The National Action Plan for Road Safety 2006-2009 is now available. The plan is based on its equivalent for the period 2002-2011, and is divided into two parts:


The plan is elaborated by the Norwegian Public Roads Administration, the National Police Directorate, the Directorate for Health and Social Welfare, and the Norwegian Council for Road Safety on an assignment from the Department of Transport. The Directorate of Public Roads has been secretariat for the work with the plan.


The intent with the plan is partly to show what challenges lie ahead of us in the traffic safety effort and which measures are relevant. The means to effectuate the plan will be incorporated into the budgets of the four main actors.

The number of fatalities and serious injuries in road traffic in Norway is reduced by more than 50% since 1970. The risk is among the lowest in the world. A continued reduction requires enforced efforts from all actors and willingness to use new measures.

The action plan shall be an inspiration to intensified efforts.

This document is a translated version of part 1: Vision, Strategy and Targets for Road Safety. Part 2 exists in Norwegian only.

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Vision Zero

Through NTP (the National Transport Plan), the Government has established that Vision Zero shall form the basis for the traffic safety activities in Norway. Vision Zero was first discussed in the national parliament during the handling of NTP 2002-2011, and subsequently with the handling of NTP 2006-2015. In the document "Road Traffic Safety 2002-2011" the Government states that:

The Government views the large number of killed and seriously injured as a serious national concern.

Therefore, a vision of no one being killed or permanently disabled has been established as a basis for the long-term traffic safety effort. The vision means that the Government, in addition to conducting a policy with the goal of reducing the total number of accidents, will focus strongly on measures that can reduce the most serious accidents.

The Norwegian Vision Zero involves the entire transportation system. The intent with the vision is to reduce the number of accidents, but the main emphasis is put on the serious accidents that can lead to fatalities and serious injuries.

Vision Zero is based on three cornerstones:

Ethics
Every human being is unique and irreplaceable, and we cannot accept that between 200 and 300 persons lose their lives annually in traffic accidents.

Science
Human physical and mental capabilities are known and shall form a basis for road system design. Knowledge of our limited ability to master traffic and our tolerance in an accident shall be premises for chosen solutions and measures. The road system shall encourage safe road user behaviour and protect against fatal consequences of normal erroneous actions.

Responsibility
Road users and authorities have a joint responsibility for traffic safety. The road users are responsible for their own behaviour; they must be cautious and avoid conscious violation of rules. The authorities are responsible for offering a road system adapted for safe behaviour as well as protect against fatal consequences of unconscious erroneous actions.

The Vision Zero is followed up by measuring the reduction in the number of killed or seriously injured. On average, 280 persons were killed annually in traffic during the period 2001-2004. In addition, each year 1060 persons were seriously injured.

When traffic accidents are divided according to type of accident, it becomes evident that 86% are killed in head-on accidents, run-off-the-road accidents or accidents involving pedestrians or cyclists. To use available resources most efficiently, main emphasis in the traffic safety effort must be put on the reduction of these accident types.

It is difficult to imagine a transportation system as currently designed without fatalities or severe injuries. Vision Zero is therefore imagined as a curve where the numbers of killed and seriously injured approach zero. In practice it is difficult to imagine that the curve will reach zero, but it is realistic to anticipate a continuous reduction over a number of years resulting in a significant reduction in the number of fatalities and serious injuries in the future.

The accident development

From 1948 until 1970 the number of fatal accidents increased with the same rate as the traffic volume. Since then the number has been reduced despite increasing traffic. In 1970 a total of 560 fatalities was recorded, while the total in 2005 was 224, i.e. more than halved. The reduction was largest the first 20 years, but has in large part continued with an even but modest reduction also during recent years.

The objective of the ongoing traffic safety work is to have the downward trend continuing and strengthened.
It is well known that the actual number of injured in traffic in Norway is significantly higher than what appears from official statistics. While the police annually reports about 11,000 to 12,000 fatalities and injuries, the national health services treat about 40,000 cases. Underreporting gives a distorted picture of the traffic safety situation in the country, which in the worst case can lead to faulty priorities. We know from studies undertaken that it is primarily accidents with minor person injury that are not being reported. We also know that accidents involving cyclists, motorcycles etc. are significantly underreported. It is therefore important to prioritize measures that reduce these types of accident. It is important for the work on traffic safety to have good data as a basis. Information on traffic accidents will therefore be included when a new national injury register is prepared. It will also be important to improve the quality of the data being recorded.

A comparison of the 2003 accident situation with that in 1983 shows that a much larger number of the fatal and serious injury accidents now take place outside urban areas (see Figure 4). The share of accidents in urban areas was reduced from about 34% to about 20% during this time period. This means that the urban traffic safety efforts have had a positive effect and should be continued, but also that measures in rural areas should be prioritized.

The Institute of Transport Economics has estimated that the annual economic costs of traffic accidents to society amount to about NOK 28 billion (3.5 billion €). This figure also includes costs of injury accidents not included in official statistics and accidents reported to insurance companies.

Figure 5 shows the distribution of the number of fatally and seriously injured by age and road user group. The figure shows which measures should be prioritized for the various age groups. Young car drivers, 16- and 17-year old mopedists and young cyclists still constitute the most vulnerable groups. Pedestrian accidents are distributed more evenly among the various age groups.

Performance indicators
Work in accordance with the Vision Zero principle must be ambitious and aimed at continuing or surpassing the positive accident development since 1970. The National Action Plan for Road Safety 2002 – 2011 adopted a measure of effectiveness system. In practical terms this means that the traffic safety development is measured by recording the development of a number of significant parameters such as operating speeds, seat belt usage etc. The application of performance indicators should be developed further.

Evaluation of the effects of the traffic safety effort will be based on the following indicators:

- Accident reduction measures on roads with many accidents
- Operating speeds, or the proportion of users abiding the speed limits
- Technical standard of heavy vehicles
- Seat belt usage (driver and passenger)
- Helmet usage (bicycle, moped, MC)
- Light usage (cyclists)
- Retro-reflector usage (pedestrians and cyclists)
- Proportion of drivers under the influence of alcohol or drugs
- Hazardous traffic behaviour

These factors will be followed up annually, and the development of these performance indicators will be presented to the main actors, the Ministry of Transport and Communication and the Ministry of Justice at meetings in the Liaison Committee for Traffic Safety. EU and ECMT (European Conference for Ministers of Transport) have passed a resolution to aim for a 50% reduction in the number of fatalities by 2010. Traffic represents less of a hazard in Norway than what is the case in most other countries. Recent development, as well as evaluation of the effect of proposed measures, suggests that it should be possible to achieve a 20% reduction in fatally and seriously injured towards 2010 and an additional 10% reduction towards 2016.

Figure 3: Annual road traffic fatalities during the period 1948-2005
(Source: SSB)

Figure 4: Distribution of fatally and seriously injured on roads within and outside urban areas during the period 1983-2003 (Source: SSB and the Norwegian Public Roads Administration)

Figure 5: Distribution of fatally and severely injured by age and user group, average for the 2000–2004 period (Source: Norwegian Public Roads Administration)
Main approach to the traffic safety work

When viewed against other countries it is relevant to be compared with, traffic safety work in Norway is well advanced. This does not mean that we are satisfied with the present situation, but that we should rather think along new lines and be active. This means that we must be willing to try new approaches to traffic safety and to intensify our research and development activities.

A number of theories have been developed around traffic accidents and their causes. The prevailing view is that accidents normally reflect system failure, i.e. there is a communication failure between the road environment, the road user and the vehicle. There can thus be many causes of accidents, implying that efforts in various areas might have accident reducing effect. This is illustrated in Figure 6. The model combines accident and injury reducing measures, both pre-crash and post-crash.

Vision Zero represents such new thinking in the work on traffic safety. Beyond focusing on accidents producing the most serious person injuries, it is necessary to guide the safety effort through risk analysis and in depth analysis in order to facilitate the implementation of the appropriate and most efficient measures. Evaluation of implemented measures also provides improved knowledge.

As previously indicated it is important to work within various fields of activity:
- Measures aimed at road users
- Measures within the road and traffic system
- Measures aimed at vehicles
- Measures aimed at snow scooters
- Measures related to land use planning
- Measures to promote the safest modes of transportation
- Measures within ITS
- Other measures to ensure injury treatment/rescue

Penalty and charge levels should correspond to the severity of the violation. They should be at a level that provides adequate traffic safety benefit and it is the correlation between the penalty level and the apprehension risk that refrains road users from undesirable behaviour in traffic.

Enforcement must be based on knowledge and studies and aimed at the most serious problems. Enforcement timing and location must be selected with regard to when and where the risk of accidents is the greatest, and aimed at user groups with the greatest accident risk. To achieve this, it is important to use high quality study material and methods.

Measures aimed at road users

Such measures include training, information and enforcement. Here, good work is at present being performed by the main actors, industry and NGOs. There is need for coordination to facilitate a more concentrated effort on a limited number of topics. Basis for actions and measures must be good knowledge of actual traffic safety problems. All activities should be evaluated. Research shows that the simultaneous application of several types of measures has the best effect. This means for example that information measures and enforcement measures should work together.

Training in traffic and risk understanding and mastering must start at an early age and be followed up throughout life. It is important to focus on children and youth, because attitudes are shaped early in life, as well as on the elderly road users. There are expectations that the general traffic training for children and youth will improve with the introduction of new curricula from 2006 with clear objectives for traffic competence. It is expected that the new training relating to taking and keeping driving license will improve traffic safety, in particular among young drivers.

New technology makes it possible to improve the efficiency of enforcement activities. However, the fact that this type of enforcement can violate privacy represents a problem. This is a balance that is important to respect even where the regard to privacy might give less efficient enforcement. Visible enforcement by uniformed police and public roads administration personnel has a clear preventative effect, and will regardless remain an important form of enforcement also in the future. We must therefore be willing to maintain the present level of privacy protection.

Measures within the road and traffic system

To improve traffic safety, the road network must be further developed. This means that emphasis must be put on implementing long-term as well as short-term measures. In the long term it is important to develop the main roads with heavy traffic and many fatalities and serious injuries to motorway standard. In the mean time, short-term traffic safety measures, such as behaviour control, improved markings, median barriers, and roadside measures should be implemented. A lasting traffic increase places special demands on road design. Unless the road network is improved in line with traffic development, the number of head-on accidents and other traffic volume dependent accidents will increase.

Among relevant short-term measures, the introduction of median barriers, use of profiled markings and measures to make the roadside more forgiving should be prioritized. Road safety inspections will show the needs for short term as well as long term measures. Another important principle is the fact that good traffic operation also provides a high safety level. This does not mean that high operating speeds should be ensured, but unnecessary obstacles in the traffic system should be eliminated. The traffic system must also be made so simple that it is easy to follow necessary traffic controls. A number of studies, moreover, show that aesthetic and well-designed roads provide a high level of traffic safety.
Measures aimed at vehicles

At present there are no proposals for undertaking comprehensive changes with regards to vehicles. This is a major area of engagement within the EU, and Norway will follow up the ongoing activities. We will, on the other hand, provide information to road users on safe vehicles and safe means of transport. When motorists replace their cars, it is important that they choose vehicles that are inherently safe. There has, however, been a tendency among many to choose vehicles with powerful engines and to increase their operating speed rather than to benefit from the safety features of the car. It has also been revealed that some popular vehicle types are inherently less safe than ordinary passenger cars.

It is anticipated that new cars will be equipped with important safety features. Such equipment must be designed to give support to the driver and not deflect his/ hers attention away from the driving task. If all new cars sold in Norway had 4 or 5 stars in the Euro NCAP rating system, the number of fatalities would be reduced by 20.

Measures aimed at snow scooters

Snow scooters are not normally driven on public roads, but there are a large number of accidents. It is therefore important to have this vehicle group included in the plan. It is also important to evaluate if other vehicle types should in time be included in the plan.

Measures related to land use planning

Land use planning measures have for a long time been considered an important traffic safety measure. The aim is to have development located such that the need for motorized transport is reduced to a minimum, that activities creating large amounts of traffic are located close to population concentrations, that schools etc. are located on the same side of the main roads as residential areas, etc. In practice it is evident that there are so many conflicting interests that implementation of important measures becomes difficult. There is also a certain overlap with the next group of measures.

EU countries will probably adopt a system that automatically alerts ambulances in the case of accidents (eCall). This should also be considered in Norway.

Research and development

It is important that traffic safety activities are based on sound knowledge and not on suppositions and well-intentioned belief. Earlier research, also in Norway, was nationally oriented. Lately there has clearly been an internationalization of research activities in this field. It is therefore important that Norwegian research institutions are given the opportunity to participate in international research such as the various EU framework programs. It will, however, be necessary to support Norwegian research regarding typical problem areas found on the domestic traffic scene. It is natural to let Norwegian research emphasize interaction between the road users and the prevailing road and traffic system in the country. Research aimed directly at the vehicle should in principle be undertaken internationally. In the area of collecting and evaluating research results, Norway should be a spearhead and take on an international responsibility.

Norwegian research should therefore back up the traffic safety activities that the action plan prepares for.

Measures to promote the safest modes of transportation

Safety-wise it is important that as many as possible select the safest means of transportation. Here the public transportation modes come out ahead when compared with for example the car. Public transport modes to be preferred in urban areas should be made more attractive. In addition it is important to ensure safe transport for pedestrians and cyclists to and from terminals. In town centres the use of private cars should be limited.

Goods transport should as far as possible be transferred from road to rail or water. Such transfer should be made as simple as possible. Where road transport prevails, conditions must be improved to ensure improved safety.

Measures within ITS

A rapid development is taking place within ITS and other electronic aids to drivers. We already observe that ABS etc. generally provide significant safety benefits.

Even though Norway is not a car producing country (except for some electric cars) we must observe the development in Europe and be proactively supportive.

Measures to ensure injury treatment/rescue

Studies show that if the person first arriving at the scene of the accident masters first aid, every fifth fatality could be avoided. More emphasis should therefore be put on improved preparedness both in the general population and in the health services.

International cooperation

During recent years traffic safety activities have become more internationalized. EU has thus adopted a very ambitious action plan based on halving the number of fatalities by 2010. This requires an intensified traffic safety effort. For Norway, already in the forefront in the traffic safety endeavour, it is important to be updated on what is happening in Europe. Other international agencies such as OECD, UN ECE, WHO etc. have been more actively involved in traffic safety efforts. Norway has thus a lot to contribute, but also a lot to learn from this undertaking.

Challenges in the next 10 years

We do see a number of characteristics within the Norwegian society today that might have a significant bearing on both the short term and long term traffic safety development. These are circumstances that need to be addressed and the traffic safety consequences must be included in planning and implementing the traffic safety activities. Among the most important are:

- Life expectancy increases and many will want to drive longer than today
- There is a steady migration towards the larger population concentrations
- Car usage is increasing and it becomes important that bus/train etc. be preferred more often
- We are getting new types of vehicles on the market without the same inherent safety characteristics
- Road traffic is being privatized and resistance against rules and regulations increases
- Aggressive driving is an increasing problem
- Road network development does not match the need for increased