

2005 GOVERNMENT STATUS REPORT OF THE NETHERLANDS

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TRAFFIC SAFETY STATUS

With respect to traffic, The Netherlands are still one of the safest countries. In the European Union only Malta, Sweden and the UK perform (slightly) better; see Figure 1.

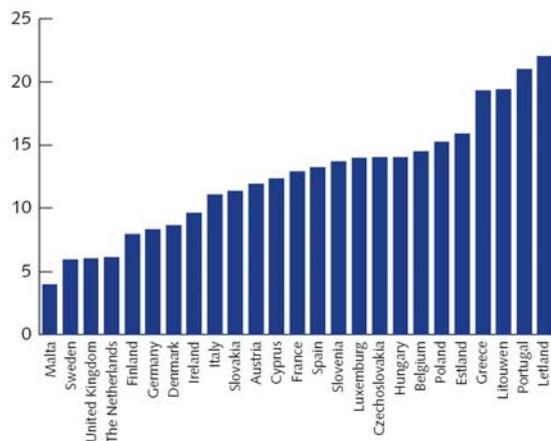


Figure 1. Traffic fatalities per 100.000 inhabitants.

The number of fatalities is declining steadily from 1972 on. Some years the trend seems to reverse, also in 2003 we had a small setback, but although traffic is relatively safe progress was and is still possible (Figure 2).

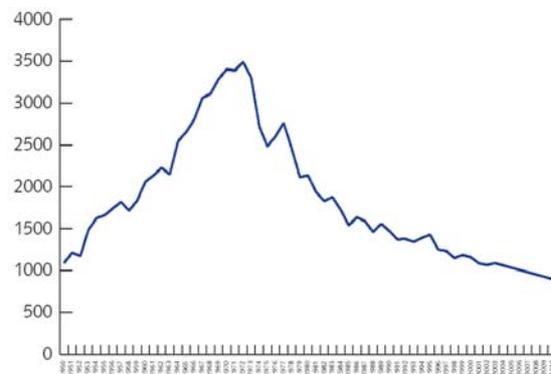


Figure 2. Number of traffic fatalities in The Netherlands from 1950 – 2010 (projected).

THE MOBILITY POLICY DOCUMENT

Last December the text of the new national mobility policy document was published by the government [1]. Parliamentary debate will take place around the summer of 2005.

Due to high, and ever increasing, traffic densities in The Netherlands traffic jams are very common. Although they can not be prevented all together, the aim is to improve the reliability and predictability of travel time. This will not be achieved by road construction alone. Road pricing, regional cooperation between different authorities, improved maintenance and technological innovation are required to reach the targets. Meanwhile, safety and the environment (climate, local air quality and sound) will have to improve as well; making the required effort even bigger.

Road Safety is Top Priority

In this paper we concentrate on traffic safety. As mentioned before, big improvements have been made in the past, making The Netherlands one of the best performing countries with respect to traffic safety. But about thousand fatalities a year is still too much. Due to the high economic and social impact of traffic unsafety a permanent improvement is necessary. For 2010 the objective is 900 fatalities or less; in 2020 it should be reduced to at most 640. Due to the ever increasing traffic densities, especially for freight transport, this means a 50% reduction of the risk in twenty years time; see Table 1.

Table 1. Annual fatalities (targets) and fatalities per billion vehicle kilometres (projected).

	Annual Traffic Deaths	Traveller kilometres	Deaths per billion traveller kilometres
2002	1066	163 billion	6.6
2010	900 (objective)	180 billion (projection)	5
2020	640 (objective)	195 billion (projection)	3.3

High Expectations for (Vehicle) Technology

To realise the required traffic safety performance in the coming 15 years, different means will have to be used. The *sustainable safety* program remains one of the corner stones of the Dutch safety policy and will be further implemented. One of its important elements is the concept of self-explaining roads: drivers should be able to read the road and assume according choice of speed, headway etc.

Men-oriented measures will remain of paramount importance. Driver training and licensing, awareness campaigns and enforcement are proven ways to reduce road un-safety.

Much is expected from technological innovation. Due to the high costs of infra-structural adaptations and the large amount of existing behavioural measures, new technology will be of growing importance to reach the target of 2020. This will mainly take place inside the vehicle; but also along the road technology will play growing role, especially in connection and cooperating with the vehicle.

It goes without saying that improvements in the vehicle have already greatly contributed to safer traffic. Especially the passive, or primary, safety has been improved impressively. Although progress can still be made in this field, both by new technology and its further penetration in the vehicle fleet, much is expected the coming decade from the large-scale introduction of active safety and driver assistance systems. Either stand-alone, or in cooperation with other vehicles or the road.

POLICY DEVELOPMENT AND LEGISLATION

EU directives

Vehicle regulation still is one of the most important instruments of national governments to improve vehicle safety. Since it is completely harmonised within the European Union for passenger cars and soon also for other vehicle types. This means that most of the legislative effort is concentrated in the Brussels working parties, the UN-ECE WP.29 and in the codification of the new directives into the national laws.

Euro-NCAP

Euro-NCAP has been of salient influence on vehicle safety. At the start of Euro-NCAP in 1996 a three-star rating was considered satisfactory; currently a five-star score is the only acceptable for safety conscious manufacturers. Since every additional star is estimated to reduce the risk of a fatal

accident by 9% [2] the impacts on traffic safety is considerable. To keep in pace with the technological developments, it is mandatory that new tests are introduced into Euro-NCAP. Especially for primary safety this requires a new approach to testing which is currently under development.

Dutch Presidency of the EU

The second half of 2004 The Netherlands hold the presidency of the European Union. For traffic safety we mention the agreement reached on the third directive on driving licences and the second Verona conference on road safety. The latter led to official council conclusions with several recommendations regarding the improvement of road safety, including vehicle safety [3].

RESEARCH ACTIVITIES 2003-2005

Also in the last two years many vehicle-related research projects were carried out by the Transport Research Centre of the Ministry of Transport (see <http://www.rws-avv.nl> for more information). The highlights are shortly presented here.

Lane Departure Warning Assistant

From summer 2002 until September 2003 a field operational test was conducted with the Lane Departure Warning Assistant (LDWA). With this trial the following items were investigated:

- Acceptance by drivers and stakeholders
- Traffic safety and traffic flow
- Consequences for road authorities
- Relation with new developments

Apart from the research, it was also considered of high importance to raise the awareness about LDWA, and driver support systems in general, among (professional) drivers and fleet owners and to learn from their experiences.

35 Heavy goods vehicles and one bus were equipped with an of-the-shelf LDWA system. The vehicles were deployed in normal business use; mostly long-haul. Several were equipped with black boxes which registered the use of the system, steering angle, position and velocity. All the drivers maintained a logbook and were interviewed on a regular bases. Some additional experiments, mainly the driver behaviour on narrowed lanes, were studied in a driving simulator.

The main conclusions from the test are:

- Acceptance of the systems was high: 75% of the drivers involved were in general positive
- The systems gave many warnings, what annoyed most drivers. This was especially the case on narrow lanes or in road work areas
- In the test drivers perception LDWA helps to improve traffic safety: shorter reacting times,

more frequent use of indicators, more attentive, increased comfort

- It was estimated that both the chance for truck-related casualties and traffic jams were reduced by 10% if LDWA were installed on all trucks.
- LDWA could help driving on narrowed lanes, but the systems tested gave too many warnings to be acceptable for the driver. A more active system might perform better.

Generally it can be concluded that the systems work as expected, but, being a first generation system, are not perfect. Their return (reduced traffic jams and number of incidents) do not merit the current price (approx. €2000). Improved systems at a lower price certainly will.

The set-up of the test turned out to work very satisfactory. The willingness of the different parties involved, drivers, fleet owners, representatives of sector organisations, to cooperate and to think along with the project organisation, was very high.

Intelligent Speed Assistant

Excessive speed is one of the most important factors contributing to road un-safety. Therefore much effort is put into the enforcement of speed limits and infra-structural means like speed humps, chicanes and the concept of *self explaining roads*.

But also from the vehicle help can be offered to keep to the speed limit. Often people are not aware of the local speed limit or do not observe their speedometer frequently. A device informing the driver about the speed limit and giving feedback when he is in excess of the limit, will improve both driver comfort and traffic safety.

In two European projects, PROSPER and SPEEDALERT, a whole range of issues is addressed. E.g., driver interface, typology of ISA, needs for introduction, introduction scenarios.

One of the critical issues for the successful introduction of ISA is the availability of an accurate and up-to-date digital map with the speed limits. This requires the continuous involvement of local, regional and national road authorities and commercial map makers. Well-considered agreements are necessary to guarantee the update process and (business) interest of the parties involved. The first version of a Dutch national speed database was published in 2004, together with a user interface for updates; see <http://www.maximumsnelheden.nl/>.

In the end of 2006, PROSPER and SPEEDALERT will be concluded and the speed database satisfactory accurate. Then first steps towards introduction of ISA can be made.

EU Framework program

In both the fifth and the sixth framework program The Netherlands, usually the Transport Research Centre of RWS or TNO, participated actively. We name AWAKE, RESPONSE2, PROSPER, HASTE (FP5), Prevent, Aprosys, AIDE, GST, SafetyNet, Humanist (FP6).

Electronic Vehicle Identification

In 2003 the EU-Commission (DGTren) decided upon an initiative of The Netherlands and the United Kingdom to launch a feasibility study in EVI. Also Belgium, France and Norway participated in the study. Recently (November 2004) the final report was delivered. Main conclusion was a broad feasibility of a basic EVI which could bring considerable benefits for public services and for the efficiency and effectiveness of enforcing. The report, the conclusions and its advice for the follow-up will be discussed in a meeting of the High Level Group on Road Safety of the EU-Commission, expected around April 2005. This High Level Group was the actual platform to launch the study, carried out by a consortium lead by ERTICO.

Transumo

Transumo is a Dutch knowledge network for sustainable mobility which started fall 2004. For six years both public and private partners will work together on innovative solutions for our transport system. The program contains five clusters: passenger transport, freight and logistics, traffic management, infrastructure and transition issues. In test areas the results of the projects will be demonstrated real-life. The project costs are equally shared between government and the participating partners. For more information see <http://www.transumo.nl>.

Roads to the Future

Roads to the Future is the innovation program of Rijkswaterstaat. Its scope is to initiate innovations that contribute toward making road transport in the Netherlands perceptibly less congested, cleaner, safer, quieter, and more comfortable. And even more fun. In the Roads to the Future program about 10 opportunity-driven innovative projects are launched every three years. In these projects public and private partners join forces. The current cycle contains the following projects:

- *Future service areas* (generate innovative ideas for the layout, design, style, facilities, and maintenance and management of service areas)
- *The assisted driver* (take a look into the (near) future of ADA systems by demonstration and study)

- *The remediating road* (use contaminated dredged material beneath or next to roads, thereby cleansing it)
- *Belonitor* (rewarding the referred behaviour, changing one's habits becomes attractive)
- *Citybox* (operate with goods boxes in inner cities that fit on both large and small trucks)
- *Optimal corridor* (offer travellers more suitable total solutions for travelling from door to door)
- *Missing link* (optimal use of road network by integration primary and secondary network)
- *Travel time expectation* (offer travellers (prior) insight into the various travel and route alternatives with associated travel times)
- *Roadwise* (options and consequences of offering far more information in the car)

Most of the pilots above started their preparation in 2003 and will be carried out in 2005. For more information see the website of Roads to the Future: <http://www.roadstothefuture.nl/>.

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[3] Council of the European Union, 2004. "Council conclusions on road safety", 11459/04 TRANS 258