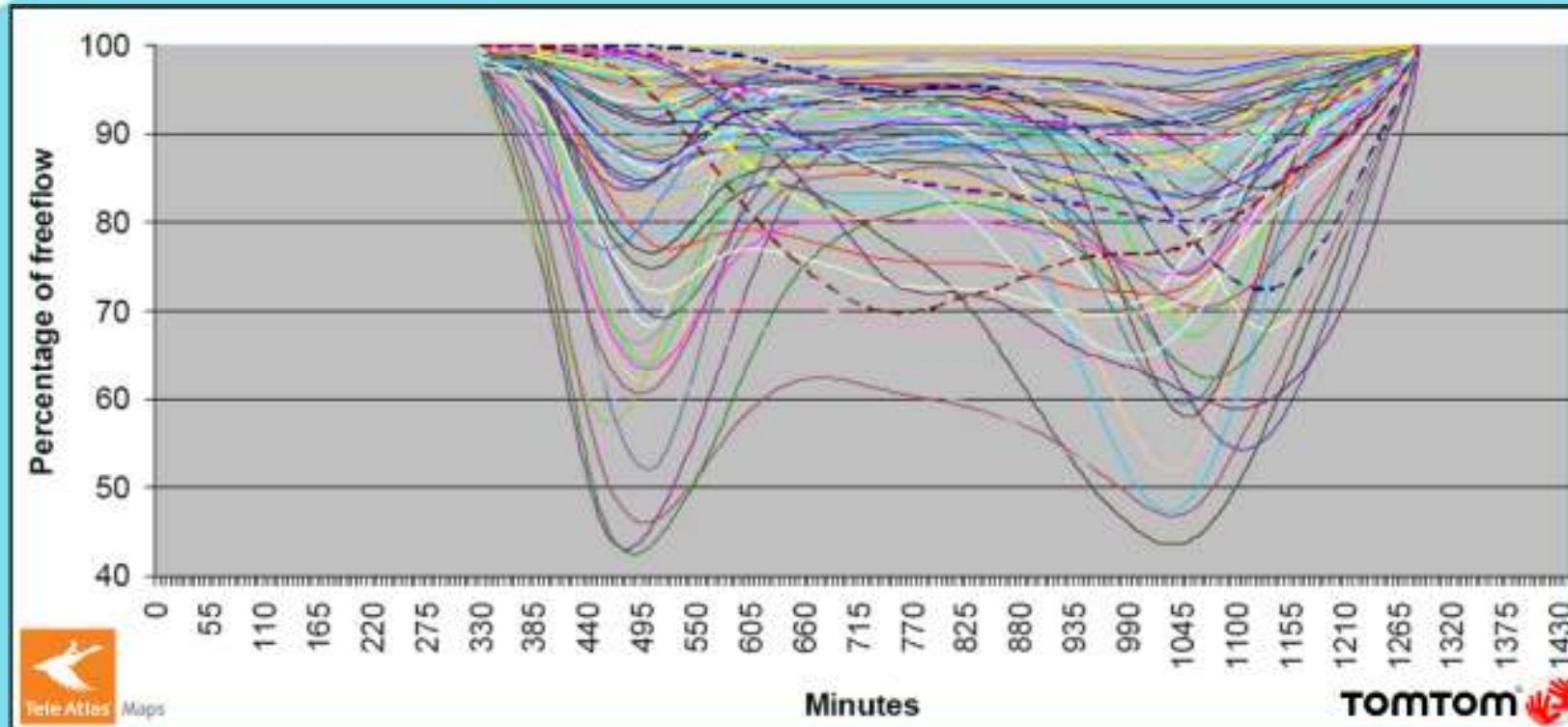




- » Speed Profiles: the speeds currently being driven, as well as in what direction, every five minutes, every day

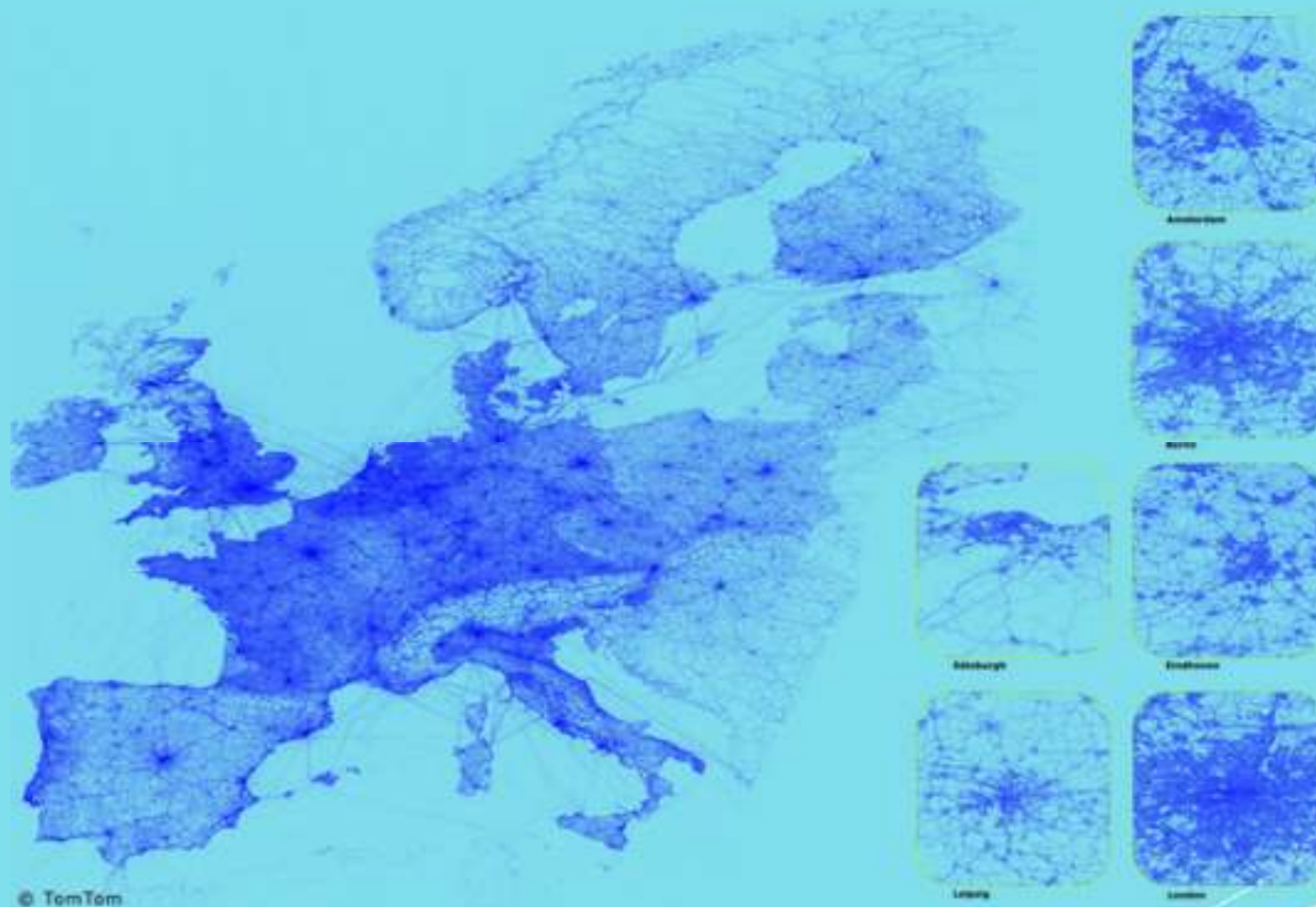


- » Reliability and current data
- » On a very dense main road network
- » Speed Profiles are based on more than 2.000 measurements on different times and day

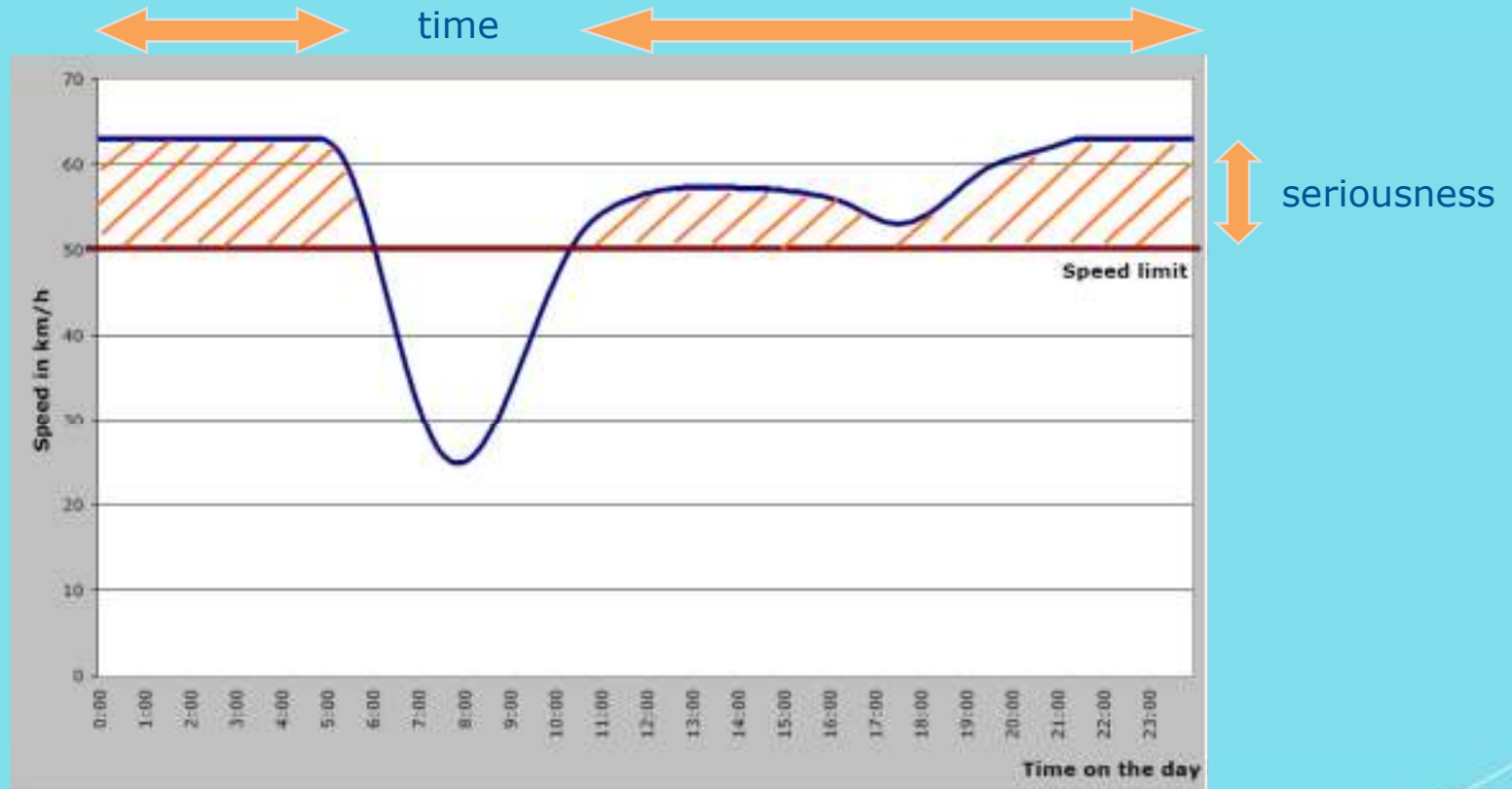


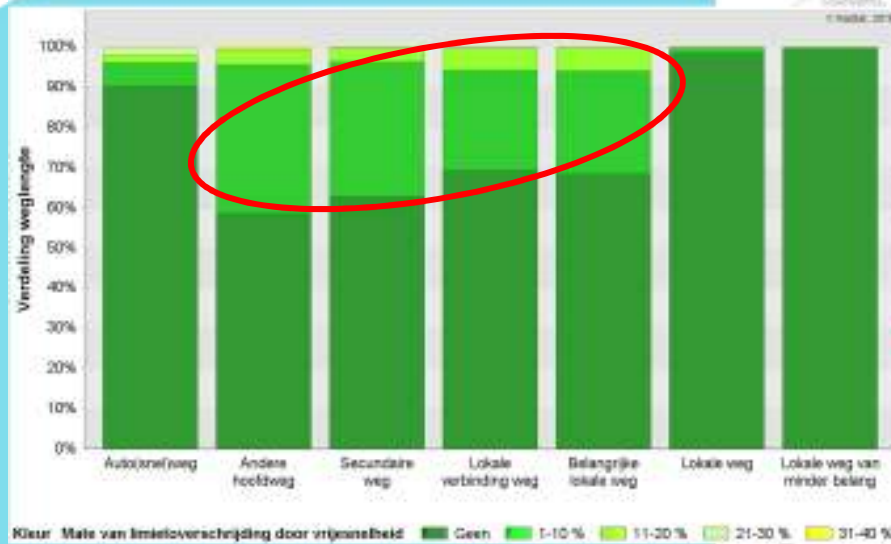
- » Speed Profiles are based on more than 2.000 measurements on different times and day

A data file available for all of Europe



Speed excess weight





Extension of the speed limit



Speed excess weight

Detailed analyses: SaGredSpeed

- » Method developed by SWOV and tested in practice by VIA
- » Demonstrated that, for a road to be safe, the speed limit must in any event be credible and the road design must force users to observe a safe speed
- » A **credible speed limit** is a limit that is logical and clear for road users; after all, in the speed limit corresponds to the expectations of the road user, this limit will be easier to enforce
- » A **safe speed** is a speed geared to the conflict that can occur with a particular road layout; should things 'go wrong', the road layout, traffic situation and speed should ideally be coordinated in such a way that the risk of death is minimised

Example of credible speed limit

80 km/u
Credible speed limit



80 km/u
No credible speed limit



Example of Safe speed

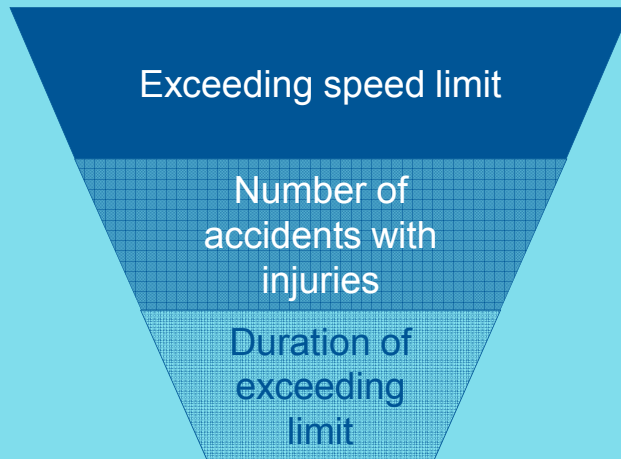
50 km/u
Safe speed



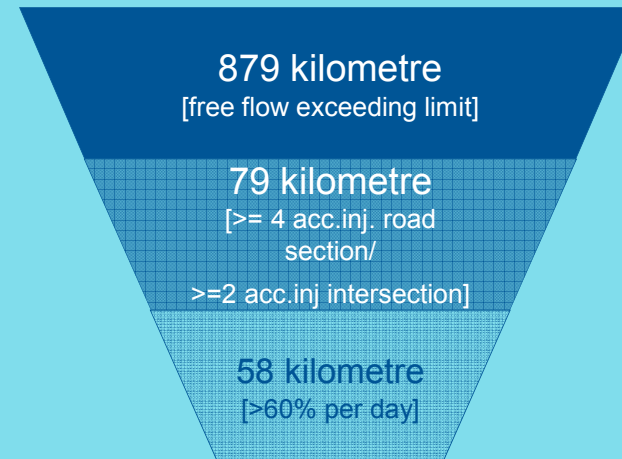
50 km/u
No safe speed



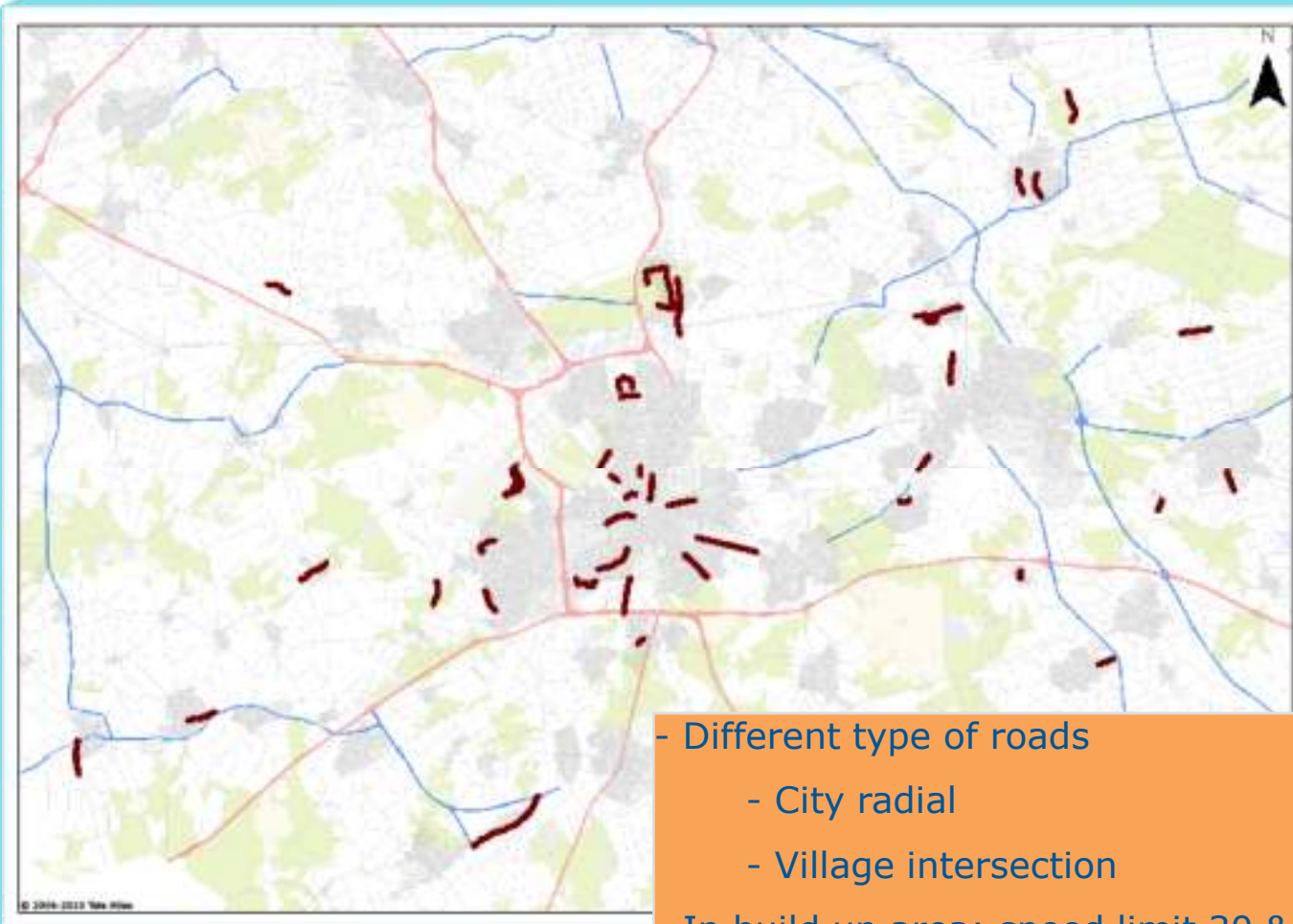
SRE: 2.806 kilometre



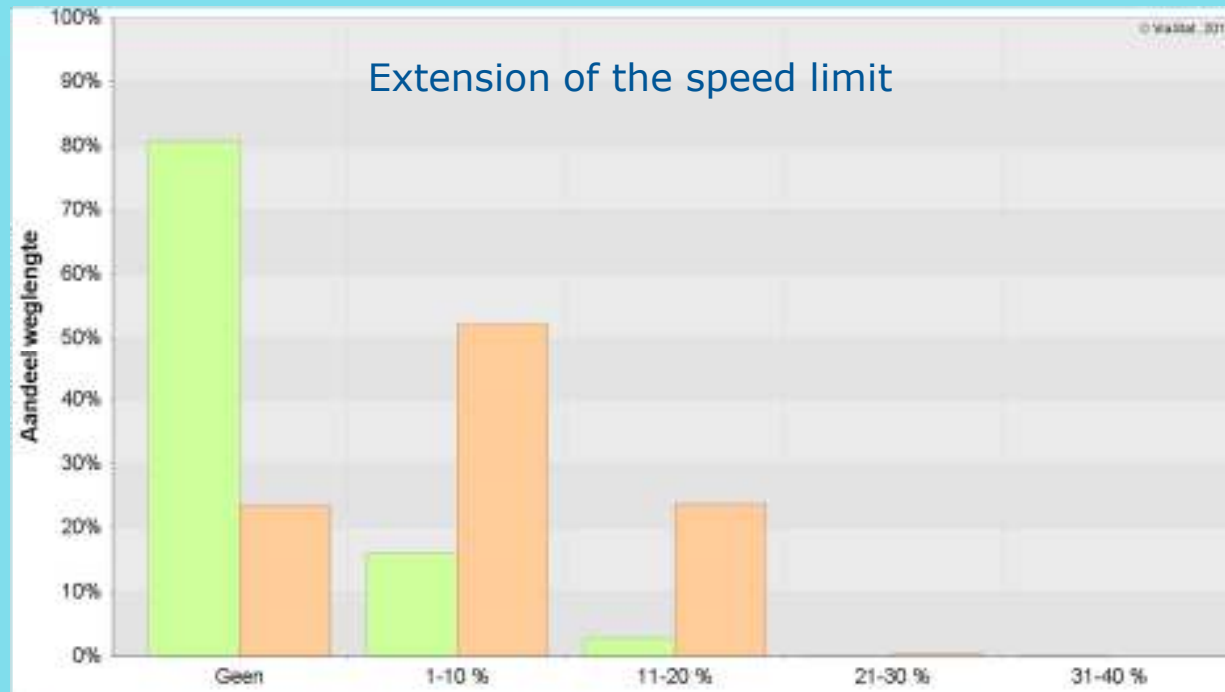
Locations suitable for grip on speed



Locations suitable for grip on speed



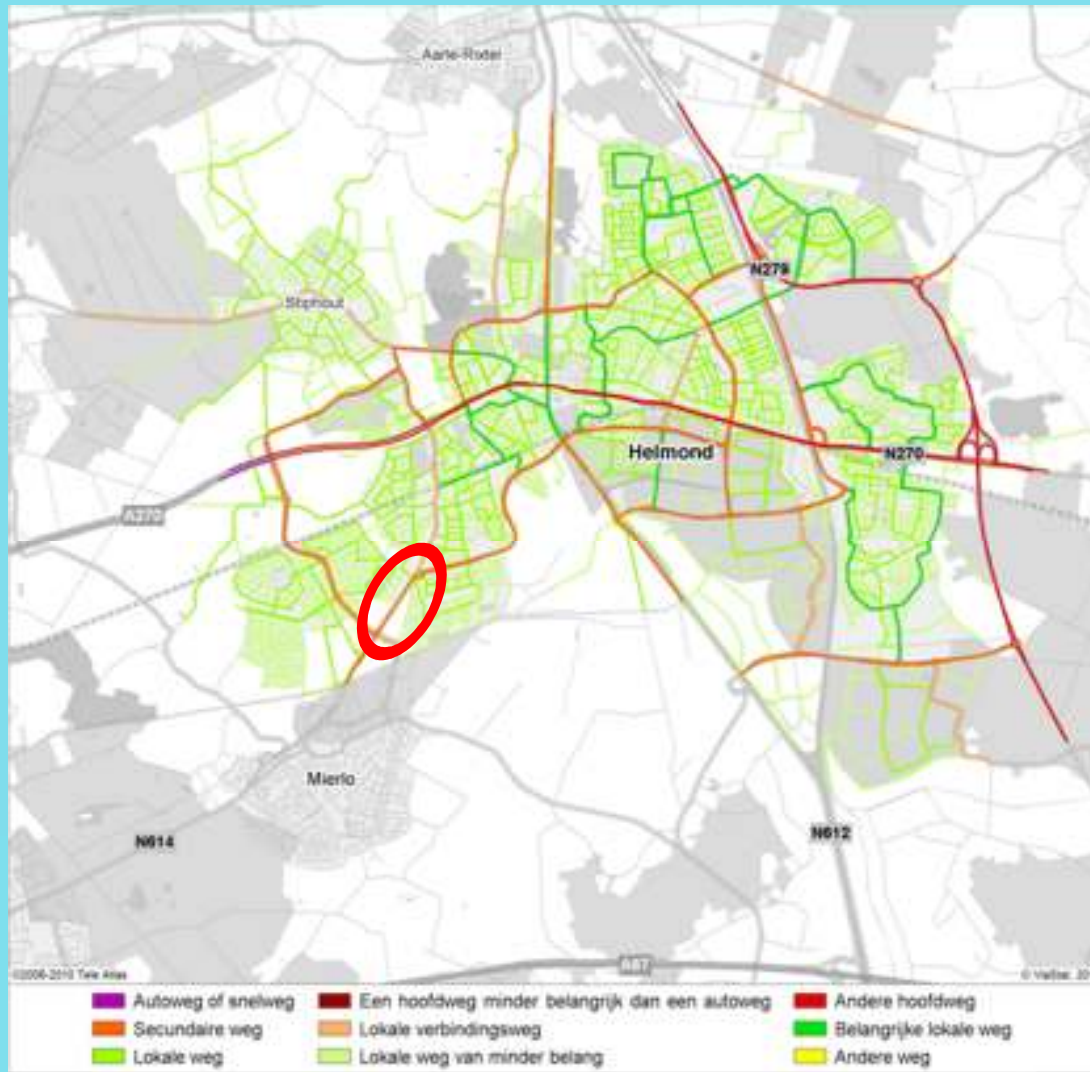
- Different type of roads
 - City radial
 - Village intersection
- In build up area: speed limit 30 & 50 k/u
- Outside build up area: speed limit 60 & 80 k/u



Reference area = all roads in SRE

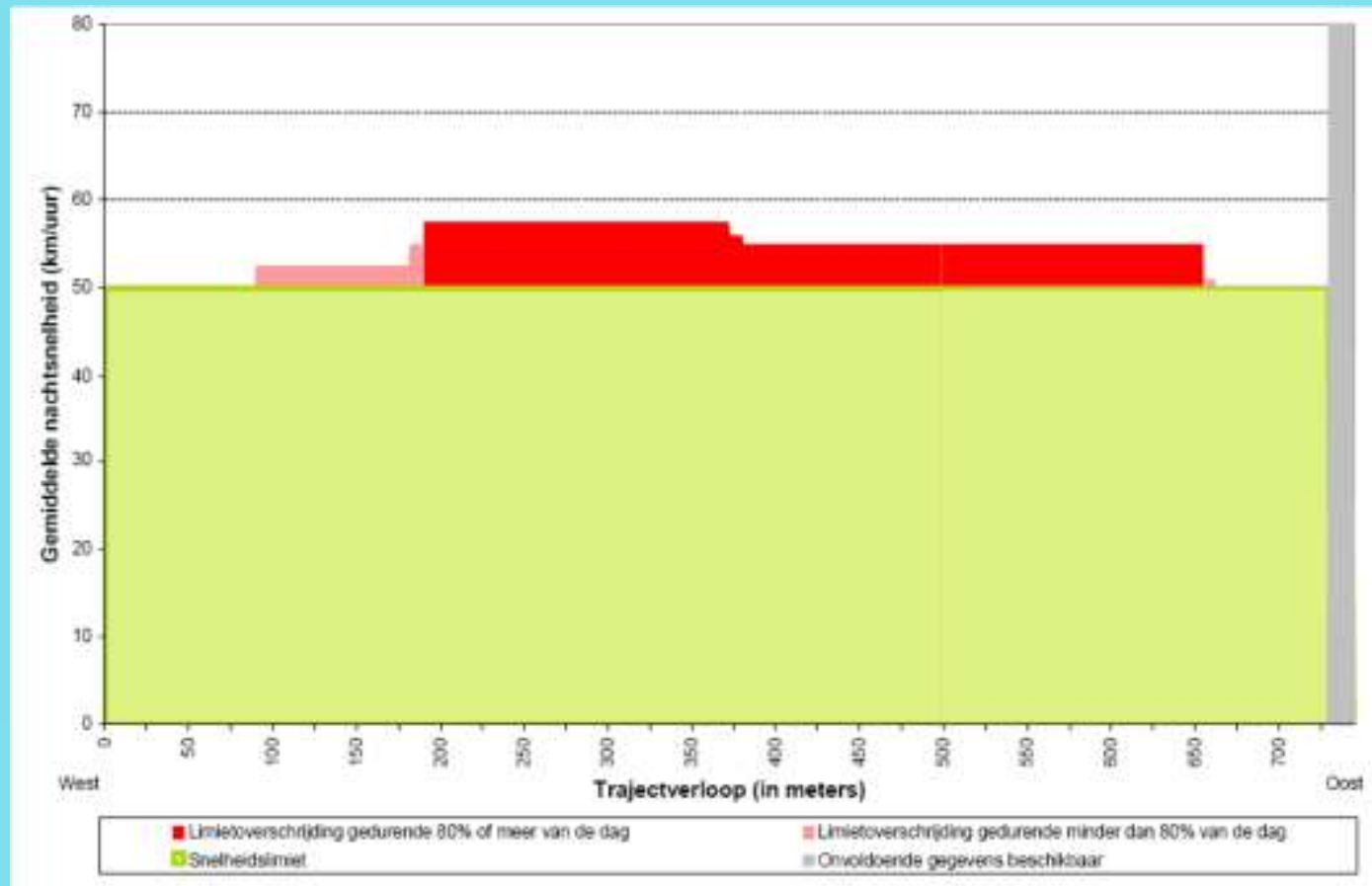
Research area = 41 locations

Functional road class

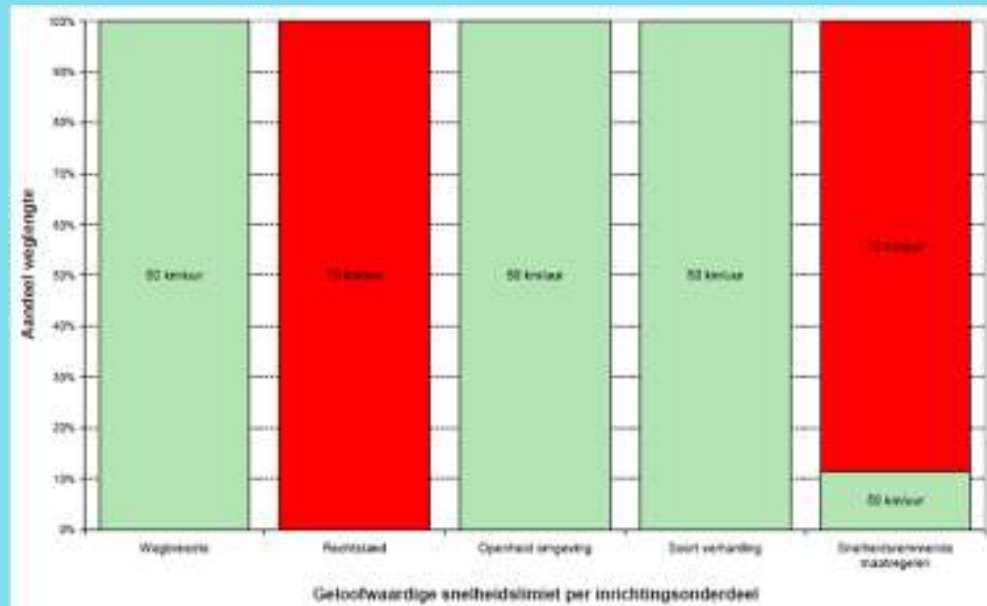




Speed progress



Credible speed limit



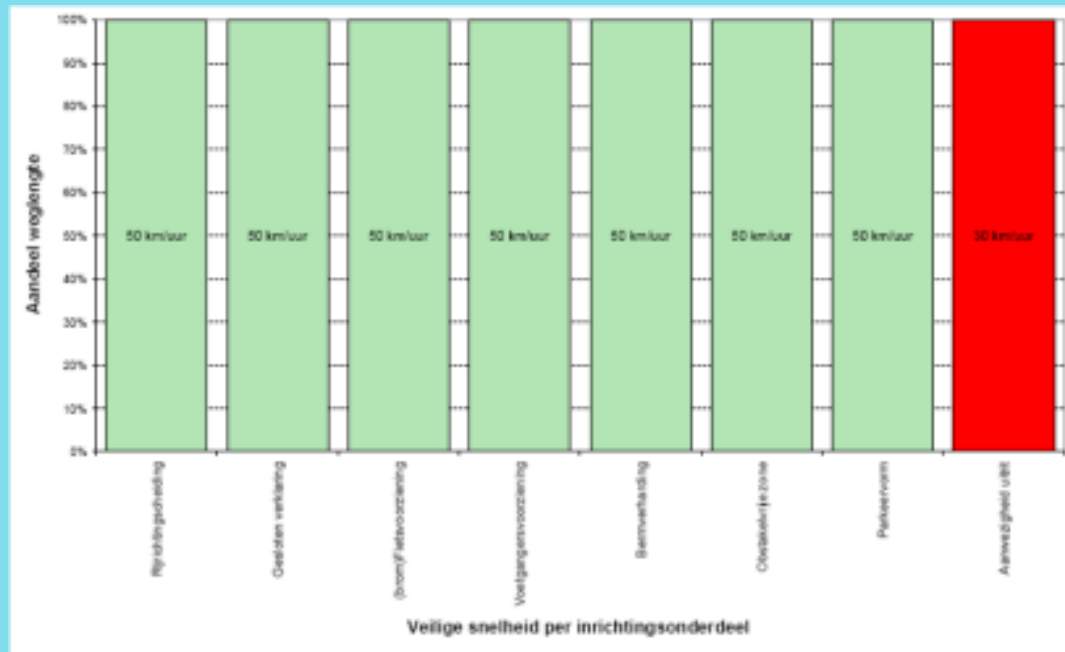
Density of physical speed reducing measures

Quality of the road surface

Density of the road environment elements

Length of straight road stretches

Road width



- Density of junctions and access lanes
- Parking
- Width of the obstacle free zone
- Forgiving road sides
- Pedestrian facilities
- Moped/bicyclist facilities
- Access restrictions
- Physical separation of driving directions

Most suitable package of measures



- 1. Road categories:** fits the road in his environment as a part of the total road network
- 2. Speed Limit:** is the speed limit credible and clear to road users
- 3. Infrastructure:** safe design, fitting to the road category and speed limit
- 4. Speed control & communication:** finally speed control and creation of high feeling of probability of detection

Package of measures

- » Speed limit of 50 km/u fits to the road design:
 - » Most part of the road is credible and safe to his users

- » Advice:
 - » Speed control by the police
 - » Increase the density of physical speed reducing measures

- » Alternative: change the speed limit; measurements are still needed

Results from the 41 locations

- » 18 x infrastructure adjustments
 - » 80% build up areas
 - Especially: credible speed limits measurements
 - » 20% outside build up area
 - Especially: safe speed measurements

- » 23x speed control
 - » Most of all build up areas
 - Specially credible speed limits measurements
 - » View cases to change the speed limit



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