

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT  
EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT

**JOINT OECD / ECMT TRANSPORT RESEARCH CENTRE**

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**WORKING GROUP ON  
ACHIEVING AMBITIOUS ROAD SAFETY TARGETS**

***COUNTRY REPORTS ON ROAD SAFETY PERFORMANCE***

**September 2006**

## **ABSTRACT**

### **Background**

This report was prepared by the OECD/ECMT Working Group on Achieving Ambitious Road Safety Targets. At its first meeting held on 9-10 March 2005, the Working Group discussed the importance of cross-country comparisons and targeted performance assessment in identifying the priority areas for implementation of effective measures and areas for possible improvements.

It was decided to present and publish an overview of the safety evolution of individual countries, based on information collected through a survey. The survey was sent to all 50 OECD/ECMT countries to collect information on road safety trends, recent road safety measures implemented; key road safety issues, measures planned to address these issues and targets set and current results towards these targets. The responses to the survey are completed by other relevant data from other sources (e.g. IRTAD, ECMT statistics, and recent reports of the JTRC).

It should be noted that the survey focused on specific sectoral elements; it did not however address governance issues and high level policy issues, which will be analysed in the main report of the Working Group.

Responses were received from 38 out of the 50 OECD/ECMT countries. In addition, the states of Victoria and Western Australia also provided responses to the Questionnaire.

### **Content of the report**

This report contains includes first a summary of road safety performance in OECD/ECMT countries. It presents an overview of road safety targets in OECD/ECMT countries, highlights the main road safety problems identified by member countries and provides some country comparisons.

The detailed responses from the 40 jurisdictions are set out later in this report.

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## **SUMMARY OF THE COUNTRY REPORTS**

This summary of the country reports includes the following sections:

1. Road safety trends in Member countries
2. Targets in OECD/ECMT countries
3. Progress towards Targets
4. Key road safety problems
  - 4.1 Overview
  - 4.2 Speeding
  - 4.3 Drink Driving
  - 4.4 Seatbelt
  - 4.5 Young drivers
  - 4.6 Vulnerable road users
  - 4.7 Infrastructure
5. Conclusions

## SUMMARY

### 1. Road Safety Trends in Member Countries

#### *Evolution in the number of fatalities*

Between 1970 and 2004, most OECD and ECMT countries have seen decreases in the number of road fatalities and injuries. Table 1 shows the reductions in absolute number of fatalities in all member countries, as well as average annual reductions / increases for each decade since 1970 and for the period 2000-2004.

**Table 1. Absolute number of fatalities in member countries 1970-2004 and average annual reduction / increase**

|  | 1970    | 2004   | Change 1970-2004 | Average annual reduction / increase |           |           |         |
|--|---------|--------|------------------|-------------------------------------|-----------|-----------|---------|
|  |         |        |                  | 1970-1980                           | 1980-1990 | 1990-2000 | 2000-04 |
| OECD Asia / Pacific                      |         |        |                  |                                     |           |           |         |
| Australia                                | 3798    | 1 590  | -58%             | -1.5%                               | -3.3%     | -2.4%     | -3.4%   |
| Japan                                    | 21795   | 8 492  | -61%             | -6.3%                               | 2.5%      | -3.3%     | -4.9%   |
| Korea                                    | 3529    | 6 563  | 86%              | 6.2%                                | 8.2%      | -3.2%     | -10.5%  |
| New Zealand                              | 655     | 436    | -33%             | -0.9%                               | 2.0%      | -4.5%     | -1.4%   |
| Total OECD Asia / Pacific                | 29 777  | 17 081 | -43%             | -3.1%                               | 3.9%      | -3.2%     | -7.1%   |
| ECMT - CEECs                             |         |        |                  |                                     |           |           |         |
| Albania*                                 |         | 315    |                  |                                     |           |           | 3.0%    |
| Bosnia - H. *                            | no data |        |                  |                                     |           |           |         |
| Bulgaria*                                | 838     | 943    | 13%              | 3.6%                                | 2.7%      | -4.3%     | -1.7%   |
| Croatia*                                 | 1166    | 608    | -48%             | 3.2%                                | -1.5%     | -7.2%     | -1.8%   |
| Czech Republic                           | 1983    | 1 382  | -30%             | -4.4%                               | 0.2%      | 1.4%      | -1.8%   |
| Estonia *                                | 252     | 170    | -33%             | 1.9%                                | 3.7%      | -7.3%     | -4.5%   |
| FYR Macedonia*                           | 148     | 155    | 5%               | 4.1%                                | -0.7%     | -2.4%     | -1.1%   |
| Hungary                                  | 1627    | 1 296  | -20%             | 0.0%                                | 4.1%      | -6.8%     | 1.9%    |
| Latvia*                                  | 646     | 516    | -20%             | 0.1%                                | 3.0%      | -3.9%     | -3.2%   |
| Lithuania*                               | 667     | 752    | 13%              | 1.6%                                | 1.8%      | -3.7%     | 4.1%    |
| Malta*                                   |         | 13     |                  |                                     |           |           |         |
| Poland                                   | 3446    | 5 712  | 66%              | 5.7%                                | 2.0%      | -1.5%     | -2.4%   |
| Romania*                                 | 1938    | 2 418  | 25%              | -0.4%                               | 7.3%      | -4.1%     | -0.8%   |
| Serbia / Mont*                           | 1425    | 953    | -33%             | 3.3%                                | 0.6%      | -6.7%     | -2.3%   |
| Slovak Republic                          |         | 608    |                  |                                     |           | -0.5%     | -0.8%   |
| Slovenia                                 | 620     | 274    | -56%             | -1.0%                               | -0.8%     | -4.9%     | -3.3%   |
| Total CEECs, excl.                       | 14 756  | 15 179 | 3%               | 2.0%                                | 2.4%      | -3.4%     | -1.5%   |
| Albania, Bosnia-H, Malta and Slovak Rep. |         |        |                  |                                     |           |           |         |
| ECMT - CIS                               |         |        |                  |                                     |           |           |         |
| Armenia*                                 |         | 259    |                  |                                     |           |           |         |
| Azerbaijan*                              |         | 811    |                  |                                     |           | -6.9%     | 8.0%    |
| Belarus *                                |         | 1718   |                  |                                     |           | -3.2%     | +1.9%   |
| Georgia*                                 | 795     | 637    |                  | 1.3%                                | 1.7%      | -7.3%     | 6.2%    |
| Moldavia*                                | 585     | 405    |                  | 4.8%                                | 1.9%      | -9.7%     | -0.1%   |
| Russia*                                  |         | 34 506 |                  |                                     | 2.5%      | -1.8%     | 3.9%    |
| Ukraine*                                 |         | 6 966  |                  |                                     |           | -5.9%     | 7.7%    |
| Total, ECMT-CIS                          |         | 45 043 |                  |                                     |           | -2.4%     | 4.4%    |
| excl. Armenia                            |         |        |                  |                                     |           |           |         |

| OECD North America   |                                |                |             |              |              |              |              |  |
|--|--------------------------------|----------------|-------------|--------------|--------------|--------------|--------------|--|
| Canada   | 5080                           | 2730           | -46%        | 0.7%         | -3.2%        | -3.0%        | -1.7%        |  |
| Mexico   | No data                        |                |             |              |              |              |              |  |
| United States  | 52627                          | 42 636         | -19%        | -0.3%        | -1.3%        | -0.6%        | 0.4%         |  |
| <b>Total</b>   |                                |                |             |              |              |              |              |  |
| <b>N.America, excl. Mexico</b>   | <b>57707</b>                   | <b>45 366</b>  | <b>-21%</b> | <b>-0.2%</b> | <b>-1.5%</b> | <b>-0.8%</b> | <b>0.3%</b>  |  |
| Western Europe   |                                |                |             |              |              |              |              |  |
| Austria  | 2574                           | 878            | -66%        | -2.5%        | -2.5%        | -4.6%        | -2.6%        |  |
| Belgium  | 3070                           | 1 163          | -62%        | -2.4%        | -1.9%        | -2.9%        | -5.7%        |  |
| Denmark  | 1208                           | 369            | -69%        | -5.4%        | -0.8%        | -2.4%        | -7.2%        |  |
| Finland  | 1055                           | 375            | -64%        | -6.3%        | 1.7%         | -4.8%        | -1.4%        |  |
| France   | 16445                          | 5 530          | -66%        | -2.0%        | -1.8%        | -3.2%        | -9.0%        |  |
| Germany  | 21653                          | 5 842          | -73%        | -3.6%        | -3.0%        | -3.8%        | -6.1%        |  |
| Great Britain  | 7499                           | 3221           | -57%        | -2.3%        | -1.3%        | -4.2%        | -1.4%        |  |
| Greece   | 1099                           | 1 619          | 47%         | 2.8%         | 3.6%         | -0.1%        | -5.6%        |  |
| Iceland  | 20                             | 23             | 15%         | 2.3%         | -0.4%        | 2.9%         | -7.9%        |  |
| Ireland  | 540                            | 374            | -31%        | 0.4%         | -1.6%        | -1.4%        | -2.6%        |  |
| Italy  | 11025                          | 5 625          | -49%        | -1.8%        | -2.5%        | -0.7%        | -4.1%        |  |
| Liechtenstein*   | 12                             | 1              | n.a.        | -2.8%        | -10.4%       | 0.0%         | -24.0%       |  |
| Luxembourg   | 132                            | 49             | -63%        | -2.9%        | -3.3%        | -0.8%        | -10.4%       |  |
| Netherlands  | 3180                           | 804            | -75%        | -4.6%        | -3.7%        | -2.4%        | -7.2%        |  |
| Norway   | 560                            | 259            | -54%        | -4.3%        | -0.9%        | 0.3%         | -6.6%        |  |
| Portugal   | 1615                           | 1 294          | -20%        | 4.8%         | 0.3%         | -3.5%        | -8.7%        |  |
| Spain  | 5456                           | 4 741          | -13%        | 1.8%         | 3.3%         | -4.4%        | -4.8%        |  |
| Sweden   | 1307                           | 480            | -63%        | -4.2%        | -0.9%        | -2.6%        | -5.1%        |  |
| Switzerland  | 1643                           | 510            | -69%        | -3.0%        | -2.6%        | -4.4%        | -3.7%        |  |
| Turkey   |                                |                |             |              |              |              |              |  |
| <b>Total Western Europe excl. Turkey</b>   | <b>80 093</b>                  | <b>33 158</b>  | <b>-59%</b> | <b>-2.1%</b> | <b>-1.3%</b> | <b>-3.1%</b> | <b>-5.6%</b> |  |
| <b>Total OECD/ECMT</b>   |                                | <b>155 827</b> |             |              |              |              | <b>-1.2%</b> |  |
| <b>Exclu. Albania, Bosnia-H, Malta, Slovak Rep, Turkey, Mexico, Belarus, Armenia</b> |                                |                |             |              |              |              |              |  |
| Source:  | IRTAD (30 countries)           |                |             |              |              |              |              |  |
| *  | ECMT Statistics (19 countries) |                |             |              |              |              |              |  |

As shown in Table 1 and in Figure 1, the greatest reductions in fatalities in the period 1970 to 2004 were observed in the Western European countries where overall the number of fatalities between 1970 and 2004 decreased by 59%. For a number of these countries, after a plateauing around the year 2000, there has been a new decreasing trend in the number of fatalities over the past 3-4 years (in 2002, 2003, 2004) and provisional data for 2005 also confirm this trend. For this region, on average the number of fatalities has decreased by 5.6% each year between 2000 and 2004.

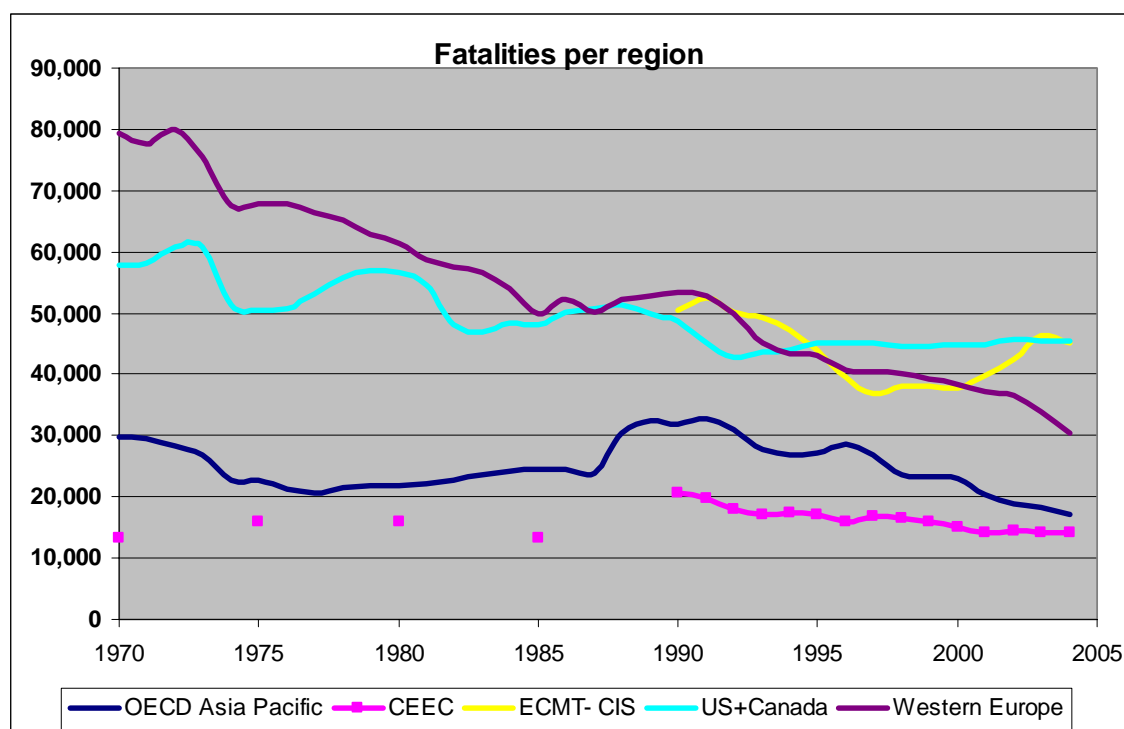
A similar trend is observed in Asia / Pacific. A 43% reduction in fatalities was achieved between 1970 and 2004. In most of the Asia Pacific countries included in this study, there was a slowing down of improvement during the 1980's, followed by greater reductions in the 1990-2004 period. During the period 2000-2004, there has been an average 7% annual reduction in road fatalities, largely due to the very good results recently achieved in Korea.

In North America (United States and Canada), where road fatalities decreased by 21% between 1970 and 2004 (-19% in the United States and -46% in Canada), there has been a slower decrease in the number of fatalities, mainly in the 1980s and 1990s. More recently, there has rather been a flattening in the curves.

In Eastern European countries, overall fatalities increased by 3% over the period 1970-2004. Most countries have shown the greatest improvement since 1990. For a number of these countries, historic peaks in road fatalities were reached in the beginning of the 1990s following the fall of the communist block.

The situation in the CIS countries is heavily influenced by the level of fatalities in Russia, which increased by 25% between 1980 and 2004. For most of the CIS countries, the peak in road fatalities may well not yet have been reached.

**Figure 1. Evolution of fatalities per region**



### ***Evolution in the exposure to risk***

The relative progress in road safety depends somewhat on what one uses as a measure of exposure to risk (i.e., population, registered vehicles, distance travelled). There has been a considerable debate in the past about which measure is most appropriate as an exposure measure. Those in the health sector prefer the use of population as the denominator since it permits comparisons with other causes of injury or with diseases. As the health and transport sector increase their level of co-operation, fatalities per 100 000 population are becoming more widely used.

In the transport sector, it has been common, where data are available, to use fatalities per distance travelled (e.g. fatalities per million vehicle-kilometres) as a principal measure or fatalities per 10 000 vehicles. Fatalities per distance travelled has traditionally been favoured by road transport authorities as it implicitly discounts fatality rates if travel is increased.



Figure 2. Risk of road fatalities per 100 000 inhabitants in 2004

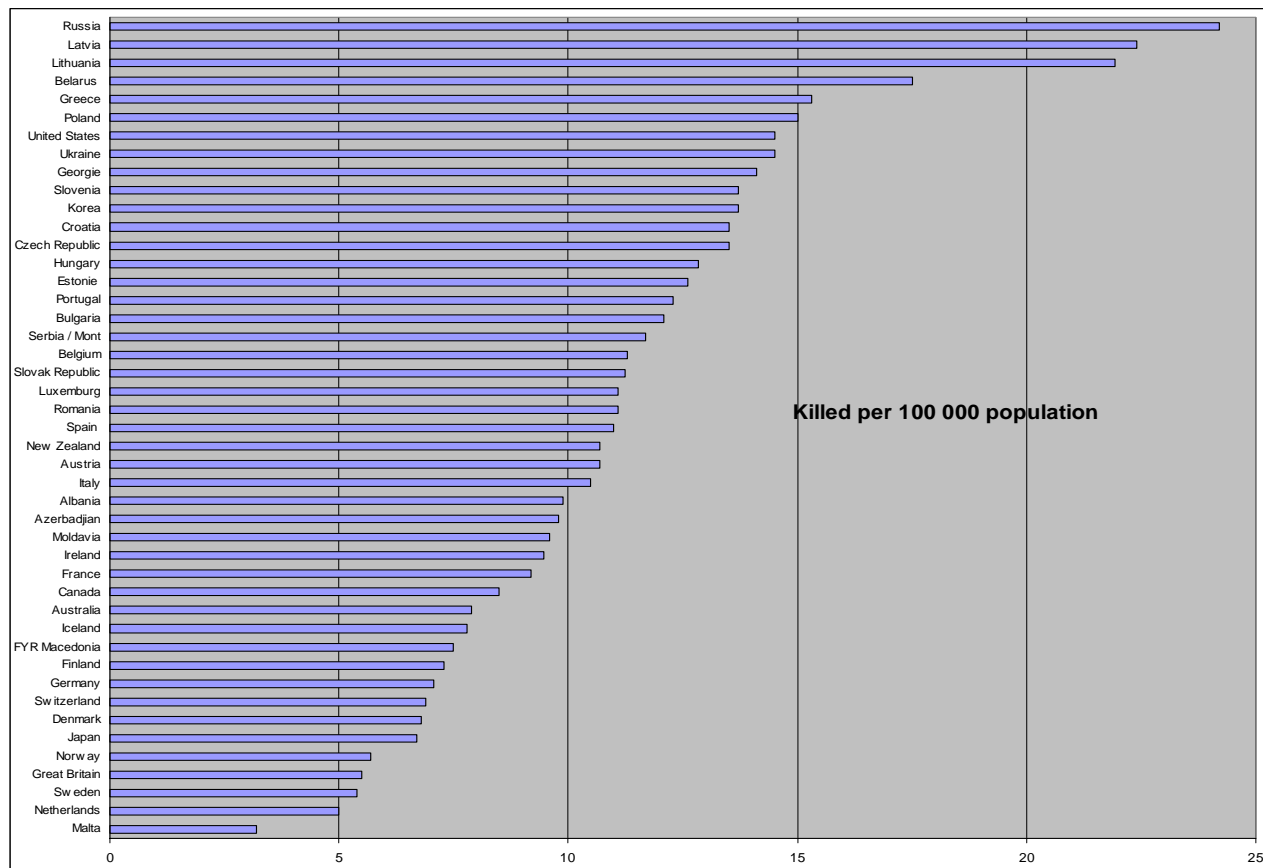
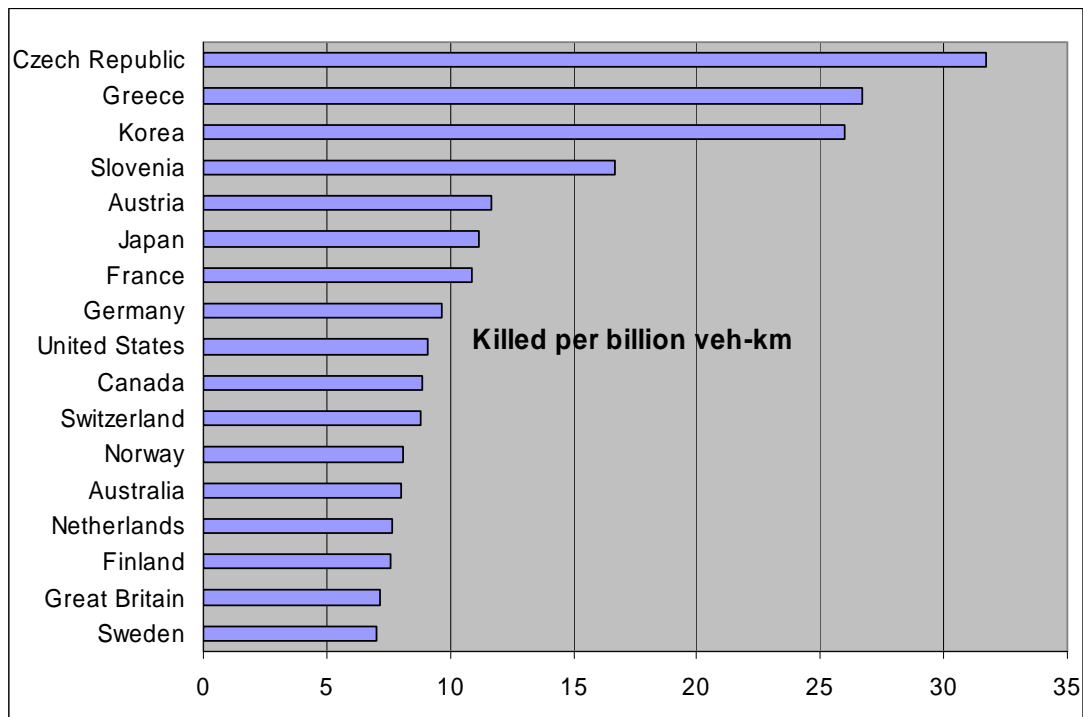


Figure 2 and Figure 3 show the number of fatalities per 100 000 population and per billion kilometres travelled for those countries providing this information. Based on fatalities per 100 000 population, most countries have shown considerable progress during the 1990-2004 period, with Sweden, Great Britain, Netherlands and Norway having rates in the 5 to 6 per 100 000 inhabitants range. Considering fatalities per billion kilometres travelled, the rates are lowest in Great Britain, the Nordic countries, and the Netherlands, and most countries have shown improvements on this measure as well.

**Figure 3. Risks of road fatalities per billion veh-km in 2003**



Source: IRTAD

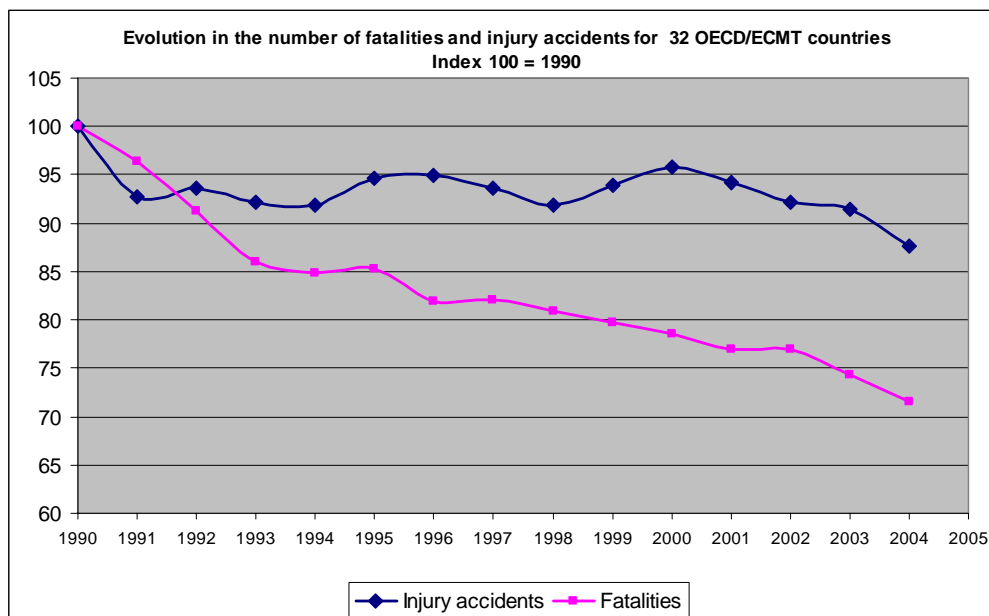
### ***Respective evolution in injury accidents and road fatalities***

In assessing road safety risks, developing countermeasures and evaluating their effectiveness, it is useful to focus not only on fatal crashes but also on serious injury crashes which result in the injured being admitted at least overnight to the hospital.

The definitions of “injury accidents” and “hospitalised” vary greatly from one country to another and comparable serious injury data between jurisdictions is very difficult to obtain. However, what is important is that this data is collected in each country/region from year to year in a consistent way and any trends are identified and analysed. As well, for a given jurisdiction, it is important to monitor the injury severity of accidents, by analysing data from hospitals (when available). A jurisdiction where the severity of accidents is decreasing can be considered as having a successful safety policy from a health perspective.

Overall, from 1990 to 2003, there has been a drop in fatalities of about 25% among OECD/ECMT countries while for injuries the reduction has only been about 8% as shown in Figure 4. These reductions occurred despite about a 30% increase in the number of registered vehicles in member countries. This gap between road fatalities and injury accidents could actually even be greater, as injury accidents are often very significantly under-reported.

**Figure 4. Overall changes in fatalities and injury accidents (1990-2004)**



## 2. Targets in OECD/ECMT countries

### *International targets*

The worrying number of accidents and their social and economic consequences led the ECMT Council of Ministers, in Bucharest in 2002, to unanimously adopt a common quantitative objective for all ECMT Member countries. ECMT Ministers of Transport adopted the target of a 50% reduction in the number of victims killed in road traffic accidents by 2012 in comparison with 2000.

Subsequently, the European Commission set a target for EU Members of reducing by 50% the number of road fatalities by the year 2010 compared to 2000.

### *National targets*

Some countries have adopted national targets rather than ECMT targets and still others have adopted both ECMT and national targets. Most countries have targets for fatalities, while a few countries such as Canada, Great Britain, and Hungary have targets for injuries, as well as fatalities. Some countries have only overall national targets, while others have sub-targets as well. There are also differences in what measure is used. Some countries have targets based on the percentage change in absolute numbers of fatalities and/or injuries, while others have adopted targets based on percentage change of fatality/injury rates using some measure of exposure (e.g., population, vehicle distance travelled). Furthermore, some targets are short-term (e.g., to be achieved in five years), whereas others are longer term (e.g., by 2012).

Table 2 shows the targets adopted in the 50 OECD/ECMT countries.

**Table 2. Road Safety Targets in Member Countries**

| <i>Country</i>    | <i>ECMT target</i> | <i>National fatalities target*</i>   |
|-------------------|--------------------|--|
| Albania           |                    | <i>Did not respond to the survey</i>   |
| Armenia           |                    | <i>Did not respond to the survey</i>   |
| Australia         |                    | -40% in fatalities per 100 000 population by 2010 compared to 1999   |
| Austria           |                    | -50% fatalities by 2010 compared to 1998-2000  |
|                   |                    | Other specific targets   |
| Azerbaijan        |                    | <i>Did not respond to the survey</i>   |
| Belarus           |                    | <i>Did not respond to the survey</i>   |
| Belgium           |                    | -50% fatalities by 2010 compared to 1998-2000  |
| Bosnia H          |                    | <i>Did not respond to the survey</i>   |
| Bulgaria          |                    | -50% fatalities by 2010 compared to 1991-2004  |
| Canada            |                    | -30% in fatalities and serious injuries by 2010<br>+ many sub targets  |
| Croatia           |                    | <i>Did not respond to the survey</i>   |
| Czech Republic    |                    | -50% in fatalities by 2010 compared to 2002  |
| Denmark           |                    | -40% fatalities and seriously injured by 2012 compared to 1998   |
| Estonia           |                    | <i>Did not respond to the survey</i>   |
| Finland           |                    | Less than 250 fatalities by 2010   |
| France            |                    | No national targets  |
| FYR Macedonia     |                    | <i>Did not respond to the survey</i>   |
| Georgia           |                    | Currently under consideration  |
| Germany           |                    | No national targets  |
| Greece            |                    | -50% fatalities by 2010 compared to 2000   |
| Hungary           |                    | -50% fatalities and injury accidents by 2015 compared to 2001  |
| Iceland           |                    | Fatalities per 100 000 population should not be higher than the best performing countries by 2016.<br>-5% reduction every year in killed and seriously |
| Ireland           |                    | -25% fatalities by 2006 compared to 1998-2003<br>several sub targets   |
| Italy             |                    | No national target   |
| Japan             |                    | Less than 5 750 fatalities in 2012   |
| Korea             |                    | -35% fatalities by 2006 compared to 2002<br>Several sub targets  |
| Latvia            |                    | -50% fatalities and -20% injured persons by 2006 compared to 1999  |
| Liechtenstein     |                    | <i>Did not respond to the survey</i>   |
| Lithuania         |                    | -50% fatalities and -20% injury accidents by 2010 compared to 2004   |
| Luxembourg        |                    | <i>Did not respond to the survey</i>   |
| Malta             |                    | -50 % fatalities and -50% injury accidents by 2014 compared to 2004  |
| Mexico            |                    | -27% fatalities by 2015 compared to 2002   |
| Moldavia          |                    | No national targets  |
| Netherlands       |                    | Less than 580 fatalities by 2020.<br>Several sub targets   |
| New Zealand       |                    | Less than 300 fatalities in 2010<br>Several sub targets  |
| Norway            |                    | -30% killed and seriously injured by 2015 compared to 2004.  |
| Poland            |                    | <i>Less than 3500 fatalities in 2010 (compared to 5640 in 2003, ie -38%)</i>   |
| Portugal          |                    | -50% fatalities by 2010 compared to 1998-2000<br>Several sub targets   |
| Romania           |                    | -50% fatalities by 2012 compared to 2002.  |
| Russia            |                    | <i>Did not respond to the survey</i>   |
| Serbia/Montenegro |                    | <i>Did not respond to the survey</i>   |
| Slovak Republic   |                    | -50% fatalities by 2010 compared to 2002.  |
| Slovenia          |                    | -50% fatalities by 2005 compared to 1995.<br>Several sub targets   |
| Spain             |                    | -40% fatalities by 2008 compared to 2003.  |
| Sweden            |                    | -50% fatalities by 2007 compared to 1996   |
| Switzerland       |                    | -50% fatalities and -50% seriously injured by 2010 compared to 2000.   |

|                                    |   |
|------------------------------------|---|
| Turkey                             | -40% fatalities by 2011 compared to 1999.                                 |
| Ukraine                            | No targets yet.   |
| United Kingdom<br>(Great Britain). | -40% in fatalities and serious injuries.<br>Several sub targets           |
| United States                      | 1.0 fatalities / 100 million vehicle-miles by 2008<br>Several sub targets |

\* A number of countries have also set up different sub targets. Please refer to the individual responses of each country for more detail.

### 3. Progress towards targets

For the ECMT countries for which data are available, Table 3 shows the average annual reduction (or increase) in fatalities achieved for 2000-2004. The table also shows the average annual reduction required over the period 2005-2012 to reach the ECMT (-50% fatalities) target, on the basis of a constant annual rate.

Based on a constant average rate, aggregate fatalities would need to decrease by 5.6% per year from 2000 to 2012 on average to reach the -50% target by 2012.

The analysis of the latest results as set out in this table suggests that only around a quarter of ECMT member countries appear to be on track to achieve the targets that have been set. Of course, conclusions reached on the basis of an in-depth analysis may well differ.

**Table 3. Average annual reduction (increase) in fatalities since 2000 and average annual reduction required to reach the ECMT targets (ECMT countries only)**

| Average annual reduction to reach -50% target between 2000 and 2012 : -5.60%                        |                    |                    |  |   |
|---|--------------------|--------------------|--|---|
| Country   | Fatalities in 2000 | Fatalities in 2004 | Average annual reduction (or increase) achieved in 2000-2004 | Average annual reduction required during 2005-2012 to reach the -50% target in 2012 |
| Azerbaijan  | 596                | 811                | 8.0%   | -11.8%  |
| Ukraine   | 5200               | 6966               | 7.6%   | -11.6%  |
| Georgia   | 500                | 637                | 6.2%   | -11.0%  |
| Lithuania   | 641                | 752                | 4.1%   | -10.1%  |
| Russia  | 29594              | 34506              | 3.9%   | -10.0%  |
| Albania   | 280                | 315                | 3.0%   | -9.6%   |
| Turkey *  | 3941               | 4428               | 3.0%   | -9.6%   |
| Hungary   | 1200               | 1296               | 1.9%   | -9.2%   |
| Belarus   | 1594               | 1718               | 1.9%   | -9.2%   |
| Moldavia  | 406                | 405                | -0.1%  | -8.3%   |
| Slovak  | 628                | 608                | -0.8%  | -7.9%   |
| Romania   | 2499               | 2418               | -0.8%  | -7.9%   |
| FYR Macedonia   | 162                | 155                | -1.1%  | -7.8%   |
| Finland   | 396                | 375                | -1.4%  | -7.7%   |
| Great Britain   | 3409               | 3221               | -1.4%  | -7.6%   |
| Bulgaria  | 1012               | 943                | -1.7%  | -7.5%   |
| Czech Republic  | 1486               | 1382               | -1.8%  | -7.5%   |
| Croatia   | 655                | 608                | -1.8%  | -7.4%   |
| Serbia  | 1048               | 953                | -2.3%  | -7.2%   |
| Poland  | 6294               | 5712               | -2.4%  | -7.2%   |
| Ireland   | 415                | 374                | -2.6%  | -7.1%   |
| Austria   | 976                | 878                | -2.6%  | -7.1%   |
| Latvia  | 588                | 516                | -3.2%  | -6.8%   |
| Slovenia  | 313                | 274                | -3.3%  | -6.8%   |
| Switzerland   | 592                | 510                | -3.7%  | -6.6%   |
| Italy   | 6649               | 5625               | -4.1%  | -6.4%   |
| Estonia   | 204                | 170                | -4.5%  | -6.2%   |
| Greece  | 2037               | 1670               | -4.8%  | -6.0%   |
| Spain   | 5776               | 4741               | -4.8%  | -6.0%   |
| Sweden  | 591                | 480                | -5.1%  | -5.9%   |
| Belgium   | 1470               | 1163               | -5.7%  | -5.6%   |
| Germany   | 7503               | 5842               | -6.1%  | -5.4%   |
| Norway  | 341                | 259                | -6.6%  | -5.1%   |
| Netherlands   | 1082               | 804                | -7.2%  | -4.8%   |
| Denmark   | 498                | 369                | -7.2%  | -4.8%   |
| Portugal  | 1860               | 1294               | -8.7%  | -4.0%   |
| France  | 8079               | 5530               | -9.0%  | -3.8%   |
| Luxembourg  | 76                 | 49                 | -10.4%   | -3.1%   |
| Armenia   | 214                | no data            |  |   |
| Bosnia  | No data            |                    |  |   |
| Iceland   | 32                 | 23                 | Too much variability for a meaningful analysis               |   |
| Liechtenstein   | 3                  | 1                  | Too much variability for a meaningful analysis               |   |
| Malta   | 15                 | 13                 | Too much variability for a meaningful analysis               |   |
| * Network operated by the National Police EGM (not representative of the whole territory of Turkey) |                    |                    |  |   |

Even though OECD non ECMT countries do not have such a -50% reduction target, Table 4 presents similar data for these countries, for comparison purposes i.e. the average annual reduction or increase achieved in the period 2000-04, and the average annual reduction that would be required during the period 2005-2012 to achieve a 50% reduction in fatalities over the period 2000-2012.

**Table 4. Average annual reduction (increase) in fatalities since 2000 and average annual reduction required to reach a 50% reduction by 2012 (OECD non ECMT countries)**

| Country       | Fatalities in 2000 | Fatalities in 2004 | Average annual reduction (or increase) achieved in 2000-04 | Average annual reduction required during 2005-2012 to reduce fatalities by -50% by 2012 |
|---------------|--------------------|--------------------|--|---|
| Australia     | 1824               | 1590               | -3.4%  | -6.7%   |
| Canada        | 2927               | 2730               | -1.7%  | -7.5%   |
| Japan         | 10 403             | 8 492              | -4.9%  | -5.9%   |
| Korea         | 10 236             | 6 563              | -10.5%   | -3.1%   |
| Mexico        |                    |                    |  |   |
| New Zealand   | 462                | 436                | -1.4%  | -7.6%   |
| United States | 41 945             | 42 636             | 0.4%   | -8.5%   |

#### **4. Key road safety problems**

In the survey circulated by the JTRC Secretariat to all 50 OECD/ECMT members, countries were asked to identify the key road safety problems they were facing.

The question was left open, with no suggestions or indications on the possible responses. The responses received were therefore much diversified and around 40 different problems were cited (see Table 5). The advantage of this approach includes the opportunity to identify types of problems which may not have appeared in a more structured survey. A disadvantage is that the responses obtained are more difficult to compile and structure.

**Table 5. List of key problems as identified by the 39 responding jurisdictions (alphabetical order)**

|   |  |   |
|---|--|---|
| Accidents with animals  | Infrastructure aspects: conflict potential, condition of roads: black spots; safety barriers; separation, obstacle on roadside, inadequate maintenance; small investment in infrastructure [alphabetical order?] | Railway crossing  |
| Bus safety  |  | Rural roads / Narrow roads / overtaking in rural roads/ head-on collisions on rural roads         |
| Children  |  | Seatbelt (front and rear); child restrain system; seatbelt in buses                               |
| Drink Driving   | Institutional problem / Lack of co-ordination / Lack of political will / developing a strategy   | Single vehicle accidents / roadway departure crashes / roadside hazards/ run off crash            |
| Drugs   | Inter vehicle Distance   | Slower rate of reduction of fatal casualties  |
| Education / training / road safety awareness / Long life education  | International co-ordination  | Speed, speeding, speed limits   |
| Elderly drivers   | Intersection; left turn at junctions   | Traffic signal violations   |
| Enforcement: Non compliance of rules / low level of enforcement / implementation of new tech for enforcement, serious offenders | Investment (lack of) infrastructure  | Under reporting of injury accidents   |
| Evaluation / Monitoring of road safety  | License (driving without)  | Urban areas   |
| Fatigue   | Making use of scientific potential   | Vehicle inspection / safety of vehicle / safety equipment of vehicle / no ESP in smaller vehicles |
| Foreign drivers   | Media not used as they should  | Vulnerable road users, cyclist  |
| Frontal accidents   | Medical Care / trauma management   | Weather conditions  |
| Hazardous driving, poor attention while driving, aggressive driving   | Mobile phone   | Young Driver / novice drivers/lack of driving experience / unsafe behaviour / negligent driving   |
| HGV / commercial vehicles   | Motorcycles / mopeds / helmet and protecting gears   |   |
| Improvised rule making  | Motorways  |   |
|   | Pedestrian   |   |



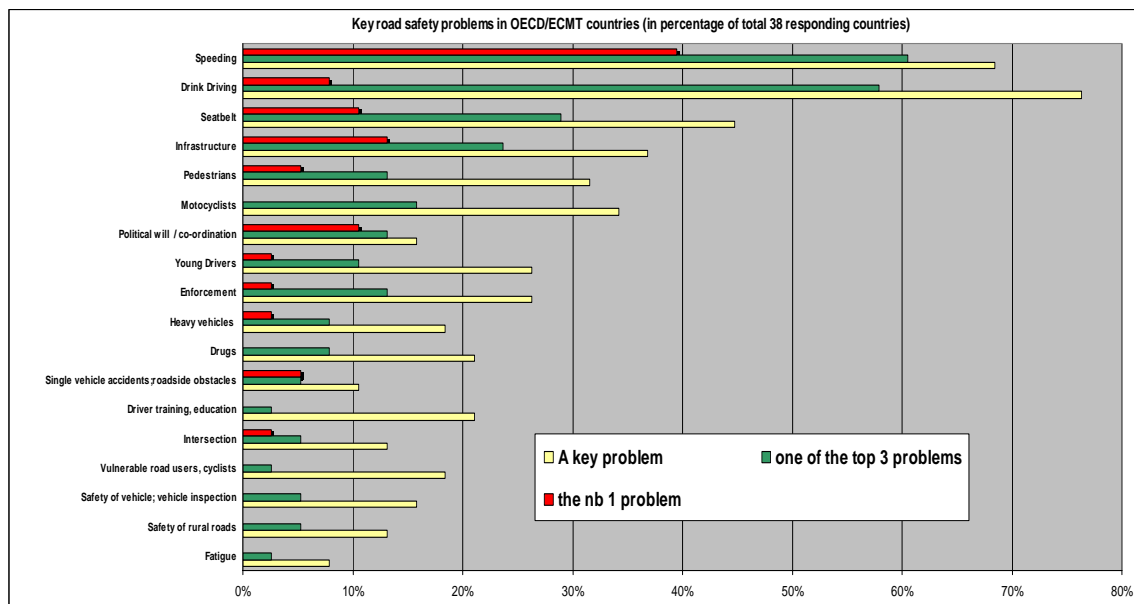
#### **4.1 Overview**

The key road safety problems, as cited by the 38 responding countries are set out in Figure 5 – which shows the "number 1" problem, the top 3 problems and the problems the most often cited by the 38 responding countries – provides a clear indication of the priority problems faced by the responding countries.

Based on the responses from the 38 countries:

- the number 1 problem is speeding (39 % of the responding countries)
- the "top 3" problems, based on the responses from these countries, are:
  - Speeding (including excessive and inappropriate speeds) (for 61% of the responding countries)
  - Drink driving (for 58% of the responding countries)
  - Non wearing of seatbelts (for 29% of the responding countries).
- Other key road safety problems commonly cited by responding countries are:
  - Infrastructure (including rural roads, inadequate maintenance, run-off the road crashes, etc.)
  - Political will, lack of co-ordination
  - Vulnerable road users (in particular motorcyclists and pedestrians)
  - Young drivers (doesn't include education etc)
  - Drugs and driving
  - Heavy vehicles
  - Fatigue

**Figure 5. Key road safety problems, as cited by responding countries**



### **Interpretation of the responses**

#### *High level issues*

The responses received include relatively little mention of the fundamental high level aspects of road safety policy e.g.: institutions, court system, and political awareness. The respondents focused more on practical issues and measures. Of course, high level aspects of road safety (leadership, institutional aspects, etc.) are crucial and will be addressed in detail in the main report of the Working Group. .

#### *Young drivers / education*

Some issues which were identified separately are closely related. For example, “driver training” and “young drivers” responses are closely related. If combined, young drivers / training and education responses would rank in the top 3 issues. Young Drivers / driver education combined should therefore probably be regarded as a one of the key road safety problems.

#### *Vulnerable road users*

Similarly, responses received separated pedestrians and motorcyclists from vulnerable road users. This is due to the fact that in many countries, pedestrians' safety is a growing issue and was cited as a distinct problem. As well, in several countries, the number of motorcyclists killed has increased sharply over the past few years. If grouped into one heading, vulnerable road users would also rank very highly.

#### *Infrastructure*

Rural roads, single-vehicle accidents and intersections were cited by several countries as key and distinct problems; they were kept separated in Figure 5. However they are all infrastructure related issues. If all responses that made reference to infrastructure and infrastructure-related aspects were combined, the ranking of this combined category would rise to priority 3, after speed and alcohol

and before seat-belt wearing. Experience across member countries suggests that infrastructure-related aspects are a key problem, but not necessary more important than seat-belt wearing.

#### *Vehicle safety*

Vehicle safety was not cited as a major road safety issue; however it should be noted that road safety professionals recognise that greater use of recent modern vehicles, with safety features (e.g. Electronic Stability Control) can make a very large contribution to improving road safety. Presumably responses to the survey did not see this being in the scope of the questions to be asked, or it reflects a lack of awareness of the potential benefits of the recently developed safety devices.

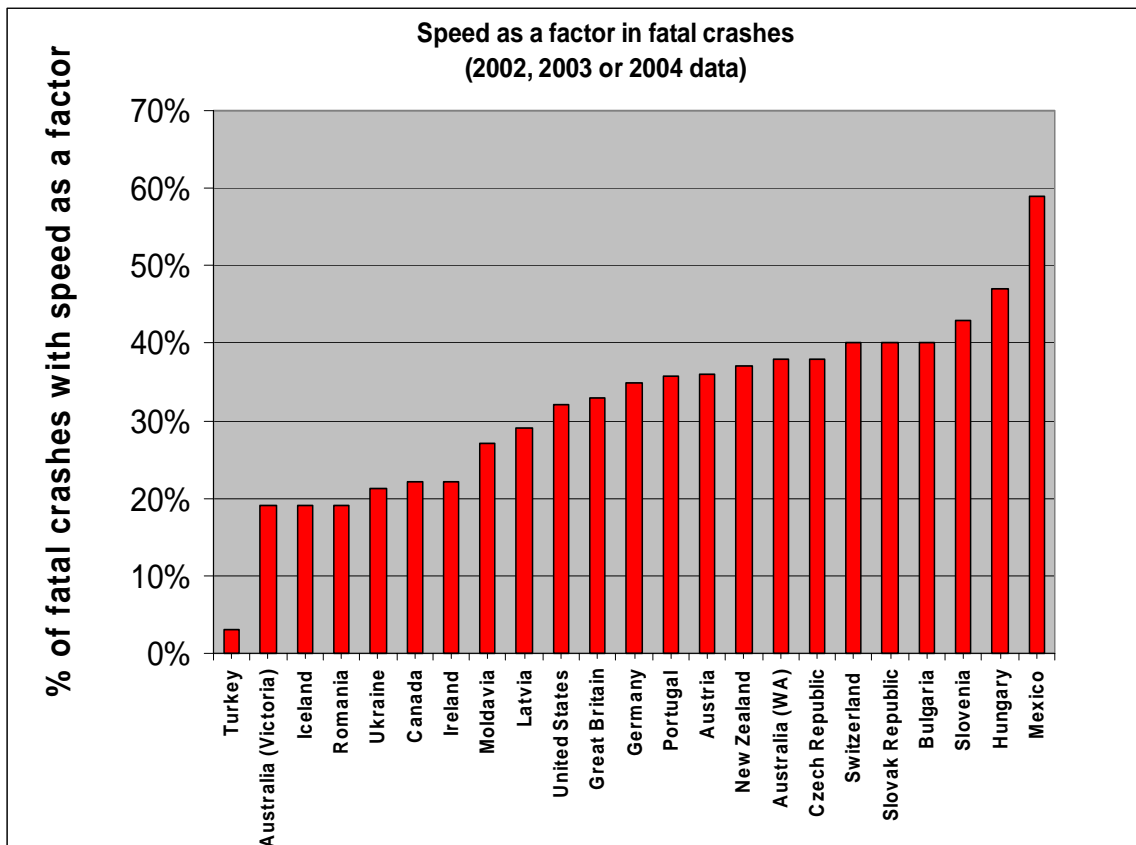
### **4.2      *Speeding***

Speeding (i.e. excessive speed or inappropriate speed) is the "number 1" problem for almost 40% of the responding jurisdictions.

Speeding - which encompasses *excessive speed* (i.e. driving above the speed limits) or *inappropriate speed* (driving too fast for the prevailing conditions, but within the limits) – is dangerous. As well as being a causation factor in around one third of fatal accidents, speed is an aggravating factor in all accidents. Vulnerable road users are particularly exposed to vehicle impacts at speeds above the limits of human tolerance - especially in urban areas.

Figure 6 below shows that speed (excess or inappropriate) was identified in crash reports as a contributing factor in between 19 and 60 per cent of fatal crashes in 23 countries. One country (Turkey) identified speed as being responsible for only 3% of fatal accidents.

Figure 6. Speed as a factor in fatal crashes<sup>1</sup>



Excessive speed is a widespread social problem. Excessive speed affects the entire road network (motorways, main highways, rural roads, urban roads). Typically, at any time, 50% of drivers are above the speed limits. Table 6 below shows the proportion of drivers above the speed limits for different types of roads.

<sup>1</sup> It should be noted that this indicator is often based on the subjective assessment of the police officer at the scene of the crash. The "percentage of fatal crashes where speed is a causation factor" is a potentially misleading statistic as it does not capture the relevance of speed to crash severity and is often based on somewhat subjective and imprecise criteria (which can vary between jurisdictions and over time). The number of accidents where speed is a factor could therefore be much greater.

**Table 6. Proportion of drivers of passenger cars above the speed limits on different types of roads in a selection of OECD/ECMT countries in 2003**

|                       | Motorways                             |                        | Rural roads    |                       | Urban roads   |                   |
|-----------------------|---------------------------------------|------------------------|----------------|-----------------------|---|-------------------|
|                       | Limit                                 | % above the limit      | Limit          | % above the limit     | Limit   | % above the limit |
| <b>Austria (2004)</b> | 130 km/h                              | 23%                    | 100km/h        | 18%                   | 50 km/h<br>30km/h   | 51%<br>78%        |
| <b>Canada</b>         | 110 km/h<br>100 km/h                  | 15 to 53%<br>15 to 81% | 80 km/h        | 15 to 45%             |   |                   |
| <b>Denmark</b>        | 110 km/h<br>130 km/h                  | 56%<br>18%             | 80 km/h        | 61%                   | 50 km/h   | 55%               |
| <b>Iceland</b>        | 90 km/h                               | 80%                    | 90 km/h        | 77%                   |   |                   |
| <b>Ireland</b>        | 70 mph                                | 23%                    | 60 mph         | 8%                    | 40 mph (arterial rd)<br>30 mph (arterial rd)<br>30 mph (local str.) | 75%<br>86%<br>36% |
| <b>Korea</b>          | 100-110 km/h                          | 50%                    | 60km/h         | not available         |   |                   |
| <b>Lithuania</b>      |                                       | 42%                    |                | 47%                   |   |                   |
| <b>Netherlands</b>    | 100 km/h<br>120km/h                   | 45%<br>40%             | 80 km/h        | 45%                   | 50 km/h (arterial rd)<br>50 km/h (local str.)                       | 73%<br>approx.45% |
| <b>Poland (2005)</b>  |                                       |                        |                | 57%                   | 50 km/h   | 81%               |
| <b>Portugal</b>       | 120 km/h                              | 46%                    | 90 km/h        | 55%                   | 80 km/h (arterial rd)<br>50 km/h (collector streets)                | 50%<br>70%        |
| <b>Sweden</b>         | 110 km/h                              | 68%                    | 30 to 110 km/h | 58% (all state roads) |   |                   |
| <b>Switzerland</b>    | 120 km/h                              | 38%                    | 80 km/h        | 24%                   | 50 km/h (arterial rd)   | 21%               |
| <b>United Kingdom</b> | 70 mph                                | 57%                    | 60 mph         | 9%                    | 40 mph (arterial rd)<br>30 mph (local str)                          | 27%<br>58%        |
| <b>United States</b>  | 65-75 mph<br>vary from state to state | 41-66%                 | 55 mph         | 47%                   | 40 mph (arterial rd)<br>30 mph (local str)                          | 73%<br>74%        |

Source: OECD/ECMT (2006). Report on Speed Management. Responses to the survey of the Target Working Group

### 4.3 Drink Driving

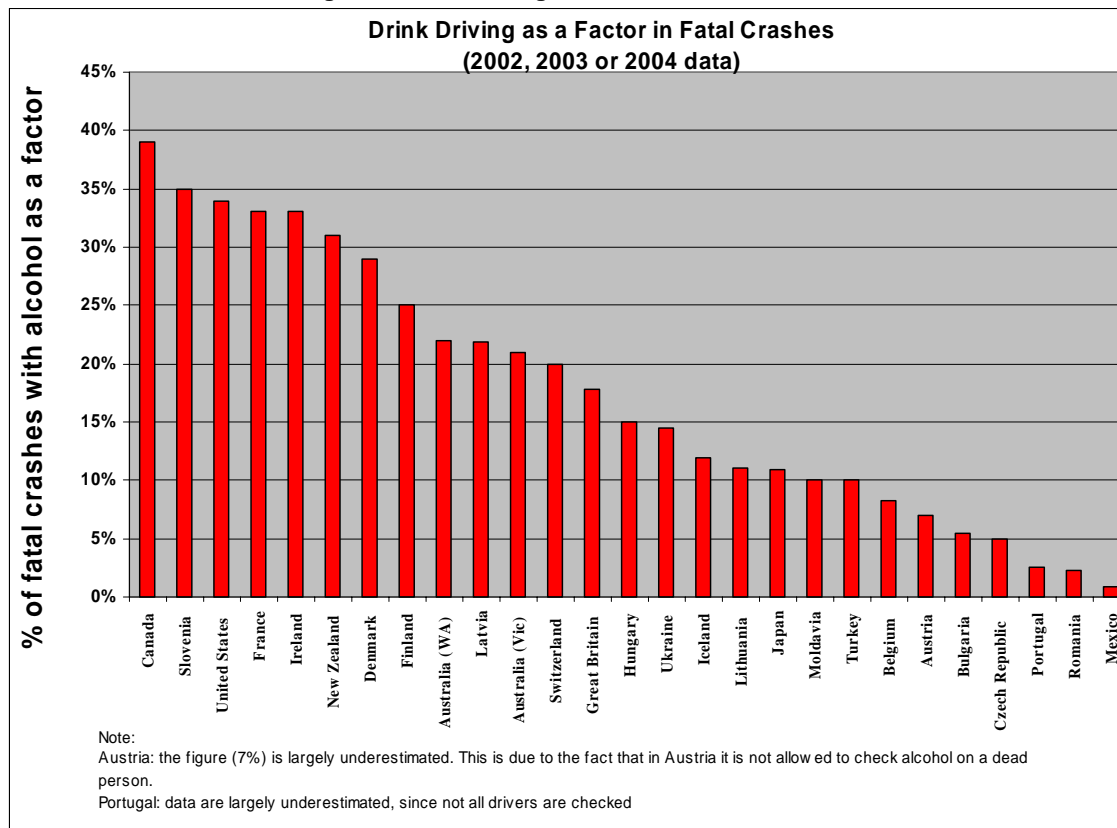
Impaired driving due to alcohol is a major contributor to road crashes in many countries. Research has shown that the risk of crashing is double for a driver with a blood alcohol concentration of 0.5 g/l compared to driver with no alcohol. The risk of crashing is 7-8 times higher for a driver with a BAC of 0.8g/l and 30 plus times for a driver with a BAC of 1.5 g/l compared to a driver with no alcohol.

Figure 7 shows for a wide range of countries the percentage of fatal crashes where drink driving is a reported factor. The percentage ranges from lows of around 1-5% in Mexico, Bulgaria, Czech Republic, Portugal and Romania to highs around 30-40% in Canada, Slovenia, United States, France, Ireland and New Zealand.

A number of those countries with low reported incidences of drink driving crashes did report problems with surveillance, recording and reporting of drink driving crashes resulting in significant under estimates of the problem. In these countries, the number of fatal crashes where drink driving is a factor is often largely underestimated, either because not all drivers are checked in case of a crash or because of specific regulations related to tests on a dead body. In Austria, for example, it is not allowed to test a dead body for alcohol level, which explains the low figure.

It should be highlighted that accurate and comprehensive data on the extent of the drink driving problem are a prerequisite to the development of well targeted and effective counter measures.

**Figure 7. Drink driving as a factor in fatal crashes**



\* Fatal crashes, where at least one of the collision partner has a BAC above the legal limit.

Table 7 shows the maximum permissible Blood alcohol content in the responding countries. Maximum BAC level varies from 0.0 g/l to 0.8 g/l. A majority of countries have a maximum BAC at 0.5 g/l. Some countries have a lower differentiated maximum BAC level for young drivers and / or for professional drivers.

**Table 7. Maximum permissible blood alcohol content in the responding countries as of 1 January 2006**

| <b>Country</b>        | <b>BAC levels</b>   | <b>Comment</b>  |
|-----------------------|---|---|
| <b>Australia</b>      | 0.5 g/l<br>0.2 g/l for novice drivers, truck and bus drivers, taxi drivers  |   |
| <b>Austria</b>        | 0.5/l for general drivers<br>0.1 g/l for : <ul style="list-style-type: none"> <li>• Moped drivers &lt; 20 years</li> <li>• Novice drivers</li> <li>• Truck drivers</li> <li>• Bus drivers</li> </ul>    |   |
| <b>Belgium</b>        | 0.5 g/l for all drivers   |   |
| <b>Bulgaria</b>       | 0.5 g/l for all drivers   |   |
| <b>Canada</b>         | 0.8 g/l<br>0.2 g/l for novice drivers   | All provinces/territories but one have administrative sanctions (e.g. short term licence suspensions of 12-24 hours) for drivers with BAC's between 50-80 mg% |
| <b>Czech Republic</b> | 0.0 g/l for all drivers   |   |
| <b>Denmark</b>        | 0.5 g/l for all drivers   | No BAC max for mopeds   |
| <b>Finland</b>        | 0.5 g/l for all drivers   |   |
| <b>France</b>         | 0.5 g/l<br>0.2 g/l for bus/coach drivers  |   |
| <b>Georgia</b>        | There is no maximum BAC.  | There is no maximum BAC, but it is not allowed to drive under the influence of alcohol.   |
| <b>Germany</b>        | 0.5 g/l   |   |
| <b>Greece</b>         | 0.5 g/l<br>0.2 g/l for : <ul style="list-style-type: none"> <li>• novice drivers</li> <li>• drivers of heavy vehicles</li> <li>• drivers of public vehicles</li> <li>• motorised 2-wheelers.</li> </ul> |   |
| <b>Hungary</b>        | 0.0 g/l   | 0.2 g/l in practice   |
| <b>Iceland</b>        | 0.5 g/l   |   |
| <b>Ireland</b>        | 0.8 g/l   |   |
| <b>Italy</b>          | 0.5 g/l   |   |
| <b>Japan</b>          | 0.3 g/l   | Usually checked by 0.15 mg / 1 liter of air   |
| <b>Korea</b>          | 0.5 g/l   |   |
| <b>Latvia</b>         | 0.5 g/l<br>0.2 g/l for novice drivers<br>1 g/l for mopeds and cyclists  |   |
| <b>Lithuania</b>      | 0.4 g/l   |   |
| <b>Malta</b>          | 0.8 g/l   |   |
| <b>Mexico</b>         | 0.8 g/l   |   |
| <b>Moldova</b>        | 0.0 g/l   |   |
| <b>Netherlands</b>    | 0.5 g/l<br>0.2 g/l for novice drivers (as of 2006)  |   |

|                        |  |  |
|------------------------|--|--|
| <b>New Zealand</b>     | 0.8 g/l<br>0.3 g/l for drivers under 20                        |  |
| <b>Norway</b>          | 0.2 g/l  |  |
| <b>Poland</b>          | 0.2 g/l  |  |
| <b>Portugal</b>        | 0.5 g/l  |  |
| <b>Romania</b>         | 0.0 g/l  | Criminal offence if above 0.8 g/l.   |
| <b>Slovak Republic</b> | 0.0 g/l  |  |
| <b>Slovenia</b>        | 0.5 g/l  |  |
| <b>Spain</b>           | 0.5 g/l<br>0.3 g/l for novice drivers and professional drivers |  |
| <b>Sweden</b>          | 0.2 g/l  |  |
| <b>Switzerland</b>     | 0.5 g/l  | (it was 0.8 g/l until 2004)<br>There is discussion to reduce BAC level to 0 for professional drivers and young drivers.  |
| <b>Turkey</b>          | 0.5 g/l  |  |
| <b>Ukraine</b>         | 0.0 g/l  |  |
| <b>United Kingdom</b>  | 0.8 g/l  |  |
| <b>United States</b>   | 0.8 g/l<br>0.2 g/l for drivers under 21                        | All 50 States have enacted zero tolerance laws (primarily, per se laws at .02% BAC or lower) that make it illegal for drivers under the age of 21 to have any detectable amount of alcohol in their bodies. As of August 2005, all 50 states, the District of Columbia, and Puerto Rico have enacted .08 BAC per se laws. Additionally, as of January 2005, 32 States have enacted high BAC laws |

#### 4.4 *Seatbelt wearing*

When a crash does occur failure to use seatbelts is a major risk factor for vehicle occupants. While wearing a seatbelt in front seats is mandatory in almost all countries. This is not the case regarding rear seats. Table 8 summarises the seatbelt requirements in the responding countries.

Seatbelt wearing is compulsory in front seats in all countries, except in Georgia, where a law should be adopted soon, and in the United States, where legislation varies from one state to another. Most countries also have legislation for wearing seatbelts in rear seats. However this has been introduced later and in many countries it is not enforced. This explains the much lower wearing rates in rear seats, even in countries where there is a very good rate for front seats.



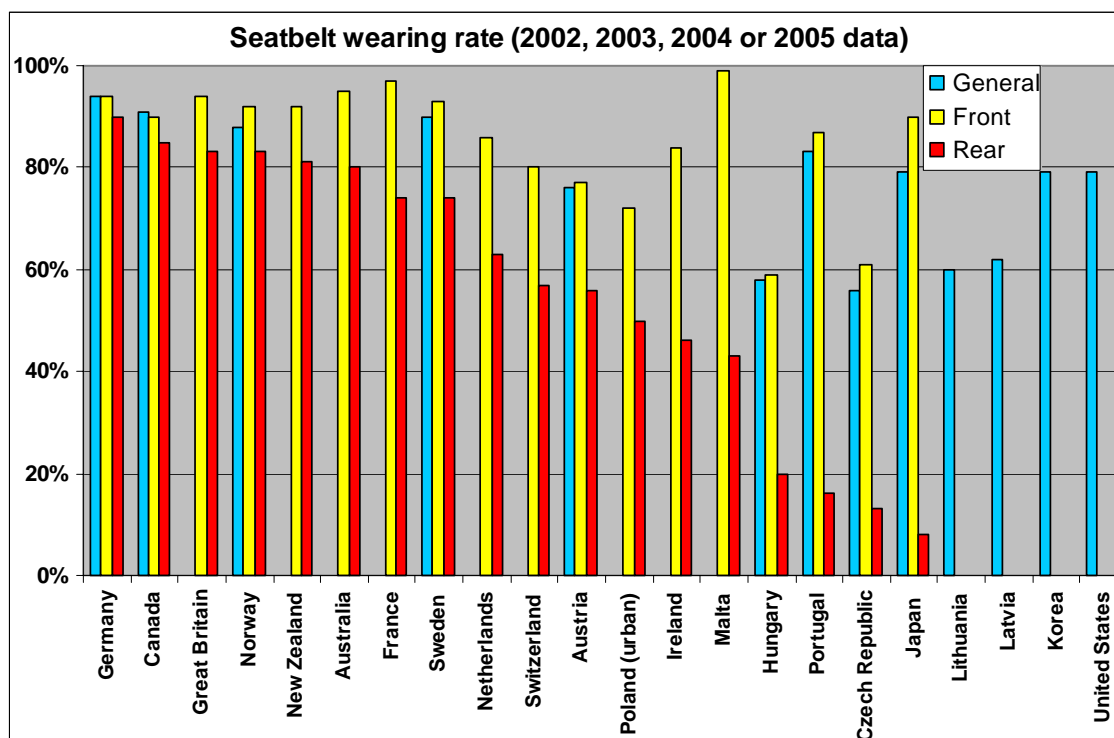
**Table 8. Seatbelt legislation in front seats and rear seats and wearing rates as of 2006**

| Country                | Front seats   | Rear seats                | Wearing rate<br>(estimation – 2004 or 2003)                                 |
|------------------------|---|---------------------------|---|
| <b>Australia</b>       | Yes   | Yes                       | Front : > 95%<br>Rear > 80%   |
| <b>Austria</b>         | Yes   | Yes                       | 76% (general)   |
| <b>Belgium</b>         | Yes   | Yes                       | 51-77% (driver)   |
| <b>Bulgaria</b>        | Yes   | Yes                       |   |
| <b>Canada</b>          | Yes   | Yes                       | 91% (general)<br>90% (front seat)<br>85% (rear seat)                        |
| <b>Czech Republic</b>  | Yes   | Yes                       | 56% (general)<br>61% (front seat)<br>13% (rear seat)                        |
| <b>Denmark</b>         | Yes   | Yes                       | Around 90%  |
| <b>Finland</b>         | Yes   | Yes                       | Around 92% in front seats   |
| <b>France</b>          | Yes   | Yes                       | Front seats: 97%<br>Rear seats: 74%   |
| <b>Georgia</b>         | Yes, on highways only   | <b>No</b>                 |   |
| <b>Germany</b>         | Yes   | Yes                       | Front seats: 94-5%<br>Rear seats: 90%                                       |
| <b>Greece</b>          | Yes   | Yes                       |   |
| <b>Hungary</b>         | Yes   | Yes                       | 58% (general)   |
| <b>Iceland</b>         | Yes   | Yes                       |   |
| <b>Ireland</b>         | Yes   | Yes                       | Front seats: 84%<br>Rear seats: 46%   |
| <b>Italy</b>           | Yes   | Yes                       |   |
| <b>Japan</b>           | Yes   | <b>No</b>                 | General: 79%<br>Front seats: 90%<br>Rear seats: 8%                          |
| <b>Korea</b>           | Yes   | Yes, but only on freeways | 79% in 2003 (23% in 2003)   |
| <b>Latvia</b>          | Yes   | Yes                       | 62% in 2002   |
| <b>Lithuania</b>       | Yes   | Yes                       | Around 60% in 2004  |
| <b>Malta</b>           | Yes   | Yes<br>Since 2004         | Front : 90-99%<br>Rear : 20-43% in 2004                                     |
| <b>Mexico</b>          | Yes   | <b>No</b>                 |   |
| <b>Moldova</b>         | Seatbelt wearing is mandatory for drivers and all passengers, except: <ul style="list-style-type: none"> <li>• driver executing a manoeuvre</li> <li>• driving instructor during instruction</li> <li>• pregnant women</li> <li>• drivers (police, emergency, etc.).</li> </ul> | Yes                       | No statistics.<br>Seatbelt wearing is not enforced.                         |
| <b>Netherlands</b>     | Yes   | Yes                       | 90% (front seats)<br>69% (rear seats)                                       |
| <b>New Zealand</b>     | Yes   | Yes                       | 92% front seats in 2003<br>91% rear seats in 2003                           |
| <b>Norway</b>          | Yes   | Yes                       | General 88% in 2003<br>Front seats: 92%<br>Rear seats: 83%                  |
| <b>Poland</b>          | Yes, since 1983   | Yes, since 1997           | Urban areas (2005)<br>72% (front seats)<br>46% (rear seats)                 |
| <b>Portugal</b>        | Yes   | Yes                       | 83% in general in 2004<br>87% front seats in 2004<br>16% rear seats in 2004 |
| <b>Romania</b>         | Yes   | Yes                       |   |
| <b>Slovak Republic</b> | Yes   | Yes                       |   |
| <b>Slovenia</b>        | Yes   | Yes                       | 92-96% (driver) in 2003   |

|                       |   |  |  |
|-----------------------|---|--|--|
| <b>Spain</b>          | <b>Yes</b>  | <b>Yes</b>   |  |
| <b>Sweden</b>         | Yes   | Yes  | 90% (general) in 2003<br>93% : front seats<br>73% rear seats, adults<br>90% rear seats, children |
| <b>Switzerland</b>    | Yes   | Yes  | 80% (front seats) in 2003<br>57% (rear seats)  |
| <b>Turkey</b>         | Yes   | Yes  | Around 93 % for long distance trips<br>Around 16% for local/short trips.                         |
| <b>Ukraine</b>        | Yes (when vehicle fitted with seatbelts)  | Yes (when vehicles fitted with seatbelts)  |  |
| <b>United Kingdom</b> | Yes   | Yes  | 83% (rear seats in GB)<br>94% (front seats) in GB in 2003  |
| <b>United States</b>  | <b>No</b> national law<br>Requirements under each State law vary as to applications and exceptions.<br><br>As of April 2005, 21 States, plus the District of Columbia and Puerto Rico, have enacted primary belt laws | <b>No</b> national law.<br>Requirements under each State law vary as to applications and exceptions. | 79% (general) in 2003  |

Figure 8 shows seatbelt wearing rates for the responding countries, for which data are available.

**Figure 8. Seatbelt wearing in the responding countries**



#### **4.5      *Young drivers***

Young drivers represent the age group most at risk. They are clearly overrepresented in crash fatalities and young male are particularly exposed. Young drivers account for about 27% of driver fatalities across OECD countries, although people in the same age group represent only about 10% of the population (see figure 9).

Traffic crashes are the single greatest killer of 15-24 year-olds in OECD countries. It is estimated that over 9 000 young drivers of passenger vehicles were killed in OECD countries in 2004. This included over 750 in Germany, 645 in France, over 300 in Japan, over 300 in Spain, and almost 4 000 in the US. Across the OECD, death rates for 18-24 year old drivers are typically more than double those of older drivers. Death rates for young men are consistently much higher than those of their female counterparts, often by a factor of three.

#### **4.6      *Vulnerable road users***

While in most countries the occupants of motor vehicles make up the majority of road trauma victims there are significant numbers of people injured as so called vulnerable road users i.e. as pedestrians, cyclists and motorised 2-wheelers. Table 9 shows the share of road fatalities by user group.

**Table 9. Share of fatalities by user group in 2004**

| Country         | Passenger Car occupants (%) | Pedestrian (%) | Motorised 2-wheelers (%) | Cyclists (%) | Others *(%) |
|-----------------|-----------------------------|----------------|--------------------------|--------------|-------------|
| Australia       | 71% include SUVs and trucks | 14%            | 12%                      | 3%           |             |
| Austria         | 55%                         | 15%            | 16%                      | 7%           | 8%          |
| Belgium         | 60%                         | 10%            | 17%                      | 8%           | 5%          |
| Bulgaria        | 30%                         | 28%            | 5%                       | 6%           | 31%         |
| Canada          | 50%                         | 13%            | 7%                       | 2%           | 26%         |
| Czech Republic  | 56%                         | 20%            | 7%                       | 9%           | 6%          |
| Denmark         | 52%                         | 12%            | 7%                       | 9%           | 4%          |
| Finland         | 59%                         | 13%            | 9%                       | 7%           | 12%         |
| France          | 60%                         | 11%            | 22%                      | 3%           | 4%          |
| Germany         | 55%                         | 14%            | 17%                      | 8%           | 5%          |
| Great Britain   | 52%                         | 21%            | 18%                      | 4%           | 5%          |
| Greece (2003)   | 47%                         | 16%            | 23%                      | 1%           | 13%         |
| Hungary         | 47%                         | 25%            | 7%                       | 14%          | 7%          |
| Ireland (2003)  | 51%                         | 19%            | 16%                      | 3%           | 11%         |
| Italy           | 50%                         | 13%            | 26%                      | 5%           | 6%          |
| Japan           | 25%                         | 31%            | 18%                      | 14%          | 11%         |
| Korea           | 22%                         | 39%            | 17%                      | 4%           | 17%         |
| Lithuania       | 27% (car drivers)           | 34%            |                          |              |             |
| Netherlands     | 46%                         | 8%             | 18%                      | 19%          | 8%          |
| New Zealand     | 77%                         | 9%             | 8%                       | 2%           | 5%          |
| Norway          | 68%                         | 8%             | 17%                      | 4%           | 3%          |
| Poland          | 45%                         | 36%            | 4%                       | 13%          | 1%          |
| Portugal        | 41%                         | 18%            | 23%                      | 4%           | 14%         |
| Slovak Republic | 77%                         | 9%             | 6%                       | 5%           | 4%          |
| Slovenia        | 62%                         | 13%            | 11%                      | 8%           | 6%          |
| Spain           | 57%                         | 14%            | 16%                      | 2%           | 11%         |
| Sweden          | 59%                         | 14%            | 15%                      | 6%           | 6%          |
| Switzerland     | 45%                         | 19%            | 24%                      | 8%           | 4%          |
| United States   | 45% (does not include SUV)  | 11%            | 9%                       | 2%           | 33%         |
| Ukraine         | 60%                         | 26%            | 10%                      | 4%           |             |

Source: IRTAD. For Ukraine and Bulgaria, response to the Questionnaire.

\* Others include: trucks, coaches, tractors (also include SUV for the United States)

### *Pedestrians*

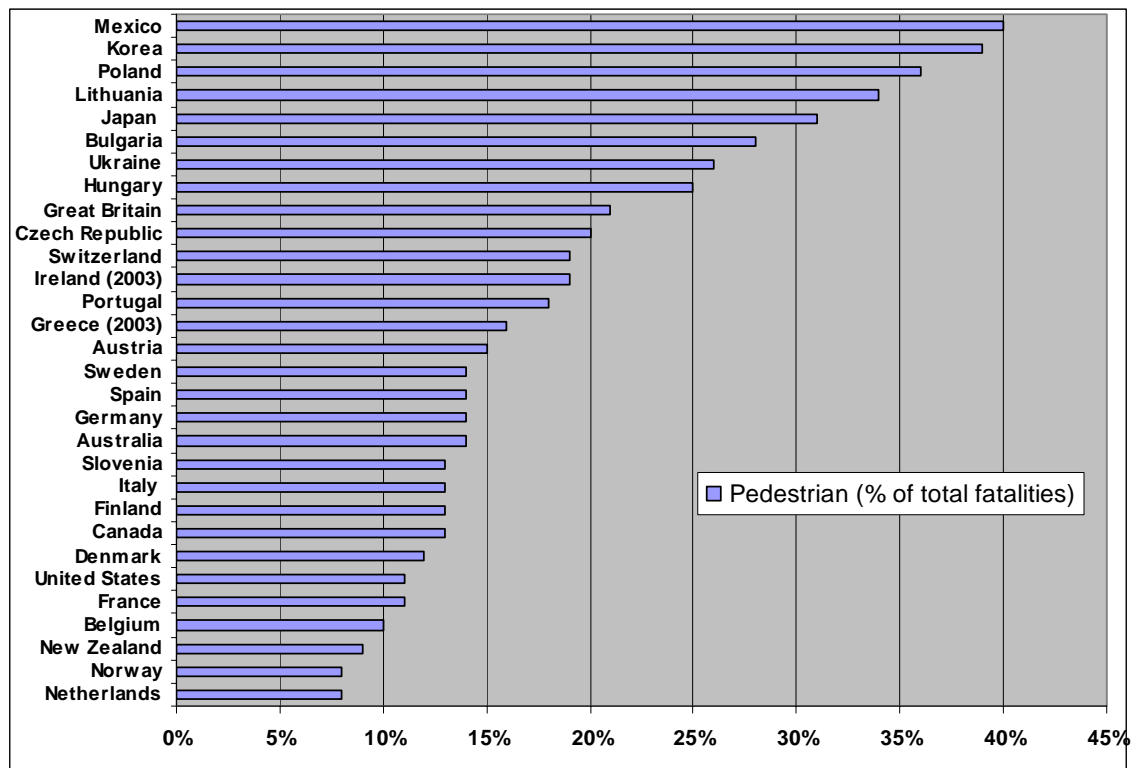
In many countries, pedestrian safety is an increasing concern.

There is however a large variation in the proportion of pedestrians killed in OECD/ECMT countries (see figure 9). The percentage of pedestrians killed as a proportion of the total number of fatalities varies from 8-10% (in Netherlands, Norway, New Zealand and Belgium) to 31% in Japan, 34% in Lithuania, 36% in Poland and a high of 39% in Korea and 40% in Mexico.

In the less industrialised countries of the OECD/ECMT region, there is usually a relatively high rate of pedestrian fatalities (around 25-30%), which can be partly explained by the relatively low level of motorisation, the lack of adequate infrastructure for pedestrian safety, the lack of awareness of the danger caused by vehicles and the speed of vehicles, especially in urban areas.

The high rate of pedestrian fatalities in some industrialised countries (e.g. Japan) is due a number of factors, including the ageing of the population<sup>2</sup>.

**Figure 9. Percentage of annual road fatalities that are pedestrians in 2004**



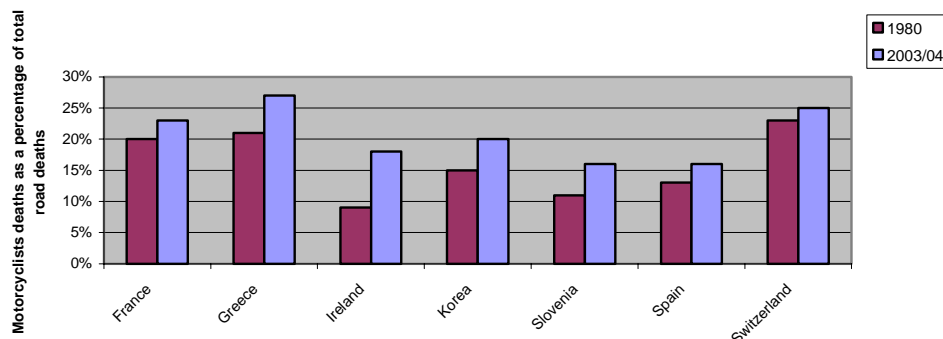
### Motorcyclists

While for several countries, motorcycles fatalities followed the general decreasing trends in road fatalities in the 1980s and 1990s, more recently, in many countries, one has observed an increase in motorcycle fatalities. As an example, between 2000 and 2004, the number of motorcyclists killed increased by 34% in the United States, (while the overall number of fatalities increased by 2%) (see Figure 10 and Table 10).

<sup>2</sup> The Joint OECD/ECMT Transport Research Centre will undertake in the framework of its 2007-09 Programme of Work a study on the *Pedestrian safety, urban space and health*, which should give further insights on the recent trends of pedestrians' risks. .

**Figure 10. Evolution of motorcyclist fatalities**

**Evolution of Motorcyclist Fatalities from 1980 (1990) to 2003/04**



**Table 10. Comparative evolution in the total number of fatalities and the number of motorcyclists killed for a selection of countries between 2000 and 2004**

|               |   |
|---------------|---|
| France        | <ul style="list-style-type: none"> <li>- Total: fatalities -32%</li> <li>- Motorcyclist: -14%</li> </ul>  |
| United States | <ul style="list-style-type: none"> <li>- Total: fatalities +2%</li> <li>- Motorcyclists: +34%</li> </ul>  |
| Australia     | <ul style="list-style-type: none"> <li>- Total fatalities: -13%</li> <li>- Motorcyclists: +3%</li> </ul>  |
| Switzerland   | <ul style="list-style-type: none"> <li>- Total fatalities: -14%</li> <li>- Motorcyclists: +11%</li> </ul> |

Helmet wearing is compulsory in all the responding countries, except the United States (see Table 9). In the United States, legislation varies from one state to another. There are large variations in wearing rate across the responding countries. Wearing rate is usually not measured, except in those countries with a high rate.

#### *Cyclists*

Cyclist fatalities very much depend on the level of cycling in the member countries. In most countries, they represent less than 10% of the total road fatalities. In countries, like the Netherlands, the share is larger because cycling is a widespread means of transport.

Table 11 presents the situation regarding helmet legislation in the responding countries. In most countries, cyclists are not obliged to wear helmets. Helmet laws exist in some countries, either for all cyclists (Australia, Finland, New Zealand, some jurisdictions in Canada) and for children only (some jurisdictions in Canada, Czech Republic, Iceland, some localities in the US).

**Table 11. Legislation regarding motorcycle helmet and cycle helmet**

| Country         | Compulsory for motorised 2-wheelers  | Compulsory for cyclists  |
|-----------------|--|--|
| Australia       | Yes  | Yes  |
| Austria         | Yes  | No   |
| Belgium         | Yes  | No   |
| Bulgaria        | Yes  | No   |
| Canada          | Yes  | Some jurisdictions have helmet use laws for cyclists but these vary in application. In some cases, the law only applies to children and young adults up to age 18.                                   |
| Czech Republic  | Yes  | Yes for children up to 15.   |
| Denmark         | Yes  | No   |
| Finland         | Yes  | Yes, there is a regulation to wear helmet, but it is not enforced.<br>Wearing rate: 29% in 2005  |
| France          | Yes<br>Wearing rate: almost 100%   | No   |
| Germany         | Yes<br>Wearing rate: 98% in 2004   | No.<br>Wearing rate: 6% in 2004  |
| Georgia         | Yes  | No   |
| Greece          | Yes  | No   |
| Hungary         | Yes  |  |
| Iceland         | Yes  | Yes for children up to 14  |
| Ireland         | yes  | No   |
| Italy           | Yes  | No   |
| Japan           | Yes  | No   |
| Korea           | Yes  | No   |
| Latvia          | Yes  | No   |
| Lithuania       |  |  |
| Malta           | Yes<br>Wearing rate: almost 100%   | No   |
| Mexico          | Yes<br>Also compulsory for all motorised 3-wheelers  | No   |
| Moldova         | Yes  | No   |
| Netherlands     | Yes, including mopeds (max 50 cc, max speed: 45 km/h).<br>Not compulsory for mopeds (max 50 cc, maximum speed: 25 km/h).   | No   |
| New Zealand     | Yes<br>Wearing rate around 99%   | Yes,<br>Wearing rate: 92% in 2004  |
| Norway          | Yes  | No   |
| Poland          | Yes  | No   |
| Portugal        | Yes  | No   |
| Romania         | Yes  | No   |
| Slovak Republic | Yes  | No   |
| Slovenia        | Yes  | No   |
| Spain           | Yes  | Yes, outside urban areas   |
| Sweden          | Yes  | From 1 Jan 2005 for children < 15 years  |
| Switzerland     | Yes  | No   |
| Turkey          |  |  |
| Ukraine         |  |  |
| United Kingdom  | Yes  | No   |
| United States   | No national law.<br>In 20 states: helmet mandatory.<br>In 27 states, only a specific population segment is required to wear helmets<br>In 3 states: no helmet use law. | As of December 2004, 20 States (including the District of Columbia) have enacted age-specific bicycle helmet laws and more than 131 localities have enacted some form of bicycle helmet legislation. |

#### 4.7 Road infrastructure

The survey found that the greatest percentage of fatal road crashes occurred on rural roads, ranging from about 27% of all crashes in Ukraine, 48% in Portugal to between 70 and 75% of all crashes in Ireland, Finland, New Zealand and Spain (see table 12). On average around 60% of fatalities occur on rural roads

This reflects the inherent nature of increased risk that travelling at higher speeds on rural roads brings where mistakes often result in severe injury or death because of the higher impact speeds.

Motorways is unsurprisingly the safest type of roads, as - with the exception of Ukraine—less than 14% of fatalities occur on this class of roads.

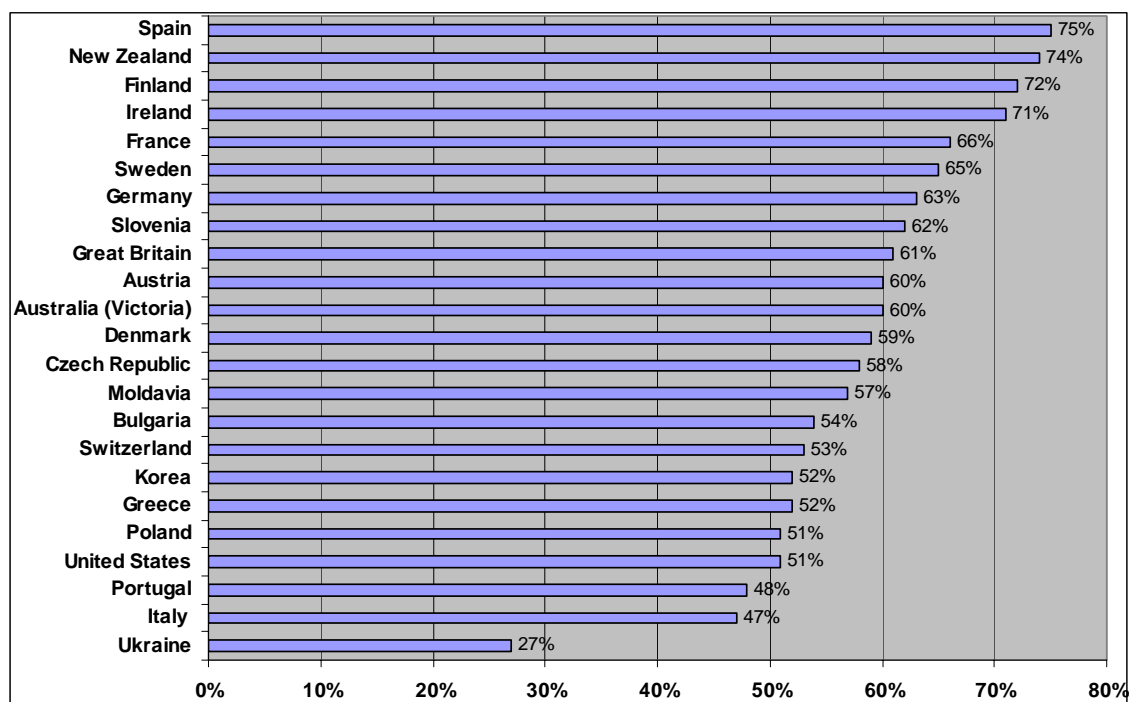
Of course, a more in-depth analysis would require to compare the fatality rate on each class of roads with the number of veh-kilometres on each of these.

**Table 12. Share of fatalities by class of roads in 2004**

| Country              | Rural roads | Built-up areas | Motorways |
|----------------------|-------------|----------------|-----------|
| Australia (Victoria) | 60%         | 32%            | 8%        |
| Austria              | 60%         | 26%            | 14%       |
| Bulgaria             | 54%         | 41%            | 5%        |
| Belgium              | 55%         | 25%            | 11%       |
| Czech Republic       | 58%         | 38%            | 4%        |
| Denmark              | 59%         | 33%            | 8%        |
| Finland              | 72%         | 27%            | 2%        |
| France               | 66%         | 28%            | 6%        |
| Germany              | 63%         | 25%            | 12%       |
| Great Britain        | 61%         | 34%            | 5%        |
| Greece               | 52%         | 45%            | 4%        |
| Ireland              | 71%         | 27%            | 3%        |
| Italy                | 47%         | 41%            | 12%       |
| Korea                | 52%         | 40%            | 8%        |
| Moldavia             | 57%         | 43%            | 0%        |
| New Zealand          | 74%         | 26%            | 2%        |
| Poland               | 51%         | 48%            | 1%        |
| Portugal             | 48%         | 43%            | 9%        |
| Slovenia             | 62%         | 30%            | 8%        |
| Spain                | 75%         | 19%            | 6%        |
| Sweden               | 65%         | 26%            | 9%        |
| Switzerland          | 53%         | 37%            | 10%       |
| United States        | 51%         | 35%            | 14%       |
| Ukraine              | 27%         | 43%            | 31%       |



**Figure 11. Percentage of road fatalities occurring on rural roads in 2004**



## 5 Conclusions

Overall the road safety situation has improved since 1990 in OECD/ECMT countries with a 26% reduction in the total number of fatalities between 1990 and 2004. This decrease in road fatalities has in general benefited to all types of roads and all types of road users.

There are however wide variations among regions and among countries, some of them having not yet reached their peak in the number of road fatalities. The reader will find in the main report details of the road safety situation for the 37 countries which responded.

It should be noted that despite the progress made, in 2004 more than 180 000 persons were killed on the roads of OECD/ECMT countries, which corresponds to a death every 3 minutes.

Much remains to be done to reduce the dramatic burden caused by road crashes. Speeding, drink driving and seatbelt wearing remain 3 main key problems for most countries. Fully addressing these issues could lead to a reduction by up to 50% of fatalities in many countries. Other key issues concern the infrastructure, the young drivers, the vulnerable road users (especially pedestrians and motorcyclists) as well as the political will and the co-ordination needed to implement a road safety policy.

The OECD/ECMT Working Group on Achieving Ambitious Road Safety Targets will continue its research work in 2006-07 and its final results will be published in 2007. It will identify best practices to address traditional road safety problems as well as emerging issues. It will identify and analyse road accident types which have appeared to be immune to road safety measures. It will also address issues associated with successful implementation of a road safety strategy and analyse the different approaches to road safety funding and resource allocation in OECD/ECMT countries.

## **CONTENT OF THE COUNTRIES' RESPONSES**

For each country response, the following information is presented:

- A. General trends in road safety
- B. Current state of affairs and national diagnosis
  - B.1. Recent road safety initiatives
  - B.2. National diagnosis in key safety areas
    - Road users
    - Age groups
    - Type of road
    - Speed
    - Drink driving
    - Seatbelt and helmet wearing
    - Other violations
    - Other factors
  - B.3. Major road safety problems today
  - B.4. Forthcoming road safety initiatives to address these problems
- C. Road safety targets
- D. Success story cards

## AUSTRALIA

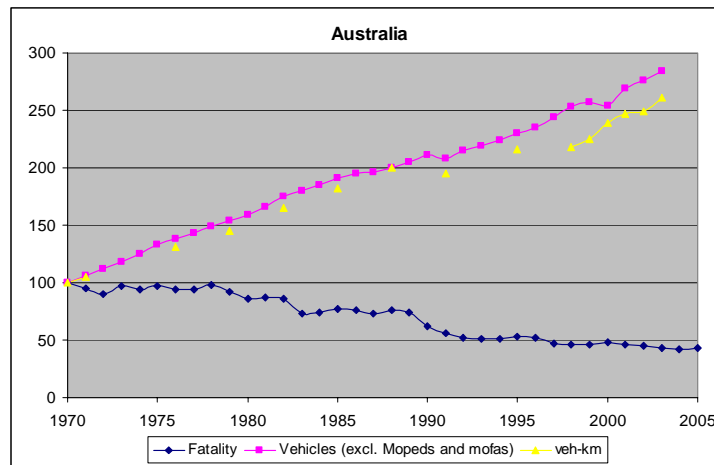
### A. General trend in road safety

#### Key road safety data in 2004:

1 590 road fatalities (1 639 in 2005)

7.9 killed per 100 000 inhabitants

Around 640 cars (passenger vehicles and light duty vehicles) per 1 000 inhabitants



Note: The Australian Bureau of Statistics *Survey of Motor Vehicle Use* collection methodology changed in 1998. Veh-km data for 1998 onwards is not directly comparable with previous years.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>• Tightened speed compliance measures in Victoria: reduced enforcement threshold (actual speed at which penalties are enforced), extended covert operations, widespread publicity.</li> <li>• Use of fixed speed cameras (as a supplement to non-fixed cameras) extended in several jurisdictions.</li> <li>• The use of combined red light/speed cameras was introduced or extended in some jurisdictions. Point-to-point speed enforcement was introduced for heavy vehicles in some jurisdictions</li> <li>• South Australia applied demerit points to speed camera offences (existing practice in most states).</li> </ul> |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>• A default speed limit of 50 km/h in built-up areas now applies in all jurisdictions (6 states and 2 territories). This applied in Victoria and Western Australia from 2001; implemented in most other jurisdictions in 2003 and Northern Territory 2005.</li> <li>• Speed zoning reviews were initiated in several jurisdictions and specific action was taken to extend the use of lower speed zones (below 60 km/h) to areas of high pedestrian activity. In South Australia, speed limits were reduced from 110 km/h to 100 km/h on 13 per cent of the rural arterial network (undivided roads).</li> </ul>               |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>• Alcohol interlock schemes were implemented or trialled in several jurisdictions.</li> <li>• Roadside testing for drugs (cannabis, methamphetamines) introduced in Victoria; under development in several other jurisdictions.</li> </ul>   |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>• The Australian Government launched its new policy on national land transport infrastructure — AusLink — including a commitment to spend \$12.5 billion over five years to 2008–09 on a range of specific road and rail projects, maintenance of the Black Spot programme and the extension of the Roads to Recovery programme.</li> <li>• Funding for black spot programmes was maintained or increased in most jurisdictions. Victoria announced it would spend \$130 million on a new two-year programme (a follow up to expenditure of a similar magnitude earlier in the decade).</li> </ul>                             |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>• Demerit points for use of (non-hands-free) mobile phones applied in some jurisdictions.</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>• All jurisdictions have some form of graduated licensing; several jurisdictions have introduced new graduated licensing measures since 2002.</li> </ul>   |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>• On-going</li> </ul>  |

|  |   |
|--|---|
| Regulation on vehicle inspection                     | <ul style="list-style-type: none"> <li>-</li> </ul>   |
| Regulation on <u>active</u> vehicle safety equipment | <p>[Comment: secondary safety features remain an important focus, and non-regulatory measures are also important.]</p> <ul style="list-style-type: none"> <li>The ANCAP program introduced credit points for vehicles with seat belt reminder systems, and commenced development of an active safety features assessment, which will encourage the uptake of ITS active safety features (including Intelligent Speed Adaptation) for light vehicles.</li> </ul> |

### *B.1.2. Strategies to decrease risk of injury:*

|  |   |
|--|---|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>On-going. Belt and helmet usage rates are high by international standards. Seatbelts, motorcycle helmets and bicycle helmets are compulsory in all jurisdictions</li> </ul>                |
| Emergency services   | <ul style="list-style-type: none"> <li>-</li> </ul>   |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>On-going – identified as a priority action item in current National Road Safety Action Plan</li> </ul>   |
| Others   | <ul style="list-style-type: none"> <li>National Road Safety Strategy and Action Plans available at <a href="http://www.atcouncil.gov.au/documents/atcnrss.aspx">http://www.atcouncil.gov.au/documents/atcnrss.aspx</a></li> </ul> |

## **B.2. National Diagnosis in key safety areas**

### *Road users*

Factors affecting vehicle occupant fatalities over this period include mandatory provision and use of seat belts (from the early 1970s); later improvements in vehicle occupant protection; improvements in road infrastructure; random breath testing for alcohol (begun in Victoria in 1976, but greatly intensified in Victoria and other states in the late 1980s and early 1990s); increasingly intensive speed enforcement (including mobile speed camera programmes which started in Western Australia in 1988, Victoria in 1989 New South Wales in 1990 and other states during the 1990s); publicity co-ordinated with enforcement.

Since 1990, percentage reductions in **pedestrian fatalities** (47%) have been considerably larger than percentage reductions in vehicle occupant fatalities (28%), even though many of the measures that address vehicle occupant fatalities would have had no influence, or limited influence, on pedestrian fatalities. There is evidence that **reductions in urban travel speeds** have been particularly important in reducing pedestrian fatalities. There is also some evidence that speed enforcement measures have been more effective on urban arterial roads than on rural roads. Although there is no national exposure data for pedestrians, it is likely that pedestrian traffic has not increased to anything like the same extent as vehicular traffic. Increasing urban congestion and development of urban freeways may have benefited pedestrian safety even more than vehicle occupant safety – though there is no direct evidence of this.

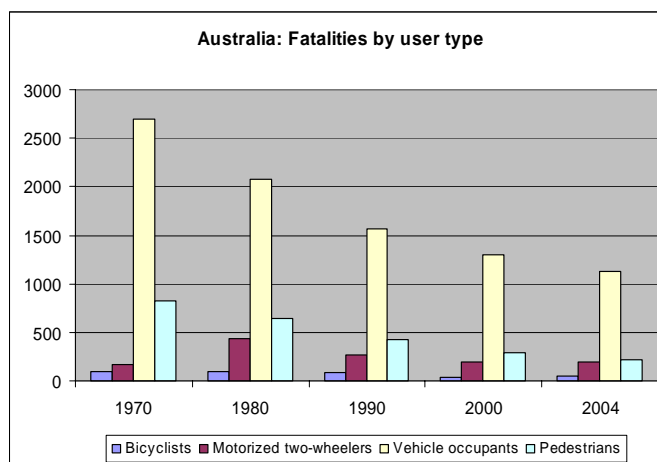
**Cyclist** fatalities have dropped by 46% since 1990. Reduced urban travel speeds and introduction of **compulsory helmet** wearing for cyclists have both contributed to this improvement.

Changes in **motorcycle fatalities** have been influenced by exposure changes (number of active riders and age profile, as well as total distance travelled); there is concern that automated speed enforcement may have had less influence on motorcycle speeds than on speeds of other vehicles: partly because of the absence of motorcycle front number plates.

Motorcycles account for:

- 0.6% of vehicle kilometres (and a lower proportion of person kilometres), but:
- 15% of motor vehicle user road deaths
- 25% of motor vehicle users hospitalised after road crashes
- 36% of male motor vehicle users hospitalised after road crashes.

**Evolution in fatalities by road user type**



Note: "vehicle occupants" includes all motorised vehicles except 2-wheelers (but a majority are occupants of cars and station wagons)

### *Age groups*

On a *per-capita* basis, the highest road fatality rates are among young adults (17-24 years) and elderly people (over 70); children aged 0-16 have the lowest fatality rate.

In percentage terms, the biggest fatality reductions since 1990 have been among infants and young children (ages 0-9): 63%. Pedestrian and cyclist fatalities in this age group have dropped dramatically (by 84%), though vehicle passenger fatalities are also down (by 43%). Exposure changes may have contributed to the drop in child pedestrian and cyclist fatalities; other factors contributing to reduced pedestrian and cyclist deaths are discussed above.

Among older children and adolescents (ages 10-17) there have been substantial reductions in passenger, pedestrian and cyclist fatalities, which are the bulk of road deaths in this age range; motorcycle deaths have also dropped (from 28 to 11) but driver fatalities have only dropped slightly (from 34 to 30).

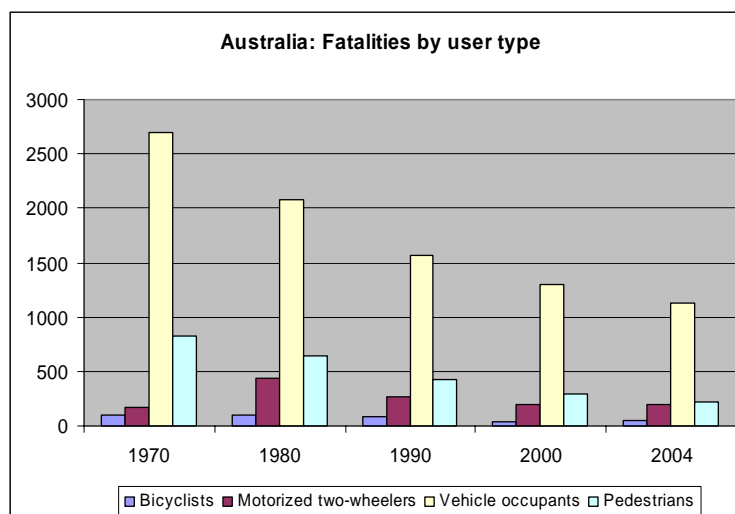
Among Young adults (18-24), the majority of fatalities are drivers or passengers; these fatalities have dropped by 39% since 1990, while young adult fatalities in other road user groups are down by 59%.

On a *per-capita* basis, driver fatality rates have dropped substantially in all age groups since 1990. A particularly sharp reduction between 1989 and 1992 coincided with a major intensification of enforcement and public education programmes aimed at drink driving and speeding (though analysis indicates that economic factors were also influential in this period). On a percentage basis, driver fatality rates have dropped most for drivers aged 17-39 and least for drivers over 60 – though absolute rates are still highest for drivers under 26 (see additional charts below).

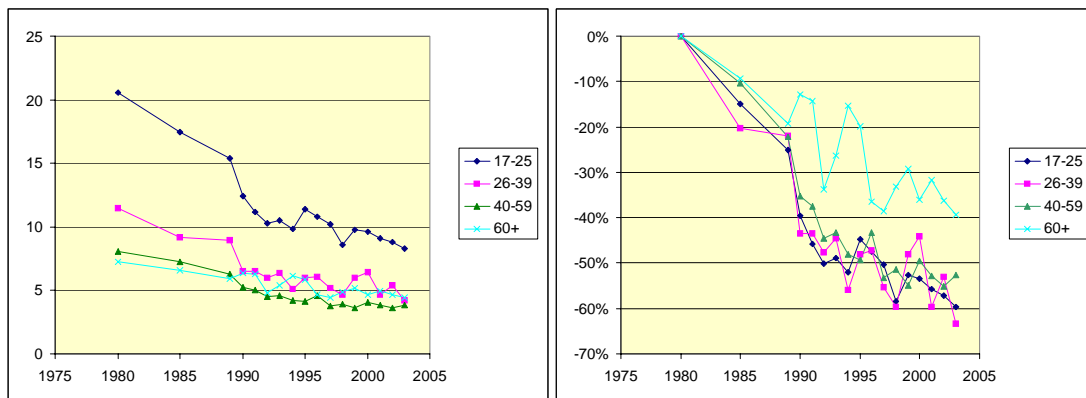
The close correlation between time trends for driver fatality rates in different age groups suggests that much of the driver fatality rate reduction over recent decades is the result of factors that had a broad effect across age groups: though programmes targeting alcohol, speed and seatbelt use seem to have been particularly effective for younger drivers (and particularly younger males). The behavioural programmes were less effective for demographic groups that initially had a low incidence of high-risk driving behaviour.

The current National Road Safety Action Plan notes that “general” road safety measures (particularly those relating to infrastructure improvement and speed management) can be among the most effective ways for improving safety outcomes for specific road user groups and demographic groups (though group-specific measures can also contribute to improved outcomes).

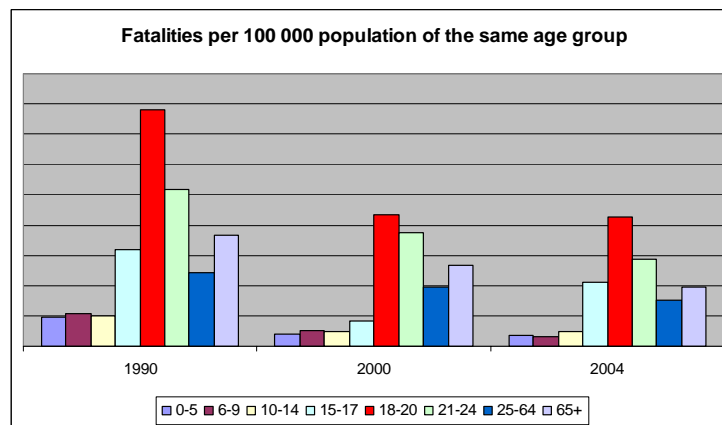
#### ***Evolution in fatalities by age group***



**Driver fatalities per 100 000 population: % change**



**Evolution in fatalities rate by age group (killed per 100 000 population of the same age group)**



### *Type of road / location*

Road fatality rates are higher for people who live in rural areas (particularly remote rural) than for people living in major cities. People living outside cities tend to do more of their driving at highway speeds, more driving on lower standard rural roads, and more driving in total. Effective enforcement of speed limits, alcohol restrictions and belt use is more difficult in rural areas.

Only a small proportion of the rural road network linking major cities in Australia is divided road, and an even smaller proportion is motorway standard.

Australia has a small population relative to its size, and this makes a high-standard intercity network less affordable than in many other OECD countries.

National and state road safety strategies emphasise the importance of road infrastructure improvements, including relatively low-cost measures applicable to single-carriageway roads.

More information is provided in the state returns provided by Victoria and Western Australia.



## *Speed*

National data on speed distributions are not available. Improvement of speed monitoring systems has been identified as a priority in the National Road Safety Action Plan.

Statistical series and other evaluation studies in individual jurisdictions indicate that speed management measures have made an important contribution to reducing road fatalities and injuries.

The “% of fatal crashes where speed is a causation factor” is a potentially misleading statistic: it does not capture the relevance of speed to crash severity, is often based on somewhat subjective and imprecise criteria (which can vary between jurisdictions and over time) and is likely to mis-classify crashes where “low level” speeding (less than about 10 km/h over the limit) was a relevant factor. It is quite possible for effective speed reduction strategies to achieve reductions in casualties and fatalities that exceed the estimated proportion of “speed related crashes” (For example, in the case of pedestrians, very few individual fatalities are attributed to illegal or excessive vehicle speed, but quite small travel speed reductions reliably produce substantial reductions in serious pedestrian casualties.

Statistics on “speed related crashes” are regularly quoted by opponents of speed management reforms to indicate that the potential benefits are limited, and that safety agencies should be focusing on other things. It is time that all safety agencies stopped facilitating this.

### **Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|  | <b>1980</b>  | <b>1990</b> | <b>2000</b> | <b>2004</b>  |
|--|--|-------------|-------------|--|
| <b>Nb of speeding citations</b>  |  |             |             | 2003, all vehicles:<br>1 123 million (0.33 per licensed drivers) |
| <b>% of fatal crashes where speed is a causation factor</b>  | It is a potentially misleading statistic (see above) |             |             |  |
| <b>% of drivers over the posted speed limit in :</b><br>- <b>urban areas</b><br>- <b>rural roads</b><br>- <b>motorways</b> | National data not available.                         |             |             |  |

## *Drink driving*

The National Road safety Action Plan notes that:

*“All jurisdictions have had considerable success in reducing the contribution of alcohol to road trauma, but about 26 per cent of driver and rider fatalities still have a blood alcohol concentration above the legal limit.*

*This figure varies considerably among jurisdictions, which suggests that there is considerable scope for further gains through identification and application of best practice approaches to deterrence.*

*Although there is scope for more strategic deployment of resources available for drink driving deterrence programmes, this is an area where ‘working smarter’ is no substitute for working hard. Effective deterrence depends on convincing potential offenders that offences are very likely to be*

*detected and punished. This perception cannot be maintained without intensive enforcement. There is concern in many jurisdictions about high drink driving rates in rural areas. This reflects both the difficulties in applying Random Breath Testing effectively in rural areas, and the lack of alternative transport options (such as trains, buses or taxis) in many rural areas. Specially adapted programmes are needed to reduce drink driving in rural areas.*

*The actual penalties in place for alcohol and drug offences are also an important aspect of deterrence. There may be a need for more effective penalties, including options such as vehicle sanctions.*

*There is evidence that a substantial proportion of drink drivers – particularly recidivist offenders - have serious alcohol abuse problems, often paralleled by broader psychological and social problems. Alcohol interlock programmes and rehabilitation programmes have had some success in changing the behaviour of recidivist offenders who are resistant to mainstream deterrence and publicity programmes”*

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980  | 1994 | 2000 | 2003 |
|--|---|------|------|------|
| Number of citations                            | National data not available, State data and comments have been provided by Victoria and Western Australia |      |      |      |
| % of fatal accidents where alcohol is a factor |   |      |      |      |

*Seatbelt and helmet wearing*

**Belt wearing** has been compulsory in all states since the 1970s. In most states there are licence demerit point penalties as well as fines for unbelted drivers, and in some states demerit points apply to drivers with unbelted passengers (in addition to fines for unbelted adult passengers).

Objective nation-wide data on wearing rates is not available, but non-national observational surveys, and self-report data from national surveys, indicate front seat wearing rates generally in excess of 95%, and rear seat wearing rates above 80%.

Despite high general wearing rates, non-wearing rates among fatally injured vehicle occupants are still estimated at about 30%. Analysis indicates that this high figure is the result of a high crash-involvement rate among those who do not wear belts, as well as the fact that they are more likely to be killed if involved in a crash.

**Helmets are compulsory for motorcycle and moped riders and bicyclists.** There is no national data about helmet usage rates.

See responses from Victoria and Western Australia for information on wearing rates in those states.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)-*

**Use of handheld mobile phones** is prohibited in all jurisdictions, but use of hands-free mobile phones is not prohibited. Compliance is poor. In a recent national survey 59% of drivers said that they use a mobile phone at least sometimes while driving. Analysis by type of phone is not yet available,

but it is likely that a high proportion of the phones used were hand-held, in any case, there is growing evidence that use of hands-free phones poses a significant safety risk.

All states and territories have legislation that makes it an offence to drive after using (or while impaired by) **drugs** other than alcohol, but legislation and enforcement practices vary between states. Roadside testing for drugs (cannabis, methamphetamines) was introduced in Victoria in 2004. Several other jurisdictions are working on plans to introduce some form of roadside drug testing.

The Australian Road Rules (adopted with some variations by all jurisdictions) define an offence related to **tailgating**, but without the sort of objective precision that would facilitate effective enforcement: “A driver must drive a sufficient distance behind a vehicle travelling in front of the driver so the driver can, if necessary, stop safely to avoid a collision with the vehicle.”

### ***B.3. Major road safety problems today***

1. **Road infrastructure:** many potentially cost-effective measures that would reduce crash incidence and crash severity have not been implemented.
2. **Speeding:** speed compliance has improved, but illegal speeds still make a substantial contribution to road trauma.
3. **Speed limits:** Australia has relatively high speed limits across much of its road network, compared with limits set by most other OECD countries on similar roads.
4. **Vehicle safety:** primary and secondary safety of many vehicles on our roads is well below the best available.
5. **Impaired driving:** particularly alcohol and fatigue.
6. High serious crash rates of **young drivers**.

### ***B.4. Forthcoming road safety initiatives to address these problems***

The National Road Safety Action Plan for 2005 and 2006 lists strategies and priority actions that have been endorsed in principle by all jurisdictions.

An important aim of this Action Plan is to highlight the Safe System concept as an overarching framework for road safety intervention. The Safe System approach emphasises the way different elements of the road transport system combine and interact with human behaviour to produce an overall effect on total road trauma. The key components of the system are safer roads and roadsides (infrastructure), safer speeds and safer vehicles. The Action Plan also emphasises the need for measures to promote safer road user behaviour: through education, enforcement and regulation of access to the system (licensing).

Priority action items include the following (further details are available at <http://www.atcouncil.gov.au/documents/atcnrss.aspx>):

#### ***Safer roads and roadsides***

- All governments (Australian, State and Territory) to allocate funds for targeted road safety countermeasures, including:

- Mass application of cost-effective measures on high volume roads (and road lengths) with bad crash records or high-risk characteristics.
- Application of road-based countermeasures to reduce the harm arising from fatigue-related crashes.
- Application of area-based treatments that meet appropriate selection criteria.
- Maintenance and extension of black spot programmes.
- Implement road safety risk assessments in road planning, construction and maintenance.
- Develop programmes to achieve safer roadsides.

### *Safer speeds*

- Education and information programmes to support speed management initiatives:
  - Focus on communicating the extent of safety improvement that can be achieved through better speed management.
- Extend integrated publicity and enforcement campaigns geared to maximising compliance with speed limits.
- Develop and promote an evidence-based guide on best practice in speed enforcement, taking into account:
  - Evidence that hidden speed cameras can achieve greater casualty reductions than more visible operations that allow offenders to adjust their speed before they are caught.
  - The safety outcomes of reduced enforcement tolerances in some jurisdictions.
  - The need for a balance between complementary approaches: tightly targeted enforcement programmes (highly visible operations at dangerous locations, producing localised effects) and broader deterrence programmes (less predictable, designed to reduce average speeds across the network).
- Continuous (automatic) speed enforcement on high volume roads, and other roads with high crash rates.
- Selective extension of the use of urban speed limits of 40 km/h or lower (for example, in local shopping precincts, school zones and other areas of high pedestrian activity), and where appropriate, reduce 60 km/h limits to 50 km/h in selected areas.
- Identify road sections with high crash risk or record, and apply lower speed limits if infrastructure remedies are not an immediate option.

### *Safer vehicles*

- Accelerate the introduction of effective audible seat belt warning devices to all new vehicles.

- Jurisdictions to join in a coordinated government strategy to use fleet purchasing power to influence vehicle safety standards.
- Encourage corporate and individual vehicle purchasers to select safer vehicles, through campaigns to promote awareness of ANCAP safety ratings and used-vehicle safety ratings.

### *Safer road users*

*Speed – see above*

*Driver impairment*

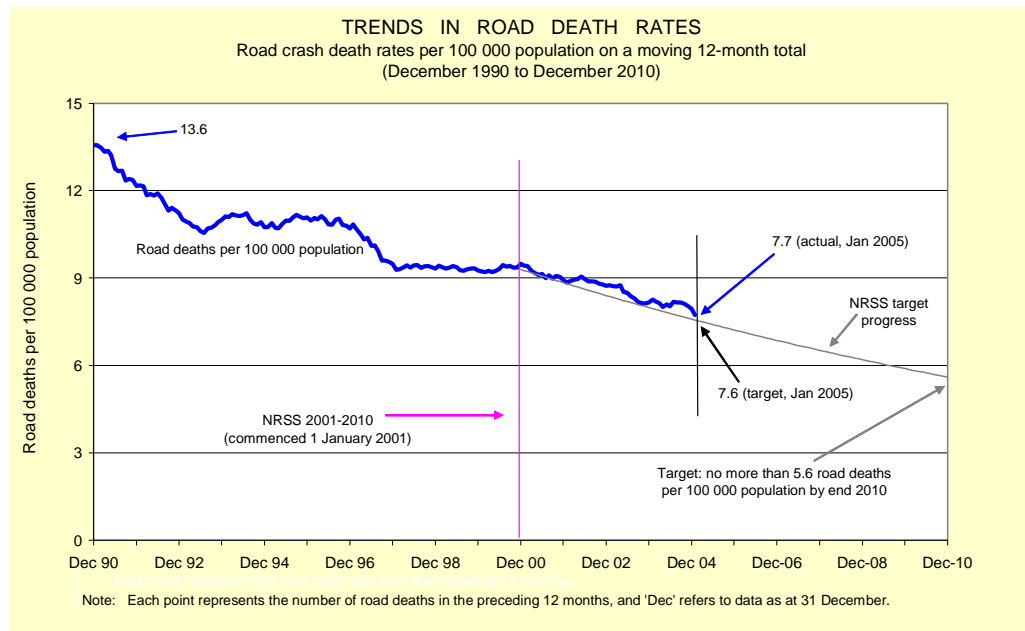
- Enhance drink driving deterrence:
  - Maintain or increase resources for enforcement and public education.
  - Improve strategic focus: (for example, achieving the best combination of general deterrence and effective targeting of particular locations and times).
- Strengthen measures to reduce drink driving in rural areas through:
  - Effective deterrence programmes.
  - Community education initiatives.
  - Provision of alternative transport options.
  - Extension of Responsible Serving of Alcohol programmes.

*Licensing and driver management*

- Examine, and if effective introduce, extensions to graduated licensing systems to improve the safety of novice drivers. Options for examination include:
  - Night-time driving and/or passenger restrictions, which have been effective in other countries.
  - Transitional arrangements from provisional to full licensing.
- Conduct a large-scale scientific trial of a post-licence driver development programme.

### C. Road safety targets

| Type  | Targets<br>(in % or<br>absolute<br>figures) | Base<br>year | Target<br>year | Base<br>year<br>figure | Current results (figure<br>in 2003 or 2004) | Intermediate<br>targets? |
|---|---|--------------|----------------|------------------------|---|--------------------------|
| Fatalities/100 000<br>population<br>Australia | -40%  | 1999         | 2010           | 9.32                   | 7.94 (2004)                                 | No                       |
| Serious Injuries                              |   |              |                |                        |   |                          |



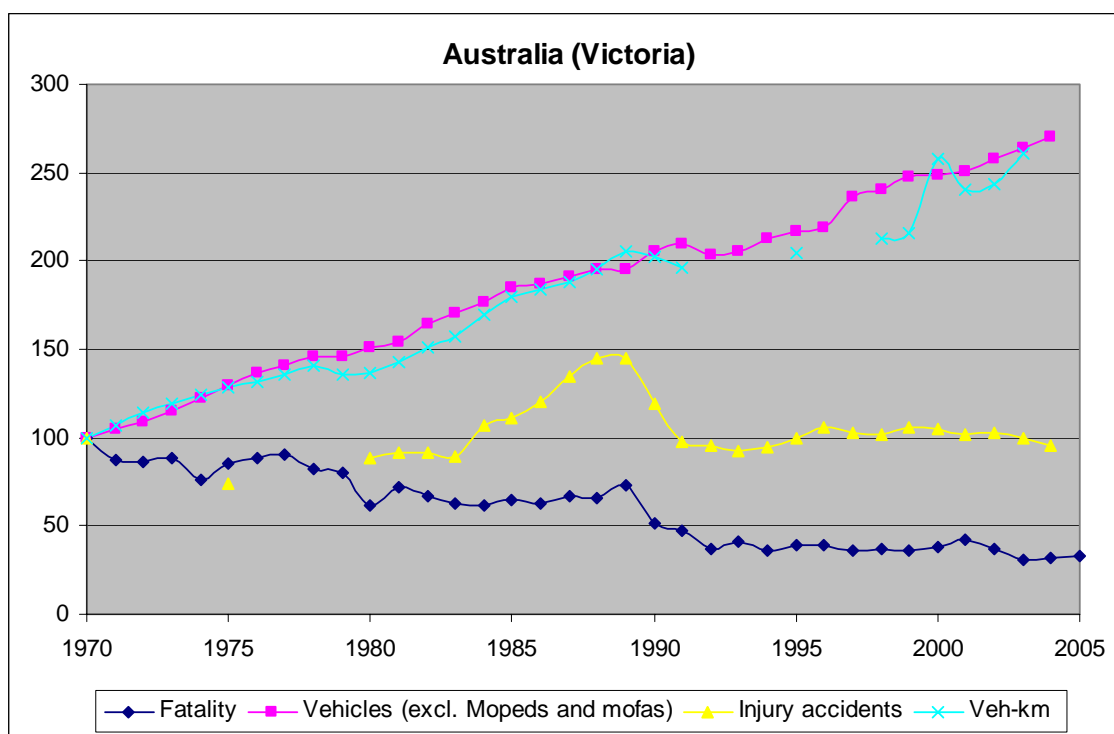
## AUSTRALIA (VICTORIA)

### A. General trend in road safety

#### Key road safety data in 2005

346 road fatalities.

6.9 fatalities per 100 000 population.



Note: Casualty accidents are crashes where at least one person was injured or killed.

From 1987 there is no "official closing date" for crash data, and hence delayed data is included.

During the 1970's improvements are attributed to mandatory seatbelt wearing and random breath testing for alcohol. During the 1990's reductions in the road toll corresponded with improvements in vehicle safety, increases in speed enforcement and increased random breath testing supported by major public education and publicity. Bicycle helmet wearing was mandated in July 1990 and the components of graduated licensing were gradually introduced. Since 2001, lower traffic speed has followed lower speed limits and enforcement measures with lower thresholds and higher penalties. Benefiting most from lower traffic speed are pedestrians, motorcyclists and cyclists.

At the end of 1989, the Traffic Accident Commission (TAC – the administrator of compulsory road traffic injury insurance in Victoria) purchased many more mobile speed cameras and random booze (alcohol testing) buses. This increase in equipment, coupled with a large increase in police enforcement hours and widespread road crash outcome advertising, resulted in a marked decrease in the number of people killed and injured in road crashes. From 2001, another decrease in road trauma corresponds to the decrease in traffic speed, achieved by decreasing speed limits (50km/h on urban roads and 40kmh outside schools and in strip shopping centres), increasing penalties, increasing enforcement and continuing mass advertising. Infrastructure improvement contributes as an ongoing commitment.

## **B. Current state of affairs and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

The **Safe System** concept is an overarching framework for road safety intervention in Australia. The Safe System approach emphasizes the way different elements of the road transport system combine and interact with human behaviour to produce an overall effect on total road trauma. The key components of the Safe System are **safer roads and roadsides (infrastructure)**, **safer speeds and safer vehicles**. Two other broad areas are included: **safer road users** (managing road user behaviour through education, enforcement and system entry) and **other supporting measures**.

#### *B.1.1. Strategies to decrease risk of crashes:*

|  |  |
|--|--|
| <i>Improved speed compliance / enforcement</i>   | <ul style="list-style-type: none"> <li>• Tightened speed compliance measures – lower speed penalty thresholds, extended covert operations, widespread publicity.</li> <li>• Combined red-light/speed cameras introduced.</li> <li>• Point-to-point speed enforcement is planned for implementation.</li> <li>• To facilitate speed enforcement, a project to develop frontal identification systems for motorcycles was initiated, with Victoria as the lead agency and funding from most jurisdictions.</li> <li>• Introduction of an incentive scheme for drivers maintaining their driving record free of traffic infringements (reduction of licensing fees).</li> </ul> |
| <i>Reduced speed limits</i>  | <ul style="list-style-type: none"> <li>• A default speed limit of 50km/h in built-up areas was incorporated in the Australian Road Rules</li> <li>• 50 km/h speed zones in the main streets of rural town centres</li> <li>• Implementation of School Speed Zones</li> <li>• 40 km/h variable speed limits in metropolitan strip shopping centres</li> <li>• Variable speed limit signs to match traffic speed to conditions are being used.</li> <li>• Guidelines for setting speed limits are being reviewed.</li> </ul>   |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i> | <ul style="list-style-type: none"> <li>• An Alcohol Interlock scheme was implemented in 2003</li> <li>• Tougher penalties for drink driving. Full licence holders driving with BAC 0.05-0.07 receive 10 Demerit Points and driving with BAC over 0.07 results in mandatory loss of licence.</li> <li>• New drug deterrence measures – including roadside saliva testing with penalties (after confirmed laboratory testing) for recent consumption of methamphetamines and THC (the active constituent in cannabis), introduced in 2004.</li> </ul>  |



|   |   |
|---|---|
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>• Support (data) for the Australian Road Assessment Program (AusRAP) - an initiative by the Australian Automobile Association (AAA) which provides a star rating system for National Highways based on casualty crash per km (collective risk) and per vehicle km (individual risk).</li> <li>• Victoria allocated \$130 million on a new two-year programme: 2004-06. This is being expended in Victoria to State highways (a follow-up to expenditure of a similar magnitude earlier in the decade), to address "run off road hit object" crashes.</li> <li>• A further \$110m was allocated by Government for 2006/07 comprising: \$20m to continue "run off road hit object" crash continuous implementation plus \$90m for intersection safety improvements.</li> <li>• A National Level Crossing Safety Strategy and action plan was endorsed by the ATC in May 2003.</li> <li>• A \$10 million program of road improvements for high risk motorcycle crash locations was funded by the Motorcycle Safety Levy of \$50 on each motorcycle registered in Victoria.</li> </ul>                               |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>• There was a general strengthening of enforcement in rural areas.</li> <li>• A National Heavy Vehicle Safety Strategy and Action Plan were approved by the Australian Transport Council (ATC) in May 2003. The strategy covers road-based, vehicle-based and behavioural measures to address safety issues for heavy vehicles, including buses.</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>• The graduated licensing scheme in Victoria is being reviewed through a heavily researched public discussion paper.</li> <li>• A large national novice driver education program is being developed as a trial and will be evaluated for crash reduction effects</li> </ul>  |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>• A range of road safety education programmes targeting later year secondary students to raise awareness and promote deeper learning on risks for young drivers, with a focus on gaining driving experience through the promotion of 120 hours of supervised driving practice.</li> <li>• Programmes educating older drivers on ways to identify and avoid risky situations as well as ways to maintain independence after retiring from driving.</li> <li>• Jurisdictions worked with the Federal Chamber of Automotive industries (FCAI) to develop and monitor application of a revised Code of Practice for the advertising of motor vehicles</li> <li>• Marketing strategy using a road safety character to support a new pre-school traffic safety program</li> <li>• Major promotional activities including mass media advertising campaigns on major crash factors (fatigue, speed, alcohol, motorcycle safety, 120 hours experience for learners)</li> <li>• Community based promotional campaigns targeting various local risk factors including working with schools, clubs, and councils.</li> </ul> |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>• Annual vehicle inspections are not required. The level of random vehicle inspection has increased following the recommendation of the 2001 Victorian Parliamentary Road Safety Inquiry into the Vehicle Roadworthiness System.</li> </ul>  |

|  |  |
|--|--|
| <i>Regulation on active vehicle safety equipment</i> | <ul style="list-style-type: none"> <li>• A major vehicle safety communication strategy was implemented, aimed at informing the community and creating a market for key vehicle safety features, such as, curtain air bags, electronic stability control, and seat belt warning devices.</li> <li>• Safer Driving/Vehicles Policies were reviewed within the Government vehicle fleet.</li> </ul> |
| <i>Others</i>  | <ul style="list-style-type: none"> <li>• Legislation making “driving while knowingly fatigued” an offence under the Road Safety Act.</li> </ul>  |

#### *B.1.2. Strategies to decrease risk of injury:*

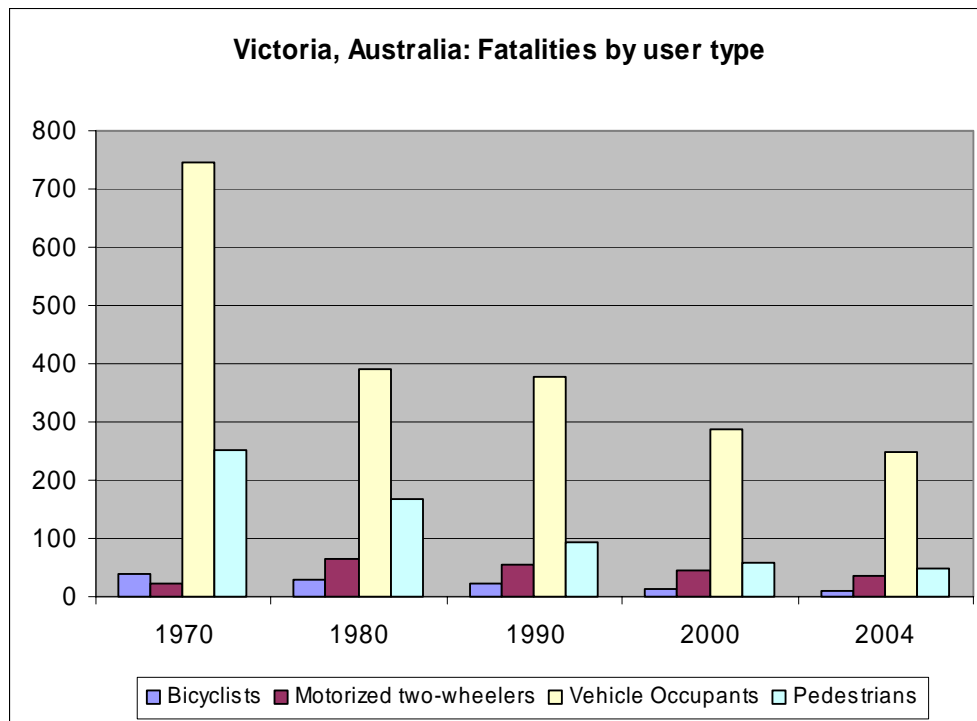
|   |  |
|---|--|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"> <li>• Ongoing low level promotion - low priority given high wearing rates. Enforcement high with more than 23,000 offences issued in 2004.</li> </ul>                         |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>•</li> </ul>  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• Completion of town by-passes.</li> <li>• Installation of significant lengths of safety barriers (mostly wire-rope barriers) on road sides and median strips.</li> </ul> |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>• Ongoing contribution and promotion of Australian New Car Assessment Program and Used Car Vehicle Safety Ratings.</li> </ul>   |

#### **B.2. National Diagnosis in key safety areas**

##### *Road users*

During the 1970's improvements are attributed to mandatory seat belt wearing and random breath testing for alcohol. During the 1990's reductions in the road toll corresponded with improvements in vehicle safety, increases in speed enforcement and increased random breath testing supported by major public education and publicity. Bicycle helmet wearing was mandated in July 1990 and the components of graduated licensing were gradually introduced. Since 2001 lower traffic speed has followed lower speed limits and enforcement measures with lower thresholds and higher penalties. Benefiting most from lower traffic speed are pedestrians, motorcyclists and cyclists.

### Evolution in fatalities by road user type

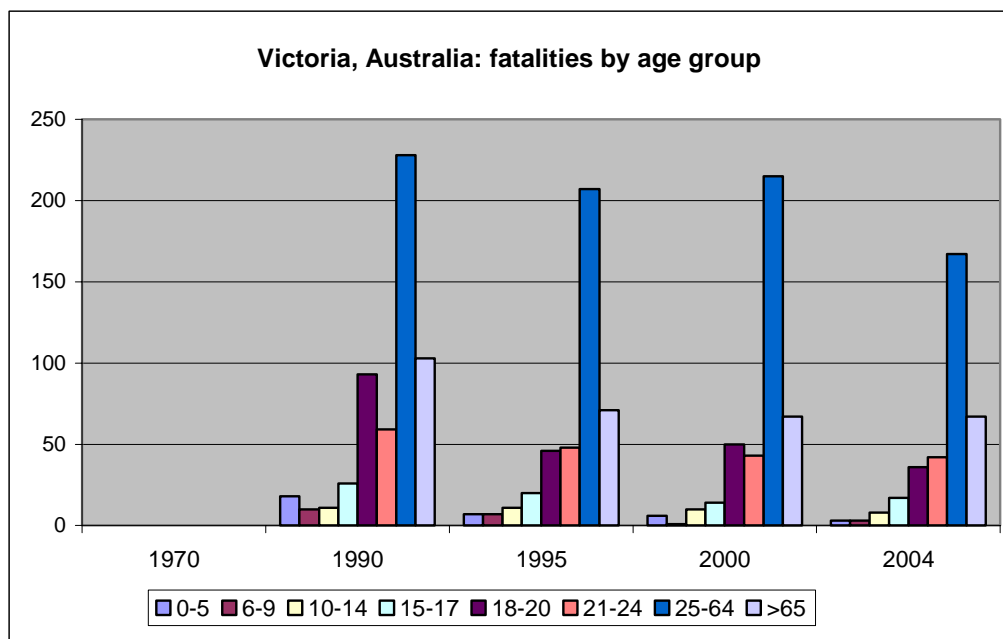


### Age groups

Young adults and older road users continue to represent the highest risk groups. Young adults (mainly males, many of whom are intoxicated, drugged, fatigued, distracted, etc) are still over-involved as drivers, passengers and pedestrians. Older adults are over-involved due to physical impairment and fragility.

Inexperience and a lack of hazard perception are considered to be critical factors in young driver crashes. In Victoria, drivers aged 16 and 17 must be under the supervision of a fully licensed driver. Minimum licensing age (18) in Victoria is higher than all other Australian States and Territories.

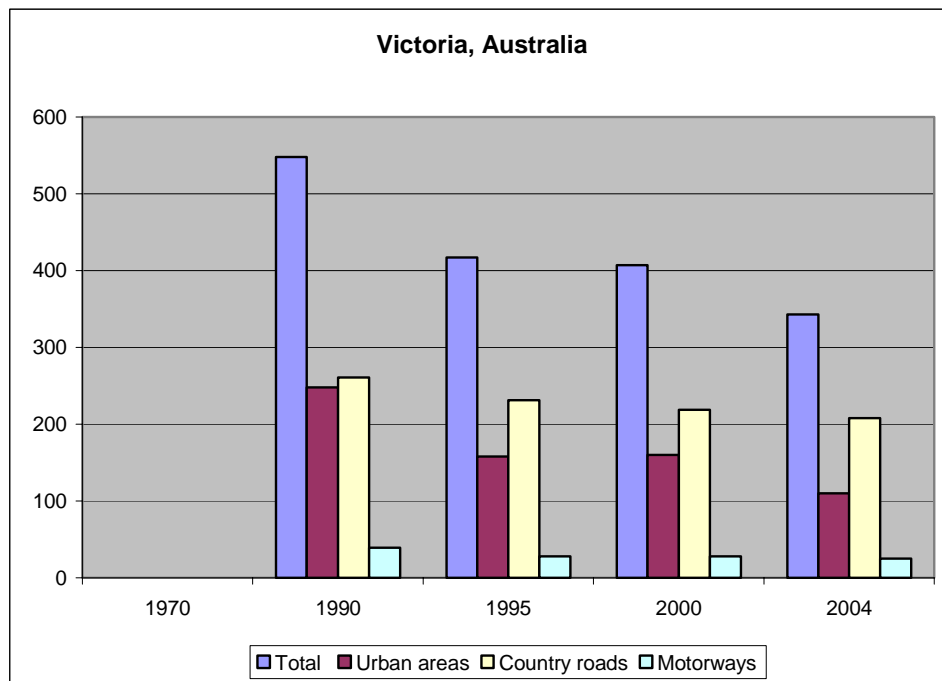
### Evolution in fatalities by age group



### Type of road / location

The major gains in road safety over the last 4 years have been in urban areas. Many of the enforcement programmes and reductions in speed have focussed, and had their greatest effects, on urban roads. Major road infrastructure improvement programmes have also focussed on high volume major routes and highways taking traffic from urban streets. Low volume country roads have a higher crash risk per vehicle kilometre travelled and have not benefited as much from road safety programmes. The country road toll has recently been the focus of a Parliamentary Road Safety Inquiry and the findings will encourage future road safety programmes in that area.

### Evolution in fatalities by type of road



### Speed

Speed surveys indicate that travel speeds have decreased both in terms of the median free speeds and the 85<sup>th</sup> percentile speeds on urban roads and to a lesser extent on rural roads, but are continuing at a high level on motorways and 'c-class roads'.

This decrease in travel speed is related to increases in speed camera hours of operation, the increased penalties and lowering of the speed penalty thresholds including lowering the enforcement tolerance - the margin over the recorded speed at which a driver will be penalised.

Speed limits have also been reduced in higher risk environments consistent with the principles of a safe system. These include urban 50 km/h default speed limits, school speed zones and shopping area speed limits (mostly 40km/h).

Benefiting most from lower traffic speed are pedestrians, motorcyclists and cyclists.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|   | <b>1980</b> | <b>1990</b>                               | <b>2000</b>                               | <b>2004</b>                               |
|---|-------------|---|---|---|
| <b>Nb of speeding citations</b>   |             | 225 000 Mobile speed camera infringements | 549 859 Mobile speed camera infringements | 708 977 Mobile speed camera infringements |
| <i>See note below</i><br><b>% of fatal crashes where speed is cited as a causation factor on police collision incident sheets</b> |             | 19%<br>71 (in 1997)                       | 26%<br>107 (in 2000)                      | 19%<br>70 (in 2004)                       |
| <b>% of drivers over the posted speed limit from speed monitoring surveys :</b><br>- urban areas<br>- rural roads<br>- motorways  |             |   | 80.5%<br>-----<br>-----                   | 44%<br>26%<br>42%                         |
| <b>% drivers 10 km over the speed limit on all roads from mobile speed cameras</b>  |             |   | <b>2.28%</b>                              | <b>1.76%</b>                              |

Note: This is based on the subjective assessment of the police officer at the scene of the crash. It is not a robust measure as speed (i.e. movement) is always a causal factor and the citation is not consistent or reliable.

#### *Drink driving*

The percentage of drivers killed with a BAC of 0.05 and above has reduced from over 50% in the 1970s to less than 30% in the 2000s (assuming drivers with unknown BAC levels are distributed proportionally to those with known BAC levels).

This decrease is attributed to a high level of random breath testing, severe penalties, sustained education and publicity to make drink driving socially unacceptable. Not driving when intoxicated is also encouraged by providing advice, such as the “designated driver” alternative, flexible late night public transport and coin-operated breathalysers in drinking venues.

Additional measures introduced are Zero BAC for 3 years after re-gaining a licence after a drink driving offence and the use of alcohol interlocks.

Alcohol intoxication is also an important factor in pedestrian crashes. Of all pedestrians killed in road crashes, around 30% have a BAC over 0.05 and the majority of these are over 0.15.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|   | 1990          | 1995         | 2000         | 2004         |
|---|---------------|--------------|--------------|--------------|
| Number of offenders   | 11 372        | 10 612       | 11 865       |              |
| See Note Below<br>Number of fatal crashes where alcohol impairment is cited as a causation factor on police collision incident sheets       |               | 14 (in 1997) | 22           | 9            |
| % of fatal accidents where the driver, rider, bicyclist or pedestrian had a BAC 0.05 or over. Unknown BAC is assumed to be under the limit. | 128/492 = 26% | 96/370 = 26% | 92/373 = 25% | 65/312 = 21% |

Note: This is based on the subjective assessment of the police officer at the scene of the crash. It is not consistent or reliable and is not based on the number of drivers with a BAC over the legal limit.

*Seatbelt and helmet wearing*

**Seatbelt:**

Mandatory wearing of seat belts for over 8 year-olds was introduced in Victoria from 1970 to 1974 (1970: for front seats, 1974: all seats).

In 1976 children had to be restrained if travelling in the front seat and this was extended to mandatory wearing of restraints where available in 1981. After 1988 all children under 1 year of age must be restrained in approved restraints unless in taxis or interstate registered vehicles. Compliance is high: there is a higher penalty for the driver of non-restrained children and if there are insufficient seat belts available for all passengers then children must be given a restraint in preference to an adult.

Nevertheless, between 17% and 40% of drivers killed over the past 5 years were not wearing seatbelts.

**Evolution in seatbelt wearing rate**

|                                     | 1980  | 1990  | 1994  | 2001  |
|-------------------------------------|-------|-------|-------|-------|
| <i>Capital City &amp; surrounds</i> |       |       |       |       |
| <i>Driver</i>                       | 91.6% | 95.2% | 97.4% | 97.7% |
| <i>Front Seat Passengers</i>        | 88.2% | 93.5% | 97.4% | 94%   |
| <i>Rear Seat Passengers</i>         | 16.2% | 74.9% | 85.9% | 89.2% |
| <i>Motorway</i>                     |       |       |       |       |
| <i>Driver</i>                       |       |       | 99%   |       |
| <i>Front seat Passengers</i>        |       |       | 98.2% |       |
| <i>Rear Seat passengers</i>         |       |       | 94.6% |       |
| <i>Rural roads</i>                  |       |       |       |       |
| <i>Driver</i>                       |       | 97%   |       |       |
| <i>Front seat Passengers</i>        |       | 97%   |       |       |
| <i>Rear Seat Passengers</i>         |       | 89%   |       |       |
| <i>Provincial Towns</i>             |       |       |       |       |
| <i>Driver</i>                       |       | 88.7% | 97.8% |       |
| <i>Front seat Passengers</i>        |       | 88.7% | 99.1% |       |

|                             |  |       |     |  |
|-----------------------------|--|-------|-----|--|
| <i>Rear Seat Passengers</i> |  | 79.3% | 94% |  |
|-----------------------------|--|-------|-----|--|

## Helmet

**Helmet wearing is mandatory for all bicyclists and motorcyclists.** Bicyclists must wear a helmet to Australian Standard AS/NZ 2063 and motorcyclists have to wear an Australian Standard AS1698 approved helmet. The compliance for motorcyclist wearing helmets is comparable to that of seatbelt wearing among car drivers. While no survey of bicyclists has been undertaken for a number of years, not much change since 1999 is expected. Helmet wearing appears to be fairly high among commuter cycling, but is lower among school students and recreational cyclists.

### Evolution in bicycle helmet wearing rate in Victoria, Australia

|                                     | 1990 | 1991 | 1994 | 1999 |
|-------------------------------------|------|------|------|------|
| <b>Capital City &amp; surrounds</b> |      |      |      |      |
| <i>School Transport</i>             | 38%  | 63%  | 70%  | 73%  |
| <i>Commuter</i>                     | 47%  | 92%  | 96%  | 98%  |
| <i>Recreational</i>                 | 32%  | 77%  | 80%  | 88%  |
| <b>Country (provincial towns)</b>   |      |      |      |      |
| <i>School Transport</i>             | 32%  | 81%  | 87%  | 95%  |
| <i>Commuter</i>                     | 13%  | 82%  | 89%  | 94%  |
| <i>Recreational</i>                 | 10%  | 76%  | 84%  | 87%  |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

**Red Light Cameras** were introduced in Victoria in 1983 and a carefully controlled evaluation showed the benefit in injury reduction but not in crash reduction. The cameras were rotated randomly around all the sites. Since then the number of sites and the number of cameras have increased and combined red-light/speed cameras are being introduced this year.

Legislation prohibiting **telephone** use while driving was introduced in Victoria before 1960. The punishment for using a hand-held mobile phone was increased to include demerit points from December 2002. Enforcement is high, and the number of police issued infringements to drivers using a mobile phone while driving decreased from 30 500 in 2002 to 23 000 in 2004.

Victoria does not have a **tail-gating** offence *per se*. The 2-second rule is promoted and the road rules require drivers to keep a safe distance behind other vehicles. For long vehicles (over 7.5m long) the driver must maintain a 60 metre gap between any other long vehicle it is following, except in built up areas or when overtaking. There were 3,205 prosecutions in 2004 for violations of this rule.

Ever since the 1950's it has been an offence to drive in Victoria when under the influence of a **drug** to an extent of not being able to have proper control of the vehicle. Random road-side saliva testing for drugs (methamphetamines and THC – the active constituent of cannabis) was introduced in Victoria in Dec 2004.

*Other factors*

None.



### ***B.3. Major road safety problems today***

1. Speed: appropriate levels on open rural roads and adequate enforcement.
2. Roadside hazards in run-off-road crashes.
3. road intersection safety and head-on crash risk reduction.
4. impaired drivers – alcohol, drugs, fatigue/daytime sleepiness, other cognitive impairment.
5. Young drivers – inexperience, inappropriate risk-taking.
6. Heavy vehicle safety and vehicle incompatibility.
7. Vehicle safety features/levels.

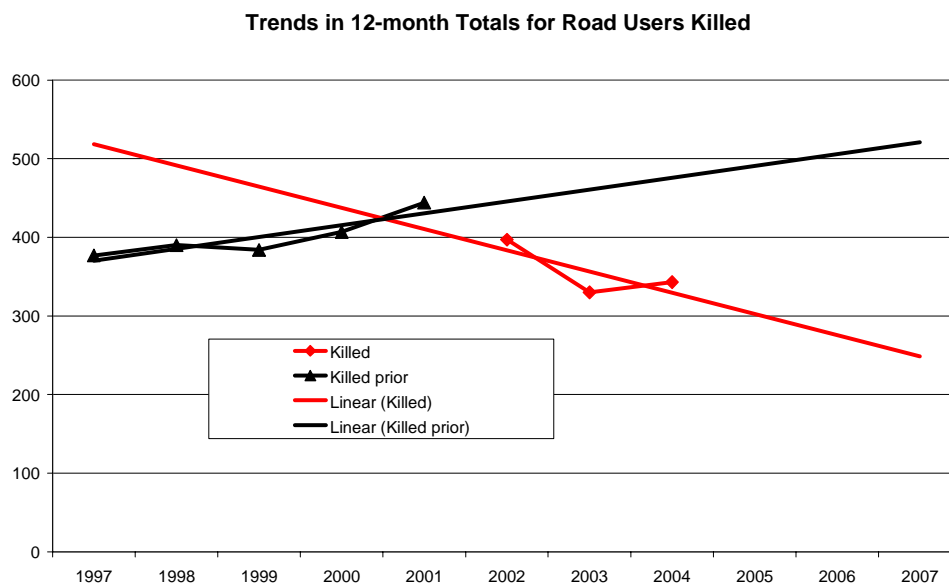
### ***B.4. Forthcoming road safety initiatives to address these problems***

1. Continued **review of speed limits**, based upon crash rate and crash risk, where infrastructure solutions are not feasible/cost effective. Enforcement including new point to point speed cameras, and roll out of variable message signs to alert drivers when they are travelling over the speed limit or at an inappropriate speed for the conditions. Continued publicity and education on the dangers and effects of vehicle speed.
2. State funded **major infrastructure improvement** projects focussing on proactive mass action treatments and specific black-spot improvement programmes.
3. Continuation of “run off road” crash treatments
4. Analysis of the types of **intersection crash**, including involvement of different road user groups. Examination of intersection engineering and traffic control types. This could involve the installation of new control devices, such as: roundabouts, changes in signal phasing, protecting right turning vehicles.
5. Introduction of countermeasures on road lengths with a higher risk of “head on” crashes
6. **Drug screening** of drivers presenting to emergency wards. Continuation of roadside saliva testing for the presence of drugs in drivers, with probable extension to other drugs.
7. Introduction of a **graduated licensing scheme** to allow young/novice drivers to gain staged experience when not under supervision to better manage their risk and risk to their passengers. Trial of a national driver education program - to establish a program based on increasing the insight of novice drivers into their risk and how to self manage that risk effectively. The program will be developed with the input of a panel of experts, for example, experts on young driver safety and experts on health interventions for young people.
8. **Heavy vehicle safety** – continue to work with WorkSafe (the state based occupational health and safety department), the TWU (Transport Workers Union) and the freight industry to ensure safe working and employment conditions addressing the main issues of drugs and fatigue.
9. Introduction and enforcement of legislation making driving while **fatigued** an offence. Continued promotion of the risks of driving while fatigued.
10. Continued promotion of the benefit of **vehicle safety features** and vehicle safety ratings and leadership by government fleets.

### C. Road safety targets

| Type                                | Targets (in % or absolute figures) | Base year | Target year | Base year figure | Current results (figure in 2003 or 2004) | 2007 Target |
|-------------------------------------|------------------------------------|-----------|-------------|------------------|--|-------------|
| Fatalities<br><b>Victoria</b>       | -20%                               | 1999-2001 | 2007        | 412              | 343 (2004)                               | 330         |
| Serious Injuries<br><b>Victoria</b> | -20%                               | 1999-2001 | 2007        | 6395             | 6371 (2004)                              | 5116        |

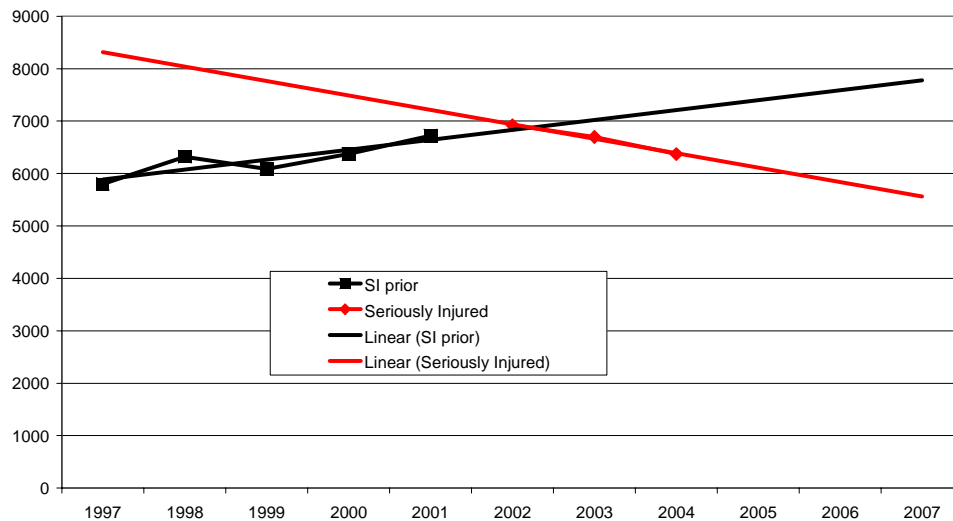
#### Illustration: Current trend towards targets in Victoria, Australia



The annual number of road deaths in Victoria increased from 377 in 1997 to 444 in 2001. The trend line shows the expected linear increase from 2001 to 2007.

From 2001 the annual number of road deaths has been decreasing and the road toll in 2004 was 343. The linear trend line fitted to the years 2002-04 shows the possible decrease to 2007.

**Trends in 12-month Totals for Road Users Seriously Injured**



The annual number of seriously injured people in road crashes in Victoria increased from 4 690 in 1997 to 5 761 in 2002. The trend line shows the expected linear increase from 2001 to 2007.

From the maximum level in 2002, the annual number of seriously injured people in road crashes has been decreasing and the number in 2004 was 5 178. The linear trend line fitted to the years 2002-04 shows the possible decrease to 2007.

#### **D. Success story cards**

##### ***Success story from your Victoria***

**Compulsory seat belt wearing** was introduced in 1970. This pioneering legislation was combined with publicity promoting the safety benefits and dispelling the myths. Seat belt wearing was supported by influential organisations (e.g. the RACV), and the bipartisan Parliamentary Road Safety Committee.

**Reduction in vehicle speeds** has contributed to an enormous decrease in crash severity and frequency. This decrease in speed has resulted from increased enforcement (mainly mobile speed cameras), the lowering of speed limits on a large proportion of Victorian roads and increased penalties including the reduction of the allowable tolerance level in recent years. Major beneficiaries in urban areas have been pedestrians and motorcyclists, with fatality levels for both at their lowest levels in 2003 & 2004 since recording commenced in 1950.

**Random Breath Testing** began in 1976 and had a major increase in funding and focus in 1989-90 with more high visibility booze buses and multi-million dollar advertising campaigns "If you drink then drive you're a bloody idiot". These commercials show crashes and injury outcomes and attempt to generate a general deterrence effect by persuading people that if they drive after drinking, they will have an accident. This advertising was accompanied by large scale enforcement programmes which contributed to its success.

**State-wide Black-spot Programme.** In 2000, the State Government of Victoria commenced a four year, \$240 million programme of treatment of crash black-spots and high risk crash locations. Casualty crashes at black-spot locations reduced by 17% compared to control locations. The cost effectiveness of the program holds up against all relevant costing assumptions.

**Mandatory bicycle helmet** wearing laws were introduced in 1990. Within two years there was a 17% reduction in serious injuries and a 70% reduction in head injuries among cyclists.

*Less recommended story card from your Victoria*

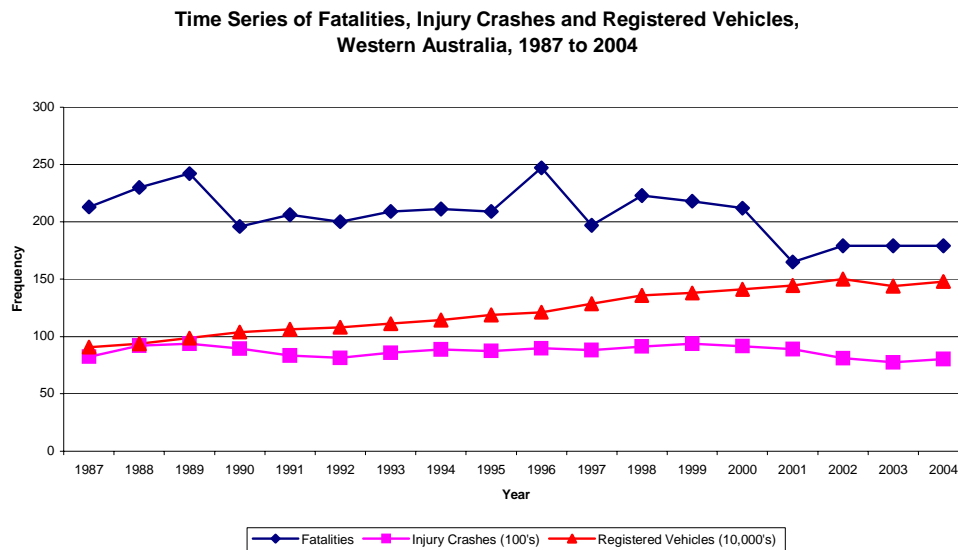
**Painted colour pavements for pedestrians crossing** at signalised intersections or pausing halfway when crossing mid block. Evaluations showed that there was very limited benefit (if any) to be gained from this kind of treatment in urban areas in Victoria.

## AUSTRALIA (WESTERN AUSTRALIA)

### A. General trend in road safety

#### Key figures in 2005

- 162 road fatalities
- 8.1 killed per 100 000 population (lowest record since records began in 1962).



As indicated in this graph despite rising vehicle registration numbers since 1987 decreases have been evident in the number of road crash fatalities on WA roads. From 1999 to 2005 there was a 26% drop in deaths on Western Australian roads the greatest rate of improvement recorded by any Australian jurisdiction in that time, although Western Australia was coming off a relatively higher base rate.

Patterns in all injury crashes (includes fatal, hospitalisation and medical attention injury crashes) have been less clear over the same period.

A full report of progress in road safety in Western Australia is now being published annually. The latest report: Annual Review 2004- Road Safety Council can be found under Fact Sheets and Publications: Publications at: [officeofroadsafety.wa.gov.au](http://officeofroadsafety.wa.gov.au).

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

*Arriving Safely, the road safety strategy for Western Australia 2003-2007*

The “Arriving Safely” Strategy for 2003-2007 sets an ambitious target of reducing serious trauma by 53% by 2007. This improvement is anticipated to occur from: safer roads and roadsides (31-43% contribution), safer vehicles (8%), improved road user behaviour (20%) and reducing urban travel speeds by 5% (resulting in a 9% contribution to improved safety.).

Annual reviews of progress on a range of process, impact and outcome focussed performance indicators for the Arriving Safely strategy are now being published. The 2004 report can be found under Fact Sheets and Publications: publications at: [officeofroadsafety.wa.gov.au](http://officeofroadsafety.wa.gov.au).

#### B.1.1. Strategies to decrease risk of crashes:

|  |  |
|--|--|
| <i>Improved speed compliance / enforcement</i>   | <ul style="list-style-type: none"> <li>Major new focus by WA Police to “Frontline First” to greater on road policing presence including establishment of new Highway Patrol.</li> <li>Review of road traffic penalties in 2005 based on road safety risk curves.</li> <li>Review of enforcement methods and technologies (including cameras) to determine type and mix needed to reduce travel speeds by 5% being conducted in 2005-06.</li> <li>Developing pilot project to trial the introduction of Intelligent Speed Adaptation (ISA) technology.</li> </ul> <p><i>Relate to the target "reducing travel speeds"</i></p>       |
| <i>Reduced speed limits</i>  | <ul style="list-style-type: none"> <li>Ongoing business through state roads authority in partnership with local government.</li> <li>50 km/h urban speed limits (default) introduced state-wide on 1 December 2001.</li> <li>Ongoing local speed limit reductions e.g. in high pedestrian areas</li> </ul>   |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                       | <ul style="list-style-type: none"> <li>New legislation and operational procedures being developed to allow for roadside drug testing for impairment and for presence using oral fluids. Expected introduction 2007</li> <li>New legislation to reduce repeat drink driving through enforcement (including compulsory carriage of license, vehicle sanctions such as immobilisation and impounding), interlock licenses and alcohol treatment including a compulsory alcohol interlock programming developed for 2007.</li> </ul> <p>See also target " improved effectiveness of enforcement and community education campaigns"</p> |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..)</i> | <ul style="list-style-type: none"> <li>Expanded Blackspot Program (up from AUD 23.75m per year to AUD 30m per year for specific site treatments.</li> <li>New (additional) AUD \$127million (over four years) Safer Roads Program to treat identified segments or lengths of roads/roadsides across the network with a focus on preventing serious single vehicle run off the road crashes (hit object or rollover). Includes wire rope barriers, audible edge lining, shoulder sealing.</li> </ul>  |

|  |  |
|--|--|
| <i>Enforcement of other road rules</i>               | <ul style="list-style-type: none"> <li>• New central Police Traffic unit established with high visibility and unmarked patrol cars. Regular operations on risk behaviours, e.g. policing of mobile phone bans, and on highways and main urban distributor roads.</li> <li>• Double demerit points apply to gazetted holiday periods for the key road safety risk factors of drink driving, not wearing a seatbelt and speeding until 2007.</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>        | <ul style="list-style-type: none"> <li>• In May 2006 the WA Government approved a new package of measures to improve Novice Driver safety including in principle support for 120 hours of supervised driving (promotion and support programs), night and peer passenger restrictions for the first 6 months of solo driving and zero blood alcohol for supervising driver, learner driver and provisional driver. Implementation 2007.</li> <li>• New Road Aware pre-driver education program for students at high schools and technical colleges.</li> <li>• Parent education workshops encourage learner drivers to maximize their supervised driving experience.</li> </ul> |
| <i>Education and information programmes</i>          | <ul style="list-style-type: none"> <li>• Ongoing campaigns being developed each year. Campaigns focus on the big four factors of speeding, drink driving, fatigue and non-wearing of restraints.</li> <li>• New campaigns being developed for safer vehicles and supervised driving hours.</li> </ul>  |
| <i>Regulation on vehicle inspection</i>              | <ul style="list-style-type: none"> <li>• Vehicle inspections done at re-registration and/or as a result of random on-road patrols and targeted operations and work orders by WA Police and transport authorities.</li> </ul>   |
| <i>Regulation on active vehicle safety equipment</i> | <ul style="list-style-type: none"> <li>• No recent initiatives, but developing large scale communication strategy to stimulate market demand for purchase of safer vehicles by private and fleet buyers.</li> <li>• Developing Government Safer Vehicle Fleet buying policy to stimulate demand for safer vehicles.</li> </ul>   |

#### *B.1.2. Strategies to decrease risk of injury:*

|   |   |
|---|---|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"> <li>• Enforcement ongoing for seatbelts and compulsory wearing of motorcycle helmets and bicycle helmet laws.</li> <li>• Lobbying Federal Government for seatbelt warning/reminder systems in all new vehicles.</li> <li>• New statewide child car restraints fitting and checking programme implemented to encourage and advise parents to place babies and children in an appropriately fitted car restraint.</li> </ul> |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• New rescue helicopter service established for 200km radius of operation around capital city Perth.</li> </ul>  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• See above Safer Roads Program and Blackspot program. Trial fitment of wire rope barriers on selected country roadside sites/lengths anticipated.</li> </ul>  |

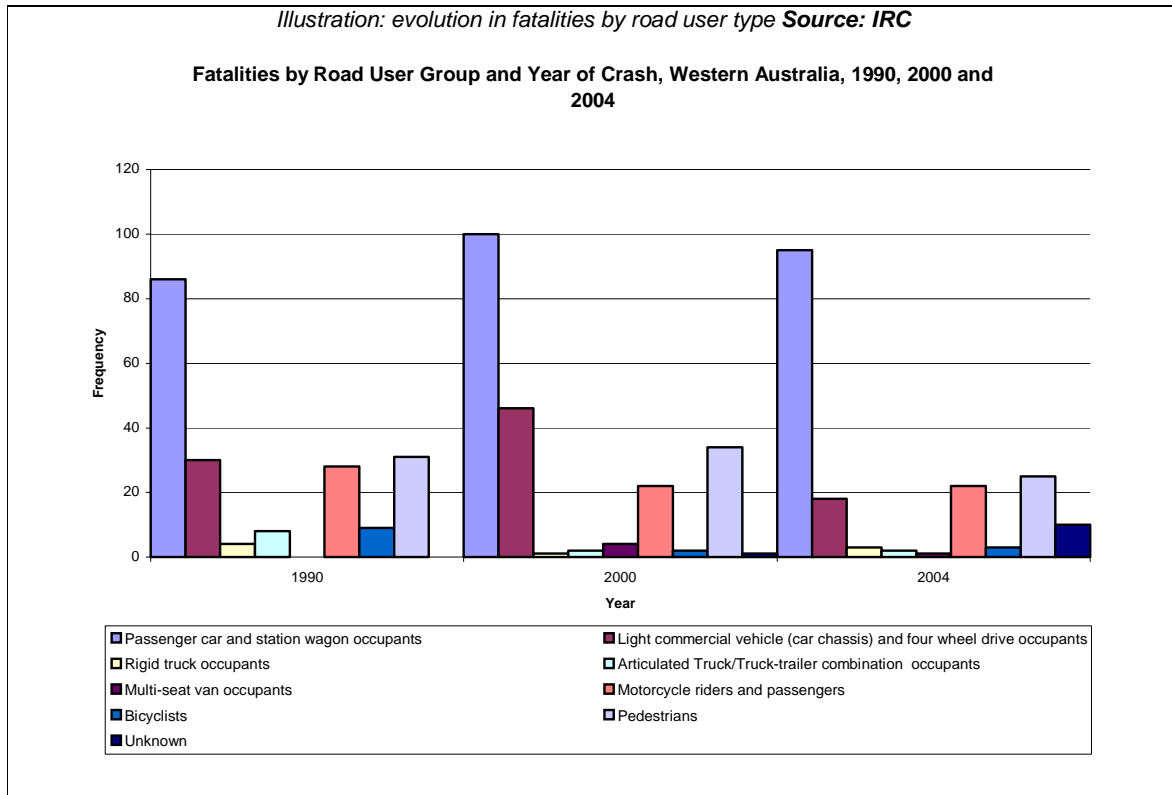
## B.2. National Diagnosis in key safety areas

### Road users

As indicated in the graph there has been consistent improvement (*i.e.* decreases) in the absolute number of fatal crashes involving most of the road user groups since 1990 in WA. In two of the road user group categories (light commercial vehicles and four wheel drive occupants; and pedestrians) decreases in absolute numbers in 2004 relative to 1990 figures followed increases in the year 2000. The number of passenger car and station wagon occupants involved in fatal crashes in 2004 increased relative to 1990 figures but decreased from 2000 figures.

In 2004 the largest involvement in fatal crashes came from passenger cars and station wagon occupants. This was followed by similar numbers of fatal crashes involving light commercial vehicles, four wheel drives and pedestrians and also by fatal crashes involving motorcycle riders and passengers.

### Evolution in fatalities by road user type



### Age groups

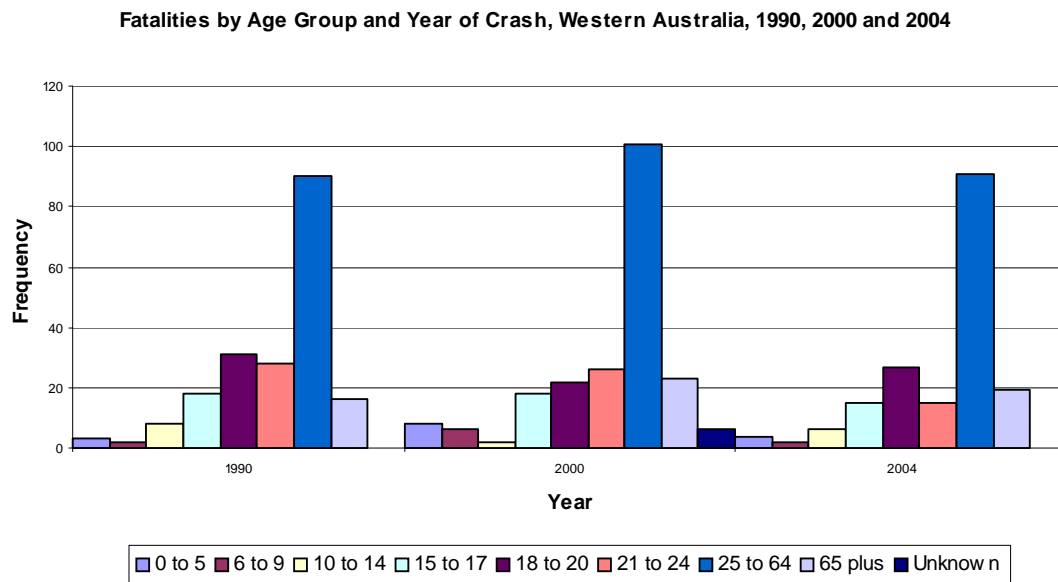
As indicated in the graph in terms of involvement of various age groups in fatal crashes in 2004 slight improvements have been noticed in most age groups since 1990 with the exceptions being the age groups 0-5 years, 6-9 year (no change) 25-64 years and the group aged 65+ years.



Although the graph indicates that 25-64 year olds are overrepresented in fatal crashes, the proportion of fatal crashes involving this group are less than would be expected given the proportion of vehicle registered to this age group. The proportion of fatal crashes involving those under 20 years and to a lesser extent those involving 21-24 year olds are far in excess of what would be expected on the basis of vehicle registration figures for these age groups.

In 2004 males continue to be overrepresented in fatal crashes with almost two and a half times more fatalities being male than female.

#### ***Evolution in fatalities by age group***



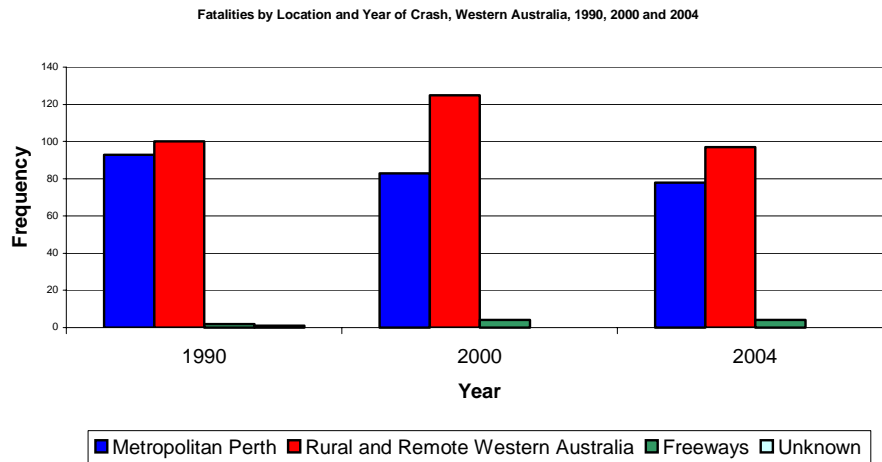
Source: IRC

#### ***Type of road / location***

As indicated in the graph below there have been improvements in the number of fatal crashes occurring on both metropolitan roads and rural and remote roads in WA in 2004 compared to 1990. This improvement has been consistent on metropolitan roads, although on rural and remote roads an increase was noted in the number of fatal crashes between 1990 and 2000. Freeways contribute very little to the number of fatal crashes in WA with 2 occurring in 1990 and 4 occurring in both 2000 and 2004.

Run off road crashes involving single vehicles on rural roads account for about 45 % of all fatal crashes in Western Australia with significant variation by region.

### Evolution in fatalities by type of road



### Speed

#### Evolution of speeds in WA

In 1978, maximum speed limits were introduced. The default for a built-up area was set at 60km/h, with 110 km/h being the maximum for areas that were not speed zoned at a lower limit or in a built up area. Local traffic area 40 km/h speed limits were introduced in 1993, these being largely implemented around school zones. Legislation was introduced on 1 December 2001, changing the default speed limit for built-up areas to 50km/h in Western Australia.

People are slowing down on Western Australian roads even if only by small amounts. Mean vehicle speeds in metropolitan and rural areas are at or below the speed limit posted for the road. This average speed has decreased marginally since the baseline period of 1998-2000 on all speed zones except 90 and 100km/h urban roads. Of concern is an apparent small increase in average travel speeds in 2004 compared to 2003 although it is too early to determine if this is the start of an upward trend.

#### Role of Excessive Speed today

In 2003, speed was a factor in 38% of fatal crashes, 14% of police-attended hospitalisation crashes, 10% of police-attended crashes where victims required medical attention, and 18% of police-attended property-damage-only crashes occurring on Western Australian roads. During 2003, speed was a factor in 62% of motorcyclist fatalities and 36% of driver fatalities.

Males continue to be over-represented in speed-related fatalities in Western Australia. In 2003, 84% of speed-related fatalities were male, with many (47%) in the 17-24 year old age group, compared to 12% of 25-29 year old males, 12% of 30-39 year old males and 10% of 40-49 year old males.

In 2003, slightly more speed-related fatal crashes occurred in the Perth metropolitan area compared to rural areas of Western Australia (42% metropolitan versus 33% rural).

In 2003, 40% of all speed-related fatal crashes occurred in 50-70 km/h speed zones and a further 43% in 100-110 km/hr speed zones. Over half (60%) of all police-attended speed-related hospitalisation crashes in Western Australia occurred in 50-70 km/h speed zones and 9% in 100-110 km/hr speed zones.

A formal evaluation of the 50 km/h built-up area speed limit in Western Australia has shown that the introduction of the lower limit resulted in a 21% reduction in casualty crashes over the two year period December 2001-November 2003. The lower default urban speed limit also resulted in a 51% reduction in pedestrian crashes and a 19% and 18% reduction in young and older driver crashes respectively.

State speed monitoring surveys show that compliance with speed limits across the State has risen since 2000, with compliance in 2003 at 57% in the Perth metropolitan area and 68% in rural areas. The percentage of vehicles travelling 10 km/h or more above the speed limit has reduced to 9% in Perth and 5% in rural areas since 2000.

In an ongoing survey of community road safety attitudes, 74% of young (17-39 years) male drivers admit to deliberately speeding. Most (67%) of these speeders exceed the limit by up to 10km/h. In the same survey, 79% of young males consider driving 10km/h over the speed limit in a 50km/hr zone morally unacceptable. Three in ten young males in the same survey (30%) agreed that reducing their speed by 10km/h would reduce their crash risk a great deal. Seventy six per cent of young males surveyed indicated that their speed had been checked (by speed camera or hand held radar) in the past 6 months.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|  | <b>1990<br/>(data for 1993)</b> | <b>2000</b> | <b>2003</b>             |
|--|---------------------------------|-------------|-------------------------|
| Nb of speeding citations                             |                                 |             |                         |
| % of fatal crashes where speed is a causation factor | <b>33%</b>                      | <b>31%</b>  | <b>38%</b>              |
| % of drivers over the posted speed limit in :        |                                 |             | <b>(data from 2003)</b> |
| urban areas  |                                 | <b>12.9</b> | <b>9.32</b>             |
| rural roads  |                                 | <b>8.83</b> | <b>5.04</b>             |
| motorways  |                                 | NA          | NA                      |

*Drink driving*

Evolution of drink driving in WA

Drink driving was first legislated in the Traffic Act 1919-1973. Components of the legislation introduced included a blood alcohol concentration (BAC) limit of 0.08g/100ml set for drink driving, and a limit of 0.15g/100ml was set for driving under the influence (DUI). Preliminary Breath Testing and Evidentiary Breath Testing were also components of this Traffic Act.

In 1982 a BAC limit of 0.02g/100ml was introduced for Probationary drivers. Random Breath Testing (RBT) then followed in 1988. The BAC limit for all other licensed drivers was reduced to 0.05g/100ml and enacted in 1992. Penalties of AUD 100 and 3 demerit points commenced in June 1993.

Currently in Western Australia, drivers convicted of driving with a BAC over 0.05g/100ml, on a first offence, are liable for a fine of AUD 200 if summonsed to court, or AUD 100 on issue of infringement. If convicted of driving with a BAC of 0.08g/100ml or above, on a first offence, drivers or riders are liable for a minimum fine of AUD 400 and are disqualified from holding or obtaining a driver's licence for a period of not less than three months. Furthermore, if a driver is convicted of driving with a BAC of 0.15g/100ml the minimum fine is AUD 800 and are disqualified from holding or obtaining a driver's licence for a period of not less than six months.

In late 2004, the WA Government approved implementation of a strategy designed to reduce the incidence of repeat drink driving in WA. This strategy includes the following components:

- An alcohol ignition interlock scheme.
- Vehicle sanctions with provision to immobilise, impound or confiscate the vehicles of repeat drink driving offenders.
- Rehabilitation for repeat drink driving offenders with serious alcohol problems.
- Initiatives to limit unlicensed driving including compulsory carriage of licence and increased detection of those driving without a valid licence.
- Compulsory blood alcohol analysis for all drivers involved in a fatal or serious injury crash.
- Confiscation of vehicle keys for 24 hours from drivers charged with drink driving where they are believed to be at risk of driving their vehicle while intoxicated.

#### Role of excessive alcohol today

There is evidence that the levels of alcohol related fatalities in Western Australia are continuing to fall with a 33% reduction in 2004 compared to the baseline of 1998-2000 in the number of people killed in crashes where at least one driver or rider had a blood alcohol concentration at or over 0.05 g/100ml. This is despite an increase of 37% in alcohol sales and a 10% increase in the number of alcohol outlets over the same time period.

Of concern is that some of the significant gains made in 2003 where illegal blood alcohol concentration levels fell to 15% of total fatalities have been eroded in 2004.

Alcohol related crashes have declined but are still a major contributor to road crashes in Western Australia. In WA in 2003, 21% of all fatal crashes involved a driver or rider with a BAC of or over the legal limit of 0.05g/100ml.

In more than 35% of fatal crashes from 1 September 1996 to the end of 1999, alcohol had been used by a driver or rider before the crash. Twenty per cent of these fatal crashes involved drivers or riders with a BAC that was at least three times the legal limit (greater than 0.15g/100ml).

Fatal alcohol-related crashes in 2003 occurred mostly in the age groups 21-24 (25%), 30-39 (25%), 17-20 (22%), 25-29 (12%) and 40-49 (12%). Males were over-represented in fatal alcohol-related crashes (84%). Similar involvement in alcohol-related crashes was noted amongst rural and metropolitan drivers and riders (49% rural versus 51% metropolitan).

In Western Australia in 2003, 33% of pedestrians killed had a BAC of at least 0.05g/100ml. Three (50%) of these pedestrians were killed in the Perth metropolitan area and three (50%) in rural areas of Western Australia.

In an on-going survey of community road safety attitudes (data from March 2006), 12% of young (17-39 years) male drivers (who also drank alcohol) said they believed that even if they always kept their BAC under 0.05g/100ml while driving they would be unlikely to reduce their chances of having a crash. In the same survey, 17% considered it was 'morally acceptable' to drive when their BAC was between 0.05 and 0.08g/100ml. Approximately 63% of the same group considered drink driving 'completely or largely unacceptable among their circle of friends' and 14% were categorised as high frequency/high amount drink drivers.

In Western Australia in 2004/05, 13 610 drivers were tested by police and found to exceed the lawful alcohol limit. Previous research has shown that of these, approximately 60% were under 30 years-of-age.

In WA each year approximately 4 000 drink drivers are repeat drink drivers (representing approximately 30% of all drink driving arrests in the State). A majority (90%) are male, under 25 years of age (65%), unskilled or unemployed and have been arrested for other offences (67%). The median re-offence time is 31 months for males and 39 months for females. Just under a half (43%) of offenders are arrested for BAC's in excess of 0.15g/100ml. The relative risk of crash involvement for repeat drink drivers is 2.3 times greater than for drivers without a recorded drink driving offence. Overall, the profile of WA repeat drink drivers is concordant with that in overseas findings.

The initial introduction of random breath testing in Western Australia is reported to have had an immediate impact on road crashes, decreasing the number of fatal crashes by approximately 25%.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1994                                 | 2000       | 2003                                  |
|--|--------------------------------------|------------|---------------------------------------|
| Number of citations                            |                                      |            | <i>(see below for available data)</i> |
| % of fatal accidents where alcohol is a factor | <b>34%</b><br><i>(data for 1993)</i> | <b>22%</b> | <b>21%</b>                            |

**Number of drink driving offenders 2001-20023**

| BAC                                     | Number of offences           | Number of offenders |
|---|------------------------------|---------------------|
| All Excess 0.02 (Probationary)          |                              | 250                 |
| All Excess 0.02 (Recently disqualified) |                              | 200                 |
| All Excess 0.05 (Infringements)         | First offence                | 4 300               |
| All Excess 0.05 (Convictions)           | Second/subsequent offence    | 1 500               |
| Excess 0.08                             | First offence                | 4 500               |
| Excess 0.08                             | Second offence               | 1 400               |
| Excess 0.08                             | Third/subsequent offence     | 1 100               |
| All DUI                                 | First, second and subsequent | 2 800               |
|   |                              |                     |
| <b>TOTAL</b>                            |                              | 16 050              |

3. Source: Court of Petty Sessions (CHIPS) 1/7/2001 – 30/6/2002; WA Police Service 2002

## *Seatbelt and helmet wearing*

### Evolution of seatbelts in WA

In 1971, legislation was introduced requiring seat belts to be fitted to motor cars for all seats. Further legislation made wearing seat belts compulsory for drivers and passengers. In 1995, new seat belt regulations were enacted requiring all children, regardless of age, to be correctly restrained. The Western Australian Road Traffic Code 2000 makes drivers responsible for ensuring that all passengers under the age of 16 are seated in a position that is fitted with a seat belt and that the restraint is properly adjusted and securely fastened.

### Role of non-use of seatbelts today

In a recent (2005) direct observational study for Western Australia, state wide seatbelt wearing rates were found to be very high (96%). Rates differed by location with rates in the metropolitan area being 98% and rates in rural areas being 90%. Wearing rates for males were 96% compared to 97% for females. While wearing rates exceeded 95% for children less than a year old and those aged 17 and above, wearing rates were lower for all other age groups (63% 1-4 year olds, 83% for 5-11 year olds and 91% for 12-16 year olds). There was also an effect found of seating position on seatbelt wearing. Only 41% of those seated in the front centre position (between the driver and another front seat passenger) were correctly restrained, compared to 79% of those travelling in the centre rear position (*i.e.* seated in middle of the row of seats immediately behind the driver), 76% of those travelling in the centre back position (*i.e.* seated in the middle of the third row of seats), 83% of the right back position and 85% of the left back position.

In WA in 2003, 24% of vehicle occupants who were killed in a police-attended road crash were known not to be wearing a seat belt (11% in the metropolitan area and 33% in rural areas).

Of those vehicle occupants killed in road crashes in 2003 who were found not to be wearing a seatbelt, 66% were males and 34% were females.

Of children and adolescents aged six to 16 years killed in car crash in 2003, 36% were found not to be wearing a seatbelt (60% males and 40% females). This percentage is high relative to other age groups (*e.g.* 27% for 17-39 year olds).

Among those killed in a road crash in 2003 and found not to be wearing a seatbelt, 59% were aged 17 to 39 years old.

Trauma data for 2004 from Royal Perth Hospital (RPH) indicated that 42% of trauma patients (*i.e.* patients presenting to RPH within 7 days of their trauma and staying greater than 24 hours or dying as a result of their trauma) involved in a motor vehicle accident who were a rear seat passenger were not wearing a seatbelt. This compared to 24% of front seat passengers and 12% of drivers.

In a 2006 survey of road safety attitudes, 93% of rural males aged 17-59 years considered driving alone without a restraint a morally unacceptable behaviour. Despite that 14% of this group reported not wearing a restraint 'at least once in the last year' and a further 2% reported 'almost never' or 'never' wearing a restraint when driving. In the same survey, 33% of rural males aged 17-59 years believed that an unexpected event occurring on the road that may result in a crash was 'unlikely' and 87% considered the risk of detection for non-restraint use 'unlikely'.

## Helmet legislation

In 1974 safety helmets were required to be worn by all motorcyclists and pillion passengers six years and older. Compulsory bicycle helmet legislation was introduced in July 1992. By January 1993 fines were introduced for non-wearing of bicycle helmets.

Helmet wearing data available

Recent helmet wearing data has not been able to be sourced for this publication.

Among fatally injured and seriously injured bicycle and motorcycle riders, helmet wearing rates have improved in 2004 relative to 1990-99 averages.

**Table 13. Evolution in seatbelt wearing rate**

|                      | 1980 | 1990<br>(Direct Obs data<br>from 1994) | 2000<br>(Direct Obs<br>data) | 2006<br>(Direct Obs data)  |
|----------------------|------|--|------------------------------|--|
| <i>General</i>       |      | 94%                                    | 92%                          | 96%  |
| <i>Rear Seat</i>     |      | 76-91%                                 |                              | Rear=row behind driver<br>Left Rear – 91%<br>Centre Rear – 79%<br>Right Rear – 90%<br>Back=2nd row behind driver<br>Left Back – 85%<br>Centre Back – 76%<br>Right Back – 83% |
| <i>Front Seats</i>   |      | 97%                                    |                              | Driver – 98%<br>Front centre – 41%<br>Front left – 95%   |
| Motorway – driver    |      |  |                              |  |
| Rural roads – driver |      | 86-98%                                 |                              | Rural - All positions 90%  |
| Urban areas –driver  |      |  |                              | Metro - All positions 98%  |

|                               | 1980 | 1990<br>(Direct Obs data<br>from 1994) | 2000<br>(Direct Obs<br>data) | 2006<br>(Self report data from 2006) |
|-------------------------------|------|--|------------------------------|--------------------------------------|
| Drivers                       |      |  | 95%                          |                                      |
| Passengers                    |      |  | 88%                          |                                      |
| Not worn >1 in last 12 months |      |  |                              | 14%                                  |
| Never wear                    |      |  |                              | 2%                                   |

|   |  |  | 1990-1999<br>crash data | 2003<br>crash data |
|---|--|--|-------------------------|--------------------|
| Seatbelt worn by fatally injured driver                         |  |  |                         | 61%                |
| Seatbelt worn by hospitalised driver                            |  |  |                         | 74%                |
| Seatbelt worn by fatally injured passenger                      |  |  |                         | 51%                |
| Seatbelt worn by hospitalised passenger                         |  |  |                         | 62%                |
| Helmet worn by fatal injured rider (bicycle and motorcycle)     |  |  | 74%                     | 88%                |
| Helmet worn by seriously injured (bicycle and motorcycle rider) |  |  | 59%                     | 70%                |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

#### Red light

Data not available.

#### Mobile phone use

Victoria was the first Australian State to ban the use of hand-held mobile phones while driving (in 1988). New South Wales then introduced similar legislation (in 1989), followed by all other States and Territories except Western Australia.

A Select Committee on Road Safety established by the Parliament of Western Australia in 1993, examined the issue of car telephones in its fourth report entitled “Regulations, Penalties and the Demerit Point System”. The Committee recommended that regulations be introduced making it an offence to drive a moving vehicle while holding a telephone with only Police and other emergency vehicles being exempt. It was also recommended that a penalty of \$50 and one demerit point be imposed.

Western Australian legislation (from 1 July 2001) requires that a driver must stop his or her vehicle off the road carriageway prior to using a mobile phone. It is an offence to use a hand-held mobile phone while the vehicle is in motion.

#### Use of drugs

Drugs other than alcohol have the potential to impair driving ability, increase crash risk and negatively impact on road safety. The relationship between the presence of drugs in a driver, driver impairment and crash risk is extremely complex. The presence of a drug does not reliably indicate the impairment at the time of the crash.

Legislation related to drug impaired driving in Western Australia is contained in the Road Traffic Act 1974 and operational procedures exist to deal with offenders charged with driving under the influence (DUI) of drugs. However, the current legislation contains a number of anomalies regarding the surveillance and enforcement of drug driving laws.

A number of Australian jurisdictions have significantly strengthened their legislation related to drug impaired driving and enhanced and standardised police operational procedures. This has resulted in an increased and more accurate level of detection of drug impaired drivers by police and improved prosecution and conviction rates through the courts.

The Government is finalising legislation that will improve surveillance and enforcement of drug impaired driving in Western Australia. The proposed legislation is focused on drivers who drive while impaired by drugs with the aim of removing those drivers from the roads.

The amendments include a number of provisions to facilitate proof of the core offence and rely on police observation of possible driver impairment supported by blood sample analysis and expert opinion by pharmacologists.



Technology for detecting the presence of some drugs is rapidly advancing and a number of jurisdictions have introduced or are soon to introduce legislation to trial random roadside drug testing using oral fluids (saliva) to test for the presence of a limited number of illicit drugs. WA is currently exploring options to trial random roadside drug testing in this State, taking into account local issues.

#### Data relevant to drug use

Since 1996, Driving Under Influence (DUI) drug charges in WA have been progressively falling. In 1996, 80 drivers were charged with DUI of drugs and 41 for DUI of drugs and alcohol. In 2001, only 24 drug impaired and 5 drug/alcohol impaired drivers were charged respectively, and in 2002 only 16 people were charged with drug driving.

For Western Australia it was found that 6% had driven while under the influence of an illegal drug and 17% for alcohol. For some subgroups the proportion was significantly higher. The table below provides age-specific data on Western Australians who had driven while under the influence of an illegal drug in the past 12 months.

**Table : Percentage of drivers driving a vehicle while under the influence of illegal drugs in last 12 months<sup>4</sup>**  
**Percentage within age group**

| Age     | Males | Females |
|---------|-------|---------|
| 14 - 19 | 11%   | 6%      |
| 20 - 29 | 23%   | 11%     |
| 30 - 39 | 9%    | 7%      |
| 40+     | 2%    | 0.6%    |
| 18 - 34 | 19%   | 10%     |
| 20 - 39 | 16%   | 9%      |

A review of studies conducted by Drummer in 1996 on the prevalence of drug use by fatally injured drivers in Victoria, New South Wales and Western Australia between 1990 and 1995, reported that in a pooled sample of 1 332 driver deaths:

- 34% had alcohol in their body fluids; and
- 23% had drugs other than alcohol in their body fluids:
  - 11.6% cannabis
  - 3.3% benzodiazepines
  - 3.7% amphetamines/stimulants
  - 3.5% opiates
  - 6.3% other drugs

---

4. Drug and Alcohol Office, 2003. 2001 National Drug Strategy Household Survey: First results for Western Australia (unpublished).

In 1998, Drummer *et al.* reported prevalence data by state. Of the 188 useable cases in Western Australia, 54% of fatally injured drivers tested positive for drugs and/or alcohol with 10% testing positive for drugs. Amongst these cannabis accounted for 16.5%, stimulants (2.1%), benzodiazepines (3.2%), opioids (2.1%) and other drugs (7.4%). The miscellaneous drugs included a wide variety of prescription and over the counter pharmaceutical products.

The Task Force on Drug Abuse Statistical Bulletin on Drug-Related Traffic Fatalities in Western Australia (1996) reported that between July 1992 and December 1995 there were 197 traffic fatalities involving CNS acting drugs (including alcohol). The most frequently identified drugs, either alone or in combination were:

- Alcohol in 97 (49%) of cases.
- Cannabis in 95 (48%) of cases.
- Opioids in 46 (23%) of cases.
- Psychostimulants in 22 (11%) of cases.

Of the 97 cases where alcohol was detected, around 50% involved cannabis and alcohol and 35% involved alcohol and other drugs (except cannabis), while 7% involved alcohol, cannabis and other drugs.

Of the 95 cases involving cannabis, around 28% involved cannabis alone, 52% involved cannabis and alcohol and 12% involved cannabis and other drugs.

#### *Other factors*

##### Safety equipment of new vehicles

Increasing the rate at which new vehicles sold in Australia have higher levels of safety design and features incorporated is a key area requiring further attention in Australia.

The uptake of safety features in vehicles sold in Australia lags behind other countries. For example Electronic Stability Control (ESC) technology is in about 70% of new vehicles sold in Sweden, 50% of vehicles sold in Europe but is present in only about 10% of vehicles sold in Australia, with many of those vehicles in the premium segment of the market.

Further collaboration by the jurisdictions with industry on stimulating market demand for safer vehicles through fleet purchasing and wider promotional activity is anticipated.

##### Data / Monitoring

While not a road safety problem as such WA has identified that the recording, access and use of data could be improved to enable more accurate diagnostic and monitoring of the total road safety picture including improving the reliability and validity of injury data to occur. A specialist “Data Sharing Advisory Group” has been formed to further consider this issue and recommend improvements.

## Inappropriate Automotive Advertising

Some automotive advertising in Australia inappropriately portrays behaviours, such as depicting images of the speed and power capability of the vehicle, that are counter to road safety efforts by Governments. A Voluntary Code of Practice introduced in 2004 by vehicle manufacturers is currently being monitored for its effectiveness.

### ***B.3. Major road safety problems today***

1. Speed related crashes
2. Drink and other drug driving crashes
3. Non-wearing of seatbelts
4. Single vehicle run off the road crashes
5. Novice driver crashes
6. Fatigue related crashes

### ***B.4. Forthcoming road safety initiatives to address these problems***

Western Australia's responses to these road safety problems can be summarised in two categories:

1. General, system wide responses that will reduce serious crashes for a number of problems and target groups; and
2. Specific initiatives more directly targeting the problem or at risk group.

## General System Improvements

Western Australia is implementing a safe system approach to improving road safety with a major focus on initiatives to reduce travel speeds, provide safer roads, provide safer vehicles and improve road user behaviour.

Planned initiatives include:

1. Reducing Travel Speeds
  - A review of the type and number of enforcement methods (electronic and on-road policing presence) to inform the development of additional enforcement required to achieve a 5% reduction in urban travel speeds will be completed in 2006.
  - Frontline First policing initiative including new Highway Patrol being implemented.
  - Engineering and speed zoning work ongoing.
  - Intelligent Speed Adaptation Pilot program being scoped in 2005-2006 to trial appropriate methodology for implementation in Western Australia.

## 2. Safer Roads

- Implementation of expanded Blackspot Program (from AUD 23.75m to AUD 30m per year for 4 years) to treat most hazardous crash sites across the network on a priority basis.
- Implementation of new Safer Roads Program (additional AUD \$127m over four years) to improve the safety of roads and roadsides on a length/segment/area basis to complement more specific site approach of Blackspot program.
- Project to analyse and prioritise crash risk across the network has commenced to inform further roads initiatives.

## 3. Safer Vehicles

- New communication strategies involving paid and unpaid media to promote and stimulate market demand for safer vehicles will commence in the second half of 2006. Three key target groups will be new vehicle fleet buyers, new vehicle private buyers and used vehicle buyers. Tools will include the use of safety star ratings (NCAP) and Used Car Safety ratings (Monash University). Liaison with vehicle manufacturers and importers has commenced to identify ways to work collaboratively to increase demand for safer vehicles and safety features.
- Development of revised State Government vehicle purchasing policy to include criteria for the purchase of safer vehicles.

## 4. Improved Road User Behaviour

- Major review of Road Traffic Act penalties including demerit points and fines being completed and recommendations approved by Government in May 2006. Review seeks to align penalty severity with relative risk curves where established for the major risk factors of drink driving, speeding and non use of restraints.
- Ongoing communication and community involvement initiatives including mass media and grants programmes to support local community involvement in road safety.

## Major Specific Initiatives

### 5. Occupant Safety

- A complete ban on carrying passengers in the open load space of a vehicle was implemented from 1 January 2006. Since gradual phase in commenced, a reduction in deaths from about 8 per year to three in total in the last four years has occurred.

### 6. Drink Driving

- Development and implementation of the Repeat Drink Driver program. New legislation and operating procedures to reduce the incidence of repeat drinks driving are being drafted. Responses will include enforcement and penalty (confiscation/impounding) of vehicles and treatment programmes (mandatory alcohol interlocks and counselling/treatment).

## 7. Drug Driving

- In May 2006 the Western Australian Government approved the development of new legislation and operating procedures for drug impaired driving and random road side presence based testing using oral fluids. Anticipated implementation is 2007.

## 8. Novice Driver Safety

- The Western Australian Government has approved a package of 7 initiatives under the graduated licensing system to improve the safety of novice drivers. <http://www.ministers.wa.gov.au/kobelke/index.cfm?fuseaction=media.main#> The statement titled “Government Targets the Safety of Novice Drivers can be found under 16th May 2006.
- The approved package includes night and passenger restrictions for the first six months of solo driving, a graduated demerit point system and zero BAC levels for “L and P” plate drivers and their supervisors. Following a current period of community consultation in 2005, which found strong community support for the proposed changes, final recommendations were approved by Government in May 2006
- In principle support for an eighth initiative to promote the importance of the need for a minimum 120 hours of supervised driving experience to parents and young people and for support programs has also been gained.

## Improving Road Safety for Aboriginal People

- Aboriginal people are over represented in WA road crashes being around 7 times more likely to be involved in a serious crash. While system approaches will improve road safety outcomes for Aboriginal people too there are two additional initiatives being implemented.
- A community road safety resource manual has been produced to assist people working to improve road safety outcomes for Aboriginal people in local areas. The manual describes the process and resources available to enable local decision makers to accurately identify effective local solutions to local problems.
- As part of a National initiative, Western Australia has led the development of an Internet based “clearing house” of road safety resources developed for use in improving road safety outcomes for Aboriginal and Torres Strait islander people. The project is jointly funded by several Australian States and Territories including the Australian Government. This clearing house will enable people working in relevant fields to access information about existing resources. An email update alert system and networking page is a part of this service which was completed and launched in November 2005. The site can be found at: <http://www.healthinonet.ecu.edu.au/>

### C. Road safety targets

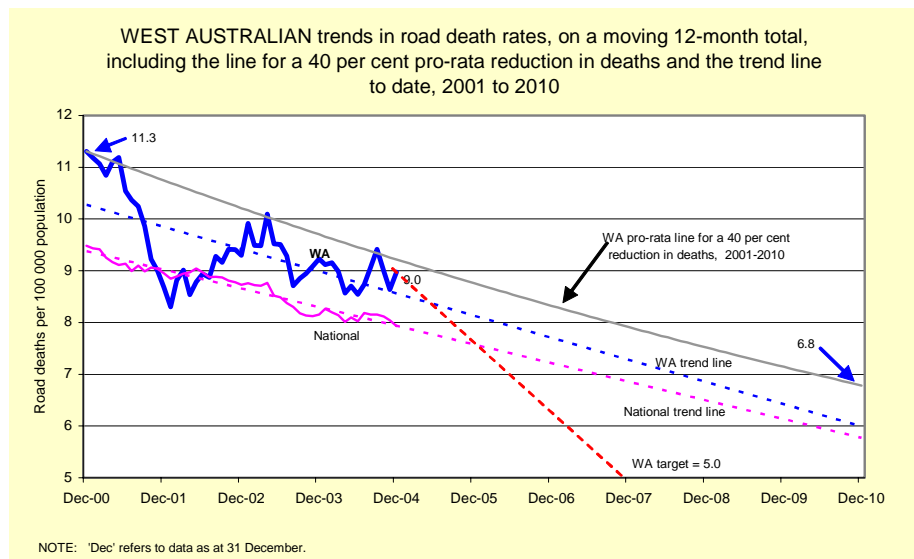
#### Road safety targets in Western Australia

| Type                    | Targets<br>(in % or absolute<br>figures) | Base year | Target<br>year | Base<br>year<br>figure | Current<br>results<br>(2005) | Intermediate<br>targets                       |
|-------------------------|--|-----------|----------------|------------------------|------------------------------|---|
| Fatalities              | From 218 per year<br>to 102 (-53%)       | 1998-2000 | 2007           | 218                    | 162                          | No, linear rate of<br>improvement<br>assumed. |
| Injury accidents        |  |           |                |                        |                              |   |
| Hospitalised<br>persons | From 2500 to 1544<br>(-38%)              | 1998-2000 | 2500           | 2007                   | 3189                         | No, linear rate<br>assumed.                   |
| Injured persons         |  |           |                |                        |                              |   |

### Road safety targets in Western Australia

| Type   | Targets<br>(in % or<br>absolute<br>figures) | Base<br>year  | Target<br>year | Base year<br>figure | Current results<br>(figure in 2005) | Intermediate<br>targets?                        |
|--|---|---------------|----------------|---------------------|-------------------------------------|---|
| Fatalities/100 000<br>population<br><b>Australia</b> | -53%  | 1998-<br>2000 | 2007           | 11.8                | 8.1 (2005)                          | No, linear<br>rate of<br>improvement<br>assumed |

### Current trend towards targets in Western Australia



## D. Success story cards

### Success story from Western Australia

#### 1. Significant Reduction in Deaths on Western Australian Roads

From 1999 to September 2005 Western Australia recorded a 32% drop in the number of road deaths. While Western Australia was coming off a higher base rate this improvement exceeds the results from any other Australian jurisdiction in the same time period.

In 2005, the total number of people killed in Western Australian roads was 162, the lowest ever recorded since records began in 1962. From a death rate between 12 and 13 deaths per 100,000 population in the late 1990's the current rate is 8.1.

While the pattern with serious injuries is less clear and not improving this significant reduction in deaths which commenced in 2001 and has been sustained since means that around 40 more people are alive each year that would have previously died on Western Australian roads representing a significant public health success story.

This result has been achieved in a context where a number of broader indicators that normally work against road safety have been prominent. Western Australia is experiencing a minerals and resources boom with very strong economic growth, low unemployment, increasing alcohol sales, increasing distances travelled and a higher percentage of young people in the population compared to all other Australian jurisdictions except Queensland. In this context to even maintain a death rate would have been a significant achievement.

While the turn around is due to a combination of education, legislation, enforcement, safer roads initiatives and safer vehicles, the introduction of 50km/h speed limits in 2001 and a corresponding small but population wide drop in travel speeds across the network, together with drops in alcohol related fatal crashes have been key factors.

Perhaps most importantly this success follows a major re-organisation of how road safety business is conducted in Western Australia in 1997. This re-organisation saw the establishment of an independent Road Safety Council with specific legislation to enable it to provide peak advice to Government on road safety together with a lead road safety agency, the Office of Road Safety. Other changes improved the coordination between key agencies in the development and implementation of road safety policy and strategy and the dedication of specific funding for road safety initiatives not already the responsibility of another agency.

The Council and Office of Road Safety subsequently have overseen the development of a scientifically based five year road safety strategy with targets, clearly defined responsibilities for agencies and a performance monitoring system that includes an annual report to Parliament on road safety progress against process, impact and outcomes based performance indicators.

These changes together with continuing political leadership and support have enabled tough, evidence based decisions to be made to introduce new initiatives in a timely manner to reduce trauma on Western Australian roads. Major initiatives introduced or approved include: 50km/h urban speed limits, major increases in Blackspot road safety treatment funding, a new Safer Roads Program of \$127m, increases in traffic penalties, repeat drink driving program including alcohol interlocks, drug driving enforcement, novice driver safety package, a state-wide community road safety program, new school based road safety program for young people and their parents, major mass media community education programs on speeding, drink driving, fatigue, seatbelts, safer vehicles and supervised driving hours.

A previous focus largely on behavioural based measures is now broadening to incorporate a systems based approach acknowledging the limitations that people are vulnerable to physical harm and that people make mistakes.

The development of a new road safety strategy for beyond 2007 has commenced and it is anticipated that this will include the development of vision, targets, strategy and involve extensive community consultation.



This success story reinforces the need to address organisational problems that may be hidden and less obvious (Third Order Problems by Rumar 2002) to ensure that more obvious first and second order problems can be successfully tackled to improve road safety.

## **2. Introduction of 50 km/h speed limits and corresponding reductions in network travel speeds.**

In the two years following the introduction of 50km/h speed limits on local roads on 1 December 2001, Western Australia experienced:

- 65 less deaths (estimated to have saved \$110m) and 711 less serious injuries (saving AUD 260m) on 50km/h and 60km/h roads
- A reduction of 20% in total crashes per month
- A reduction of 21% in casualty crashes per month
- A 51% reduction in pedestrian crashes
- A 19% reduction in young driver crashes; and
- A 18% reduction in crashes involving older drivers (aged 55 and over).

The introduction of the 50km/h limits was accompanied by a year of extensive community education including mass media advertising and community debate.

Small reductions in travel speed across the road network have begun to be realised since 2000.

## **3. Open Load Space Casualty Reduction**

A phased in approach toward a total ban on the carrying of passengers in the open load space of a vehicle commenced in Western Australia on 1 January 2001. A total ban (no further use of approved rollover protection cages) will apply from 1 January 2006, giving 5 years advance notice for people to make alternative vehicle purchases.

From an average of 8 deaths per year previously recorded there have only been 3 recorded deaths in total due to riding in the open load space of a vehicle in the four years since introduction.

## **4. Blackspot Program**

A statewide blackspot program has been shown in a recent evaluation to be extremely effective returning a safety benefit of AUD 4.60 for every one dollar spent on site treatments.

## **5. Double Demerits on Holiday Weekends**

Western Australia has introduced a doubling of demerit points for speeding, non wearing seatbelts, open load space violations and some drink driving penalties at gazetted holiday periods. An evaluation after two years has found:-

- a 54% reduction in fatal crashes where alcohol was a factor.
- a 40% drop in fatal crashes where speed was a factor.
- a 39% decrease in fatal crashes where the non-wearing of seatbelts was a factor.

## **6. Random Breath Testing**

The introduction of Random Breath Testing in 1998 saw an immediate drop of 25% in fatal crashes.

**Less recommended story card Western Australia**

There is no evidence based example, but:

1. Western Australia's road safety record slipped in the 1990's from being the best in Australia to the second worst as the other jurisdictions improved and WA stalled. The major improvements made included a multi-agency coordinated set of responses with political will and a major strategy development.
2. Prior to implementing a legislated ban on the use of hand held mobile phones while driving a community education campaign was tried. The education initiatives made little or no difference which led to a legislated ban being introduced. Education without supporting enforcement is less effective.

## AUSTRIA

### A. General trend in road safety

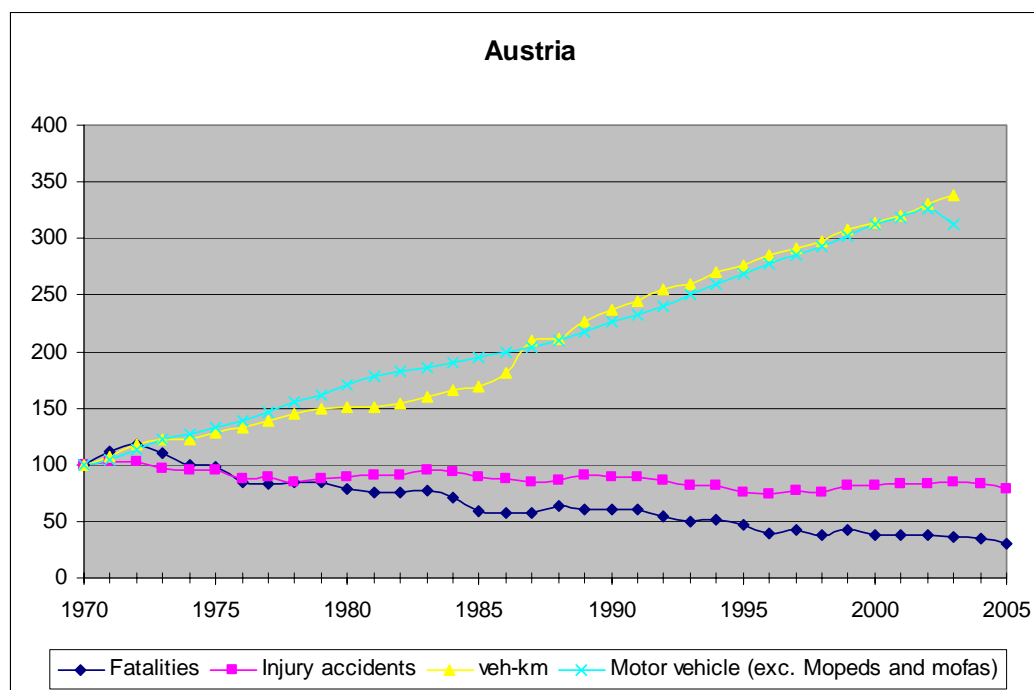
#### Key road safety data in 2005

768 road fatalities (878 in 2004)

40 896 injury accidents (42 657 in 2004)

9.39 killed per 100 000 inhabitants

Around 500 passenger cars per 1 000 inhabitants in 2004.



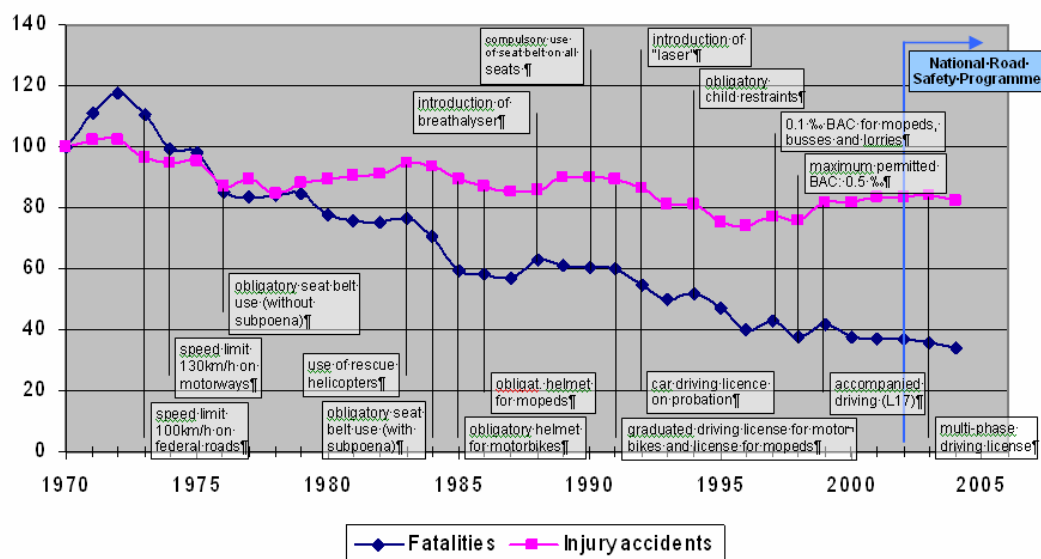
In Austria road traffic increased extensively over the past 35 years. Since 1970 the numbers of motor vehicles as well as the scale of traffic performance have more than tripled. On the other hand, the numbers of injury accidents and fatalities decreased (injury accidents -17%, fatalities -65%).

As indicated in the following figure, the general speed limits on federal roads and on motorways were reduced in the early 1970s (at the time of the oil crisis). A vast reduction of fatalities was recorded in the following years. Other well-considered measures enhanced road safety furthermore. When the use of seatbelts became mandatory in 1984, the number of fatalities was reduced by more than 300 (or 17%) in the following year. The introduction of car driving licence on probation and the introduction of speed surveillance with laser (1992) as well as the obligatory child restraints (1994)

succeeded, too. The multi-phase driving licence was introduced in 2003 to sensitise the high risk-group of young drivers (age of 18-24 years).

Recent road safety initiatives are described in the following sections.

### Austria - safety measures and trend of road safety



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |  |
|---|--|
| Improved speed compliance / enforcement | <ul style="list-style-type: none"> <li>First Austrian Section Control in a motorway tunnel (A22) in Vienna (implemented: August 2003) – cost benefit analysis within the EU-project ROSEBUD.</li> <li>Section Control on motorway A2 at mount Wechsel (implemented: February 2005)</li> <li>First mobile Section Control at a motorway roadwork zone on A1 (in operation from March 2005 until September 2005)</li> <li>Mobile Section Control at a motorway roadwork zone on A10 (in operation from November 2005 until autumn 2007)</li> <li>One more Section Control will be implemented within the next months.</li> </ul> |
| Reduced speed limits                    | <ul style="list-style-type: none"> <li>Discussions at expert level on reduced speed limits are ongoing, preparation of papers and lobbying are planned.</li> </ul>   |

|   |  |
|---|--|
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>• Recent introduction of alcohol quick-test breathalyzer in Austrian Road Traffic Regulations (not yet in force) – no assessment as yet.</li> <li>• Reduction of alcohol limit in 1998 – no further discussions as yet.</li> <li>• No discussions on drunk pedestrians, as yet.</li> <li>• Obligatory blood tests in case of suspicion of drug influence (Austrian Road Traffic Regulations, implemented in 2003) – no assessment as yet.</li> <li>• Discussions on improved drug-use recognition and drug quick-test unit.</li> </ul>  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>• Introduction of performance-based road pricing on motorways for vehicles above 3.5 tonnes (implemented in January 2004) as well as Section Control (see above).</li> <li>• Improvements in tunnel safety with better lighting systems, improved design of tunnel walls, curbs and entrances, improved fail-safety of radio facilities, tactile guidance through rumble strips and improved emergency action plans of police, fire and rescue services (ongoing improvements) – assessments in some refurbished tunnels were carried out.</li> <li>• Furthermore, there are ongoing infrastructure improvements to roundabouts, tactile edges, etc. (but no major infrastructure improvements).</li> </ul> |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>• Implementation of multifunctional control sites on the motorways (six in operation, another 10 are planned or under consideration); first control site was established in 2000 - no assessment as yet.</li> <li>• Increase of penalty, from 21 to 25 Euros, for using a telephone without a hands-free set (January 2005) – no assessment as yet.</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>• Introduction of multi-phase driving license (January 2003). Evaluation of the measure is ongoing.</li> </ul>  |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>• Campaign, including information brochure concerning correct child restraints (second edition 2004); creation and maintenance of a homepage concerning child restraints (2002) – ongoing assessment of restraint use.</li> <li>• Campaigns concerning alcohol, with special focus on young drivers (2002) – ongoing assessment of alcohol accidents.</li> <li>• Campaigns and studies on improved safety for motorcyclists and creation of homepage from “bikers project” (2002).</li> <li>• Aggressive radio and TV campaigns concerning restraint use (beginning June 2005).</li> </ul> <p><i>Relates to the targets “increase seatbelt use” and “increase of child restraints”;</i></p>                 |

|  |   |
|--|---|
| <i>Regulation on vehicle inspection</i>              | <ul style="list-style-type: none"> <li>• First technical inspection of new vehicles after 3 years, second inspection after another 2 years. After this a yearly inspection is required (instead of yearly inspections, even for new vehicles) due to Austrian Traffic Law (implemented April 2002) – no assessment as yet.</li> <li>• There is also an improved co-ordination of road-side controls of heavy good vehicles (HGV) and the implementation of multifunctional control sites on the motorways (5 in operation, another 11 are planned or under consideration).</li> </ul> |
| <i>Regulation on active vehicle safety equipment</i> | <ul style="list-style-type: none"> <li>• Obligatory ABS for busses and lorries with maximum weight of more than 3.5 tonnes, due to Austrian Traffic Law (implemented May 2002) – no assessment as yet.</li> </ul>   |
| <i>Others</i>  | <ul style="list-style-type: none"> <li>• Optimised general framework for cargo restraint due to Austrian Traffic Law (implemented August 2003) – no assessment as yet.</li> <li>• Realisation of the first Traffic Management and Information System in Austria (installation in Autumn 2004). One third of the motorways in Austria will be equipped with TMIS by 2008.</li> </ul>   |

*B.1.2. Strategies to decrease risk of injury:*

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>• Increase of penalty, from 21 to 35 Euros, for non-use of seatbelts (January 2005) – no assessment as yet. (Relates to the targets “increase seatbelt use”).</li> <li>• Seatbelt obligatory for lorries with a maximum weight of up to 12 tonnes due to Austrian Traffic Law (implemented May 2002) – no assessment as yet.</li> <li>• Helmet obligatory for quads due to Austrian Traffic Law (implemented August 2003) – no assessment as yet.</li> <li>• Signal vest obligatory for lorry drivers due to Austrian Traffic Law (implemented May 2002) – no assessment as yet.</li> <li>• Signal vest obligatory for car drivers due to Austrian Traffic Law (implemented May 2005).</li> </ul> |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• First discussions on e-call (not yet implemented).</li> </ul>   |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• Ongoing replacement programme on the motorways of aluminium guard rails by modern concrete median barriers or steel guard rails – no assessment as yet;</li> </ul>  |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>• A “penalty point system” (which is in fact a warning system) was implemented in July 2005 – no assessment as yet;</li> <li>• Mandatory daytime running lights (during the whole year, on all urban and rural roads) effective from November 2005 – no assessment as yet.</li> </ul>   |

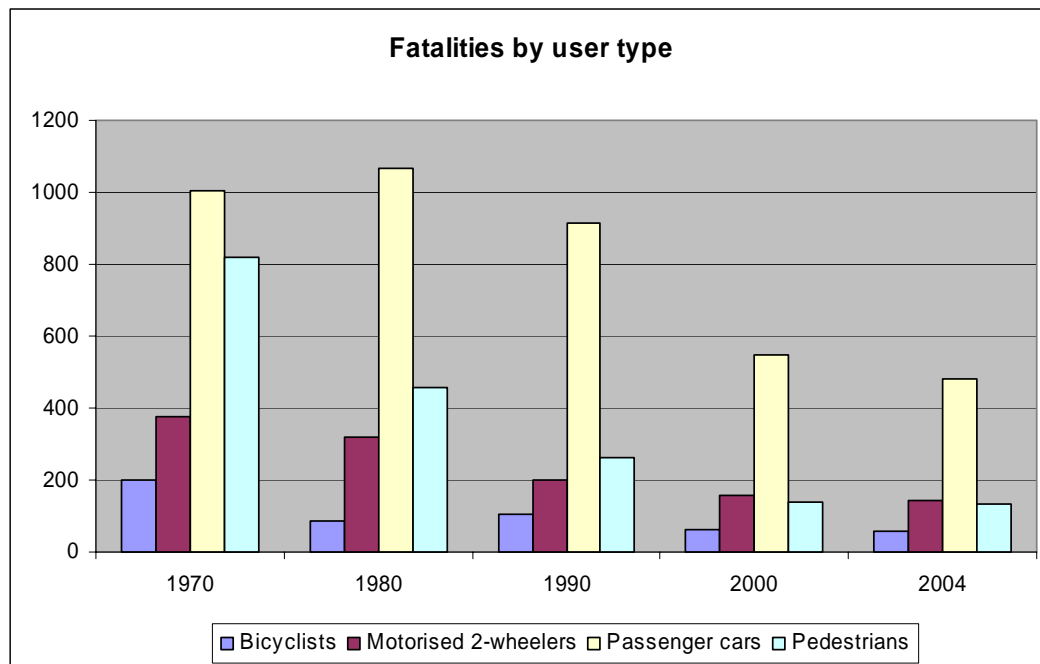
## B.2. National Diagnosis in key safety areas

### Road users

Since the early 1970s, a vast reduction of fatalities has been recorded. The Austrian Road Safety Programme was implemented in 2002. However the number of fatalities in 2004 was still 120 above the target of the road safety programme. Further measures will follow that will improve road safety for all road user groups. The implementation of daytime running light took place in November 2005, although there is still some discussion on the effects of this measure on the road safety of motorised 2-wheelers, pedestrians and bicyclists.

There is still a high number of drivers and passengers killed in Austria due to low restraint use.

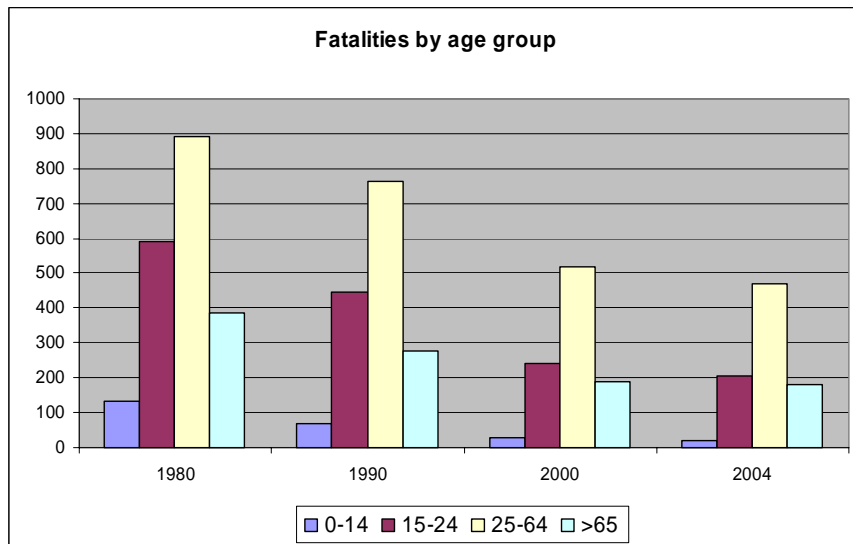
Evolution in fatalities by road user type



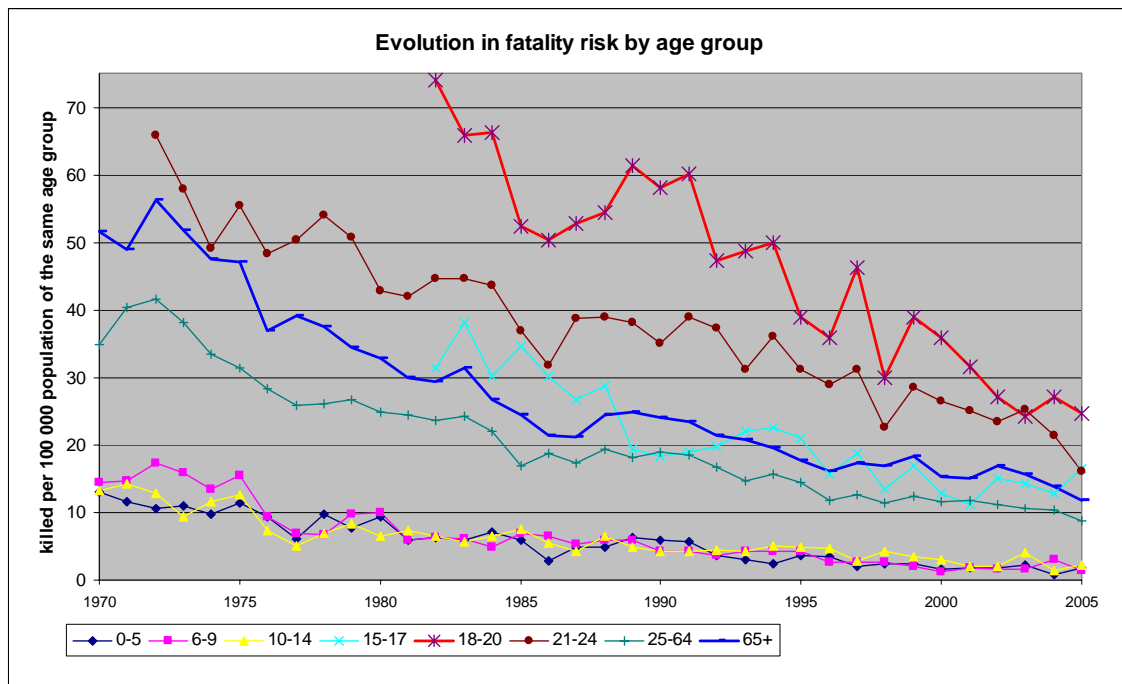
### Age groups

Although there is a significant reduction in the number of fatalities, young people (15-24) are still a high risk group in road safety. Due to recent measures (*e.g.* multi-phase driving licence and the penalty point system) an improved performance from young drivers can (hopefully) be expected. The introduction of alcohol quick-tests will affect this high risk group, too.

### Evolution in fatalities by age group



### Evolution in fatalities rate by age group (killed per 100 000 population of the same age group)



### Type of road / location

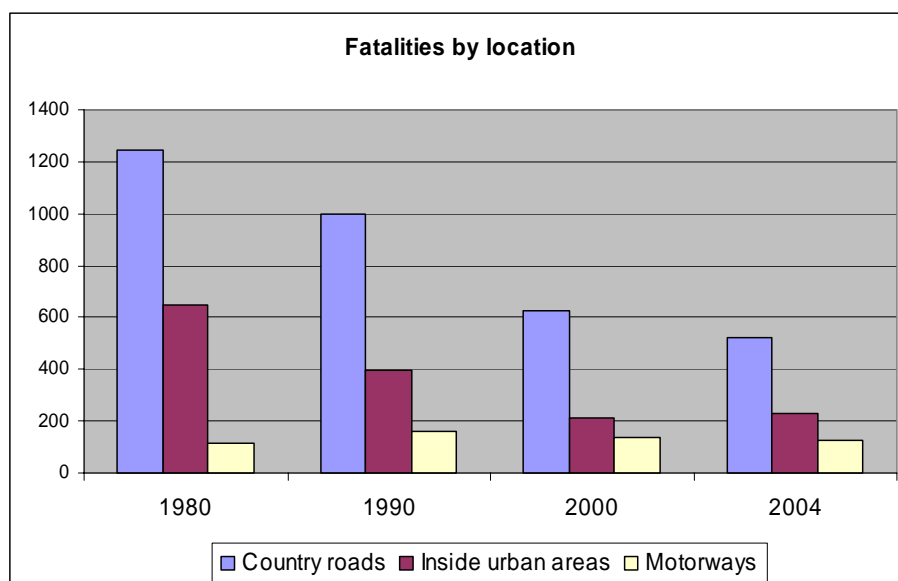
Since 1980, there has been a reduction in the number of accidents on urban roads, and especially country roads. Yet country roads still bear the highest share of fatalities in Austria. This is why the



implementation of road safety programmes on a regional and local level is necessary. Measures such as harmonisation of black spot treatment and implementation of road safety inspection on the secondary road network would improve country, as well as urban, road safety.

A slight reduction in fatalities is recorded on motorways, although network extensions and strong increases in traffic performance have occurred. However, further improvements in road safety are necessary to meet the targets of the Austrian Road Safety Programme on motorways.

**Evolution in fatalities by type of road**



### *Speed*

The problem of speeding has remained at a comparatively high level over the past years. Speed, and especially inadequate speed, is the main cause of accidents in Austria.

Due to a shortage in manpower, there will be less speed surveillance by traffic police in future, but there will be an increase in automatic speed enforcement (*e.g.* Section Control), as well as private surveillance at municipality level.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.**

|   | 1980 | 1994 | 2000  | 2004  |
|---|------|------|---|---|
| <i>No. of speeding citations</i>  | N.A. | N.A. | No. of citations (with radar):<br>908 810<br>No. of citations (with laser):<br>167 357<br><b>No. of tickets (with laser):<br/>450 359</b><br>Total: 1 526 526   | No. of citations (with radar):<br>1 499 543<br>Nb of citations (with laser):<br>177 309<br><b>No. of tickets (with laser):<br/>452 824</b><br>Total: 2 129 676  |
| <i>% of fatal crashes where speed is a causation factor</i>   | N.A. | N.A. | 36.2%   | 36.2 %  |
| <i>% of drivers over the posted speed limit in :</i><br><ul style="list-style-type: none"> <li>• urban areas</li> <li>• rural roads</li> <li>• motorways</li> </ul> | N.A. | N.A. | For cars in 2000:<br><ul style="list-style-type: none"> <li>• Motorway: 22%</li> <li>• Main highways: 41%</li> <li>• Rural roads: 19,1%</li> <li>• Urban arterial areas: 53%</li> <li>• Urban 30 km/h zones: 83%</li> </ul> | For cars in 2004:<br><ul style="list-style-type: none"> <li>• Motorway: 23%</li> <li>• Main highways: 47%</li> <li>• Rural roads: 18%</li> <li>• Urban arterial areas: 51%</li> <li>• Urban 30 km/h zones: 78%</li> </ul> |

### *Drink driving*

The maximum permissible BAC is 0.5 g/l. It is 0.1 g/l for moped drivers younger than 20 years; novice drivers (holding a driving licence for less than 2 years); drivers of lorries of more than 7.5 tons; drivers of busses with more than 9 seats.

Since 2002, every driver involved in an injury accident is tested for alcohol (unless killed or unconscious). However, it is not possible in Austria to test a dead body. Due to this fact, the estimated number of unreported cases is still high.

Although drink driving remains a predominantly male problem, an increasing percentage of female drunk drivers has been recorded (at present, about 11%).

While an increasing number of accidents due to drink driving has been observed over the last years, the number of (reported) fatalities remains at the same level.

One in every five drunk drivers is in the 20-24 age group. The new penalty point system and the introduction of alcohol quick tests can be expected to have an effect.

In general, alcohol surveillance in Austria is currently less frequent than in other countries.

**Evolution in the number of citations for drink-driving,  
and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1994 | 2000  | 2004  |
|--|------|------|---|---|
| Number of citations                            | N.A. | N.A. | Reports of drink driving: 42 508<br>No. of alcohol tests: 129 672 | Reports of drink driving: 38 654<br>No. of alcohol tests: 177 565 |
| % of fatal accidents where alcohol is a factor | N.A. | N.A. | 5.4%  | 7.0%  |

*Seatbelt and helmet wearing*

While restraint systems and the wearing of helmets for motorised two-wheelers are compulsory in Austria, the rate of restraint use is still about 10% lower than that of other European countries (although records show an increasing tendency in recent years). A clear correlation between restraint campaigns and restraint use is identifiable.

Although new and aggressive restraint campaigns were launched in Austria recently (on radio and TV), follow-up campaigns, and especially improved specific surveillance and adequate penalties, are required to meet the targets of the road safety programme. Further improvements in the use of child restraints can be expected from the new penalty point system. On the other hand, non-use of restraints by adults is not included in the penalty point system.

**Evolution in seatbelt wearing rate**

|                      | 1980       | 1994       | 2000       | 2004       |
|----------------------|------------|------------|------------|------------|
| <i>General</i>       | <b>N.A</b> | <b>N.A</b> | <b>74%</b> | <b>76%</b> |
| <i>Rear Seat</i>     | <b>N.A</b> | <b>N.A</b> | <b>50%</b> | <b>56%</b> |
| <i>Front Seats</i>   | <b>N.A</b> | <b>N.A</b> | <b>76%</b> | <b>77%</b> |
| Motorway – driver    | <b>37%</b> | <b>75%</b> | <b>78%</b> | <b>83%</b> |
| Rural roads – driver | <b>29%</b> | <b>74%</b> | <b>75%</b> | <b>79%</b> |
| Urban areas –driver  | <b>26%</b> | <b>63%</b> | <b>70%</b> | <b>72%</b> |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Too short *inter-vehicle distance* is one of the main causes of accidents in Austria. With its inclusion in the new penalty point system, there is, for the first time, a clear legal basis and definition of required inter-vehicle distance. Improvements can be expected also with the planned application of automatic inter-vehicle distance enforcement.

A high number of drivers in Austria (more than 20%) use *mobile phones* (without hands-free sets) despite this being penalised since July 1999.

Further major safety offences concern *HGV-drivers*; the main violations being in the required rest-times for drivers and the poor technical status of lorries and busses, as well as inadequate securing of cargo.

### *Other factors*

Most penalty fees are earmarked, with 20% going to the traffic police and 80% to the infrastructure operator (with some exceptions). There is also ongoing discussion on *reallocation for financing police forces*. If this scheme goes ahead surveillance frequency could be increased.

*Black Spot Management*: There are no compulsory definitions of black spots in Austria (although Black Spot Treatment is obligatory due to the Road Traffic Regulations where a black spot is identified). Due to this lack of definition, some federal states have no adequate measures in place.

*Secondary road network* responsibility: Nine provincial governments and the municipalities are responsible for the secondary road network in Austria. The majority of accidents occur on these roads, but federal government measures may have an indirect influence only. Improvements in road safety can be expected with the implementation of regional road safety programmes.

### **B.3. Major road safety problems today**

1. Inadequate speed.
2. Inter-vehicle distance.
3. Seatbelt wearing rate for front and rear seats.
4. Drink driving – too little surveillance on Friday and Saturday evenings
5. Violations by HGV-drivers

#### **B.4. Forthcoming road safety initiatives to address these problems**

1. Increased implementation of automatic speed enforcement (e.g. Section Control); implementation of digital radar; extension of the Traffic Management and Information System (TMIS) on motorways.
2. Inclusion of inter-vehicle distance in the new penalty point system; implementation of automatic distance enforcement systems (in combination with TMIS).
3. Improved, aggressive restraint campaigns; inclusion of misuse and non-use of child restraints in the new penalty point system.
4. Introduction of alcohol quick-tests; inclusion of drink driving in the new penalty point system.
5. Introduction of test devices for fatigue ("Pupillomat"); extension of multifunctional control stations; inclusion of poor technical vehicle status and inadequate cargo securing in the new penalty point system

#### **C. Road safety targets**

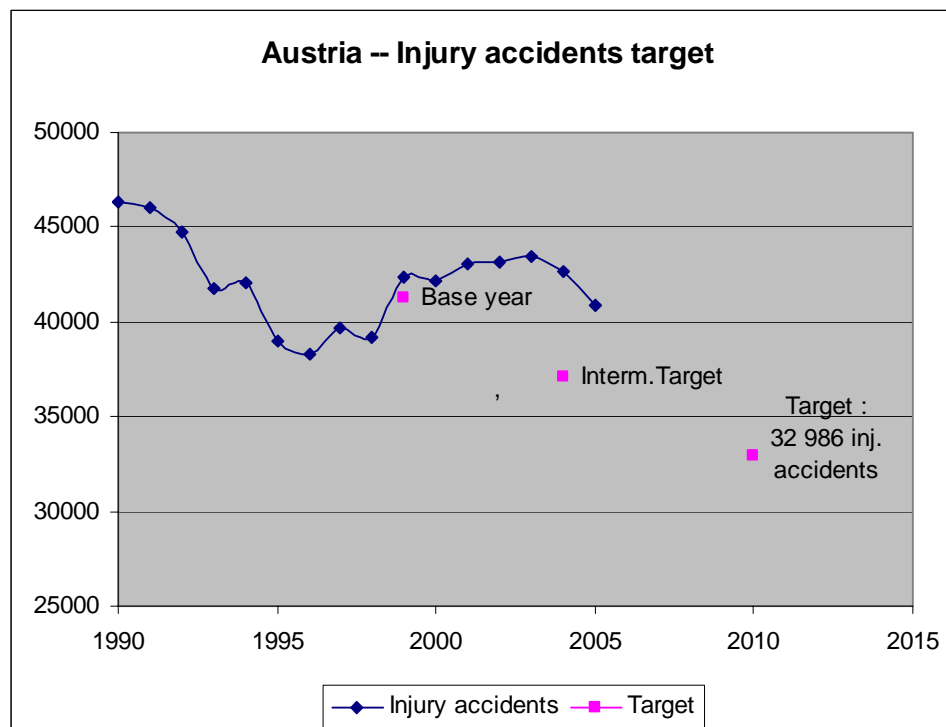
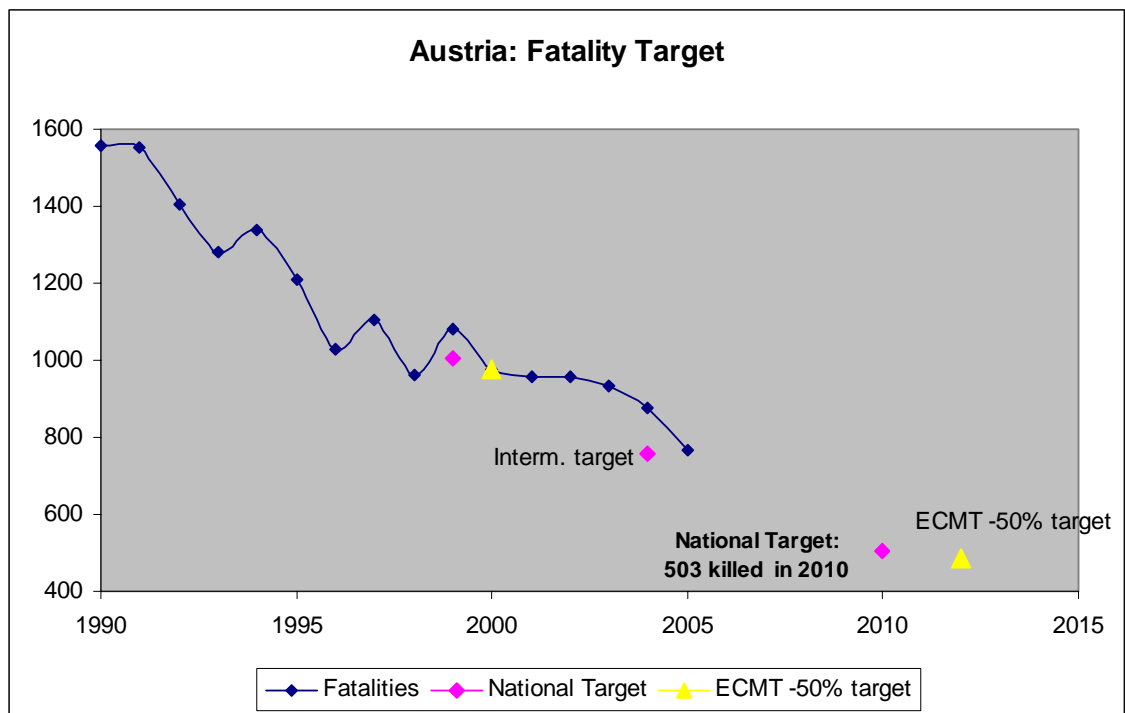
##### **General road safety targets**

| Type             | Targets<br>(in % or<br>absolute<br>figures) | Base year            | Target<br>year | Base<br>year<br>figure | Current<br>results<br>(figure in<br>2004) | Intermediate<br>targets ? |
|------------------|---|----------------------|----------------|------------------------|---|---------------------------|
| Fatalities       | -50%  | average<br>1998-2000 | 2010           | 1 006                  | 878                                       | Yes<br>-25% by 2004       |
| Injury accidents | -20%  | average<br>1998-2000 | 2010           | 41 233                 | 42 657                                    | Yes<br>-10% by 2004       |

##### **Specific targets for particular road users**

|                                 | Targets<br>(in % or<br>absolute<br>figures) | Base year            | Target<br>year | Base year<br>figure | Current<br>results<br>(figure in<br>2004) | Intermediate<br>targets? |
|---------------------------------|---|----------------------|----------------|---------------------|---|--------------------------|
| <b>Restraint<br/>systems:</b>   |   |                      |                |                     |   |                          |
| Increase seatbelt<br>use        | + 10%                                       | average<br>1998-2000 | 2010           | driver:<br>72,7%    | driver:<br>77,2%                          | None                     |
| Increase of child<br>restraints | rate of 95%                                 | average<br>1998-2000 | 2010           | 70,4%               | 83,1%                                     | None                     |

Figure Trend towards targets



## **D. Success story cards**

### **Success stories from Austria**

#### **Section Control:**

In August 2003, the first Austrian Section Control System (which calculates the average speed by means of passage time in a defined road-section) was implemented in the Kaisermühlen Tunnel on the A 22 motorway in Vienna. Although the accident rate on this road section was below the Austrian average on motorways, clear effects on road safety have been observed since the implementation of this measure. Section Control is a widely accepted and respected instrument for automatic speed surveillance on road sections with an increased safety risk. From that time on, two more Section Control systems were installed in Austria: Section Control on the motorway A 2 at mount Wechsel (implemented in February 2005), and mobile Section Control on the motorway A 1 in a motorway roadwork zone (in operation from March 2005 until September 2005. After completing the roadwork, the mobile Section Control was installed in an other roadwork zone on the A 10 motorway (in operation from November 2005 until autumn 2007). First statistics indicate a reduction of accidents at mount Wechsel and in the A 1 motorway roadwork zone by about 50%.

In 2006, another Section Control System will be installed on the S 16 in Vorarlberg.

#### **Road Safety Audit / Road Safety Inspection:**

RSA and RSI are quite new instruments in Austria. By 2005, approximately 100 km of planned motorways have been audited and about 160 km of existing roads (mainly motorways) have been inspected. RSAs have resulted in a 70% reduction in potential deficiencies. Several measures have been recommended following the RSIs, including improvements to visibility, road markings and vertical signing as well as the Section Control at Mount Wechsel.

#### **Graduated Driving License for motorbikes:**

Graduated driving licenses for motorbikes were implemented in 1991. The model was adjusted in 1997 to be in line with EU legislation. The new motorbike driving licenses, valid for two years, are for young people between the ages of 18-21 (18-24 prior to 1997) and are limited to "light" bikes with a maximum engine performance of 25 kW. (Prior to this it was 20 kW, with a limited cubic capacity.) Evaluations indicate a reduction of fatalities in the primary affected age group (18-19) by two thirds and a reduction in injured people of 75%. In the age group partly affected (20-24), the number of fatalities and injuries was halved.

#### **Accompanied Driving (L17):**

In 1999, the accompanied driving "L17" (i.e. combined professional and lay instruction of driver education) was implemented. Evaluation of the measure indicated a reduction of accidents by L17-drivers (especially within the second and third year of driving). L17-drivers show a better attitude towards driving and legal behaviour (less drink driving and fewer speeding offences).

#### **Multifunctional Control Sites:**

In the year 2000, the first multifunctional control site was established on an Austrian motorway. It allowed the automatic and safe flow of vehicles to a technically equipped area. Until 2005, a further five multifunctional control sites have come into operation and another 10 are planned. Technical inspections, as well as additional surveillance on all types of vehicles (mostly HGVs), are regularly carried out in these places.

**Less successful story card from Austria****Driving permission for mopeds at the age of 15:**

In November 1999, the age limit for driving mopeds was reduced from 16 to 15 years of age. Since then, the number of people injured in accidents involving 15 year-old moped drivers has increased, with a vast jump in 2003 (there were 49 injuries in 1998, 169 injuries in 2000, 282 injuries in 2002 and 810 injuries in 2003). There had been some “obstacles” put in the way of young people – a psychological examination was required, for example, from 1999 – but this requirement was dispensed in 2002. In the same year, a mandatory theoretical training (8 hours) was introduced. Starting from 2005, it is no longer necessary to prove the need for mobility as a requisite to drive a moped at the age of 15 – as a countermeasure a mandatory practical training (6 hours at an exercise site) was introduced.

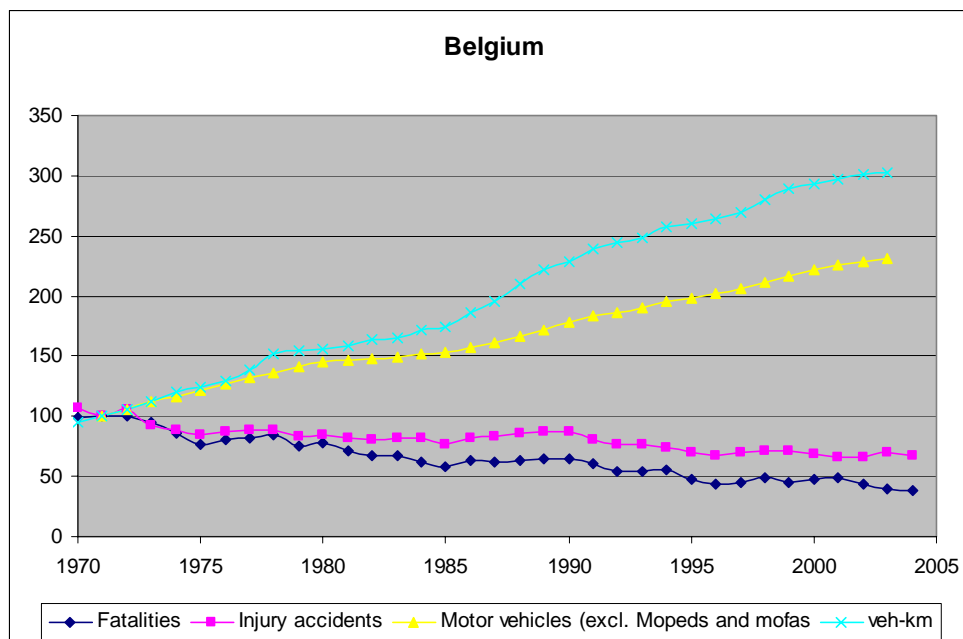


## BELGIUM

### A. General trend in road safety

#### Key road safety data in 2004

- 1 163 road fatalities (1 216 in 2003)
- 48 670 injury accidents (50 479 in 2003)
- 11.2 fatalities per 100 000 inhabitants
- Around 500 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



Despite the increase in the number of motor vehicles and the consequent density of traffic, the number of accidents and fatalities continues to decline.

## **B. Current state of affairs and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

#### *B.1.1. Strategies to decrease risk of crashes:*

|  |                              |
|--|------------------------------|
| Improved speed compliance / enforcement  | Yes, in 2002                 |
| Reduced speed limits   | Yes, in 2005 around schools. |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs                                     | Yes, in 2006.                |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | No                           |
| Enforcement of other road rules  | Yes, in 2006.                |
| Graduated Licensing for novice drivers   | No                           |
| Education and information programmes   | Yes, in 2002                 |
| Regulation on vehicle inspection   | Yes in 2006.                 |
| Regulation on active vehicle safety equipment  | No                           |

#### *B.1.2. Strategies to decrease risk of injury:*

|  |              |
|--|--------------|
| Safety equipment: enforcement of seatbelt wearing/ helmet use  | Yes, in 2002 |
| Emergency services   | No           |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | No           |

### ***B.2. National Diagnosis in key safety areas***

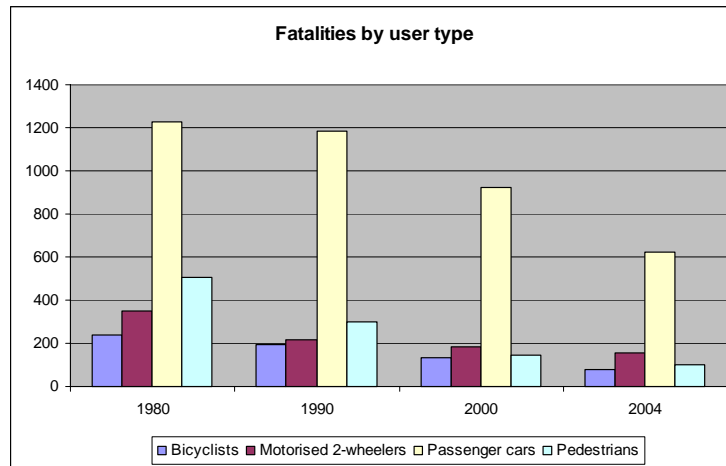
#### *Road users*

The total number of fatalities continues to decline.

Car passengers are still the most frequent victims.

While in 1990 the second most affected road users were pedestrians, this had changed by 2004. The number of pedestrians killed during this period decreased, but the number of fatalities among motorised 2-wheelers increased.

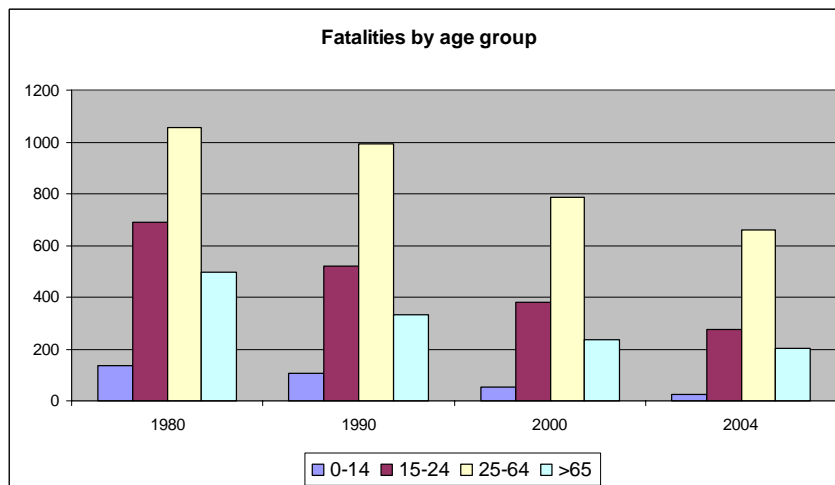
### Evolution in fatalities by road user type

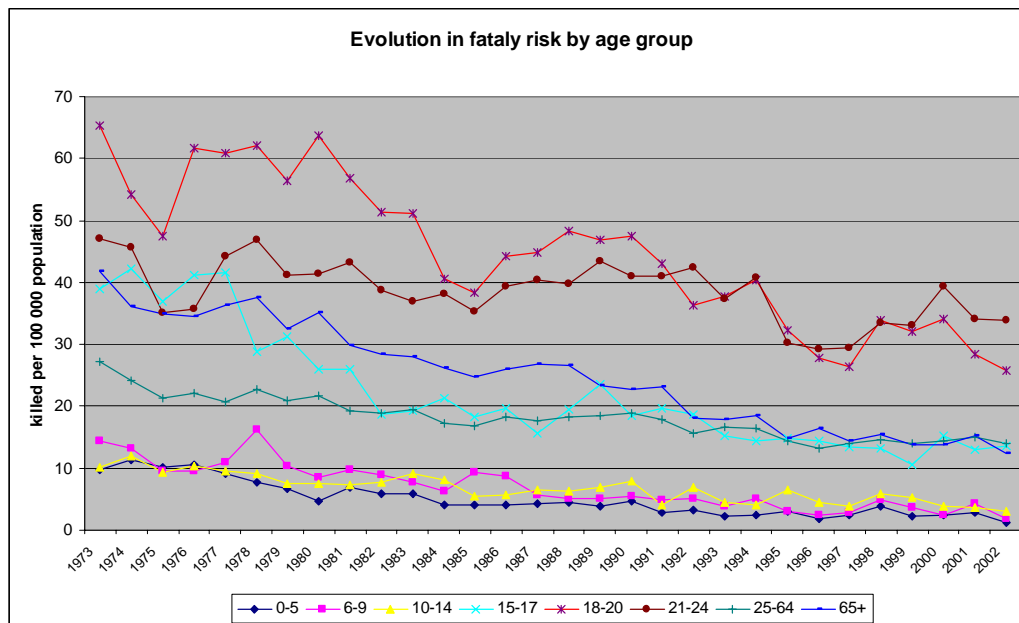


### Age groups

The total number of fatalities has decreased for all age groups, although there has been less of a decline in the 25-64 age group than for other age groups.

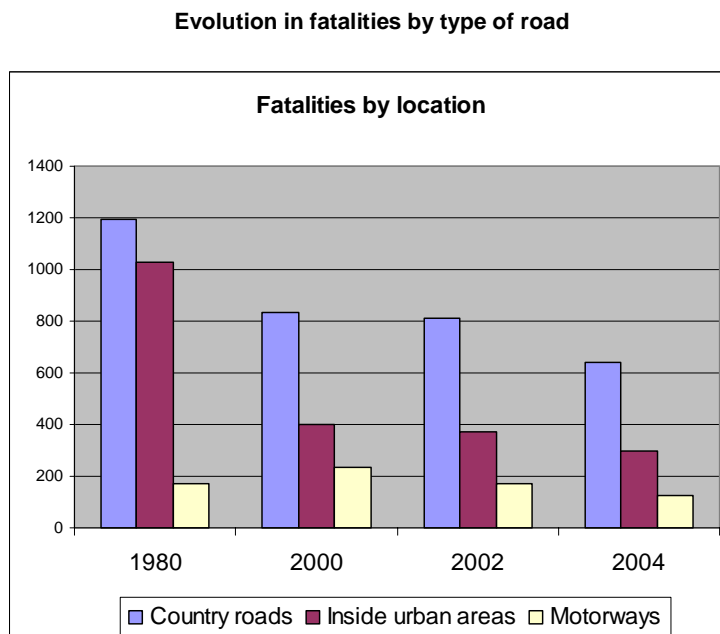
### Evolution in fatalities by age group





#### *Type of road / location*

Overall, fatalities have decreased on all types of road. The decline in fatalities, however, is more pronounced on country roads and in urban areas than on motorways.



### *Speed*

### *Drink driving*

The maximum BAC level authorised in Belgium is 0.5 g/l.

#### **Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | <b>1980</b> | <b>1994</b> | <b>2001</b> | <b>2002</b> |
|--|-------------|-------------|-------------|-------------|
| Number of citations                            |             |             |             |             |
| % of fatal accidents where alcohol is a factor |             |             | 9.2%        | 8.2%        |

### *Seatbelt and helmet wearing*

Seatbelts are compulsory on both the rear and front seats, and helmet wearing is compulsory for all motorcyclists and moped riders

#### ***Illustration: Evolution in seatbelt wearing rate in Belgium***

|                            | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2003</b>  | <b>2004</b>  |
|----------------------------|-------------|-------------|-------------|--------------|--------------|
| Motorway – driver 120 km/h |             |             |             | <b>69.8%</b> | <b>77.4%</b> |
| 90 km/h - driver           |             |             |             | <b>61.5%</b> | <b>69.1%</b> |
| 70 km/h – driver           |             |             |             | <b>62.5%</b> | <b>67.3%</b> |
| 50 km/h – driver           |             |             |             | <b>49.0%</b> | <b>66.9%</b> |
| <b>30 km/h –driver</b>     |             |             |             | <b>45.5%</b> | <b>51.5%</b> |

### *Other factors*

From 2004, a portion of the revenues from fines goes to the local and federal polices to finance safety road actions (as defined in the road safety action plan).

#### ***B.3. Major road safety problems today***

1. Speed.
2. Drink driving.
3. Seat-belt wearing.
4. Driving under influence of illicit drugs.
5. Young drivers.
6. Motorcycles.
7. Heavy goods vehicles.

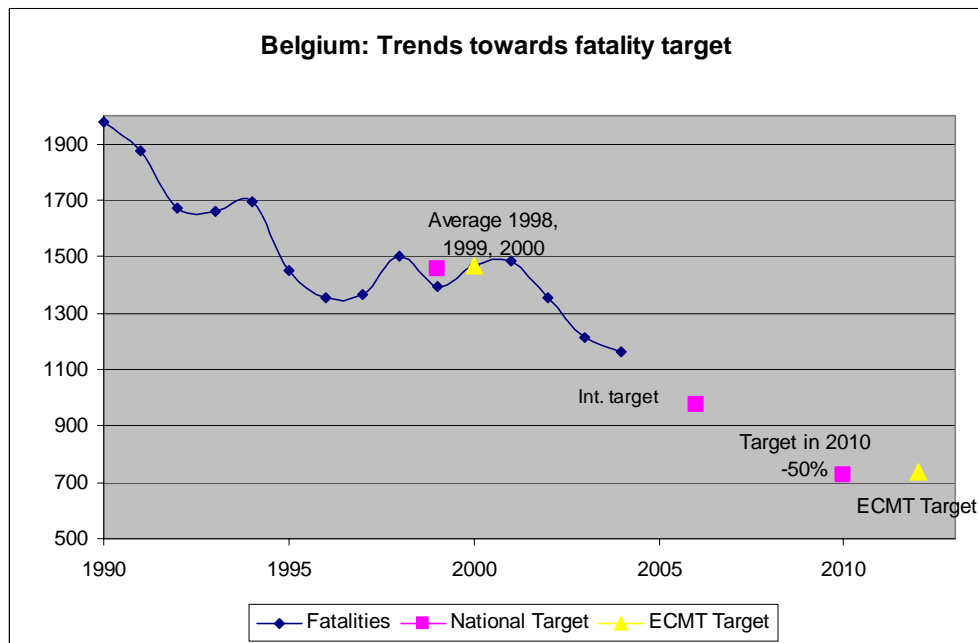
#### ***B.4. Forthcoming road safety initiatives to address these problems***

1. Educational programmes.
2. Enhanced enforcement.
3. Combined with communication and awareness-raising.
4. Improvement of road infrastructure.

### C. Road safety targets

General road safety targets

| Type       | Targets<br>(in % or absolute figures) | Base year                | Target year | Base year figure | Current results<br>(figure in 2004) | Intermediate targets |
|------------|---------------------------------------|--------------------------|-------------|------------------|-------------------------------------|----------------------|
| Fatalities | 50%                                   | Mean of 1998, 1999, 2000 | 2 010       | 1 456            | 1 163                               | 975 in 2006          |



### D. Success story cards

#### Success story from Belgium

##### Drink-Driving : “Bob campaign”

In December 1995, Belgium's yearly **drink-driving campaign** introduced the concept of the “designated driver”, the person who refrains from drinking when he or she has to drive in order to deliver the others home safely. This person was named “Bob”. The Bob campaign was jointly implemented by the IBSR (Belgian Road Safety Institute – a non-profit-making body) and the ARNOLDUS Group from the Confederation of Belgian Breweries. In the past ten years, Bob has become very popular with the Belgian population and has certainly contributed to reducing the phenomenon of drink driving in Belgium, especially with young people. In 2001, the “Bob” concept was introduced in The Netherlands, France and Greece with the support of the European Commission. The success of these “Bob” designated driver campaigns has inspired organisations from other European member states to implement the same kind of campaign to combat drink driving. In 2006, the “Bob” designated driver approach and strategy will be implemented in seventeen EU member states, in an attempt to reduce the number of casualties due to drink driving. “Bob” campaigns are based on a combination of awareness-raising and enforcement (the so-called integrated approach). The awareness raising actions are expected to bring people's attention to the problem and to change their attitude towards drink driving, *i.e.* making it socially unacceptable. The enforcement actions complement these awareness raising campaigns and are intended to bring about a real change in behaviour.

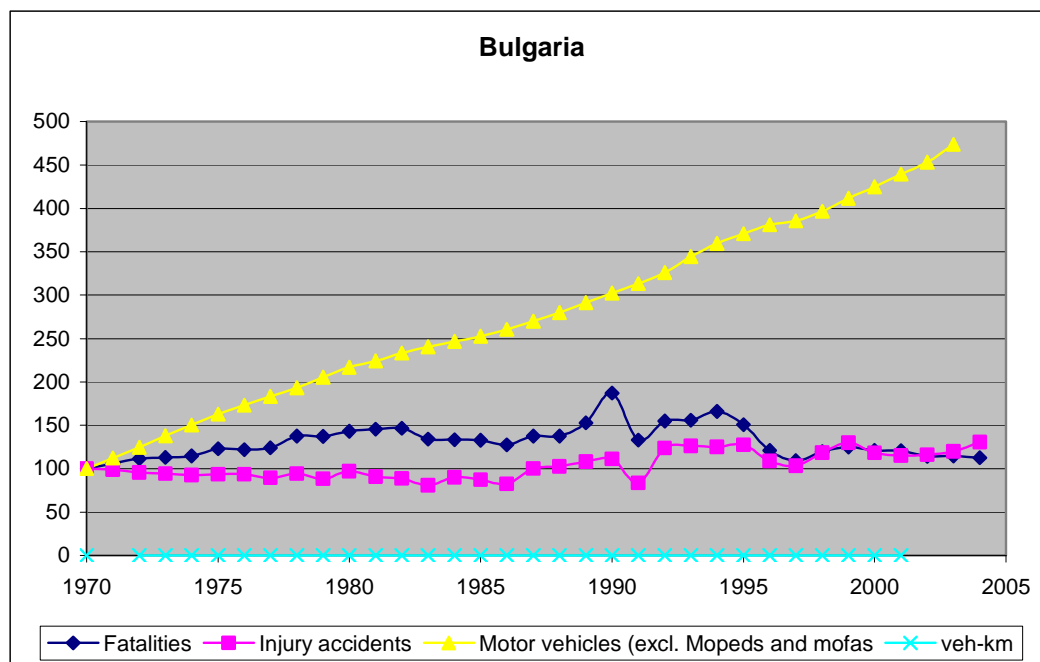
The overall objective of the “Bob” campaigns is to: reinforce the idea that drinking and driving do not mix; make people aware of the dangers of alcohol behind the wheel; and make drink driving socially unacceptable. The message is intended for all drivers. Mass media (e.g. billboard advertising, posters, TV and radio spots, flyers etc.) are the means to spread this message and make people conscious of the problem and, hopefully, change their behaviour. Where possible, the active collaboration of the police force is sought in order to raise the level of the objective and subjective risk of being caught. Besides the media mentioned above, some below-the-line channels are used as well (for example, distribution of Bob keyrings in pubs, cafés and restaurants).

## BULGARIA

### A. General trend in road safety

#### Key road safety data in 2004

- 943 road fatalities (960 in 2003)
- 7 612 injury accidents (6 997 in 2003)
- 12.1 killed per 100 000 inhabitants
- Around 280 cars (passenger cars and light duty vehicles) per 1 000 inhabitants





## **B. Current state of affairs and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

#### *B.1.1. Strategies to decrease risk of crashes:*

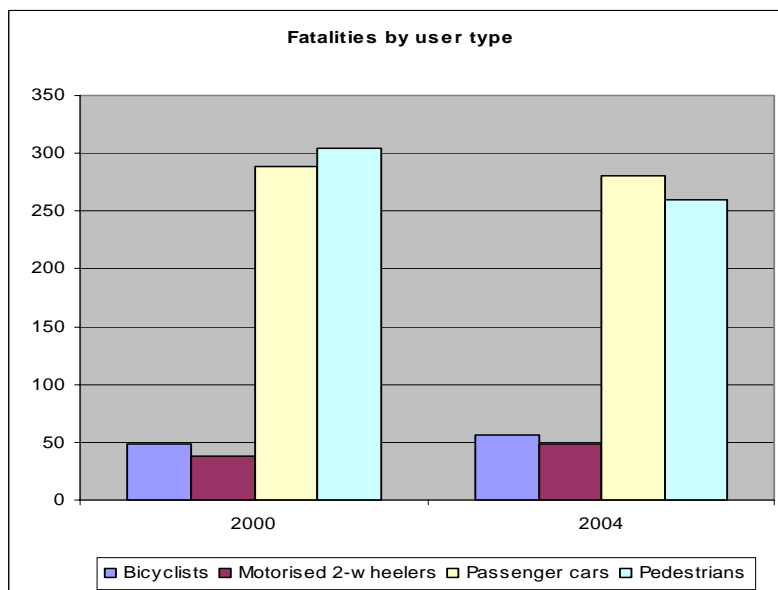
|   |  |
|---|--|
| <i>Improved speed compliance / enforcement</i>  |  |
| <i>Reduced speed limits</i>   |  |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                     |  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> |  |
| <i>Enforcement of other road rules</i>  |  |
| <i>Graduated Licensing for novice drivers</i>   |  |
| <i>Education and information programmes</i>   |  |
| <i>Regulation on vehicle inspection</i>   |  |
| <i>Regulation on active vehicle safety equipment</i>  |  |

#### *B.1.2. Strategies to decrease risk of injury:*

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  |  |
| <i>Emergency services</i>   |  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> |  |

## ***B.2. National Diagnosis in key safety areas***

### *Road users*



### *Age groups*

A clear distinction can be made between the different age groups as road users.

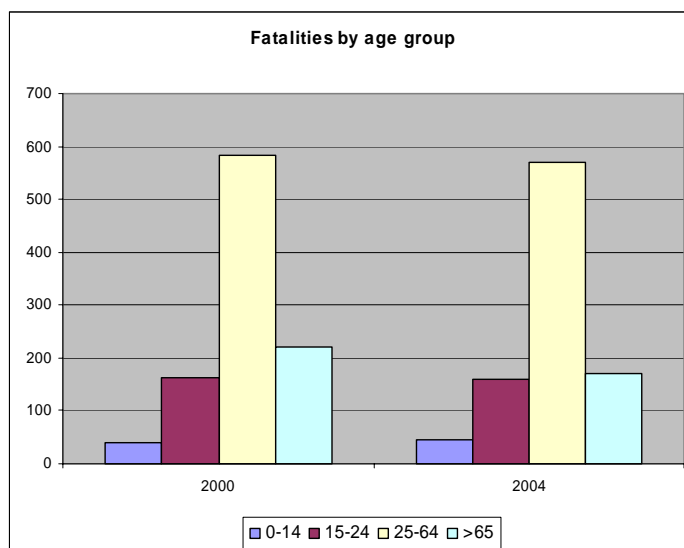
Children under 17 years of age are killed mainly in their capacity as passengers and pedestrians.

Young people between 17 and 24 years are killed almost equally as drivers and passengers. The death rate of pedestrians among the 17-24 is very low (3%) because young people react quickly to threats caused by vehicles.

Middle-aged people (25 to 64 years) are killed most often as drivers (53%). Older people are most vulnerable as pedestrians due to their slow speed of movement and reaction.

There is a great imbalance in the gender of drivers who are killed. Nearly 95% of them are men.

### Evolution in fatalities by age group



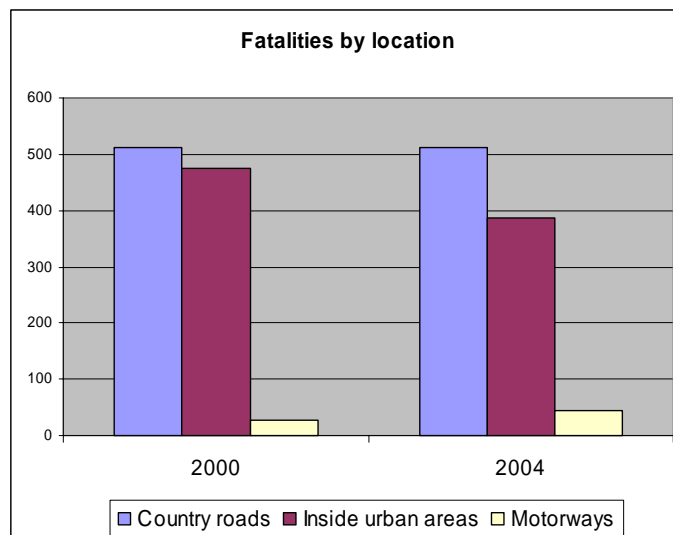
### Type of road / location

There is an obvious difference between the numbers of car accidents and fatalities inside and outside built-up areas. The ratio of car accidents inside and outside built-up areas is 67%:33%, while the ratio for fatalities is 41%:59%.

For accidents in built-up areas over the period 2000-2003, 76% of fatalities were in cities and towns, whereas 24% occurred in villages. For pedestrians, 80% of those killed were involved in road accidents in cities, towns and villages.

The reported number of road accidents outside built-up areas, towns, and villages is 8 222, with 2 112 fatalities and 10 965 injured individuals. Highway accidents accounted for 6.6% of fatalities, Class I road accidents for 37%, Class II road accidents for 22.6%, Class III road accidents for 14.9% and municipal road accidents for 18.9% of fatalities.

### Evolution in fatalities by type of road



### Speed

The speed factor accounts for the largest number of casualties in road accidents caused by drivers: 15 297 individuals, of which 1 913 were killed during 2000-2003.

#### Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.

|   | 1980 | 1994 | 2000 | 2003 |
|---|------|------|------|------|
| Nb of speeding citations  |      |      |      |      |
| % of fatal crashes where speed is a causation factor  | 28.3 | 35.1 | 46.4 | 40.2 |
| % of drivers over the posted speed limit in : <ul style="list-style-type: none"> <li>- urban areas</li> <li>- rural roads</li> <li>- motorways</li> </ul> |      |      |      |      |

### Drink driving

In Bulgaria, the BAC limit is 0.5 g/l for all drivers.

Car accidents caused by drink driving are generally severe with serious consequences. During the period 2000-2003, driving and drinking caused 1 714 road accidents, with 2 156 injured and 236 fatalities.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1994 | 2000 | 2003 |
|--|------|------|------|------|
| Number of citations                            |      |      |      |      |
| % of fatal accidents where alcohol is a factor | 7.2  | 10.8 | 7.3  | 5.5  |

*Seatbelt and helmet wearing*

Seatbelt is compulsory for both front and rear seats.

Helmet wearing is compulsory for motorcycle and moped drivers and their passengers. There are no statistics for helmet wearing rates.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

- Mobile phone: 40 BGN ( $\approx$  20) +6 penalty points (out of 39).
- Red light: 50 to 150 BGN ( $\approx$  25 to 75) +10 penalty points (out of 39).
- Inter-vehicle distance: the Bulgarian Traffic Police does not have the equipment required for controlling inter-vehicle distance.
- Use of drugs: forbidden.

*Other factors*

- Education campaigns are conducted.
- Special vehicle registration certificates are issued for faultless drivers

The highest accident incidence rates are reported on Fridays, Saturdays, and Sundays, accounting for 52% of total road accident casualties.

47% of fatalities happen during the hours of darkness. The figure exceeds 60% during autumn and winter

**B.3. Major road safety problems today**

1. Safety of children.
2. Development of further legislation.
3. Reducing road infrastructure conflict potential.
4. Implementation of modern enforcement technologies.
5. Evaluation of the real losses caused by road accidents.
6. Making use of scientific potential.

**B.4. Forthcoming road safety initiatives to address these problems**

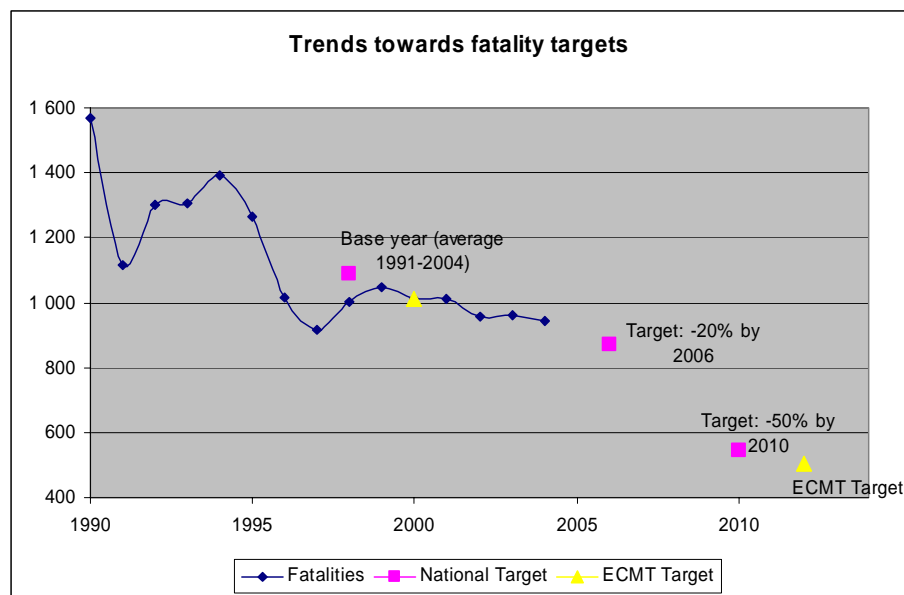
1. Increase children's awareness, transport culture and discipline by improving education, engaging the families, holding competitions, seminars etc.; Improving traffic rules enforcement in school zones
2. Strong legislative initiatives

3. Identifying and securing black spots on roads; create cycling paths; increasing the number of speed reducing bumps in built-up areas
4. Providing proper equipment for better enforcement of speeding, drink driving, seatbelt using etc., rules
5. Improved cooperation with the medical authorities and insurance people for fuller statistics on the financial losses caused by road accidents

### C. Road safety targets

General road safety targets

| Type       | Targets<br>(in % or absolute figures) | Base year                   | Target year | Base year figure | Current results<br>(figure in 2004) | Intermediate targets? |
|------------|---------------------------------------|-----------------------------|-------------|------------------|-------------------------------------|-----------------------|
| Fatalities | -20%                                  | Average value for 1991-2004 | 2006        | 1 088            | 943                                 | No                    |
|            | -50%                                  |                             | 2010        |                  |                                     |                       |



### D. Success story cards

#### Success story from Bulgaria

##### Raising children's awareness through painting

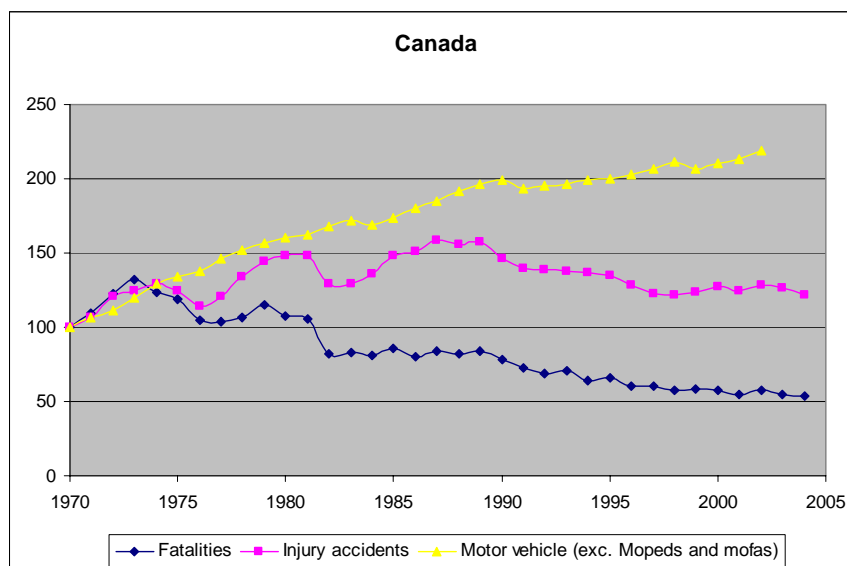
In 2002, the Bulgarian authorities organised the first painting competition for children. It has since become an annual event, and more than 21 000 children have participated thus far. The aim of this competition is to raise the awareness of children, parents and teachers of the importance of road safety and to educate and change road user behaviour so that a higher level of transport culture and discipline can be achieved.

## CANADA

### A. General trend in road safety

#### Key road safety data for 2004

- 2 725 road fatalities (2 766 in 2003)
- 151 321 injury accidents (156 904 in 2003)
- 8.5 killed per 100 000 inhabitants
- Around 580 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



Like most other industrialized countries, Canada's road safety record improved considerably during the past twenty years (1984-2004). Fatalities and serious injuries decreased by 34%, while the number of road users (population) and motor vehicles in use increased by almost similar margins (24% and 32%, respectively). During this time frame, the two largest road safety problems in Canada (non-use of seat belts and child restraint systems and drinking and driving) were confronted head-on through the creation of national task forces that developed and implemented numerous initiatives initially in selected provinces and territories and eventually at the national level. Since the creation of these task forces (National Occupant Restraint Program in 1989 and Strategy to Reduce Impaired Driving in 1990), there has been a 20-percentage point increase in restraint use and a 28% decrease in unbelted fatally injured occupants and a 35% decrease in the number of fatally injured road users (drivers and pedestrians) who tested positive for alcohol.

In spite of these improvements, overall progress in road safety had levelled off during the early 1990s to the extent that road safety stakeholders considered that the introduction of a national road safety plan was necessary. The result was Road Safety Vision 2001, which had a more focused approach to road safety intervention efforts. This national plan proved successful, as fatalities decreased by 10% and serious injuries by 16% during the six-year time frame of the initiative. Canada's second-generation national road safety plan, Road Safety Vision 2010, which is outlined in Section C of this questionnaire, maintained the original key strategies and overall 'vision' of the inaugural plan (having the safest roads in the world) and added a number of quantitative targets. In addition to focusing on increasing occupant restraint use and on decreasing the incidence of drinking and driving, the renewed vision targets rural road safety, vulnerable road users, speed, intersection safety, commercial vehicle safety, as well as young drivers and riders. Six nationally representative task forces are currently in place to guide, monitor and report on progress on the various targets of Canada's national road safety plan.

## **B. Current state of affairs and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

#### *B.1.1. Strategies to decrease risk of crashes:*

|  |   |
|--|---|
| <i>Improved speed compliance / enforcement</i>   | <ul style="list-style-type: none"> <li>In selected provinces, police services carried out intensive campaigns, which focused on unsafe speed and lasted up to 10 days in duration. Assessments have not been made.</li> </ul> <p><i>These campaigns relate to reductions in speed-related fatalities and serious injuries</i></p>   |
| <i>Reduced speed limits</i>  | <ul style="list-style-type: none"> <li>In one province, legislation was passed regarding 'speeding in excess of 50 km/h over the posted speed limit'. Assessments have not been made.</li> </ul> <p><i>The legislation relates to reductions in fatalities and serious injuries in crashes involving excess speed.</i></p>  |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i> | <ul style="list-style-type: none"> <li>A number of provinces have implemented legislation requiring drivers convicted of drinking driving offences to equip their vehicles with approved ignition interlock devices before operating their vehicles.</li> <li>More stringent vehicles impoundment and seizure laws were introduced in a number of provinces.</li> <li>More stringent measures (lengthier sentences) were introduced for repeat drink-driving offenders. Some provinces provided funding to police services to work overtime to increase enforcement levels specifically targeting drinking drivers. Some jurisdictions conducted enforcement activities at strategic locations and times to target drink drivers. Selected provinces trained some officers as drug recognition experts Assessments have not been made</li> </ul> <p><i>These initiatives relate to the target on fatality and serious injury reductions involving drinking drivers.</i></p> |



|  |  |
|--|--|
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>Selected provinces upgrade signage, traffic lanes and traffic light configurations at intersections that are high crash locations.</li> <li>Some provinces are now installing roundabouts in selected locations rather than traffic signals. Assessments have not yet been made.</li> </ul> <p><i>These initiatives relate to the target pertaining to fatality and serious injury reductions at intersections.</i></p>   |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>One province conducted targeted traffic enforcement on rural roadways, and found that 150 enforcement hours/week per 100 kilometres combined with public awareness campaigns resulted in significant crash reductions over expected outcomes.</li> </ul> <p><i>These activities relate to the target pertaining to reducing fatalities and serious injuries on rural roadways (80-90 km/h).</i></p>   |
| Graduated Licensing for novice drivers   | <ul style="list-style-type: none"> <li>Graduated licensing was introduced in one jurisdiction, bringing to eight the number of provinces/territories with graduated licensing programmes in place. An assessment of the GLS programme is being made in the province that introduced it. However, results are not yet available. Graduated licensing schemes that were introduced in three provinces prior to 2003 were evaluated and proved to be successful at reducing fatalities and serious injuries among young drivers.</li> </ul> <p><i>This initiative relates to the target pertaining to fatality and serious injury reductions involving young drivers/riders</i></p> |
| Education and information programmes   | <ul style="list-style-type: none"> <li>Public education and awareness programmes aimed at achieving the objectives of each of the sub-targets of Road Safety Vision 2010 (e.g. seatbelt use awareness campaigns, new driver education programmes, pedestrian safety, speed and intersection awareness campaigns) have been introduced in numerous jurisdictions. Assessments have not been made.</li> </ul> <p><i>These programmes support the achievement of the objectives of the various sub-targets of RSV 2010.</i></p>   |
| Regulation on vehicle inspection   | No   |
| Regulation on active vehicle safety equipment  | No   |
| Other  | <ul style="list-style-type: none"> <li>Selected provinces worked cooperatively with police services to conduct enforcement campaigns which targeted jaywalking pedestrians and cyclists at controlled intersections.</li> </ul>  |

### B.1.2. Strategies to decrease risk of injury:

|  |   |
|--|---|
| Safety equipment: enforcement of seatbelt wearing/ helmet use  | <ul style="list-style-type: none"> <li>Selected provinces have carried out Selective Traffic Enforcement Programmes (STEP) to enforce the tougher sanctions (increased fines and assignment of demerit points) imposed on unrestrained occupants of vehicles. Assessments have not been made.</li> </ul> <p><i>These initiatives relate to the target pertaining to the achievement of a 95% usage rate of seatbelts and child restraints</i></p>   |
| Emergency services   | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>Selected jurisdictions upgraded signage, traffic lanes and traffic light configurations at high-volume, high-crash locations. Assessments have not been made.</li> </ul> <p><i>These initiatives relates to the target pertaining to fatality and serious injury reductions in crashes at intersections.</i></p>   |
| Other  | <ul style="list-style-type: none"> <li>Selected provinces have introduced <b>red light cameras at high-crash intersections</b> in larger cities to deter speeding. An assessment has been made, but results have not yet been published.</li> <li><b>Mandatory cyclist helmet</b> wearing laws were introduced in one province, bringing the number of provinces/territories to seven who now have such a law. Assessments of these initiatives have not been made.</li> </ul> <p><i>These initiatives relates to the targets pertaining to fatality and serious injury reductions in crashes at intersections and among vulnerable road users.</i></p> |

### B.2. National Diagnosis in key safety areas

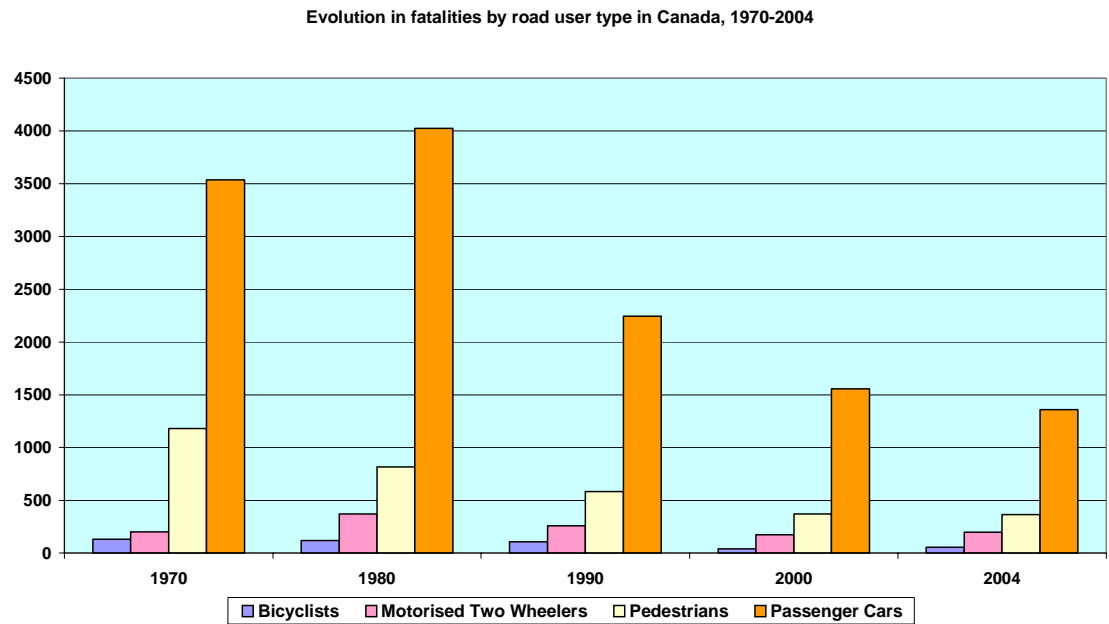
#### Road users

Canadians rely heavily on privately-owned motor vehicles for basic transportation, due in large part to the size of the country (9 984 670 km<sup>2</sup>; 1.4 million kilometres of roads) and the lack of public transportation alternatives outside of urban centres. As a result, the large majority of road traffic fatalities that occur each year on Canadian roadways are motor vehicle occupants. During the past 20 years, motor vehicle (car, light truck and heavy truck) occupants have accounted for an increasing proportion of total annual traffic fatalities, from 71% in 1984 to 76% in 2004. The increased percentage of motor vehicle occupant fatalities has been offset by reductions in motorcyclist and moped rider fatalities. Pedestrian fatalities have remained very stable on a percentage basis (about 13%), and bicyclist fatalities, which comprise a very small segment of total fatalities (2%), have been halved during the past twenty years. Since more than three of every four traffic fatalities are motor vehicle occupants, the principle focus of intervention efforts in support of the quantitative targets of Road Safety Vision 2010 is on motor vehicle occupant safety.

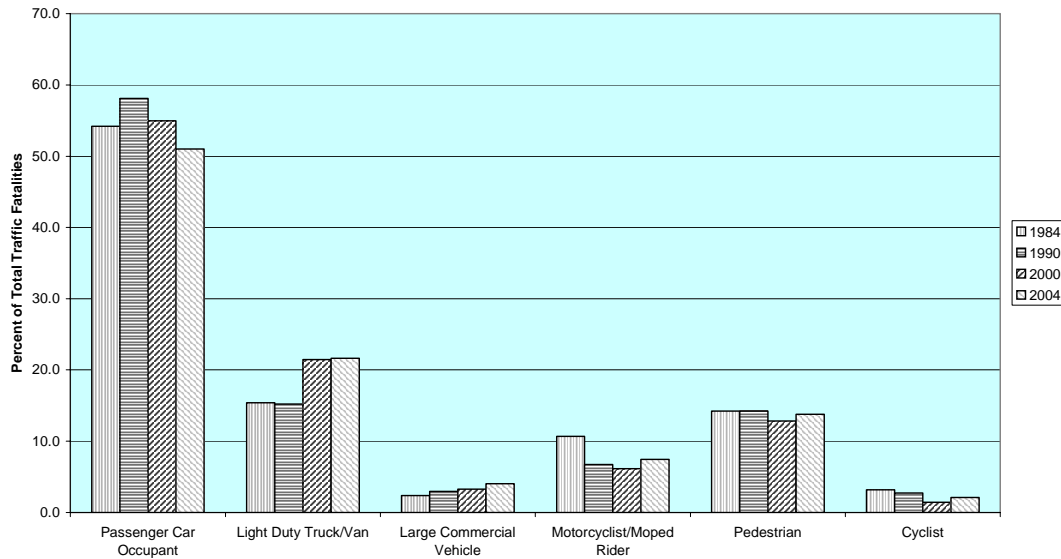
The combination of a gradual increase in registered vehicles, licensed drivers and population, combined with gradual decreases in traffic-related fatalities and serious injuries suggests that road

travel in Canada has gradually become safer for all classes of road users. A number of factors have contributed to this improved level of safety. For motorists, better engineered vehicles that incorporate crash avoidance and crashworthiness attributes, better engineered roads, more stringent regulations and police enforcement for driving infractions and changes in public attitudes towards high-risk road use behaviour have contributed to these improvements. For vulnerable road users, public education and awareness campaigns that target all road users, greater enforcement efforts and making road infrastructure more accessible have all contributed to safer travel among pedestrians and cyclists in particular. Improved emergency medical services have also contributed to the decline in fatalities and serious injuries.

**Evolution in fatalities by road user type in Canada, 1970-2004**



**Evolution of Fatalities by Road User Type - Canada - 1984 - 2004**



### *Age groups*

Like most developed countries, in Canada, the youngest age groups of road users are gradually accounting for smaller proportions of total traffic fatalities. In contrast, the growth in Canada's elderly population is being reflected in the gradual growth in casualty totals in this age group.

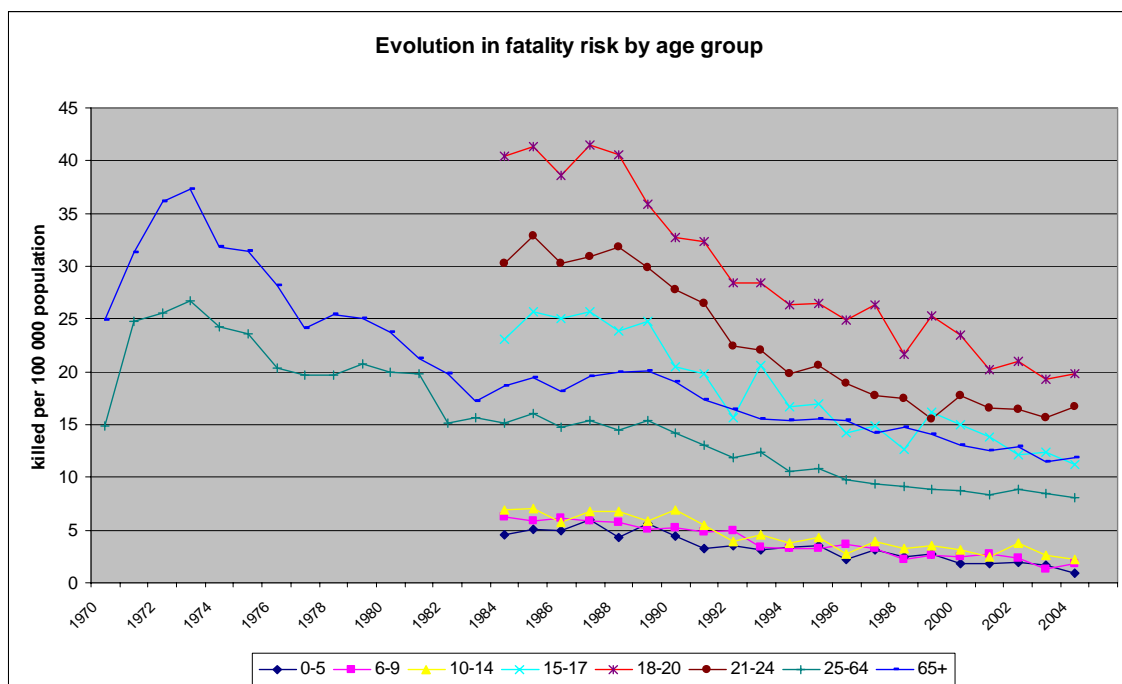
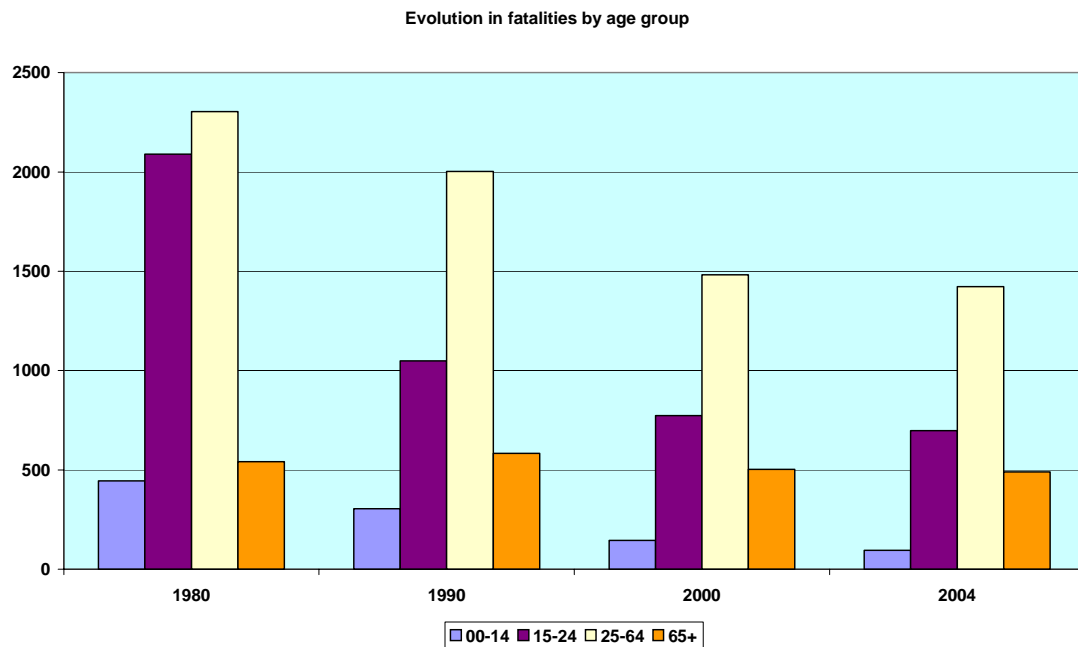
Among younger fatally injured victims (14 years or younger), the main problem area is among seriously injured pedestrians and fatally or seriously injured cyclists. Numerous public education and awareness campaigns and training clinics have contributed largely to increased proper use of appropriately fitted child restraint systems. As a result, the death toll among very young occupants (0-5 years) decreased dramatically, by 70%, during the 1984-2004 period.

Among 15-24 year old fatally injured victims, motor vehicle occupant fatalities represent the principal problem. Despite graduated licensing programs being in place in most areas of the country, driver inexperience, particularly among drivers aged 16-19 years, is still a concern and is reflected in the higher driver fatality rate per billion vehicle kilometres travelled. Only very old drivers (75+ years) have higher fatality rates. The latest national rural seat belt use survey showed that seat belt use among drivers less than 25 years of age who were operating pickup trucks on rural roads was dramatically lower (more than 15 percentage points lower than overall rural seat belt usage rates).

Alcohol use is cited as a contributing factor among almost half of fatally injured drivers in the 25-45 year old age category. Non-use of seatbelts among fatally injured drivers in single vehicle crashes on rural roads is also extremely common among this age group of road users.

Among older road users (65+ years), drivers are over-represented as fatally injured victims of rural intersection crashes (25%) when compared with population totals (13%). Older pedestrian fatalities are also considerably over-represented as victims when compared with population totals.

### Evolution in fatalities by age group in Canada, 1980-2004

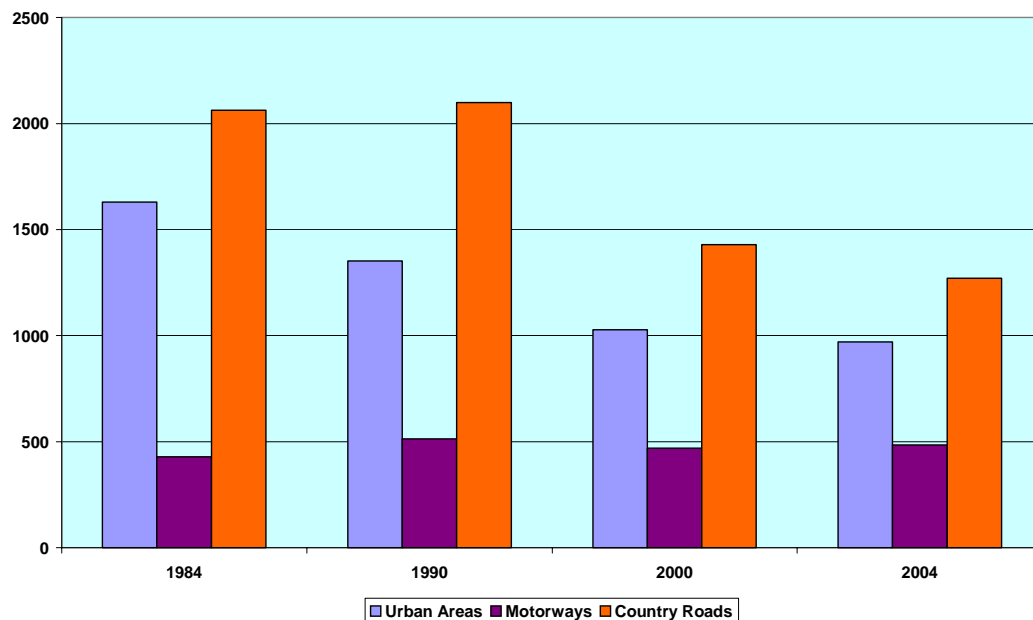


### *Type of road / location*

Rural roadways (those with posted speed limits of 80-90 km/hr) are the most dangerous location for road user travel. In 2004, almost half (47%) of all traffic fatalities and 33% of those seriously injured were victims of crashes that occurred on rural roads. A recently completed study of characteristics of fatal and serious injury collision on rural roads identified a number of high-risk driver behaviours including the high incidence (approximately 60%) of non-use of seatbelts among 16-54 year old drivers in single vehicle crashes, the high incidence of unrestrained drink drivers who were killed (78%) or seriously injured (74%) in single vehicle night-time crashes, the high incidence of drivers of all ages that were killed in intersection crashes who committed driving infractions (62%), and the extremely high incidence of driver infractions committed among both fatally and seriously injured (74% for both severity levels) drivers involved in head-on crashes. Interestingly, non-use of seatbelts among fatally injured drivers is very similar, at about 40%, on both urban and rural roads. While the large majority of fatally injured victims of rural road and motorway crashes are motor vehicle occupants, the large majority of vulnerable road user fatalities occur in urban areas with posted speed limits of 70 km/h or less. Urban intersections are particularly dangerous for vulnerable road users (pedestrians, motorcyclists and cyclists) and motorists alike.

At present, one of Transport Canada's principal areas of concern is on rural road safety, due in large part to the number of fatalities and serious injuries that occur on these roads and also to the high-risk road use behaviour that is frequently cited in serious crashes in rural areas. Transport Canada recently disseminated a report to its provincial and territorial counterparts on traffic collision trends and recommended strategies for making rural road travel safer. The strategies proposed to make rural road travel safer include initiatives directed at improving the road network, making vehicles safer and changing road user behaviour.

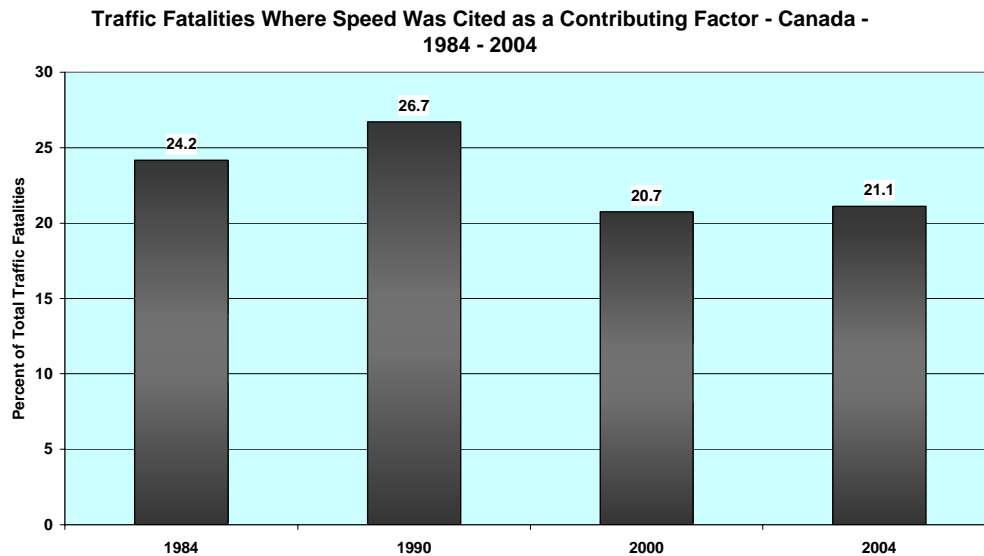
**Evolution in fatalities by type of road, Canada**



## *Speed*

Excess speed was a factor for more than 21% of fatalities and approximately 17% of serious injuries in 2004. Speed is often cited as a factor in combination with other high-risk behaviour such as drink driving, non-use of seatbelts and running red lights. A recently completed study showed that speed was a factor among 35% of drivers killed and 25% of those seriously injured in single vehicle crashes occurring on rural roads in Canada. Speeding is also very problematic on urban streets with posted speed limits of 60 km/h or less, where it was cited as a contributing factor for one-third of all fatalities and serious injuries.

Road safety experts recently created a nationally representative task force to develop and implement measures aimed at curbing speeding and at making intersections safer for all road users. As already stated, speed is one of the targeted areas under Canada's national road safety plan. The four core strategies utilised under the auspices of this task force are education and awareness initiatives, road infrastructure standards and improvements, research and enforcement.



## *Drink driving*

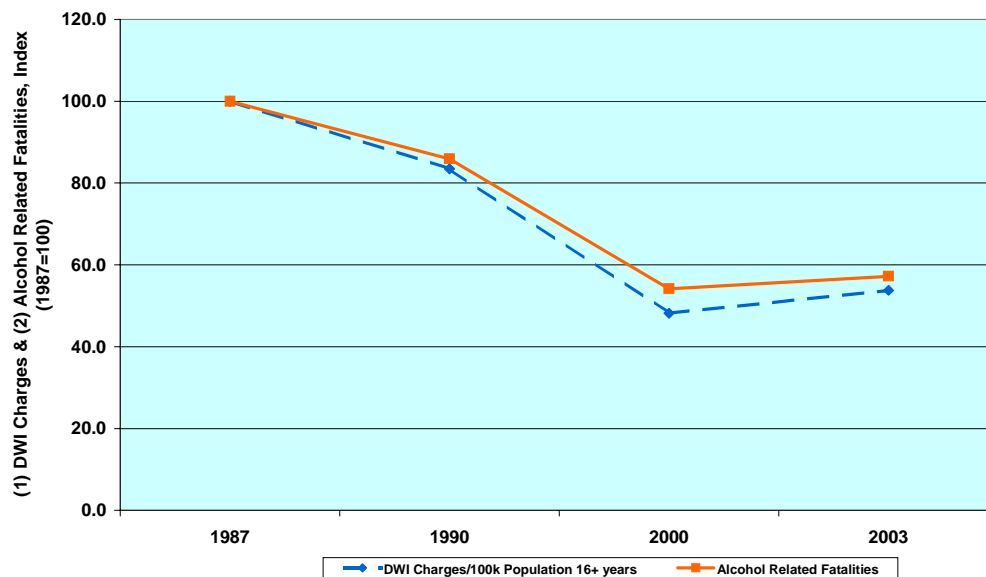
The Canadian Criminal Code specifies that driving with a BAC over 80mg% is a criminal offence, punishable by fine, licence suspension of 12 months on first offence, and possibly jail. In addition, most Canadian provinces/territories have administrative offences whereby if a driver has a BAC between 50mg% and 80mg%, he/she can have his/her licence suspended for a short period of time ranging from 12 to 24 hours. Most Canadian provinces/territories have Graduated Driver Licensing programs which require novice drivers not to drive with a BAC over 20mg% during the novice and probationary periods which usually last for 2-3 years.

Drink driving continues to be a major challenge facing road safety experts in Canada. A national programme, called the Strategy to Reduce Impaired Driving (STRID), has been instrumental in reducing the incidence of alcohol use among fatally injured drivers from 45% when it was introduced

in 1990 to 39% in 2003, although the percentage was even lower (33%) in 1999. The figures in the following chart reflect these improvements.

Transport Canada and Canada's provinces and territories have collaborated with key partners (police services and the health sector) through the STRID Task Force to implement numerous public education and awareness campaigns, health promotion activities and focused enforcement initiatives and have introduced tougher sanctions in order to reduce drinking and driving. Today, drinking and driving is not as socially acceptable as it once was. However, alcohol is still a factor among more than 50% of alcohol-related deaths (*i.e.* drivers and pedestrians) involving 20-35 year old victims. Among fatally injured drivers who were legally impaired, approximately two-thirds had blood alcohol concentration levels that were more than twice the legal limit (80 mg%).

**Evolution in Drink Driving Charges and Alcohol Related Traffic Fatalities - Canada - 1984 - 2003**



### *Seatbelt and helmet wearing*

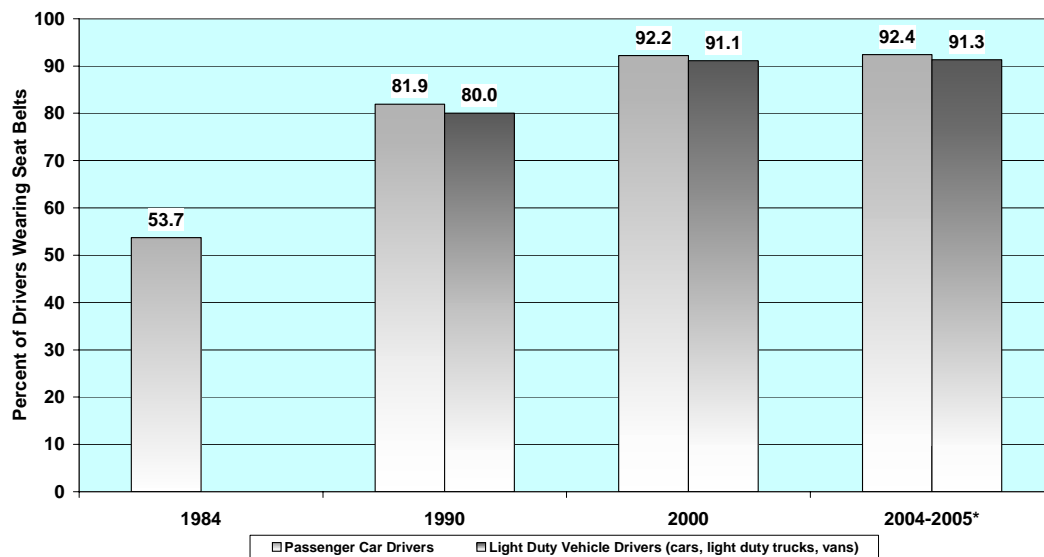
#### Seatbelt

Following the introduction of the National Occupant Restraint Program (NORP) in 1989 and public education and enforcement initiatives to support the overall objective of this program (95% usage rate), occupant restraint use increased from approximately 74% to about 82% in 1991. In 2001, the usage rate was about 90%. Until 2001, Transport Canada carried out annual seat belt use surveys primarily in urban communities. Beginning in 2002, the first national seat belt use survey was conducted in rural Canada. The results of the rural survey showed that seat belt use in rural communities was about four percentage points lower than in urban areas. However, restraint use was dramatically lower among young male drivers (less than 25 years of age) of pickup trucks (70%). Subsequent annual seat belt use surveys have alternated between urban and rural sites. The most recent combined (and weighted) urban/rural seat belt use figures, which cover the 2004-2005 period, show that the approximate 4% disparity in restraint use between urban and rural locations still exists. .



While seat belt wearing rates had levelled in recent years, a number of public education, legislative and enforcement initiatives undertaken under the auspices of NORP in many of Canada's jurisdictions led to notable increases in restraint use. The overall urban/rural seat belt usage rate for all occupants increased from 87.4% during the 2002-2003 period to 90.5% during 2004-2005. Restraint use among pickup truck occupants, who have much higher casualty rates than the rest of the driving population, also increased from 80% to 84.4% during the same period.

**Seat Belt Usage Rates Among Drivers of Passenger Cars & Light Duty Vehicles - Canada - 1984 - 2004-2005**



Note: Usage rates cited for all years except 2004-2005 were derived from urban areas; the 2004-2005 figures were derived from both urban and rural sites.

**Evolution in seatbelt wearing rates**

|                      | 1980 | 1994 | 2000 | 2005 |
|----------------------|------|------|------|------|
| Urban areas - driver | 36%  | 82%  | 92%  | 92%  |

In spite of overall high restraint usage rates in Canada, approximately 39% of motor vehicle occupants that died and 18% of those seriously injured in traffic collisions were unbelted at the time of crash occurrence during 2004. Victims in the 20-44 year old age categories had the highest incidence of non-compliance. Non-use of seat belts among fatally injured occupants was highest, on a percentage basis, among victims who were killed in urban areas (roads with posted speed limits of 70 km/h or less), at more than 39%, followed by victims who died in crashes on rural roads (80-90 km/h) (almost 36%) and on motorways (36%).

## Helmet

All riders of motorized 2-wheelers are required by provinces/territories to wear helmets. Some jurisdictions have helmet use laws for cyclists but these vary in application. In some cases, the law only applies to children and young adults up to age 18.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

**Red Light Cameras:** A number of provinces have introduced red light cameras in selected cities to curb the incidence of running red lights. A study carried out in one province showed that crashes involving fatalities and serious injuries decreased by 7% at intersection locations equipped with red light cameras.

**In-Vehicle Telematics:** Transport Canada is concerned that in-vehicle telematic devices, such as mobile phones, are a threat to road safety because they distract drivers and may lead to an increase in crashes. It has published a discussion document outlining strategies for reducing driver distraction and possible regulatory and non-regulatory activities. It also plans to carry out consultations with industry to determine what is currently being done or planned to reduce distraction from such equipment.

**Drug Use:** Transport Canada is also concerned about the role of cannabis and other drugs, both licit and illicit, in collision causation. The Government of Canada is considering the introduction of legislative changes that would decriminalise possession of small amounts of cannabis. There is some disquiet about the possible effects of such changes on impaired driving in Canada. Transport Canada commissioned a study that reviewed the effects of cannabis on driving performance and collision risk. The Criminal Code of Canada permits police to lay a charge of impaired driving if they believe a person's ability to operate a vehicle is impaired by 'alcohol or a drug'. A number of police services, including Canada's national police force, have initiated the training of police officers as drug recognition experts.

*Other factors*

**Enforcement:** In Canada, enforcement is the responsibility of the provincial and territorial governments. In all but two provinces, the Royal Canadian Mounted Police (RCMP), Canada's national police service, is contracted to provide enforcement services. The RCMP, as well as the Ontario provincial police force and a number of municipal police services, have endorsed Road Safety Vision 2010 and use the targeted areas of this national plan as focal points for the delivery of their intervention efforts. In spring and autumn, Transport Canada partners with the Canadian Association of Chiefs of Police (CACP) on two national public education and enforcement initiatives to increase awareness of road safety issues among the police community, as well as the motoring public. Transport Canada also sponsors two annual national awards for police officers – one for innovative efforts in the traffic safety domain and the other for distinguished career service in traffic safety by a police officer.

**Engineering:** Transport Canada is working closely with motor vehicle manufacturers to enhance the existing motor vehicle occupant protection regulation governing frontal crashes. The improved regulation will provide additional protection for children and short-statured adults when they are involved in frontal crashes. A regulation aimed at improving occupant protection in side impact collisions is also being developed.

**Education:** Public awareness of Canada's national road safety plan is unfortunately quite low. A recent survey on awareness of road safety issues revealed that fewer than five percent of the Canadian public was aware of Road Safety Vision 2010. Transport Canada, provincial and territorial governments, as well as a number of non-governmental organisations (*e.g.* police services) are involved in ongoing efforts to make the Canadian public more aware of key road safety issues and of the strategic elements of Road Safety Vision 2010.

**Evaluation:** Ad hoc road safety evaluations are carried out in both the federal (*e.g.* evaluation of the effectiveness of air bags and seatbelts) and jurisdictional (*e.g.* red light cameras or graduated licensing programmes) domains. Positive results that emanate from these evaluations are used to raise awareness of specific road safety issues or to modify road user behaviour. Transport Canada plays a role in knowledge transfer by informing its provincial/territorial partners about measures shown in evaluations to be effective in improving road safety.

### ***B.3. Major road safety problems today***

The key road safety problem areas in Canada today are those for which quantitative targets exist under the Road Safety Vision 2010 national road safety plan. An evolving concern, for which a national target currently does not exist, is elderly driver safety – given the projected increases among this segment of the population during the next two decades.

- Non-use of seatbelts and child restraint systems.
- Drink driving.
- Rural roadways.
- Intersections.
- Speeding.
- Vulnerable road user safety.
- Commercial vehicle safety.
- Young drivers/rider safety.
- Elderly driver safety.

### ***B.4. Forthcoming road safety initiatives to address these problems***

*For motor vehicle occupants:*

- Improving the frontal crash protection mainly for the elderly and short-statured occupants of vehicles in the event of head-on crashes.
- Introducing a side-impact regulation that will benefit outboard position occupants of vehicles that are struck on the side by other vehicles or fixed objects.

*For pedestrians:*

- Canada is participating with European countries in the development of a global technical regulation aimed at making the front hood and bumper of cars softer, so that pedestrians will potentially sustain less severe injuries when struck by these vehicles.

### Assessment of Road Safety Vision 2010 in 2006

Transport Canada is planning to carry out a mid-term review of Road Safety Vision 2010 in 2006 to assess the progress achieved toward the quantitative targets of Road Safety Vision 2010, to identify areas where additional effort is required, and if necessary, to modify existing targets or introduce new areas that require intervention efforts. Jurisdictionally, all provinces and territories are actively carrying out initiatives that support the targeted areas of Canada's national road safety plan.

#### C. Road safety targets

**Road Safety Vision 2010 National Target, Sub-Targets, Baseline Data & Target Objectives**

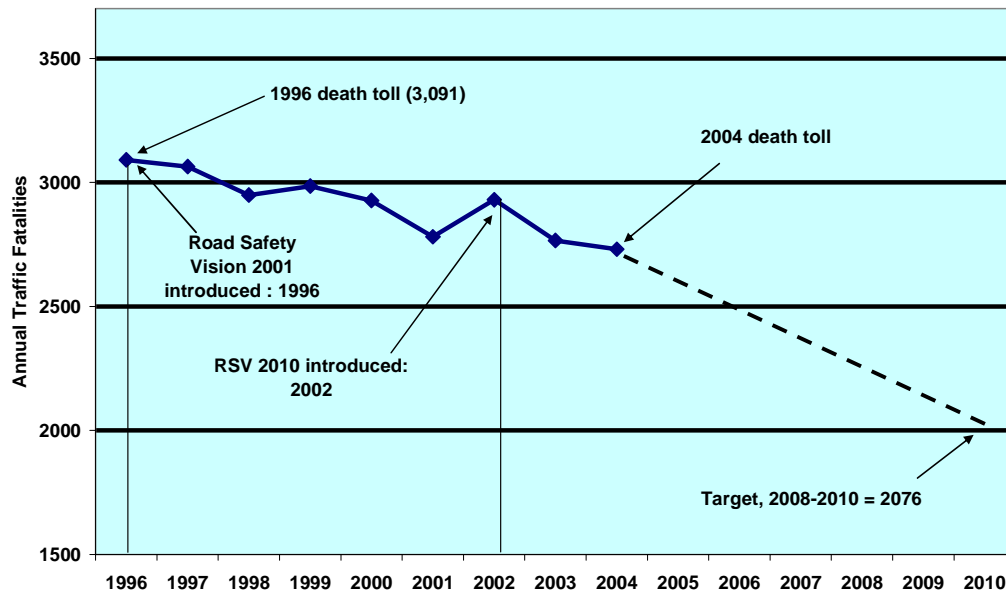
|  | Fatalities                      |               |                                |                         | Serious Injuries                |               |                                |                         |
|--|---------------------------------|---------------|--------------------------------|-------------------------|---------------------------------|---------------|--------------------------------|-------------------------|
| National Target  | 1996-2001<br>Baseline<br>Figure | 2004<br>Total | 2004<br>Progress<br>(% change) | 2008-<br>2010<br>Target | 1996-2001<br>Baseline<br>Figure | 2004<br>Total | 2004<br>Progress<br>(% change) | 2008-<br>2010<br>Target |
| A 30% decrease in the average number of road users fatally or seriously injured during the 2008-2010 period (compared to 1996-2001). | 2,966                           | 2,725         | -8.1                           | 2,076                   | 19,463                          | 18,468        | -5.8                           | 13,624                  |
| <b>Sub-Targets</b>   |                                 |               |                                |                         |                                 |               |                                |                         |
| A 40% decrease in the number of unbelted fatally or seriously injured occupants.   | 897                             | 802           | -10.6                          | 538                     | 2,764                           | 2,335         | -15.5                          | 1,659                   |
| A 40% decrease in the percentage of road users fatally or seriously injured in crashes involving drinking drivers.                   | 33.0%                           | 30.4%         | -8.0                           | 19.8%                   | 19.0%*                          | 17.0%         | -10.5                          | 11.4%                   |
| A 40% decrease in the number of road users fatally or seriously injured on rural roadways.   | 1,421                           | 1,270         | -10.6                          | 853                     | 6,264                           | 5,753         | -8.2                           | 3,758                   |
| A 20% decrease in the number of young drivers/riders (those aged 16-19 years) killed or seriously injured in crashes.                | 161                             | 139           | -13.6                          | 129                     | 1,199                           | 1,057         | -11.9                          | 960                     |
| A 20% decrease in the number of road users killed or seriously injured in speed-related crashes.                                     | 608                             | 585           | -3.8                           | 487                     | 2,576                           | 3,156         | 22.5                           | 2,061                   |
| A 20% decrease in the number of road users killed or seriously injured in intersection-related crashes.                              | 902                             | 860           | -4.6                           | 721                     | 8,717                           | 7,714         | -11.5                          | 6,974                   |
| A 30% decrease in the number of fatally or seriously injured vulnerable road users (pedestrians, motorcyclists and cyclists).        | 613                             | 621           | 1.3                            | 429                     | 3,577                           | 3,668         | 2.6                            | 2,504                   |
| A 20% decrease in the number of road users killed or seriously injured in crashes involving commercial vehicles.                     | 585                             | 583           | -0.4                           | 468                     | 1,711                           | 1,813         | 6.0                            | 1,369                   |

\*Estimates of the percent of drivers involved in serious crashes involving alcohol on public roads during 1996-2001.

Note: 2004 progress for the target pertaining to drinking driving are preliminary.

## Progress to date towards fatality target

### Canada: Target



## D. Success story cards

### *Success stories from Canada*

**Daytime Running Lights (DRL):** The DRL regulation took effect in December 1989. The federal government requires all new vehicles sold in Canada to be equipped with daytime running lights which are illuminated automatically when the vehicle is started. The regulation was introduced because DRL increases the conspicuity of vehicles in traffic (*i.e.* the distance at which the presence of a vehicle can be detected by other road users). An effectiveness study demonstrated that DRL equipped vehicles were involved in significantly fewer (8.3%) daytime target collisions (mainly head-on crashes) than vehicles that were not equipped with DRL.

**Graduated Licencing Systems (GLS):** Novice (predominantly young) drivers have consistently been over-represented as victims of traffic collisions. Drivers and motorcycle riders aged 16-19 years represent approximately 5% of licensed drivers but almost 9% of fatally injured drivers and more than 10% of those seriously injured. GLS was first introduced for all novice drivers in one province in 1994 in order to address this problem. A number of driving restrictions (*e.g.* no late night driving, zero BAC and a requirement to drive with a licenced adult) are inherent to GLS. Today, nine Canadian jurisdictions covering 90% of the Canadian driving population have GLS programmes in place. Evaluations in provinces where the programme was first introduced have shown them to be successful in reducing fatalities and serious injuries.

**National Occupant Restraint Programme:** The National Occupant Restraint Programme (NORP) was introduced in 1989 as a mechanism for road safety advocates across the country to develop and implement strategies aimed at increasing seatbelt and child restraint system use to 95%. NORP was the first truly national road safety initiative and all provinces and territories embraced it. When the programme was initially introduced (1989), seatbelt use in predominantly urban areas stood at 74%. By 1991, the national usage rate had increased to almost 82%. Current national usage levels stand at 90.5 %. NORP is one of the key targets of Road Safety Vision 2010. Although the overall 95% restraint use target has not yet been achieved, this initiative, which utilises seatbelt/child restraint wearing survey results, public education and awareness campaigns, enforcement campaigns and legislative initiatives to increase usage rates, is still regarded as a success because of the substantial increase in the overall seatbelt usage rate (16 percentage points) and the corresponding 27% decrease in the number of fatally injured unbelted occupants.

**Strategy to Reduce Impaired Driving (STRID):** The Strategy to Reduce Impaired Driving is a national initiative that was introduced in 1990 to curtail the incidence of drinking and driving. During the year that STRID was introduced, 45% of fatally injured drivers had been drinking or were impaired. STRID has recommended a number of education/awareness, legislative, enforcement, health promotion and research initiatives which have been adopted by a number of provincial/territorial jurisdictions to reduce the incidence of driving after drinking. STRID is addressing another Road Safety Vision 2010 target, calling for a 40% decrease in the number of road users fatally or seriously injured in crashes involving alcohol by 2010. Since its inception in 1990, initiatives carried out under this programme have resulted in a 35% decrease in the number of drivers killed annually in which alcohol was cited as a factor.

***Less recommended story card from your country***

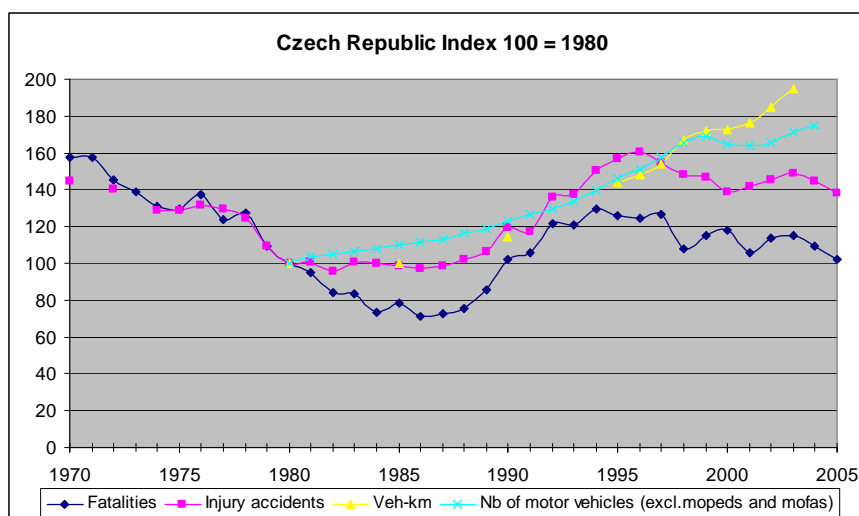
**Photo radar** was introduced in a couple of Canada's provinces as a mechanism to deter speeding and make the motoring public drive more prudently. However, road safety experts in these jurisdictions failed to explain the benefits of this measure to either politicians or the general public. As a result, this measure was extremely unpopular and was regarded by the general public as a 'cash grab' by governments rather than a safety measure that benefited all road users. Consequently, following provincial elections, the new incoming governments prohibited the use of photo radar.

## CZECH REPUBLIC

### A. General trend in road safety

#### Key road safety data in 2005

- 1 286 road fatalities (1 382 in 2004)
- 25 239 injury accidents (26 516 in 2004)
- 12.6 killed per 100 000 inhabitants
- Around 400 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



Between 1970 and 2004, three periods can be observed:

**From 1970 to 1986:** the number of fatalities decreased and reached its lowest in 1986. At that time, the number of fatalities per million population in the former Czechoslovakia was comparable with the most advanced European countries. Official assessment by UNECE rated Czechoslovakia as one of the best countries regarding the development in number of road fatalities. This good performance was explained by the following factors:

- Introduction of first speed limits for rural roads on 1 July 1979 (passenger cars 90 km/h, heavy vehicles 70 km/h, motorcycles 80 km/h).
- Implementation of the regulation of the Federal Ministry of Interior no 101/1981 Coll., on suspending driving licences of drivers not able to pay a fine for their road traffic offence. The regulation, which came into effect on 1 January 1982, contributed significantly to road safety improvement (this regulation, however, is no longer effective).
- Intensive development of motorway network started at the end of the 1960s (in 1980, opening of a motorway between Prague and Brno).

- Faster development and modernization of vehicle fleet.

**1986-1996**, the number of road fatalities started to increase slightly after 1986 and more rapidly after 1989, with a peak in 1994. This can be explained by the fast increase in motorisation and a false understanding of “new freedom”.

**1997-today:** The number of fatalities has decreased. The first significant impulse was the speed limit reduction in urban areas to 50 km/h on 15 October 1997. Later, mandatory daytime running lights in the winter season and priority of pedestrians at marked pedestrian crossings were introduced on 1 January 2001. This trend was further accelerated at the end of 2003, when, in connection with developing the National Road Safety Strategy, the work of the Police was intensified and greater initiatives were carried out to improve road environment at the local level.

## **B. Current state of affairs and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

#### *B.1.1. Strategies to decrease risk of crashes:*

|  |   |
|--|---|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>• Automatic speed cameras.</li> <li>• Section speed control (two pilots in Prague).</li> </ul>   |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>• The speed limit of 50 km/h in urban areas was introduced in 1997, but there are a lot of incentives at local level for these to be reduced to 30km/zones</li> </ul>  |
| New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs                                      | <ul style="list-style-type: none"> <li>• Discussed in Parliament and awaiting approval.</li> </ul>  |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>• Many intersections have been changed into roundabouts, including several outside built-up area.</li> <li>• Increasing speed of new motorway construction.</li> <li>• Those and further improvements are strongly limited by available funding.</li> </ul>  |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>• No, but discussed in Parliament and awaiting approval.</li> </ul>  |
| Graduated Licensing for novice drivers   | <ul style="list-style-type: none"> <li>• No, but there is ongoing discussion to do that in the future.</li> </ul>   |
| Education and information programmes   | <ul style="list-style-type: none"> <li>• Safe way to school project started as pilot in 2004, also Dutch programme Road Show – Action started in 2004, further new programmes on child road safety education are under research and pilot testing.</li> <li>• Much better oriented campaigns, like Speed kills, EuroBob and Euchires, started as well.</li> <li>• High importance is given to increasing safety in built-up areas.</li> <li>• Generally there is much more space given to road safety issues in all media.</li> </ul> |
| Regulation on vehicle inspection   | <ul style="list-style-type: none"> <li>• No</li> </ul>  |
| Regulation on active vehicle safety  | <ul style="list-style-type: none"> <li>• Implementation of the EU regulations.</li> </ul>   |



|           |  |
|-----------|--|
| equipment |  |
|-----------|--|

Note: There are no specific targets for different measures. There is only the National Road Safety Strategy target to cut the fatalities in 2010 by 50%, comparing with the data of 2002

*B.1.2. Strategies to decrease risk of injury:*

|  |  |
|--|--|
| Safety equipment: enforcement of seatbelt wearing/ helmet use  | <ul style="list-style-type: none"> <li>No, but the Police give importance to the wearing of seatbelts.</li> </ul>  |
| Emergency services   | <ul style="list-style-type: none"> <li>Strategies are implemented according to needs of the emergency services.</li> </ul>   |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>New technical regulation, e.g. guidelines for redesign of through-passes, were introduced during this period.</li> </ul>  |
| Other road safety strategy   | <ul style="list-style-type: none"> <li>National Road Safety Strategy was approved by the Czech Government in April 2004.</li> <li>This includes: 50% reduction fatalities in 2010 compared to 2002.</li> </ul> |

**B.2. National Diagnosis in key safety areas**

*Road users*

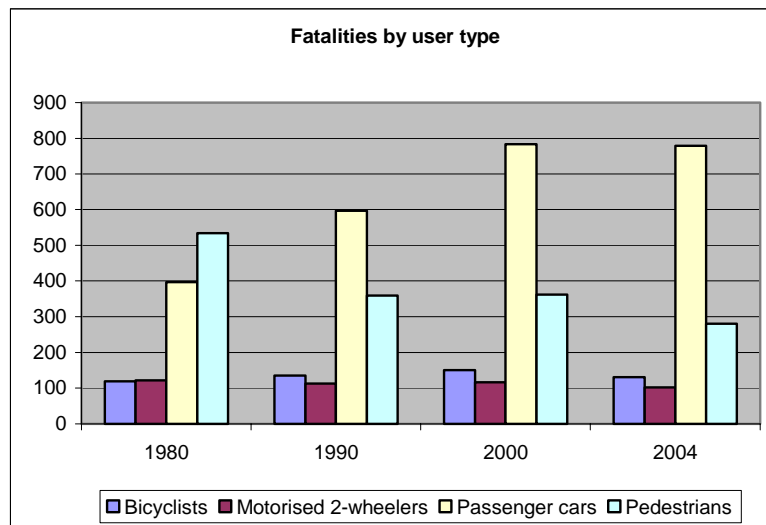
The number of *bicyclists* killed in the last 10 years is more or less stable (although there was a decrease of 18% in 2004 compared with 2003).

The number of killed *motorised 2-wheeler drivers* in the last 10 years has increased (+36% in 2004 compared with 1994, but the numbers are small).

The number of killed *passenger cars occupants* in last 10 years has decreased slowly (-9% in 2004 compared with 1994).

The number of killed *pedestrians* in the last 10 years has significantly decreased (-44% in 2004 compared with 1994).

### Evolution in fatalities by road user type



### Age groups

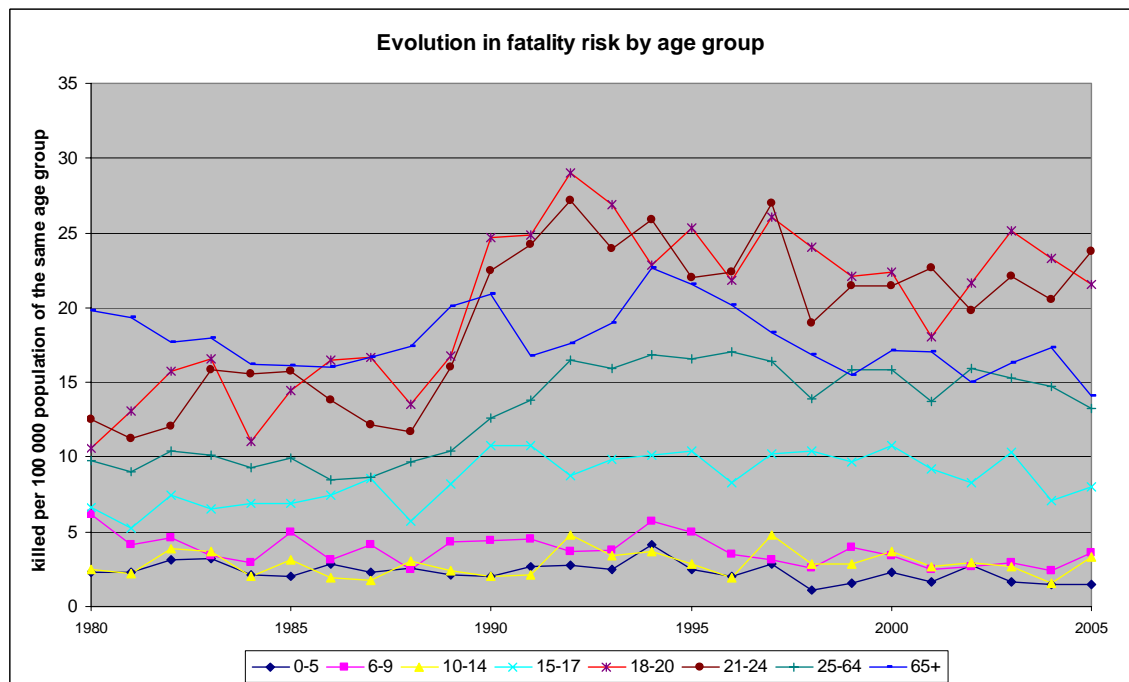
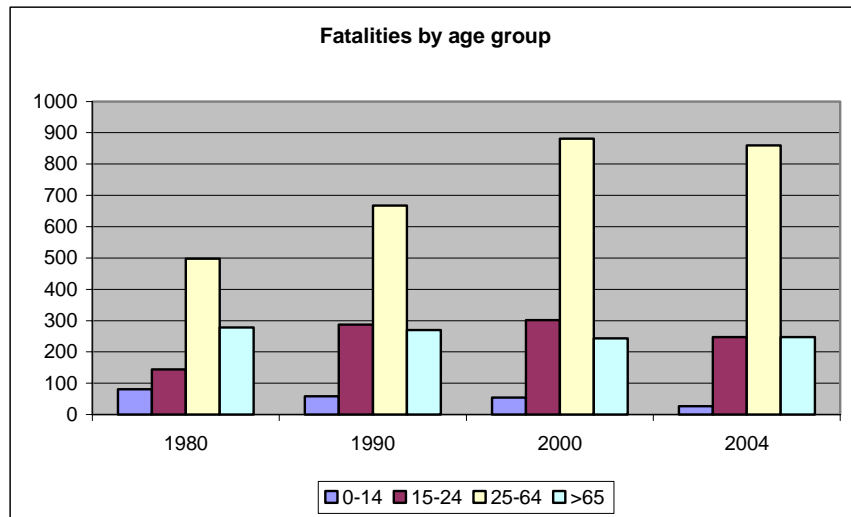
The number of young people (0-14) killed over the past 10 years has significantly decreased (-70% in 2004 compared with 1994, but the numbers are small).

The number of people killed in the 15-24 years age group over the past 10 years is also decreasing (-26% in 2004 compared with 1994).

The number of people killed in the 25-64 years age group in the last 10 years is slowly decreasing (-4% in 2004 compared with 1994).

The number of people killed over 65 years of age in the last 10 years is also decreasing (-19% in 2004 compared with 1994, but increased by 17% in 2004 compared with 2002).

### Evolution in fatalities by age group



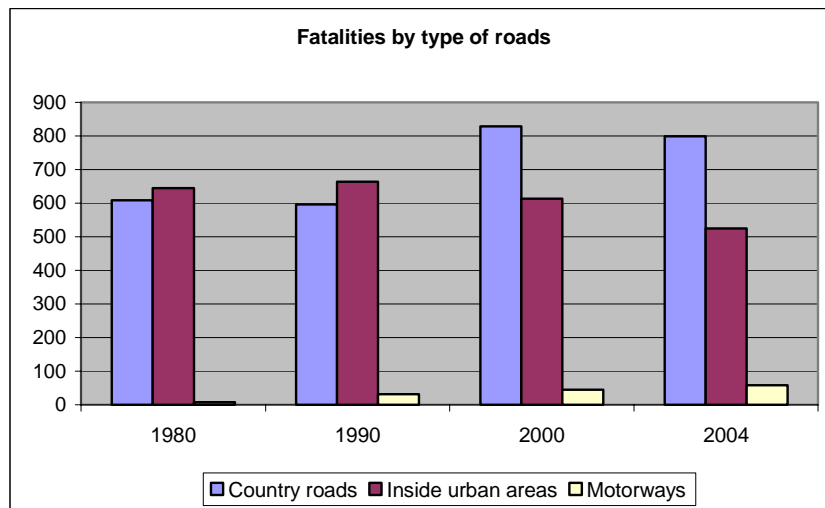
### Type of road / location

The number of people killed on country roads over the past 10 years has remained stable.

The number of people killed in urban areas over the past 10 years has significantly decreased (-33% in 2004 compared with 1994).

The number of people killed on motorways over the past 10 years has increased (+26% in 2004 compared with 1994, but the numbers are small).

**Evolution in fatalities by type of road**



### *Speed*

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.**

|  | 1980  | 1994          | 2000          | 2003          |
|--|---|---------------|---------------|---------------|
| No. of speeding citations  | Not available   | Not available | Not available | Not available |
| % of fatal crashes where speed is a causation factor   | 33  | 39            | 40            | 38            |
| % of drivers over the posted speed limit in :<br>- urban areas<br>- rural roads<br>- motorways | Not available as yet. First data to be collected in 2005. |               |               |               |

### *Drink driving*

There is a zero BAC limit in the Czech Republic. When the police come to the scene of an accident, all the persons involved are checked for BAC. If the BAC level of any of the persons is involved is above 0.0 g/l, the accident is classified as alcohol-related. Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor.

|  | 1980          | 1994          | 2000          | 2003          |
|--|---------------|---------------|---------------|---------------|
| Number of citations                            | Not available | Not available | Not available | Not available |
| % of fatal accidents where alcohol is a factor | 10            | 11            | 7             | 5             |

### *Seatbelt and helmet wearing*

Seatbelt wearing is compulsory on both front and rear sets. However, until recently the level of enforcement was very low. The situation has improved since the last two years. Evolution in seatbelt wearing rate.

|                      | 2000 | 2003 | 2005 |
|----------------------|------|------|------|
| <i>General</i>       | 46%  | 56%  |      |
| <i>Rear Seat</i>     | 7%   | 13%  |      |
| <i>Front Seats</i>   | 63%  | 61%  |      |
| Motorway – driver    | 81%  | 88%  |      |
| Rural roads – driver | 62%  | 65%  |      |
| Urban areas –driver  | 46%  | 47%  |      |

Helmets are compulsory for all motorised 2-wheelers.

Safety helmets were made mandatory for young cyclists (up to 15 years) in 2004, and no cyclists of this age were killed in that year.

### ***B.3. Major road safety problems today***

1. Speeding.
2. Safety belts and child restraint devices in general.
3. Safety in urban areas.
4. Safety on railway crossings.
5. Visibility of vulnerable road users.
6. Safety on motorways.
7. Drinking and driving of young drivers.

### ***B.4. Forthcoming road safety initiatives to address these problems***

- New methods of enforcement, Safe City Project – Introduction of the penalty point system – Road Safety Campaigns
- Increase of enforcement – Road Safety Campaigns – EU Project EUCHIREs – New Legislation
- New Project Safe City as complex co-operation of road safety partners, including education, enforcement and traffic engineering
- Introduction of red light cameras, Safe City Project – Tougher penalties and better enforcement

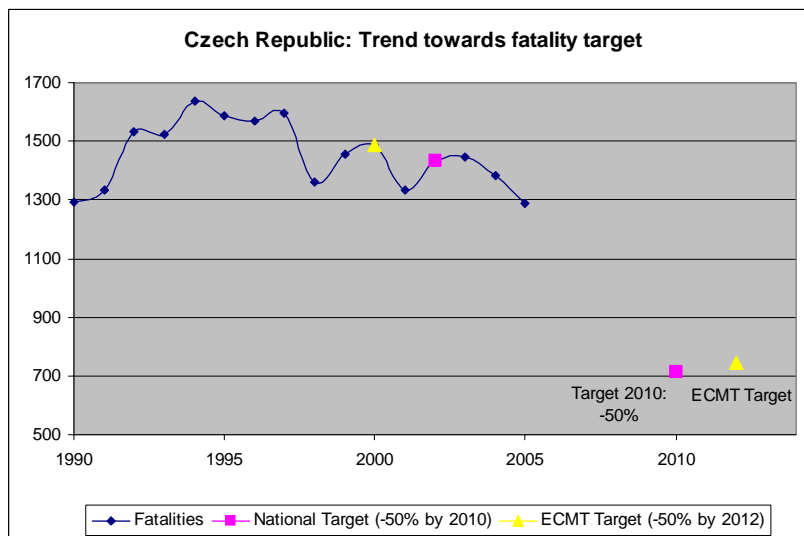
- Road Safety Campaigns.
- Traffic engineering solutions -- Better enforcement -- Road Safety Campaigns.
- New legislation -- Better enforcement -- Road Safety Campaigns – Road Show – the Action Project.

### C. Road safety targets

There is only a general target for the reduction of road fatalities by 50% by 2010. No other specific target.

**General road safety targets**

| Type       | Targets<br>(in % or absolute figures) | Base year | Target year | Base year figure | Current results (figure in 2004) | Intermediate targets ? |
|------------|---------------------------------------|-----------|-------------|------------------|----------------------------------|------------------------|
| Fatalities | -50%                                  | 2002      | 2010        | 1 431            | 1 382                            | NONE                   |



#### D. Success story cards

##### *Success story from the Czech Republic*

###### **Mandatory safety helmets for young cyclists**

Introduction of mandatory wearing of **safety helmets for young cyclists** up to 15 years led to no fatalities of children of this age in 2004.

###### **Mandatory use of daytime running lights during Winter in 2001**

The Introduction in 2001 of mandatory use of daytime running lights led to significantly positive development in accident records in winter time compared to the summer time in period 2001 – 2004.

As of July 2006, driving lighting will be mandatory during all seasons.

##### *Less recommended story card from Czech Republic*

###### **Increase of speed limit**

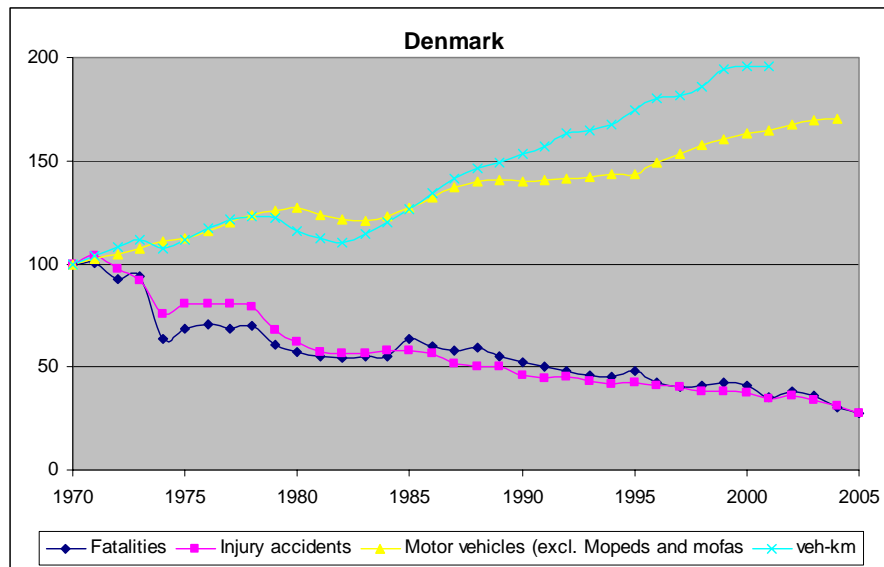
**Speed limit was increased on** motorways from 110 km/h to 130 km/h in 199. This led to a 25% increase in fatalities.

## DENMARK

### A. General trend in road safety

#### Key road safety data for 2005

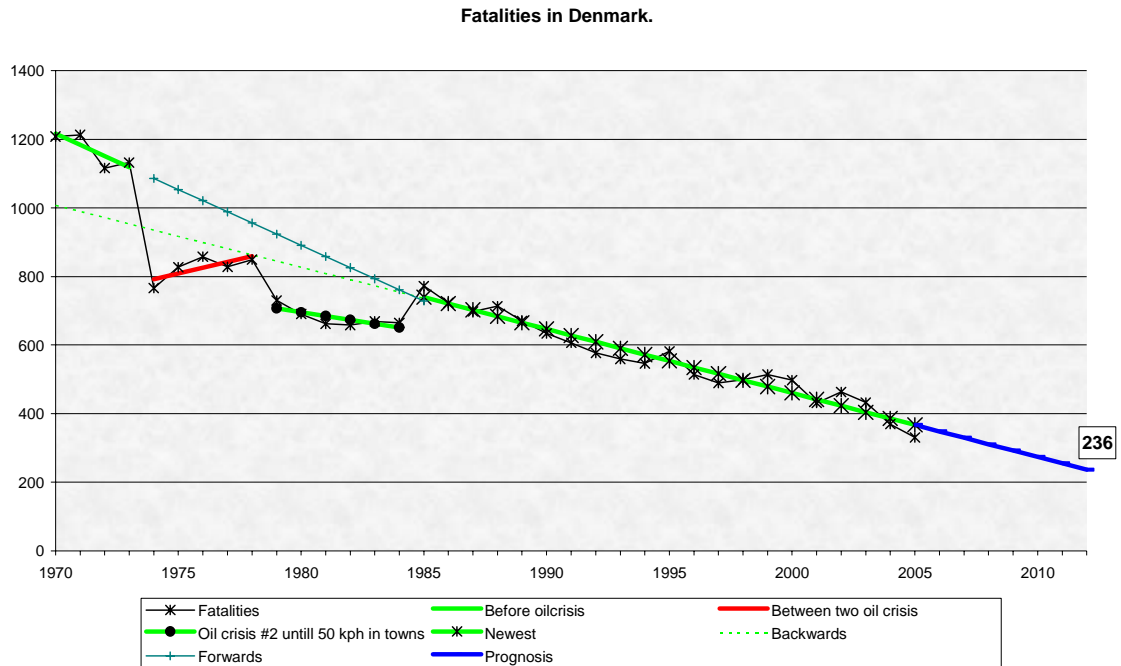
- 331 road fatalities (369 in 2004)
- 5 412 injury accidents (6 209 in 2004)
- 6.1 killed per 100 000 inhabitants
- Around 370 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



It is evident, when considering the evolution in the number of road fatalities in the period 1970-2005, that the oil crisis and the introduction of speed limits during the seventies had a huge impact. Both these events may explain the dramatic drop in road fatalities in 1974 and 1979.



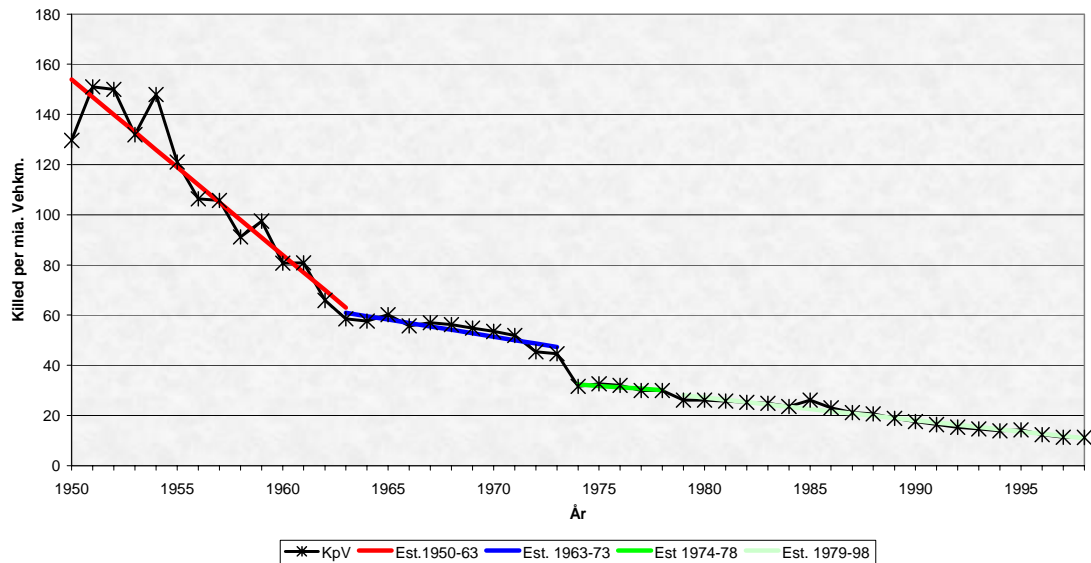
The number of fatalities in 2005 dropped by 10% compared to 2004.



Looking at the number of killed per billion veh-km (KpV), it is clear that much of the drop during the seventies can be explained by a reduction in the volume of traffic.

Tendency lines in the figure below show a big decrease between 1950 and 1963 – 7,0 per year. During the sixties the decline is lower, at 1.4 per year. In the seventies (from 1974 to 1978) it drops to 0.6 per year. From 1979, the slope is a very constant 0.9 per year.

Killed per mia. Vehkm (KpV) in the years 1950-1998 in Denmark.  
KpV drops: 7,0 per year in 1950-63, 1,4 in the years 1963-73, 0,6 in the years 1974-78 and 0,9 in the years 1979-98.



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |   |
|--|---|
| Improved speed compliance/enforcement  | <ul style="list-style-type: none"> <li>From 2000 automatic speed checks have been used to enforce speed limits. From 2003 in all police districts.</li> <li>From June 2004, the level for losing driving license has been lowered (from 70 per cent above the speed limit to 60 per cent).</li> </ul> |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>From April 2004 the general speed limit on motorways was changed from 110 km/h to 130 km/h. About 50 per cent of the network has now a posted limit with 110 km/h.</li> </ul>  |
| New Regulation and enforcement related to :<br>Drink driving, drunk pedestrians, driving under the influence of drugs                                  | <ul style="list-style-type: none"> <li>March 2002. Drivers who lose their license for drink-driving are forced to pass an education programme.</li> </ul>   |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>Construction of many roundabouts.</li> </ul>   |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>Enforcement of traffic rules by the local police and the national traffic police.</li> </ul>   |

|   |  |
|---|--|
| Graduated Licensing for novice drivers        | <ul style="list-style-type: none"> <li>March 2002. Seriously violations of the traffic code results in loss of driving license for young drivers. If so they are forced to pass an examination before getting their driving license back.</li> </ul>   |
| Education and information programmes          | <ul style="list-style-type: none"> <li>Children are educated (they are offered a membership of a traffic learning club in The Danish Road Safety Council) before school-age and also in schools.</li> <li>The Danish Road Safety Council make traffic campaigns and information programmes, e.g. use of safety belt</li> </ul>   |
| Regulation on vehicle inspection              | <ul style="list-style-type: none"> <li>Cars older than 4 years are inspected every second year.</li> </ul>   |
| Regulation on active vehicle safety equipment | <ul style="list-style-type: none"> <li>The installation of safety devices (e.g. airbags) in cars is encouraged by a lower tax.</li> </ul>  |
| Others  | <ul style="list-style-type: none"> <li>Black spot treatment, also on a local basis.</li> <li>Traffic safety revision of new road projects.</li> <li>A penalty point system was introduced in September 2005. The result was a drop in mean speeds on several road types.</li> <li>A "Speed Barometer" started in November 2005 with data for each month from 2003 and onwards for 7 road types. The Speed Barometer is available on a website and is updated within a week after an actual month.</li> </ul> |

### *B.1.2. Strategies to decrease risk of injury :*

|  |  |
|--|--|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>Focus on the enforcement is done by the traffic police several weeks every year.</li> </ul>                               |
| Emergency services   | <ul style="list-style-type: none"> <li></li> </ul>   |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>Median barriers are not in use in Denmark but guardrails in the roadside are used where needed.</li> </ul>                |
| Others   | <ul style="list-style-type: none"> <li>September 2005: introduction of a penalty point system to encourage drivers and passengers to wear a seatbelt.</li> </ul> |

## **B.2. National Diagnosis in key safety areas**

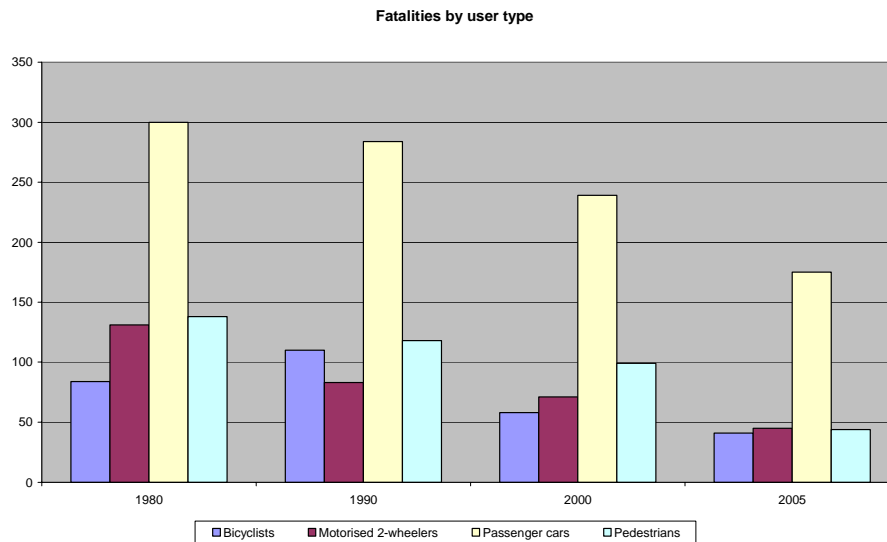
### *Road users*

From 1980 to 2005 the number of fatalities decreased by 52 %, with the following reduction by road user:

- Pedestrians - 68 %
- Bicycles - 51 %
- Mopeds and motorcycles - 66 %
- Passenger cars - 42 %

The explanation for the reduction in killed pedestrians is not very clear. It should, however, be noted that the sale of new cars has increased over the past few years.

### Evolution in fatalities by road user type

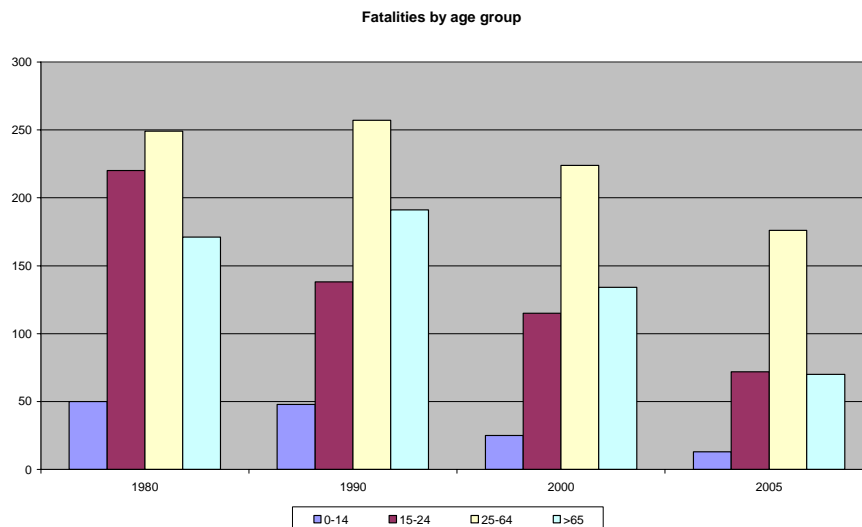


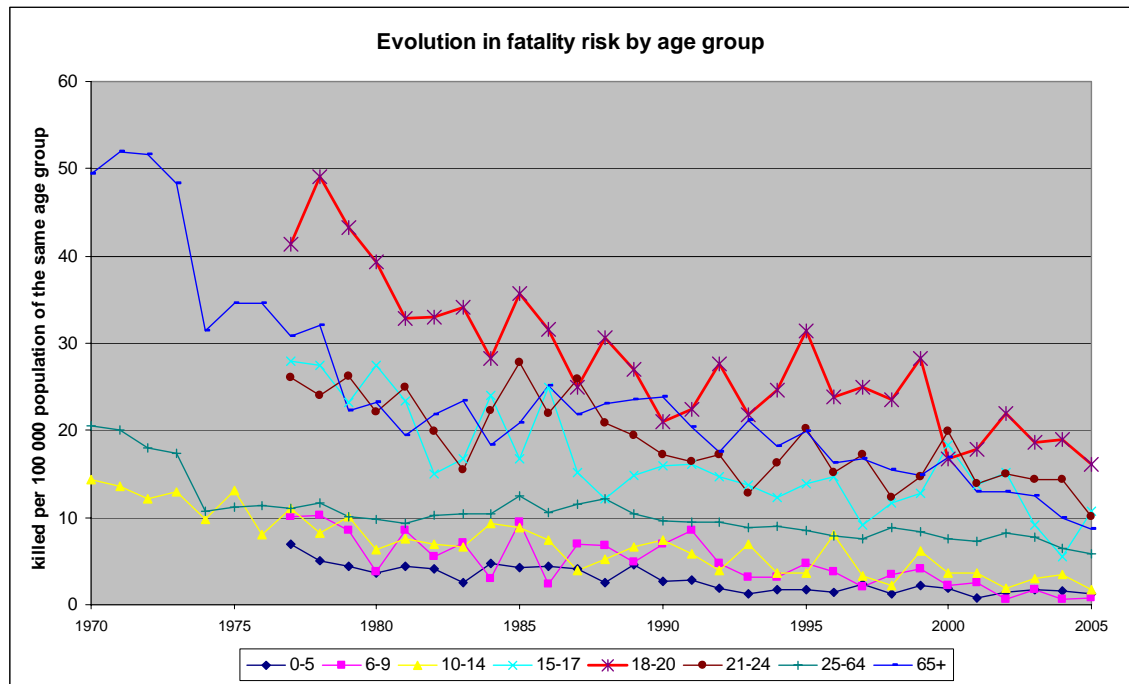
### Age groups

The largest reduction in the number of fatalities can be seen for the age group 0 – 14 years (74% reduction between 1980 and 2005). The number of young people killed in the 15 – 24 year group decreased by 67 % during the same period. The number of fatalities among the 25-64 year olds was reduced by 29 % only, and the number of fatalities among persons aged over 65 decreased by 59%.

For further analysis, these figures should be divided by the numbers of persons for each age group.

### Evolution in fatalities by age group

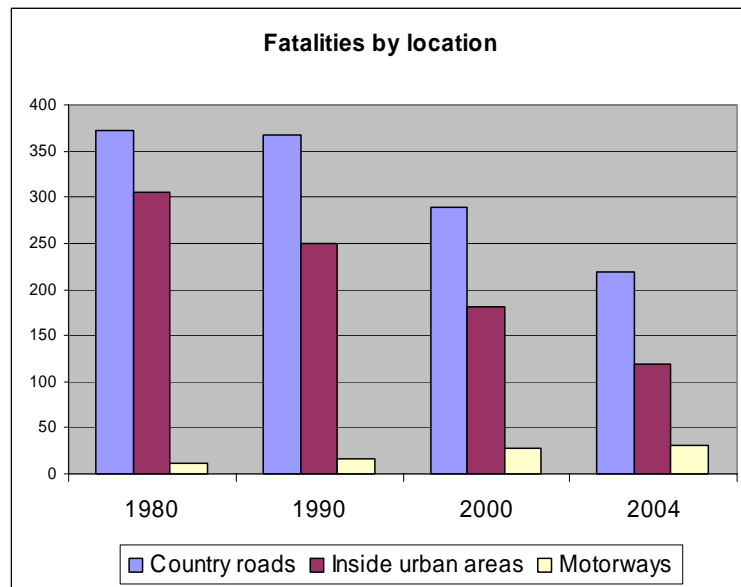




#### *Type of road / location*

Between 1980 and 2005, several new motorways were constructed, which explains the increase in the number of motorway fatalities (although this does not mean that motorways have become less safe). The reduction in fatalities is more pronounced in urban areas (- 69 %) than on country roads (-47%). This may be the result of changes in traffic patterns, or the introduction of automatic speed controls, which began in urban areas.

### Evolution in fatalities by type of road



### Speed

The Road Directorate is developing a speed-index in order to monitor the mean speeds for different road types.

|  | 1980 | 1990 | 2000 | 2003  |
|--|------|------|------|---|
| <b>Nb of speeding citations</b>  |      |      |      | • Not available   |
| <b>% of fatal crashes where speed is a causation factor</b>  |      |      |      |   |
| <b>% of drivers over the posted speed limit in :</b> <ul style="list-style-type: none"> <li>- urban areas</li> <li>- rural roads</li> <li>- motorways</li> </ul> |      |      |      | <b>2004:</b> <ul style="list-style-type: none"> <li>• 54.6% (urban)</li> <li>• 60.6% (rural)</li> <li>• 55.9% on 110 Km/h motorways</li> <li>• 18.2% on 130 km/h motorways</li> </ul> |

### Drink driving

The maximum authorised blood alcohol content is 0.5 g/l for drivers of a motorised vehicle where a driver licence is required (including professional drivers). There is no maximum authorised BAC for cyclists, moped drivers and pedestrians.

The penalty for novice drivers (driving license obtained less than two years previously) is higher.

| Citations in the year                         | 1980                      | 1990        | 2000        | 2004        |
|---|---------------------------|-------------|-------------|-------------|
| Alcohol                                       | 20 094                    | 18 012      | 15 335      | 16 303      |
| Killed persons in accidents involving alcohol | 246<br>36 % of all killed | 154<br>24 % | 110<br>22 % | 106<br>29 % |

While it is difficult to assess whether alcohol is a factor, it is noted that the blood/alcohol level in at least one driver or pedestrian involved in a vehicle accident is above the legal limit.

#### *Seatbelt and helmet wearing*

##### Evolution in seatbelt wearing rate

|                             | 1980 | 1990 | 2000 | 2003 | 2005 |
|-----------------------------|------|------|------|------|------|
| <b>General</b>              |      |      |      |      |      |
| <b>Rear Seat</b>            |      |      |      |      |      |
| <b>Front Seats</b>          |      |      |      |      |      |
| <b>Motorway – driver</b>    | 90%  |      |      | 88%  | 92%  |
| <b>Rural roads – driver</b> |      |      |      | 89%  | 91%  |
| <b>Urban areas –driver</b>  |      |      |      | 81%  | 83%  |

#### **B.3. Major road safety problems today**

1. Accidents involving speeding
2. Accidents involving drink-driving
3. Accidents involving cyclists
4. Accidents involving road junctions

In addition to these key issues, it should be noted that there is an increasing number of young drivers who require specific attention, while the growing proportion of older drivers, too, need consideration. Another concern is the increase in people driving mopeds.

#### **B.4. Forthcoming road safety initiatives to address these problems**

In the action plan, 62 initiatives are proposed. The cost effectiveness of some of these has been calculated and several examples are given below. Of the 62 initiatives, 15 have already been implemented in 2005. The Traffic Safety Action Plan will be revised in 2006 and new initiatives will be suggested.

**For speeding**, the most cost effective initiatives are:

- Speed limiting device in cars. Estimated benefit: 36 less fatalities per year
- Stricter punishment for speeding. Estimated benefit: 12 less fatalities per year
- Local speed limits at road junctions and stop signs. Estimated benefit: 12 less fatalities per year.

**For drink-driving** the most cost effective initiatives are campaign activities and enforcement. The estimated benefit is 31 less killed per year.

**Use of cyclist helmets** could reduce the number of killed cyclists by 4 per year.

**Accidents at junctions** 9 initiatives on this have been calculated. The most cost effective is: road safety audit, with the benefit being an estimated reduction of 46 fatalities per year.

#### **C. Road safety targets**

A target has been set for the total number of killed and seriously injured persons but, in practice, there are two sets of figures.

The number of seriously injured persons in 2004 was 3 561.

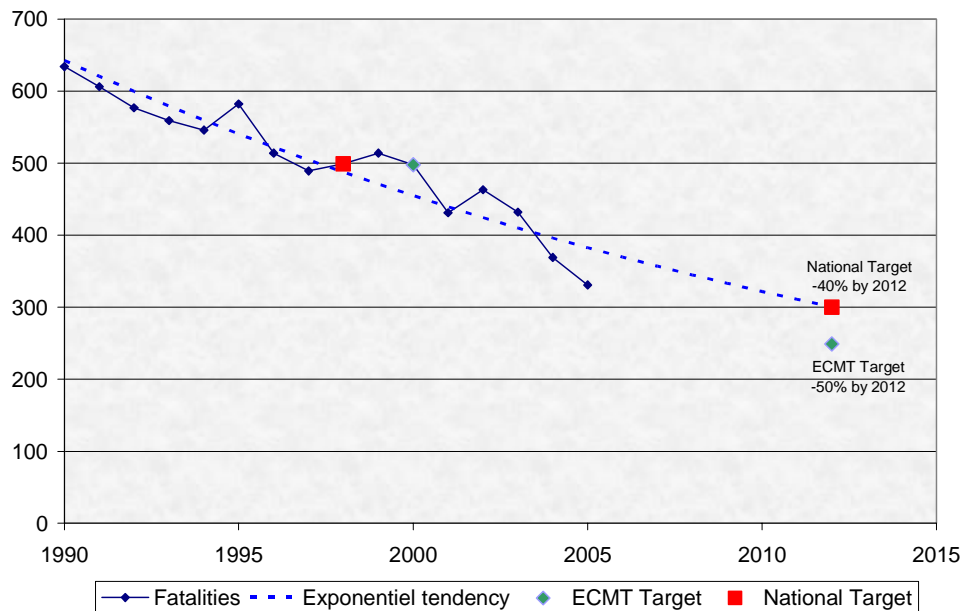
**Road Safety Target in Denmark**

| Type                         | Targets<br>(in % or absolute<br>figures) | Base year | Target<br>year | Base year<br>figure | Current<br>results in<br>2005 | Intermediate<br>targets ? |
|------------------------------|--|-----------|----------------|---------------------|-------------------------------|---------------------------|
| Fatalities                   | -40%                                     | 1998      | 2012           | 499                 | 331                           | No                        |
| Seriously injured<br>persons | -40%                                     | 1998      | 2012           | 4071                | 3072                          | No                        |



## Current trend towards targets

Denmark: Fatalities and targets.



## D. Success story cards

### Success story from Denmark

#### Reductions in the number of fatalities in 2004 and 2005

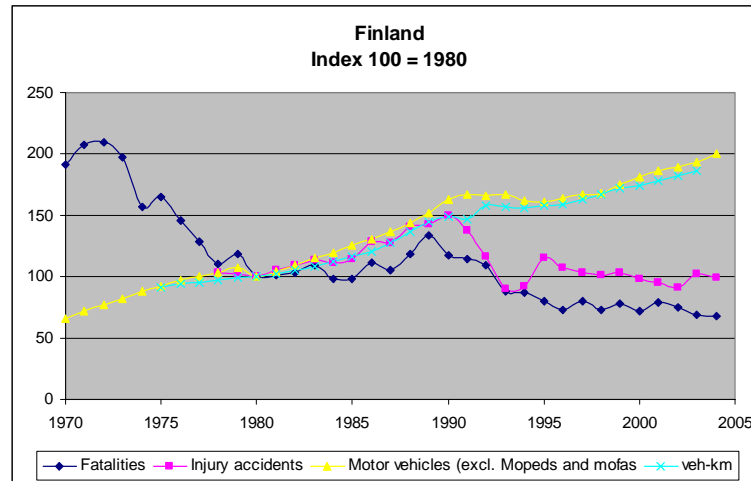
In 2004 and 2005, the number of road fatalities dropped by 15% and 10% respectively compared to 2003 and 2004. There is no clear explanation for this. Perhaps this was a consequence of the increase in people driving newer cars - with their passive safety equipment – instead of walking and bicycling. The introduction of a penalty point system was followed by lower speeds and recently the newspapers have focused more on traffic safety than in the past.

## FINLAND

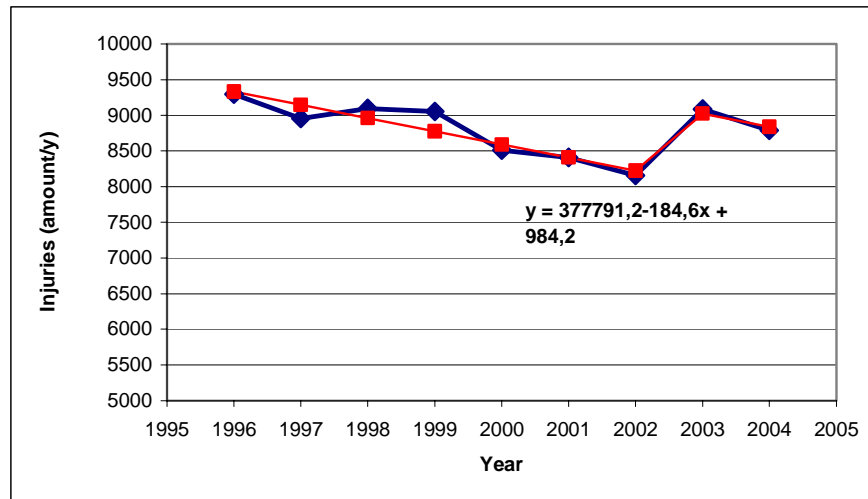
### A. General trend in road safety

#### Key road safety data for 2004

- 375 road fatalities (379 in 2003)
- 6 767 injury accidents (6 907 in 2003)
- 7.3 fatalities per 100 000 inhabitants
- Around 500 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



Due to changes made in statistical processes, *e.g.* in 2003, the injury figures below have a clear change of level. (Blue = data, red = model.)



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |   |
|--|---|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>Yes, reports in 2003-2004; for the time being: the resources of enforcement have been too low.</li> </ul>  |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>Yes, in 2003-2005. New winter time speed limits. Difficulties at political level regarding acceptance.</li> </ul>  |
| New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs                                      | <ul style="list-style-type: none"> <li>New law for stricter bans, including minimums for driving licence sanctions.</li> <li>New law: It is a doctor's duty to inform police of someone's inability to drive.</li> <li>Law on alcohol-locks is expected to come into force by the end of 2005.</li> </ul> |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>These have been used by our road administration.</li> </ul> <p><i>The road administration has quantitative yearly targets and these activities are included as measures that make it possible to reach the targets.</i></p>  |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>Ministry of Interiors (Police) has its quantitative enforcement targets. Effectiveness has been evaluated in 2004.</li> </ul>  |
| Graduated Licensing for novice drivers   | <ul style="list-style-type: none"> <li>The situation was reviewed in 2002-2004 and specified further activities were required.</li> </ul>   |
| Education and information programmes   | <ul style="list-style-type: none"> <li>Continuous activities included in programmes.</li> </ul>   |
| Regulation on vehicle inspection   | <ul style="list-style-type: none"> <li>Continuous activities included in programmes.</li> </ul>   |
| Regulation on active vehicle safety equipment  | <ul style="list-style-type: none"> <li>Continuous activities included in programmes.</li> </ul>   |

All these measures are included as countermeasures and serve the achievement of the final targets.

### B.1.2. Strategies to decrease risk of injury:

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>• Implementation of new safety belt directive.</li> <li>• New law on helmet use for cyclist (2003).</li> </ul>  |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• Working with the EU in eCALL activities, and introduction of new system in 2006 following pilot.</li> </ul>   |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• Finland has been piloting and analysing the activities. They are included in the programmes. Main obstacle is restricted resources on safety improvements.</li> </ul> |

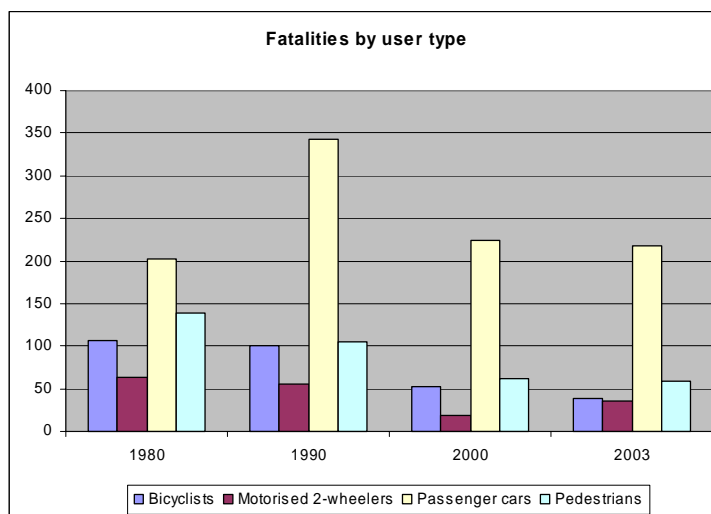
All these measures are included as countermeasures and serve the achievement of the final targets.

## B.2. National Diagnosis in key safety areas

### Road users

The road safety of *bicyclists* and *pedestrians* has considerably improved, while the number of motorcyclists killed has increased recently. The number of motorbike accidents with severe consequences has been growing, although not yet at an alarming level. Accidents involving trucks, especially trailer trucks, account for about 25 % of all fatalities. This figure has remained quite stable during recent years with no clear improvement. While trailer accidents are a cause for concern, especially during the winter months when roads are slippery, the main problems still relate to passenger cars.

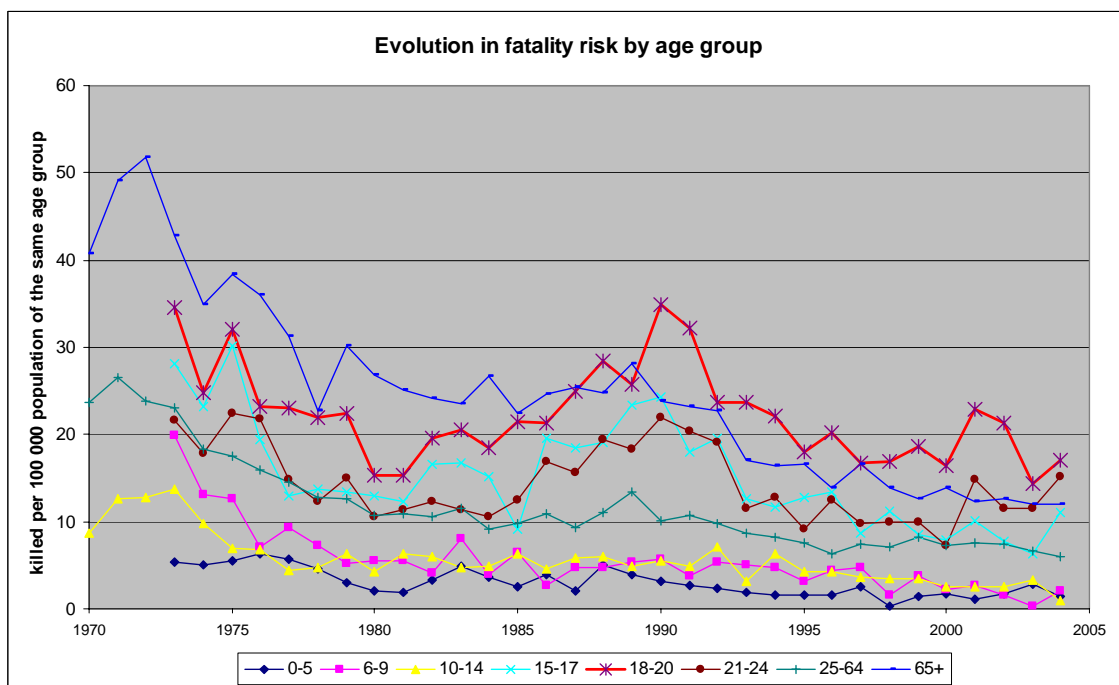
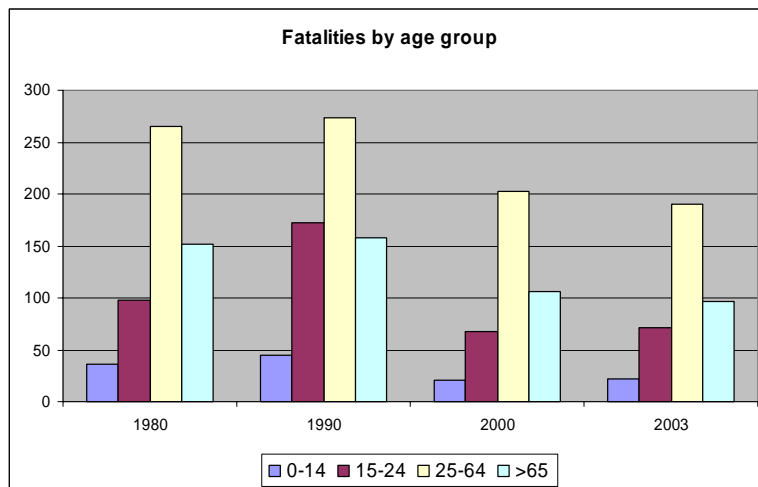
Evolution in fatalities by road user type



### Age groups

There has been general improvement for all age groups, but young drivers remain a major concern, with most accident and risk problems involving young male drivers.

### Evolution in fatalities by age group

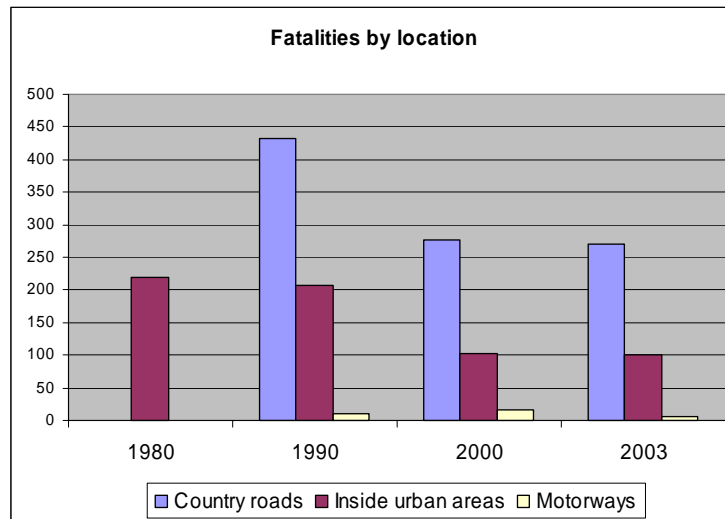


### Type of road / location

Most fatalities are due to frontal crashes which occur on the main roads outside built-up areas. Finland has only about 650 km of motorways, and they account for a minor share of accidents.

High risk roads are usually those with one-way carriageways, no central fencing, and 80-100 km/h speed limits.

### Evolution in fatalities by type of road



### Speed

While a high proportion of drivers go above the speed limit, the percentage of drivers speeding 10km/h above the limit is relatively small, *e.g.* 17% of drivers on 80 km/h rural roads and 6 % of drivers on 100 km/h rural roads.

### Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.

|  | 1980 | 1994 | 2000   | 2003   |
|--|------|------|--|--|
| <i>No. of speeding citations</i>   |      |      |  | 174 000 (0.05 per licenced driver)                                       |
| <i>% of fatal crashes where speed is a causation factor</i>  |      |      |  |  |
| <i>% of drivers over the posted speed limit in :<br/>urban areas<br/>rural roads<br/>- motorways</i> |      |      | <i>Rural:</i><br>80 km/h: 66 %<br>100 km/h: 39.8 %<br>mw 120 km/h: 32.3% | <i>Rural:</i><br>80 km/h: 66 %<br>100 km/h: 39,8 %<br>mw 120 km/h: 32.3% |

### Drink driving

About 0.7% of drivers have consumed alcohol and around 0.16% of drivers have a BAC above the 0.5 g/l limit.

While the percentage of drivers under the influence of alcohol in traffic has decreased since reaching its highest level (1.02 %/0.21 %) in 1999, the proportion of drivers with high levels of alcohol (BAC>1.20 g/l) has increased slightly. One possible reason for the increase is the reduction in the price of alcohol, due to harmonisation, in 2003 with neighbouring countries. This is expected to have repercussions for accident levels.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1994 | 2000       | 2003       |
|--|------|------|------------|------------|
| Number of citations                            |      |      | 22 783     | 26 977     |
| % of fatal accidents where alcohol is a factor |      |      | About 25 % | About 25 % |

*Seatbelt and helmet wearing*

The *Seatbelt wearing* rate is about 92% for the front seats of passenger cars. This percentage has remained stable since the beginning of the 1990s. However the rate is a bit lower in built-up areas and for rear seats.

Helmets are compulsory for all motorised two-wheelers.

While it has been mandatory to wear a helmet while cycling since 2003, this is not enforced. The *bicycle helmet* wearing rate was 25% in 2004 and 29% in 2005. Most small children wear helmets, but teenagers and elderly people do not. The wearing rate in the Helsinki area is about 50%, but the figure in the northern parts of Finland is much lower.

**Evolution in seatbelt wearing rate**

|                      | 1980 | 1994 | 2000 | 2003 |
|----------------------|------|------|------|------|
| Rural roads – driver |      | 90%  | 89%  | 91%  |
| Urban areas –driver  |      |      | 80%  | 83%  |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Major violations of road safety (Police) in 2000: 2 435. In 2004: 4 374.

*Other factors*

**Automatic enforcement** will be further deployed. An additional 1 500 km of main roads will have automated enforcement and many new mobile traffic enforcement units by 2009.

**(Engineering)** There are major problems with *frontal accidents* on undivided main roads. A strong improvement programme is in the pipeline which would greatly reduce the occurrence of frontal accidents, but it will take many years until resources are available to implement it fully. The availability of proper funding is therefore one of the major obstacles.

**(Education)** Finland has been focusing on lifelong education through special groups of the young and the adults. Stronger input is expected from education and information activities due to attitudinal and motivation problems. It is also anticipated that new technologies will provide fresh possibilities if used properly.

**B.3. Major road safety problems today**

1. Fatal frontal accidents, introduction of safety barriers and separation, enforcement.
2. Drink and driving, focusing on enforcement, alcohol-locks, etc.

3. Young drivers: new directives to driver training, motivation and attitudes.
4. Non-compliance of rules, *e.g.* speeding, use of safety devices.
5. Problems with professional transports.

#### **B.4. Forthcoming road safety initiatives to address these problems**

1. The introduction of a new programme of median barriers and separation of traffic. Intensified enforcement, more automatic enforcement; eCALL; new warning systems and services.
2. Better enforcement (more controls, and better focused timing of controls). Use of new technologies.
3. Renewals of driver training. Focused motivation and information activities. New legislation. Better traffic culture generally. Life-long learning and better education, starting very early in schools.
4. Intensified automatic enforcement with improved handling processes. Better campaigns and motivation. Use of driver support systems.
5. New ways to tackle tiredness. Sharing of responsibilities. Better truck technologies *e.g.* ESP. Reduced speed-level of speed-limiters. Improved roads with separation of traffic.

#### **C. Road safety targets**

The aim of the Road Safety Programme is to create the right conditions for continuous improvement of the transport system. The target is for no more than 100 traffic fatalities per year by about 2025. Achievement of this vision will be sought via a series of intermediate targets.

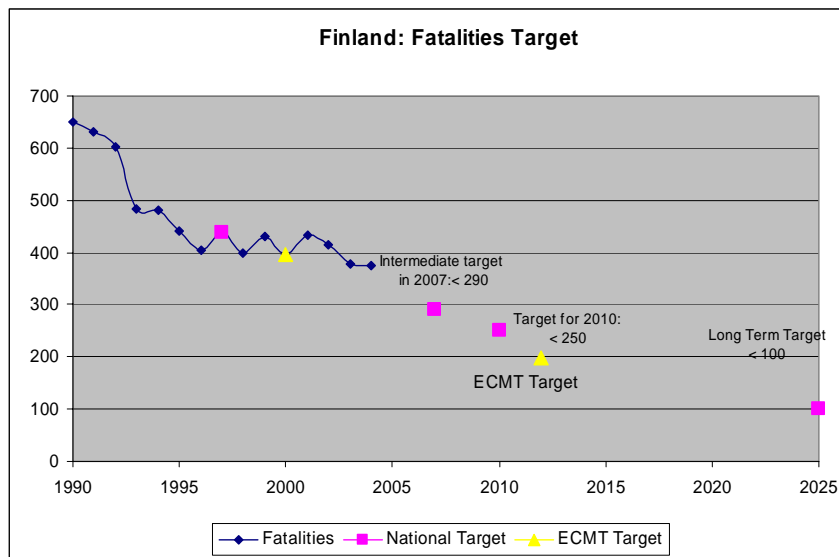
The target for year 2010 is to reduce the number of road traffic fatalities to below 250. There are no other official targets, *e.g.* for injuries etc.

The Finnish government has stated in its 2004-2007 programme that road safety activities will be intensified. The target now is to have fewer than 290 fatalities by 2007 and fewer than 250 fatalities by 2010.

**General road safety targets**

| Type  | Targets<br>(in % or absolute figures)   | Base year | Target year | Base year figure | Current results<br>(figure in 2004) | Intermediate targets ?               |
|---|---|-----------|-------------|------------------|-------------------------------------|--------------------------------------|
| Fatalities<br>Finland<br>Government<br>programme<br>2004-2007 | <i>less than 250 killed (43 %)</i><br><br><i>Long term target: less than 100 killed by 2025</i> | 1997      | 2010        | 438              | 374<br>(about -15 %)                | Yes:<br><290 by 2007<br>(i.e. -34% ) |





#### D. Success story cards

##### *Success story from Finland*

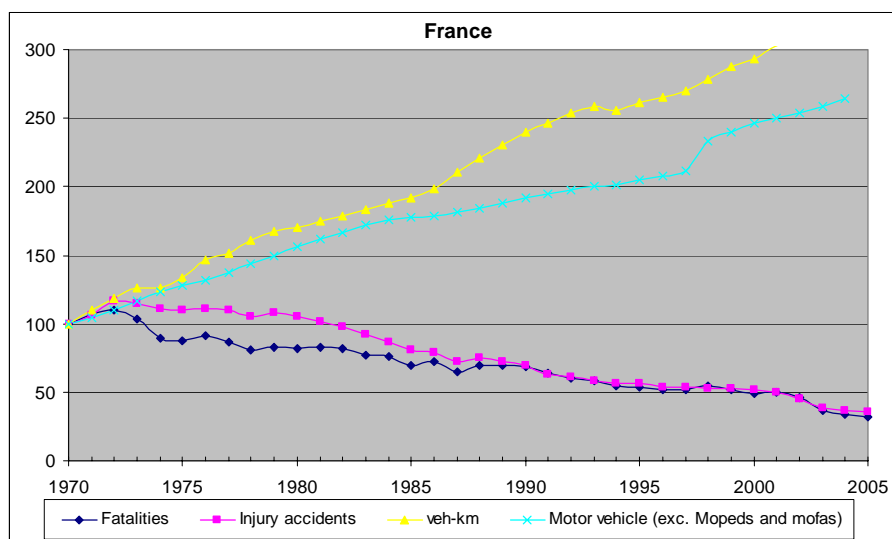
**Systematic targeted road safety work and programmes** introduced since the 1980s have proven to be a sustainable way to tackle the road safety problem.

## FRANCE

### A. General trend in road safety

#### Key road safety data for 2005

- 5 318 road fatalities in 2005 (5 530 in 2004)
- 84 525 injury accidents (85 390 in 2004)
- 8.7 fatalities per 100 000 inhabitants
- Around 570 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



### B. Current state of affairs and national diagnosis

#### B.1. Recent (after 2002) road safety initiatives

##### B.1.1. Strategies to decrease risk of crashes:

The French public administrative system is reputed to be very centralised and technocratic. This is incorrect, at least in the domain of French road safety policy. For instance, infra-national tiers of government (regions, départements and communes) have the possibility to plan and implement various road safety programmes without asking the permission of central government. Within the central government, the Délégation interministérielle à la sécurité routière (DISR) demonstrates quite limited powers when it comes to persuading, mobilising and managing public entities (national police for example) in order to set up and/or reach specific road safety targets.

Globally, the French policy making system in the field of road safety is characterised by a rather strong pluralism which renders cooperation and co-ordination between stake-holders slow and uneasy.

As a consequence, decision and implementation processes function mainly on an incremental mode of mutual adjustment between actors (step-by-step improvements are generally to be expected, but it works in the long term). Occasionally, however, a striving policy coalition can emerge and, under certain conditions, provoke a breakthrough. This is what happened in 2002. A review group of the Commissariat général du Plan had been accumulating expertise, since 2000, on how police forces could do more for road safety. When Jacques Chirac declared publicly, on the 14th July 2002, that road safety would be one of the three major priorities of his presidential mandate, he opened a window of opportunity for the review group who were able to work on an important new national public road safety policy with a strong law enforcement orientation. This gave birth, among other innovations, to the “dispositif de contrôle-sanction automatisé” (system of speed cameras connected to a unique infringement bureau, which issues and sends the infringement notices less than two days after their commission).

|  |   |
|--|---|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>• November 2003: Automatic Control Sanctions for Speed.</li> <li>• End 2005: 1 000 automatic cameras were operational.</li> <li>• To come: Automatic control-sanction for red-light running and reserve lanes</li> </ul>   |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>• No</li> </ul>  |
| New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs                                      | <ul style="list-style-type: none"> <li>• Increased penalties for 2003 law (driving under the influence of alcohol); systematic drug tests in case of death</li> <li>• Other more recent measure: 0.2g/l alcohol limit for bus drivers</li> </ul>  |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>• On the state road system: SURE initiative (2004)</li> <li>• Safety audits of road projects for the state owned network (2003): local initiatives.</li> </ul>   |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>• Global reinforcement of controls (e.g. seatbelt) (2003)]</li> </ul>  |
| Graduated Licensing for novice drivers   | <ul style="list-style-type: none"> <li>• Probationary licence: 6 months</li> </ul>  |
| Education and information programmes   | <ul style="list-style-type: none"> <li>• Attestation Scolaire de Sécurité Routière (School exam on road safety): it is compulsory to succeed the 2<sup>nd</sup> level before the driving licence exam.</li> <li>• Road safety exam mandatory to drive a moped.</li> </ul>                                   |
| Regulation on vehicle inspection   | <ul style="list-style-type: none"> <li>• Increase in the number of checkpoints]</li> </ul>  |
| Regulation on active vehicle safety equipment  | <ul style="list-style-type: none"> <li>• No change</li> </ul>   |
| Other  | <ul style="list-style-type: none"> <li>• Driving without a license is now a crime (law June 2003)</li> <li>• Registration of new mopeds (July 2004)]</li> <li>• National experiment with daytime running lights, with the possibility of a decree in September 2005 (but abandoned in June 2005)</li> </ul> |

### B.1.2. Strategies to decrease risk of injury:

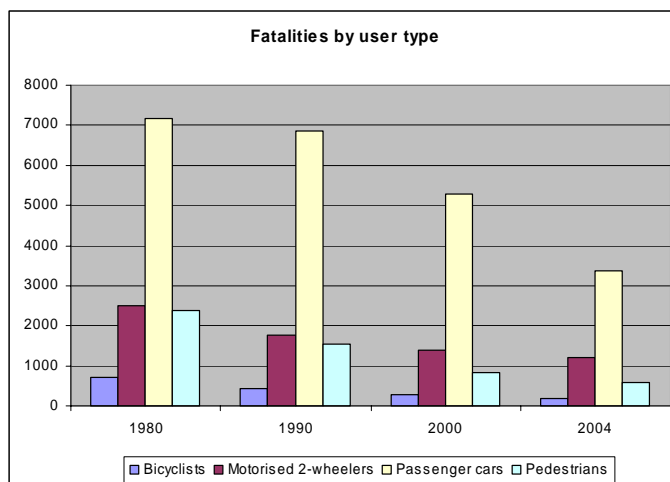
|  |  |
|--|--|
| Safety equipment: enforcement of seatbelt wearing/ helmet use  | <ul style="list-style-type: none"> <li>• Reinforcement of controls</li> </ul>  |
| Emergency services   |  |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>• Programme for lateral obstacles</li> <li>• In cities, local improvements in traffic safety</li> </ul> |

## B.2. National Diagnosis in key safety areas

### Road users

There has been very significant progress for *passenger cars* and *pedestrians* from 2002 until now. High gas prices due to the most recent Gulf War is part of the explanation. *Motorised 2-wheelers* are becoming a major road safety problem in France, especially in urban areas. (Of the 50 killed on Paris roads, half are from motorized 2-wheelers).

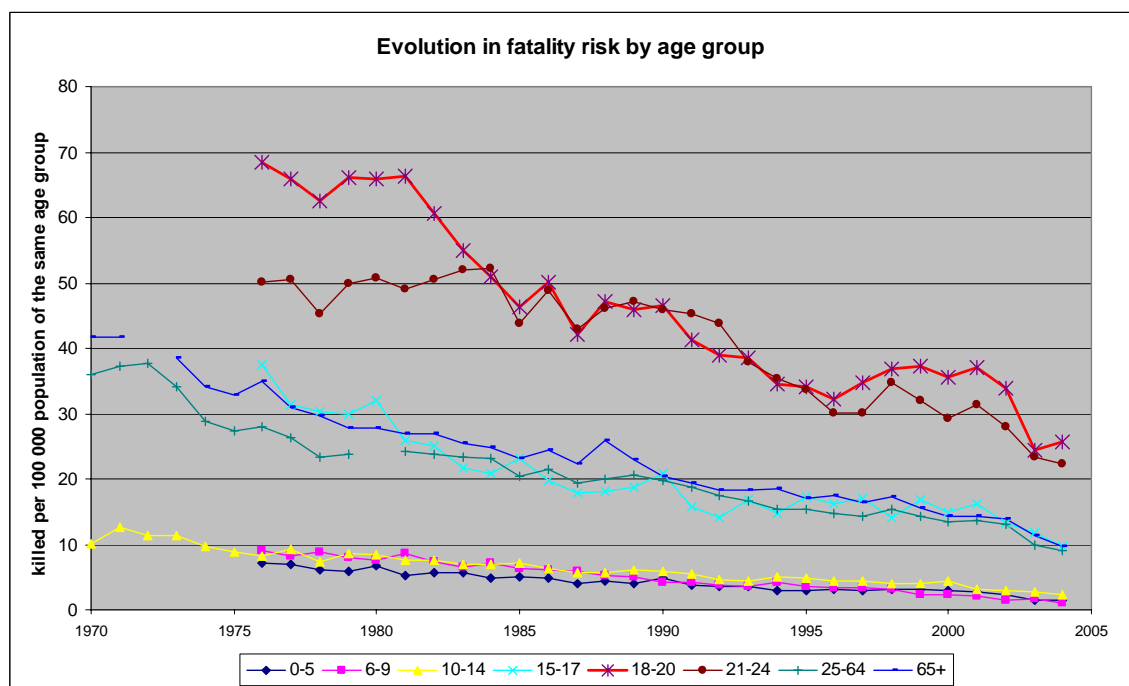
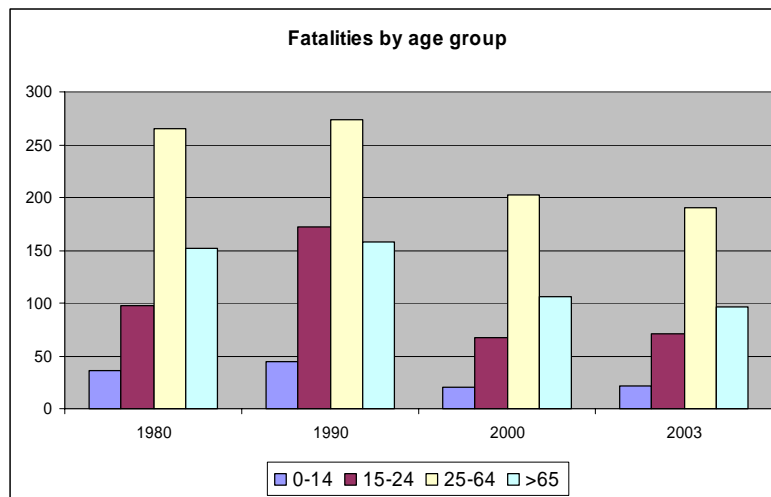
Evolution in fatalities by road user type



### Age groups

More attention should be paid to gender than to age. However, little data or research exists on this subject. There is, for example, no precise measure of the risk exposure by gender even for passenger cars.

### Evolution in fatalities by age group

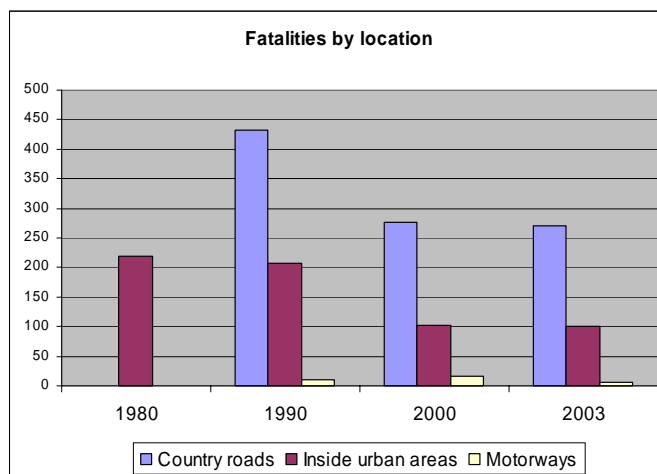


### Type of road / location

France has a very long network (1 million km), of which 80% is rural (inter-urban motorways excluded). When considering fatalities per billion km-vehicle travelled by type of road, it shows that road risk on country roads is extraordinarily high. Road policing (law enforcement, crash investigation, etc.) on country roads is carried out by the “gendarmerie nationale with improving

professional standards. Significant organizational progress is yet to come<sup>5</sup>. More speed cameras will certainly help (1500 should operate at the end of 2006), but drink-driving will remain a major problem in rural areas.

**Evolution in fatalities by type of road**



### *Speed*

Great efforts had been made on speed before 2002 and were reinforced and amplified after 2002, largely because of the installation of a system of fixed or mobile speed cameras over the whole territory. The average speeds observed in France did not diminish very much, the hypothesis being that on each type of road the speeds have become more homogeneous and subsequently safer.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.**

|   | 1994      | 2000            | 2003             |
|---|-----------|-----------------|------------------|
| <i>Nb of speeding citations</i>                             | 1 000 000 | 1 230 000       | 1 500 000        |
| <i>% of fatal crashes where speed is a causation factor</i> | N.A.      | N.A.            | N.A.             |
| <i>% of drivers over the posted speed limit in :</i>        | N.A.      |                 |                  |
| - urban areas   |           | Urban roads 82% | Urban: 73%       |
| - rural roads   |           | Rural roads 55% | rural roads: 50% |
| - motorways   |           | Motorways 50%   | Motorways: 45%   |

### *Drink driving*

The maximum permissible BAC is 0.5 g/l and 0.2 g/l for bus drivers.

5. For example, more linkage between crash investigation and law enforcement, purchasing and deployment of “booze buses”.

Although drink-driving is a domain where the police forces could improve their performance very much, the involvement of alcohol in fatal accidents has followed the trend towards the diminution of fatal accidents generally. It seems that a process of “social learning” (regardless of public intervention) has taken place in France concerning drink-driving. People drink less when they have to drive, even though there is no particular increase in police pressure regarding drink driving.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1994        | 2000        | 2003        |
|--|------|-------------|-------------|-------------|
| Number of citations                            | NA   | 100 000     | 125 000     | 130 000     |
| % of fatal accidents where alcohol is a factor |      | Approx. 33% | Approx. 33% | Approx. 33% |

*Seatbelt and helmet wearing*

Seatbelt wearing is compulsory on both front and rear seats.

Measurements of *seatbelt* wearing rate are questionable, especially on rear seats. Fortunately once people acquire the habit of wearing seatbelts they keep it. In other words, the degree of efficiency of educative or coercive policy in this domain is much higher than in drink driving or speeding.

Concerning *helmet wearing*, (mandatory for motorcyclists), here again, measurements are questionable. The data available (site soundings) show an almost 100% rate, but, unlike for seatbelts, the quality of the helmet or its proper buckling is very variable from one user to another and from one situation to another, etc..

**Evolution in seatbelt wearing rate**

|                      | 1980 | 1994 | 2000 | 2003 |
|----------------------|------|------|------|------|
| General              |      |      |      |      |
| Rear Seat            | N.A. | N.A. | N.A. | 74%  |
| Front Seats          | N.A. | 88%  | 95%  | 97%  |
| Motorway – driver    | 94%  | 91%  | 96%  | 98%  |
| Rural roads – driver | 79%  | 87%  | 94%  | 96%  |
| Urban areas –driver  | 55%  | 55%  | 78%  | 95%  |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

No comments are available on these violations.

*Other factors*

**Enforcement** has still much progress to make in France, especially for drink driving violations – on which enforcement is legally, organisationally and materially over-burdened.

One other major problem stems from the way road safety **data** are produced (lack of reliability) and made available (data are not conceived to be used by local actors of enforcement or engineering).

On engineering, the French State is now transferring the responsibility for maintenance and engineering of part of “national roads” (except heavy traffic highways) to departments. These transferred roads represent two-thirds of the national network and it is expected that the remaining state-managed highways will be transformed into 2x2 lane roads. This is likely to have an impact on road safety but, as this change will not stem from something labelled “road safety public policy”, little attention will be paid to it. Besides, even though France cannot be properly qualified a federal state, the State already plays a federative role for sub-national tiers of government, like “départements” or “communes, but this role is for the moment confined to a technical or expertise dimension. These local entities invest vast sums of money on traffic calming engineering, and the French State would be well advised to elaborate and implement a clear incentive policy for co-financing these road safety investments.

### ***B.3. Major road safety problems today***

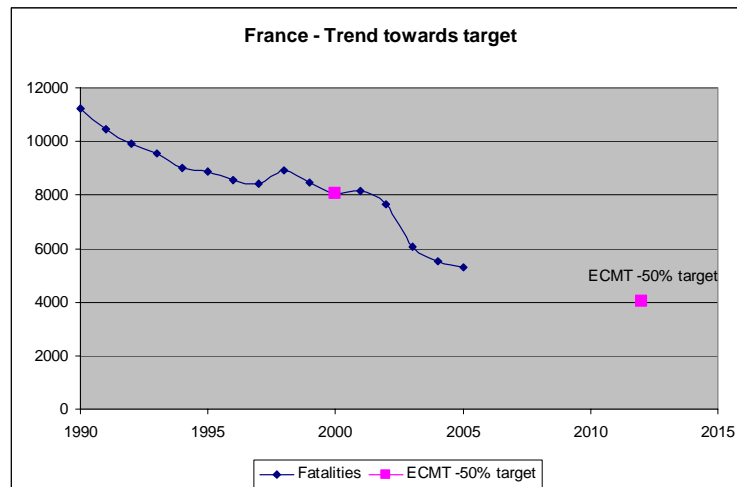
1. Drink driving.
2. Motorcycles safety.
3. Speed behaviour on small and medium rural roads.

### ***B.4. Forthcoming road safety initiatives to address these problems***

1. None
2. License plates for motorised two-wheelers (already implemented).
3. Expanding the automatic speed camera system.

## **C. Road safety targets**

Currently, there are no national targets in France. The following figure charts the trend towards the ECMT -50% target. It seems however that France could reach the ECMT 50% target set for 2012.





#### **D. Success story cards**

##### ***Success story from France***

###### **Speed camera system with quasi-automatic infringement processing.**

Although no more than 1 000 cameras (one third mobile, two thirds fixed) were in operation at the end of 2005 (4 times fewer than in the United Kingdom), huge publicity accompanied this innovation and generated a powerful change in behaviour among road users.

A recent poll of a 5 000 persons sample showed that 75% of the adult population in France is in favour of the further development of this system.

##### ***Less recommended story card from France***

###### **Daytime running lights:**

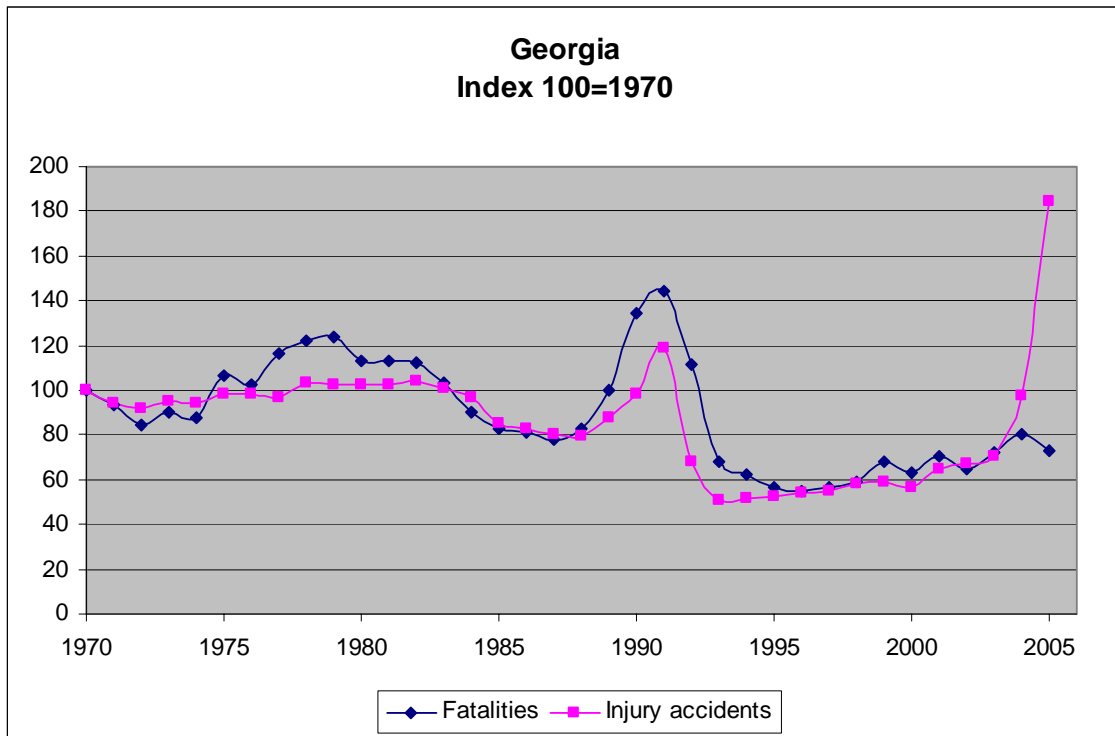
Ill-designed experimentation at national level and poor management, which led to the abandonment of a measure which had plausible potential for road safety gains.

## GEORGIA

### A. General trend in road safety

#### Key road safety data for 2005

- 581 road fatalities (637 in 2004)
- 5 546 injury accidents (2 936 in 2003, see explanation below for this sharp increase)
- 12.8 killed per 100 000 inhabitants
- Around 90 cars (passenger cars and light duty vehicles) per 1 000 inhabitants.



There was a sharp increase in the total number of injury accidents in 2005. This is due to a better reporting of injury accidents.

## **B. Current state of affairs and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

#### *B.1.1. Strategies to decrease risk of crashes:*

Some slight amendments to the laws have been made recently regarding safety belt usage, restriction of mobile phones while driving and speed limits. But these have not yet come into force.

|  |   |
|--|---|
| Improved speed compliance / enforcement  | No, the relevant legislation is currently being elaborated.                               |
| Reduced speed limits   | No, the relevant legislation is currently being elaborated.                               |
| New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs                                      | No, the relevant legislation is currently being elaborated.                               |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | No, the relevant legislation is currently being elaborated.                               |
| Enforcement of other road rules  | No, the relevant legislation is currently being elaborated.                               |
| Graduated Licensing for novice drivers   | No, the relevant legislation is currently being elaborated.                               |
| Education and information programmes   | No, the relevant legislation is currently being elaborated.                               |
| Regulation on vehicle inspection   | Not recently. Adopted in 1999.  |
| Regulation on active vehicle safety equipment  | Not recently, implemented in 1999.  |
| Other  | September 2005: adoption of a law that prohibits the usage of mobile phone while driving. |

#### *B.1.2. Strategies to decrease risk of injury:*

|  |   |
|--|---|
| Safety equipment: enforcement of seatbelt wearing/ helmet use  | Seatbelt is compulsory on front seats on highways.<br>Motorcycle helmet is obligatory.      |
| Emergency services   | There are general provisions on emergency services, but not particularly for road vehicles. |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | Median barriers are available on some sections of highways.                                 |

## ***B.2. National Diagnosis in key safety areas***

### *Road users*

Data on crashes (fatalities, injuries, etc.) come from the Traffic Patrol Police. Current data does not currently take into account categories of road users.

### *Age groups*

Data on crashes (fatalities, injuries, etc.) come from the Traffic Patrol Police. Current data does not take into account ages of road users.

### *Type of road / location*

Data on crashes (fatalities, injuries, etc.) come from the Traffic Patrol Police. Current data does not take into account type of roads.

### *Speed*

Current data do not allow this type of analysis.

### *Drink driving*

There is no legal maximum BAC in Georgia. However, it is not allowed to drive under the influence of alcohol.

### *Seatbelt and helmet wearing*

Seatbelt wearing is compulsory on front seat on highways only. General legislation for seatbelt wearing will soon be introduced.

Helmet wearing is compulsory for motorised 2-wheelers.

### *Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Restriction on mobile phone usage will come in force soon.

### *Other factors*

Driver education is a priority (initial training and upgrading) and also for other road users.

## ***B.3. Major road safety problems today***

1. General condition of the roads.
2. Speed limit.
3. Seatbelt usage.
4. Interdiction of mobile phones while driving.
5. Interdiction of alcohol or drugs while driving.
6. Upgrading the skills of drivers and other participants.

#### ***B.4. Forthcoming road safety initiatives to address these problems***

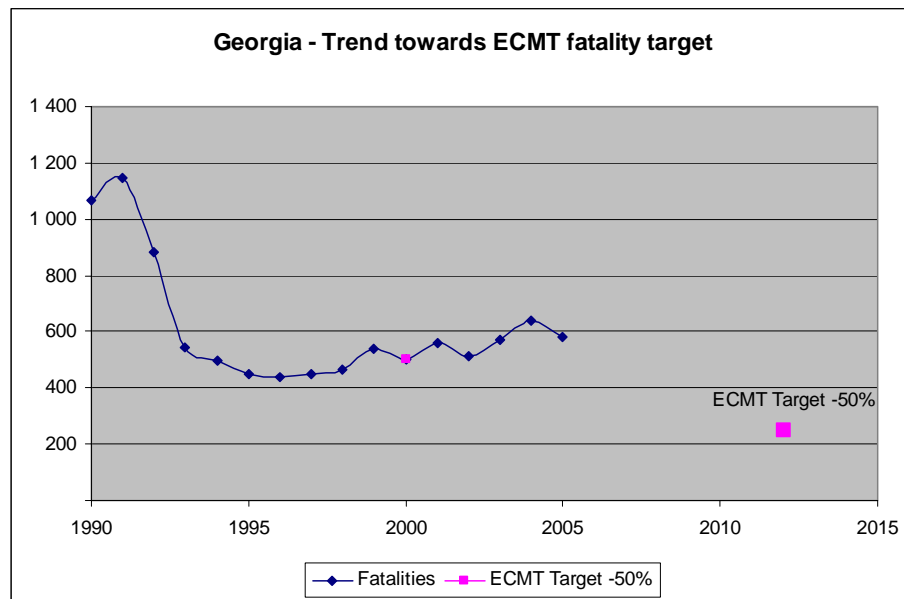
1. Elaboration of the Concept on Safety.
2. Implementation of the legislative amendments.
3. Educational reforms for drivers.
4. Institutional reforms and structural changes.
5. Joining the convention for traffic safety and obtaining membership of the relevant international organisations.
6. Enforcement of seatbelt wearing, drink-driving, and drug –driving.

#### **C. Road safety targets**

The provisions of the target programme are currently under consideration. These will be adopted in the future and will be implemented jointly with the traffic patrol police of Georgia.

A parallel programme to reach the target will be elaborated by the traffic police, the Ministry of Health, the Ministry of education, local authorities, etc.

The chart below shows the progress towards the ECMT -50% objective.



#### D. Success story cards

##### **Success story from Georgia:**

- **Setting up and operation of the Traffic Patrol Police.**

The Traffic Patrol Police is better structured and its effectiveness has improved.

- **Improvement to surfaces of the major state roads (excluding road infrastructure)**

##### **Less recommended story from Georgia**

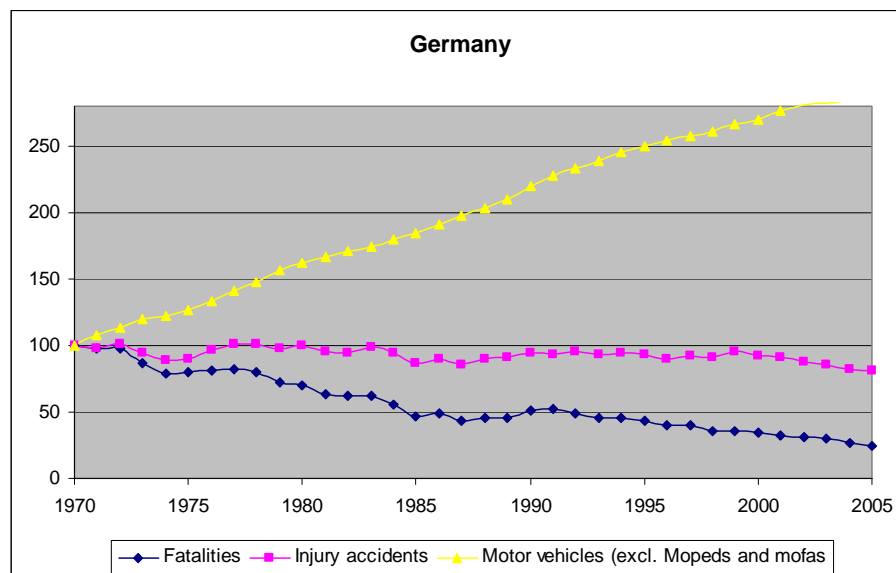
- No state conception on road safety
- No institutional change on road safety
- Vehicle fleet is old but is progressively being renewed.

## GERMANY

### A. General trend in road safety

#### Key road safety data for 2005

- 5 359 road fatalities (5 842 in 2004)
- 336 509 injury accidents (339 310 in 2004)
- 6.1 killed per 100 000 inhabitants
- Around 550 passenger cars per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |  |
|--|--|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>Increased use of fixed and mobile speed cameras by the Federal States.</li> <li>Increased sanctions for speed limit offences by lorry and bus drivers (2004)</li> <li>Constant improvement in detecting speed limit offences by automatic surveillance systems (identification of drivers by comparison with passport photo, increased summoning of vehicle owners, increased imposition of the obligation to keep a log book if offenders cannot be identified in individual cases as well as other measures agreed upon at federal and state level and applied at federal state level).</li> </ul>  |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>Extension by the federal state authorities of 30 km/h zones in built-up areas on the basis of enforcement preconditions that were facilitated a few years ago.</li> </ul>   |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs                                     | <ul style="list-style-type: none"> <li>The Federal Highway Research Institute had a „Training Programme for Drug Detection in Road Traffic“ developed for the police. With the increasing ability of police officers to recognize driving under the influence of drugs the undetected drug-driving rate will be reduced. Detection will also be supported by the use of quick drug tests.</li> </ul>   |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>Project “Safety on Rural Roads”: target areas are “passing manoeuvre without risk” (research), “adequate speed by road design” and “maximum speed” (infrastructural measures), “barrier-free sideline” (directives), “improved alignment” (directive), “roundabouts” (directive).</li> <li>Integrating road safety in road planning: directives for the Federal States regarding safe road network design and the implementation of road safety audits were established and are currently in use (recommendations for road network safety analyses (ESN); recommendations for a safety audit for roads in Germany (ESAS 2002).</li> <li>Increasing length of cycle paths: A National Cycling Plan was established (implementation by Federal States and on local level). In 2002 and 2003 more than 620 km of cycle paths were built.</li> <li>Improving the quality of (local) accident investigation teams.</li> <li>Avoiding through-traffic in towns by construction of by-passes: between 2001 and 2004, 140 bypasses were built (length: about 520 km). Up to 850 bypasses are planned to be built by 2015. Approximately further 710 bypasses are planned to be built by 2015.</li> <li>Expansion of the motorway network, as motorways are known as the safest type of roads: the motorway network has been enlarged and the accessibility of motorways has been increased by several additional interchanges.</li> </ul> |



|   |   |
|---|---|
| Enforcement of other road rules               | <ul style="list-style-type: none"> <li>Increased sanctions for specific traffic offences (e.g. specific technical defaults, making phone calls while driving, violations of regulations governing automotive engineering) which have proved to be of special relevance in accident or traffic situations were already introduced; others are being prepared (e.g. failure to keep a safe distance to the vehicle in front); measures specially intended to improve the safety of motor buses and coaches.</li> </ul>  |
| Graduated Licensing for novice drivers        | <ul style="list-style-type: none"> <li>Model test: Voluntary Advanced Courses for beginner drivers under probation (Freiwillige Fortbildungsseminare für Fahrerlaubnisinhaber auf Probe) ("Second Phase driver training"). Course with group discussion, track training, feed back drive, 10.5 hours in total. Costs are borne by the participants. Courses can be visited earliest six month after having received the driving license. Participation leads to a one year shortening of the probation time which is two years in general and four years for traffic offenders.</li> <li>Model test: "accompanied driving from the age of 17" (Begleitetes Fahren ab 17), voluntary participation, entering driver education earliest at 16.5 years, obtaining the driver license class B earliest at 17, accompanied driving until 18 years, solo driving earliest at 18. Since April 2004 implemented in 3 federal states of Germany; implementation into national law ongoing (proclamation in August 2005)</li> </ul> |
| Education and information programmes          | <ul style="list-style-type: none"> <li>The Programme for Improving Road Safety mentioned in No. 2 above is accompanied by public relation campaigns such as "keep cool – keep moving" and "Consider Consideration" (since July 2004).</li> </ul> <p>This campaign serves the purpose of intensifying the social responsibility of each individual road user and of changing the behaviour in road traffic. The aim is to make being considerate the foremost principle for sharing our road space.</p> <p>This is also the content of the target group programmes financed with millions of euros from the federal budget, which have been successfully conducted for decades by the German Road Safety Council and its members for young drivers, older road users and children</p>  |
| Regulation on vehicle inspection              | <ul style="list-style-type: none"> <li>To enhance road safety Germany has proposed a wording for a "Rule 2" of the UN ECE-Agreement of 1997. It is intended to provide a minimum standard for the main technical inspection of motor vehicles throughout Europe</li> </ul>  |
| Regulation on active vehicle safety equipment | <ul style="list-style-type: none"> <li>Current discussions with the automobile industry and the surveillance organizations serve the purpose of defining ways and means to prevent misuse and incorrect use of modern driver assistance systems. There is a permanent dialogue with the industry on the implementation of the recommendations of the European Commission concerning the human-machine interface; in this context research work is being carried out by the Federal Highway Research Institute.</li> <li>In addition, initiatives are launched jointly by the government and industry to provide modern driver assistance systems in as many vehicles as possible. As a result, 64 per cent of new vehicles are fitted with ESP (Electronic Stability Programme); this has placed Germany in a leading position in international comparison and, as has been demonstrated, has positive effects on accident rates.</li> </ul>  |

|        |  |
|--------|--|
| Others | <ul style="list-style-type: none"> <li>• Increased sanctions for insufficient load locking</li> <li>• Handbook for safe load locking (target groups: drivers, firms and police)</li> <li>• Research on driving dynamics for light goods vehicles</li> <li>• Telematics: programme to make traffic on federal motorways safer.</li> </ul> |
|--------|--|

### *B.1.2. Strategies to decrease risk of injury:*

|  |   |
|--|---|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>• The Federal States, which are responsible for traffic control in Germany, are explicitly required to increase these controls (e.g. assessing speed control photos also as regards compliance with the provision requiring the compulsory wearing of seat belts); the Federal States have launched implementation programmes which – together with increased sanctions introduced some years ago - resulted in a considerable improvement of the rate of seat belt wearing, and moved it to the top of the league in Europe</li> </ul>  |
| Emergency services   | <ul style="list-style-type: none"> <li>• The automobile industry offers new cars fitted with in-vehicle eCall systems. The Federal States which are responsible for the rescue and emergency medical services in Germany support this measure by arrangements for cooperation of the bodies involved as regards the technical and practical handling of emergency calls made via these systems. Germany moreover participated in preparing the Memorandum of Understanding (for Realization of Interoperable In-Vehicle eCall). These measures positively complement the rescue and emergency services which, per se, are already very efficient in Germany (arrival at the scene of an accident in less than 8 minutes on the average). They are currently being coordinated with the Federal States.</li> </ul> |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>• Development of smart restraint systems (research)</li> <li>• Increasing cycle helmet use by children and adolescent road user (campaigns)</li> <li>• Germany participates intensively in updating and extending EURONCAP for active safety</li> </ul>  |

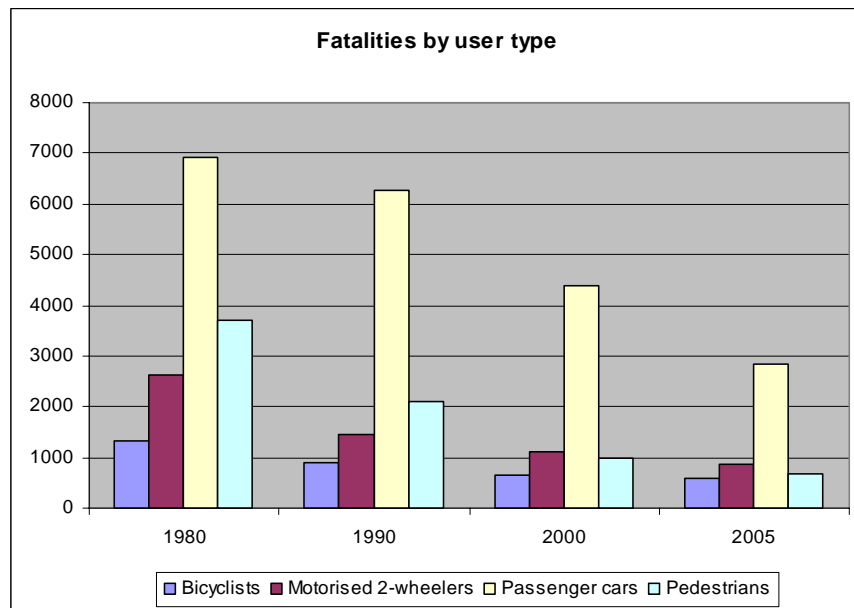
## **B.2. National Diagnosis in key safety areas**

### *Road users*

The number of road fatalities is showing a downward trend for all kinds of road users. As most of the distances are covered by passenger cars (especially long distances) the number of fatalities is highest for occupants of passenger cars.

Related to the vehicle stock, the risk of being killed has declined for all kinds of vehicle users since 1980. In particular, the risk for riders of motorcycles has been reduced greatly. The number of fatalities per 100 000 motorcycles has been reduced by nearly 80%. Nevertheless, the number of fatalities per 100 000 vehicle stock is still more than three times higher for motorcycle riders (23 fatalities per 100 000 motorcycles in 2005) than for occupants of passenger cars (6.25 fatalities per 100 000 passenger cars in 2005).

### Evolution in fatalities by road user type



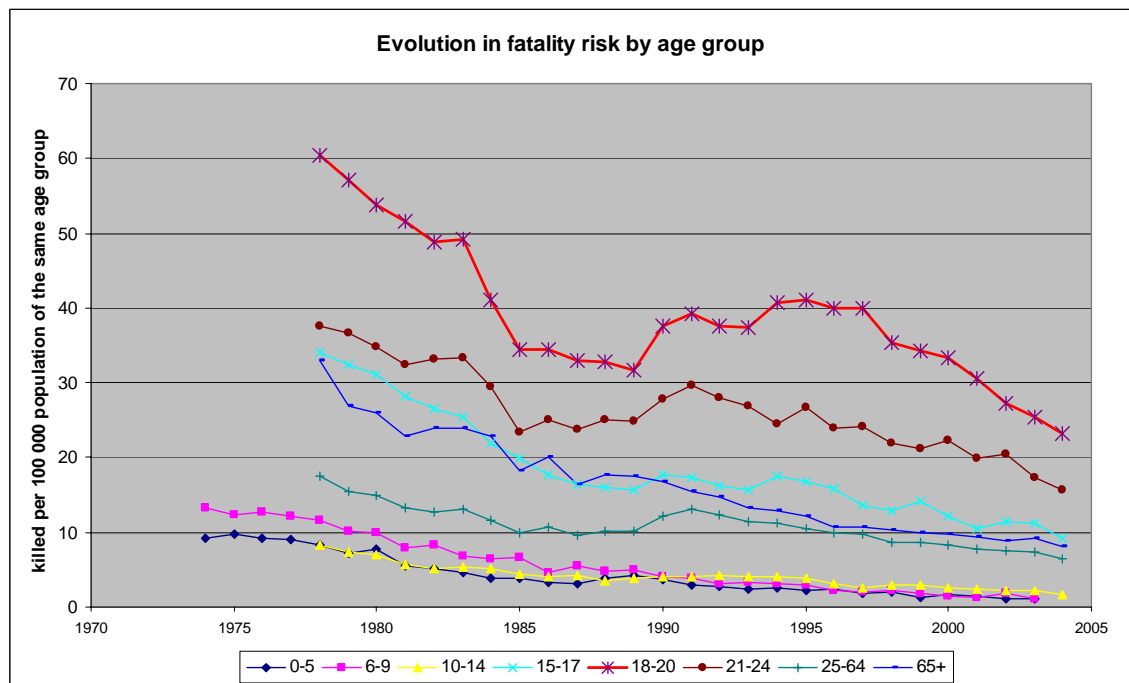
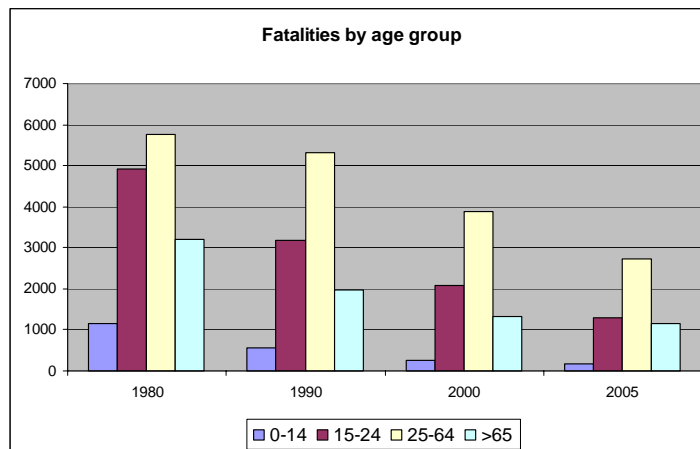
### Age groups

Since 1980 the number of road fatalities has been reduced for all age groups – in absolute numbers as well as related to the rate of population for the respective age group.

The population-related risk of being killed in an accident has been reduced to 6 fatalities per 100 000 inhabitants on average in 2005. The risk is highest for adolescents and young adults between 15 and 24 years of age. Young adults between 18 and 20 years have the highest risk of being killed in an accident with 17.8 fatalities per 100 000 inhabitants of that age group. In contrast, the risk is far below average for children under the age of 15 with approximately 2 fatalities per 100 000 inhabitants of that age group. The risk for senior citizens more than 65 years of age is slightly above average with 7.6 fatalities per 100 000 inhabitants of that age group.

As the absolute numbers for senior citizens above 65 years of age have been declining not as quickly as for other age groups the relevance of that age group in accident figures – and consequently traffic safety – has grown steadily. Taking into account the societal development into an ageing society in combination with an increasing mobility of elderly people it can be anticipated that the relevance of that age group will be growing furthermore in the future.

### Evolution in fatalities by age group

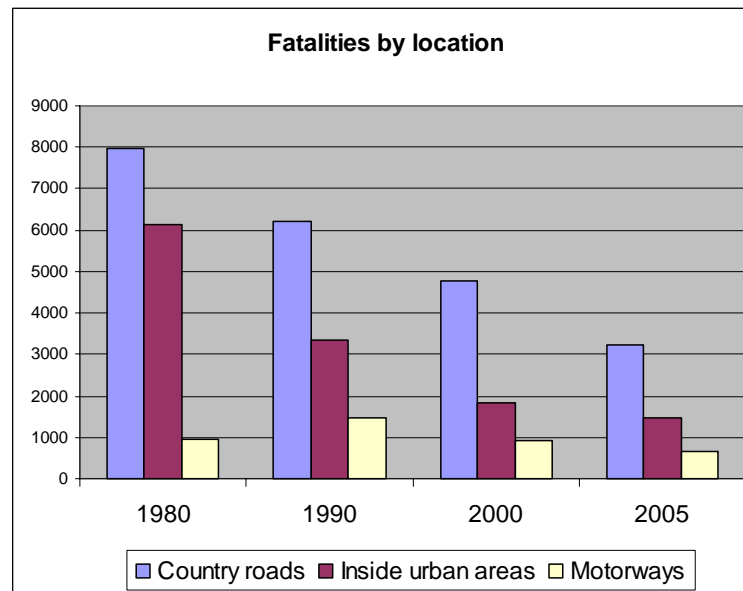


### Type of road / location

The number of road fatalities has been reduced greatly since 1980 on all kinds of roads. Especially the number of road fatalities inside urban areas has been reduced by more than 75% between 1980 and 2005. Still, by far the highest number of fatalities occurs on rural roads.

Also, on rural roads, the severity of the accident is highest compared to the other types of road. In 2005, 36 fatalities occurred per 1 000 personal injury accidents whereas the average was 16. Motorways nearly come up to the same degree of severity with 32 fatalities per 1 000 personal injury accidents on that type of road. Regarding accident severity urban roads are by far the safest German roads with only 6.5 fatalities per 1 000 personal injury accidents.

### Evolution in fatalities by type of road



### *Speed*

The number of road accidents caused by inappropriate speed – regardless of an excess in the speed limit – has declined steadily. Still, inappropriate speed remains one of the major causes of accidents, especially for young drivers between 18 and 25 years of age. In 2004, it accounted for approximately 18% of all driver-related personal injury accidents, and 36% of all driver-related fatal accidents.

### *Drink driving*

The maximum permissible blood alcohol content is: 0.5 g/l.

Although the relevance of drink-drive accidents has decreased since 1980, they are still a matter of concern because of their severity. While the percentage of drink-drive accidents has decreased from nearly 13% to below 7% of all personal injury accidents since 1980, the share of fatalities is still over 12%. Drink-driving is especially a problem for novice drivers, as it causes nearly 6% of all driver-related accidents for young drivers between 18 and 25 years of age. On average it makes up to less than 5% of all driver-related accident causes. One of the reasons for the prevalence of drink-drive accidents among novice drivers is probably the consumption of alcohol combined with a lack of driving experience, which consequently leads to unsafe driving. In 2004, at least one of the individuals in 10.5% of fatal crashes had a BAC above the legal limit

### *Seatbelt and helmet wearing*

**Seatbelt wearing:** compulsory in both front (since 1976) and rear seats (since 1984); not wearing seatbelts in front seats is fined since 1984, and since 1986 in rear seats. Since fines were imposed, seat belt wearing rates increased sharply.

***Helmet wearing:*** compulsory for motorised two-wheelers (wearing rate:98% in 2004), not compulsory for bicycles (wearing rate 6% in 2004)

**Evolution in seatbelt wearing rate**

|                      | <b>1980*</b>                             | <b>1990*</b>                  | <b>2000</b>                   | <b>2004</b>                   |
|----------------------|--|-------------------------------|-------------------------------|-------------------------------|
| <i>General</i>       | ./.                                      | ./.                           | 94%                           | 94%                           |
| <i>Rear Seat</i>     | ./.                                      | 45%/47%                       | 82%                           | 90%                           |
| <i>Front Seats</i>   | Driver: 56%/58%<br>Passenger:<br>58%/62% | Driver: 96%<br>Passenger: 96% | Driver: 94%<br>Passenger: 95% | Driver: 94%<br>Passenger: 95% |
| Motorway – driver    | 79%/80%                                  | 99%                           | 98%                           | 97%                           |
| Rural roads – driver | 63%/65%                                  | 96%/97%                       | 95%                           | 94%                           |
| Urban areas –driver  | 42%/45%                                  | 95%/94%                       | 90%                           | 91%                           |

\* Western Germany; two observation periods (March and September); if two figures are mentioned, the first refers to the observation in March, the second to September

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

**Red light:** it is important to enforce red light only on very dangerous junctions, where the disregard has been cause in a lot of severe accidents with high accident costs.

**Mobile phone:** since 2001 phone calls while driving are only acceptable if using a hands-free phone system. It is central to give the information concerning the risks of using mobile phones to the public.

**Inter-vehicle distance:** the accepted minimal distance often falls below a value – particularly on motorways. The result may be rear-end collision accidents with a high severity. Public awareness campaigns and monitoring are important means.

**Drugs:** driving with drugs is punishable by fines and a suspended driving licence since 1998. Before 1998 it was possible to punish driving under the influence of illegal drugs only if it was proved that the fitness to drive was impaired.

*Other factors*

On one hand **enforcement of traffic behaviour** – in particular speeding, misuse of alcohol and non-use of seat belts – is a part of the traffic safety strategy that is (except automatic systems) of a high intensity of personal. On the other hand you can quantify the success quickly. Enforcement is very efficient on locations with a lot of severe accidents, *e.g.* speed monitoring should take place on so-called “black spots” caused by speeding.

### ***B.3. Major road safety problems today***

1. Accident involvement of young novice drivers
  - lack of driving experience
  - inappropriate motives for safe driving
2. Non-equipment of smaller vehicles with vehicle stability systems (ESP)
3. Obstacles on the roadsides
4. Accidents caused by overtaking on rural roads
5. Left turn accidents at junctions
6. Inappropriate speeds

#### ***B.4. Forthcoming road safety initiatives to address these problems***

##### *Infrastructure*

- New guidelines for safety barriers
- 2+1 lane roads
- New guidelines for rural roads (Self explaining road design)
- Construction of roundabouts
- Local speed cameras
- Lowering the speed-limit on rural roads

##### *Car technology*

- Establish new regulations; try to build up one way of regulation work (ECE); continuity of regulation work (EG and ECE)
- Integration of active safety aspects within EuroNCAP

##### *Human factors*

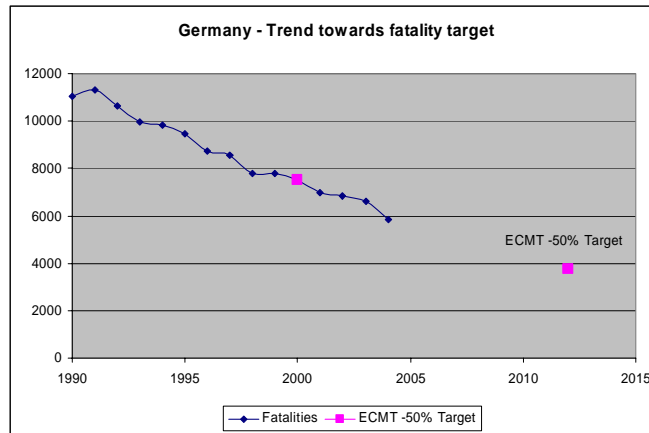
- Pre-license driver education:
  - Quality management of driver education in driving schools.
  - Strengthening of the pedagogical profile of the driving instructor profession.
- Post license driver education and measures for novice drivers:
  - Accompanied driving from the age of 17: to extend driving experience under safer conditions prior to solo driving and additional to the basic driver training in a driving school.
  - Second Phase training course: to address youth specific motives relevant for safe driving.
  - Both measures are implemented as model projects and will be evaluated within the next years.
- Better design of the Human-Machine-Interface.

#### **C. Road safety targets**

There is no national target in Germany. The transport policy of the federal government is realistic and based on facts. Unrealistic objectives would mean giving up this goal because it cannot be achieved or in the foreseeable future as it is. The Federal Government focuses on what is feasible, and constantly decreasing accident figures prove that this is the right way.



The following chart shows the trend towards the ECMT -50% target.



#### D. Success story cards

##### **New Road Safety Programme of the German Ministry of Transport, Building and Housing has introduced in 2001**

The new road safety programme, containing five main road safety problems and a broad variety of different road safety measures. Today, the programme is carried out successfully and a huge reduction of fatalities has already been realised.

The road safety programme has been accompanied by two road safety campaigns called „Gelassen läuft's“ (meaning it's better to behave relaxed while driving) and „Rücksicht ist besser“ (meaning respect for other traffic participants is better).

Below the programme level some interesting success stories should be mentioned in detail:

##### ***Safety barriers:***

In principle, safety barriers are highly beneficial for road safety in a broad variety of applications. Constructing safety barriers which can prevent heavy goods vehicles from falling down from a bridge during an accident implies a special type of problem. On one hand the barrier has to be stiff enough to prevent that a truck out of control could reach the edge of the bridge deck, on the other hand it has to be soft enough to avoid unacceptable damage of the bridge due to forces transmitted by the barrier to the deck. German Federal Highway Research Institute (BAST) has designed a replica of a typical German bridge deck where these forces can be measured during an impact test with a heavy goods vehicle (38 t). Testing on safety barriers developed by the industry started in the middle of 2003. While the first tests show that it is a challenging task for barrier designer to fulfil the requirements, it is now possible to provide barriers with a high level of safety for road user and for German bridges at reasonable costs. Additionally valuable data are being produced for future bridge design in Germany.

##### ***Dynamic traffic management***

The main objective of traffic management is to either avoid congestion or, in case of unavoidable congestion, to improve traffic safety by informing drivers about existing or expected traffic problems. Dynamic route guidance (DRG) with variable direction signs aim to guide traffic via alternative routes with spare capacity. Variable message signs (VMS) are used to harmonise traffic flow with variable speed limits and other regulations such as dynamic lane allocations, "no-passing for lorries" signs and danger warnings according to prevailing conditions. This contributes to more harmonised traffic flows in order to avoid instability and break down of traffic. DRG and VMS systems have yielded statistically significant reduction of accidents. Thus a better exploitation of existing road capacity as well as an improvement of traffic safety is achieved.

DRG and VMS systems are considered as indispensable tool for traffic managers on heavily traffic roads and incident prone parts of roads network. Statistical surveys have yielded the result that accident rates can be cut down by 25% and accident severity by 30 to 50%. Due to the fact that speed limits can be adjusted to prevailing conditions, speed regulations gain a higher acceptance by drivers. Up till 2007, 1700 kilometres (km) out of 12000 km of motorways have been or will be equipped with dynamic route guidance. The existing equipment of 850 km with dynamic variable message signs will be increased to 1200 km until the year 2007, thus contributing to further increase of safety and harmonisation of traffic flow. "Intelligent speed management" on the basis of variable message signs is considered to be very effective, as it has gained high appreciation from drivers.

#### ***RDS-TMC: The Traffic Message Channel in the Radio Data Systems***

Another tool of traffic management is information conveyed to drivers before they start and during their trip. Major sources of traffic information are traffic messages as broadcast to motorists in order to inform them and to warn them in case of congestion or other hazardous situations. Traffic messages are a tool to support traffic management actions. The increasing amount of traffic messages forced the automation of this information service. As a consequence, the "Traffic Message Channel" in the "Radio Data System" (RDS-TMC) was considered to be the most appropriate solution.

In Germany, RDS-TMC services have been operational since 1997. The introduction of RDS-TMC and its infrastructure has improved the operation and the efficiency of the whole information chain "from the loop to the driver", as well for digitally and spoken broadcast information as for a number of other communication channels such as internet portals, fax-on-request, telephone information and WAP portals. Digitally transmitted information can be decoded in any language as requested by the driver and can ideally be used to supply navigation systems with actual traffic data to adjust route recommendations to traffic conditions.

Free TMC information is supplied by 10 public and 2 private broadcasters in 47 programmes. This means 100% coverage of the area of the Federal Republic of Germany. Additionally, commercial service providers with encrypted traffic messages provide individualised information to their clients; they use transmission channels of private Broadcasters. In the future, information on urban traffic problems shall be included. This requires broader transmission channels. A migration towards Digital Audio Broadcasting (DAB) is foreseen.

#### ***Winter maintenance on German motorways***

During the winter the traffic is endangered by snowfalls and icing on German motorways. Accidents are caused especially by worsening road conditions which the drivers are not aware of. It is important to avoid dangerous road conditions.

The situation has been improved by following measures:

The accuracy of forecast of slippery could be improved by road weather information system. This system consists of two parts:

Special detection systems for the road conditions are installed on the motorways and special forecasts from weather services. This information is transmitted to the winter maintenance centres. These systems give information about the current road conditions and possible changes of the conditions in the near future.

Slippery can be avoided with this information by a winter maintenance in time.

Special de-icing systems have been installed at critical road section. These systems are activated automatically by road surface sensors or can be activated by the road service teams. Critical road conditions and thus accidents can be reduced due to a short-reaction time of the systems.

#### ***Safety Analysis of Road Networks:***

In 2003 the German Guidelines for Road Safety Analysis of Road Networks (ESN) were published. Together with the "traditional" safety methods: black spot management and safety inspections, now there are three pillars for road safety work in Germany. While the two traditional methods aim at small-scale considerations, the ESN has been developed to evaluate whole road networks e.g. federal, state, county or municipal networks.

The main idea behind the concept is to compare the current safety performance (accident cost densities ACD) of each road section of a road network to Basic Accident Cost Densities (bACD). The difference between ACD and bACR reveals the safety potential of these section. A ranking of sections on basis of this safety potential allows a well directed appropriation of resources to sections with higher need for safety improvements first.

**Road Safety Audits:**

In 1999 the German Ministry of Transport, Building and Housing decided to start establishing Road Safety Audit procedures. Within less than three years the Road and Transport Research Association developed audit procedures and published the Guideline for Road Safety Audits in 2002. Training courses for auditors and regularly meetings of auditors were also established.

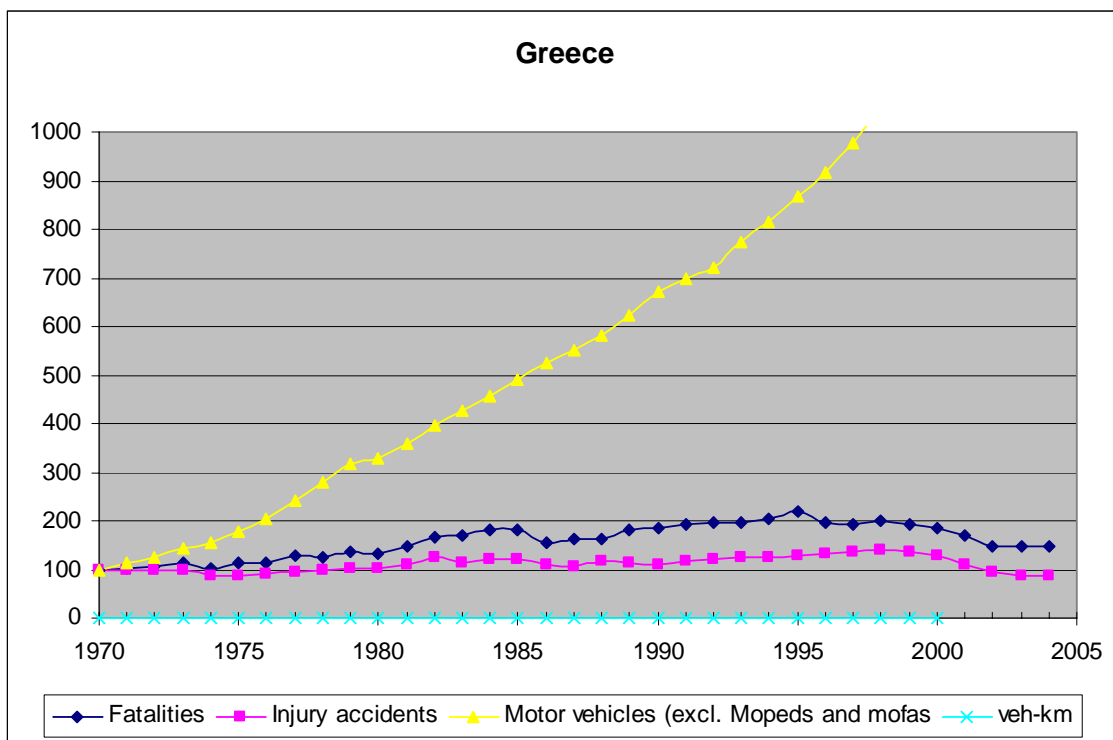
Road Safety Audits are leading to an improvement of road design and thus are able to enhance road safety. Furthermore experience made with Road Safety Audits is being used for the further development of design standards in Germany.

## GREECE

### A. General trend in road safety

#### Key road safety data for 2004:

- 1 670 road fatalities (1 605 in 2003)
- 15 547 injury accidents (15 751 in 2003)
- 15.2 killed per 100 000 inhabitants
- Around 500 vehicles (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

On the basis of the international experience, and the particularities of the existing situation in Greece, the first road safety Strategic Plan was prepared by the National Technical University of Athens (NTUA) and was officially adopted by the Government in June 2001.

The selected structure concerns four main directions/programmes, which are implemented by the four principal State Authorities (Ministries) responsible for road safety and which, at the same time, correspond to the four basic axes of actions necessary to improve road safety. These programmes concern: safe road environment (Ministry of Environment, Physical Planning and Public Works), safety of the road user and safe vehicles (Ministry of Transport and Communications), effective road safety enforcement (Ministry of Public Order) and effective post-crash treatment (Ministry of Public Health).

A small number of cost-effectiveness studies on road safety measures have been conducted by independent institutions and organisations. These have not been very conclusive and their use is still very limited. Occasionally, research initiatives have provided some insight on existing activities and strategies, but these are rarely transferred to policy-makers. Only recently have some inquiries into the use of research outcomes been noted.

#### B.1.1. Strategies to decrease risk of crashes:

| Improved speed compliance / enforcement   | <ul style="list-style-type: none"> <li>Intensification of enforcement concerning speeding has resulted in an important increase of road safety levels in Greece, as indicated in the table below.</li> </ul> <table border="1"> <caption>Speed enforcement related trends in Greece</caption> <tr> <th></th><th>2001</th><th>2002</th><th>2003</th><th>2004</th><th>2005</th><th>2001-2005</th></tr> <tr> <td>speed infringements</td><td>316 451</td><td>418 421</td><td>447 349</td><td>382 970</td><td>374 712</td><td>18%</td></tr> </table>   |           |           |           |           |           |  | 2001 | 2002 | 2003 | 2004 | 2005 | 2001-2005 | speed infringements  | 316 451 | 418 421   | 447 349   | 382 970   | 374 712   | 18% |                             |        |        |        |        |        |    |
|---|--|-----------|-----------|-----------|-----------|-----------|--|------|------|------|------|------|-----------|----------------------|---------|-----------|-----------|-----------|-----------|-----|-----------------------------|--------|--------|--------|--------|--------|----|
|   | 2001   | 2002      | 2003      | 2004      | 2005      | 2001-2005 |  |      |      |      |      |      |           |                      |         |           |           |           |           |     |                             |        |        |        |        |        |    |
| speed infringements   | 316 451  | 418 421   | 447 349   | 382 970   | 374 712   | 18%       |  |      |      |      |      |      |           |                      |         |           |           |           |           |     |                             |        |        |        |        |        |    |
| Reduced speed limits  | <ul style="list-style-type: none"> <li>No</li> </ul>   |           |           |           |           |           |  |      |      |      |      |      |           |                      |         |           |           |           |           |     |                             |        |        |        |        |        |    |
| New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs | <ul style="list-style-type: none"> <li>Stronger enforcement, since 2001, concerning drinking and driving has resulted in increased drink and drive checks, as shown in the table below.</li> <li>The reduction of drink and drive infringements (8%) could be attributed to increased enforcement, which contributed to changes in drivers' behaviour.</li> </ul> <table border="1"> <caption>Drinking and driving enforcement related trends in Greece</caption> <tr> <th></th><th>2001</th><th>2002</th><th>2003</th><th>2004</th><th>2005</th><th>2001-2005</th></tr> <tr> <td>Drink &amp; drive checks</td><td>710 998</td><td>1 034 502</td><td>1 271 273</td><td>1 281 202</td><td>1.376.307</td><td>94%</td></tr> <tr> <td>Drink &amp; drive infringements</td><td>49 464</td><td>48 947</td><td>45 546</td><td>40 986</td><td>46.938</td><td>5%</td></tr> </table> |           |           |           |           |           |  | 2001 | 2002 | 2003 | 2004 | 2005 | 2001-2005 | Drink & drive checks | 710 998 | 1 034 502 | 1 271 273 | 1 281 202 | 1.376.307 | 94% | Drink & drive infringements | 49 464 | 48 947 | 45 546 | 40 986 | 46.938 | 5% |
|   | 2001   | 2002      | 2003      | 2004      | 2005      | 2001-2005 |  |      |      |      |      |      |           |                      |         |           |           |           |           |     |                             |        |        |        |        |        |    |
| Drink & drive checks  | 710 998  | 1 034 502 | 1 271 273 | 1 281 202 | 1.376.307 | 94%       |  |      |      |      |      |      |           |                      |         |           |           |           |           |     |                             |        |        |        |        |        |    |
| Drink & drive infringements   | 49 464   | 48 947    | 45 546    | 40 986    | 46.938    | 5%        |  |      |      |      |      |      |           |                      |         |           |           |           |           |     |                             |        |        |        |        |        |    |

|   |  |
|---|--|
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..) | <ul style="list-style-type: none"> <li>• Several actions concerning road environment improvement are included in the Strategic Plan: Identification and treatment of hazardous locations, improvement of road markings and signalization and improvement of lighting conditions are some of the measures concerning the road network. However, many of these actions are not yet implemented.</li> <li>• In addition, an important programme concerning the upgrade of several hundred kilometres of national road network into motorways is underway (750 km in Patras-Athens-Thessaloniki, 700 km in Via Egnatia, 70 km in the Athens Ring Road), as well as a promising programme for the maintenance of the interurban road network.</li> </ul>  |
| Enforcement of other road rules   | <ul style="list-style-type: none"> <li>• No</li> </ul>   |
| Graduated Licensing for novice drivers  | <ul style="list-style-type: none"> <li>• In the <b>second national strategic plan</b> for the improvement of road safety in Greece (2006 - 2010) being prepared by the Greek Government, strategies are being considered concerning licensing of novice drivers.</li> </ul>  |
| Education and information programmes  | <ul style="list-style-type: none"> <li>• With the exception of some rare initiatives, information programmes have not been implemented so far. However they are under consideration in the framework of the second strategic plan for road safety.</li> <li>• Regarding the drivers' education system, several changes were introduced during the past few years, in order to upgrade it. More specifically, a new and reliable driver's training system has been developed and is widely implemented since 2005. This system is in accordance with modern training models and methods. The driver's theoretical examination has been upgraded, by introducing a new automatic examination system, which enables candidate drivers to be automatically and objectively examined. This fully automated system provides for transparency and simplifies the entire procedure of obtaining a driver's licence.</li> </ul> |
| Regulation on vehicle inspection  | <ul style="list-style-type: none"> <li>• All EU directives and regulations concerning the improvement of vehicle safety standards have been applied by the Ministry of Transport. However, innovative concepts on vehicle inspection have not yet been adopted.</li> </ul>   |
| Regulation on active vehicle safety equipment   | <ul style="list-style-type: none"> <li>•</li> </ul>  |

### B.1.2. Strategies to decrease risk of injury:

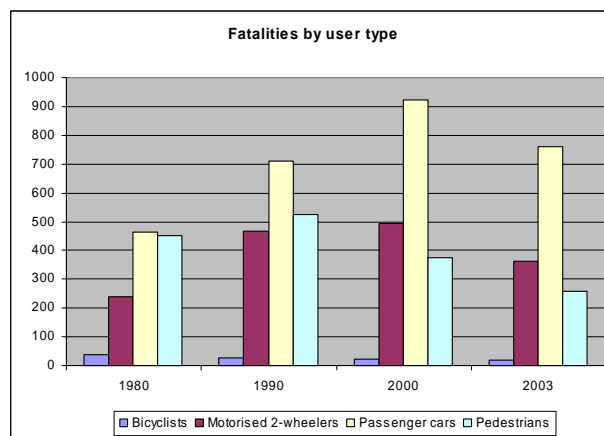
|   |  |
|---|--|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>Some road safety awareness campaigns at national and/or local level are occasionally developed for the information of the public on seatbelt and helmet wearing. Emphasis is given during peak exit periods from urban centres (Christmas, Easter, Summer).</li> <li>In addition, the more intense enforcement of seatbelt and helmet usage has been monitored since 1998.</li> </ul> |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>Upgrade of the services provided by the police, the fire brigade and the trauma management system, as well as of the relevant equipment (vehicles, speed control cameras, alcohol meters, etc) is a priority for the Greek Government and implementation efforts have been ongoing since 2002.</li> </ul>   |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>Several low-cost measures, on both the urban and inter-urban network have also been implemented, but their coverage is still limited. Furthermore, a series of national guidelines for the geometric characteristics and construction process of the inter-urban road network have been adopted (2000).</li> </ul>  |

## B.2. National Diagnosis in key safety areas

### Road users

Up until 2000, road accident fatalities for *passenger car drivers* and two-wheelers had significantly increased. However, a decrease has been detected in recent years. Similarly, while *pedestrian* fatalities were rather high in the previous decades (almost equal to passenger car driver fatalities), the respective figures for 2000 and 2003 have shown a decrease.

Evolution in fatalities by road user type

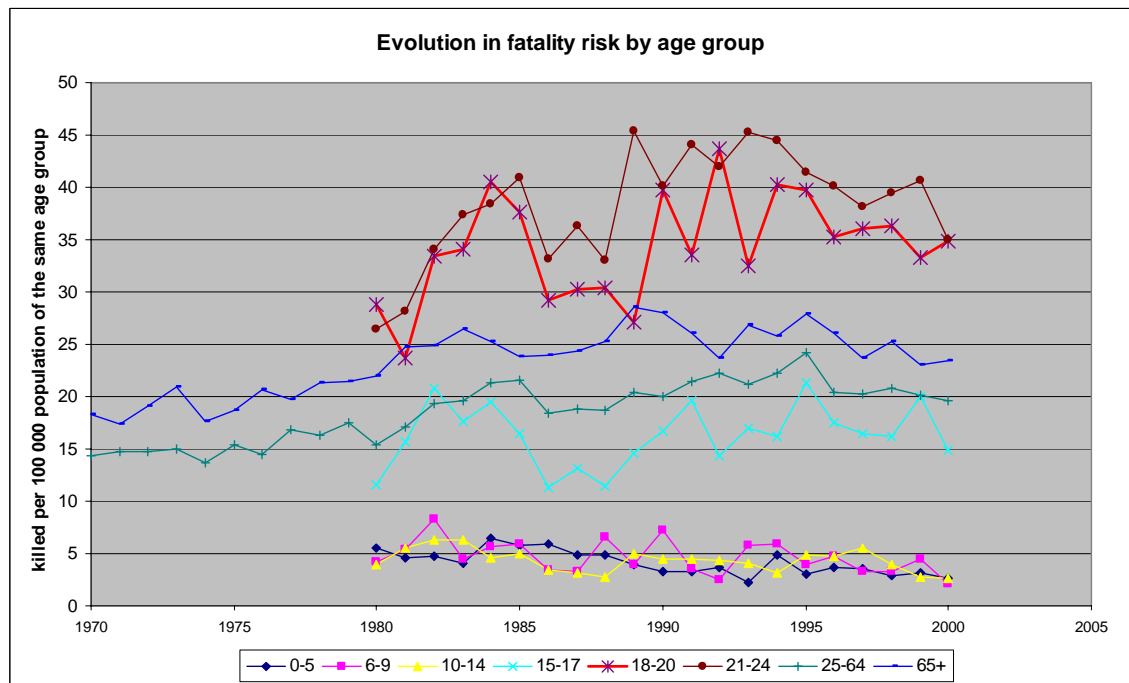
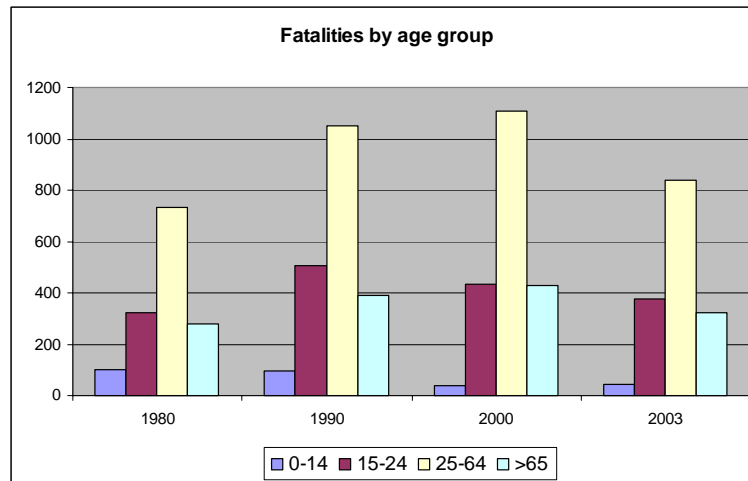


### Age groups

In 2003, the road accident fatalities rate was considerably lower, and there was a significant reduction in the number of fatalities in the 25-64 age group. It should be noted that during the past

decade road accident fatalities involving 25-64 year olds had increased, while the respective figures regarding the 15-24 age group decreased. Given that the 15-24 age group is considered the most vulnerable, this is a significant reduction that seems to have continued up until 2003.

**Evolution in fatalities by age group**



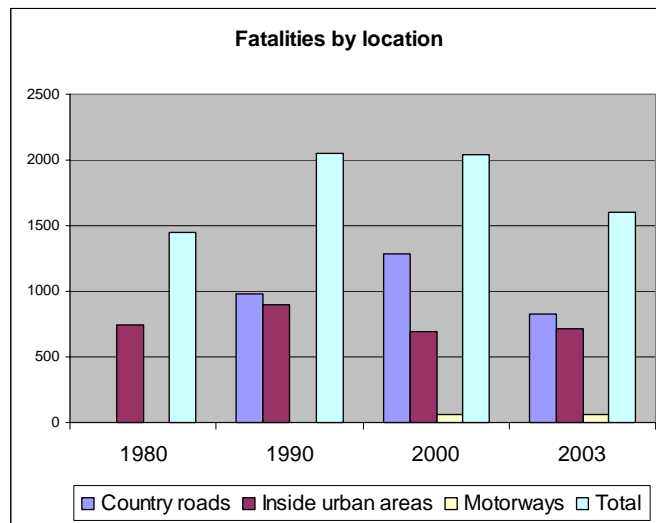
### *Type of road / location*

There appears to have been a reduction in road accident fatalities outside urban areas (country roads) during the last few years, while there has been a slight increase inside urban areas. Given that traffic congestion has become more intense over the past decades, the fact that there are more fatalities



related to road accidents inside urban areas could be due to the increased traffic of vulnerable road users (two-wheelers, pedestrians). Moreover, the national road network leading onto motorways has been undergoing significant upgrading in recent years in order to “improve” the road safety level in Greece, especially in the outside urban areas.

**Evolution in fatalities by type of road**



### *Speed*

The intensification of speed enforcement in recent years has proved very effective. More drivers have been fined for speeding during this period.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.**

|                           | 2000    | 2003    |
|---------------------------|---------|---------|
| No. of speeding citations | 175 075 | 382 970 |

### *Drink driving*

The general BAC limit is 0.5g/l. There is a lower (0.2 g/l) level for novice drivers and drivers of heavy vehicles, public vehicles, as well as motorised two-wheelers.

Drink and drive enforcement has been intensified over the past years, while the number of drink and drive infringements seems to have reduced slightly. Nowadays, most drivers in Greece believe that there is a higher probability of being controlled for alcohol than was the case previously.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b>  | <b>2004</b>  |
|--|-------------|-------------|-------------|--|--|
| Number of citations                            | 30 507      | 49 464      | 48 947      | 45 546<br>An 8% reduction compared to 2001, (79% increase in controls).<br><i>Source: response to Target questionnaire</i> | 40 986<br>A 17% reduction, compared to 2001 (80% increase in controls) |
| % of fatal accidents where alcohol is a factor | -           | -           | -           | -  | -  |

*Seatbelt and helmet wearing*

Seatbelt wearing is compulsory for all seats (front and rear). There is no estimation of wearing rate. Helmet wearing is compulsory for all motorised 2-wheelers (including mopeds). However, enforcement of seatbelt and helmet wearing has been rather “poor” over the past few years.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Regarding other road safety violations, such as red light or mobile phone, enforcement in Greece has been rather limited over the past decades, and furthermore it has not been systematic.

There are no controls for the use of drugs.

*Other factors*

**Enforcement:** The intensification of enforcement has shown significant results in recent years. The measures should and will continue in the future.

**Engineering:** A lot of interventions have taken place over the years, but they have been piecemeal and not always oriented towards road safety.

**Education:** Road safety education at schools has been compulsory since 2002.

**Encouragement:** Very few campaigns, and no co-ordination, have taken place in Greece regarding road safety.

**Evaluation:** No evaluation of road safety measures has been undertaken in Greece, apart from some rare efforts made by Universities.

**B.3. Major road safety problems today**

1. Fragmentary implementation of road safety measures and lack of coordination among the authorities involved, resulting in reduced efficiency.
2. Lack of systematic enforcement of all road safety related infringements.
3. Road network insufficiencies and inadequate maintenance, inside and outside urban areas.

4. Lack of efficient systems for road safety training and driver information, as well as a reliable vehicle technical inspection system.
5. Insufficient system for road casualty care.
6. Lack of systematic monitoring of the road safety level and eventual problems, and of the appropriate assessment of the measures' efficiency

***B.4. Forthcoming road safety initiatives to address these problems***

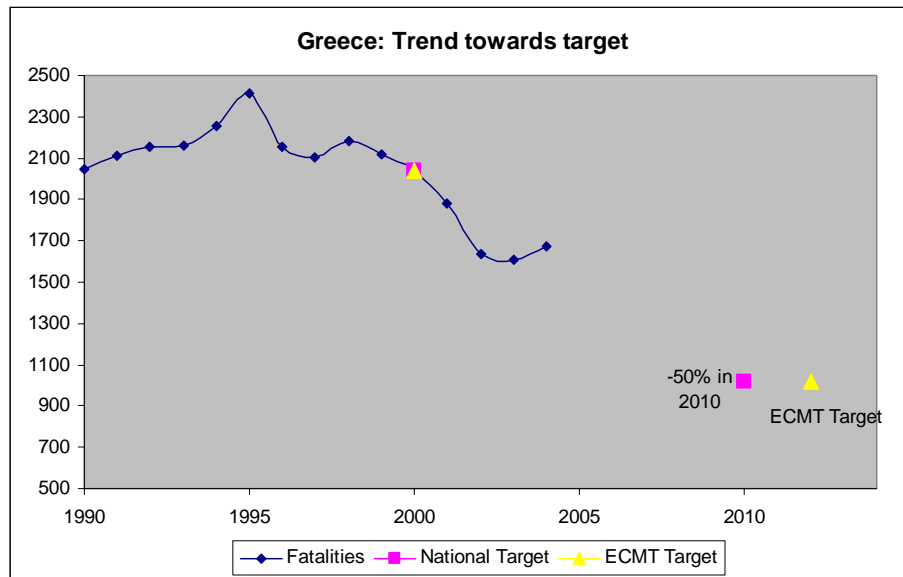
1. The Traffic Police will continue with the intensive road safety enforcement (mainly speeding, drinking and driving and use of seatbelts and helmets), and systematically monitor and publish the related enforcement and casualty results at local and national level.
2. The Ministry of Public Order has carried out a large-scale campaign for the promotion of road safety.
3. The Ministry of Public Works has prepared a business plan for the improvement of road safety, which can be used as the basis for the development of concrete road safety actions.
4. The Ministry of Public Works continues with an important programme of motorway development (750 km in Patras-Athens-Thessaloniki, 700 km in Via Egnatia, 70 km in the Athens Ring Road), as well as a promising programme for the maintenance of the inter-urban road network.
5. The Ministry of Transport and Communications has begun implementation of a 14-point programme for the improvement of road safety, dealing mainly with driver behaviour and vehicle inspection.

The second five-year Strategic Plan (2006-2010) is under development by the Department of Transportation Planning and Engineering at the National Technical University of Athens. This aims to achieve the European target of a 50% reduction in fatalities by 2010 (in relation to the 2000 figures).

### C. Road safety targets

#### General road safety targets

| Type       | Targets<br>(in % or<br>absolute<br>figures) | Base<br>year | Target<br>year | Base year<br>figure | Current<br>results (figure<br>in 2004) | Intermediate<br>targets ? |
|------------|---|--------------|----------------|---------------------|--|---------------------------|
| Fatalities | -50%  | 2000         | 2010           | 2 037               | 1 670                                  | —                         |



## D. Success story cards

### Success story from Greece

#### Intensification of enforcement

In 1998, the Greek Traffic Police began its intensification of road safety enforcement, having set as a target the gradual increase of road controls for the two most important infringements: speeding and drink driving. Since then, all recorded controls and related infringements are systematically monitored, and the related enforcement and casualty results at local and national level are regularly published, as shown in the following Table on basic road safety related trends in Greece

|                             | 1998    | 1999    | 2000    | 2001    | 2002      | 2003      | 2004      | 7-year change |
|-----------------------------|---------|---------|---------|---------|-----------|-----------|-----------|---------------|
| Injury road accidents       | 24 819  | 24 231  | 23 001  | 19 671  | 16 809    | 15 751    | 15 547    | -37%          |
| Persons killed              | 2 182   | 2 116   | 2 037   | 1 880   | 1 634     | 1 605     | 1 670     | -23%          |
| Vehicles (x1000)            | 4 323   | 4 690   | 5 061   | 5 390   | 5 693     | 5 968     | 6 257     | 45%           |
| Speed infringements         | 92 122  | 97 947  | 175 075 | 316 451 | 418 421   | 447 349   | 382 970   | 316%          |
| Drink & drive infringements | 13 996  | 17 665  | 30 507  | 49 464  | 48 947    | 45 546    | 40 986    | 193%          |
| Drink & drive controls      | 202 161 | 246 611 | 365 388 | 710 998 | 1 034 502 | 1 271 217 | 1 281 102 | 534%          |

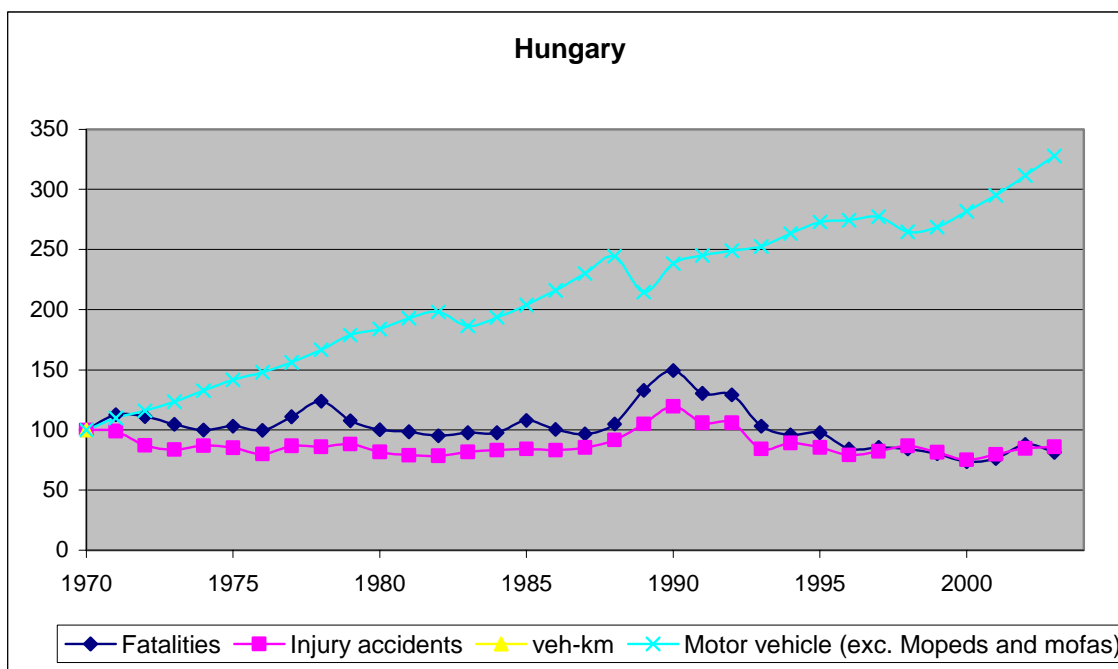
Based on the figures in the above Table, it seems that while the number of speed and drink driving infringements, as well as the number of drink driving checks, has significantly increased, the number of road accidents and persons killed has not followed the same trends over the past 7 years. There is certainly a correlation between systematic road safety enforcement and the number of road accidents. The road safety enforcement intensification is one of two basic reasons (the other is congestion), which may explain the important decrease observed in the number of road accidents, persons killed and injured during the last five years in Greece.

## HUNGARY

### A. General trend in road safety

#### Key road safety data for 2004:

- 1 296 road fatalities (1 326 in 2003)
- 20 957 injury accidents (19 976 in 2003)
- 12.8 killed per 100 000 inhabitants
- Around 320 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



The history of Hungarian road safety can be divided into four periods:

- **1976-1986: Relatively stable period.** The 30-day-definition of road accident victims was introduced in 1976.
- **1987-1990: Rapid deterioration.** It was characteristic for all countries where the political social and economic system has changed. (This is a negative side-effect of the changes because of the weak police control, false interpretation of freedom, quick changing in vehicle fleet, etc.). 1990 was the “black year” of the Hungarian road safety with nearly 2 500 people killed.

- **1991-2000:-** Continuous and big development:
  - 1993: the first Hungarian National Road Safety programme with a quantitative target. Consistent road safety measures (speed limit reduction inside built-up areas, DRL use outside built-up areas – see the “success stories” –, intensified police control and road safety campaigns, more severe sanctions, etc.)
  - 2000 was the best year till now with 1 200 people killed. (More than 50% reduction in the number of people killed.) Some demographic and economic factors “helped” the positive trend. (Decrease in the number of young novice drivers and increase in the vehicle operation costs.)
- **2001-2005:** Deterioration, mainly outside built-up areas. In 2001 the speed limits outside built-up areas were raised. (See “Less recommended story card from Hungary”). The level of police enforcement is not appropriate. This is true for the organisation and funding of the road safety activities as well.

## **B. Current state of affairs and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

#### ***B.1.1. Strategies to decrease risk of crashes:***

|  |   |
|--|---|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>• No. Not enough personal and technical constraints.</li> </ul>  |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>• No, contrary to political views.</li> </ul>  |
| New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs                                      | <ul style="list-style-type: none"> <li>• A penalty point system was introduced in 2001 for drivers' violations, including drink driving. However, relatively small capacity is available for continuous police controls. There are difficulties to present correct evidences quickly at the supposed using of drugs.</li> </ul> |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>• Yes, by continuous road reconstructions. All the listed items are dealt with, except lighting.</li> </ul>  |

|   |   |
|---|---|
| Enforcement of other road rules               | <ul style="list-style-type: none"> <li>• On going.</li> </ul>   |
| Graduated Licensing for novice drivers        | <ul style="list-style-type: none"> <li>• Already implemented</li> </ul>   |
| Education and information programmes          | <ul style="list-style-type: none"> <li>• GRSP safety belt campaign in 2004</li> </ul>                                 |
| Regulation on vehicle inspection              | <ul style="list-style-type: none"> <li>• Already implemented</li> </ul>   |
| Regulation on active vehicle safety equipment | <ul style="list-style-type: none"> <li>• Systematic checking of vehicles (not very effective in practice).</li> </ul> |

### *B.1.2. Strategies to decrease risk of injury:*

|  |  |
|--|--|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>• Increased enforcement (2004-2005). Police has started to show good example at safety belt wearing.</li> </ul>   |
| Emergency services   | <ul style="list-style-type: none"> <li>• Already implemented but technical (vehicle) and financial difficulties are braking the efficiency</li> </ul>  |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>• Median barriers on the most dangerous road-sections (e.g. on M0 road for motor vehicles ) from 2002; roadside barriers at developments and reconstructions, if needed; minimising the number of close obstacles at reconstructions</li> </ul> |
| Regulation on vehicle equipment  | <ul style="list-style-type: none"> <li>• In line with EU directives</li> </ul>   |

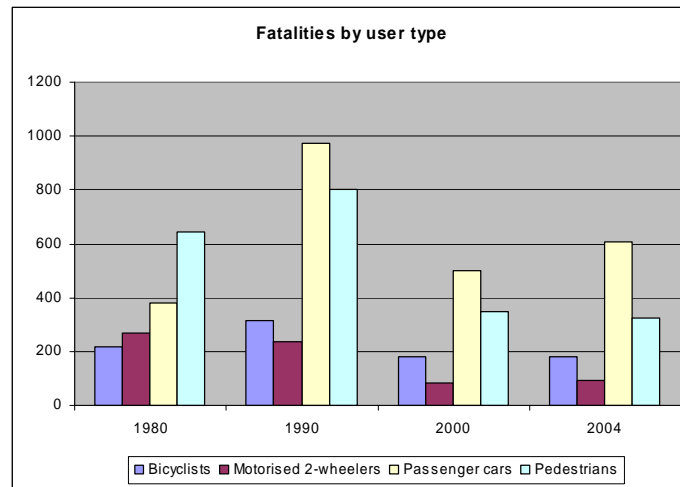
## ***B.2. National Diagnosis in key safety areas***

### *Road users*

In the recent years, the increased number of killed car occupants can be observed mainly outside built-up areas. This can be explained partly by the increased speed limit outside built-up areas. (See section on "Less recommended story card from Hungary").



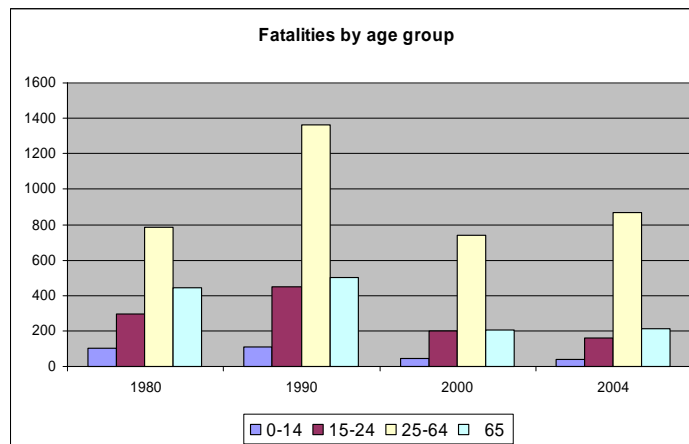
### Evolution in fatalities by road user type

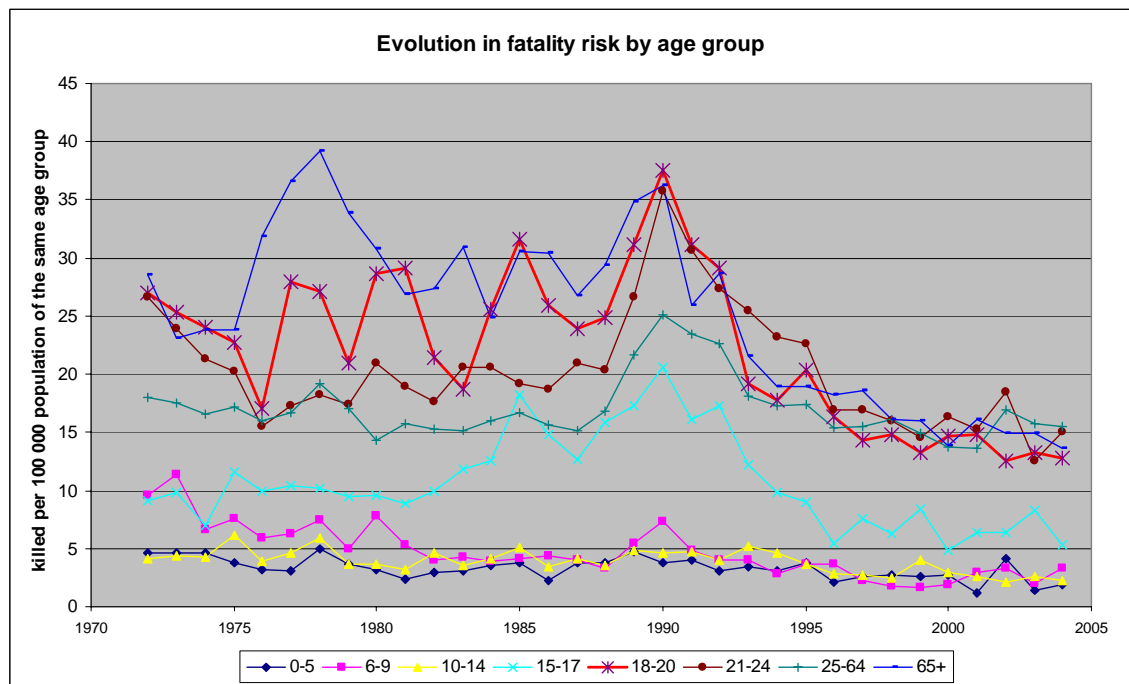


### Age groups

After a declining trend (1990-2000), the number of fatalities in the most active age group (25-64 years old) has increased again since 2000. (See section on "Less recommended story card from Hungary").

### Evolution in fatalities by age group

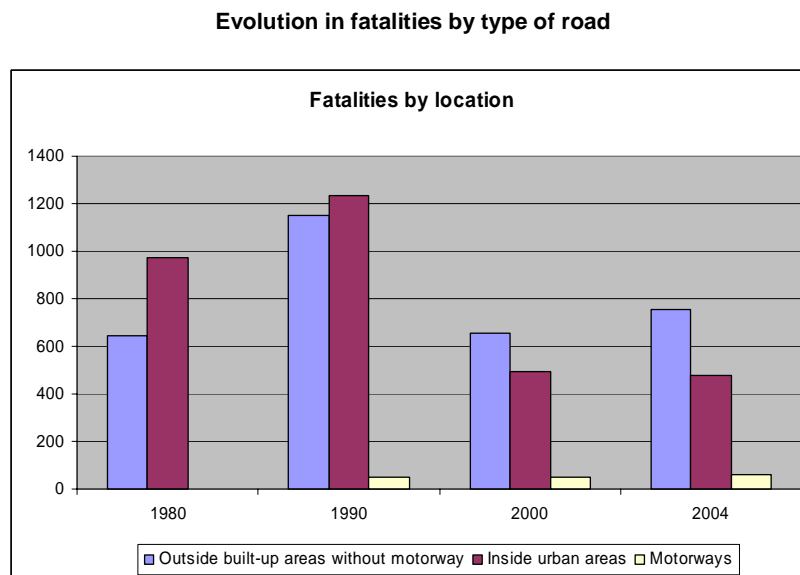




#### *Type of road / location*

The increasing number of fatalities outside built up areas is due mainly to the increased speed limits. (See section on "Less recommended story card from Hungary".)

Without exposure data (kilometres driven on each type of road) it is impossible to evaluate the risk. It is only possible to evaluate the distribution of the fatalities by different road categories can be evaluated.



## *Speed*

The percentage of fatal crashes where speed was a causation factor has been increasing since 1990 and reached its highest level in 2004.

### **Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|  | <b>1980</b>  | <b>1994</b>  | <b>2000</b>  | <b>2003</b>  |
|--|--|--|--|--|
| Nb of speeding citations   |  |  |  |  |
| % of fatal crashes where speed is a causation factor                                     | <b>36,66<sup>(1)</sup></b><br><b>46,36<sup>(2)</sup></b> | <b>33,96<sup>(1)</sup></b><br><b>39,68<sup>(2)</sup></b> | <b>38,34<sup>(1)</sup></b><br><b>43,73<sup>(2)</sup></b> | <b>41,18<sup>(1)</sup></b><br><b>46,97<sup>(2)</sup></b> |
| % of drivers over the posted speed limit in :<br>urban areas<br>rural roads<br>motorways |  |  |  |  |

Note: (1) = 100% = all fatal crashes

(2) = 100% = all fatal crashes caused by the driver. In our opinion the data (2) would be more appropriate. In the case (1) the accidents caused by pedestrians have been taken into account as well, which is misleading.

## *Drink driving*

According to the Hungarian Highway Code, the vehicle driver may not be under the influence of some driving ability impairing drug, and the organism is not allowed to contain any alcohol originating from some alcoholic drink (or food with alcoholic content).

According to the standpoint of the National Institute of Forensic Medicine, alcohol consumption cannot be proved if the blood alcohol content does not exceed 0.2 ‰. In principle, the allowed blood alcohol level is 0.0 ‰, but in practice it is 0.2 ‰. No responsibility for drinking and driving can be called to if the driver refuses to admit the fact of alcohol consumption, and blood alcohol content does not exceed the value of 0.2 ‰.

Drivers' alcohol consumption may be controlled at random by the police. If an accident occurs, police control on the spot the drinking and driving of the driver(s) involved in the accident. If the driver has been injured in the accident, the blood test is made in the hospital; if the driver is dead, blood and urine samples are taken during the autopsy.

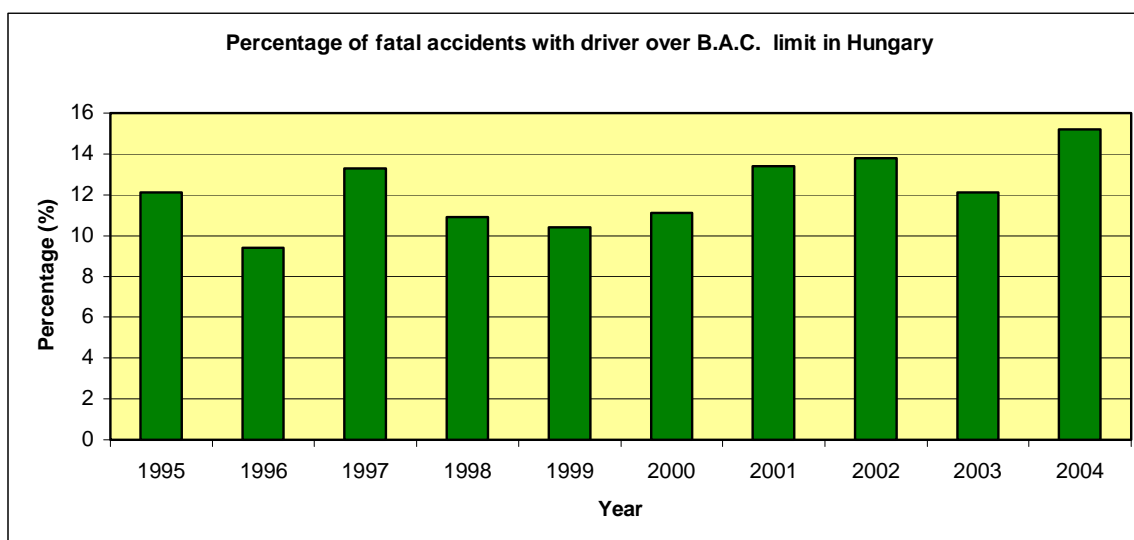
Between 1990 and 2000, the number of road accidents involving personal injury and drinking and driving accidents decreased by 37.0 and 51.6%, respectively. Unfortunately, starting in 2001, both the number of total accidents and those caused under the influence of alcohol has been increasing. In comparison with the data of the previous year, the number of drinking and driving accidents increased in 2001 and 2002 by 4 and 14%, respectively. In fact, in 2003, the number of accidents caused under the influence of alcohol was practically the same as in 2002. In 2004 the number of personal injury accidents caused under the influence of alcohol increased by 18.7% compared with the previous year.

Although the number of police breathalysing enforcements increased in 2002, 2003 and 2004, there was no reduction in the number of drinking and driving accidents and there is a continuous deterioration in this area.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1994  | 2000  | 2003  |
|--|------|-------|-------|-------|
| Number of citations                            |      |       |       |       |
| % of fatal accidents where alcohol is a factor |      | 18,31 | 11,09 | 15,15 |

| Year | Number of breathalysing tests | Number of positive tests | Proportion of positive tests |
|------|-------------------------------|--------------------------|------------------------------|
| 1990 | 457 586                       | 37 032                   | 8.1                          |
| 1991 | 516 311                       | 43 035                   | 8.3                          |
| 1992 | 649 107                       | 47 170                   | 7.3                          |
| 1993 | 767 598                       | 40 683                   | 5.3                          |
| 1994 | 801 796                       | 40 067                   | 5.0                          |
| 1995 | 732 808                       | 33 500                   | 4.6                          |
| 1996 | 795 176                       | 28 406                   | 3.6                          |
| 1997 | 793 430                       | 26 503                   | 3.3                          |
| 1998 | 773 292                       | 27 401                   | 3.5                          |
| 1999 | 858 053                       | 29 308                   | 3.4                          |
| 2000 | 935 319                       | 28 767                   | 3.1                          |
| 2001 | 973 384                       | 29 640                   | 3.1                          |
| 2002 | 1 032 777                     | 34 074                   | 3.3                          |
| 2003 | 1 101 010                     | 34 213                   | 3.1                          |
| 2004 | 1 172 956                     | 36 088                   | 3,1                          |



#### *Seatbelt and helmet wearing*

Wearing a safety belt is compulsory in Hungary. For rear seats it has been compulsory for roads outside built up areas since 1993, and for roads inside built-up areas, since 2001.

The safety belt wearing rates is very low. From the year 2000 on, there is an increasing trend due to the more effective police enforcement and campaigns. It is a positive change that as of 2004 the driver can get demerit point when not wearing a seat belt and when a passenger does not wear a seatbelt.

|                    | 1980 | 1990 | 2000 | 2004 |
|--------------------|------|------|------|------|
| <i>General</i>     |      |      | 43%  | 58%  |
| <i>Front Seats</i> |      |      | 49%  | 59%* |
| Motorway           |      |      | 62%  | 69%  |
| Rural roads        |      |      | 48%  | 56%  |
| Urban roads        |      |      | 35%  | 50%  |
| <i>Rear Seat</i>   |      |      | 8%   | 20%  |

\*2003

Helmet wearing has been compulsory for motorcyclists since 1965; for moped riders outside built-up areas since 1997, and since 1998 inside built-up areas.

#### *Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

The use of mobile phones when driving has become widespread, despite the regulation which prohibits the use of hand-held devices while driving.

The use of direction indicators is often neglected in urban areas.

### *Other factors*

The level of **police enforcement** is very low in comparison with other countries, taking into account the population, the vehicle fleet and the road network.

### ***B.3. Major road safety problems today***

1. Lack of high-level **political willingness** and responsibility.
2. Lack of appropriate **organisation** for the co-ordination of the road safety measures.
3. Improvised **rule-making** – sometimes under the influence of foreign examples – results sophisticated, too large and not always coherent prescriptions.
4. **Low level of police enforcement** and road safety campaigns (therefore: increasing speeds and speed differences, low level of safety belt wearing rates, increasing rate of drinking and driving) stepping over a lot of main rules: red light, give way, turning, blocking the intersection).

### ***B.4. Forthcoming road safety initiatives to address these problems***

These measures are suggestions only from researchers:

- Evaluation of the National Road Safety Programme approved in 1993 was carried out some years ago with clear proposals for the future activities. Accordingly, the soonest possible decision should be made in connection with the Programme's revision, the setting of a new quantified target, eventually the national adoption of the EU's or CEMT's goals. To this end, the EU programme needs to be adapted to Hungarian circumstances. The elaborated programme – together with quantifiable targets – has to be widely disseminated and accepted.
- Institutional and organisational background engaged presently in management and responsibility are not optimal. In many countries, one of the ministries (home affairs or transport) is responsible for road safety; in Hungary it is not obviously defined which of the ministries has the main responsibility fall in this field. It causes a basic problem that the ministries evaluate their own activities; and no emphasis is laid on fine, objective and independent analysis of the road safety situation. Professional interpretation and presentation, just as the evaluation of the different ministries' work, the co-ordination of their activities, would also be the task of a high-level organisation, independent of the ministries.
- Resources of road safety improvement should be increased, and the aspects of cost efficiency should be applied during utilisation.
- Dialogue between decision-makers and researchers should be improved. Basically, the tasks should be determined by professional concepts and decisions.
- Of course, in the subject of drivers' training also, – being the efficient influencing element of the behavioural factors – the road safety views, basically the selection of the safe speed and in general the strict requirement of rules' obedience must get a greater role.
- Nowadays in the field of road safety, the "letting the genie out of the lamp" is witnessed. For example the "message" of speed limit increase severely deteriorates drivers' behaviour;

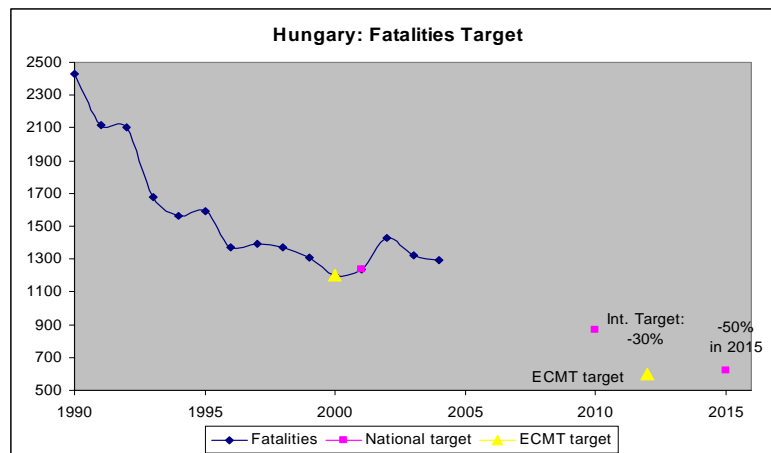
impatient, aggressive driving style is widely spreading. Previously, the situation could still be influenced positively notwithstanding the insufficient number of the police force. This is less the case now. Development of effective speed-management would be of primary importance.

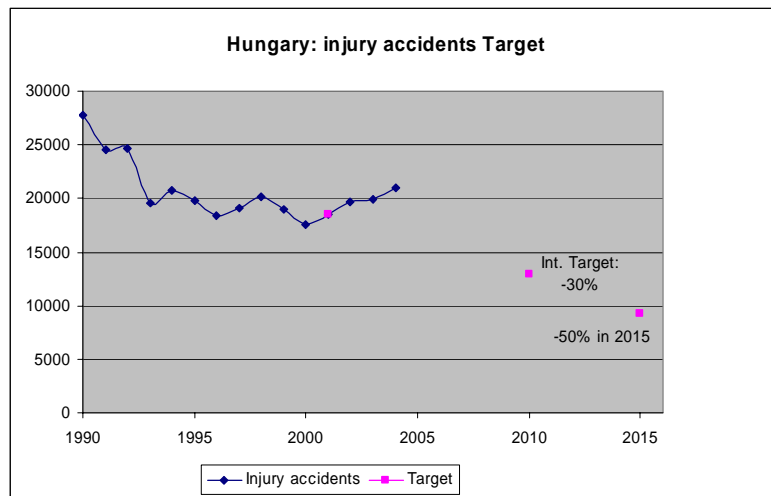
- The presence of police needs to be enhanced considerably. Determined, severe police is required which consistently enforces the most important rules (speed limits, ban on alcohol consumption, wearing of safety belts).

### C. Road safety targets

| Type                | Targets<br>(in % or absolute<br>figures) | Base<br>year | Target<br>year | Base year<br>figure | Current results<br>(figure in 2004) | Intermediate<br>targets ?           |
|---------------------|--|--------------|----------------|---------------------|-------------------------------------|-------------------------------------|
| Fatalities          | -50%                                     | 2001         | 2015           | 1 239               | 1 296 (2004)                        | Yes<br><i>min. -30%<br/>by 2010</i> |
| Injury<br>accidents | -50%                                     | 2001         | 2015           | 1 8505              | 20 957 (2004)                       | <i>min. -30%<br/>by 2010</i>        |

Illustration: Current trend towards targets





#### D. Success story cards

##### Success story from Hungary

###### 1.) Decrease of the speed limit from 60 km/h to 50 km/h inside built-up areas

###### Best practice in Hungary

The decrease from 60 km/h to 50 km/h of the speed limit inside built up areas – in agreement with international experiences – proved to be an efficient road safety measure in Hungary, too. The greatest effect could be achieved on the short run, which – along other factors – was due to an intensive propaganda-campaign and police enforcement accompanying the introduction.

The effect of the measure has been analysed through a so-called control-group test [1].

The real effect of the measure is found if the reduction of the number of fatal accident victims registered in the test group (23,4%) is subtracted from the decrease of the accident fatalities experienced in the test group (37,3%). In other words, this means that the decrease from 60 km/h to 50 km/h of the speed limit in force inside built up areas reduced the number of accident fatalities in the “after” period by 13.9%.

The number of killed as a result of road accidents inside built up area in each months of the year 1993 was below the corresponding values of 1992 (Figure 1). However, as of 1995 the accident data and results of speed measurements show well already that the initial effect of the 50 km/h speed limitation “is fading away” gradually, and speed, as well as the number of fatalities inside built up areas increase again. All this calls the attention to the fact, that also inside built up areas a speed control far more intensive than before, and as a consequence, a more probable and severe sanctioning of excessive speeding would be necessary.

###### REFERENCE

[1] Péter Holló, Ph.D.: Impact analysis of road safety measures with special emphasis on the methodology of international comparison, doctoral dissertation, Hungarian Academy of Sciences, Budapest, 1999.

###### 2.) Daytime Running Lights

As of 1 March 1993, a partial (relating only to semi-motorways and main roads), and as of 1 June 1994, a total (relating to all roads) legal obligation to use DRL came into force outside built-up areas in Hungary. The paper [1] examines the effectiveness of this regulation as an accident countermeasure.



The results of the comparison group analysis are consistent not only with the hypothesis that DRL reduces certain types of collisions, but also with the results of a meta-analysis of 17 studies that have evaluated the effects on accidents of using DRL on cars. By using this method, it was possible to detect in the experimental group a 13.0% reduction in the number of frontal and 'crossing' vehicle collisions in daylight, in good visibility conditions, during the "after" period. The number of frontal and crossing collisions decreased without a simultaneous increase in rear-end collisions: the number of the latter has not significantly changed. Thus, the hypothesis, that it is more reliable to estimate the collision-reducing effect of DRL on the basis of accidents occurring only in good visibility conditions, rather than on the basis of the total number of daylight accidents, has been justified by this study. The causes of this, as well as the difficulties and confounding factors arising when the odds ratio method is used, are dealt with in the study. By analysing over a longer time series, it was possible to verify that the positive road safety effect is not a mere novelty effect, and is not simply due to the 'regression to the mean'.

[1] Changes in the legislation on the use of daytime running lights by motor vehicles and their effect on road safety in Hungary.

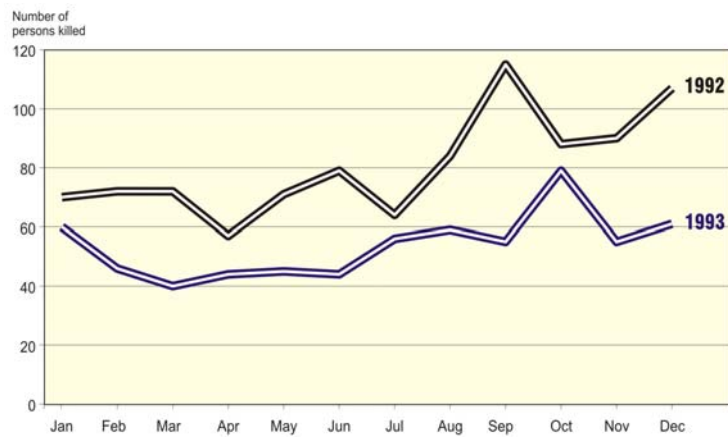
Accident Analysis and Prevention, Vol. 30, No. 2., March 1998, pp. 183-199.

Table 1: The significance analysis of the effect of intervention

| Number of people killed in road accidents              | "Before"-period:<br>(01.03.1990-<br>28.02.1993) | "After"-period:<br>(01.03.1993-<br>29.02.1996) | Total: |        |
|--|---|--|--------|--------|
|  |   |  |        |        |
| Test group (roads inside built up areas)               | 3106  | 1947   | 5 053  | -37,3% |
|  |   |  |        |        |
| Control group (secondary roads outside built up areas) | 1181  | 905  | 2 086  | -23,4% |
|  |   |  |        |        |
| Total:   | 4287  | 2852   | 7139   |        |
|  |   |  |        |        |

$$\chi^2 = \frac{7139 \left[ \left| 3106 \cdot 905 - 1947 \cdot 1181 \right| - \frac{7139}{2} \right]^2}{5053 \cdot 2086 \cdot 4287 \cdot 2852} = 14,39 > 10,827 = \chi_{0,001}$$

### Fatalities due to road traffic accidents inside built-up areas in 1992 and 1993



### Less recommended story card from Hungary

#### Increase of the speed limits outside built-up areas

The speed limit on all road categories outside built up areas was increased by 10 km/h as of 1<sup>st</sup> May 2001. Accordingly, the following increases have been introduced:

- General speed limit outside built up areas changed from 80 km/h to 90 km/h;
- Speed limit on highways increased from 100 km/h to 110 km/h;
- Speed limit on motorways increased from 120 km/h to 130 km/h.

The road safety of public roads outside built up areas, and in particular that of first category main roads, deteriorated spectacularly following these interventions. This conclusion can be drawn quite simply, and without special analysis, on the basis of Figure 1, where the number of road accident fatalities can be seen inside and outside built up areas. It is clear, that whereas, following the slight deterioration experienced in 2001, the declining trend in built up areas continued in 2002, the number of fatal victims outside built up areas increased considerably. (In practice, the level of road safety has fallen to that of 1995).

Figure 1: Number of road accident fatalities inside and outside built up areas between 1980 and 2003

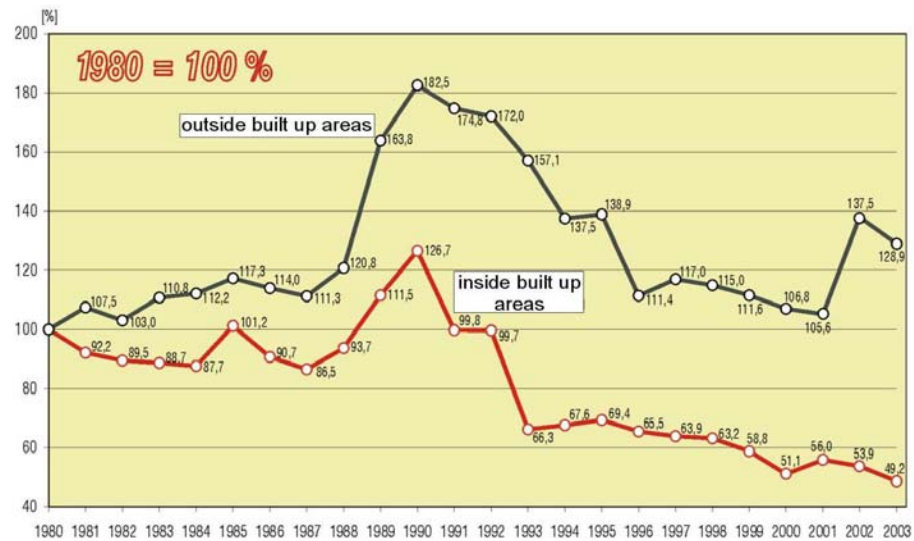
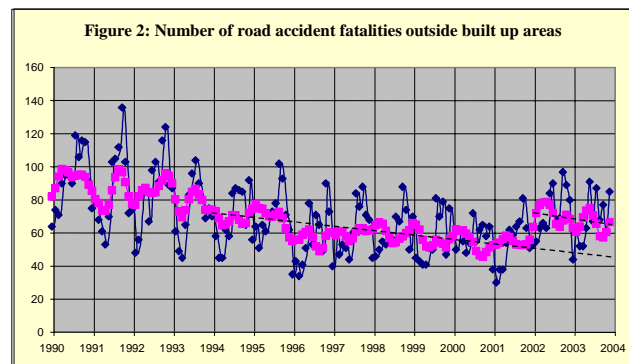
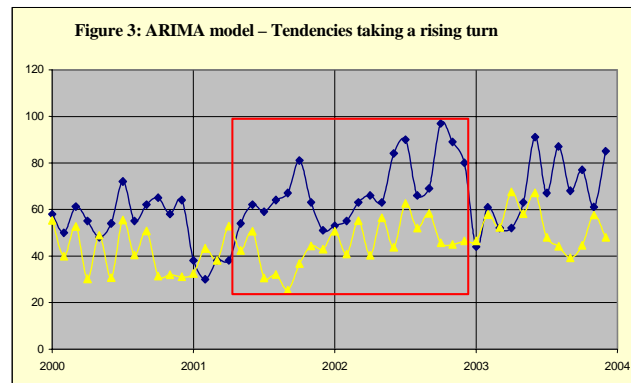


Figure 2 clearly shows that there is a changing tendency in the number of fatalities outside built up areas. It can be declared that after 2001 the number of fatal injuries has increased by 20 each month.



The ARIMA model shows a firm deviation from the tendency as of May 2001, that is, from the date when speed limits outside built up areas were raised (Figure 3).



With the help of the analysis it can be demonstrated, that the tendency of probable and experienced monthly numbers of people killed in road accidents outside built up areas diverges as of May 2001; that is, from this date on (following the increase in the speed limits) the tendency of the experienced values, which had been falling up to that time, starts to increase.

The analysis clearly proves the negative road safety effect of the increase of the speed limits.

[1] Practical forecast experiences concerning the road safety impact analysis of increased speed limits (with co-author Olivér Zsigmond)

On Safe Roads in the XXI. Century 3rd Conference

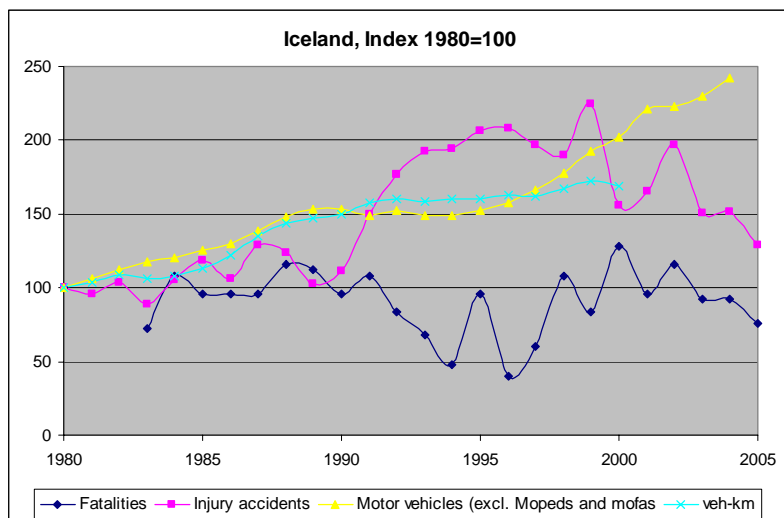
25-27 October, 2004, Budapest, Hungary Proceedings, Meeting Budapest Ltd. (CD-ROM)

## ICELAND

### A. General trend in road safety

#### Key road safety data for 2005:

- 19 road fatalities (23 in 2004)
- 671 injury accidents (790 in 2004)
- 7.8 killed per 100 000 population in 2004
- Around 660 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>Increased enforcement (increased surveillance) summer of 2005.</li> </ul>  |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>No, but advisory speed was introduced in Iceland during summer 2005.</li> </ul>  |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>Increased enforcement (increased surveillance) for drink driving during summer 2005.</li> </ul>  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>No, but there is an <i>Estimate of driving skills</i> which was introduced on 1st January 2003. : one has to pass that before getting full licence. (see contribution of Iceland to the OECD Working Group on Young Drivers).</li> </ul> |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>Increased emphasis on traffic education for the 7-16 age group in the new traffic safety plan (Spring 2005).</li> </ul>  |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>No</li> </ul>  |

#### B.1.2. Strategies to decrease risk of injury:

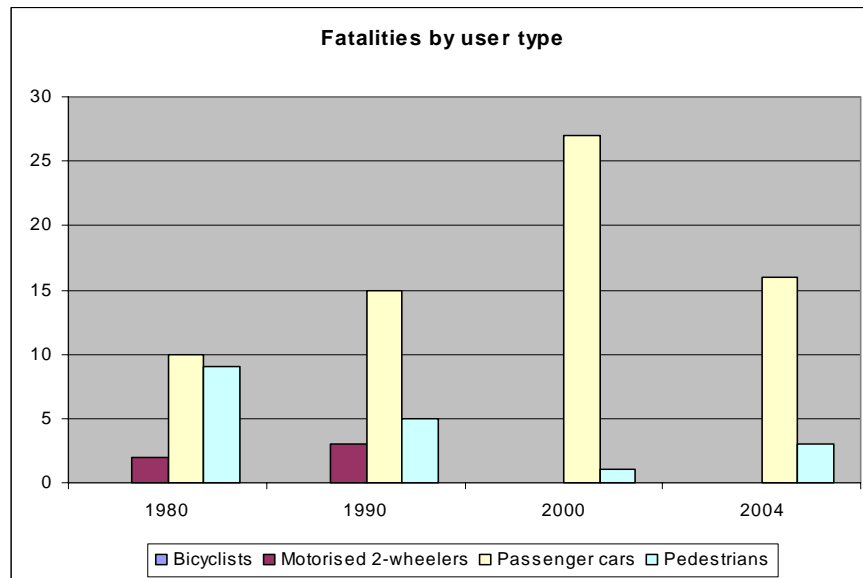
|   |   |
|---|---|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>Increased enforcement (increased surveillance) in the case of seatbelt wearing in the summer 2005.</li> </ul>  |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>A median barrier is to be built to a new 2+1 road between Reykjavik and Selfoss (a small town) 50 km east of Reykjavik . A wire rope will be installed in the median between directions. This is the first road with physical median barrier outside urban areas.</li> <li>In the summer of 2004 the first part of a 2+2 road between Reykjavik and the international airport in Keflavik was opened. This widening from 1+1 to 2+2 was primarily put through in order to increase road safety, the average annual daily traffic did not require the widening. A safety area of 11 meters is between directions but there is no physical barrier.</li> </ul> |

## B.2. National Diagnosis in key safety areas

### Road users

As the numbers of killed in traffic are very low in Iceland it is not possible to compare the number of fatalities from one year to another. One has to look at averages over several years.

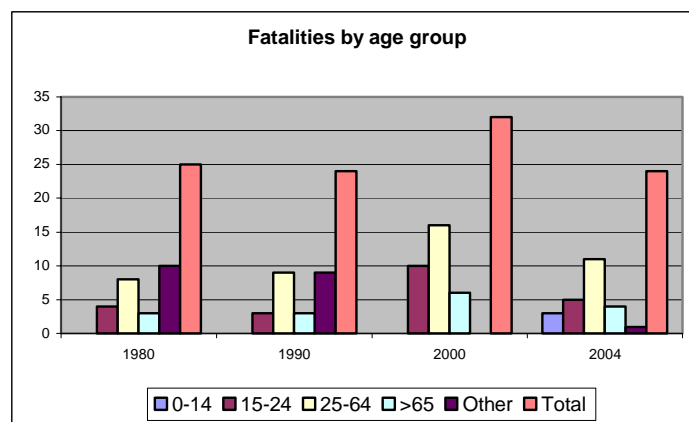
**Evolution in fatalities by road user type**



### Age groups

Of all those killed or injured in traffic in Iceland, the proportion of 17-20 year olds killed or injured is more than 20%, even though this age group represents only ca. 5% of the nation.

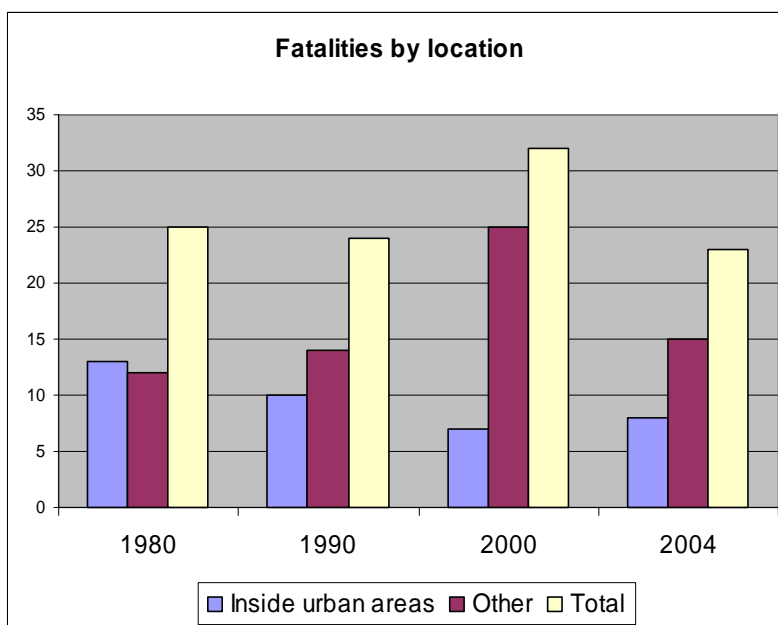
**Evolution in fatalities by age group**



### *Type of road / location*

During the period 2001-2004, about 77% of fatal accidents occurred in rural surroundings. In the same period, about 47% of all serious accidents occurred in rural surroundings. From 1971-2000 the percentage of fatal accidents occurring in rural surroundings increased.

**Evolution in fatalities by type of road**



### *Speed*

Speed is a big problem on Icelandic roads. There has been an increase in the average speed and the V85-speed in the period 1990-2004.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.**

|  | 1980 | 1994 | 2000 | 2003  |
|--|------|------|------|---|
| No. of speeding citations  |      |      |      | 26 000 (0.15 per licensed driver)   |
| % of fatal crashes where speed is a causation factor                                     |      |      |      | For the period 1998-2004 speed was the primary cause in 29 fatal accidents. The total no. of fatal accidents in the same period was 152 |
| % of drivers over the posted speed limit in :<br>urban areas<br>rural roads<br>motorways |      |      |      | Freeway (90km/h): 80%<br>Main highway (90 km/h): 62%<br>Rural roads: 77%  |



### *Drink driving*

In Iceland, the BAC limit is: 0.5 g/l.

#### **Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1994 | 2000 | 2003   |
|--|------|------|------|--|
| % of fatal accidents where alcohol is a factor |      |      |      | <b><i>Alcohol was the primary cause of 18 fatal accidents in the period 1998-2004. The total number of fatal accidents in the same period was 152.</i></b> |

### *Seatbelt and helmet wearing*

It is compulsory, in Iceland, to wear seatbelts in both front and rear seats if they are available. On average, 40% of victims in fatal accidents during the period 1998-2004 were not wearing seatbelts.

Helmet wearing is mandatory for all motorised 2-wheelers, and is compulsory for cyclists up to 14 years of age.

#### ***B.3. Major road safety problems today***

1. Speeding and non-use of seatbelts.
2. Non-use of seatbelts in buses.
3. Use of alcohol and drugs when driving.
4. Black spots in the road system (*e.g.* narrow bridges), and lack of guardrails.
5. Foreign drivers unfamiliar with the circumstances on Icelandic roads.
6. Narrow roads.
7. Accidents caused by animals running onto rural roads.

#### ***B.4. Forthcoming road safety initiatives to address these problems***

1. Increased enforcement (through increased police surveillance) in the summer of 2005. It is also intended to introduce more safety cameras in Iceland within the next four years.
2. Increased enforcement.
3. Increased enforcement.
4. Black spots will be systematically eliminated within the next four years.
5. Videos describing Icelandic road conditions are being made and shown to tourists.
6. Standards will be reviewed.
7. More fences will be put up in order to reduce the number of accidents caused by animals running onto the road.

### C. Road safety targets

The Icelandic Parliament (in the spring of 2005) agreed upon a new traffic safety plan. This plan is a part of the transportation plan, of which the goals and objectives are as follows:

- In 2016, the number of killed in traffic in Iceland per 100 thousand inhabitants shall not be higher than in countries with outstanding traffic safety (*e.g.* Great Britain, Sweden and Netherlands now have the lowest numbers, *i.e.* five year average 1999-2003).
- The number of killed and seriously injured in traffic in Iceland shall decrease by 5% on average per year until 2016.

#### *Intermediate targets:*

- It is expected, after the safety actions planned for the period 2005-2008 have taken place (see B3 and B4, except for narrow roads), that on average the lives of 4 persons in Iceland will be saved per year. (Again it should be mentioned that, because of low numbers, it is necessary to look at the average over several years.)
- It is also expected that the same safety actions will prevent 14 persons per year (on average) being seriously injured.

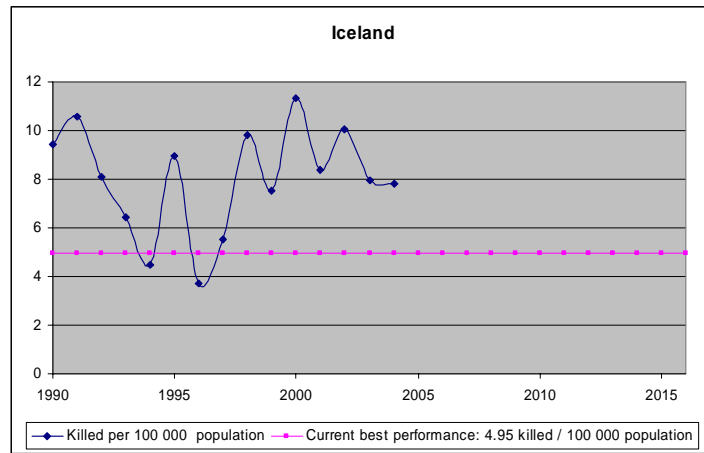
#### General road safety targets

| Type                                 | Targets<br>(in % or<br>absolute<br>figures)            | Base year   | Target<br>year | Base<br>year<br>figure | Current<br>results<br>(figure in<br>2004) | Intermediate<br>targets?   |
|--------------------------------------|--|---|----------------|------------------------|---|--|
| Fatalities per<br>100 000 population | Not higher<br>than the best<br>performing<br>countries | 1999-2003   | 2016           | 9.0                    | 7.8                                       |  |
| Killed and seriously<br>injured      | -5% per year   | Average of<br>1999-2003<br>for killed,<br>2003 for<br>seriously<br>injured. | 2016           | 170.8*                 | 138**                                     | Saving 4 fatalities<br>and 14 serious<br>injuries on average<br>per year after having<br>implemented all the<br>safety actions<br>planned for the<br>period 2005-2008. |

\* *i.e.* 145 (no. of seriously injured in 2003) + 25,8 (the number of killed in 1999-2003 on average)  
When the traffic safety plan was prepared the numbers for the year 2003 were the most recent ones.

\*\* 138 = 115(no. of seriously injured in 2004, sharp reduction from 2003) + 23 (the number of killed in 2004)

### Trend towards target

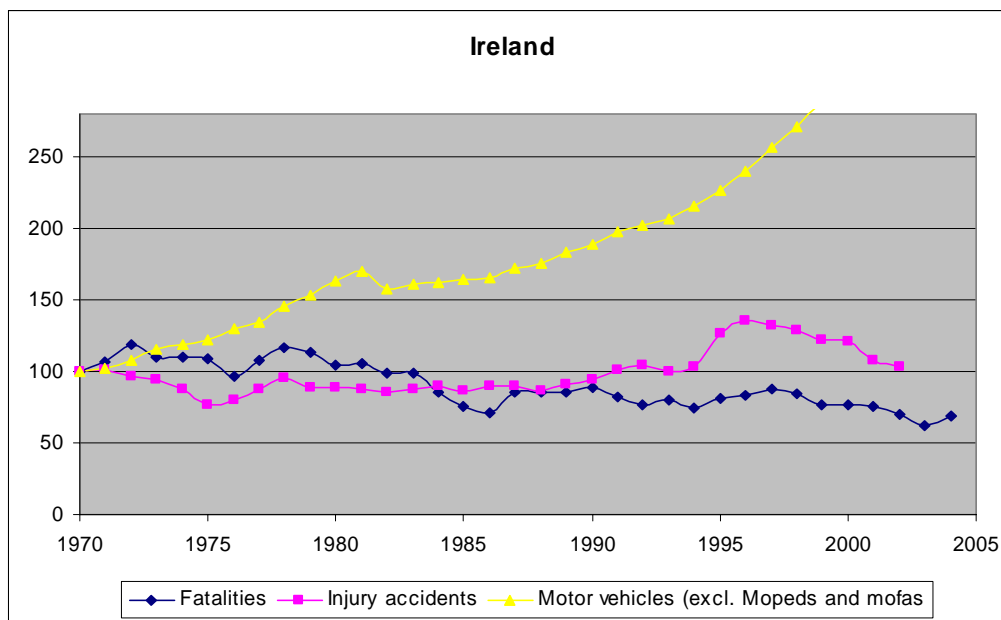


## IRELAND

### A. General trend in road safety

#### Key road safety data for 2004:

- 375 road fatalities (335 in 2003)
- 5 985 injury accidents in 2003
- 9.5 killed per 100 000 inhabitants
- Around 470 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |  |
|--|--|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>Penalty points for speeding were introduced in October 2002 – no formal assessments have been carried out to date but in the months immediately after the introduction of the system, road deaths reduced significantly. Furthermore, 2003 saw the lowest level of road deaths in 40 years. A speed survey was carried out in 2003 which monitored compliance with speed limits since the introduction of penalty points – improvements were experienced in many categories.</li> </ul> <p><i>The Road Safety Strategy 1998-2002 set a target of a reduction of 20% on the number of road deaths in 1997. One of the key features of that Strategy was the introduction of penalty points. The target was achieved by the end of 2002 with further reductions experienced in 2003.</i></p>  |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>In January 2005, a revised speed limit structure in metric values was introduced. The revised structure resulted in the reduction of speed limits on non-national roads from 60mph to approximately 50 mph (80 km/h). The changeover process was a complex project involving an intensive public information campaign. The changeover was smooth and successful and an evaluation of the information campaign has shown this to be the case. A speed survey is taking place in 2005 which will monitor compliance with the reduced speed limits. Guidelines have also issued to local authorities in relation to the application of reduced speed limits at schools and where road works are taking place.</li> </ul> <p><i>The proposal to introduce a revised speed limit structure in metric values is a key measure in the Road Safety Strategy 2004 – 2006. That Strategy sets a target of a 25% reduction by the end of 2006 on the average number of road deaths between 1998 and 2003.</i></p>                          |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs | <ul style="list-style-type: none"> <li>On 1 December 2003, extended breath testing was introduced. Prior to this date, the Irish police could only request a breath sample where they had formed the opinion that an intoxicant had been consumed. The new powers provide that a member of the police can request a breath sample where a collision has taken place, or where a road traffic offence has been committed. No assessment/evaluation of this system has taken place.</li> </ul> <p><i>This measure was provided for in the first Road Safety Strategy (1998-2002) which set a target of a 25% reduction in the number of road collisions occurring between 9pm and 3am (as collisions at those times are associated with drink driving). Figures for 2002 indicate that the number of fatal collisions occurring between 21.00 and 03.00 hours was 10.4% lower than in 1997. The target set out in the Strategy was therefore not achieved by the end of 2002. However, figures for 2001 show a 26.4% drop in fatal accidents during these hours.</i></p> |

|  |   |
|--|---|
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>The low cost remedial measures programme for national roads was initiated by the National Roads Authority in 1994. The Road Safety Strategy 1998-2002 continued the implementation of the scheme with 418 schemes being completed (target was 400). The new Strategy proposes that a further 240 schemes be implemented over 2004 – 2006 along with other engineering measures, such as traffic calming, high cost remedial measures and 2+1 roadway schemes. The low cost engineering measures programme has achieved an average annual rate of return of 595% compared with a target of 100%.</li> </ul> <p><i>Implementation of engineering measures relate to the achievement of the primary target relating to a reduction in deaths and injuries</i></p>   |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>Specific enforcement campaigns targeting speeding, drink-driving and seat-belt wearing as well as campaigns targeting HGVs take place on an ongoing basis.</li> <li>Penalty points for seat-belt wearing offences, driving without insurance and careless driving were introduced in 2003 and 2004. Evaluation of these campaigns takes place through the collation of enforcement statistics in order to monitor behaviour.</li> </ul> <p><i>The Road Safety Strategy 2004 – 2006 sets specific enforcement targets (e.g. 11.1m checks for speeding per annum by the end of the period of the Strategy). The achievement of high levels of enforcement relates to the achievement of the primary target. (25% reduction in road deaths). (The achievement of the speed enforcement target is dependent on the introduction of a network of privately operated speed cameras).</i></p> |
| Graduated Licensing for novice drivers   | <ul style="list-style-type: none"> <li>No recent initiatives</li> </ul>   |
| Education and information programmes   | <ul style="list-style-type: none"> <li>Hard-hitting advertising relating to speeding, drink driving, seat-belt wearing and pedestrian/driver attention have been launched. In 2002 a resource pack for secondary schools was launched as a follow on to a resource pack for primary schools which had been launched a couple of years previously. Advertising campaigns are evaluated and have shown to be effective in changing attitudes. The school resource packs are currently being evaluated.</li> </ul> <p><i>Effective advertising and education programmes can help achieve the primary target of a reduction in deaths.</i></p>  |
| Regulation on vehicle inspection   | <ul style="list-style-type: none"> <li>The National Car Test was introduced in 2000 and all cars over 4 years old are subject to a test every two years. The NCT has been modified since its introduction in order to improve the standard of vehicles on the roads.</li> </ul> <p><i>Safer vehicles is a further key area in the road safety strategy which contributes to the achievement of the primary target</i></p>   |
| Regulation on active vehicle safety equipment  | <ul style="list-style-type: none"> <li>No</li> </ul>  |

**B.1.2. Strategies to decrease risk of injury:**

|  |  |
|--|--|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>Penalty points for seat-belt wearing were introduced in August 2003. Recent surveys have shown an improvement in front wearing rates (84%). However, rear wearing rates and wearing rates among children could be significantly improved.</li> </ul> <p><i>The achievement of high levels of seat belt wearing contributes to a reduction in deaths and serious injuries as targeted in the Strategy.</i></p> |
| Emergency services   |  |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>The National Roads Authority has received funding in 2005 to retro-fit median barriers on motorways in Ireland</li> </ul> <p><i>The pursuit of engineering measures can help to achieve a reduction in deaths/injuries</i></p>  |

**B.2. National Diagnosis in key safety areas**

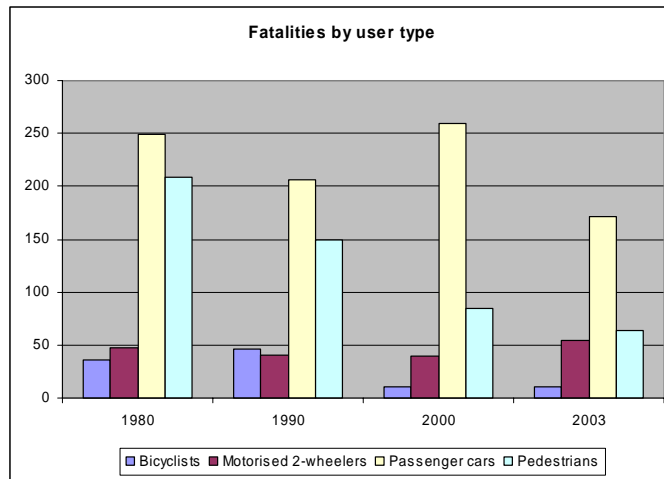
*Road users*

A total of 335 persons were killed in 301 fatal collisions on public roads in the Republic of Ireland in 2003.

This represents a reduction of 41 fatalities and 45 fatal crashes over the 2002 figures. This trend was influenced by the introduction of the Penalty Points system on 31st October 2002. While the initial focus of the system related to speeding offences, the penalty points system was extended during 2003 to cover seat belt wearing and insurance offences.

Compared with 2002, there was a significant reduction in the number of both pedestrian fatalities (which fell by 22 to 64) and in car user fatalities (which fell from 200 to 172) recorded in 2003. The number of pedal cyclists killed from 18 to 11, while the number of motorcyclists killed rose from 44 to 55. The number of 'other road users killed increased from 28 to 33 in 2003.

### Evolution in fatalities by road user type

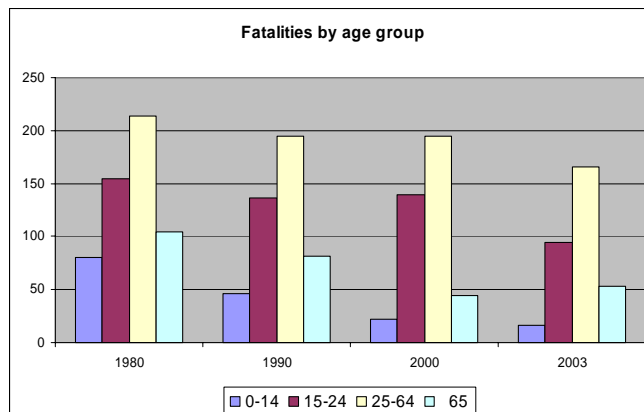


### Age groups

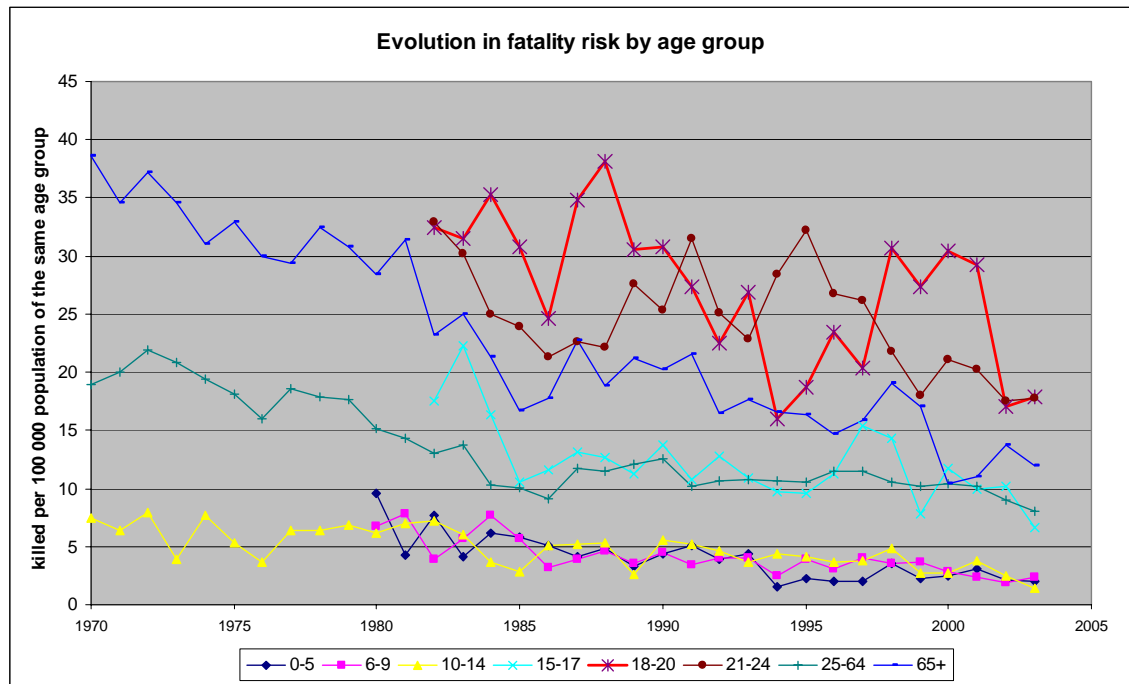
There are marked differences between the sexes and different age cohorts in terms of their respective likelihood of being involved / injured / killed in a road collision.

**Males** typically account for approximately three-quarters of all fatalities in road collisions, while young males in particular have the highest risk of being involved in road collisions.

### Evolution in fatalities by age group







#### *Type of road / location*

Collision rates differ according to the type of road provided and the traffic volume on the road in question.

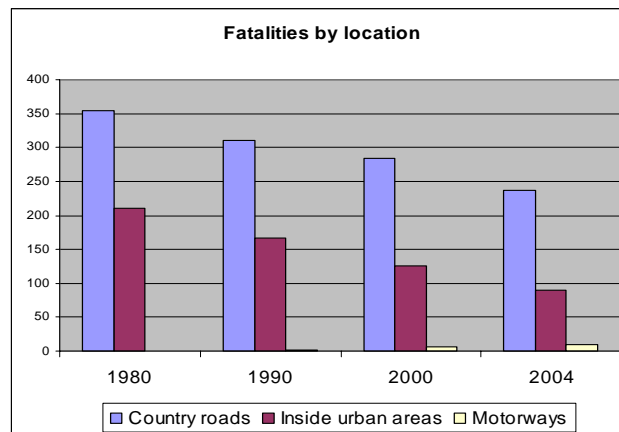
The National Roads Authority's Cost Benefit Analysis Guidelines provides collision rates based on historic data for each major inter-urban road category, with speed limits of 50 mph or greater, namely:

- Motorways - .037 PIAs / mvkm
- Dual C/ways - .094 PIAs / mvkm
- Single C/ways - .142 PIAs / mvkm
- 2 + 1 roads - .107 PIAs / mvkm

{Note PIA = Personal Injury Accident}

The small number of fatalities on motorways is due both to the relatively low collision rates on this carriageway type and the relatively underdeveloped motorway network in Ireland. The current roads development plan does, however, envisage the completion of 1 100 kilometres of motorway / high quality dual carriageway by the end of the decade.

### Evolution in fatalities by type of road



### Speed

The free speeds (urban) 2003 survey measured the speeds of vehicles unconstrained by traffic, weather conditions or road geometry, on urban roads where it was possible to travel faster than the speed limit. Trends in relation to observed speeding behaviour noted in this report may have been substantially influenced by the introduction of penalty points for speeding violations on 31<sup>st</sup> October 2002.

The survey shows that the proportion of cars exceeding the speed limit on urban arterial and residential roads fell sharply between (summer) 2002 and (summer) 2003. The proportion of free-speeding cars observed to be exceeding the speed limit on urban arterial roads in 30mph zones fell from 99 per cent in 2002 to 86 per cent in 2003, and from 82 per cent to 75 per cent on urban arterial roads in 40mph zones.

The fall in the percentage of free-speeding cars exceeding the speed limit was most dramatic in urban residential areas. The percentage of cars violating posted 30mph limits on these roads fell by 25 percentage points to 36 per cent in 2003.

Slight increases were noted in the proportion of free speeding cars and rigid vehicles breaking speed limits on urban national roads, reflecting increases in observed average free speeds.

The free speeds (rural) survey showed significant improvements in compliance by cars with speed limits (60mph) on dual carriageways and two-lane national primary roads. The proportion of free-speeding cars breaking the posted limit fell from 43 per cent in 2002 to 29 per cent in 2003 on dual carriageways and from 44 per cent to 30 per cent on national primary roads over the same period.

Smaller increases were noted in relation to compliance rates on two-lane national secondary and regional roads, while a slight reduction was noted on county roads<sup>6</sup>. The average free speed noted on motorways, for all vehicle types, was practically unchanged from the 2002 survey. However, owing to slight shifts in the distribution of free speeds, there were minor increases in the percentage of

6. These observed trends may have been influenced, in part, by an increase in the number of regional and county roads surveyed for the 2003 speed survey.

articulated and rigid vehicles exceeding the speed limit and a slight reduction (of one percentage point) in that of cars on the same road type.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|   | 1980                                  | 1990                                  | 2000                                  | 2003   |
|---|---------------------------------------|---------------------------------------|---------------------------------------|--|
| Nb of speeding citations  |                                       |                                       | 224,264                               | 157,852  |
| % of fatal crashes where speed is a causation factor<br><br>(% of listed contributory factors accounted for by excessive speeding in two vehicle fatal collisions.) | 29%<br>(Two vehicle fatal collisions) | 22%<br>(Two vehicle fatal collisions) | 24%<br>(Two vehicle fatal collisions) | 22%<br>(Two vehicle fatal collisions)  |
| % of drivers over the posted speed limit in :<br>urban areas<br>rural roads<br>motorways  |                                       |                                       |                                       | Motorway (70 mph): 23%<br>Main highways (60 mph): 29%<br>Rural roads (60 mph): 8%<br>Urban arterial roads (40 mph): 75%<br>Urban arterial roads (30 mph): 86%<br>Urban local streets (30 mph): 36% |

*Drink driving*

The situation with regard to drink driving is not improving. Figures for 2004 indicate that over 12 000 detections for drink driving were made by the Gardai during that year. Some 89% of blood and urine specimens and 81% of breath specimens analysed in 2003 by the Medical Bureau of Road Safety were above the alcohol limit for driving. More worryingly, 57% of blood and urine results and 30% of breath results more than twice exceeded the limit.

Ireland applies an 80-mg blood alcohol limit with very strict application of driving disqualification. The statistics indicate that those being detected for drink driving have a blood alcohol level well in excess of the legal limit. The question of reducing the limit will be kept under review but the priority at present is to increase the chances of being breathalysed and heighten the deterrent effect.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1990 | 2000  | 2004   |
|--|------|------|---|--------|
| Number of citations                            |      |      | 10 433  | 12 000 |
| % of fatal accidents where alcohol is a factor |      |      | The Road Safety Strategy 1998 – 2002 stated that a conservative estimate of 33% of all fatal accidents are associated with alcohol. |        |

*Seatbelt and helmet wearing*

Overall wearing rates, drivers and front passengers combined, rose substantially in 2003 (up 12 percentage points to 84%) compared with 2002. As in previous surveys, the proportion of female drivers wearing seatbelts (89%) was much higher than for male drivers (81%).

The average driver seat-belt wearing rate also increased markedly to 85% in 2003.

Wearing rates differ substantially by road class, with the highest rates on urban national secondary roads, rural national primary roads and in Limerick, Cork and Dublin (urban areas). Wearing rates were lowest on county roads and rural national secondary roads.

**Seatbelt wearing rate in 2003**

|                      |     |
|----------------------|-----|
| <i>General</i>       |     |
| <i>Rear Seat</i>     | 46% |
| <i>Front Seats</i>   | 84% |
| Motorway – driver    |     |
| Rural roads – driver | 87% |
| Urban areas –driver  | 85% |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

*Drug Driving*

While the key road safety violations relate to the issues which are internationally renowned to result in road collisions (speeding, driving while intoxicated and seatbelt wearing), there are a number of other areas which are emerging as areas where specific measures may be required. For example, a survey of drug driving in Ireland published in 2004 showed that 68% of tested drivers with essentially zero levels of alcohol were positive for one or more drugs.

*Use of mobile phones*

The use of mobile phones while driving is a further area where legislative intervention is being considered. The matter is being examined by the Department of Transport in the overall context of in-vehicle information and communications technologies.

### *Other factors*

The Road Safety Strategy 2004 – 2006 includes a range of measures in the areas of enforcement, engineering, education and legislation in order to combat the level of road deaths. An encouraging development has been the announcement in November 2004 by the Minister for Justice, Equality and Law Reform of the creation of a dedicated Traffic Corps with an additional 700 members (the existing traffic corps comprises approximately 500 members). This increase in enforcement resources will provide an increased deterrent which is necessary in order to change driver behaviour.

While the vast majority of accidents can be attributed to driver behaviour, it is estimated that a road factor contributes to some 25% of all accidents. Engineering measures are therefore an appropriate response to these cases and an important element in the Road Safety Strategy.

It is important to continue implementing strong advertising and education campaigns given that road safety is not just a matter for Government, personal responsibility is an important factor and a better educated and informed road users can result in changes in behaviour which can significantly reduce the level of road deaths and injuries.

A further problem area in Ireland relates to the level of court challenges to drink driving legislation. It is a criminal offence to drink and drive, but those who commit this offence do not see themselves as criminals and are willing to challenge court decisions in order to save their reputation and avoid losing their licence. It is a mind-set which is very difficult to change and it is important in this context, that legislation is sound, robust and reasonable.

### ***B.3. Major road safety problems today***

1. Drink driving during the hours most associated with drink driving
2. Motorcycle fatality rates
3. Child safety – seat belt wearing rates and school bus safety
4. Rear seat belt wearing rates
5. Drug driving
6. Speeding
7. Pedestrian safety

#### ***B.4. Forthcoming road safety initiatives to address these problems***

##### *Drink Driving*

The Road Safety Strategy provides that random breath testing should be in place before the end of 2006. A detailed examination of the possible approaches that could be adopted in Ireland to give the Gardaí greater powers to impose roadside breath tests has been pursued. This examination has been informed and supported by the receipt of independent legal opinion and the opinion of the Attorney General. There are a number of legal issues which are being examined in order to ensure that a proposed system is proportional and rational. In the meantime, Gardaí can require a person to provide a preliminary breath sample where they form an opinion that an intoxicant has been consumed, or where a collision has taken place, or where a road traffic offence has been committed.

##### *Motorcycle safety*

It is the intention over the course of the road safety strategy to introduce compulsory initial practical training for motorcyclists before they are permitted to drive alone on the public road.

In the area of licensing regulations it is also intended to introduce a requirement that motorcyclists with provisional licences must display L-plates. It is illegal for motorcyclists on provisional licences to carry a pillion passenger, but given the current arrangements where the display of L-plates is not mandatory, this rule is difficult to enforce. This group are over represented in road collision statistics and the measures outlined above should lead to a reduction in the level of deaths and serious injuries currently being experienced among this vulnerable group. A new advertising campaign targeting motorcyclists was launched in August 2005 in order to combat the recent increase in the number of motorcycle fatalities compared to last year.

##### *Child safety*

The application of penalty points to seat-belt wearing offences means that drivers will not only be liable for penalty points if they do not wear their seat belt but are also liable if they allow a person under 17 years of age to travel unrestrained in the front or back seat of a vehicle. The extension of penalty points to failure to wear rear seat belts should therefore improve child safety in vehicles. Traffic calming measures and the introduction of special low speed limits in residential areas and in the vicinity of schools will improve the safety of pedestrians, particularly child pedestrians. Proposals are also being progressed to introduce seat belts on school buses and to abolish the 3 for 2 rule.

##### *Rear seatbelt wearing rate*

A recent survey carried out by the NRA on seat belt wearing rates in 2003 has shown that wearing rates have significantly improved (84% in the front and 46% in the rear). The target for the road safety strategy is to achieve a 90% seat belt wearing rate in front (driver and passenger) seats and, taking into account the lower levels of rear seat-belt wearing observed to date, a 60% wearing rate for rear seat belts. This will be achieved through continued educational and enforcement work.

In addition, the exemptions currently in place for certain categories of drivers and passengers will be abolished. All adult drivers and passengers in vehicles equipped with seat belts will be required to wear them except where medical conditions dictate otherwise. The exemptions currently in place for children will be addressed in the context of EU Directive 2003/20/EC.

At present the compulsory use of seat belts/ safety restraints applies to occupants of cars and the driver and front seat passengers of mini-buses and light commercial vehicles in which these safety devices are fitted. Following the adoption of EU Directive 2003/20/EC, the requirement on occupants of vehicles to use seat belts/ safety restraints is being extended to cover every vehicle in which they are fitted. The technical standards for the fitment of safety belts and restraint systems in new vehicles at European level, which are set down in a number of EU type-approval directives, are obligatory in respect of the front and rear seats of passenger cars, the front seats of light goods vehicles and the front seats of minibuses. However, following the adoption in September 2005 of a number of EU Directives relating to safety belts and restraint systems the technical standards will be mandatory in respect of every seat in a motor vehicle (other than in buses used in staged-stop urban services) for all new vehicles entering into service from 20 October 2007.

#### *Drug driving*

Where a blood or urine sample is taken and sent to the MBRS for analysis, the Road Traffic Acts provide for the MBRS to examine the sample for drugs. Since 1 January 2002, the policy of the MBRS is to examine all samples found to be under the legal limit for alcohol for the presence of drugs, as well as samples over the legal limit for alcohol if this is requested by the Gardai. To further facilitate the operation of drug testing, the MBRS with the Department of Forensic Medicine at University College Dublin will put in place an education programme in drug recognition techniques for Gardai and doctors.

#### *Speeding*

A vigorous programme of enforcement will be pursued by the Garda Síochána, the aim of which will be to deter speed limit infringements by creating the public impression that breaking the speed limit incurs an unacceptable risk of being caught. It is important that best use be made of available Garda resources. For that reason, plans for the engagement of private sector interests in the operation of traffic enforcement cameras are being progressed. A comprehensive review of speed limits was completed and presented to the Minister for Transport in September 2003. The review, carried out against the background of the adoption of metric values, has in particular recommended that separate default speed limits should be applied to the national and non-national road networks outside of the urban areas. In addition, the review recommends the introduction in association with appropriate traffic calming measures of new low speed limit values for residential areas and for the special safety considerations associated with school entry sites to be recognised. This new structure has been implemented with effect from 20<sup>th</sup> January 2005.

#### *Pedestrian safety*

The National Safety Council will continue to run their “Text” and “Home” advertising campaign targeted at pedestrians. As indicated above, the measure being pursued as part of this Strategy relating to traffic calming and the introduction of a lower speed limit in residential areas will improve pedestrian safety. Directive 2003/102/EC of the European Parliament and of the Council of 17 November 2003 was transposed into domestic legislation with effect from 28 May 2004. The Directive relates to the protection of pedestrians and other vulnerable road users. The Directive applies to cars and van-cars up to 2.5 tonnes gross vehicle weight and lays down the harmonised technical requirements for EU type approval of such motor vehicles with regard to pedestrian protection. The aim of the Directive is to reduce deaths and injuries to pedestrians and cyclists by motor vehicles through changes in the design of the fronts (i.e. bumper, bonnet and windscreen) of vehicles.

Directive 2005/66/EC of the European Parliament and the Council setting type approval standards in respect of frontal protection systems, *e.g.* bull-bars, fitted to passenger cars and vans up to 3.5 tonnes gross vehicle weight, was adopted on 26 October 2005. All Member States are required to adopt this Directive by 25 August, 2006.

### C. Road safety targets

#### General road safety targets

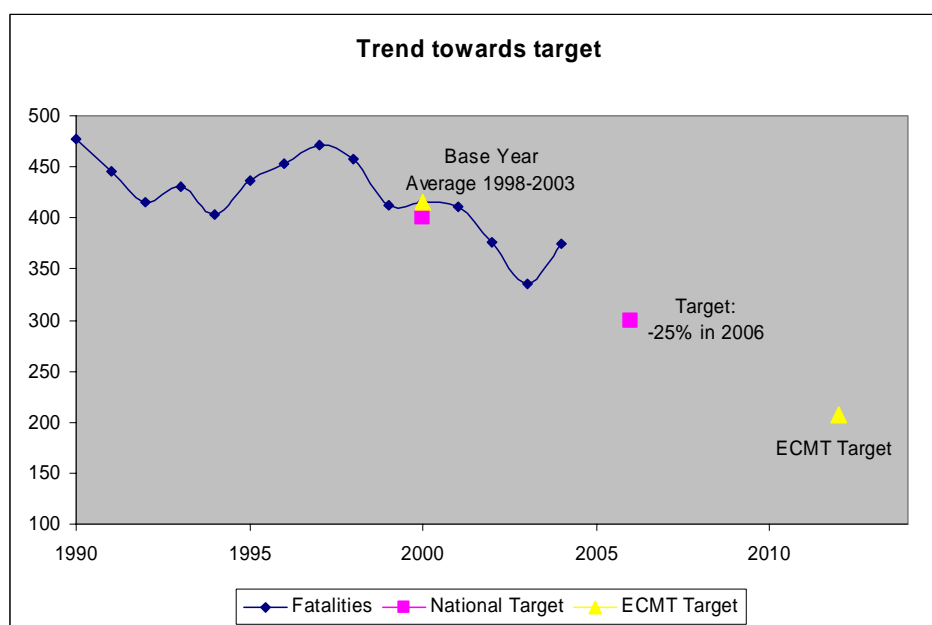
| Type                 | Targets<br>(in % or absolute<br>figures)  | Base year                         | Target<br>year | Base<br>year<br>figure | Current<br>results<br>(figure in<br>2003) | Intermediate<br>targets ? |
|----------------------|---|-----------------------------------|----------------|------------------------|---|---------------------------|
| Fatalities           | 25% reduction by end of 2006 on the average number of road deaths during the 1998 – 2003 period       | Av no. of road deaths 1998 - 2003 | 2006           | 401                    | 375 (2004)                                | No                        |
| Injury accidents     | Review of serious injury figures is ongoing – no target has been set in Strategy for serious injuries |                                   |                |                        |   |                           |
| Hospitalised persons | Definition of a serious injury is a where a person was admitted to hospital. See above.               |                                   |                |                        |   |                           |
| Injured persons      | Review of serious injury figures is ongoing – no target has been set in Strategy for serious injuries |                                   |                |                        |   |                           |



**Targets related to accident causation factors and road users protection**

|  | <b>Targets<br/>(in % or absolute<br/>figures)</b>   | <b>Base<br/>year</b> | <b>Target<br/>year</b> | <b>Base year<br/>figure</b>          | <b>Current results<br/>(figure in 2003 or<br/>2004)</b>   | <b>Intermediate<br/>targets?</b>  |
|--|---|----------------------|------------------------|--------------------------------------|---|---|
| To increase the incidents of compliance on urban arterials to 60% (up from 1% in 30mph zones and 18% in 40 mph zones). | For cars and motorcycles: To increase from 3% to 50% the number of vehicles complying with urban speed limits on urban national roads and to increase from 39% to 80% the number of vehicles complying with urban speed limits on non-national roads. |                      |                        | Base year figures included in target | <b>2003 Results _:</b><br>2% compliance (cars) with urban speed limits on urban national roads at 30 mph sign (3% in 2002 survey)                   | No, but speed survey took place in 2005 (results not yet published) and further survey being undertaken in 2006 in order to monitor speed compliance. |
|  |   |                      |                        |                                      | 64% compliance (cars) with urban speed limits on non-national roads in 30mph zone (39% compliance in 2002 survey)                                   |   |
|  | On single lane national roads, to increase compliance with speed limits to 80% (up from 56%).   |                      |                        |                                      | 14% compliance (cars) in 30mph zones on urban arterials (1% in 2002)  |   |
|  | For heavy goods vehicles and buses: To achieve a 90% compliance rate with the urban and urban arterial speed limits and 80% compliance with the ordinary speed limits applying to such vehicles on the overall non urban network of roads             |                      |                        |                                      | 25% compliance (cars) in 40mph zones on urban arterials (18% in 2002)   |   |
|  |   |                      |                        |                                      | 70% compliance (cars) on single lane national roads (56% in 2002)   |   |
|  |   |                      |                        |                                      | 8% compliance among articulated vehicles (8% in 2002) and 4% compliance among rigid vehicles (15% in 2002) on urban roads (in a 30 mph speed zone). |   |

|                             | <b>Targets<br/>(in % or absolute<br/>figures)</b>                                     | <b>Base<br/>year</b> | <b>Target<br/>year</b> | <b>Base year<br/>figure</b>  | <b>Current results<br/>(figure in 2003 or<br/>2004)</b>   | <b>Intermediate<br/>targets?</b>  |
|-----------------------------|---|----------------------|------------------------|--|---|---|
| <b>Seatbelt<br/>Wearing</b> | Increase the wearing of front seat belts to 90% and of rear seat belts to 60% by 2006 |                      |                        | 72% wearing rates in the front – no data on rear wearing rates although an earlier survey has indicated rear wearing rates as low as 20% | Overall wearing rate (Driver and Front Passenger ) of 84% (compared to 72% in 2002). Rear-seat wearing rate: 46% (no equivalent for 2002) | No, but a seatbelt wearing survey was being carried out in 2005 (results not yet published) and further survey taking place in 2006 in order to monitor compliance. |



## D. Success story cards

### **Success story from Ireland**

**The introduction of penalty points** has had a positive impact on the number of road deaths, particularly in the initial phase. The value of penalty points is supported by the statistics. Although Ireland experienced an increase in the number of road deaths in 2004 and 2005 compared to 2003, it should be remembered that Ireland has not returned to the levels of road deaths which were experienced before the introduction of the penalty points system. Furthermore, there have been 146 fewer lives lost on the roads in the two years and eight months since the introduction of the system, compared to the 2 year and eight month period immediately preceding the introduction of the system.

**The low cost remedial measures programme** for national roads was initiated by the National Roads Authority in 1994. Early indications were that the programme was successful, and this conclusion was borne out by the NRA's evaluation, published in 2001, of the first programme which was completed during 1994/1995. The evaluation indicated that the average annual economic rate of return of the 104 schemes assessed was 595%<sup>7</sup>. This figure was arrived at by comparing the collision rate before the implementation of the schemes with the collision rate after completion. The target of 400 further locations over the lifetime of the first Road Safety Strategy was achieved, with 418 schemes completed by the end of 2002. The new Road Safety Strategy 2004 – 2006 proposes that a further 240 schemes take place. A further 400 schemes will be implemented on non-national roads.

Over the period of the first Road Safety Strategy, the National Safety Council launched four major **media campaigns**, with television commercials addressing the issues of speeding, drink-driving, seat-belt use and pedestrian safety. These commercials aimed to present a disturbing but realistic presentation of the known causes of deaths and collisions on our roads. Cut-down versions were produced for television use before the 9pm watershed. These campaigns were all carried out jointly with the Department for the Environment in Northern Ireland. Evaluation research on the three earlier campaigns indicated that they were succeeding in gaining viewer attention, and most respondents indicated that their behaviour and attitudes had been influenced by the campaigns. The road safety TV commercial 'DAMAGE', aimed at increasing the level of seat-belt wearing, was awarded the 'Grand Prix' supreme award at the Institute of Advertising Practitioners in Ireland (IAPI) Advertising Effectiveness Awards 2002. Both 'DAMAGE' and 'SHAME', the Council's anti-drink driving commercial also picked up IAPI Gold Awards for their effectiveness in influencing people's behaviour. A new drink driving ad was launched on 23 November 2005 highlighting the consequences of drinking and driving.

### **Less recommended story card from Ireland**

#### **Road Safety Together Working Groups in local authorities**

In 1996 the Department of the Environment and Local Government (who then had responsibility for road safety policy) announced an initiative to generate road safety activity at local level. The establishment of Road Safety Together Working Groups in local authorities was introduced in order to general local initiatives to combat road fatalities and injuries. It is acknowledged that the performance of local authorities in relation to road safety initiatives has been mixed and the new Strategy 2004 – 2006 has set out measures in order to improve this situation. It is proposed that model local road safety plans will be drawn up and implemented by two local authorities, one urban authority and one rural authority. The Department of Transport will provide guidance as to the structure of these plans, which will prioritise implementation of road safety measures and the establishment of structures to ensure that road safety is a priority in local authorities' transport activities and is addressed in co-ordination with the Garda Síochána, National Roads Authority, National Safety Council and other responsible agencies.

#### **Development of IT systems to allow for the full roll-out of the penalty point system**

While the introduction of penalty points has resulted in significant reductions during the initial phase, the development of IT systems to allow for the full roll-out of the penalty point system has been subject to significant delays. This has resulted in negative publicity relating to the roll-out of the full system and the operation of a manually operated system relating to a small number of key offences.

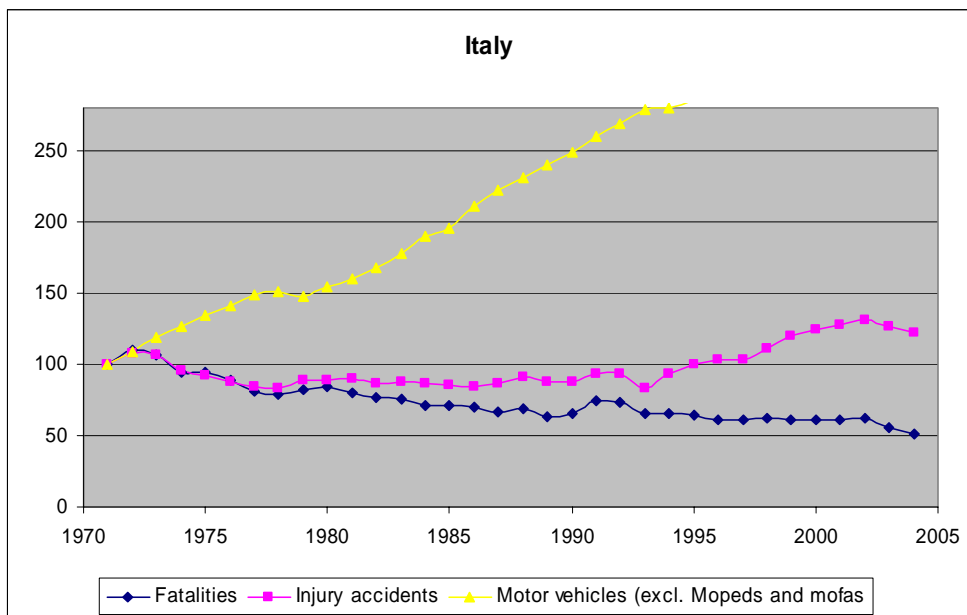
7. 128 schemes were approved and constructed in phase 1 of the programme, but of these a small number were not considered amenable to evaluation and 19 were categorised as "partial treatment schemes". The economic analysis was therefore carried out only on 104 schemes.

## ITALY

### A. General trend in road safety

#### Key road safety data for 2004

- 5 625 road fatalities (6 065 in 2003)
- 224 553 injury accidents (231 740 in 2003)
- 9.8 killed per 100 000 inhabitants
- Around 650 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>• Yes, from 2003; no complete assessment as yet.</li> </ul>  |
| <i>Reduced speed limits</i>   |   |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>• No</li> </ul>  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>• In the financial budgetary legislation infrastructure, improvement action or maintenance planning are settled each year. Some of these plans are co- financed by EU funding support of Trans-European Transport Network Priorities Programme</li> <li>• Recent improvement since 2002: viability of heavy traffic stretches has improved; improvement in safety of big cities' motorways orbital, tunnels.</li> </ul>  |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>• Yes, in July 2003</li> </ul> <p>In line with the Commission guidelines, Italy focussed on a series of actions aimed at reducing the number of road accidents by means of some urgent provisions designed to have a wide impact on the behaviour of drivers. Among the various measures taken, the most important are:</p> <ul style="list-style-type: none"> <li>– penalty points driving licence;</li> <li>– moped driving certificate;</li> <li>– rules concerning the correct use of mobile phones;</li> <li>– new procedures for testing for abuse of alcohol and drugs;</li> <li>– compulsory use of reflective jackets when drivers exit vehicles which have broken-down;</li> <li>– compulsory use of dipped headlights during daylight hours.</li> </ul> |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>• No. The item is at the evaluation – study stage at the moment</li> </ul>   |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>• Yes , since 2002-2003</li> </ul>   |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>• Yes, legislation about roadside checks in 2002</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>  |   |
| <i>Others</i>   |   |

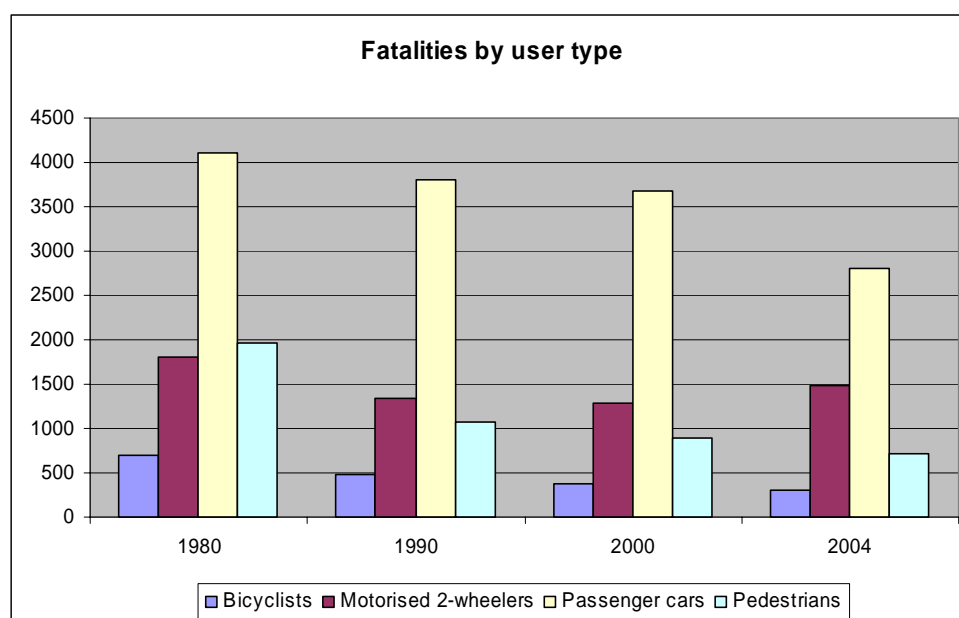
### B.1.2. Strategies to decrease risk of injury:

|  |   |
|--|---|
| Safety equipment: enforcement of seatbelt wearing/ helmet use  | <ul style="list-style-type: none"> <li>Yes 2002. Directive 2003/20/EC on safety belt use being adopted in 2005</li> </ul> |
| Emergency services   |   |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway |   |
| Others   |   |

### B.2. National Diagnosis in key safety areas

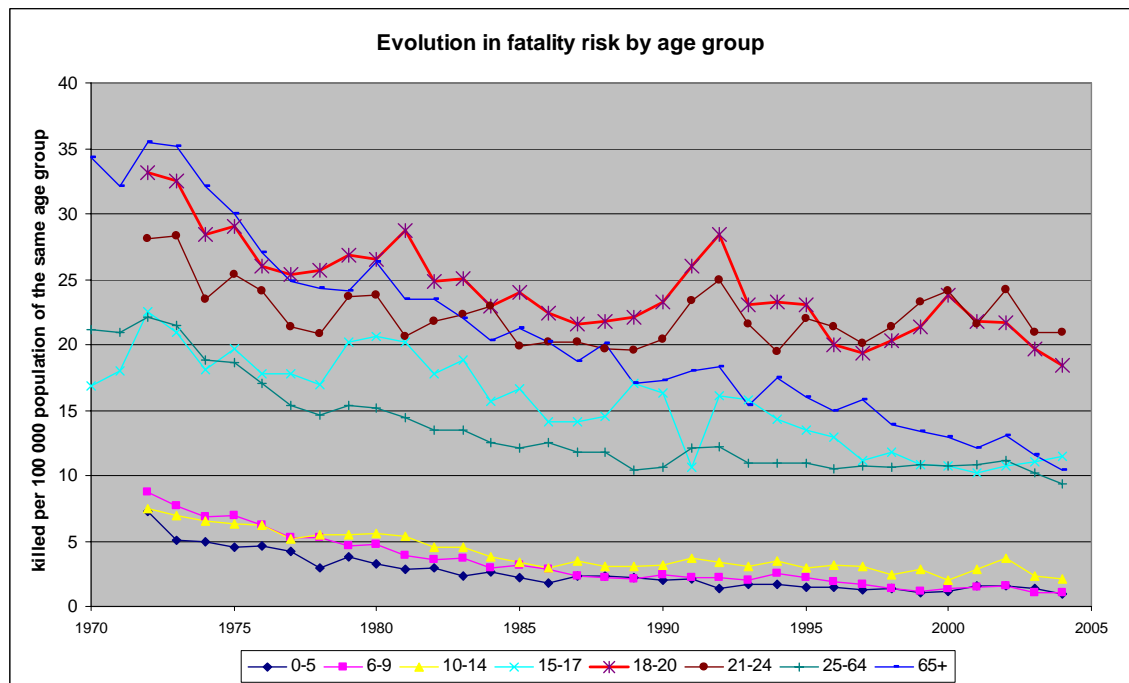
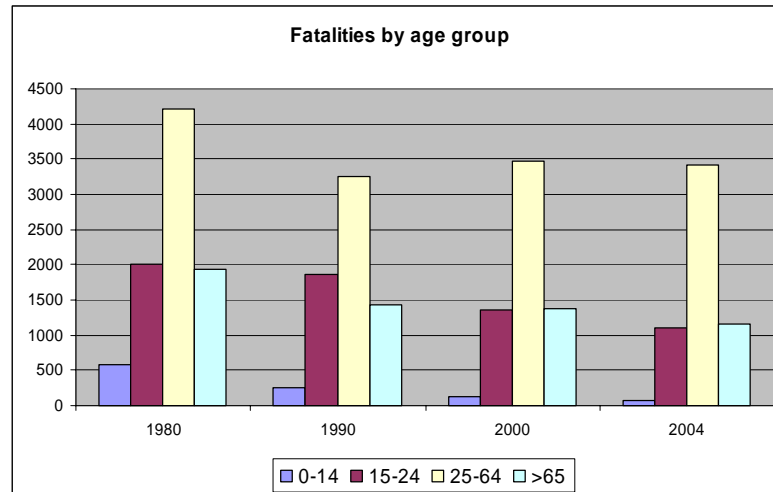
#### Road users

Evolution in fatalities by road user type



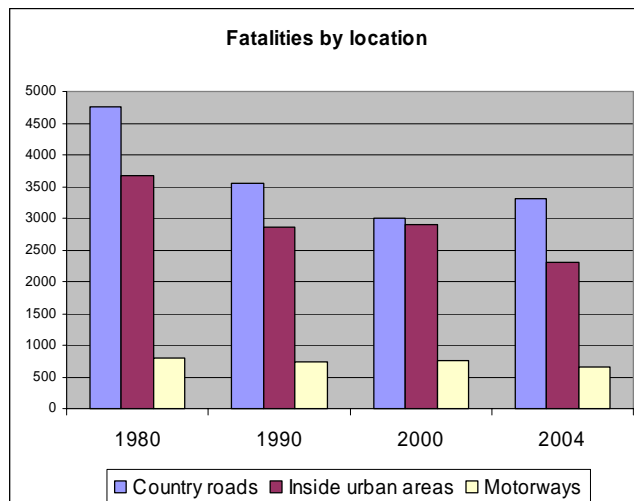
## Age groups

**Evolution in fatalities by age group**



### *Type of road / location*

**Evolution in fatalities by type of road**



### *Speed*

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit**

|  | 2003    | 2004    |
|--|---------|---------|
| <i>Nb of speeding citations</i>                              | 273 404 | 258 428 |
| <i>Nb of fatal crashes where speed is a causation factor</i> | 849     | 714     |

Speed is still one of the most difficult problems to deal with and is considered a priority area. In recent years the police have strengthened enforcement in terms of numbers of black spot area controls, and radar controls have been increased considerably. Special enforcement measures have been considered to lessen the number of fatalities due to excessive speed.

In 2004, 700 mobile camera systems, 150 on-board patrol cars and 170 lasers were used in police road-side patrolling.

### *Drink driving*

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|                     | 2004  |
|---------------------|-------|
| Number of citations | 5 098 |

Drink driving is recognised by the authorities as a major cause of accidents and fatalities. There is also the social impact of the drink –driving phenomenon, which is quite widespread among young people. Since 2003, police have increased the number of roadside checks and also spot checks, particularly at weekends, near discos, 24-hour bars and night clubs.



Targeted campaigns to raise awareness of the risks of alcohol abuse before driving are thought to be important, and these will be carried out in the near future.

#### *Seatbelt and helmet wearing*

The use of safety belts is compulsory in front and rear seats, as well as special restraint equipment for children.

New measures for buses and commercial vehicles were adopted in 2005.

It is interesting to highlight the sharp decrease in violations for non-use of seatbelt and helmet. Non-seatbelt wearing was introduced as an offence from 2003, and five points (from driving license) can be lost. Between July 2003 (when the penalty point system legislation entered into force) and November 2005, there was a decrease of 29.7% in the non-wearing of seatbelts.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

#### ***Drugs***

Many checks have been carried out following car crashes, especially on young people, to detect the use/abuse of drugs and the level of impairment in driving. In 2003, 5 542 drivers were charged for drugs, while 4 621 were charged in 2004.

#### ***Mobile phone***

Five points can be lost for the use of mobile phones while driving.

The variable message signs displayed on the motorways are also used to remind motorists of the importance of inter-vehicle distance, and that the use of hand-held mobile phones while driving is prohibited under any circumstances. Between 1st July 2003 and 30 June 2004, 49 384 motorists received a citation for using mobile phones while driving.

#### *Other factors*

**Enforcement** is one way to keep up the level of awareness and consciousness of drivers. This would involve specific and targeted legislation and efficient police patrolling, especially for young drivers or drink drivers repeat offenders, and in specific “black spot” areas where accidents or severe traffic violation occur.

**Infrastructure:** Foster road network maintenance programme, financing also of all the innovative techniques for monitoring road conditions, traffic flows, and to spot in the shortest time the accidents which have occurred. Maintenance programmes for road signals, and for the increased use of VMS (Variable Message Signs) – both for traffic management and for the management of emergencies (severe weather conditions, traffic flow diversions) – through the development of technological serviced infrastructure. An increase in government funds committed to road safety was decided in the last budgetary law. The deployment of infrastructure is shared between the Central Government, regions, municipalities and highway agencies. There is also co-financing from the European Union and investments from private industrial sector based on a partnership agreement.

**Education:** Driver, cyclist and pedestrian behaviour can be moulded and changed through educational courses, starting from childhood and continuing through adulthood. Moreover, the behavioural factor can be influenced by the knowledge of existing rules, or of the risks incurred in case of violations. Education is important to raise awareness.

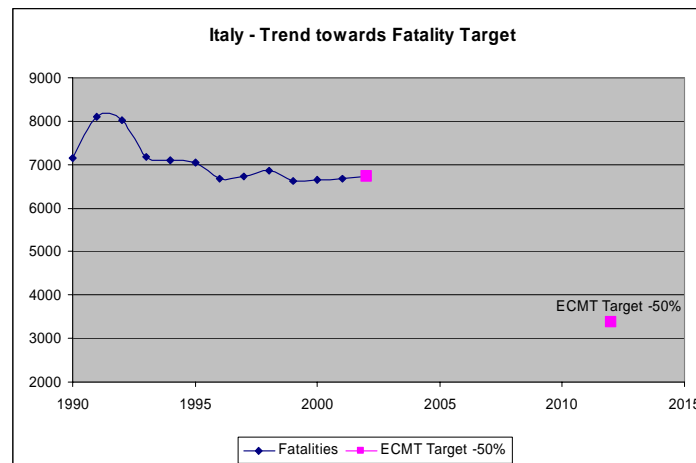
#### ***B.3. Major road safety problems today***

1. Speed and speed control
2. Raise the awareness of drink driving risks
3. Hazardous driving/poor attention, careless driving
4. Proper use of safety belts and child restraints
5. Protections of vulnerable road users (pedestrians, cyclists, elderly people)
6. Infrastructure maintenance
7. Roadworthiness check for all vehicles

#### ***B.4. Forthcoming road safety initiatives to address these problems***

#### **C. Road safety targets**

There is no national target in Italy. The following chart shows the trend towards the ECMT -50% target.



#### **D. Success story cards**

##### ***Success stories from Italy***

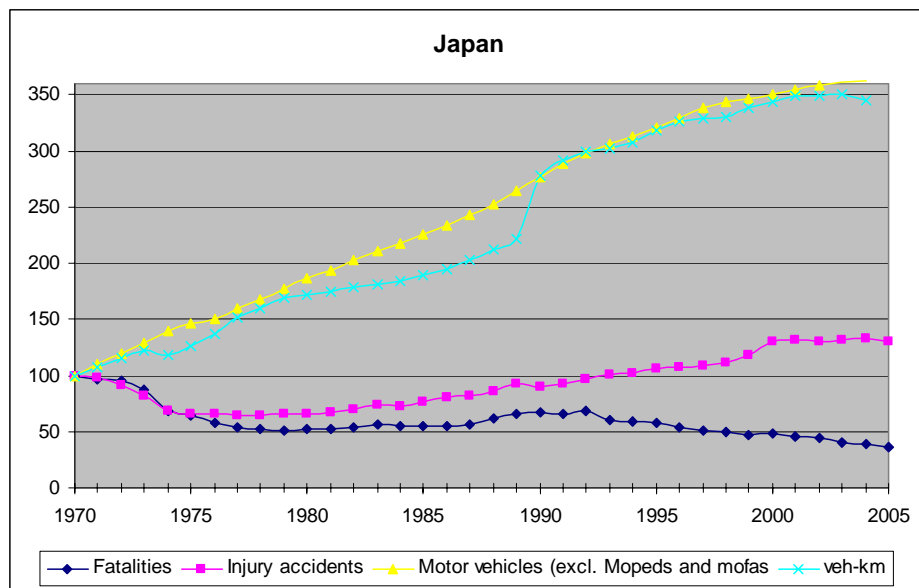
No information.

## JAPAN

### A. General trend in road safety

#### Key road safety data for 2005:

- 7 931 road fatalities (8 492 in 2004)
- 933 828 injury accidents (952 191 in 2004)
- 6.2 killed per 100 000 inhabitants
- Around 580 cars (passenger cars and light duty vehicles) / 1 000 inhabitants in 2004



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>No, not specifically recent.</li> </ul>  |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>Not specifically recent.</li> </ul>  |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>June 2002: New drink driving regulation was introduced with a max BAC of 0.3 g/l.</li> </ul>   |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>Safe Walking Areas: A 1-2 km<sup>2</sup> section (usually bordered by major roads) in an accident-prone residential or commercial district is targeted for remedial action. Local residents/workers are called upon to attend safety workshops and high-risk site inspections, and a variety of community-approved measures are implemented to prevent casualty-inflicting accidents.</li> </ul> |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>May 2005: Mobile phone use – 1 demerit point.</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>No graduated licensing system.</li> </ul>  |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>Not specifically recent.</li> </ul>  |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>Being revised at any time.</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>Under development.</li> </ul>  |

#### B.1.2. Strategies to decrease risk of injury:

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use.</i>   | <ul style="list-style-type: none"> <li>September 2005: Seatbelt reminder.</li> </ul> |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>Not specifically recently.</li> </ul>         |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>Safe Walking Areas.</li> </ul>                |

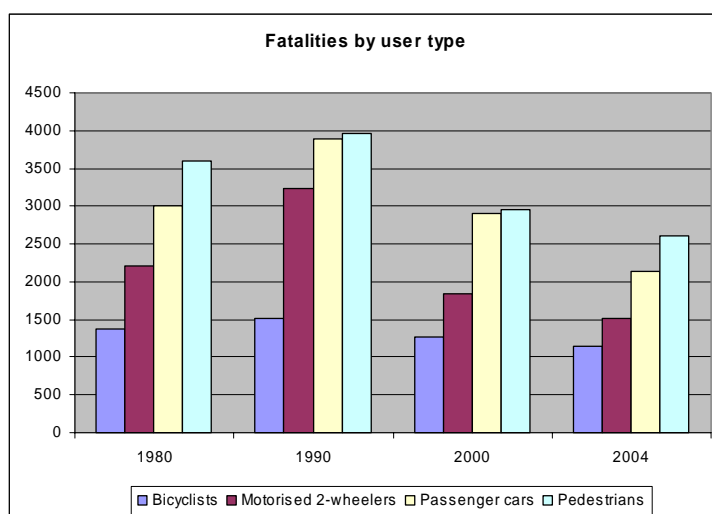
## B.2. National Diagnosis in key safety areas

### Road users

Each category shows same trend. There are no specific characteristics.

Pedestrians represent the larger group of fatalities (30% of total fatalities), which is much higher than in most European countries. The most at risks are pedestrians in the age group 0-15 and over 65. Among the persons killed who are more than 65 years, 50% are pedestrians.

Evolution in fatalities by road user type



### Age groups

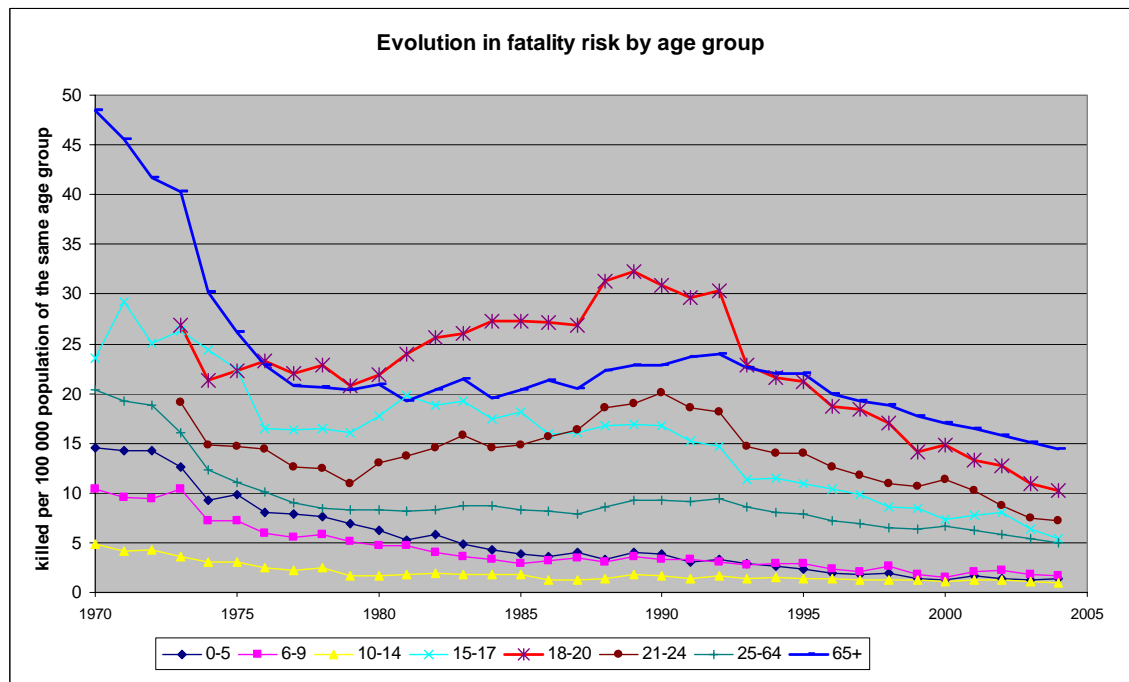
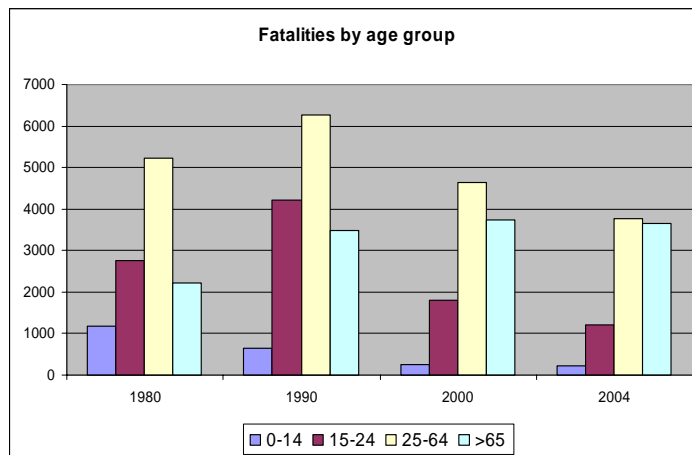
The ratio of elderly people, aged 65 years old and more, killed in accidents rose above 40% for the first time ever, signalling a growing crisis in the condition of senior traffic safety. Especially, the risk of 75 years old and more age group is more than 3 times of other age group.

Consequently, the national goal of making Japan's roads the "safest in the world" by reducing annual traffic fatalities below 5 000 by 2012 can be realized only if greater effort is made to improve senior traffic safety.

Against this backdrop, the government is now implementing a diverse array of strategies under the "On comprehensive traffic safety measures for the elderly toward the transition to the full scale of aging society."

As recognized by these guidelines, traffic safety measures for seniors are intertwined with those for younger generations. Developing greater consideration for the elderly in younger people would help to foster stronger traffic safety awareness in every individual, and thus serve as a safety strategy targeting all generations.

### Evolution in fatalities by age group



### Type of road / location

In Japan, there are no distinct data for roads inside urban area and country roads.

## Speed

Fatal crashes, where speed is a causation factor, have decreased over the last 12 years.

|  | 1990                          | 2000                          | 2004                          |
|--|-------------------------------|-------------------------------|-------------------------------|
| No. of speeding citations                              | 2 876 836                     | 2 592 145                     | 2 819 655                     |
| Licensed driver  | 60 908 993                    | 74 686 752                    | 78 246 948                    |
| Nb of citations per driver                             | 0.05                          | 0.04                          |                               |
| Fatal crashes where speed is the main causation factor | 2 473*                        | 1 417*                        | 711 *                         |
|  | Speed as the main factor only | Speed as the main factor only | Speed as the main factor only |
| Fatal crashes not due to pedestrian or cyclist         | 9 524*                        | 8 024*                        | 6 503*                        |
|  | Speed as the main factor only | Speed as the main factor only | speed as the main factor only |
| All fatal crashes                                      | 10 651*                       | 8 707*                        | 7 084 *                       |

\* Death within 24 hours, different from IRTAD database

## Drink driving

A new drink driving regulation with a new maximum authorised BAC (from 0.25mg/l to 0.15mg/l of alcohol in the air – equivalent to 0.3 g/l of blood alcohol concentration) was introduced in June 2002. The effects are positive, since the number of fatal accidents where alcohol is a causation factor is decreasing.

|   |                       | 1990                        | 2000                        | 2003                        | 2004                        |
|---|-----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Number of citations   |                       | 329 744                     | 255 286                     | 175 730                     | 152 823                     |
| Fatal accidents where alcohol is a factor                                     | main factor           | 487                         | 340                         | 165                         | 144                         |
|   | drunk/not main factor | 1 336                       | 1 276                       | 780                         | 710                         |
| Fatal crashes not due to pedestrian or cyclist                                |                       | 9 524<br>(main factor only) | 8 024<br>(main factor only) | 6 839<br>(main factor only) | 6 503<br>(main factor only) |
| All fatal crashes   |                       | 10 651                      | 8 797                       | 7 456                       | 7 084                       |
| Note: Fatalities data is death within 24 hours, and different from IRTAD data |                       |                             |                             |                             |                             |

## Seatbelt and helmet wearing

Seatbelts are compulsory on front seats only. From 1st September 2005, seatbelt reminders are installed in new vehicles. .

Helmets are compulsory for motorised two-wheelers (including mopeds).



#### Evolution in seatbelt wearing rate

|                       | 1980 | 1994 | 2000 | 2003 |
|-----------------------|------|------|------|------|
| Front seats           |      |      |      | 90%  |
| Rear seats            |      |      |      | 8%   |
| Motorway – driver     | 22%  | 90%  | 93%  | 96%  |
| Other roads -- driver | 16%  | 77%  | 92%  | 95%  |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Mobile phones

Today, it is forbidden to use a mobile phone while driving. Prior to 2004, drivers using a mobile phone while driving were not stopped, unless they were involved in an accident.

#### ***B.3. Major road safety problems today***

1. Senior drivers and pedestrians.
2. Road safety awareness.

#### ***B.4. Forthcoming road safety initiatives to address these problems***

In responding to the "senior driver and pedestrian" problem: on 27 March 2003, national efforts were adopted "on comprehensive traffic safety measures for the elderly toward the transition to the full scale of aging society". This includes:

##### *I. Traffic Safety Measures for Elderly Pedestrians and Cyclists*

- Development of universal design-based road traffic environment

Creation of safe pedestrian areas; promotion of universal design-based urban development; IT-powered R&D for supporting pedestrians and R&D for mobility support.

- Protection of Pedestrians through Vehicle Safety Measures

Standards and safety information for pedestrian head protection; development of the Advanced Safety Vehicle (ASV); Non-step Bus Certification System; Subsidy for Enhancement of Mobility in Public Transportation

- Traffic Safety Education and Awareness Campaigns

Home visits and traffic safety tips for seniors, Traffic Safety Awareness Program for Seniors, Bicycle safety awareness

- Traffic Safety Measures at Night/Dusk

Promotion of use of reflectors; promotion of early use of headlights; promotion of greater visibility in signs.

- Electric Wheelchair Safety Measures

Electric wheelchair safety model areas.

## II. Traffic Safety Measures for Elderly Drivers

- Enhancement of Courses for Elderly Drivers

Courses for senior drivers and for senior operators of commercial vehicles.

- Efforts Aimed at Younger Drivers

Government-sponsored publicity, senior driver markers.

- Enhancement of road environment

Road environment enhancements

- Elderly Driver-oriented Vehicle Safety Measures

Comprehensive vehicle safety plan for responding to a rapidly aging society.

## III. Citizen-involved Traffic Safety Campaigns and Enhanced Protection for Seniors

- Community Traffic Safety Measures

- Traffic Safety Instructor Training

Citizen-involved project for improving traffic safety for seniors

- At-home Traffic Safety Education

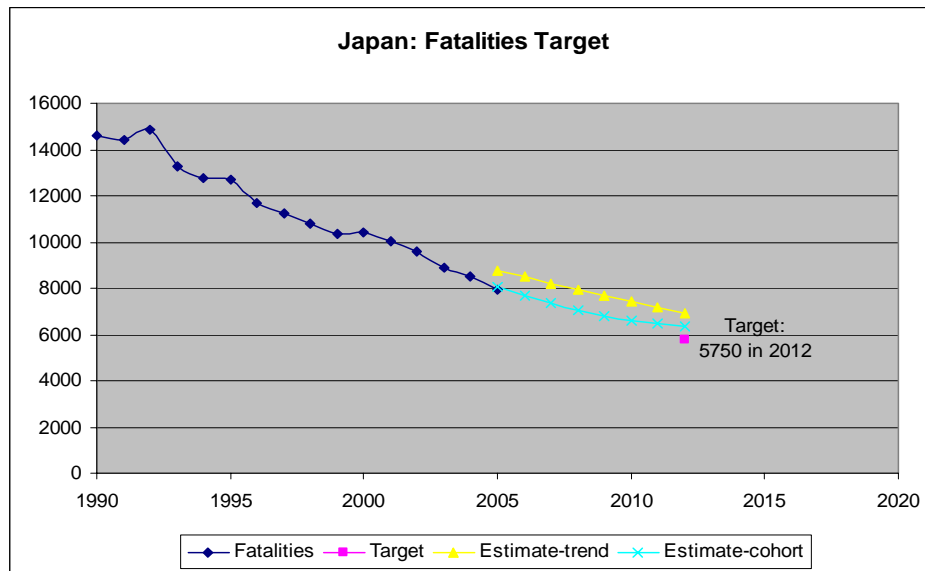
- School Traffic Safety Measures

Research project for promoting effective traffic safety education

## C. Road safety targets

| Type       | Targets<br>(in % or absolute<br>figures) | Base year | Target year | Base year<br>figure | Current<br>results (figure<br>in 2005) | Intermediate<br>targets ? |
|------------|--|-----------|-------------|---------------------|--|---------------------------|
| Fatalities | 9,736                                    | 2000      | 2005        | 10,403              | 7 931                                  | none                      |
|            | Less than 5 750                          | 2002      | 2012        | 9,575               |  | none                      |

Note: Data in the table represent fatalities within 30 days. (Official Japanese police data report fatalities within 24 hours and the following correction factor is applied:  $K(30d)=K(24h)*1.15$ .)

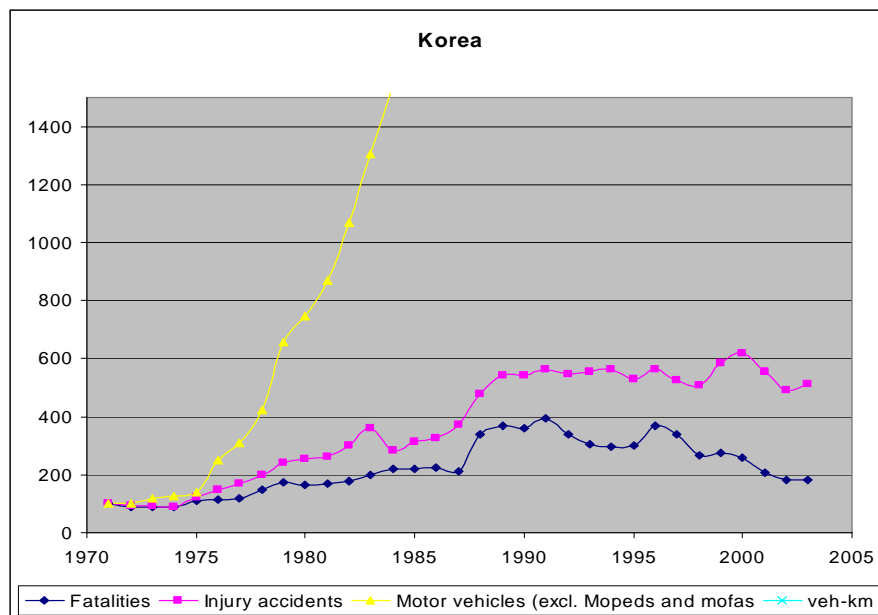


## KOREA

### A. General trend in road safety

#### Key road safety data for 2004:

- 6 563 road fatalities (7 212 in 2003)
- 220 755 injury accidents (240 832 in 2003)
- 13.7 killed per 100 000 inhabitants
- Around 250 cars (passenger cars and light duty vehicles) per 1 000 inhabitants.



Between 1970 and 2004, the number of motor vehicles has been multiplied by more than 2 000! There was 145 000 motor vehicles in 1971 and 16 million in 2004.

The number of road fatalities tripled between 1990 and 1970 and reached a peak in 1991 with more than 15 000 deaths. Since 1990, the number of fatalities has decreased by 50%.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |     |
|---|-----|
| Improved speed compliance / enforcement   | Yes |
| Reduced speed limits  | Yes |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs                                      | Yes |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..) | Yes |
| Enforcement of other road rules   | Yes |
| Graduated Licensing for novice drivers  | Yes |
| Education and information programmes  | Yes |
| Regulation on vehicle inspection  | Yes |
| Regulation on active vehicle safety equipment   |     |

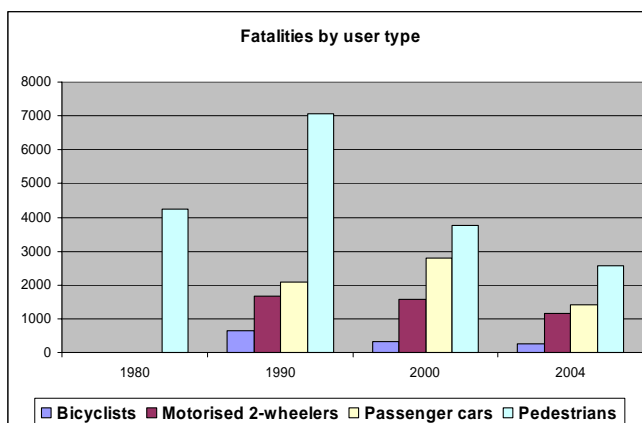
#### B.1.2. Strategies to decrease risk of injury:

|  |     |
|--|-----|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | Yes |
| Emergency services   | Yes |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | Yes |
| Regulation on vehicle equipment  | Yes |

### B.2. National Diagnosis in key safety areas

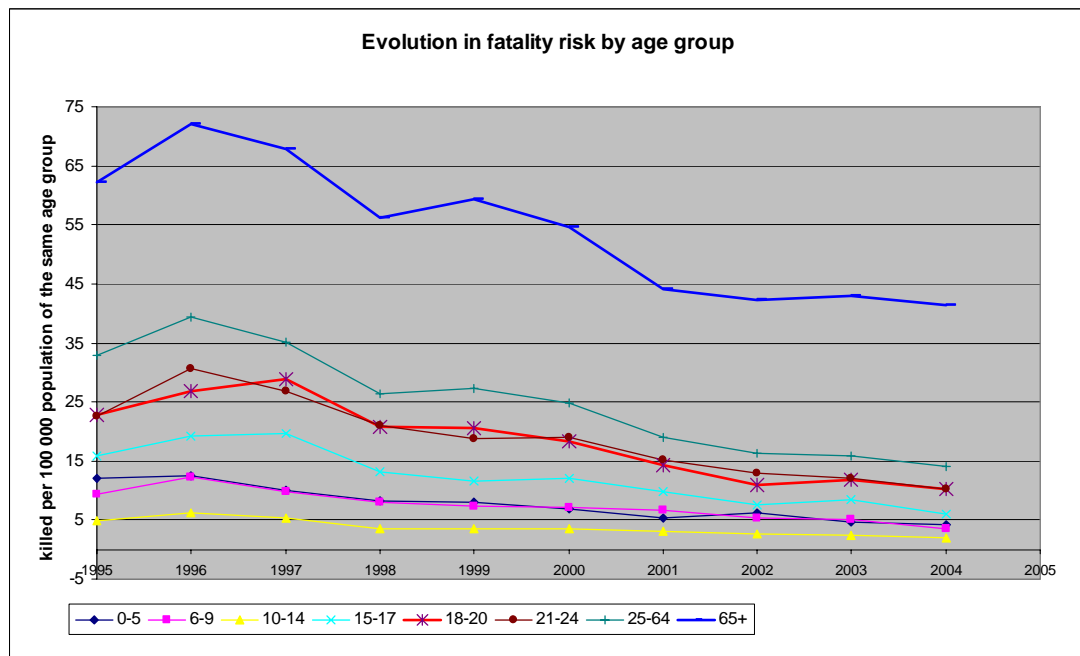
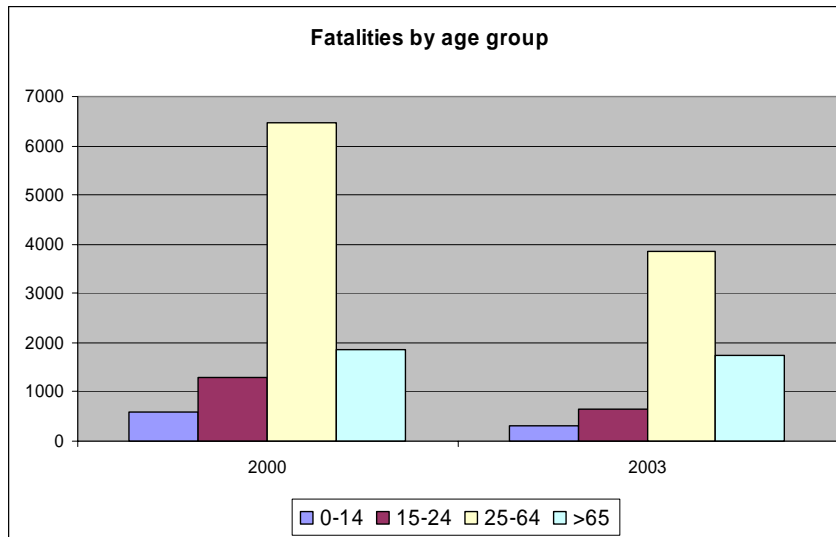
#### Road users

Evolution in fatalities by road user type



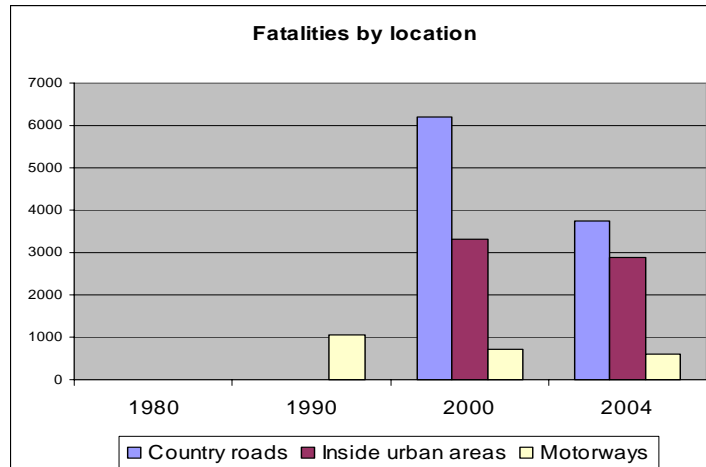
## Age groups

### Evolution in fatalities by age group



### *Type of road / location*

**Evolution in fatalities by type of road**



### *Speed*

Police and traffic safety experts consider that excessive speed is one of the major causes of fatal crashes. Of the total number of traffic violations in 2004, 57.8% were for speeding. To strengthen enforcement of speed controls, and to reduce the number of fatal crashes, police adopted the speed enforcement camera system in 1996. This system has proved to be very effective in decreasing fatal road crashes caused by excessive speed. Since the number of speed enforcement cameras has been increased (from 777 in 2000 to 2 997 in 2004) the rate of accidents and fatalities has dropped by 28.0% and 51.2% respectively. However, in spite of their effectiveness, some departments are opposed to the wider use of speed cameras.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|   | 1980 | 1994 | 2000 | 2003   |
|---|------|------|------|--|
| Nb of speeding citations  |      |      |      | 2002:<br>9.9 million (0.46 citation per licensed driver)                     |
| % of fatal crashes where speed is a causation factor  |      |      |      |  |
| % of drivers over the posted speed limit in :<br>- urban areas<br>- rural roads<br>- motorway |      |      |      | Motorway: 81%<br>Freeway: 81.3%<br>Main highway: 84.6%<br>Rural roads: 81.1% |

### *Drink driving*

In Korea, the maximum permissible BAC level is 0.5 g/l.

In 2004, as a result of 25 150 drink driving incidents, 875 were killed and 44 522 were injured. This means that the rate of killed through drink driving was 13.3% of total numbers killed (6 563 in 2004). Although there are highly developed public transportation systems, such as the subway, bus, taxi and driving agencies acting for drunk drivers, drink driving is still widespread and a major social problem. Also, in spite of strong enforcement by police, drink driving has not decreased as much as expected. In 2004, enforcement was strengthened by 3%, and the number of killed through drink driving was reduced by 32.4%, the number injured by 19.4%, and the total accident number by 19.5%.

#### *Seatbelt and helmet wearing*

Seatbelt wearing is compulsory in front seats. It is compulsory on rear seats when driving on freeways only. Helmet is compulsory for all motorised 2-wheelers, but not for cyclists.

Since 2001, a continuing campaign has improved the rate of seatbelt wearing from 23% in 2000, to 79% in 2003, and played a big part in the decrease of crash fatalities. The Korean government's goal is to improve the rate to 95% in the near future, both through the campaign and, at the same time, by strengthening enforcement.

**Evolution in seatbelt wearing rate**

|                | <b>2000</b> | <b>2003</b> |
|----------------|-------------|-------------|
| <i>General</i> | 23%         | 79%         |

#### *Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Other common violations concern: Unlicensed driving, *Traffic signals violation*, Violation of pedestrian protection, Careless driving, Dangerous passing, Violation of central line, Drowsiness while driving.

#### *Other factors*

In Korea, enforcement, education, encouragement, and engineering are the main tools used in safety. Enforcement by police plays a major part in the reduction of accidents. Engineering is actively conducted by Ministry of Construction and Transportation and other departments. Education and encouragement by government, school, NGO and institutes is also very important to improve traffic safety. Auditing, too, has recently been considered an effective tool in this area and will be adopted soon.

### ***B.3. Major road safety problems today***

1. Safety of pedestrians.
2. Safety of commercial vehicles.
3. Excessive speed.
4. Traffic signals violation.
5. Lack of road safety facilities.



6. Drink driving.

#### ***B.4. Forthcoming road safety initiatives to address these problems***

##### **Strengthen the enforcement and management of drivers**

- Enforce and manage repeat offenders.
- Educate the newly-licensed drivers.
- Strengthen the punishment for excessive speed.
- Manage the revocation of license.
- Increase speed enforcement cameras.

##### **Safety of pedestrians**

- Carry out ‘Traffic Calming’ programmes.
- Re-arrange the school zone and manage its facilities.
- Install safety facilities for pedestrians.
- Adopt road safety audit.
- Compulsory wearing of cycle helmet.

##### **Strengthen the traffic safety education and campaign**

- Educate the systematic safety programmes.
- Conduct field training for safety.
- Conduct safety campaign through mass media.

##### **Improve the vehicle safety**

- Develop the technique associated with ASV and ITS.
- Invent a warning system for drowsiness, vehicle derailment, etc.
- Defect inspection of vehicles and strengthening of recall system.

##### **Commercial vehicle safety**

- Strong enforcement on tachometers and speed limiters of heavy vehicles.
- Modify (reasonably) the driving hours of commercial vehicle drivers.
- Systematic and continual education of drivers and their employers.
- Mandatory employment of traffic safety managers.

## C. Road safety targets

### *General targets*

| Type       | Targets        | Base year | Target year | Base year figure | Current results | Intermediate targets?                                     |
|------------|----------------|-----------|-------------|------------------|-----------------|---|
| Fatalities | -34.9%<br>4700 | 2002      | 2006        | 7 222            | 6 563<br>(2004) | Yes<br>-12.8% by 2003<br>-21.1% by 2004<br>-28.0% by 2005 |

### *Specific targets for particular road users*

|  | Targets          | Base year | Target Year | Base year figure | Current results | Intermediate targets?            |
|--|------------------|-----------|-------------|------------------|-----------------|----------------------------------|
| Reduction in the number of people killed in a commercial vehicles accident | 42.4%<br>(527)   | 2002      | 2006        | 1,242            | 1,413           | yes<br>- an average annual 12.9% |
| Reduction in the number of children killed                                 | 42.5%<br>(156)   | 2002      | 2006        | 461              | 265             | yes<br>- an average annual 12.9% |
| Reduction in the number of pedestrians killed                              | 69.9%<br>(2,193) | 2002      | 2006        | 3,138            | 3,595           | yes<br>- an average annual 17.9% |

*Targets related to accident causation factor and road users protection*

|                                  | Targets | Base Year | Target year | Base year figure | Current results |
|----------------------------------|---------|-----------|-------------|------------------|-----------------|
| Seat belt wearing rates          | 95%     | 2003      | 2006        | 73%              | (2004)          |
| Child safety seat use            | 80%     | 2003      | 2006        | 17%              |                 |
| Two-wheelers helmet wearing rate | 95%     | 2003      | 2006        | 50%              |                 |

**Illustration: Current trend towards targets**



**D. Success story cards**

*Success story from Korea*

**Photo accusation system by the public**

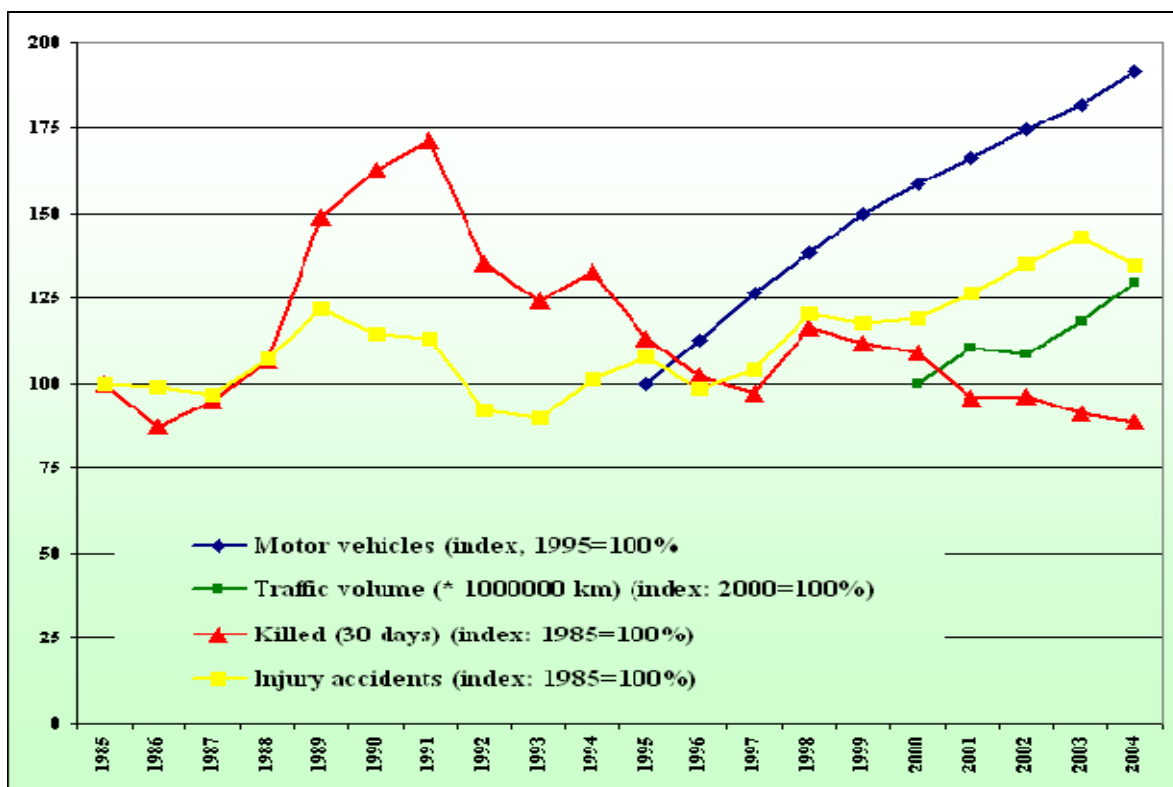
In 2001, to make up for the lack of police in the force, and to improve civilians' road safety awareness for the 2002 Korean/Japan World Cup, the National Police Agency adopted '**the photo accusation system**' by civilians. This system was used for violations of central lines, traffic signals, bus lanes and highway shoulder driving. Pictures were taken of the incidents by civilians; these were submitted to the police, and a certain amount of money was received in payment for the work. This programme played a major role in the reduction of road accidents and was very effective considering that, in the beginning, the reported violation number was 23 000 per day, but afterward the figures reduced greatly to only 6 000 per day. Following the programme, the rate of accidents and fatalities decreased (by 45.7% and 47.5% respectively) in 100 areas where accidents occurred most frequently. However, for several reasons, this programme was abolished in 2003.

## LATVIA

### A. General trend in road safety

#### Key road safety data for 2004

- 516 fatalities (493 in 2003)
- 5 081 injury accidents (5 379 in 2003)
- 21.6 killed per 100 000 inhabitants
- Around 350 cars (passenger cars and light duty vehicles) for 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |   |
|--|---|
| <i>Improved speed compliance / enforcement</i>   | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| <i>Reduced speed limits</i>  | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                       | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..)</i> | <ul style="list-style-type: none"> <li>• In 2004, improvement programme for "black spots", on 29 locations. The programme has not yet been evaluated.</li> <li>• In 2004, winter maintenance classes (levels) definition in Governmental act.</li> <li>• In 2003: Road safety audit for 27 pedestrian crossings on main state roads.</li> </ul> |
| <i>Enforcement of other road rules</i>   | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>  | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| <i>Education and information programmes</i>  | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| <i>Regulation on vehicle inspection</i>  | <ul style="list-style-type: none"> <li>•</li> </ul>   |
| <i>Regulation on active vehicle safety equipment</i>   | <ul style="list-style-type: none"> <li>• No</li> </ul>  |

#### B.1.2. Strategies to decrease risk of injury:

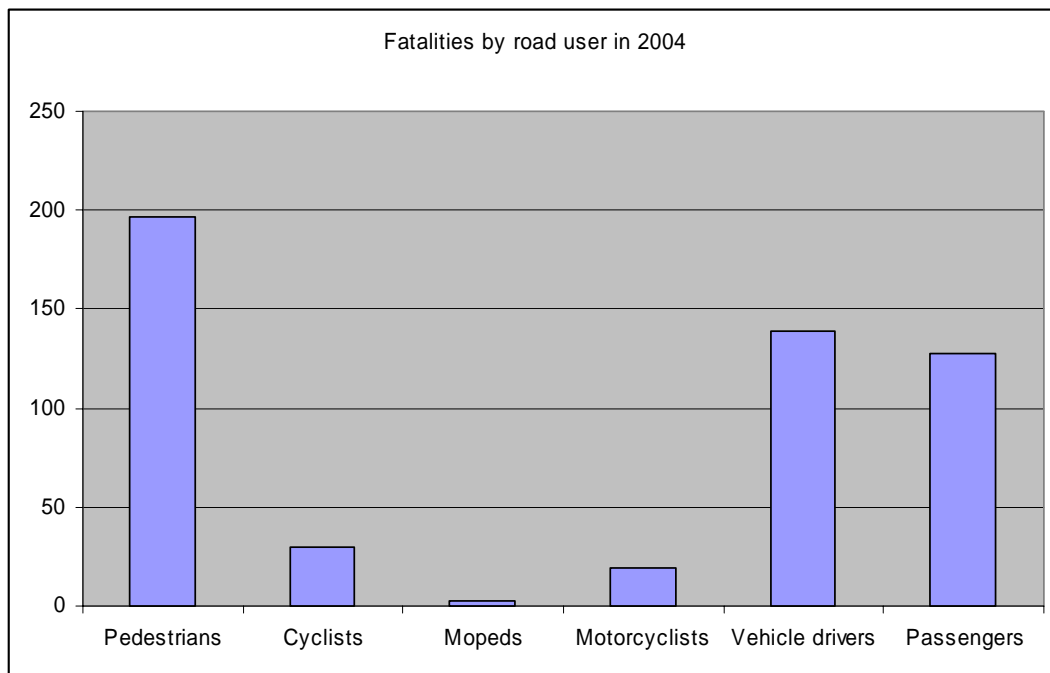
|   |   |
|---|---|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| <i>Emergency services</i>   |   |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• In 2002: Massive removal of obstacles (old trees) near the state roads.</li> </ul> |

### B.2. National Diagnosis in key safety areas

#### Road users

Pedestrians represent the larger group of road fatalities. In 2004, among the 516 fatalities, 38% were pedestrians, 27% were drivers, 25% were passengers, 6% were cyclists and 4% were riders of mopeds or motorcycles

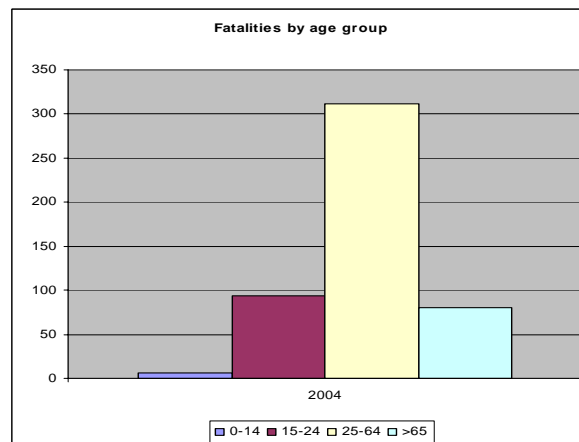
### Fatalities by road user type in Latvia



### Age groups

Six children were killed on the road in 2004. This corresponds to a 62% reduction compared to the situation in 2001, where 17 children were killed.

### Evolution in fatalities by age group



### *Type of road / location*

The number of accidents is larger in the capital and cities (53.6% and 26% in 2004), but the accidents are much more severe in rural roads. The number of killed per 100 injured is 3-5 times higher on state roads than in the capital and other cities. 67% of fatalities occur on state roads, while only 16% of accidents occur on these roads.

### *Speed*

#### **Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.**

|  | 1980    | 1994 | 2000 | 2004 |
|--|---------|------|------|------|
| No. of speeding citations  | No data |      |      |      |
| % of fatal crashes where speed is a causation factor                                     | No data |      |      | 29%  |
| % of drivers over the posted speed limit in :<br>urban areas<br>rural roads<br>motorways | No data |      |      |      |

### *Drink driving*

The maximum authorised blood alcohol content is 0.5 g/l, with the following exceptions:

- 0.2 g/l for novice drivers (less than 2 years of driving license)
- 1g/l for mopeds and cyclists.

There has been a strong decrease in drink driving in 2005.

#### **Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|   | 2000         | 2004         |
|---|--------------|--------------|
| <b>% of fatal accidents where alcohol is a factor<sup>1</sup></b> | <b>22.7%</b> | <b>21.9%</b> |

### *Seatbelt and helmet wearing*

Seatbelt is compulsory in both front and rear seats.

The wearing of a helmet is compulsory for moped and motorcycle riders.

#### **Evolution in seatbelt wearing rate**

|                | 1980 | 1990 | 2000 | 2002 |
|----------------|------|------|------|------|
| <i>General</i> |      |      |      | 62%  |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

The following violations are important in Latvia:

- Insufficient inter-vehicle distance
- Incorrect crossing of level intersections
- Causation of accidents by pedestrians
- Ignorance of road signs

*Other factors*

There is insufficient life-long learning.

### **B.3. Major road safety problems today**

1. Pedestrian protection with appropriate infrastructure.
2. Pedestrian visibility in dark.
3. Drink driving.
4. Over speeding.
5. Long-life education
6. Aggressive driving
7. Driving without driving licence

### **B.4. Forthcoming road safety initiatives to address these problems**

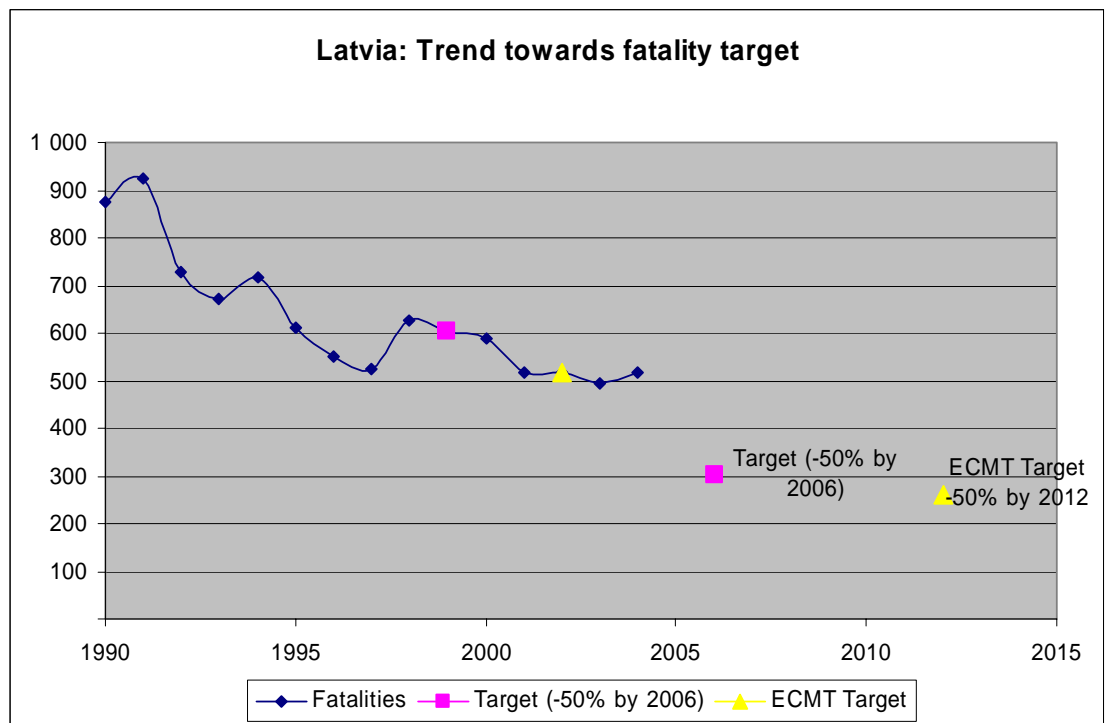
- *Drink driving.* Regular enforcement and campaigns. Decreasing of drink driver's number due to new punishment- arrest.
- *Speeding.* Automatic speed cameras.
- Pedestrian protection with appropriate infrastructure. Engineering measures for pedestrian safety management.
- *Pedestrian visibility in dark.* Campaigns and more responsibility (enforcement) from pedestrian side.
- *Long-life education.* Road safety as special regular subject in schools.
- Aggressive driving and car use without driving licence: Further development of penalty point system and criminal liability.

## **C. Road safety targets**

| Type                      | Targets<br>(in % or<br>absolute<br>figures) | Base year | Target<br>year | Base year<br>figure | Current<br>results<br>(2004) | Intermediate<br>targets? |
|---------------------------|---|-----------|----------------|---------------------|------------------------------|--------------------------|
| Fatalities <sup>(1)</sup> | -50%  | 1999      | 2006           | 652                 | 516                          | Yes -20.8%               |



|                 |      |      |      |      |      |  |
|-----------------|------|------|------|------|------|--|
| Injured persons | -20% | 1999 | 2006 | 5414 | 6416 |  |
|-----------------|------|------|------|------|------|--|

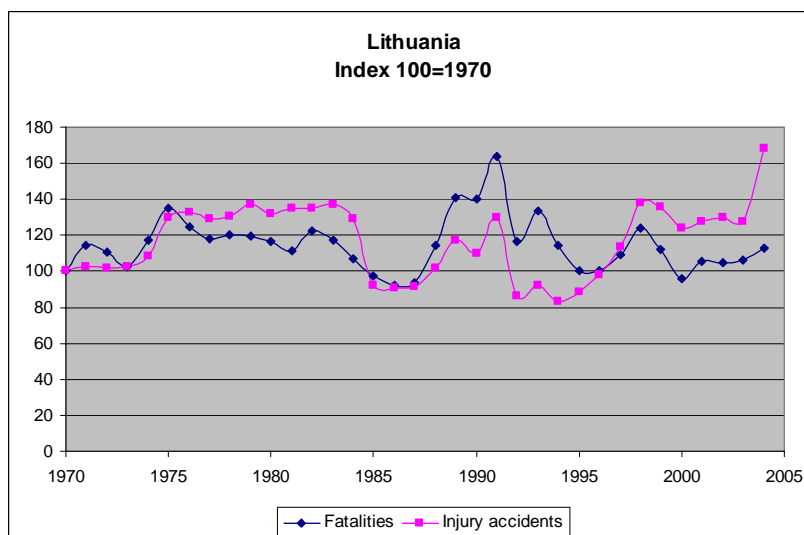


## LITHUANIA

### A. General trend of road safety / motorisation

Key road safety data for 2004

- 752 fatalities (709 in 2003)
- 7 877 injury accidents (5 963 in 2003)
- 21.9 killed per 100 000 population
- Around 480 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



### B. Current state of affairs and national diagnosis

#### B.1. Recent (after 2002) road safety initiatives

##### B.1.1. Strategies to decrease risk of crashes:

|  |  |
|--|--|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>• Automatic speed enforcement cameras was introduced in 2003</li> </ul> |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>• Since October 2003, speed limit in urban areas is 50 km/h.</li> </ul> |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs | <ul style="list-style-type: none"> <li>• No</li> </ul>   |

|   |   |
|---|---|
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..) | <ul style="list-style-type: none"> <li>• The following road safety engineering countermeasures are being implemented in Lithuania: <ul style="list-style-type: none"> <li>– Road safety audit.</li> <li>– Road safety inspection.</li> <li>– Management of high risk site (black spots).</li> </ul> </li> <li>• The following major road-engineering preventive measures of traffic safety are implemented In Lithuania: <ul style="list-style-type: none"> <li>– Development of pedestrian walkways and cycle track networks separating them from motor vehicle traffic.</li> <li>– Installation of traffic lights at at-grade intersections outside the city area.</li> <li>– Reconstruction of at-graded intersections into roundabout intersections.</li> <li>– Reconstruction of X intersection into two T-form intersections, erection of traffic-lights.</li> <li>– Taking complex engineering measures with the aim to ensure safe conditions for all road users.</li> <li>– Other measures to warn road users beforehand (noise lanes, Bee-Bump humps etc.).</li> </ul> </li> <li>• Measures to mitigate accident consequences: <ul style="list-style-type: none"> <li>– Installation of crash barriers on roads with a central reservation.</li> <li>– Elimination of obstacles from the road or road-side area or fencing them off.</li> <li>– Reducing the angle of the earth bank slope.</li> <li>– Measures ensuring effective information and visual warnings against dangers: <ul style="list-style-type: none"> <li>– Reflectors of different shapes providing visual information on the arrangement, trajectory, width of traffic lanes, possible obstacles and the location of the road edge.</li> <li>– Timely and easily accessible information on destination points and directions.</li> </ul> </li> </ul> </li> </ul> |
| Enforcement of other road rules   | <ul style="list-style-type: none"> <li>• Government of Lithuania approved the New Traffic Regulation (rules) in October 2003.</li> </ul>  |
| Graduated Licensing for novice drivers  | <ul style="list-style-type: none"> <li>• New requirements for novice drivers in 2004.</li> </ul>  |
| Education and information programmes  | <ul style="list-style-type: none"> <li>• Great influence on traffic safety in our country is exercised by the Road Traffic Safety Law of the Republic of Lithuania adopted in the year 2000 (For implementation of this Law), the Government of the Republic of Lithuania approved, by the Resolution of 8 July 2005, the State Programme of Road Traffic Safety for 2005-2010.</li> </ul>  |
| Regulation on vehicle inspection  | <ul style="list-style-type: none"> <li>• New requirements on vehicle inspection in 2005.</li> </ul>   |
| Regulation on active vehicle safety equipment   | No  |

### *B.1.2. Strategies to decrease risk of injury:*

|   |   |
|---|---|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"><li>• In October 2003, the Government of Lithuania approved the New Traffic Regulation (rules) with the new Safety equipment: enforcement of seat belt wearing/ helmet use.</li></ul>   |
| <i>Emergency services</i>   |   |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"><li>• In Lithuania, traffic safety improvement measures are implemented according to the National Traffic Safety Programme in 2005-2010. It provides legal measures related with the preparation and improvement of legislation, educational activities, road users' control, improvement of vehicle safety, medical aid and functions of emergency services as well as the implementation of engineering measures of traffic safety improvement.</li></ul> |

### *B.2. National Diagnosis in key safety areas*

#### *Road users*

The user groups which present the highest safety risks are the following:

- Drivers under the influence of alcohol,
- Drivers without license.

In 2004, the proportion of pedestrian casualties was high, with 263 pedestrians killed (34% of the total number of fatalities). Drivers were responsible for 64% of crashes in 2004, and represented 27% of the total number of road fatalities (192 drivers killed).

#### *Age groups*

The age group most represented in road crashes are young people of 15-24 years of age. Insufficient assessment of the situation and excessive self-confidence are the main reasons for the accidents. In 2004, this age group accounted for 20% of deaths and 28% of injuries, while they only represent 12% of the population.

Novice drivers are a particular problem. A large share of the accidents involved drivers with less than 2 years' experience.

#### *Type of road / location*

In 2004, the number of fatal accidents was reduced by 4% in built-up areas.

#### *Speed*

According to the information provided by the traffic police, each year excessive speed causes around 1 200 traffic accidents, 200 fatalities and around 1 500 injured.

According to the analysis of vehicle speed on rural roads and motorways undertaken in 2004 by the “Transport and Road Investigation Institute” (public institution):

- The number of drivers exceeding the speed limits slightly increased in 2004 (in comparison with 2003);
- In 2004, 20 to 50% of drivers (depending on the type of roads) exceed the speed limit. On average, half of them exceeded the speed limit by more than 10 km/h.
- In 2004, on the A1 motorway (section Vilnius-Kaunas), about 42 % of drivers exceeded the speed limit (average traffic density is 15 936 vehicles/day). This situation may be explained by the fact that drivers who speed deliberately influence the behaviour of other drivers.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|   | <b>2000</b>               | <b>2003</b>                |
|---|---------------------------|----------------------------|
| <i>Nb of speeding citations</i>                             | <i>About 41 000 cases</i> | <i>About 43000 cases</i>   |
| <i>% of fatal crashes where speed is a causation factor</i> |                           |                            |
| <i>% of drivers over the posted speed limit in :</i>        |                           |                            |
| - <i>urban areas</i>  | - <i>rural roads: 43%</i> | - <i>rural roads: 47 %</i> |
| - <i>rural roads (90 km/h )</i>                             | - <i>motorways: 46%</i>   | - <i>motorways: 42 %</i>   |
| - <i>motorways (110-130 km/h)</i>                           |                           |                            |

*Drink driving*

According to Lithuanian law driving of motor vehicle under the influence of alcohol is prohibited. Since 1994, the permissible level of alcohol in blood is 0.4 mg/100ml.

Alcohol level is controlled through breathe / blood test. After an injury accident, all drivers involved are tested for alcohol.

In 2004, drunk drivers caused 850 car accidents, in which 90 road users were killed and 1 257 were injured.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | <b>2000</b>               | <b>2004</b>         |
|--|---------------------------|---------------------|
| Number of citations                            | <i>About 22 000 cases</i> | <i>24 516 cases</i> |
| % of fatal accidents where alcohol is a factor | <i>14%</i>                | <i>11 %</i>         |

### *Seatbelt and helmet wearing*

EU regulations (91/671/EWG) require the use of seatbelts in all fitted cars, including on rear seats. This requirement is included in the Traffic Rules of Lithuania. There are no clear data about the use of seatbelts in different types of car, but according to Police data, in general seatbelt usage is around 60 %,

**Evolution in seatbelt wearing rate**

|                | <b>2004</b>       |
|----------------|-------------------|
| <i>General</i> | <i>Around 60%</i> |

### *Other factors*

The increase in the number of cars and the volume of traffic is a fundamental cause of the growing road safety problems in Lithuania. At the same time, the increase in road traffic is viewed as positive and something that hardly needs to be regulated.

Between 1992 and 2002, 7 547 people died and 58 185 were injured as the result of road accidents. The casualty rate in 2004 compared with one of the best performing countries is high, with a fatality rate of about 21.9 killed for 100 000 inhabitants. The road safety problem is complex and is complicated by several risk factors. The need to prioritise measures often forces a focus on certain primary factors that then determine how safety problems are defined. Statistical analyses and black spot analyses conducted by the Lithuanians indicate that 80% of all accidents arise due to driver/pedestrian errors.

### ***B.3. Major road safety problems today***

1. Drink driving,
2. Driver's without license;
3. Pedestrian safety.

### ***B.4. Forthcoming road safety initiatives to address these problems***

In Lithuania, traffic safety improvement measures are implemented according to the National Traffic Safety Programme in 2005-2010. It provides legal measures related to the preparation and improvement of legislation, educational activities, road users' control, improvement of vehicle safety, medical aid and functions of emergency services, as well as the implementation of engineering measures of traffic safety improvement.

The following road safety improvement procedures are being applied in Lithuania:

#### ***Road safety audit.***

Pilot road safety audits started in Lithuania in 2004. The new audit procedure will be prepared in 2006 according to the National Traffic Safety Programme.

#### ***Road safety inspection.***

Inspections have been carried out since 1999. Road inspections, during which road compliance to safety as well as other parameters is assessed, have quite a long history. Inspections are carried out twice a year: in spring and autumn. They are carried out by a team comprised of Lithuanian Road Administration under the Ministry of Transport and Communications, road maintenance enterprises and the police. Based on the findings of the inspections mentioned above, measures to remedy the found defects are implemented.

***Management of high risk site (black spots).***

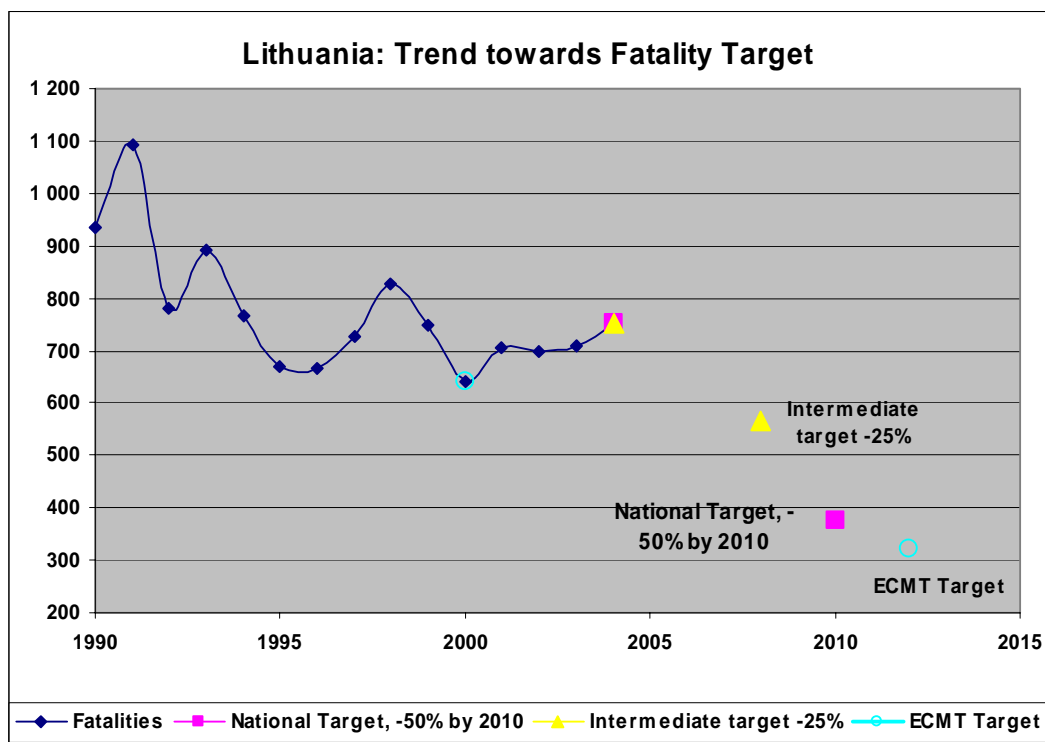
In Lithuania, high risk sites (black spots) have been identified and their maps have been drawn since 1996. Having analyzed “black spots” according to the type of accidents, projects to eliminate these high risk sites are prepared and implemented.

When implementing “black spot” remedy projects, the following engineering traffic safety improvement works are carried out: lighting of road sections, construction of walkways and cycle tracks, construction of metal guard rails, reconstruction of intersections, including the reconstruction of regular intersections into roundabouts, control of traffic lights, reconstruction of separate road sections, implementation of engineering speed reduction measures, installation of the enhanced reflection road signs “Children” near schools, as well as the implementation of other measures.

**C. Road safety targets**

**General road safety targets**

| Type             | Targets<br>(in % or<br>absolute<br>figures) | Base year | Target<br>year | Base<br>year<br>figure | Current<br>results<br>(figure in<br>2004) | Intermediate<br>targets ? |
|------------------|---|-----------|----------------|------------------------|---|---------------------------|
| Fatalities       | -50%  | 2004      | 2010           | 752                    | 751                                       | Yes<br>-25% by 2008       |
| Injury accidents | -20%  | 2004      | 2010           |                        | 7877                                      | Yes<br>-10 % by 2008      |



#### D. Success story cards

##### Reduction of speed limit from 60 km/h to 50 km/h inside built-up area

In October 2003, the speed limit in built up areas was reduced from 60 km/h to 50 km/h. This was a very effective road safety measure.

This was followed by an immediate reduction in the number of fatal accidents. Overall, in the last 4 months of 2003, there was a 12% reduction in fatalities in built up areas compared to the 4 last months of 2002. In 2004, there was a 4% reduction in the number of fatalities in built up areas compared to 2002.

Overall, this new speed limit, largely contributed to the improvement of the road safety situation in Lithuania in built-up areas, where the number of fatalities decreased from 314 to 199 between 2000 and 2004.

In comparison the road safety situation in other parts of the road network has deteriorated (+17% fatalities between 2000 and 2004).

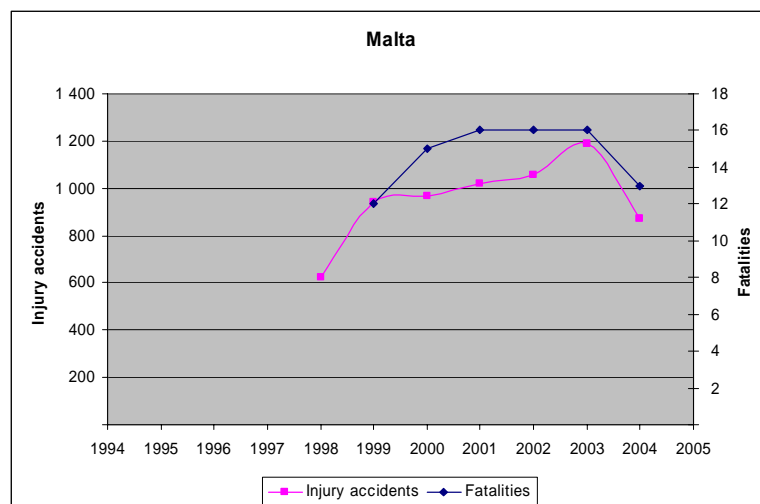


## MALTA

### A. General trend in road safety

Key road safety data for 2004

- 13 fatalities (16 in 2003)
- 870 injury accidents (1 187 in 2003)
- 3.3 killed per 100 000 population
- Around 600 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |   |
|--|---|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>• Introduction of speed cameras in 2004 – no assessments made.</li> </ul>  |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>• Speed limits have been revised to 50 km/h in towns and villages and 80 km/h outside towns and villages in 2004</li> </ul>  |
| New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs                                      | <ul style="list-style-type: none"> <li>• Nothing new. Current drink driving regulations and driving under the influence of drugs apply</li> </ul>   |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>• Continuous upgrade of the main and local road network</li> </ul>   |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>• Introduction of compulsory use of rear seatbelt use (by adults and children) in 2004.</li> </ul>   |
| Graduated Licensing for novice drivers   | <ul style="list-style-type: none"> <li>• New driver testing and licensing procedures were introduced in 2003/4 and penalty points system introduced for new drivers.</li> </ul>   |
| Education and information programmes   | <ul style="list-style-type: none"> <li>• Concurrent with the introduction of rear seatbelt use and other campaigns on dangerous driving.</li> </ul>   |
| Regulation on vehicle inspection   | <ul style="list-style-type: none"> <li>• A vehicle inspectorate was set up within the Malta Transport Authority in 2004/5 to conduct roadside road worthiness testing in conjunction with the national VRT tests</li> </ul> |
| Regulation on active vehicle safety equipment  | <ul style="list-style-type: none"> <li>• No</li> </ul>  |

#### B.1.2. Strategies to decrease risk of injury:

|  |   |
|--|---|
| Safety equipment: enforcement of seatbelt wearing/ helmet use  | <ul style="list-style-type: none"> <li>• Legislation in place for both seatbelt and crash helmet use. Relatively high compliance for crash helmet use and front seat seatbelt use.</li> </ul> |
| Emergency services   | <ul style="list-style-type: none"> <li>• No.</li> </ul>   |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>• Current practices in road construction and maintenance</li> </ul>  |

## ***B.2. National Diagnosis in key safety areas***

### *Road users*

In Malta the group most at risk is still *the driver*. As a percentage in 2004, 56% of the total injuries were drivers whilst 28% of all injuries were *passengers*. A high 16% of the total injured were *pedestrians*. Among those injured 165 people (13%) were injured in accidents involving *motorcycles*.

The lack of injuries resulting from *cycling* on the road is mainly due to the very low number of cyclist in Malta.

The current high traffic volumes and relatively short distances travelled reflect in the number of accidents. Poor pedestrian infrastructure reflects the relatively high number of injuries incurred by this group. Cycling facilities are not available on any part of the road network in Malta.

### *Age groups*

Injuries in road accidents are highest among the 25-59 age group, which reflect a *laissez-faire* attitude among more mature drivers. Given the stricter regulations (new driving tests and penalty points system) young drivers are safer.

In 2004, 726 of the injuries (60%) were male, however there is a slightly higher male driving population.

### *Type of road / location*

Road accidents in Malta mostly occur in the urban area, with few fatal accidents occurring on major arterial roads linking outlying settlements. These are mostly due to the availability of straight, relatively newly surfaced roads where drivers tend to increase speed. The introduction of speed cameras in these locations is therefore welcome. Due to Malta's network very few roads allow for high speed and distances travelled within the urban area are short. However there are identified black spots which indicate a tendency for accidents to occur. There is still a high amount of simple accidents occurring on the road network due to location (which includes type of infrastructure and/or type of traffic management in place). In Malta, due to the influx of tourists in and around selected tourist areas, there is also an element of seasonality which affects location of accidents.

### *Speed*

Speed limits were reduced in 2004 to 50 km/h in towns and villages and 80 km/h outside towns and villages. Speeds have decreased over the past 10 years due to increased traffic and congestion. In addition the condition of the roads was not conducive to high speeds. Severity of accidents is linked to the condition of the road surface, with fatalities occurring on new roads. This is very much linked to speed. There is a risk therefore that, with improvements of the road network, accidents might increase.

### *Drink driving*

The maximum permissible BAC level is 0.8 g/l.

### *Seatbelt and helmet wearing*

Legislation for compulsory use of front seatbelts was introduced in 1995. Compulsory use of rear seatbelts by children was introduced in January 2004, whilst compulsory use of rear seatbelts by adults was introduced in July 2004.

Surveys carried out in October 2004 showed the following results :

| User                                     | Percentage Use |
|--|----------------|
| Car driver (1995 legislation)            | 99%            |
| Front seat passengers (1995 legislation) |                |
| Adults                                   | 93%            |
| Children                                 | 90%            |
| Rear seat passengers (2004 legislation)  |                |
| Adults                                   | 43%            |
| Children                                 | 20%            |

It is evident that the 1995 legislation was very successfully adopted, whilst there is still very little knowledge and enforcement of the 2004 legislation.

It is compulsory to use crash helmets in Malta whilst driving a motorised two-wheeled vehicle. Compliance is close to a 100%.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

No information available.

### *Other factors*

Enforcement is not as effective in Malta, therefore there is abuse of driving regulations which in general increase the risk of accident.

### ***B.3. Major road safety problems today***

1. Speeding.
2. Drink driving.
3. Enforcement.
4. Pedestrian safety.
5. Motorcycles / Cyclists.

**B.4. Forthcoming road safety initiatives to address these problems**

1. More speed cameras to be introduced for better enforcement.
2. Increased awareness and enforcement, especially during week ends in particular entertainment zones.
3. Collaboration between Transport Authority and Police to improve enforcement and target specific users.
4. Improve infrastructure and raise awareness.

**C. Road safety targets**

**General road safety targets**

| Type                | Targets<br>(in % or absolute<br>figures) | Base year | Target<br>year | Base year<br>figure | Current<br>results) | Intermediat<br>e targets? |
|---------------------|--|-----------|----------------|---------------------|---------------------|---------------------------|
| Fatalities          | -50%                                     | 2004      | 2014           | 13                  | -                   | No                        |
| Injury<br>accidents | -50%                                     | 2004      | 2014           | 870                 | -                   | No                        |

**D. Success story cards**

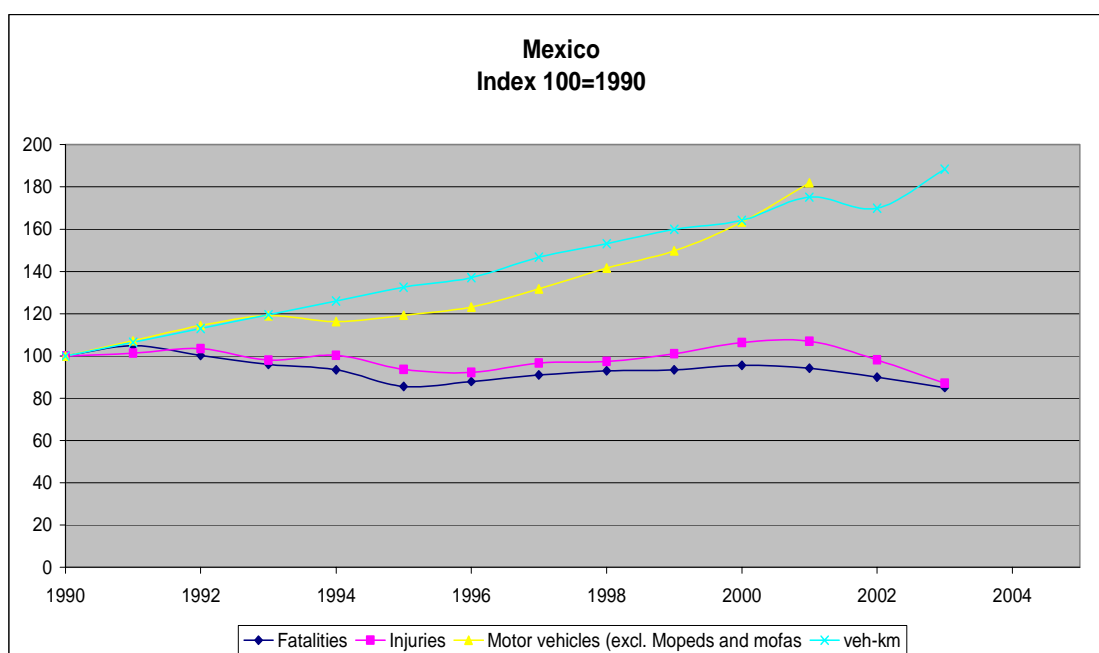
None

## MEXICO

### A. General trend in road safety

#### Key road safety data for 2003

- Around 15 000 road fatalities, including 4 064 on Federal highways
- Around 200 cars / 1 000 inhabitants



The chart above gives a snapshot of the evolution of fatalities and injuries data since 1990. It also shows an increase in the number of motor vehicles and vehicle- kilometres since 1990.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |  |
|---|--|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>Prevention Programmes: Carrusel, Caballero del Camino, 30 Delta, Lince y Lince con radar</li> </ul> <p><i>Related to the target: " Reduce road traffic accidents in Federal Highways"</i></p>   |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>No</li> </ul>   |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                     | <ul style="list-style-type: none"> <li>The Preventive-Medicine Road Service Act of April 26, 2004 compels commercial motor vehicles (CMV) drivers to a medical and psychological evaluation. The evaluation includes blood and drug tests in order to improve highway safety by ensuring that drivers are qualified to operate those vehicles and to remove unsafe and unqualified drivers from highways. Drivers are also compelled to this medical evaluation when they want to keep his/her Federal Driving License after being involved in a road accident. Additionally, there is a medical evaluation for CMV drivers before, during and after a working day which ensures his/her optimal health conditions. If the results from the medical and psychological tests do not show positive results for drivers, they have 30 days after receiving a medical report to appeal the results.</li> </ul> <p><i>Related to the targets: Reduce road traffic accidents in Federal Highways. ; Reduce the number of people injured., Reduce the number of road casualties</i></p> |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>Upgrading 14 Federal Travel Corridors (17 320 km)</li> </ul> <p><i>Related to the target: Prevention of road accidents</i></p>  |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>Road Transit on Federal Highways</li> <li>Alcohol and Drugs Tests (30 Delta)</li> </ul> <p><i>Related to the Target : prevention of road accidents</i></p>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>Obligatory training courses to obtain a federal driving license</li> </ul> <p><i>Related to the Target : prevention of road accidents</i></p>   |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>Training courses</li> <li>Road education programmes: defensive driving, road regulation and safety belt usage.</li> </ul> <p><i>Related to the Target : prevention of road accidents</i></p>  |

|  |  |
|--|--|
| <i>Regulation on vehicle inspection</i>              | <ul style="list-style-type: none"> <li>• “Operación Metro”</li> <li>• Weight and Dimensions</li> <li>• Transport of Hazardous of Materials</li> <li>• Mechanic conditions from trucks and buses</li> </ul> <i>Related to the Target : prevention of road accidents</i> |
| <i>Regulation on active vehicle safety equipment</i> | <ul style="list-style-type: none"> <li>• Inspection of ABS breaks</li> </ul> <i>Related to the Target : prevention of road accidents</i>   |
| <i>Others</i>  | <ul style="list-style-type: none"> <li>• Road safety programmes during holidays and vacations.</li> </ul>  |

#### *B.1.2. Strategies to decrease risk of injury:*

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"> <li>• Federal Police (PFP) carries out campaigns to show the importance of a safety belt usage.</li> </ul>                            |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• Civil Protection</li> <li>• Medical Assistance from Capufe</li> <li>• Red Cross</li> <li>• Government's Green Angels</li> </ul> |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | Yes, ongoing.  |

All relate to the target: Reduce road traffic accidents on Federal highways

#### *B.2. National Diagnosis in key safety areas*

##### *Road users*

According to statistics from the National Counsel for Prevention of Accidents (CONAPRA) from the Office of the Ministry of Health, **pedestrians** are the most vulnerable group to experience road accidents. Around 40 per cent of annual deaths involving road accidents have been pedestrians in the last few years, being the main cause of deaths (5,700 casualties a year). There is an increase of the last percentage in areas where population is highly concentrated. Mexico City is the place that experiences more incidents (more than 50 per cent).

Within the 49 000 kilometres of federal highways, around the 20 per cent of annual deaths correspond to pedestrians crashed by a vehicle (1,000 dead pedestrians a year). The number of casualties of motorcyclists and pedal push cyclists is similar just followed by deaths from car passengers and drivers and passengers from buses and motor carriers.

Therefore, at national level -including federal highways- pedestrians count among the large and most vulnerable number of victims of road accidents followed by pedal push cyclists, motorcyclists, vehicle passengers and drivers.

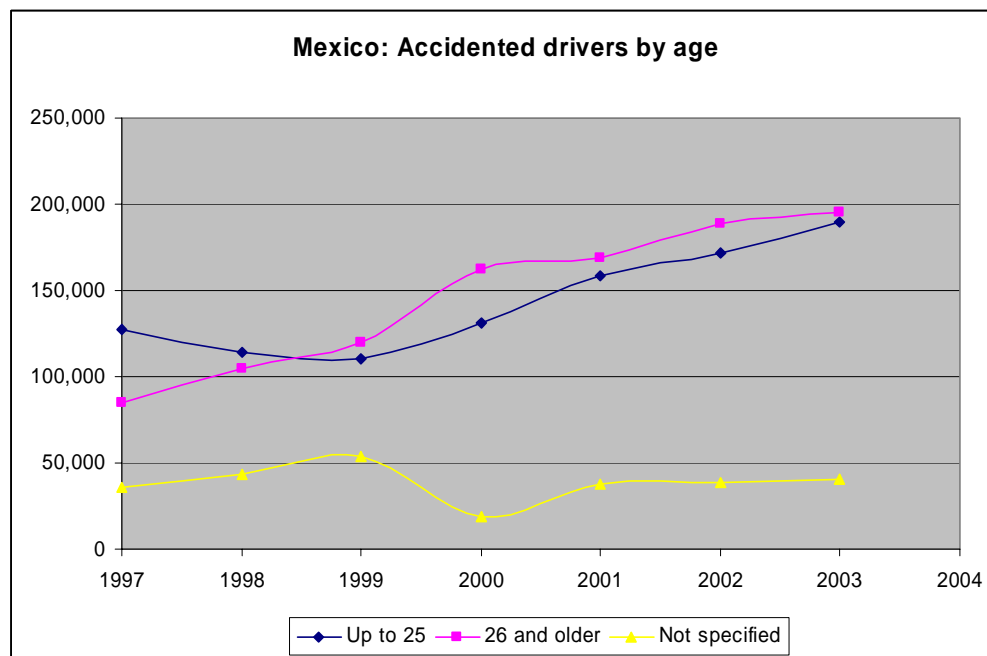


### Age groups

According to statistics from CONAPRA, the most vulnerable group of pedestrians to road accidents are young-aged persons, between the ages of 15-39 years. People from 20-24 years experience the highest risk (12.7 % of total deaths).

Within in the Federal Highways the tendency is the same. Figures by gender shows that men from 20-24 years are most vulnerable to suffer casualties (13% of total deaths of men) while for women the group from 45-50 is the most affected (13% of the total deaths of women).

#### Evolution in accidented drivers by age group



Source: INEGI

### Type of road / location

According to CONAPRA there has been 15 000 annual fatalities due to road accidents in the last few years. A third of these deaths have taken place within federal highways. In 2003, 660 casualties were reported occurred in 6 000 kilometres of toll highways managed by Caminos y Puentes Federales de Ingresos y Servicios Conexos (CAPUFE, Office of Federal Toll Roads and Bridges).

According to figures from the National Institute of Statistics, Geography and Data Processing (INEGI) there were 5 400 fatalities on urban and sub-urban roads during 2004. Annual deaths reported by CONAPRA correspond to the 69 000 kilometres of existing state highways.

It is also important to highlight that according to INEGI, among the 500 000 road accidents that occurred in 2004, 92 % took place on urban and sub-urban roads.

**Evolution in the number of accidents, fatalities and injuries on federal highways**

| Year | Total of accidents | Fatalities | Injuries |
|------|--------------------|------------|----------|
| 1998 | 61 216             | 5 084      | 35 210   |
| 1999 | 57 315             | 5 106      | 36 528   |
| 2000 | 61 197             | 5 224      | 38 434   |
| 2001 | 57 431             | 5 147      | 38 676   |
| 2002 | 42 614             | 4 920      | 35 480   |
| 2003 | 33 041             | 4 652      | 31 477   |
| 2004 | 30 668             | 4 603      | 31 274   |

Source : INEGI and PFP

**Evolution in the number of accidents in urban and suburban roads (estimation)**

| Year | Accidents in urban and suburban areas |
|------|---------------------------------------|
| 1998 | 26 2700                               |
| 1999 | 28 5500                               |
| 2000 | 311 900                               |
| 2001 | 346 900                               |
| 2002 | 399 000                               |
| 2003 | 424 500                               |
| 2004 | 500 000                               |

Source : INEGI

*Speed*

**Speeding citations, percentage of fatal crashes where speed is a causation in 2003**

|  |   |
|--|---|
| Nb of speeding citations                             | 212 568<br>speeding tickets in federal highways |
| % of fatal crashes where speed is a causation factor | 58.95%<br>Federal Highways                      |

### *Drink driving*

According to the Rules of the Road for motor vehicles (Reglamento de Tránsito ) the blood alcohol content limit is 0.8 g / l.

#### **Number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  |                           |
|--|---------------------------|
| Number of citations                            | 470<br>Federal Highways   |
| % of fatal accidents where alcohol is a factor | 0.87%<br>Federal Highways |

### *Seatbelt and helmet wearing*

Seatbelt wearing is compulsory on federal highways for drivers and passenger in front seats.

Helmet wearing is compulsory for all motorized two and three-wheelers.

### *Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc..)-*

The following are the main causes of road accidents:

- Speeding 63%
- Fatigue :2%
- Invasion of a lane road :10%
- Red-light and stop violations 4%
- Inter-vehicle distance 8%
- Illegal passing 4%
- Drinking & Driving 2%
- Others 7%

Source: Información de accidentes 1999, Direction of Systems, Federal Motor Carrier Administration

### ***B.3. Major road safety problems today***

1. Speeding
2. Invasion of lane road
3. Negligent driving
4. Inter-vehicle distance
5. Weather conditions

### ***B.4. Forthcoming road safety initiatives to address these problems***

- ITS implementation
- Massive divulgation of accident prevention campaigns
- Training courses for commercial motor vehicles drivers

### **C. Road safety targets**

Data presented below refer to the federal highways and not to the entire road network.

| Type       | Targets<br>(in % or absolute figures) | Base year | Target year | Base year figure | Current results 2004 | Intermediate targets ? |
|------------|---------------------------------------|-----------|-------------|------------------|----------------------|------------------------|
| Fatalities | 27%                                   | 2002      | 2015        | 4 920            | 4 603                | No                     |
| Injuries   | 34%                                   | 2002      | 2015        | 35 480           | 31 274               | No                     |

Source: Preventive Federal Police (PFP)

There are no sub targets in Mexico.

### **D. Success story cards**

#### ***Success story from Mexico***

##### ***Modernisation of 14 road corridors***

One remarkable success story for the improvement of road safety in Mexico has been the modernization of 14 central road corridors. This program will finish in 2006 with the upgrading of 17,320 kilometres of the most important highways in the country (90% of the total length of the 14 corridors).

The programme includes the substitution of old, one-lane, curvy and less-functional highways still existing by modern, multilane highways designed with a convenient design speed, total access control, good roadside area, high level of service.

#### ***Less recommended story card from Mexico***

##### **Road maintenance based with gravel material**

Techniques of road maintenance based on throwing gravel material on road surfaces - so vehicles can eventually pave it down- have provoked a large number of road accidents, deaths, injuries and material damages in urban and suburban highways.

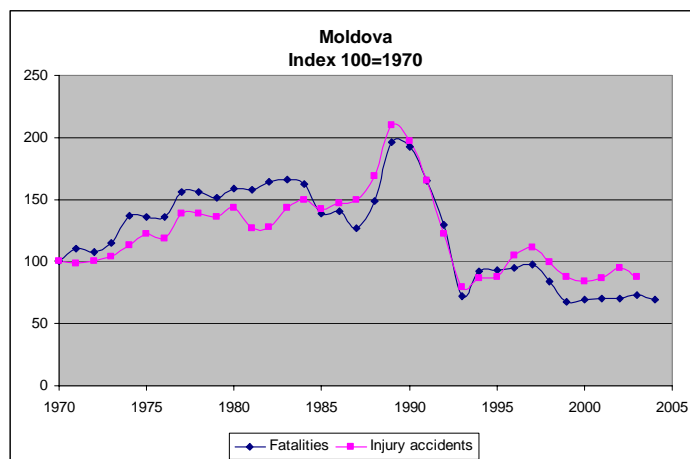
## MOLDOVA

### A. General trend in road safety

#### Key road safety data for 2004

- 405 road fatalities (425 in 2003)
- 2 670 injury accidents (in 2003)
- 9.4 killed per 100 000 inhabitants
- Around 196 vehicles per 1 000 inhabitants

The Republic of Moldova is a young and small country, with a territory of 33 800 km<sup>2</sup> and a population of around 4 million inhabitants (in January 2005), of which 44% live in built-up areas. Moldova was proclaimed an independent country on 27 August 1990.



In 1990, there was a sharp increase in the number of traffic accidents following the creation of the new country.

It should be noted that from 1993 onwards, traffic accidents statistic do not include the eastern region of the Republic of Moldova – Transnistria – as this region is not under the responsibility of the authorities of the country.

Safety problems are mainly due to the rapid increase in the number of vehicles in the Republic of Moldova. In 1990, there were 268 212 vehicles registered and a motorisation rate of 73 vehicles per 1 000 inhabitants. At the end of 2004, 649 910 vehicles were registered and the motorisation rate was of 197 vehicles per 1 000 inhabitants.

An analysis of the situation during the period 1995-2005 shows a yearly increase in the number of road accidents of 5% during the period 1995-97, and of 18% during the period 2000-02. This is probably due to an increase in road traffic, which is partly explained by the import of approximately 30 000 cars per year.

In the Republic of Moldova, traffic accident data are collected and recorded by the Road Police Division of the General Department of Public Police and Internal Affairs. Statistics data only concern injury accidents (non-injury accidents are not included in the statistics).

After 1991, when the Republic of Moldova became a sovereign and an independent country, strict standards were adopted for the registration of traffic accidents. These standards, however, do not yet correspond with the standards of the European Commission.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>No.</li> </ul>   |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>No, but it is planned to reduce the speed limits to 50 km/h, to be in line with practice in most European countries.</li> </ul>  |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                     | <ul style="list-style-type: none"> <li>No, but the government is preparing a new law relative to drink driving.</li> </ul>  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>Yes. In December 2003, a national programme for the improvement of the road infrastructure for 2004-2008 was adopted. However, due to a lack of financial resources, the programme has not been implemented.</li> </ul>  |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>No, but proposals are being prepared for more stringent penalties and sanctions for road traffic infringement.</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>Yes, there is a graduated licensing system in Moldavia.</li> </ul>   |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>Yes, in 2003, the government adopted a road safety programme for 2004-08, which includes the implementation of an education and information programme. However, due to a lack of financial resources, the programme has not been implemented.</li> </ul>   |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>No, but a new system will soon enter into force, for the mandatory inspection of vehicles (both technical and environmental performance)</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>No. However, this is mandatory for trucks involved in international traffic.</li> </ul>  |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>Moldavia has the objective to reduce road fatalities by 50% by 2012. However, it has to cope with the following problems: <ul style="list-style-type: none"> <li>– Lack of legislative background. Lack of experience.</li> <li>– Lack of support from international road safety organisations.</li> <li>– Lack of financial resources.</li> </ul> </li> </ul> |

### *B.1.2. Strategies to decrease risk of injury:*

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"><li>• Seatbelt wearing is compulsory for all vehicle occupants, with some exceptions, such as driving instructors and pregnant women.</li><li>• Helmet wearing is compulsory for motorcyclists.</li></ul>  |
| <i>Emergency services</i>   | <ul style="list-style-type: none"><li>• The activity of emergency services is organized satisfactory.</li></ul>  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"><li>• No. There is no infrastructure improvement, due to a lack of financial resources. The government is however aware that improvement to the infrastructure is critical to the improvement of the road safety situation and is trying to find the necessary budget.</li></ul> |

### *B.2. National Diagnosis in key safety areas*

#### *Road users*

Drivers account for 25-30% of road fatalities, vehicle passengers for 25%, pedestrians for 40-45% and cyclists for 3-5%.

The high level of fatalities in Moldavia is due largely to the lack of separation between road users, especially on high speed roads. This in turn is due to deficiencies in land use planning.

Important infrastructure improvement is required to reduce this high fatality rate, with measures such as pedestrian crossings and central islands introduced in built-up areas.

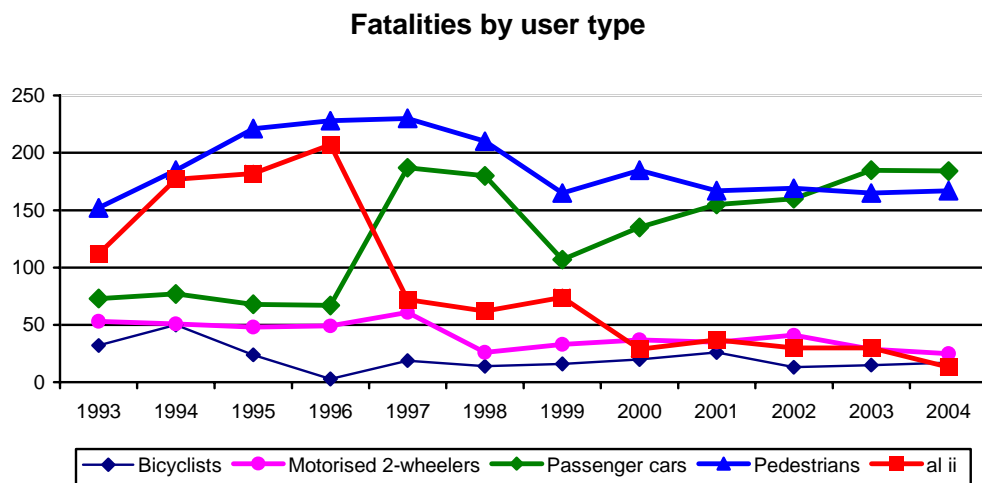
Excessive speeds are also responsible for the high number of fatalities.

Since 1995, vehicle occupants constitute the user group with the biggest increase (+171%) in the number of fatalities. One reason for this is the non-utilisation of passive safety devices, such as seatbelts.

A key issue is also the high rate of pedestrians killed, which is far above the European average. Collisions with pedestrians represent 46% of all accidents.



### Evolution in fatalities by road user type



### Age groups

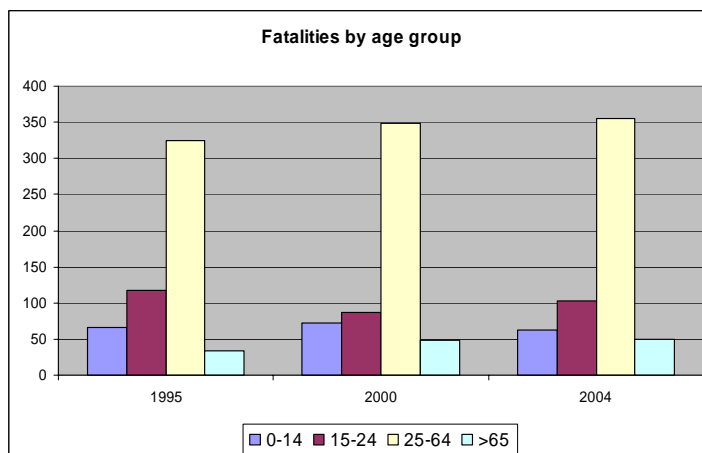
Young drivers (having their license less than 3 years) are responsible for 10% of road accidents.

In 2004, the majority of all accidents were caused by drivers with less than one year of driving experience. There were 1 230 such accidents.

Overall in 2004, the number of accidents was reduced by 8% compared to 2003, while the number of accidents involving young drivers increased by 13.8%. Between 1999 and 2004, the number of accidents involving young drivers increased by 57% (203 in 1999 and 353 in 2004).

The age group between 25 and 64 is the largest groups of casualties.

### Evolution in fatalities by age group



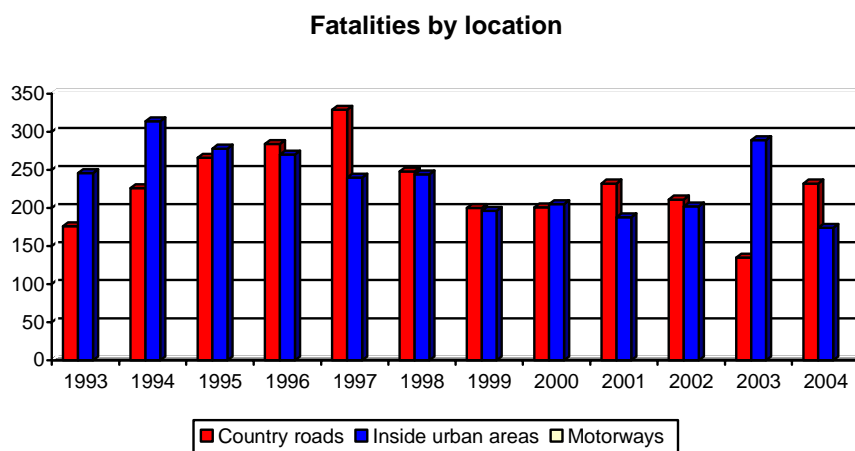
### *Type of road / location*

The Republic of Moldova does not have roads of motorway status.

Compared to 1995, the number of accidents in 2004 decreased by 37% in urban areas, and by 13% outside urban areas.

Of all fatal and injury accidents, 73.5% occur in built-up areas; the remainder (26, 5%) occur on state roads administered by the state.

**Evolution in fatalities by type of road**



### *Speed*

In 2004, 589 crashes were due to excessive speed, *i.e.* 27% of the total number of accidents. Speeding is related to 24.8% of infractions.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|  | 1980          | 1990          | 2000        | 2004            |
|--|---------------|---------------|-------------|-----------------|
| Nb of speeding citations                             | 79256 (15,8%) | 37986 (10,3%) | 58334(5,7%) | 147.971 (24,8%) |
| % of fatal crashes where speed is a causation factor | 29,2%         | 22,3%         | 32,9%       | 27,1%           |

### *Drink driving*

In Moldova, the BAC limit is 0.0 g/l.

In 2004, drunk drivers caused 212 accidents (9.8% of total number) in which 371 people were injured.

There has been an evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor

|  | <b>1980</b>   | <b>1990</b> | <b>2000</b>  | <b>2004</b>   |
|--|---------------|-------------|--------------|---------------|
| Number of citations                            | 15 862 (3.2%) | 808 (0.21%) | 31 859(3.1%) | 25 811 (4,3%) |
| % of fatal accidents where alcohol is a factor | 21.2%         | 19.7%       | 10.1%        | 9.8%          |

#### *Seatbelt and helmet wearing*

Seatbelt wearing is compulsory for drivers and passengers – in front and rear seats – except in the following cases:

- the driver is executing a manoeuvre
- driving instructor during instruction
- Pregnant women
- Drivers with traffic rights during their service (*e.g.* policemen, firemen, ambulance personnel).

A change in the contravention legislation in 1999 divided traffic infringements into minor or major violations; this reduced the importance of seatbelts as a prime factor of protection against traumas in the event of traffic accidents. Non-wearing of seatbelt is considered a major infringement. The sanction for not wearing a seatbelt is a fine of EUR 1.50. In practice, therefore, the seatbelt wearing rate is very low.

Helmet wearing is compulsory for motorised 2-wheelers.

#### *Other factors*

The economic and financial situation of the country has a direct impact on the level of road safety, and the lack of modern equipment for enforcement (video speed trap, alcoholic test, etc.) is a significant problem.

Other problems concern:

- Insufficient control by the police.
- The legislation, which needs to be improved.
- Road education, which barely exists.

Moldavia is progressively catching up with European Union road safety standards. The following measures were adopted:

- Proposed law on road safety, which is currently being examined by the government.

- Improvement in the procedures to collect traffic accidents data, in-line with UN ECE standards. Subject to appropriate financing, this could be in place in 2006.
- Pilot project on enforcement was submitted to the government for examination and financing. The cost of the project is EUR 280 000.
- The Republic of Moldova is in the process of joining the International Academy of Traffic Safety, which will contribute to improved traffic control.

### ***B.3. Major road safety problems today***

1. Elaboration of a legislative system conforming to EU requirements.
2. Enforcement system.
3. Reorganization of traffic control system, from human and logistic point of view;
4. Traffic data collection system, conforming with UN ECE requirements.
5. Training and education.
6. Elaboration of a national traffic safety strategy based on the EU objective to reduce by 50% the number of fatalities between 2001 and 2010.

### ***B.4. Forthcoming road safety initiatives to address these problems***

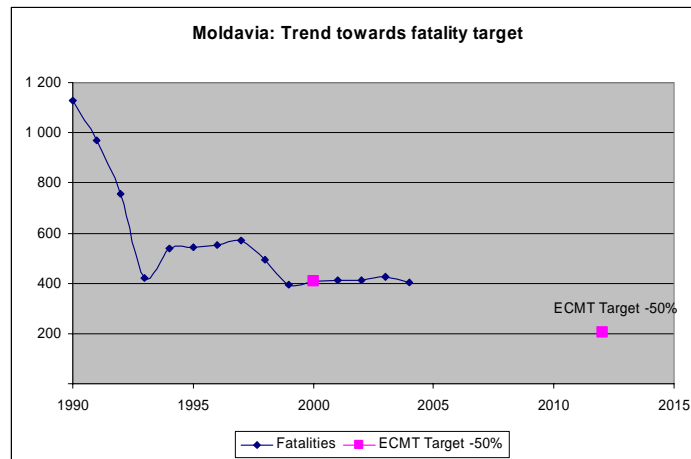
- Approbation and implementation of a traffic safety law, including the necessary legislative tools conforming to EC requirements.
- Ratification of international conventions regarding road safety. This is already in the final stage of approbation by Parliament.
- Revision of the enforcement system. Standardisation with EC practices. Introduction of new control procedures.
- As of 1 January 2006, new accident data collection and registration system, conforming to UN ECE practices. Creation of a centralised database on road traffic accidents in Moldova. This will contribute to the setting up of a more systematic analysis of the road safety situation.
- New training and education systems for drivers. New driving license process conforming to EU requirements. Redefinition of road user categories and of the respective driving licenses.
- Membership of the International Road Safety Academy ([www.irs-a-association.org](http://www.irs-a-association.org)). Closer co-operation with the UN ECE WP1, with the European Commission and other organisations involved in road safety.
- Moldova will examine the review of road safety in Lithuania performed by the ECMT, which is also expected to be very useful to them.

- The Republic of Moldova, being a young country in transition, has not undertaken any in-depth study of its road safety situation. This started to become an issue in 2001, and the first national road safety programme was approved at the end of 2003. The National Council for Traffic Road Safety – a consultative body which advises the government – was also created in 2003, under the authority of the prime Minister.

There is real political will to change the situation as reflected in the recent results, with a 13% decrease in fatalities between 2001 and 2004. To improve the situation further, there is a need for international support and assistance, in particular to improve the current legislative framework for road safety.

### C. Road safety targets

There is no national target in Moldova. The following chart shows the trend towards the ECMT -50% target.

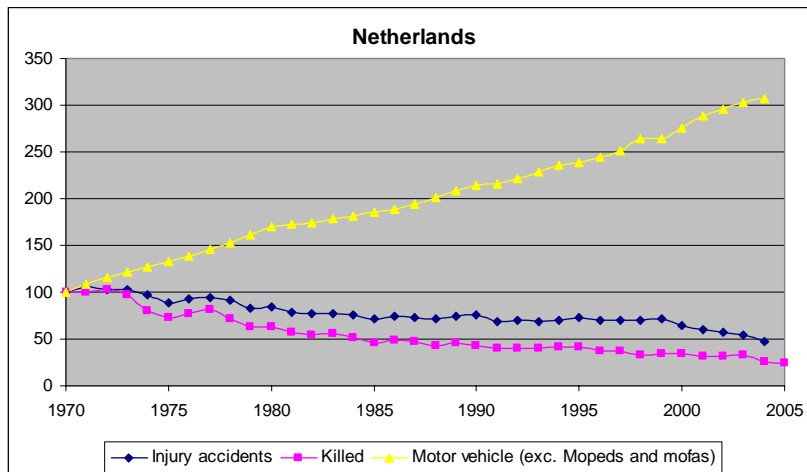


## NETHERLANDS

### A. General trend in road safety

#### Key road safety data for 2005

- 750 fatalities (804 road fatalities in 2004)
- 8 494 injury accidents in 2004
- 4.6 killed per 100 000 inhabitants
- Around 500 cars (passenger cars and light duty vehicles) per 1 000 inhabitants in 2004



Mofa = slow moped = max 50 cc, max 25 km/h, no obligatory helmet

While car use has tripled since 1970, the number of road casualties has dropped. The number of (reported) casualties has halved, and the number of killed has decreased even further. This illustrates the fact that an increase in traffic does not necessarily mean the number of injured and killed will automatically rise. The transport system (motor vehicles, infrastructure, legislation, driver education) has been actively and substantially improved, thus compensating the risks of increased mobility.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### STRATEGIES TO DECREASE RISK OF CRASHES

The mentioned 'strategies' are superseded by 'super-strategies'. In our view, Sustainable Roads Safety is seen as a strategy, the below mentioned 'strategies' are, in fact, measures or measure groups or tactics. Ideally, our principle strategies are:

- *Systems* approach: first look how accidents can be prevented via optimisation of the system and next look at countermeasures for present accident causes
- *Decentralization* of policy development and implementation: act local where possible, act central when needed
- *Integral & cascade-approach*: first look at the macro level, then the meso level, i.e. land use > network > site; values > norms > behaviour; travel needs > modalities > vehicles; social sector > group > individual road user. Most measures will have much more impact when combined with other types of measures. Thus speed campaigns are combined with enforcement and no longer implemented as separate measures. So, the organizational setting of measures can be as important as the measures themselves.

In The Netherlands an important turning point is the signing of the Starting up Program Sustainable Road Safety in 1998, an agreement between local, and regional and central authorities.

Policy measures on the national level are:

- Legislation (penalty point system, novice drivers, impairment rules etc.)
- Vehicle regulation
- Driver education

Decentralised road safety policy:

- Implementation of Sustainable Safety traffic environment
- Law enforcement and campaigns
- RS education

In the 2005 Policy Paper Mobility the following statement text is given:

The fight for higher traffic safety levels starts with retention of the existing traffic safety level and eradication of maintenance backlogs. In terms of policy, this means: continuation of efforts to embed traffic safety into road management, education, driving courses, enforcement of legislation, public information campaigns, retention of safety requirements for vehicles and retention of the vehicle inspection system (APK inspections). Usage of the full capacity of the road, including emergency lanes, will make it necessary to introduce extra measures to guarantee emergency service access in the event of accidents. Accidents are registered via the detection system and remote cameras. The matrix signs are then used to temporarily close lanes to allow the emergency services to reach the location quickly.

In this year's ministers' briefing of the parliament with regard to road safety the 5 most important policy dossiers are :

- Co-operation within the road safety field
  - Sustainable Safety
  - National Initiative Road Safety
  - Accident registration
- Road safety behaviour
  - Risky substances (alcohol, drugs...)
  - Driving licences (renewing of the system)
  - Road safety education
  - Public relations & communication
  - Speed
  - Safety culture in enterprises
  - Enforcement
  - Aggression
  - Fatigue
  - Vulnerable road users

- Vehicle safety
  - European New Car Assessment Programme
  - child safety
  - safety of Heavy Goods Vehicles
  - prohibition of Radar-detection
  - vehicles for the handicapped
  - General Periodical Inspection of motor vehicles
  - Optical and audio signals
  - bicycle lighting and retro reflection
  - Daytime Running Lights
  - Licence plates for vehicle identification
  - Collision compatibility
  - intelligent vehicles (ISA experiment, LDWA)
  - bicycle thefts
  - transport of persons in trailers
  - implementation of EC guidelines
- Infrastructure safety
  - national roads
  - management and maintenance
  - capacity management
  - construction of new roads
  - motorcycle related safety measures
  - policy regarding rail crossings
  - Roundabouts
  - 30 km/h and 60 km/h zones
  - parallel routes for slow (motorised) traffic
  - new design guidelines
- Monitoring and evaluation of policy measures
  - Evaluations studies
  - forecast studies

#### *B.1.1. Strategies to decrease risk of crashes:*

|  |  |
|--|--|
| <i>Improved speed compliance / enforcement</i>   | <ul style="list-style-type: none"> <li>• Speed and red light cameras</li> <li>• Fining vehicle owners in stead of drivers</li> <li>• Regional traffic law enforcement teams</li> </ul>   |
| <i>Reduced speed limits</i>  | <ul style="list-style-type: none"> <li>• Re-classification of the road network: &gt; 50% of the urban network is now 30 km/h</li> <li>• Rural access roads: transformed to 60 km/h</li> <li>• Urban freeways: Rotterdam example: from 100 km/h to 80 km/h</li> </ul> |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i> | <ul style="list-style-type: none"> <li>• 0,2 promille max for novice drivers</li> <li>• Educational Measure Driving under influence of Alcohol</li> </ul>  |



|   |   |
|---|---|
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>• Start-up Program Sustainable Safety (30 km/h zones, moped on carriageway)</li> <li>• Categorization and reconstruction</li> <li>• New guidelines regarding Essential Recognition Characteristics + agreement implementation in 10 years</li> <li>• Distributor roads connections = roundabout</li> <li>• Road safety audits</li> </ul> |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>• HELMGRAS: Helmet, safety belt, speeds, alcohol, traffic lights</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>• Novice drivers get a provisional driving licence; a more refined system is under consideration</li> </ul>  |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>• Multi year road safety campaign program: information + enforcement</li> <li>• (All authority levels)</li> <li>• Re-education of drivers</li> </ul>   |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>• Obligatory annual vehicle inspection vehicles older than 3 years</li> <li>• Fraud proof licence plates</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>• Is EC competence</li> <li>• DOBLI Mirror for HGV's</li> </ul>  |
|   | <ul style="list-style-type: none"> <li>• introducing license plates for mopeds (for support of enforcement of traffic regulation)</li> </ul>  |

#### *B.1.2. Strategies to decrease risk of injury:*

|   |   |
|---|---|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"> <li>• Multi year road safety campaign program</li> </ul>   |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• Incident management on freeways and regional arteries</li> <li>• Ambulance regulation: no more than 15 minutes ETA</li> <li>• Trauma helicopters</li> </ul>  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• Separation of non motorized traffic on arteries</li> <li>• Traffic calming</li> <li>• Widespread reconstruction in relation to re-classification</li> <li>• Obstacle protection / obstacle free zones in verges</li> <li>• Roadside safety barriers</li> </ul> |

#### **B.2. National Diagnosis in key safety areas**

##### *Road users*

The Dutch success in achieving traffic safety is due to sustainable safety: separating fast and slow (vulnerable) traffic. From all combinations of traffic modes, the number of pedestrians killed by cars has gone down by a factor of 4 since 1976. The number of cyclists and mopedists (2 moped types: max 45 km/h and max 25 km/h) killed by cars are also effectively reduced through this policy. Although other combinations (car occupants killed by a car) have also decreased in number, they are

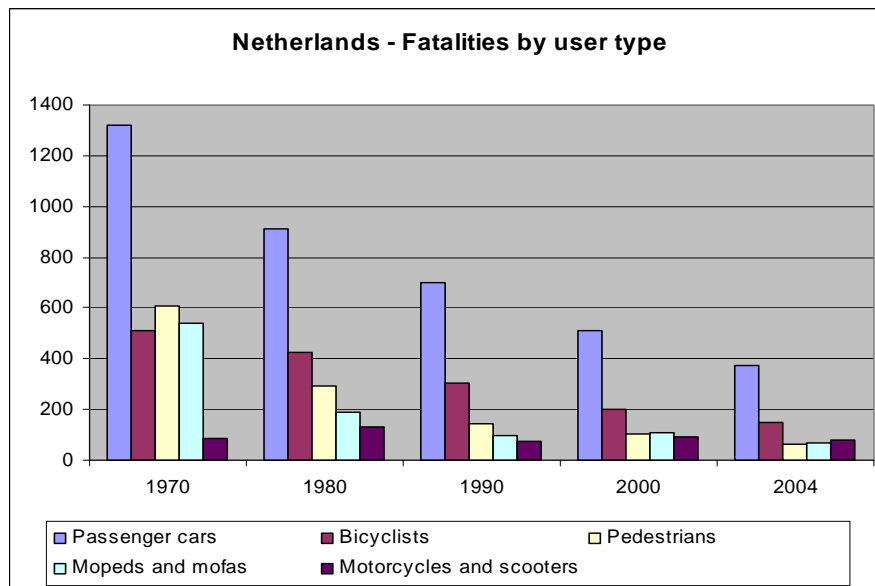
not as spectacular as the number of pedestrians, cyclists and mopedists. Furthermore, there are many combinations of traffic modes which show no decrease (the number of fatalities in single-sided car accidents has been almost stable since 1990). The number of fatalities among motorcyclists fluctuates with the use of the motorbike, which in turn fluctuates with the fashion. For the moped too, the number of accidents (with trucks, single-sided and the remaining number of fatalities with cars) shows no great reduction.

One of the main long term goals will be to reduce the number of fatalities in single-sided crashes and those involving mopeds and motorcycles. It is not expected to gain much more from infrastructural and other 'traditional' measures. While it would be expected that very rigorous measures, like intelligent speed adaptors and the banning of mopeds and motorcycles would help to reduce the number of accidents, such measures are, of course, politically and socially unacceptable. The focus is therefore on less radical means.

| Fatalities                      | 1970  |      | 1980  |      | 1990  |      | 2000  |      | 2004 |      |
|---------------------------------|-------|------|-------|------|-------|------|-------|------|------|------|
| <b>Passenger cars</b>           | 1 322 | 42%  | 910   | 46%  | 702   | 51%  | 513   | 47%  | 373  | 46%  |
| <b>Bicyclists</b>               | 512   | 16%  | 425   | 21%  | 304   | 22%  | 198   | 18%  | 149  | 19%  |
| <b>Mopeds and mofas</b>         | 540   | 17%  | 191   | 10%  | 95    | 7%   | 107   | 10%  | 66   | 8%   |
| <b>Motorcycles and scooters</b> | 85    | 3%   | 130   | 7%   | 72    | 5%   | 89    | 8%   | 83   | 10%  |
| <b>Pedestrians</b>              | 609   | 19%  | 295   | 15%  | 144   | 10%  | 106   | 10%  | 65   | 8%   |
| <b>Other</b>                    | 113   | 4%   | 45    | 2%   | 59    | 4%   | 69    | 6%   | 68   | 8%   |
|                                 |       |      |       |      |       |      |       |      |      |      |
| <b>Total</b>                    | 3 181 | 100% | 1 996 | 100% | 1 376 | 100% | 1 082 | 100% | 804  | 100% |

Source: IRTAD, AVV

#### Evolution in fatalities by road user type



### Age groups

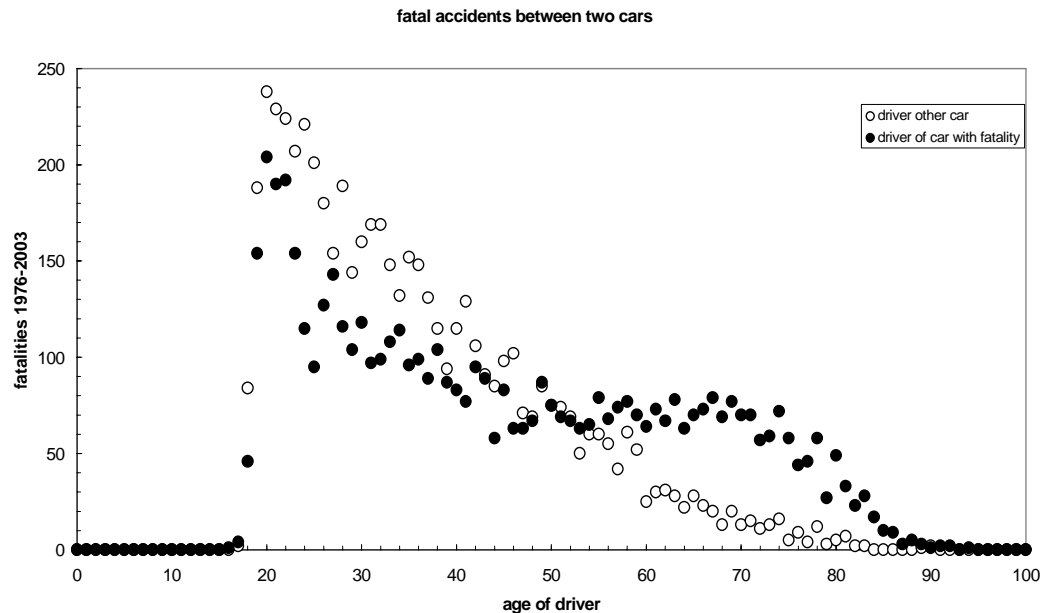
The number of fatalities varies with age. Inexperienced riders and drivers are killed more often in traffic, and vulnerable drivers too. Most cyclists are killed between the ages of 12 – 25, and young car drivers between the age of 18 – 25 etc. As the number of children on bicycles dropped, the number of killed cyclists went down. Of course, many other measures were effective too (*e.g.* child seats).

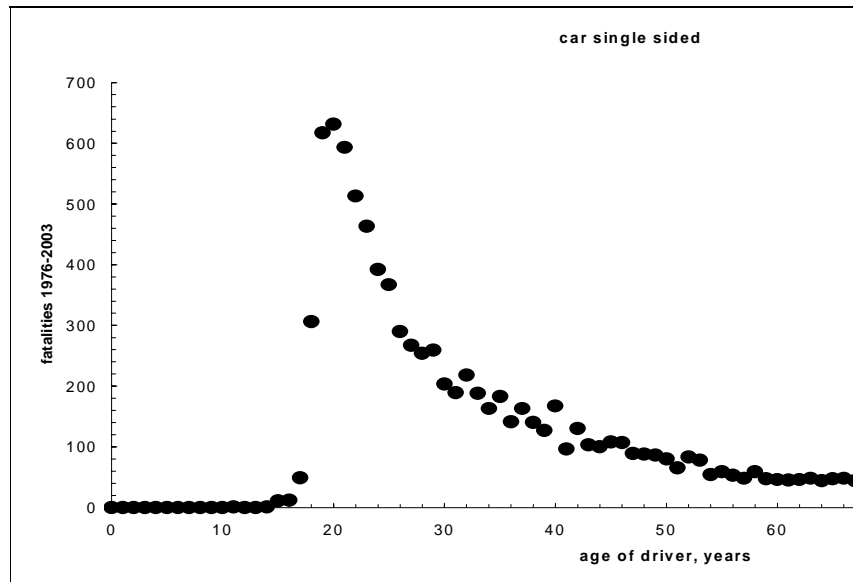
It is illustrative to look at the age of the drivers involved in fatal car-car accidents, either as a driver of the fatally injured (which can be the driver or a passenger), or as the driver of the other vehicle (almost always without a fatality inside). The figure below shows these distributions (from 1976, and fairly constant since).

As can be seen from this figure, the number of fatalities is almost independent of age, apart from the early years (18-30). This is due mainly to the increasing fragility of the elderly, as can be seen by comparing the series of black dots with the series of open dots, which shows that the involvement of drivers in fatal accidents, as the non-fatally injured, strongly decreases with age all over the regime between 18 and 70 years of age. This shows, by the way, that the ensemble of road users continues to learn until they are very old. Above the age of 60, relatively many do not have a driving licence. This however is changing rapidly. On average, the elderly (still) drive less than other adults.

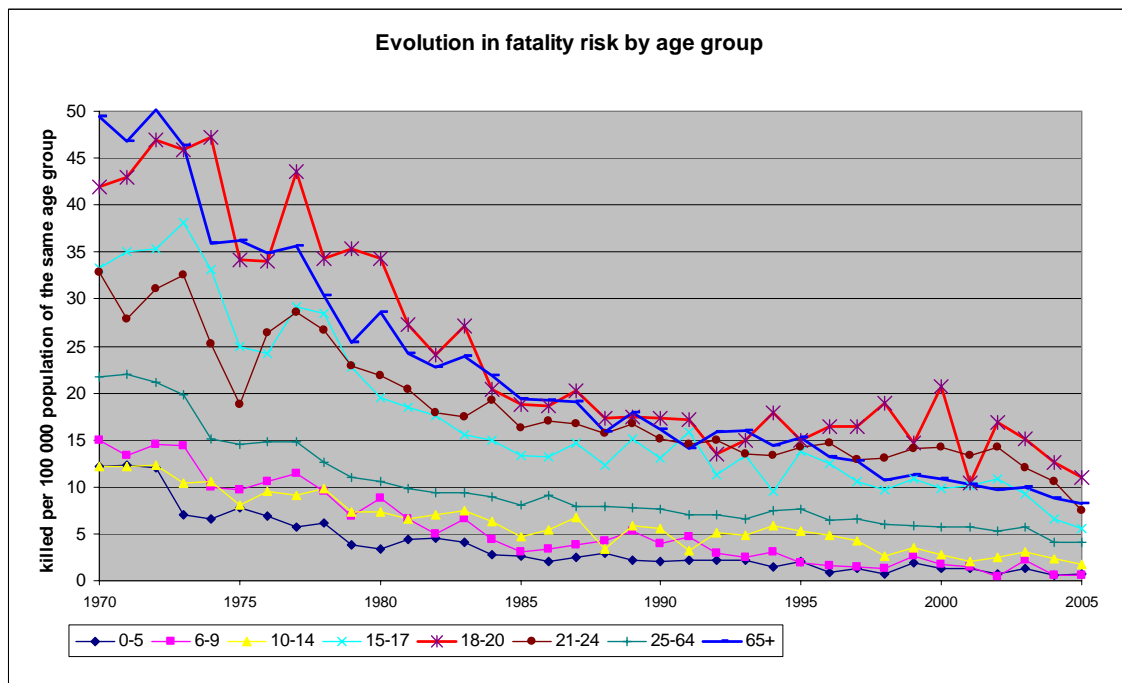
Another interesting graph (see below) shows the age of people in single-sided car accidents. It shows that single-sided accidents represent a serious problem for young drivers. Relatively many of these accidents happen during the weekend (25%), partly related to alcohol consumption.

### Evolution in fatalities by age group





**Figure NL.2. Age of drivers, involved in fatal single sided car accidents between 1976 and 2003**



### *Type of road / location*

The decrease in fatalities over the last 30 years has been achieved mainly by the improvement of urban and rural roads. The highways receive (proportionally) increasingly more traffic, and do not show a strong reduction in fatalities.

**Evolution in fatalities by type of road**

| <b>Location of fatalities</b> | <b>1970</b> |     | <b>1980</b> |      | <b>1990</b> |      | <b>2000</b> |      | <b>2004</b> |     |
|-------------------------------|-------------|-----|-------------|------|-------------|------|-------------|------|-------------|-----|
| <b>Urban areas</b>            | 1 319       | 41% | 784         | 39%  | 463         | 34%  | 374         | 35%  | 263         | 33% |
| <b>Country roads</b>          |             |     | 1 104       | 55%  | 789         | 57%  | 609         | 56%  |             |     |
| <b>Motorways</b>              |             |     | 108         | 5%   | 124         | 9%   | 99          | 9%   |             |     |
| <b>Other</b>                  | 1 862       |     |             |      |             |      |             |      |             |     |
| <b>Total</b>                  | 3 181       |     | 1 996       | 100% | 1 376       | 100% | 1 082       | 100% | 804         |     |

### *Speed*

While efforts have increased, the sharp reduction in fatalities in 2004 is not believed to have been due to speed checks; they have, however, contributed to the overall downward trend of fatalities in the Netherlands.

### *Drink driving*

Until 2006 the BAC limit in the Netherlands was 0.5 g/l for all drivers. Starting in 2006, however, a lower limit of 0.2 g/l will be applied for novice drivers.

The number of alcohol enforcement checks has risen and, in the figure, the number of violations appears to have gone up as well. In fact (corrected for the choice of location of the checks – not shown), the number of violations were proven to have declined.

### *Seatbelt*

**Evolution in seatbelt wearing rate in the Netherlands**

|                    | <b>1970</b> | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2003</b> | <b>2004</b> |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>General</b>     |             |             |             |             |             |             |
| <b>Rear Seat</b>   |             |             |             |             | <b>63%</b>  | <b>69%</b>  |
| <b>Front Seats</b> |             |             |             |             | <b>86%</b>  | <b>90%</b>  |
| <b>Motorway</b>    |             | <b>76%</b>  | <b>80%</b>  | <b>87%</b>  |             |             |
| <b>Rural roads</b> |             | <b>58%</b>  | <b>75%</b>  | <b>86%</b>  | <b>89%</b>  |             |
| <b>Urban areas</b> |             | <b>57%</b>  | <b>59%</b>  | <b>74%</b>  | <b>84%</b>  |             |

*Source: IRTAD and AVV*

### *Helmet*

Helmet wearing is compulsory for motorcycles and for mopeds (max 50cc, max speed: 45 km/h). It is not compulsory for mopeds (max 50cc, maximum speed: 25 km/h).

The percentage of riders wearing a helmet varies depending on the type of vehicle: nearly 100% of motorcycle riders wear helmets, 92% of the moped riders wear helmets, and almost no mofa riders

Only 75% of moped passengers wear helmets.

**Moped : Helmet wearing - stated behaviour** (Source: PROV 2003)

|                                 | 1990 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 |
|---------------------------------|------|------|------|------|------|------|------|
| <i>Short trips</i>              |      |      |      |      |      |      |      |
| urban                           |      | 80   | 86   | 88   | 86   | 83   | 83   |
| rural                           |      | 88   | 88   | 85   | 87   | 88   | 88   |
| total                           | 94%  | 83   | 87   | 87   | 86   | 85   | 86   |
| <b>long trips (&gt; 5 min.)</b> |      |      |      |      |      |      |      |
| urban                           |      | 94   | 94   | 95   | 93   | 87   | 86   |
| rural                           |      | 96   | 96   | 95   | 96   | 95   | 98   |
| total                           | 98   | 94   | 95   | 96   | 95   | 91   | 92   |

**Observed helmet wearing percentage** (source: BVOM)

|      | Passing mopeds | Passing moped passengers | Mofa riders |
|------|----------------|--------------------------|-------------|
| 1999 | 92,5           |                          |             |
| 2000 | 91,6           |                          |             |
| 2001 | 92,6           |                          |             |
| 2002 | 90,6           |                          |             |
| 2003 | 94,7           | 85                       | 2           |
| 2004 | 93,3           | 82                       | 6           |

In the Netherlands cyclists are not obliged to wear helmets, although some children and foreign-cyclists wear them.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

| Enforcement activities in 2004                        |   |
|---|---|
| Item  | number of transactions per 1 000 motor vehicles |
| Speed   | 856   |
| Parking ticket  | 133   |
| Red traffic light                                     | 45  |
| Other offences  | 187   |
| Total number of transactions per 1 000 motor vehicles | 1 221   |
| of which based of license plate                       | 1 032   |
| of which by halted police officers                    | 189 (15,5%)                                     |

*Other factors*

None

### **B.3. Major road safety problems today**

The following issues are mentioned in the minister's 2005 policy briefing to parliament:

- The minister's ambition is to keep The Netherlands in the top safest countries. This is not a self-evident situation.
- The decrease in number of fatalities in relation to lorries and delivery vans is less than in other modes; the increase in goods transport gives reason to be cautious.
- The number of fatalities in 2004 was exceptionally and unexpectedly low. It is unlikely that this good record will be met next year.

Accident analysis and expert opinions lead to a slightly different list: One-vehicle accidents, accidents with mopeds and motorcycles, and accidents with small vans. Alcohol is still an important factor, and the sustainable safety policy must be continued.

#### ***B.4. Forthcoming road safety initiatives to address these problems***

Policy measures focused on the infrastructure are expected to increase traffic safety by more than 35% in the period through 2010. In the period 2010-2020, this percentage will increase to 50%. This has consequences for the required resources. Central government has included 80 million euros per year in the BDU (a Transport and Traffic Measures Fund for regional and local authorities) for the period after 2010 (at 2004 price levels). This is to ensure that the regional road network can be permanently changed to meet the principles of Sustainable Safety, in combination with local and regional measures. When this objective was defined, the assumption was that the local governments would also make substantial financial contributions.

## **What do the road administrators do?**

### ***Create safe infrastructure***

To realise the objectives, all road administrators are asked to contribute: municipalities, provinces, water boards and the central government. Examples include the creation of 30 km/h zones, roundabouts, bicycle paths, optimisation of intersections and traffic control installations, increased safety for road shoulders, level crossings, etc. Starting January 2005, the central government embedded requirements for this type of regional and local measure in the Traffic and Transport BDU for provinces and WGR-plus regions (regions around the larger cities).

Central government is responsible for the national (primary) road network and must increase traffic safety on the road network in various ways, *e.g.* application of 'essential identification features'. In addition, as a road administrator, the national government must pay great attention to safety when constructing and expanding roads. One extra benefit of all traffic safety measures is that they increase travel time reliability. But management and maintenance must also be optimised to increase the safety level of the road network.

## **What does the central government do?**

### ***Influencing driver behaviour***

For traffic safety, it is important that drivers know how they are expected to behave in traffic and are able to modify their behaviour as required. If necessary, the national government can command such behaviour by strict law enforcement. Supplementary to current behaviour policy, the national government will introduce the following elements during the period up to 2010:

- Extra attention will be paid to 'identifying risks' in driver education in schools.
- Measures related to driving licences, for example phased driver training, exams that focus more on competencies, introducing a motorbike license, introducing a points system for serious traffic offences, recalibrating medical suitability for driving, improved training for driving instructors, introduction of a 0,2 promille alcohol limit for beginner drivers, introduction of an alcohol lock in case of recurring offences involving alcohol.
- Additional policy for medicines, drugs and fatigue as soon as good test equipment is available for this.
- Continuing campaigns regarding alcohol, seatbelts, tail gaiting, bicycle visibility, traffic aggression, always as a collaborative effort between the central government, local governments, the police and the Justice Department.
- Specific policy focused on elderly drivers.
- Expanding on transport companies' safety cultures (freight haulers and lease car companies).
- Periodic additional training of professional drivers, among others.
- Introducing an administrative penalty for 'faulty parking and stopping', and fines for certain minor traffic infractions.
- Optimising regional traffic enforcement, for example through improved co-operation between police and local administrators, deploying additional capacity for enforcement and additional control along the roads.



## C. Road safety targets

### C.1. Visions

#### ➤ National visions:

In the Netherlands, the leading philosophy is Sustainable Road safety. Key issues are: man is the reference standard; prevention is preferred to a curative approach; complete re-classification and re-design of the road network in residential areas and traffic roads (5 categories: urban and rural access roads, urban and rural distributor roads and urban arterials / rural freeways); three safety principles: functionality, homogeneity, predictability; de-central approach where possible, central approach where needed.

#### ➤ Regional road safety strategies:

Context: Transport Planning Act. National (= central + regional + local authorities) agreement on key strategies in National Transport and Traffic Plan; Regional elaboration in Regional Transport and Traffic Plan; local plan not obligatory, but activities should be in line with Regional T&T Plan. At Regional and local level, freedom of policy choices: they have the best knowledge of problems and remedies.

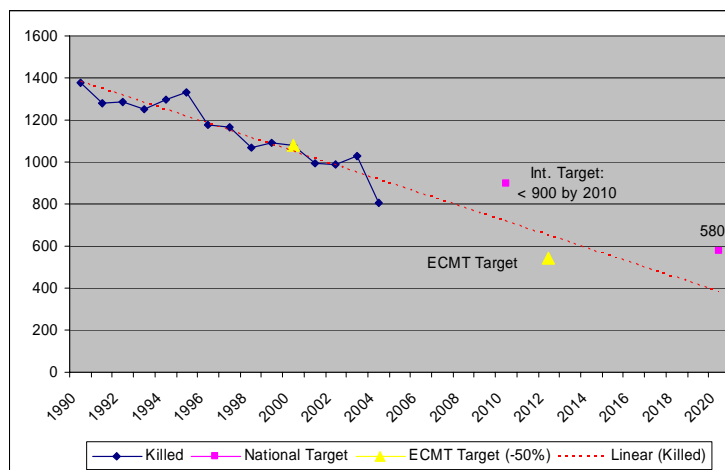
### C.2 Targets

**Table . Road safety targets in the Netherlands**

| Type                      | Targets<br>(absolute figures)            | Base year                         | Target<br>year | Base year<br>figure     | Current results<br>(figure in 2003) | Intermediate<br>targets ?            |
|---------------------------|--|-----------------------------------|----------------|-------------------------|-------------------------------------|--------------------------------------|
| Fatalities                | 580                                      | average of<br>2000, 2001,<br>2002 | 2020           | 1 106                   | 1,088                               | Yes,<br>900 by 2010                  |
| Injury<br>accidents       | no target                                |                                   |                |                         |                                     |                                      |
| Hospitalised<br>persons   | 12 250                                   | average of<br>2000, 2001,<br>2002 | 2020           | 18 775                  | 18 660                              | yes,<br>17 000 by<br>2010            |
| Injured<br>persons        | no target                                |                                   |                |                         |                                     |                                      |
| Other (please<br>specify) | no rise in % victims<br>of goods traffic | average of<br>2000, 2001,<br>2002 | 2020           | fatal: 21%<br>hosp: 14% | fatal: 23%<br>hosp: 13%             | < 21% fatal<br>< 14%<br>hospitalised |

|                                   | Targets                                     | Base year | Target<br>year | Base year<br>figure     | Current results<br>(figure in 2003<br>or 2004) | Intermediate<br>targets ?            |
|-----------------------------------|---|-----------|----------------|-------------------------|--|--------------------------------------|
| Goods transport<br>(vans + HVG's) | no rise in %<br>victims of goods<br>traffic | 2000      | 2020           | fatal: 21%<br>hosp: 14% | fatal: 23%<br>hosp: 13%                        | < 21% fatal<br>< 14%<br>hospitalised |

**Figure. Trends towards fatality target in the Netherlands**



#### D. Success story cards

##### Success story from the Netherlands

Sustainable safety: **separate traffic** such that high differences in impulse (mass times speed) cannot meet. Use speed delimiting devices, roundabouts, build separate infrastructure for bicycles and mopeds, lead motorised traffic to highways and so on

The introduction of the **moped helmet** in 1975 induced a strong decrease in moped sales. With a helmet it was no longer fun to drive a moped. The number of fatalities decreased almost immediately by a factor 2 as well, probably due to sudden, sharp, decrease in inexperienced children on mopeds

The introduction of **free public transport for students from 18 to 24** lead to a strong reduction in the number of accidents – both in cars and on mopeds – involving young drivers. This group caught up later when they started driving, but it is thought that people drive more safely when they are (a little) older.

### **Less recommended story from the Netherlands**

From a road safety perspective the following, less-recommended, measures come to mind:

#### ***Mopeds / "snorfiets" – Cars without driving license***

In the Netherlands a special category of mopeds was introduced: a so-called 'snorfiets' (mofa = bicycle with a tiny engine with a max. possible speed of 25 km/h). In the beginning these 'snorfiets' really were marginally motorized bicycles, used by people who no longer felt fit enough to use a normal bicycle. Snorfiets riders were not obliged to use a helmet.

Some 10 years ago, due to EC regulations, other mopeds were allowed as " 'snorfiets', provided their power was reduced to a max. speed of 25 km/h. This proved to be a bad thing, since it was very easy to tune the snorfiets to moped (or greater) speeds. For youngsters these new dimmed scooter model mofas were very attractive: no helmet obligatory, and easy to make them as fast as they wanted. This resulted in very high accident risks.

More recently, a new category of vehicle, for which no driving licence, but only a traffic theory certificate, is needed, has been introduced. This type of vehicle, a tiny car, originates in France. People without a driving licence are allowed to drive these vehicles as, for the law, it is a moped. It is getting more popular by the day. On the other hand, these vehicles (in essence a substandard mini car) proved to be very risky. The accident risk levels per km driven are as high, or higher, than a moped (which is 40 times as risky as a normal car!). From a safety point of view it would be best to ban these vehicles, and certainly not make it easy to buy or use one. Currently there are 'only' 15 000 of them. If the licence and health requirements stay moped-related, a fast increase in the numbers of these dangerous and risky vehicles can be expected. Second-hand ones, especially, can be easily bought by youngsters, who will tune them to be able to ride much faster than the legal 45 km/h max speed.

#### ***Mobile phones***

Similarly, the increasing trend of mobile telephone use in cars, mopeds and bicycles is a growing problem. Hands-free systems are not significantly safer than hand-held ones. A ban on telephone use in cars could not be put into legislation as it is not enforceable.

The number of evidently unsafe gadgets grows; mobile offices are becoming more or less accepted.

#### ***Absence of uniformity in right-of-way at roundabouts***

With regard to infrastructure, an example not to be recommended is the absence of uniformity in right of way at roundabouts with bicycle lanes. In the Netherlands, the connectivity of the bicycle network made it necessary to introduce special facilities for cyclists. Bicycle lanes not physically separated from motorised traffic proved to be risky, so separated bicycle paths are needed.

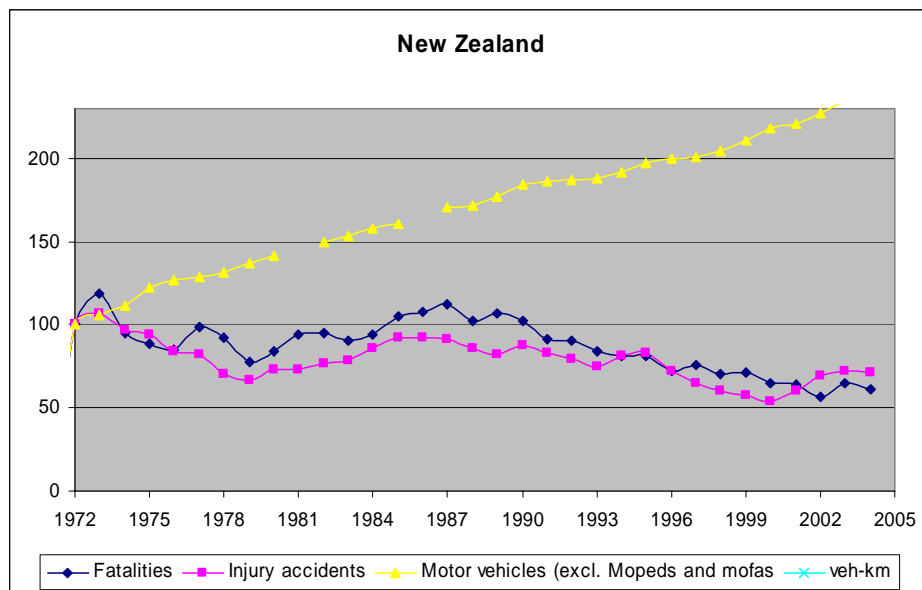
The general rule is: traffic on roundabout has priority on traffic accessing the roundabout. However, since some experts think that it is safer to exclude bicyclist from that rule while others do not agree, there are now bicycle paths with and without priority, depending on the local authority's taste. For both cyclists and motorists this is confusing. The conflict between both groups of experts/authorities is not solved and has resulted in a trench war.

## NEW ZEALAND

### A. General trend in road safety

#### Key road safety data for 2004

- 436 road fatalities (461 in 2003)
- 10 368 injury accidents (10 615 in 2003)
- 10.7 killed per 100 000 inhabitants
- Around 600 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

In New Zealand, ex-ante economic appraisals are carried out for all road safety policies and programmes, wherever possible, to ensure the potential benefits of any intervention outweigh the costs. As interventions usually interact multiplicatively, it is difficult to identify the actual individual effect of each policy or programme on road safety outcomes. Ex-post evaluations are usually carried out to evaluate the overall incremental effect (in terms of road trauma outcome) of a series of interventions introduced concurrently. Individual interventions are sometimes evaluated using other intermediate outcomes such as behavioural survey data.

Recent ex-post evaluations since 2002 include:

- An independent review of the *Road Safety to 2010* strategy in 2004. The review found New Zealand's current road safety programmes are on track to meet, in the face of rising traffic, government's road safety goals to 2010, provided the strategy is fully implemented. The review identified improvements to existing programmes/interventions and potential new interventions. These recommendations form the basis of a proposal to complete implementation of the strategy.
- In 2004, at the same time, an independent review of the programme that funds all the road safety enforcement and most of the road safety education activities in New Zealand was undertaken. The review found the road safety interventions have been effective.

#### B.1.1. Strategies to decrease risk of crashes:

|  |  |
|--|--|
| <i>Improved speed compliance / enforcement</i> | <ul style="list-style-type: none"><li>• Improved speed enforcement since 2002 includes:<ul style="list-style-type: none"><li>- NZ Police has been refining its targeting of speed enforcement to high-risk areas, and working closely with other road safety partners (e.g. road safety engineers and education advisors) to do so. Since 2002/2003, this includes increased targeted urban arterial enforcement and enforcement for motorways in Auckland – New Zealand's largest city.</li><li>- In 2004 NZ Police changed the operational guidelines for the development of speed cameras. Speed camera zones and warning signs in New Zealand have been removed, and speed cameras are now deployed on an 'anywhere, anytime' basis.</li></ul></li><li>• Speed enforcement and management has been assessed very favourably, and increased enforcement for targeted urban arterial enforcement has a high benefit to cost ratio.</li></ul> |
| <i>Reduced speed limits</i>                    | <ul style="list-style-type: none"><li>• Speed limits have not been reduced in any uniform way, due to public acceptability. Road authorities have reduced speed limits in order to address particular parts of the network, and a trial is underway to implement a speed setting methodology based on road design, not roadside development. This will involve test applications of 80 and 90km/h speed limit on roads currently 100km/h.</li></ul>  |

|  |  |
|--|--|
| <p><i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i></p>                                      | <ul style="list-style-type: none"> <li>• The following initiatives have been introduced: <ul style="list-style-type: none"> <li>- In 2002/03 compulsory breath testing enforcement was intensified in rural areas.</li> <li>- NZ Police are currently training staff to administer tests for driving impairment by substances other than alcohol.</li> <li>- NZ Police is currently undertaking a major project to enhance the collection of intelligence on alcohol related harm. The new project builds on the long running "last drinks" survey to provide a consistent and robust approach to intelligence led efforts in this area.</li> <li>- The Land Transport Amendment Act was passed in June 2005. The Act will result in enhanced safety through tougher enforcement measures for repeat drink drivers and repeat disqualified driver offenders.</li> </ul> </li> <li>• CBT enforcement has been assessed very favourably both internally and externally and has a high benefit to cost ratio. The external reviews of drink driving programmes show that the programmes in place, under current regulation, have high benefit to cost.</li> </ul>   |
| <p><i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i></p> | <ul style="list-style-type: none"> <li>• Since 2002, infrastructure improvements programmes are: <ul style="list-style-type: none"> <li>- Two major infrastructure packages for New Zealand's two main cities – Wellington and Auckland- have been announced. These packages are primarily aimed at congestion relief but also are improving the standard of the network.</li> <li>- Funding for minor safety works such as seal widening, barriers etc was increased by \$47m in 2004/2005.</li> <li>- Central government is assisting road controlling authorities to develop voluntary safety management systems which ensure authorities' decisions about the construction, maintenance and management of road networks lead to the achievement of clear safety targets. 60 authorities will have an operational safety management system by the end of 2004/2005 and a commitment to assist the remaining 14 authorities is currently being considered.</li> <li>- New Zealand's State Highway authority has accelerated programmes on seal widening, profiled centrelines and edgelines, median barriers, carriers for high risk sites and safety retrofitting by eliminating roadside hazards.</li> <li>- New Zealand's State Highway authority has a programme of installing passing lanes on roads of medium volumes.</li> <li>- Continued excellent results from a programme of Accident Reduction Studies with reduction of injury crashes at those sites of 30 to 50 percent.</li> </ul> </li> <li>• Internal and external assessments have advised that the roading improvements are essential to New Zealand meeting its goals for road safety. The infrastructure improvements listed above have a high benefit to cost ratio.</li> </ul> |
| <p><i>Enforcement of other road rules</i></p>  | <ul style="list-style-type: none"> <li>• Increased resources and targeting from 2002/03 into heavy vehicle enforcement, which includes management of heavy vehicle weight, mechanical safety, and speed.</li> <li>• Enforcement of heavy vehicle speed and other aspects is included in other programmes, rather than specifically evaluated.</li> </ul>   |

|   |   |
|---|---|
| <i>Graduated Licensing for novice drivers</i>                               | <ul style="list-style-type: none"> <li>• Trial of competency-based training and assessment for novice drivers and motorcyclists.</li> <li>• A specific outcome evaluation is still to be conducted.</li> </ul>  |
| <i>Education and information programmes</i>                                 | <ul style="list-style-type: none"> <li>• Since 2002, new education and information programmes include: <ul style="list-style-type: none"> <li>– Introduction in 2004 of 'Up to Scratch' – an education and promotional programme .</li> </ul> </li> <li>• In 2003: <ul style="list-style-type: none"> <li>– 'Bikewise'— a cycle safety programme.</li> <li>– 'Roadsense' – a primary school education programme.</li> <li>– 'Safe Routes' – a pedestrians and cyclists programme.</li> <li>– Best practice guidelines and standards for walking and cycling infrastructure.</li> <li>– Substantial development of the Community Road Safety Programme occurred, which supports communities to be involved in road safety.</li> <li>– Development of a 'failure to give way' public education advertising campaign targeting high-risk intersection behaviour.</li> </ul> </li> <li>• It is difficult to assess the effect of the education activity as it stands alone, but it has value as supporting enforcement activity.</li> </ul> |
| <i>Regulation on vehicle inspection and active vehicle safety equipment</i> | <ul style="list-style-type: none"> <li>• Introduction of regulation in 2002 requiring that certain types of vehicles imported into New Zealand have to meet approved standards for frontal impact protection. This has directly improved the frontal impact protection of imported vehicles since 2002.</li> <li>• Vehicles that are manufactured and tested to approve frontal impact standards have been shown to reduce occupant trauma in a crash by as much as 25%.</li> <li>• Enhanced risk-targeted patrol planning, involving all road safety partners; and the introduction of 'Static Roll Threshold' for heavy good service vehicles</li> <li>• These initiatives have a high expected benefit to cost ratio.</li> </ul>   |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>• Enhanced risk-targeted patrol planning, involving all road safety partners; and the introduction of 'Static Roll Threshold' for heavy good service vehicles</li> </ul> <p><i>Related to target: Yes – risk-targeted patrol planning; static roll threshold is not tied to specific targets</i></p> <ul style="list-style-type: none"> <li>• These initiatives have a high expected benefit to cost ratio.</li> </ul>   |

### B.1.2. Strategies to decrease risk of injury:

|  |   |
|--|---|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>Tactics to improve levels of seatbelt usage are: <ul style="list-style-type: none"> <li>The annual seatbelt survey programme was significantly expanded from 114 sites to 274 sites in 2003 and has enabled police and councils to target enforcement, engineering and educational activity.</li> <li>NZ Police has been working with the Plunket Association child and family health services to increase the use of child restraints</li> </ul> </li> </ul> <p><i>Related to target: on safety belt wearing rate</i></p> |
| Emergency services   | <ul style="list-style-type: none"> <li>No new programmes or strategies have been introduced and the external review of the Strategy assessed trauma management as on course.</li> </ul>   |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>See above</li> </ul>   |

### B.2. National Diagnosis in key safety areas

#### Road users

The biggest proportional change in figure below is the reduction in *motorcycle fatalities* as a proportion of total fatalities. A main reason for this was the significant decline in popularity of motorcycling in the 1990s, which coincided with the importation to NZ of cheaper used cars from overseas markets.

Cyclist fatalities have declined significantly since 1980. This can be attributed to:

- Improvements in cycle helmet wearing rates and the introduction of a compulsory helmet-wearing law in 1994.
- Changes in exposure (*i.e.* a decrease in the hours, kilometres and trips cycled).
- General improvements in road safety through action in education, engineering and enforcement.

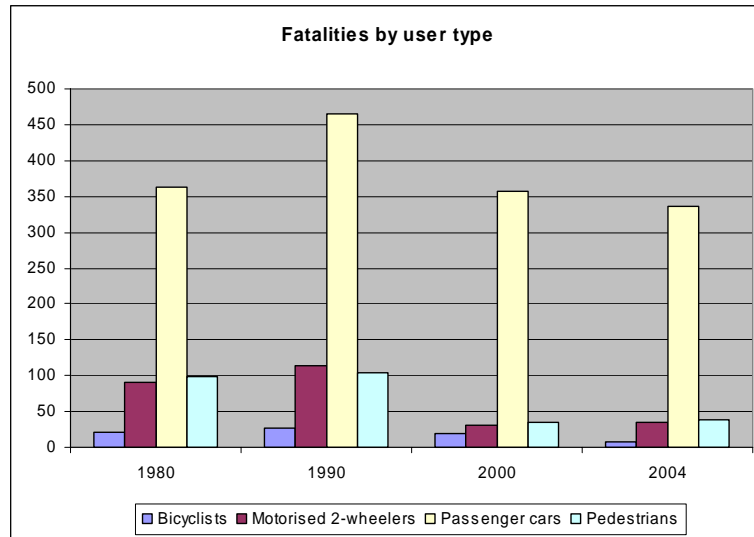
There is a downward trend in the number of *pedestrian fatalities* since 1980, due to general improvements in road safety through action in education, engineering and enforcement (e.g. lower vehicle speeds, better-controlled crossings, etc.).

Despite traffic growth, the number of *vehicle occupant fatalities* has declined since 1990 due to road safety activity based around education, engineering and enforcement. Examples of education include targeted road safety education, the introduction of a graduated driver licensing system and community road safety programmes. Examples of engineering include crash reduction study and skid resistance programmes, roadside clear zones and enhanced frontal impact systems (airbags, crumple



zones, etc.). Examples of enforcement include the introduction of compulsory breath testing, speed cameras and the highway patrol.

**Evolution in fatalities by road user type**



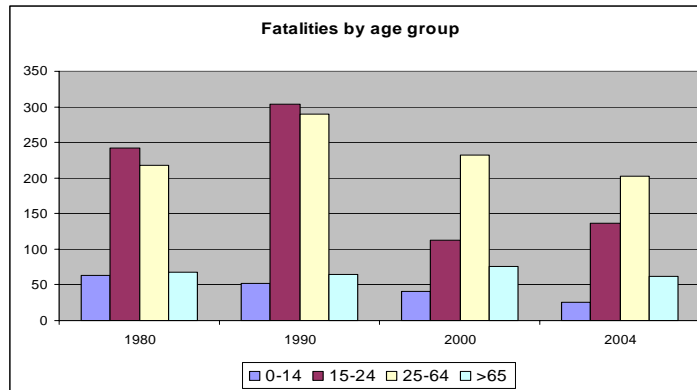
### *Age groups*

There is an overall declining trend in the total number of fatalities by age group, due to general improvements in vehicles, roads, enforcement and education.

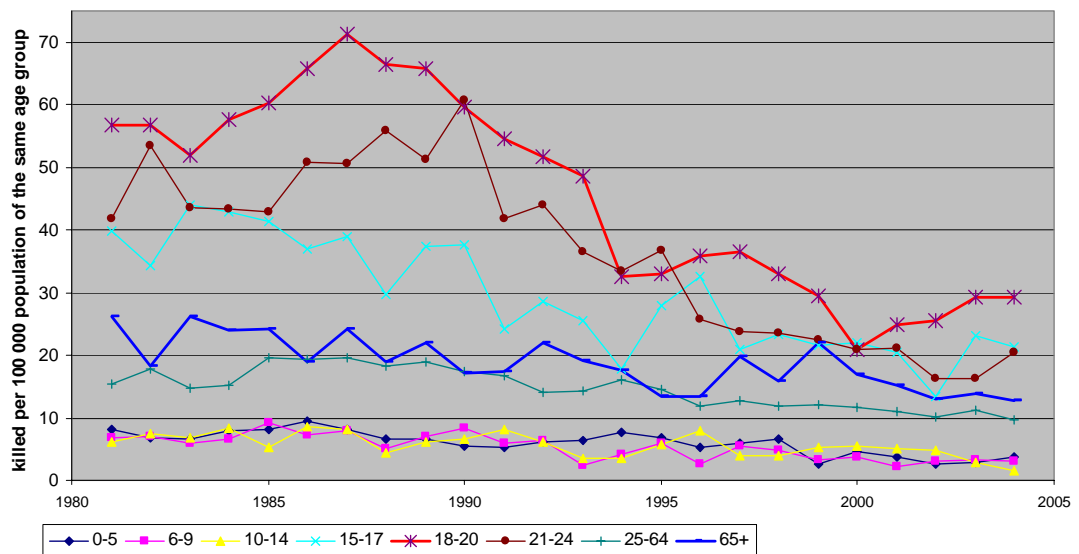
There has been a large decline in the number of fatalities in *the 15-24 age group*. This is partly due to a reduction in the number of 15-24 year old motorcyclists in the 1990s and a strong focus in the late 1990s on young, male drink-drivers. However, 15-24 year old drivers continue to be the highest risk age group. Lifestyle factors, a propensity to take risks, and inexperience (for example, failing to respond appropriately to traffic situations) play key roles in explaining the high crash risk for this age group.

As in most developed countries, the NZ population is ageing, which means that there hasn't been a reduction in the number of fatalities in *the over 65 age group*.

### Evolution in fatalities by age group



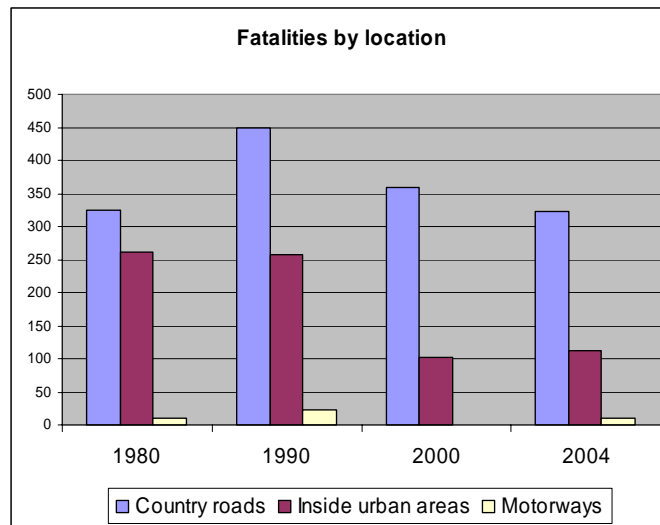
### Evolution in fatality risk by age group



### Type of road / location

Currently, approximately three-quarters of road deaths in NZ occur on roads with relatively high speed limits (*i.e.* country roads and motorways). This proportion has been relatively stable for the last few years.

### Evolution in fatalities by type of road



### Speed

The targeting of inappropriate and excessive speed is a priority road safety area. This is because inappropriate and excessive speed is the single biggest contributing factor in fatal road crashes.

Over the last decade, the open road mean speed has dropped from 102km/h to 98km/h. During the same period, urban road speeds dropped from 57km/h to 53km/h, based on surveys of unimpeded travel speeds.

### Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.

|  | 1980   | 1994                             | 2000    | 2003    |
|--|--|----------------------------------|---------|---------|
| Nb of speeding citations   | ---  | ---<br>(1995 figure was 478 000) | 630 000 | 873 000 |
| % of fatal crashes where speed is a causation factor   | 35%  | 35%                              | 23%     | 37%     |
| % of drivers over the posted speed limit in :<br>- urban areas<br>- rural roads<br>- motorways | Not currently tabulated or available before 1996 (but see below for a general comment on changes in vehicle speeds). |                                  |         |         |
|  |  | ---                              | ---     | ---     |

### Drink driving

The maximum permissible BAC level is 0.5 g/l for all drivers, except drivers under 20 for whom, the maximum BAC level is 0.3 g/l.

During the 1990s, there was a dramatic decline in drink-driving deaths, from 318 in 1990 to 115 in 2000. However, in the last few years there has been a small increase in alcohol-related road fatalities.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980 | 1994                            | 2000   | 2003   |
|--|------|---------------------------------|--------|--------|
| Number of citations                            | ---  | ---<br>(1995 figure was 28 700) | 25 100 | 26 000 |
| % of fatal accidents where alcohol is a factor | 36%  | 42%                             | 26%    | 31%    |

### *Seatbelt and helmet wearing*

#### Safety belts

The wearing of safety belts is compulsory by law in NZ.

Children under the age of 5 must be properly restrained in an approved child restraint. Children between 5 and 7 years of age must use a child restraint if available. If there is no child restraint available, the child must use a safety belt. If there is no safety belt available, the child must be in the back seat.

It has been a requirement that all new motor cars, station wagons and light trucks registered since 1965 must be fitted with safety belts.

In 1975, these seat belt requirements were extended to motor vehicles registered on or after 1 January 1955.

Children between 8 and 14 must use safety belts if available. If there is no safety belt available, the child must be in the back seat.

Vehicle occupants over the age of 14 must wear safety belts when available. The fine for not wearing a safety belt or allowing a person under the age of 15 to travel unrestrained is \$150 for each belt not worn.

Results of the latest national survey of safety belt use in NZ show that:

- The safety belt wearing rate for drivers and adult front seat passengers is 94%.
- The safety belt wearing rate for adult rear seat passengers is 86%.
- The child restraint wearing rate by children under the age of 5 is 86%.

More detailed safety belt statistics can be viewed online at:  
<http://www.ltsa.govt.nz/research/belts4.html>

Helmet is compulsory for all motorised 2-wheelers. Wearing rate is around 99%.

#### Cycle helmets

Cycle helmet wearing has been compulsory by law in NZ since 1 January 1994. Cyclists can be fined \$55 if caught cycling without a helmet or without a helmet done up. Cyclists can also be fined for not wearing an approved helmet type.

Results of the latest annual survey of helmet use in NZ by cyclists of all ages showed that the overall national cycle helmet-wearing rate was 92%. More detailed cycle helmet statistics are available online at: <http://www.ltsa.govt.nz/research/helmets.html>.

#### Evolution in seatbelt wearing rate

|                      | 1980  | 1994                | 2000                | 2003                |
|----------------------|---|---------------------|---------------------|---------------------|
| <i>General</i>       | <b>Not measured</b>   | <b>Not measured</b> | <b>Not measured</b> | <b>Not measured</b> |
| <i>Rear Seat</i>     | Not measured  | Not measured        | 76%                 | 81%                 |
| <i>Front Seats</i>   | Not measured (first restraint survey programme was in 1987, when the safety belt wearing rate for front seat adults was 83%). | 88%                 | 90%                 | 92%                 |
| Motorway – driver    | Not measured  | Not measured        | Not measured        | Not measured        |
| Rural roads – driver | Not measured  | Not measured        | 92%                 | 93%                 |
| Urban areas –driver  | Not measured  | Not measured        | 88%                 | 91%                 |

#### Cycle helmet wearing rates (1989 is the earliest year for which data are available):

| Year | Percentage wearing helmets |
|------|----------------------------|
| 1989 | 19                         |
| 1990 | 41                         |
| 1991 | 60                         |
| 1992 | 67                         |
| 1993 | 59                         |
| 1994 | 97                         |
| 1995 | 96                         |
| 1996 | 91                         |
| 1997 | 94                         |
| 1998 | 95                         |
| 1999 | 95                         |
| 2000 | 95                         |
| 2001 | 93                         |
| 2002 | 89                         |
| 2003 | 89                         |
| 2004 | 92                         |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Drink-driving and excessive speed are the two biggest contributing factors to road crashes in NZ. Other significant contributing factors in road crashes are:

- Failure to keep left (approx. 17% of fatal crashes and 4% of injury crashes).
- Driver distraction (approx. 13% of fatal crashes and 19% of injury crashes).
- Failure to give way (approx. 9% of fatal crashes and 24% of injury crashes).

### ***B.3. Major road safety problems today***

Future priorities will focus on the 8 priority areas in the Road Safety to 2010 strategy:

1. *Engineering safer roads*: The network is being progressively upgraded and there are numerous examples of infrastructure improvement programmes in recent years (see pg. 5). Work will continue to focus on maintaining and improving the safety of built infrastructure, but there is also a need to improve roads with high crash risk and ensure that high safety standards are incorporated in new constructions.
2. *Reducing speed*: A range of measures have contributed to a reduction in open road and urban road speeds in the last decade (see pp. 3-4, 11). However, speeding is still the single biggest contributing factor to road crashes in NZ. New approaches to speed management are being explored, such as a move beyond enforcing the speed limit to also managing speed related crashes that occur under the legal speed limit.
3. *Combating drink-driving*: Alcohol enforcement and associated advertising has been highly successful in reducing the incidence of drink-driving in NZ (see pp. 12, 19). However, there has been an increase in the number of alcohol-related road crashes in recent years. Additional interventions to combat drinking and driving will be required to meet the 2010 road safety goals.
4. *Dealing with serious offenders*: There have been notable successes in recent years to address the problem of serious traffic offenders. Current efforts will need to be maintained while identifying further, and more difficult to achieve, gains through specific targeting.
5. *Encouraging the use of safety belts*: Although NZ has a relatively high rate of safety belt use (see pp. 12-13), this rate could be further improved. Current levels of enforcement and associated awareness advertising need to be maintained to persuade those who don't wear them of their advantages and to remind wearers of the need to use them at all times.
6. *Improving safety for pedestrians and cyclists*: Pedestrians and cyclists have particular safety requirements. More focus will be placed on ensuring NZ's road environments, particularly in urban areas, are safe for pedestrians and cyclists and on integrating the needs of these road users with the planning and implementation of general road safety initiatives.
7. *Improving the vehicle fleet*: The safety of the vehicle fleet in NZ has improved considerably since 1980. Although numerous vehicle safety initiatives are in place, there are further opportunities to maximise the level of injury crash protection across the fleet.
8. *New and better targeted education initiatives*: Since 2002, numerous education initiatives have been introduced in NZ (see p.6). Future work will focus on the development of new and enhanced education initiatives to address issues such as driver distraction and driver fatigue.

#### ***B.4. Forthcoming road safety initiatives to address these problems***

An independent review of the Road Safety to 2010 strategy was completed in November 2004. The purpose of the review was to:

- Evaluate the progress of the Road Safety to 2010 strategy towards achieving the desired 2010 goals; and
- Identify improvements to existing interventions and potential new interventions to help reach Government's road safety goals.

The review of the Road Safety to 2010 strategy recommended additional efforts for achieving the Government's road safety goals to 2010. The review has been used to develop a paper that outlines a proposed work programme for completing implementation of the Road Safety to 2010 strategy. Government is currently considering the paper. The interventions in the work programme are based on the 7 key priority areas noted above.

#### **C. Road safety targets**

- General targets (overall number of fatalities, accidents or injured persons) :

New Zealand has set overall road safety goals in relation to social cost, deaths, and hospitalisations to the end of the year 2010. This will put, by 2010, New Zealand's road safety performance closer to that of countries with the best road safety records.

Within the overall goals, targets to 2004 were also set, based on interventions which were planned to be introduced. See Table One.

- Specific targets for particular groups of road users (motorcyclists, pedestrians, young drivers, children, etc.):

Yes – see Table 2 (a). New Zealand singled out targets to 2004 for the social cost borne by two particular user groups – pedestrians and cyclists.

New Zealand also set regional goals to 2010 and targets to 2004 to provide a focus for regional land transport strategies – see Table 2 (b).

- Targets relating to accident causation (aimed at reducing causation factors) :

Yes – see Table three. New Zealand had intermediate outcome targets to 2004 in three priority areas – speed management, alcohol and restraints.

**Table 1 Overall outcomes**

|                                |  | <b>Base</b> | <b>Outcomes</b>         | <b>Targets</b>                | <b>Goals</b>                      |
|--------------------------------|--|-------------|-------------------------|-------------------------------|-----------------------------------|
|                                |  | <b>2001</b> | <b>2004<sup>8</sup></b> | <b>2004<br/>not exceeding</b> | <b>2010<br/>not<br/>exceeding</b> |
| Social cost <sup>9</sup>       | \$ billion                               | 3.02        | 2.92                    | 2.75                          | 2.15                              |
|                                | Cents per vehicle–km                     | 8.4         | 7.2                     | 6.7                           | 4.4                               |
|                                | \$ per person                            | 783         | 718                     | 700                           | 650                               |
|                                | \$ per vehicle                           | 1 145       | 989                     | 1 020                         | 940                               |
| Deaths <sup>10</sup>           | Total                                    | 455         | 435                     | 400                           | 300                               |
|                                | Rate per billion vehicle–km              | 12.6        | 1,101                   | 9.9                           | 6.1                               |
|                                | Rate per 100,000 persons                 | 11.8        | 10.8                    | 10.2                          | 7.3                               |
|                                | Rate per 10,000 vehicles                 | 1.7         | 1.5                     | 1.5                           | 1.1                               |
| Hospitalisations <sup>11</sup> | Total                                    | 6 700       | 6 580                   | 5 870                         | 4 500                             |
|                                | Rate per billion vehicle–km              | 186         | 163                     | 140                           | 90                                |
|                                | Rate per 100,000 persons                 | 174         | 162                     | 150                           | 110                               |
|                                | Rate per 10,000 vehicles                 | 25          | 22                      | 22                            | 16                                |
|                                | Hospitalisations for more<br>than 1 day  | 2 880       | 2 656                   | 2 750                         | 2 200                             |
|                                | Hospitalisations for more<br>than 3 days | 1 794       | 1 657                   | 1 750                         | 1 400                             |

The following table shows sub targets set in New Zealand.

- 
- 8 2004 social cost is based on fatality data for the 12 months to October 2004 and injury data for the 12 months to May 2004. 2004 outcomes for the total number of deaths, rate per billion vehicle-km and rate per 100,000 persons and per 10,000 vehicles are provisional as at 10 February 2005.
- 9 The cost of crashes resulting only in property damage is excluded because the data are unreliable and the cost is relatively small. Social costs are expressed in June 2001 prices.
- 10 Deaths are injuries that result in death within 30 days of the crash.
- 11 Hospital data is for the 12 months to May 2004. Hospitalisations are the number of hospital admissions in each area reported by the New Zealand Health Information Service. Along with fatalities, the numbers of people hospitalised for more than one and more than three days have been included as measures for more serious injuries.



**Table 2 (a) – User group outcomes**

|   |                                   | <b>Base</b>   | <b>Outcomes</b>  | <b>Target</b>   |
|---|-----------------------------------|---|--|---|
|   |                                   | <b>2001<br/>Fatalities and<br/>hospitalisations<br/>not exceeding</b> | <b>2004<sup>12</sup><br/>Fatalities and<br/>hospitalisations<br/>not exceeding</b> | <b>2004<br/>Fatalities and<br/>hospitalisations<br/>not exceeding</b> |
| Pedestrians                                   | Total deaths and hospitalisations | 724   | 728  | 700   |
|   | More than 1 day's hospitalisation | 394   | 360  | 390   |
|   | More than 3 days' hospitalisation | 298   | 265  | 290   |
| Pedestrians<br>per million<br>hours travelled | Total deaths and hospitalisations | -   | Not available  | 3.1   |
|   | More than 1 day's hospitalisation | -   | Not available  | 1.7   |
|   | More than 3 days' hospitalisation | -   | Not available  | 1.3   |
| Cyclists                                      | Total deaths and hospitalisations | 291   | 241  | 270   |
|   | More than 1 day's hospitalisation | 128   | 91   | 130   |
|   | More than 3 days' hospitalisation | 77  | 56   | 90  |
| Cyclists per<br>100 million km                | Total deaths and hospitalisations | -   | Not available  | 100   |
|   | More than 1 day's hospitalisation | -   | Not available  | 50  |
|   | More than 3 days' hospitalisation | -   | Not available  | 35  |

**Table 2 (b) – Regional outcomes goals to 2010 and targets to 2004**

| Region             | Deaths and hospitalisations not exceeding |             |             | Deaths and hospitalisations over 1 day not exceeding |             |             | Deaths and hospitalisations over 3 days not exceeding |             |             |
|--------------------|---|-------------|-------------|--|-------------|-------------|---|-------------|-------------|
|                    | Outcome                                   | Target      | Goal        | Outcome  | Target      | Goal        | Outcome   | Target      | Goal        |
|                    | <b>2004<sup>13</sup></b>                  | <b>2004</b> | <b>2010</b> | <b>2004<sup>8</sup></b>                              | <b>2004</b> | <b>2010</b> | <b>2004<sup>8</sup></b>                               | <b>2004</b> | <b>2010</b> |
| Northland          | 503                                       | 440         | 340         | 198  | 200         | 150         | 119   | 120         | 100         |
| Auckland           | 2556                                      | 2,120       | 1,640       | 821  | 840         | 690         | 573   | 600         | 490         |
| Waikato            | 841                                       | 740         | 570         | 407  | 420         | 330         | 303   | 320         | 250         |
| Bay of Plenty      | 567                                       | 490         | 380         | 277  | 270         | 210         | 169   | 160         | 130         |
| Gisborne           | 91  | 70          | 50          | 47   | 40          | 30          | 30  | 30          | 20          |
| Hawkes Bay         | 210                                       | 250         | 190         | 142  | 140         | 110         | 99  | 100         | 70          |
| Taranaki           | 131                                       | 120         | 100         | 86   | 70          | 60          | 55  | 50          | 40          |
| Manawatu/Wanganui  | 360                                       | 390         | 300         | 222  | 240         | 190         | 150   | 160         | 130         |
| Wellington         | 325                                       | 320         | 240         | 203  | 200         | 150         | 109   | 120         | 90          |
| Nelson Marlborough | 155                                       | 140         | 110         | 89   | 80          | 60          | 65  | 50          | 40          |
| West Coast         | 75  | 90          | 70          | 35   | 40          | 30          | 17  | 20          | 20          |
| Canterbury         | 819                                       | 700         | 530         | 408  | 380         | 300         | 294   | 260         | 210         |
| Otago              | 249                                       | 250         | 190         | 147  | 150         | 110         | 98  | 100         | 80          |
| Southland          | 136                                       | 150         | 110         | 68   | 100         | 70          | 40  | 60          | 40          |
|                    |   |             |             |  |             |             |   |             |             |
| National           | 7 018                                     | 6 270       | 4 820       | 3 150  | 3 150       | 2 490       | 2 121   | 2 150       | 1 710       |

12. 2004 Hospital data is for the 12 months to May 2004. Note that travel survey data was not available at 10 February 2005 to calculate rates per hour walked for pedestrians or per kilometre travelled for cyclists.

13. 2004 hospital data is for the 12 months to March 2004.

The following table shows targets related to accident causation factors.

**Table 3 – Intermediate road safety outcome targets**

|                                 |  |                  | Base  | Outcomes           | Target             |
|---------------------------------|--|------------------|-------|--------------------|--------------------|
|                                 |  |                  | 2001  | 2004 <sup>14</sup> | 2004 not exceeding |
| Speed (open road) <sup>15</sup> | Mean                                   | km/h             | 100.2 | 97.8*              | 99                 |
|                                 | 85th percentile                        | km/h             | 109   | 105*               | 107                |
| Speed (urban)                   | Mean                                   | km/h             | 55.2  | 52.9               | 55.2               |
|                                 | 85th percentile                        | km/h             | 61.5  | 58                 | 61                 |
| Alcohol                         | Driver fatalities with excess alcohol  | Number           | 55    | Not available      | 48                 |
|                                 | Driver fatalities with excess alcohol  | % of all drivers | 21%   | Not available      | 21%                |
|                                 |  |                  |       |                    | at least           |
| Restraints                      | Vehicle occupants wearing safety belts | % (front)        | 92%   | 94%                | 92%                |
|                                 | Vehicle occupants wearing safety belts | % (back)         | 70%   | Not available      | 75%                |
|                                 | Children restrained                    | %                | 89%   | 97%                | 90%                |

#### Current trend towards targets



14. Some data was not available as at 10 February 2005.

15. Open road speed targets for 2004 were based on a limited survey which produced 2km/h higher than the full survey.

## **D. Success story cards**

### **Success story from New Zealand**

#### **Drink-Driving Decrease**

As noted previously, drink-driving deaths declined dramatically during the 1990s, from 318 in 1990 to 115 in 2000. This major public health success story was the result of a wide range of actions, including:

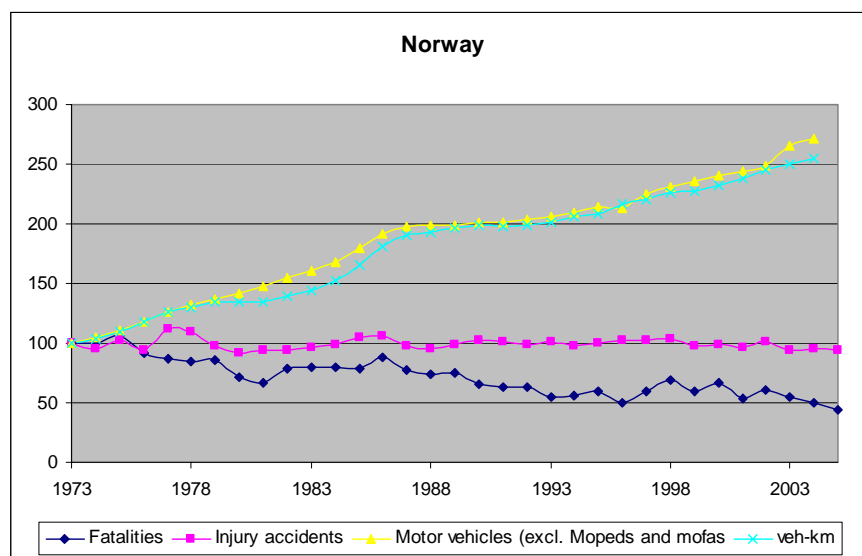
- Long-term commitment to improving drink-driving safety outcomes.
- Development of a comprehensive drink-driver 'risk profile' through enhanced data, careful research and rigorous, evidence-based analysis.
- Adoption of an integrated approach (e.g. use of a hard-hitting advertising campaign to support intensive Police enforcement of laws relating to drink-driving).
- Development of approaches to tackle the problem at the 'grass roots' level (e.g. Community Alcohol Action Programmes).
- Focusing of efforts on the entire community, not just a core group of offenders.
- Mobilising of community to change their attitude and behaviour in relation to drink-driving.
- Securing the support of 'champions' and other allies to promote anti drink-driving messages.
- Closing of the gap between public perception and reality, in terms of the risks associated with drink-driving.
- Ability to demonstrate a clear link between drink-driving and other socially unacceptable problems. For example, the NZ National Survey of Crime Victims 2001 asked participants how much they worried about being the victim of 12 specific types of victimisation. The survey showed that being in a traffic accident caused by a drunk driver was of greatest concern to participants, ahead of other types of victimisation, such as having one's house burgled, being attacked and robbed, and being sexually assaulted

## NORWAY

### A. General trend in road safety

#### Key road safety data for 2005

- 224 road fatalities (258 in 2004)
- 8 078 injury accidents (8 185 in 2004)
- 4.9 killed per 100 000 inhabitants
- Around 560 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>It is planned that the number of speed cameras be double from 250 in 2005 to 500 by 2009</li> </ul>  |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>In 2001, the speed limit was lowered from 80 km/h to 70 km/h on 700 km of roads (positive results on number of killed)</li> </ul>  |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>  | <ul style="list-style-type: none"> <li>In 2001, the legal limit for BAC was lowered to 0.02%</li> </ul>   |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i>           | <ul style="list-style-type: none"> <li>A programme for carrying out road safety inspections on the roads with many accidents, and subsequently following-up by implementing the suggested measures</li> </ul>   |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>—</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>—</li> </ul>   |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>The introduction of a “traffic club” for school children (in addition to the existing club for pre-school children)</li> </ul>   |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>—</li> </ul>   |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>Experiments with alcolock in busses in Lillehammer</li> </ul>  |
| <i>Others</i><br><i>Increased fines for traffic violations</i><br><i>Penalty point</i><br><i>Fatigue</i><br><i>Training / licensing</i><br><i>Vision area test area</i> | <ul style="list-style-type: none"> <li>Sharp increase in fines in February 2005</li> <li>Penalty point system introduced in 2004</li> <li>In 2004 launch of a campaign to encourage drivers to stop and rest for 15 minutes when they are tired</li> <li>New driver training/testing/licensing system was introduced in 2004-5</li> <li>A test area for vision zero measures was established in the Lillehammer area</li> </ul> |

#### B.1.2. Strategies to decrease risk of injury:

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>Campaign with road side boards to encourage road users to wear the seatbelt</li> </ul>        |
| <i>Emergency services</i>   | —  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>A programme for the introduction of median barriers on 2 and 3-lane existing roads</li> </ul> |

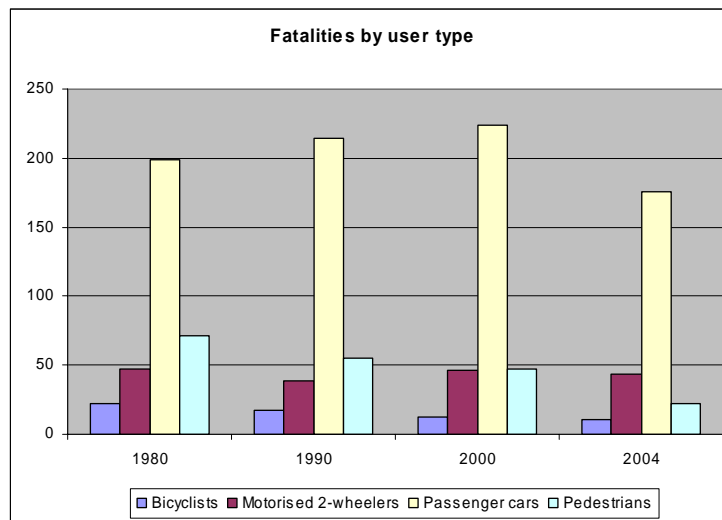
## B.2. National Diagnosis in key safety areas

### Road users

The dominant road user groups among the fatalities are drivers and car passengers. The number of killed among these groups has been fairly stable since 1980, with a fair decrease from 2000 to 2004.

There has been a fair and steady decrease in the number of killed pedestrians. The same goes for bicyclists, but the figures are small.

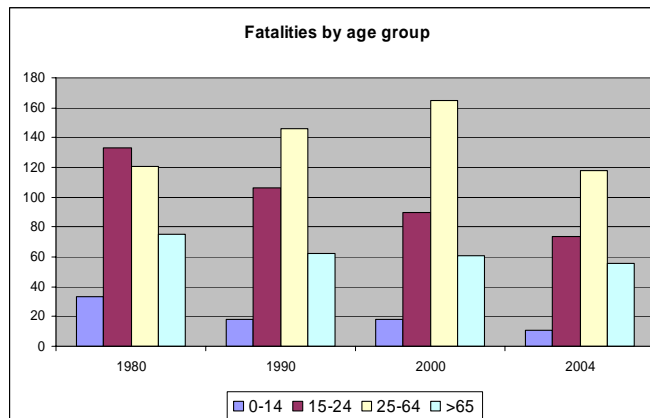
Evolution in fatalities by road user type

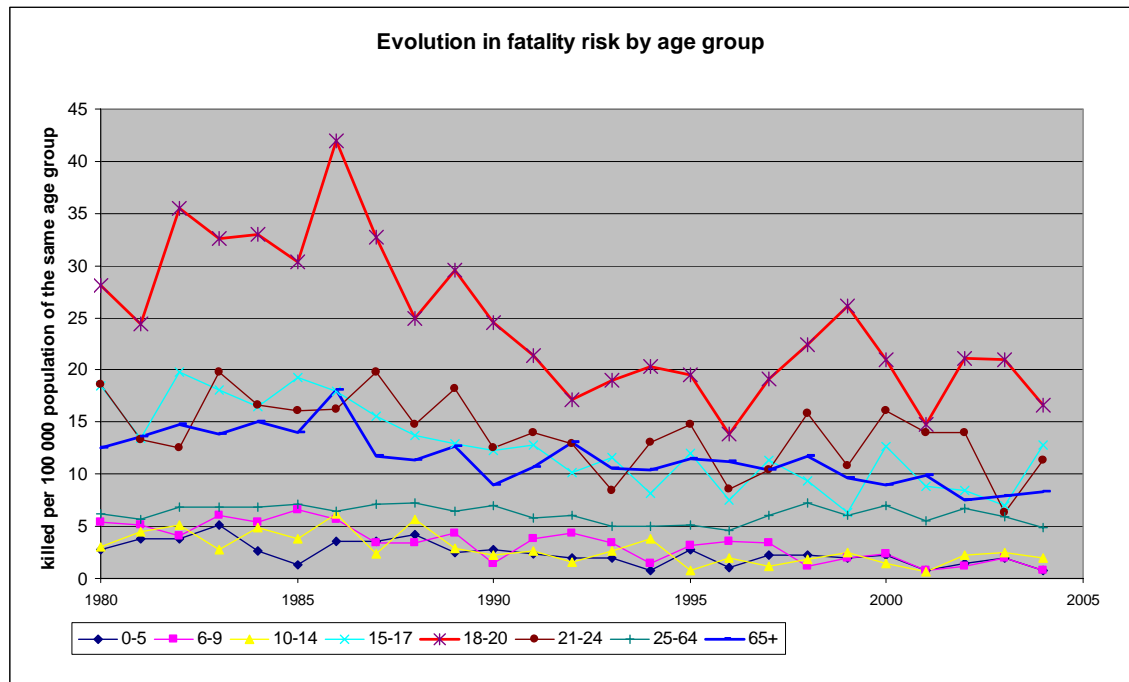


### Age groups

There has been a remarkable decrease in the number of fatalities in the 15-24 age group. There has also been a decrease in the >65 age group. On the other hand, the 25-64 age group had increased up until 2000, before decreasing over the last few years.

Evolution in fatalities by age group

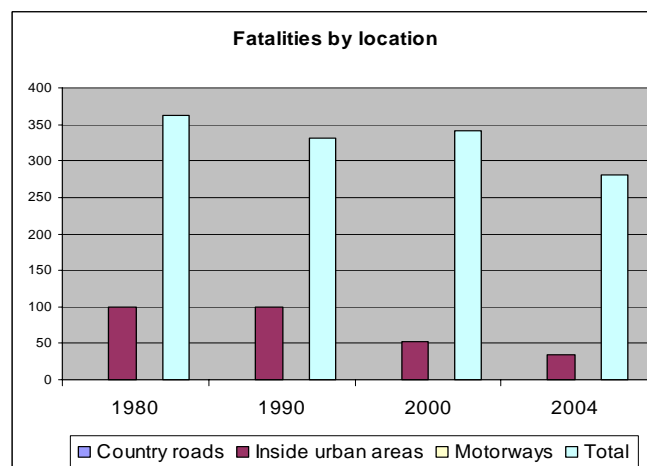




#### *Type of road / location*

There has been a fair reduction in the total number of killed since 1980. This is basically due to a remarkable reduction in the number of killed in urban areas

#### **Evolution in fatalities by location**



*Source: IRTAD*

*Note: data are not available for motorways and country roads*

## Speed

### Speeding citations, and percentage of drivers over the posted limit in 2003.

|   |  |
|---|--|
| No. of speeding citations                     | <b>160 500 (0.056 per licenced driver)</b>                             |
| % of drivers over the posted speed limit in : | <b>Motorway:</b> Hvam: 56.2%<br><b>Main Highway:</b> Hanekampen: 60.1% |
| - urban areas                                 |  |
| - rural roads                                 |  |
| - motorways                                   |  |

## Drink driving

The BAC limit in Norway is 0.2 g / l.

It should be noted that there has been a clear development in the drink driving convictions. In 1980, nearly all the convictions were related to alcohol.

However in 2004, approximately 50% were convicted for using *other drugs*, and there has been a gradual development during the last 10-15 years. It is a fact that the police are more better able today to detect other drugs than they were some years ago- Therefore, it is difficult to know if the development in the convictions reflects a change of behaviour, or if it only reflects the increased capacity among the police to detect other drugs.

### Evolution in the number of citations for drink-driving

|                     | <b>1980</b> | <b>1994</b> | <b>2000</b> | <b>2003</b> |
|---------------------|-------------|-------------|-------------|-------------|
| Number of citations | 6 372       | 7 402       | 8 946       | 8 363       |

## Seatbelt and helmet wearing

Seatbelt wearing is compulsory for front and rear seats. Helmet wearing is compulsory for all motorised two-wheelers but is not compulsory for bicycles.

### Evolution in seatbelt wearing rate

|                      | <b>1980</b> | <b>1994</b> | <b>2000</b> | <b>2003</b> |
|----------------------|-------------|-------------|-------------|-------------|
| <i>General</i>       | <b>82</b>   |             | <b>87</b>   | <b>88</b>   |
| <i>Rear Seat</i>     |             | <b>67</b>   | <b>84</b>   | <b>83</b>   |
| <i>Front Seats</i>   |             |             | <b>90</b>   | <b>92</b>   |
| Motorway – driver    |             |             | <b>91%</b>  | <b>91%</b>  |
| Rural roads – driver | <b>90%</b>  | <b>91%</b>  | <b>92%</b>  | <b>94%</b>  |
| Urban areas –driver  | <b>74%</b>  | <b>67%</b>  | <b>78%</b>  | <b>84%</b>  |



|                       |          | 1980 | 1990 | 2000 | 2003 |
|-----------------------|----------|------|------|------|------|
| Drivers               | urban    | 74 % | 67 % | 78 % | 84 % |
|                       | rural    | 90 % | 91 % | 92 % | 94 % |
|                       | motorway |      |      | 91 % | 91 % |
| Front seat passengers | urban    |      |      | 88 % | 89 % |
|                       | rural    |      |      | 92 % | 94 % |
|                       | motorway |      |      | 80 % | 90 % |
| Rear seat passengers  | urban    |      |      | 84 % | 79 % |
|                       | rural    |      |      | 84 % | 87 % |
|                       | motorway |      |      | 68 % | 77 % |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

See paragraph on drink driving for “drugs”.

### ***B.3. Major road safety problems today***

1. Non-use of seatbelts
2. Drink driving, including drugs other than alcohol.
3. Speeding.
4. Head on accidents.
5. Single vehicle accidents.
6. Safety of motorcycles and mopeds.
7. Pedestrian safety.

### ***B.4. Forthcoming road safety initiatives to address these problems***

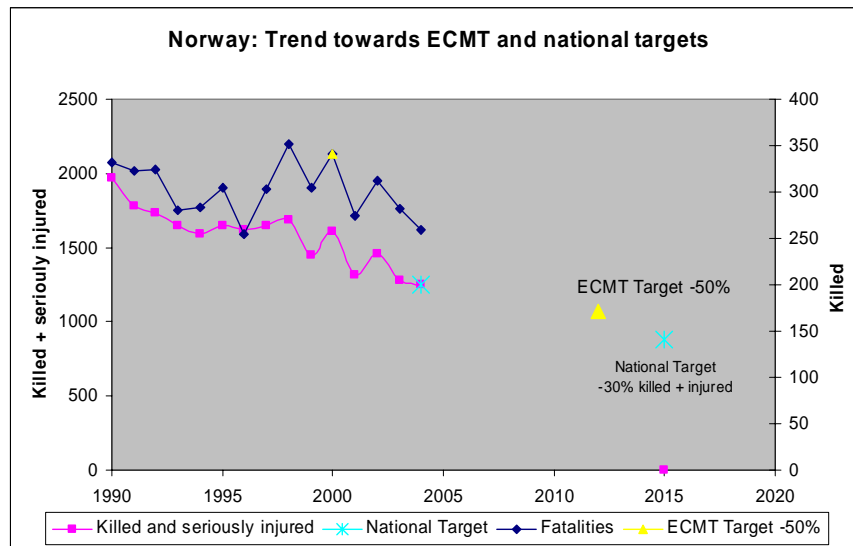
## **C. Road safety targets**

### **General road safety targets**

| Type                         | Targets<br>(in % or<br>absolute<br>figures) | Base<br>year | Target<br>year | Base year<br>figure | Current results<br>(2004) | Intermediate<br>targets ? |
|------------------------------|---|--------------|----------------|---------------------|---------------------------|---------------------------|
| Killed and seriously injured | -30%  | 2004         | 2015           |                     | 1252                      | -20% in 2009              |

### **Specific targets for particular road users**

| <b><i>User specific target groups (e.g. motorcyclists, pedestrian, etc.)</i></b>  | Targets<br>(in % ) | Base<br>year | Target<br>year | Base year<br>figure | Current results<br>(figure in 2003<br>or 2004) | Intermediate<br>targets ? |
|---|--------------------|--------------|----------------|---------------------|--|---------------------------|
| Young persons:<br>Decrease in the<br>number of young<br>persons (15-24)<br>killed or seriously<br>injured in a accident | -50%               | 2004         | 2015           | 382                 |  | -25% in 2009              |



#### D. Success story cards

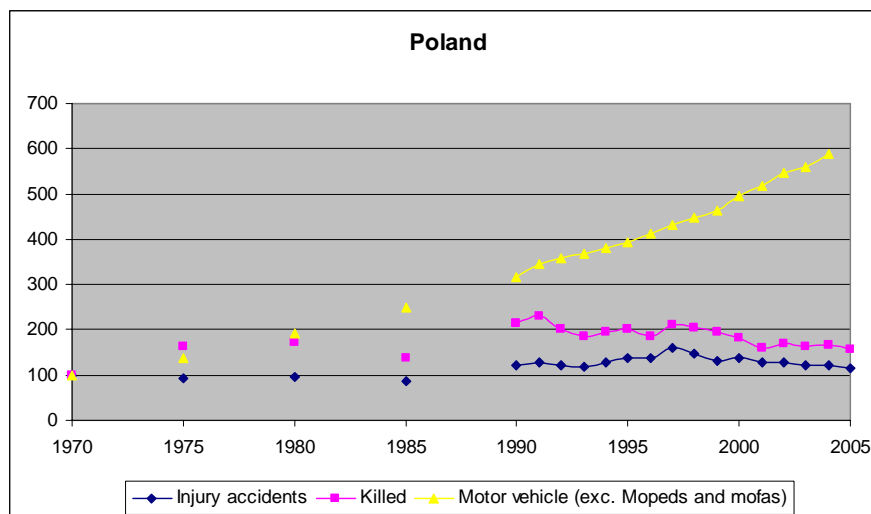
N.A.

## POLAND

### A. General trend of road safety / motorisation

#### Key road safety data for 2005

- 5 444 road fatalities (5 712 in 2004)
- 48 100 injury accidents (51 069 in 2004)
- 14 killed per 100 000 population
- Around 360 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |  |
|---|--|
| Improved speed compliance / enforcement   | <ul style="list-style-type: none"> <li>No, lack of financial resources of the police.</li> </ul>   |
| Reduced speed limits  | <ul style="list-style-type: none"> <li>Yes, 50 km/h in urban area was introduced in 2004</li> </ul> <p><i>This is related to the target "reduction of casualties".</i></p>   |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs                                      | <ul style="list-style-type: none"> <li>No recent measures. Regulation in this field was tightened in 1988-2000.</li> </ul>   |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..) | <ul style="list-style-type: none"> <li>There are ongoing works on Polish roads, mainly dedicated to the construction of new motorways (as there are currently few km of motorways in Poland).</li> </ul>                                     |
| Enforcement of other road rules   | <ul style="list-style-type: none"> <li>No.</li> </ul>  |
| Graduated Licensing for novice drivers  | <ul style="list-style-type: none"> <li>No.</li> </ul>  |
| Education and information programmes  | <ul style="list-style-type: none"> <li>Yes, public awareness campaigns related to speed, seat belt, child restrain system.</li> </ul> <p><i>This is related to the target "reduction of casualties among young people and children".</i></p> |
| Regulation on vehicle inspection  | <ul style="list-style-type: none"> <li>No.</li> </ul>  |
| Regulation on active vehicle safety equipment   | <ul style="list-style-type: none"> <li>No.</li> </ul>  |

#### B.1.2. Strategies to decrease risk of injury:

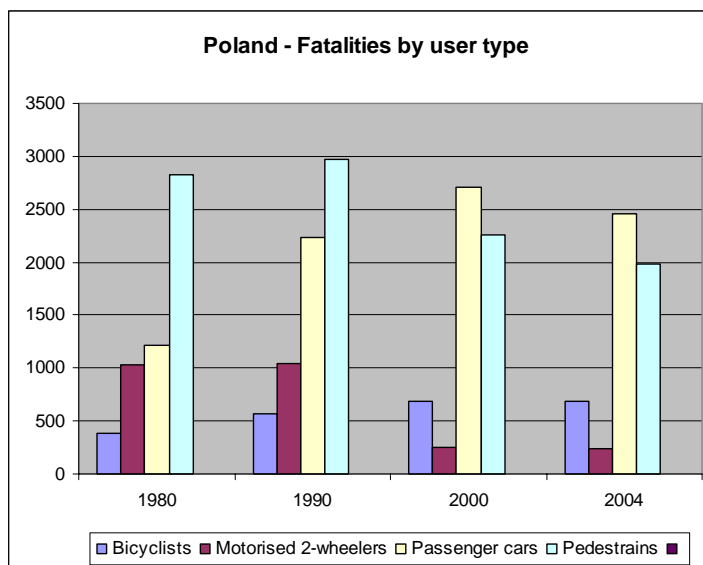
|  |  |
|--|--|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>Yes, public awareness campaigns related to speed, seat belt, child restrain system.</li> </ul> <p><i>This is related to the target "reduction of casualties among young people and children".</i></p> |
| Emergency services   | <ul style="list-style-type: none"> <li>No.</li> </ul>  |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | <ul style="list-style-type: none"> <li>No. All new roads are designed in such a way.</li> </ul>  |

## ***B.2. National Diagnosis in key safety areas***

### *Road users*

According to Polish statistics, the number of fatalities is decreasing progressively every year. However, the vulnerable road users are the group the most at risk.

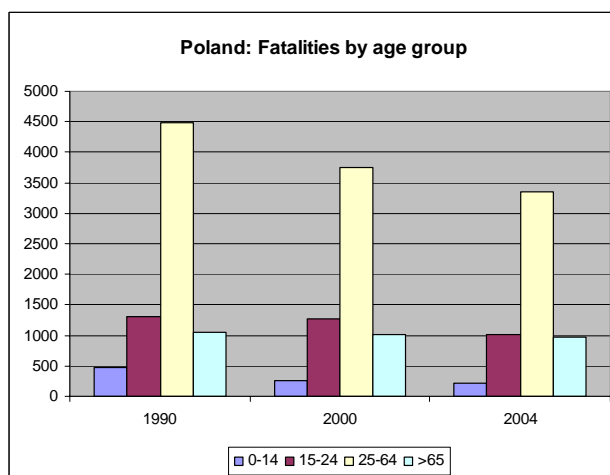
**Evolution in fatalities by road user type**

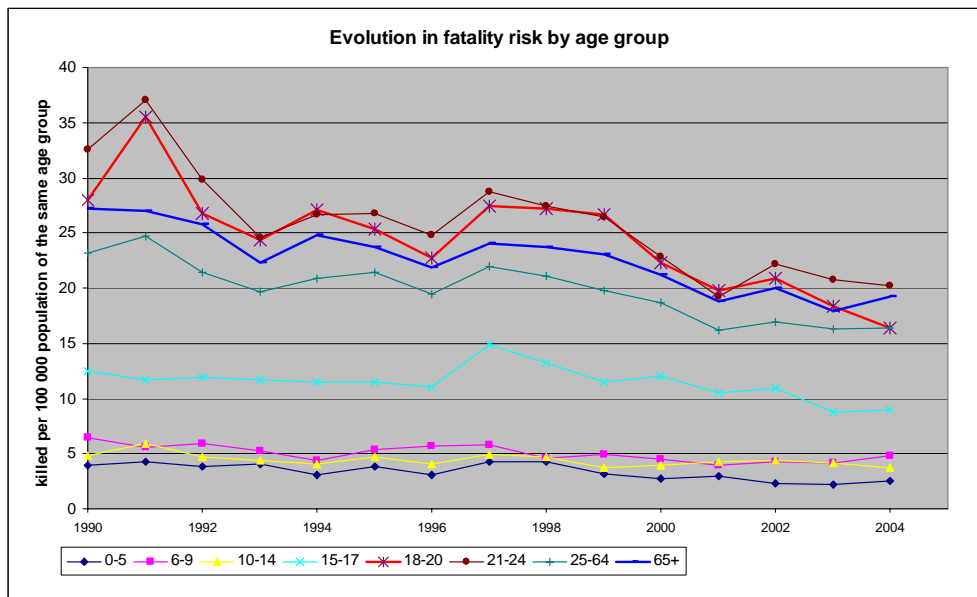


### *Age groups*

The group the most at risk are the young people.

**Evolution in fatalities by age group**

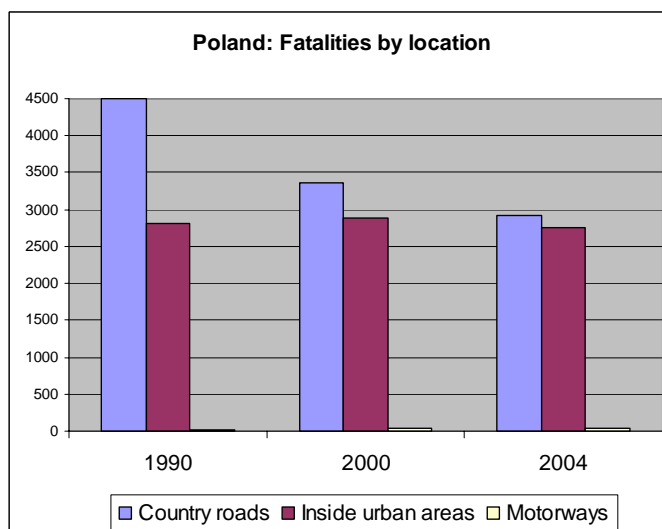




### *Type of road / location*

While overall the number of fatalities is decreasing, the situation in urban areas is a concern, with a high number of pedestrian fatalities. The motorway network is not well developed (358 km of motorways in 2000), which explains the very low number of fatalities on motorways.

### **Evolution in fatalities by type of road**



### *Speed*

There is a lot of speeding in Poland. It is estimated that 30% of all injury accidents are caused by excessive speed.

The extent of speeding can be explained by a lack of enforcement.

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|  | 2000  | 2004                                 | 2005                                  |
|--|-------|--------------------------------------|---------------------------------------|
| <i>Nb of speeding citations</i>  |       |                                      |                                       |
| % of <i>injury</i> crashes where speed is a causation factor                                   | 27.9% | 29.1%                                | 28.8%                                 |
| % of drivers over the posted speed limit in :<br>- urban areas<br>- rural roads<br>- motorways |       | Rural roads: 60%<br>Urban roads: 80% | Rural roads: 57%<br>Urban roads : 81% |

*Drink driving*

In Poland, the maximum BAC level is 0.2 g/l for all drivers.

The number of injury accidents due to alcohol is decreasing every year. This is due to more frequent controls.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 2000 | 2004 | 2005 |
|--|------|------|------|
| Number of citations                            |      |      |      |
| % of fatal accidents where alcohol is a factor | 17%  | 13%  | 14%  |

*Seatbelt and helmet wearing*

Seatbelt:

Seatbelts are compulsory in Poland since 1983 in front seats, and since 1997 in rear seats and child restraint seat. There are intense public awareness campaigns related to seatbelt wearing and child restraint systems.

#### Evolution in seatbelt wearing rate

|                                | 2003       | 2004       | 2005       |
|--------------------------------|------------|------------|------------|
| <b>General</b>                 |            |            |            |
| <b>Rear Seat Urban areas</b>   | <b>49%</b> | <b>46%</b> | <b>50%</b> |
| <b>Front Seats Urban areas</b> | <b>71%</b> | <b>70%</b> | <b>72%</b> |
| <b>Motorway – driver</b>       |            |            |            |
| <b>Rural roads – driver</b>    |            |            |            |
| <b>Urban areas –driver</b>     | <b>73%</b> | <b>71%</b> | <b>72%</b> |

#### Helmet:

Helmet wearing is compulsory for motorcyclists. It is not compulsory for bicyclists. There is no study on helmets use; however based on observation on the streets, almost all motorcyclists wear a helmet.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Statistics show that 1.5% of all accidents are caused by entering intersection on red light.

#### *Other factors*

Enforcement is insufficient.

Poland is still suffering of a lack of modern infrastructure. The roads are in very bad conditions and there are continuous works on the roads (building new and renovating old road).

There is a lot of efforts in education and information. Good public awareness campaigns have been launched since 2004.

Evaluation : there is lack of evaluation of measures implemented.

#### **B.3. Major road safety problems today**

1. Speeding
2. Young drivers
3. Seat belts / child seats
4. Drink driving
5. Pedestrian safety in urban areas
6. Lack of good quality modern roads
7. Lack of evaluation

#### **B.4. Forthcoming road safety initiatives to address these problems**

**Speeding.** Amending legal acts regarding driving speed, improvement of education and communication with society promoting safe speed of driving, updating road traffic enforcement in scope of speed control, common speed limit verification, performing systematic vehicle traffic speed research, introducing speed cameras net.



**Young drivers.** Improvement of drivers training and exams; introduction of graduated licensing system for novice drivers

**Seatbelt / child restrain use.** Improvement of education and communication with society in the scope of safety seat belt use, improvement of safety seat belt use control, systematic research on safety belt use

**Drink driving.** Amending legal acts related to the issue of sobriety in road traffic, improvement of education and communication with society resulting in the awareness of the role of alcohol in road accidents, improvement of road traffic enforcement, conducting systematic research on the problem of participation in road traffic under the influence of alcohol and intoxicants of similar effect

**Pedestrian safety in urban areas.** Amending legal acts in order to support pedestrian protection, improvement of education and communication with society in the scope of pedestrian safety, intensifying pedestrian protection by means of road traffic enforcement, common use of road measure of road measures of pedestrian protection, conducting systematic research on pedestrian safety

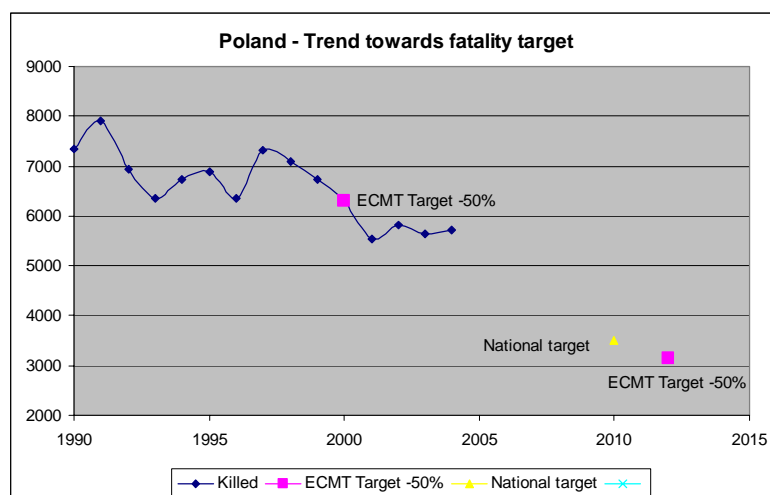
**Lack of good quality modern roads.** Redesign of the road network in order to have a proper hierarchy and to increase the accessibility control; design of safe roads; improvement of the quality of road surface and equipment; systematic analyses and research for increasing the quality of designing tools, securing or eliminating hazardous objects in the road immediate surroundings, shaping a safe road lane

**Evaluation.** Introduction of obligatory audit procedures system for road safety.

### C. Road safety targets

#### General road safety targets

| Type       | Targets<br>(in % or absolute figures) | Base<br>year | Target<br>year | Base year<br>figure | Current<br>results (figure<br>in 2005) | Intermediate targets    |
|------------|---------------------------------------|--------------|----------------|---------------------|--|-------------------------|
| Fatalities | Vision Zero                           | 2003         | 2013           | 5640                | 5444                                   | 3500 fatalities in 2010 |

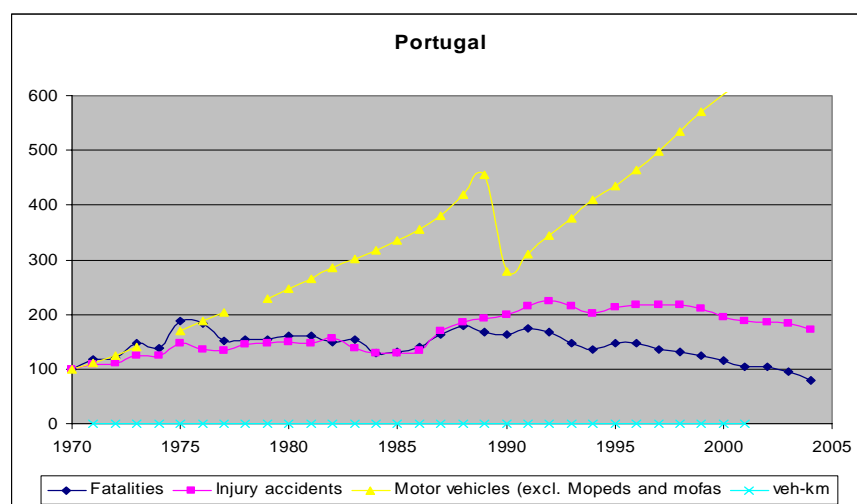


## PORTUGAL

### A. General trend in road safety

#### Key road safety data for 2005

- 1 247 road fatalities (1 294 in 2004)
- 37 066 injury accidents (38 930 in 2004)
- 12.3 killed per 100 000 inhabitants in 2004
- Around 400 cars (passenger cars and light duty vehicles) per 1 000 inhabitants in 2004



Note regarding data on motor vehicles: there was a change in the data source in 1990. From 1990 onwards, data came from an estimation of the number of vehicles in circulation, done by the ACAP, a Portuguese non public automobile association. In the period before 1990, this same data was provided by a public entity, the DGV (in addition to the problem of having different data sources, not all the scrapped vehicles were removed from the DGV database, and for that reason numbers are overestimated during the period before 1990). **Therefore, it is important to stress that data on the number of motor vehicles for the period 1990-2004 are not directly comparable with that of the previous period, 1970-1989.**

The chart above gives an overview of the changes in the number of fatalities, injury accidents and motor vehicles from 1970 until 2004. During the first 20 years (1970-1989) there was an annual average increase in road deaths (+3.5%) and injury accidents (+3.9%). At the same time, the number of vehicles rose by 8.3% on average, and so the number of accidents per one million vehicle actually fell slightly in this period (-0.9 points on average). Between 1990 and 2004 there was a positive trend: on average, the number of fatalities and injury accidents fell by 3.9% and 0.2%, respectively, whereas the number of motor vehicles rose by 4%. Consequently, the injury accidents per one million vehicles decreased 0.4 points. The average accident severity index decreased from 7.6 fatalities per 100 injury accidents in the period 1970-1989 to 4.8 for the period 1990-2004.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>• Use of automatic speed control cameras in one district;</li> <li>• The police has been equipped with more radars (2002-2005) in order to intensify the enforcement regarding speeding;</li> <li>• Introduction of differentiated and higher penalties inside and outside urban areas for speeding offences (new edition of the Road Code published in March 2005).</li> </ul>  |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>•</li> </ul>   |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>• Increasing the number of drink-driving checks, namely the random breath tests carried out by the police on selected places and at specific times;</li> <li>• Increased penalties for drinking and driving (new edition of the Road Code published in March 2005).</li> </ul>   |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>• Application of road safety audits for new road projects in accordance with a manual;</li> <li>• Several dangerous stretches of road were improved with the application of reflective plastic position marker posts at the road axes, luminous signs (led technology), rough pavement surface, suppression of overtaking lanes;</li> <li>• The upgrade of several kms of the main route IP5 into motorway began in 2002 and is still ongoing;</li> <li>• Many measures regarding road environment improvement in rural areas were already in practice before 2002, but the efforts are now more intense and better coordinated (construction of rest and police observation platforms, paved shoulders; inspection of existing road signing; access control to major roads; risk mitigation at bus stops).</li> </ul> |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>•</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>• The provisional period for novice drivers Increased from two to three years (new edition of the Road Code published in March 2005).</li> </ul>   |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>• Publication of various information articles on the DGV site (<a href="http://www.dgv.pt">www.dgv.pt</a>);</li> <li>• Publicity campaigns regarding safety for pedestrians ("It is better we stop now") and drink-driving ("100% Cool");</li> <li>• Distribution of educational brochures in schools for children from 6 to 10 years old</li> </ul>   |

|  |  |
|--|--|
| <i>Regulation on vehicle inspection</i>              | <ul style="list-style-type: none"> <li>• Adoption of new procedures by the existing inspection centres concerning vehicle technical inspections on specific situations (attribution of new number plates, accidents and others) in January 2005;</li> <li>• New training courses for inspectors in accordance with the type of vehicle and inspection (decree nb. 258/2003, dated October 21) ;</li> <li>• The European Parliament and Council Directive 2000/30/EC of 6 June was transposed into national legislation (decree nb. 92/2003, dated April 30);</li> <li>• Several actions regarding the technical roadside inspection of the roadworthiness of heavy vehicles were carried out during the year 2005</li> </ul> |
| <i>Regulation on active vehicle safety equipment</i> | <ul style="list-style-type: none"> <li>• 2003-Plano Nacional de Prevenção Rodoviária (PNPR)<sup>1</sup></li> </ul>   |

### *B.1.2. Strategies to decrease risk of injury:*

|   |   |
|---|---|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>• Intensive enforcement focused on seat belt use, particularly in the back seat, and child restraint use.</li> <li>• The driver is responsible if the children are not properly restrained – fine and suspension of the driving license (new edition of the Road Code published in March 2005).</li> </ul>                                     |
| <i>Emergency services</i>   |   |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• A new law and its regulation were published in 2004/2005, stating that guardrails in all new roads must be fitted with devices to avoid motorcyclists' direct collisions against the metal posts of the guardrails. For existing roads, guardrails must be fitted with these protections at black spots and other dangerous sites</li> </ul> |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>• 2003-Plano Nacional de Prevenção Rodoviária (PNPR)<sup>1</sup></li> </ul>  |

- 1: The “Plano Nacional de Prevenção Rodoviária” (PNPR) – the Government’s Road Safety Strategy – was launched in March 2003. This was the first plan setting quantitative long-term targets and providing the strategies for achieving them. . However, it must be stressed that during the past two decades, particularly since the early nineties, many actions have been undertaken by the national and local authorities in the fields of infrastructure, education and information, vehicles and enforcement. Despite their more restricted character, all these actions contributed to the development of the PNPR.

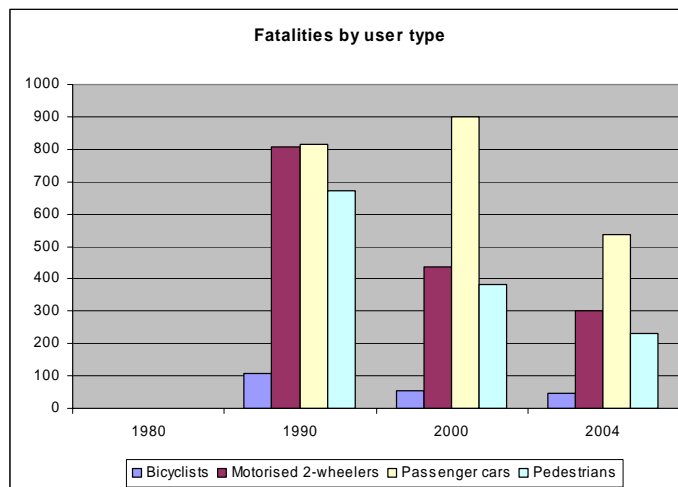
Concerning the impact assessment of the measures undertaken, efforts are being put in developing and improving an assessment programme. At present, it is only analysed the evolution of people killed or seriously injured in road accidents since the baseline period (1998-2000). The current number of fatalities and serious injuries is compared with the average annual reduction required for the achievement of the general and the specific targets settled by the PNPR.

### **B.2. National Diagnosis in key safety areas**

#### *Road users*

Concerning the evolution in the number of fatalities by road user type illustrated by the graph, the results show a downward trend in all the road users since 1990. The average annual decrease was higher in the last years: -3% for the period 1990-2000 and -7.6% for the period 2000-2004. From 2003 to 2004, there were substantial reductions, particularly amongst pedestrians (-16.8%) and two-wheeled vehicle users (-19.6%). However, there is still a disproportionate risk to *pedestrians* and *two-wheeled* vehicle users across Portugal when compared to the European average.

### Evolution in fatalities by road user type



### Age groups

The evolution in the number of fatalities by age group illustrated by the graph shows that the number of deaths decreased within all age groups from 1990 to 2000. For the period 2000-2004, the annual average rate of decline was higher for all age groups than in the previous period excluding the 6-9 years group (the same rate of decline in both periods). Comparing the years 2003 and 2004, the rate of decrease for the age groups 0-14, 15-24, 25-64 and >65 years was, respectively, -12.7%, -12.2%, -14.9% and -23.6%.

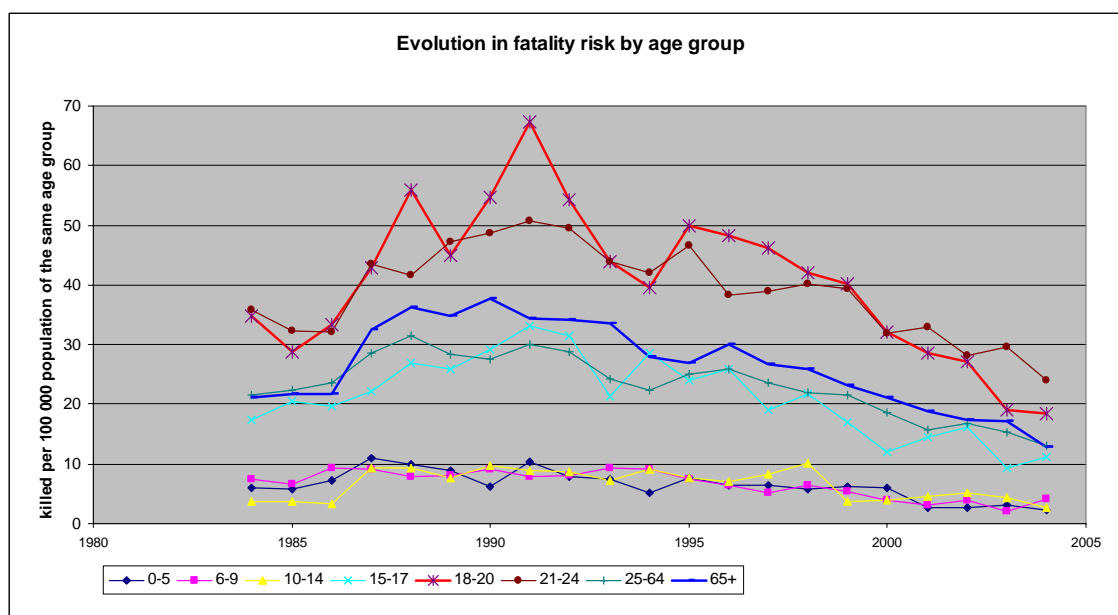
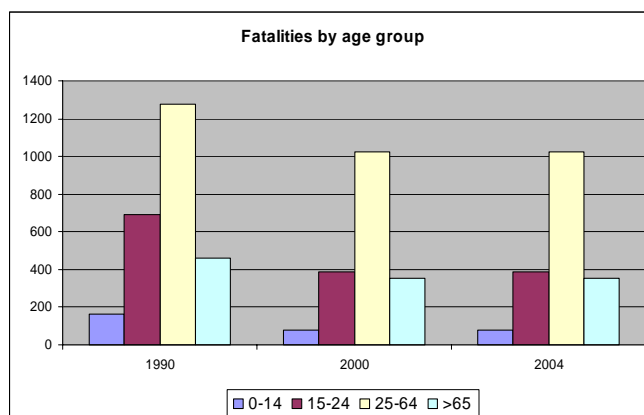
Children under 14 years represented 3.8% of the total road deaths in 2004, and 52.4% of them were pedestrians.

Young people aged from 15 to 24 years old have been the group with the highest fatality rate, expressed as the number of fatalities per one million inhabitants within each age group. The proportion of young people killed in injury accidents was 19.8% in 2004. Almost 60% of these road users were drivers, and 89.4% of them were men driving cars or two-wheeled motor vehicles.

The adults aged from 25 to 64 years, mostly drivers (70%), constituted 58.5% of the total road deaths in 2004, and 92.7% of them were men. Actually, the probability of men drivers being killed in a road accident was about 4 times greater than that of the women in 2004.

Elderly people (>65 years) killed in road accidents were predominantly pedestrians and cyclists. In 2004, the pedestrians over 65 years old represented 38.9% of the total of pedestrian deaths. The correspondent percentage for the bicycle users was 31.7%.

### Evolution in fatalities by age group



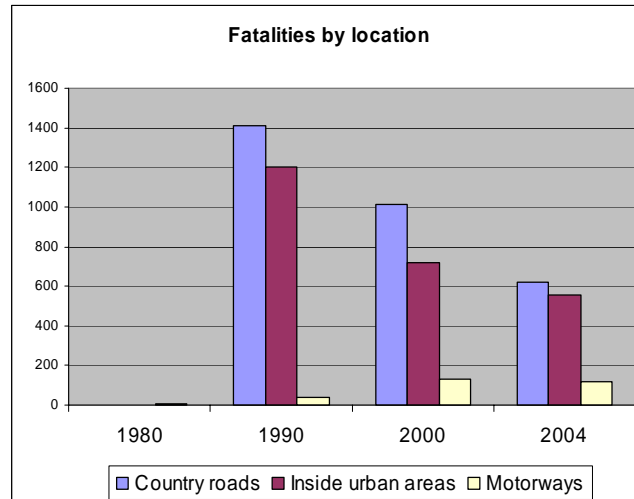
### Type of road / location

Regarding the trends in the number of fatalities by type of roads, there was an average annual reduction in country roads and urban areas for the two periods: -2.9% and -4.0%, respectively, from 1990 to 2000; and -9.5% and -5.8%, respectively, for the period 2000-2004. In 2004, 57.0% of the road deaths occurred on country roads and the severity of country road accidents – expressed as the number of fatalities per 100 injury accidents – was three times greater than that of the urban roads: 5.5 and 1.8, respectively.

Regarding the motorways, the average annual number of road deaths rose by 22.8% between 1990 and 2000. However, this evolution was closely related to the great annual increase in the motorway network length in the same period (+23.7%). From 2000 till 2004, fatalities fell by 2.3% on average, whereas the motorway network length increased by 10.5%. Although the proportion of deaths

on motorways was low (9% of the total road deaths in 2004) the severity of motorway accidents was high: (5.3 fatalities per 100 injury accidents).

#### Evolution in fatalities by type of road



#### Speed

A study carried out by LNEC in 2000 shows that almost all drivers exceed speed limits, particularly on through-roads (speed limit=50km/h): 80% of passenger cars and heavy vehicles exceeded the speed limit, and 20% exceeded the limit by more than 30km/h.

From the figures given in the table below we can see that the percentage of drivers over the posted speed limit was very high on all the roads in 2003, particularly on urban collector roads (70%) and main highway (65%). In addition, the proportion of fatal accidents where at least one driver was going too fast for the driving conditions increased from 32.8% in 2000 to 35.7% in 2003. In the same period, however, the number of speed citations rose by 70.2% as a result of increased speed enforcement in the last years.

#### Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.

|  | 2000   | 2003  |
|--|--------|---|
| No. of speeding citations  | 72 585 | 123 545   |
| % of fatal crashes where speed is a causation factor                                     | 32.8%  | 35.7%   |
| % of drivers over the posted speed limit in :<br>urban areas<br>rural roads<br>motorways |        | Motorway: 46%<br>Main Highway : 65%<br>Rural roads: 55%<br>Urban arterial roads: 50%<br>Urban collector roads (limit = 50 km/H): 70%<br>Urban residential : 47% |

<sup>1)</sup> % of accidents in which at least one driver was travelling too fast for the driving conditions

From the figures given in the table above we can see that the percentage of drivers over the posted speed limit was very high on all the roads in 2003, particularly on urban collector roads (70%) and main highway (65%). Besides, the proportion of fatal accidents in which at least one driver was travelling too fast for the driving conditions increased from 32,8% in 2000 to 35,7% in 2003. In the same period, however, the number of speed citations rose by 70,2% as a result of an increased speed enforcement in the latest years.

#### *Drink driving*

In Portugal it is compulsory to test drivers involved in road accidents and the legal alcohol limit is 0,5g/l. However, the data on fatal accidents with drinking drivers given in the table above – which are based on the injury accidents reported by the police - is underestimated, namely because not all drivers are breath tested.

Besides, the results of the blood tests made by the “INML-Instituto Nacional de Medicina Legal” (National Forensic Medicine Institute – toxicological department) are not included in the accidents database yet. According to the INML data, 40% of the drivers killed in road accidents who were tested were over the legal blood alcohol limit in 2004. At present, Portugal is working in order to produce a better estimate of the number of alcohol-related accidents based on the two sources – Police and INML reports.

Concerning the number of citations, there was an appreciable increase between 2000 and 2003 (+54,4%) due to a more effective enforcement. There is now a higher chance of drink drivers being caught than in previous years..

#### **Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|   | <b>2000</b>   | <b>2003</b>   | <b>2004</b>   |
|---|---------------|---------------|---------------|
| <b>Number of citations</b>  | <b>15 111</b> | <b>23 332</b> | <b>23 954</b> |
| <b>% of fatal accidents where alcohol is a factor<sup>(1)</sup></b> | <b>2.9</b>    | <b>3.2</b>    | <b>2.6</b>    |

(1) % of accidents in which at least one driver was over the legal alcohol limit (0,5 g/l)

#### *Seatbelt and helmet wearing*

The use of seat belts (both front and rear) and child restraints is compulsory.

The table below shows that there was a general increase in seatbelt usage from 2000 (80%) to 2004 (83%). Seatbelt wearing rates are much higher for front seat occupants (87% in 2004) than for rear seat passengers (16% in 2004).

Concerning the type of road, the usage amongst drivers is relatively higher on rural roads than in urban areas. From 2000 to 2003, there was a big decrease in the rate of seatbelt use on both types of road. In 2004, the rate of seatbelt wear went up by 3 points inside urban areas compared to 2003, but did not change on rural roads: 89% in both years.

In comparison with other European countries, the level of seatbelt use is still too low, particularly in the backseats.



Regarding child restraints, despite the recent progress on the rate of child restraint use, which rose from 37% in 2000 to 53% in 2004, improving children safety is still a priority target of the PNPR.

|                             | <b>2000</b> | <b>2003</b> | <b>2004</b> |
|-----------------------------|-------------|-------------|-------------|
| <b>General</b>              | <b>80%</b>  | <b>81%</b>  | <b>83%</b>  |
| <b>Rear Seat</b>            | <b>11%</b>  | <b>17%</b>  | <b>16%</b>  |
| <b>Front Seats</b>          | <b>85%</b>  | <b>85%</b>  | <b>87%</b>  |
| <b>Rural roads – driver</b> | <b>96%</b>  | <b>89%</b>  | <b>89%</b>  |
| <b>Urban areas –driver</b>  | <b>88%</b>  | <b>83%</b>  | <b>86%</b>  |

The use of *crash helmet* is mandatory for two-wheeled motor vehicle (mopeds and motorcycles) users. In 2004, 13.4% of the riders of 2-wheels motorised vehicles (TWMV) and 35,0% of the passengers killed in injury accidents were not wearing helmet. These percentages were very high, when compared with the corresponding values for the seriously (5,1% riders and 16,0% passengers) and slightly (1,5% riders and 8,2% passengers) injured TWMV users.

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

The test for drugs of drivers involved in road accidents is mandatory. However, data on the use of drugs by drivers involved in injury accidents were inserted into the database for the first time in 2004 (introduction of a new accident statistical form) and are still very incomplete.

### **B.3. Major road safety problems today**

1. Excessive or inappropriate speed.
2. Safety for pedestrians.
3. Safety for two-wheeled motor vehicle users.
4. Use of safety devices.
5. Drinking and driving.
6. Safer infrastructure.
7. Trauma management.

### **B.4. Forthcoming road safety initiatives to address these problems**

1. Excessive or inappropriate speed:
  - Introduction of new type of variable message panels allowing the presentation of pictograms and text messages on inter-urban roads.
  - Setting of local speed limits, where necessary, within consistent technical guidelines provided by a manual.
  - Implementation of traffic-calming measures in urban areas.
  - Increased speed enforcement in order to encourage compliance with existing speed limits.
  - Improving driver training and testing – new theory and practical tests. Besides the right skills, such as hazard perception skills, the new programme aims to instil in young people the right attitude regarding speed, other road users, alcohol and drugs.
  - Publicity campaigns (national and local) to make people aware of the dangers of excessive or inappropriate speed and understand the reasons for speed limits and speed enforcement.

2. Safety for pedestrians:

- Some of the measures planned for improving pedestrian safety were already referred in the previous point, namely concerning the road environment and drivers training and testing.
- Construction of bypasses/ring roads around the cities and reduction of traffic flows in urban areas.
- Increased control on drivers behaviour', particularly on pedestrian areas.
- Increase in penalties for parking on pedestrian crossings and mandatory use of reflective vest by broken vehicle drivers (new edition of the Road Code published in March 2005).
- Elaboration of new guidelines for the design of urban roads and updating of good practice manuals for the design of pedestrian facilities.
- Road safety education in schools for ages up to 12 years, with the collaboration of the children's families.
- Teacher training.
- Distribution of pedagogic materials for children aged from 6 to 12 years old.
- Publicity campaigns (national and local) to make people aware of the need to be visible to traffic (use of reflector devices), to promote the use of helmets by cyclists and encourage drivers to modify their behaviour concerning the vulnerable road user.

3. Safety for two-wheeled motor vehicle users:

- Introduction of protective barriers on the roadside.
- Increased enforcement focused on motorcyclist helmet wearing and daytime running lights use (which is compulsory for these vehicles).
- Increase in fines for non-use of crash helmets (new edition of the Road Code published in March 2005).
- Improve driver training and testing – new theory and practical tests.
- Road education campaigns in schools.

4. Use of safety devices:

- Publicity campaigns (national and local) providing drivers and passengers with information about the consequences of driving unbelted.

5. Combating drinking and driving:

- Wider use of rehabilitation courses for drink-drivers.
- Publicity campaigns targeted at young drivers based on the “designated driver” message.

6. Safer infrastructure:

- Some of the measures concerning the infrastructural area were already mentioned (targets 1 and 2).
- Regular technical inspections of the road network (better maintenance), and the setting of critical safety levels for intervention.

- Elaboration of a manual for maintenance inspections addressing explicitly road safety aspects.
  - Definition of road safety performance indicators
  - Development of a new hierarchy of roads defined by their function and quality based on technical guidelines.
  - Identification and treatment of high accident risk sites.
  - Training courses for road professionals.
7. Trauma management:
- Improvement of the alarm system efficiency.
  - Improvement of the response times of the emergency services

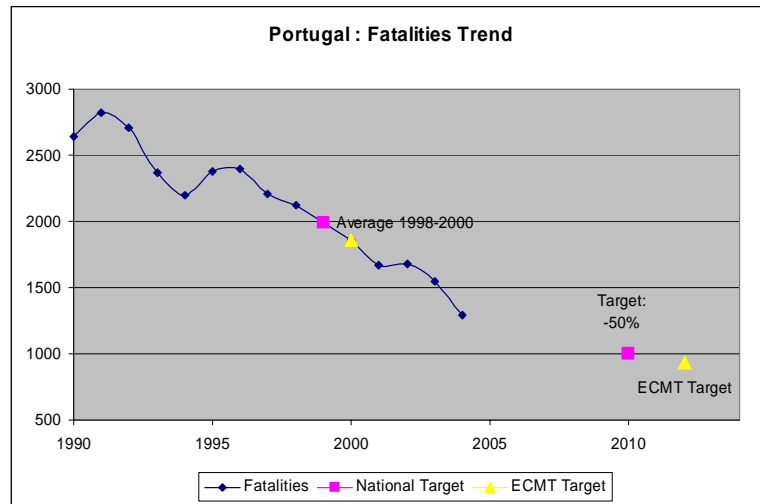
### C. Road safety targets

| Type                      | Targets<br>(in % or absolute figures) | Base year | Target year | Base year figure | Current results (2004) | Intermediate targets? |
|---------------------------|---------------------------------------|-----------|-------------|------------------|------------------------|-----------------------|
| Fatalities <sup>(1)</sup> | -50%                                  | 1998-2000 | 2010        | 1 748            | 1 135                  | None                  |
| Seriously injured         | -50%                                  | 1998-2000 | 2010        | 7 597            | 4 190                  | None                  |

(1) Death within 24h (the correction factor=1.14 was not applied)

| <i>User specific target groups (e.g. motorcyclists, pedestrian, etc.)</i>  | Targets<br>(in % or absolute figures) | Base year | Target year | Base year figure | Current results (figure in 2003 or 2004) | Intermediate targets? |
|--|---------------------------------------|-----------|-------------|------------------|--|-----------------------|
| Pedestrians:<br><i>Decrease in the number of pedestrians killed or seriously injured in an accident</i>                    | -60%                                  | 1998-2000 | 2010        | K=346<br>SI=1538 | K=204<br>SI=766                          | None                  |
| Two-wheeled motor vehicle users:<br><i>Decrease in the number of TWMV users killed or seriously injured in an accident</i> | -60%                                  | 1998-2000 | 2010        | K=438<br>SI=2227 | K=273<br>SI=1107                         | None                  |

|  | Targets<br>(in % or absolute figures) | Base year | Target year | Base year figure                         | Current results (2004)         | Intermediate targets?                     |
|--|---------------------------------------|-----------|-------------|--|--------------------------------|---|
| Front/rear seatbelt wearing rates:<br><i>increase in seatbelt wearing rates</i>                                      | Fseatbelt>=90%<br>Rseatbelt>=60%      | 2000      | 2010        | Fseatbelt=85%<br>Rseatbelt=11%           | Fseatbelt=87%<br>Rseatbelt=16% | None                                      |
| Child restraints:<br><i>increase in child restraints wearing rate</i>  | Child restraints use rate>=70%        | 2000      | 2010        | 39%                                      | 57.8%                          | None                                      |
| Drinking and driving:<br><i>Decrease in the % of drivers killed in road accidents who were above the legal limit</i> | -50%                                  | 2001/2002 | 2010        | 27.5%                                    | 40%                            | None                                      |
| Speed:<br><i>Decrease in the mean speeds inside and outside urban areas</i>  | Outside= -5km/h<br>Inside= -15km/h    | 2000      | 2010        | Different average speeds by type of road | Not available                  | 2005<br>Outside= -1km/h<br>Inside= -5km/h |
| Urban areas:<br><i>Decrease in the number of road users killed or seriously injured inside urban area</i>            | -60%                                  | 1998-2000 | 2010        | K=718<br>SI=4 715                        | K=488<br>SI=2 587              | None                                      |

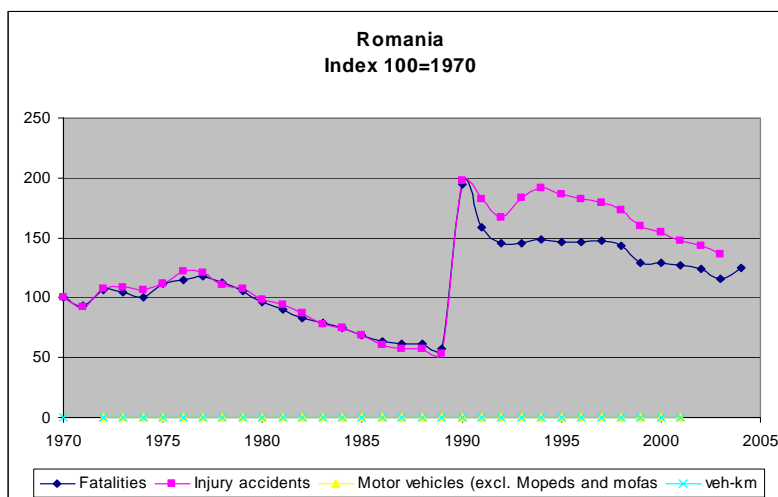


## ROMANIA

### A. General trend in road safety

#### Key road safety data for 2004

- 2 418 road fatalities (2 235 in 2003)
- 10.9 killed per 100 000 inhabitants
- Around 160 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



The break in accidents and fatalities curves in 1990 can be explained by the fact that until 1990 there was petrol restriction. In addition until 1990 on Sundays there was alternate traffic (odd plates one Sunday, even plates the following Sunday).

Today, the situation is getting worse as shown in the table below :

| Year             | 1 <sup>st</sup> Semester 2004 | 1 <sup>st</sup> Semester 2005 | Difference (%) |
|------------------|-------------------------------|-------------------------------|----------------|
| Injury accidents | 2 642                         | 2 768                         | +4,77          |
| Fatalities       | 894                           | 943                           | +5,48          |
| Injured people   | 2 167                         | 2 262                         | +4,38          |

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>Yes, February 2003: Demerit point system for speeding. In addition, in case of speeding by more than 50 km/h above the limit, licence withdrawal for 90 days.</li> </ul>   |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                     | <ul style="list-style-type: none"> <li>In 2002, the maximum blood alcohol content, leading to prosecution, has been lowered from 1 g/l to 0.8 g/l. (However, the official authorised BAC level is still 0.0 g/l).</li> </ul>  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>Yes, improvement of the road infrastructure based on the available funding.</li> </ul>   |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>Yes, enforcement of the European rules regarding the transport of dangerous goods through road tunnels (ADR).</li> <li>Enforcement of European rules regarding working hours of truck drivers and coach drivers (AETR).</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>Road safety education in schools</li> <li>Information and road safety education through the media for all citizens. <ul style="list-style-type: none"> <li>Every year, 35 000 spots on radio, 15 000 on TV and 25 000 articles in the written media.</li> <li>Education campaign in cooperation with the community,</li> </ul> </li> </ul> |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>Yes, vehicle inspection is done every two years</li> </ul>   |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>First implementation of video surveillance of road traffic on the road 1 'Bucuresti-Ploiesti-Sinaia-Azuga'</li> </ul>  |

### *B.1.2. Strategies to decrease risk of injury:*

|   |   |
|---|---|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"><li>• Yes, prevention campaigns in co-operation with non governmental organizations:<ul style="list-style-type: none"><li>– "Safety belt are life belt" with Michelin</li><li>– "Wearing seatbelt saves life"</li></ul></li></ul> |
| <ul style="list-style-type: none"><li>• <i>Emergency services</i></li></ul>   | <ul style="list-style-type: none"><li>• Yes, introduction of the 112 emergency number on public roads.</li></ul>  |
| <ul style="list-style-type: none"><li>• <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i></li></ul> | <ul style="list-style-type: none"><li>• No</li></ul>  |

### *B.2. National Diagnosis in key safety areas*

#### *Road users*

Based on recent data, responsible of road crashes are:

Drivers: 60.1%  
Pedestrians: 34.2%  
Bicyclists: 4.1%  
Carts : 1.5%  
The road: 0.1%

Here is a breakdown of the road users involved in road crashes:

Passenger cars: 85%  
Freight vehicles: 11.4%  
Buses and coaches: 1.5%  
Motorcycles: 1%  
Tractor: 0.5%  
Tramway: 0.4%  
Trolleybus: 0.2%

#### *Type of road / location*

Repartition of fatal crashes:

- Urban roads: 43.7%
- Rural roads: 16.2%
- Streets: 40%

#### *Speed*

The introduction of 150 additional radars between 2002 and 2004 led to a diminution of speed-related crashes (from 23.2 % to 18.3%)/



**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|  | <b>2000</b> | <b>2003</b> |
|--|-------------|-------------|
| Nb of speeding citations                             | 874 396     | 1 079 546   |
| % of fatal crashes where speed is a causation factor | 25,7        | 19,3        |
| % of drivers over the posted speed limit in :        |             |             |
| urban areas  | 22%         | 20%         |
| rural roads  | 73%         | 76%         |
| motorways  | 5%          | 4%          |

*Drink driving*

The authorised BAC level is 0.0 g/l.

However, penalties concern drivers with a blood alcohol content above 0.8 g/l (it was 1 g/l until 2002). If a driver is controlled with a BAC above 0.8 g/l, he/she is subject to a fine. BAC above 1.6 g/l is considered as an infraction.

The traffic police is trying to increase its efforts to reduce drink driving. Between 2002 and 2004, the number of fines for drink driving increased by 20% (from 37 000 to 45 000).

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | <b>2000</b>   | <b>2003</b>   |
|--|---------------|---------------|
| Number of citations                            | <b>60.790</b> | <b>34.617</b> |
| % of fatal accidents where alcohol is a factor | <b>3,17</b>   | <b>2,32</b>   |

*Seatbelt and helmet wearing*

Seatbelt wearing is compulsory for both front and rear seats. The fine for non wearing seatbelt is between ROL 500.000 and ROL 700.000 (between EUR 14 and EUR 20). Over the period 2002-04, the number of fines increased by 160% (from 210 000 to 550 000).

Helmet wearing is mandatory for all motorised 2-wheelers.

*Other factors*

Main causes of road crashes:

- Non compliance of traffic rules by pedestrians: 24,7%
- Speeding or inappropriate speeds 18,3%
- Lack of priority to pedestrian 5,4%
- Lack of priority to vehicles 5,4%
- Unsafe behaviour of children of 6-14 5,1%
- Non allowed overtaking 4,9%
- Changing lanes 4,2%

- Bad surveillance of young children aged 0-6 3,6%
- Fatigue 2,9%

### ***B.3. Major road safety problems today***

1. Lack of a national consistent road safety strategy.
2. Deterioration of road safety education of the population.
3. Road safety not seen by the local community as a priority.
4. Media are not used as they should for crash prevention. Media are mainly interested to report on important crash and neglect prevention.
5. Lack of small investment for road infrastructure in urban areas (intersections, urban lightings, parking, pavement, bicycle tracks, automatic control, and traffic control).
6. Lack of investment for motorways.
7. Lack of investment in rural areas, where road transport is the only mean of transport because of a lack of infrastructure.

### ***B.4. Forthcoming road safety initiatives to address these problems***

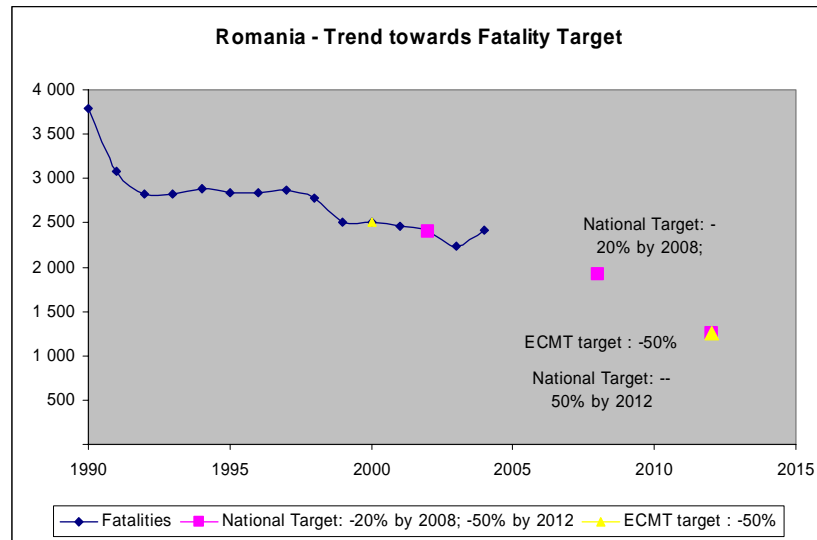
To reach the EU target of -50% of fatalities between 2001 and 2010, the Transport Ministry, the Police and the Administration Ministry adopted in 2003 "a road safety strategy for 2004-2007 for motorways and highways" with the objective of reducing by 30 the number of road fatalities.

A budget of EUR 130 million was planned. However the project was abandoned due to a lack of funds.

## **C. Road safety targets**

### **General road safety targets**

| Type       | Targets<br>(in % or absolute<br>figures) | Base<br>year  | Target<br>year | Base<br>year<br>figure | Current<br>results<br>(figure in<br>2004) | Intermediate<br>targets ? |
|------------|--|---------------|----------------|------------------------|---|---------------------------|
| Fatalities | -50%                                     | 2002<br>-2354 | 2012           | 2354                   | 2418                                      | Yes<br>-20% by 2008       |



#### D. Success story cards

##### *Success story from Romania*

**Law on use of mobile phone.** Only hand free phones are now allowed.

##### *Less recommended story from Romania*

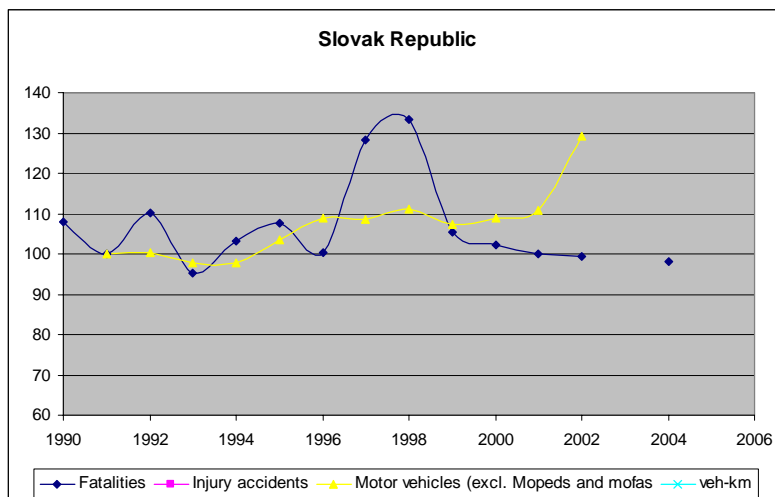
**Seatbelt wearing rate in urban areas is less than 5 %/**

## SLOVAK REPUBLIC

### A. General trend in road safety

#### Key road safety data for 2005

- 650 road fatalities (608 in 2004)
- 11.1 killed per 100 000 inhabitants
- Around 300 cars (passenger cars and light duty vehicles) per 1 000 population



The reason for the peak in the late 1990s is that there was no coordinated prevention procedures and measures in the field of road traffic safety, while at the same time motorisation increased significantly.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

Strategic tasks on the field of road safety are comprised in the National Plan for the Enhancement of Road Safety. The first Plan was presented on 15 May 2005.

Since 15 May 2005, it has been decided to implement only countermeasures with the highest potential to reduce fatalities. Road safety projects and events implemented by the Police aim to reach the general road safety target. There are also intermediate goals which relate to speed, drink driving, drugs, seatbelt wearing rate, etc.

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>2005: Penalty for speeding up to 7 000 SK.</li> </ul>  |
| <i>Reduced speed limits</i>   | <p><u>Vehicles and buses up to 3.5 tons</u></p> <ul style="list-style-type: none"> <li>Speed limit in town residential area: 60km/h</li> <li>Speed limit on highways: vehicles - 130km/h<br/>buses – 110km/h</li> <li>Speed limit on highways in town residential area: 80km/h</li> <li>Speed limits on roads of 1<sup>st</sup> and 2<sup>nd</sup> class: 90km/h</li> </ul>   |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                     | <ul style="list-style-type: none"> <li>Level of the alcohol in the blood in the Slovak republic is 0.</li> <li>Driving under the influence of the drugs is prohibited.</li> </ul>   |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>Finishing the building of the network of highways until year 2010</li> <li>Solving the grade separation of roads and railroads</li> </ul>  |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>The first driving licence is granted to the novice drivers for a probation period of two years. The probation period starts from the day when the driving license is issued.</li> <li>If the driver commits a crime in connection with the driving of the vehicle or if the driver commits 2 driving offences, the district department will take a decision upon the person's participation on driver's training in the training establishment.</li> </ul> |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>Traffic education is a subject at primary schools.</li> <li>The activation of the traffic playgrounds for the children.</li> </ul>   |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>No</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>Legislation is harmonised to the EU directives.</li> </ul>   |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>Creation of a Road Safety Council: On 1st December 2004 the Road Safety Council of Slovak republic was set up by Decree no. 1162. On 15th March 2005 the Road Safety Council established its Secretariat. On 15th May, a National Road Safety Plan for the 2nd half-year of 2005, with outlook until 2010, was approved by the Government of the Slovak republic.</li> </ul>   |

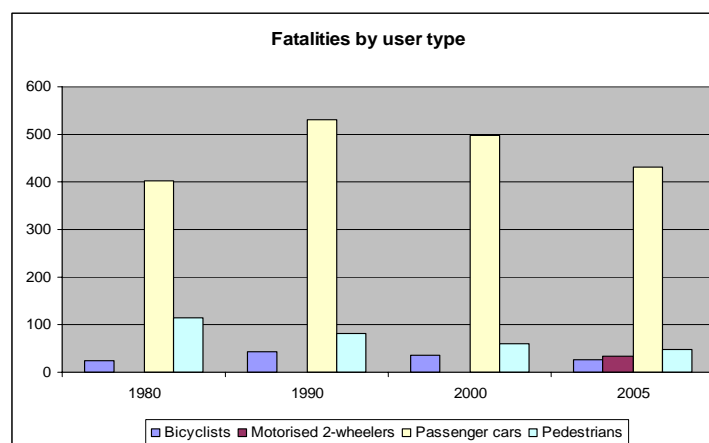
### B.1.2. Strategies to decrease risk of injury:

|  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Safety equipment: enforcement of seatbelt wearing/ helmet use</li> </ul>  | <ul style="list-style-type: none"> <li>• No</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Emergency services</li> </ul>   | <ul style="list-style-type: none"> <li>• New pilot project on "Integrated emergency services 112"</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Others</li> </ul>   | <ul style="list-style-type: none"> <li>• On 15th May 2005 "National Road Safety Plan for the 2nd half-year 2005, with outlook until 2010" was approved by the Government of the Slovak republic</li> </ul> |

## B.2. National Diagnosis in key safety areas

### Road users

Evolution in fatalities by road user type



### Age groups

| Age group   | Nb of fatalities in 2004 |
|-------------|--------------------------|
| 0-14 years  | 28                       |
| 15-24 years | 109                      |
| 25-64       | 381                      |
| +65         | 80                       |

## *Speed*

Speed limits for vehicles and buses up to 3.5 tons:

- Speed limit in town residential area: 60km/h
- Speed limit on highways: vehicles - 130km/h  
buses – 110km/h
- Speed limit on highways in town residential area: 80km/h
- Speed limits on roads of 1<sup>st</sup> and 2<sup>nd</sup> class: 90km/h

**Table 14. Evolution in the percentage of fatal crashes where speed is a causation factor**

|  | 1994   | 2000   | 2003   | 2004   | 2005   |
|--|--------|--------|--------|--------|--------|
| % of fatal crashes where speed is a causation factor | 49.86% | 47.48% | 40.08% | 35.82% | 38.21% |

## *Drink driving*

In Slovak Republic, it is prohibited to drive under influence of alcohol and drugs and the maximum BAC level authorised is 0g/l.

## *Seatbelt and helmet wearing*

In Slovak republic, it is compulsory to wear seatbelts in all vehicles, in both front and rear seatbelts. Sanctions for not wearing the seatbelts and helmets are as follows:

- Built-up areas: fine up to 500 SK (around EUR 13)
- Rural areas: fine up to 2000 SK (around EUR 53)

It is compulsory to wear helmets on motorcycles.

## *Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Other common violations include:

- Mobile phone. It is prohibited to phone while driving.
- Crossing the roads on zebra crossing (pedestrians have the priority).

## **B.3. Major road safety problems today**

1. Usage of seatbelt
2. Drink driving
3. Speeding
4. Training the next generation
5. National coordination
6. International coordination

#### ***B.4. Forthcoming road safety initiatives to address these problems***

##### *Safety of vehicles:*

- Ensure checks of vehicles that have not undergone the technical inspection within fixed terms.
- Execute the efficient state supervision of the activity of authorised technical service for technical inspections and by Vehicle Testing Stations.
- Inform government about results of statistical surveys within the scope prescribed by a generally binding legal regulation, and if appropriate propose solutions for the improvement. The government will be informed about results of executed checks and the state supervision until 31.3. 2006 as it is resulting from National Road Safety Plan for the 2<sup>nd</sup> half-year 2005, with outlook until 2010.

##### *Road Safety:*

- Application of entrance islands at the entrance to communities, utilisation of roundabouts on new-built roads.
- Application of elements of traffic alleviation in sections of through-roads in communities and cities for road safety.
- Increase the visibility and readability of road signalling.
- Install information automatic speedometers (speed traps?) in selected road sections.
- Improve the transparency of pedestrian crossings and ensure their visibility.
- Improve traffic signalling of railway crossings on roads.
- Improve the transparency of railway crossings and classic crossroads.
- Improve the maintenance of railway crossings.
- Improve the quality of (pavement) surface of roads.
- In the framework of the project for the preparation for construction and reconstruction of the road network, apply requirements for the implementation of progressive traffic control using intelligent transport systems.
- Install a camera system on motorways and express ways, stationary systems for the detection of red light runners on selected crossroads.
- Establish and introduce the system for fast and exact identification of road accident locations.
- Continue building the road infrastructure.
- Propose traffic-organisational and construction-technical measures on black-spots and in locations where the road safety situation requires the improvement of road safety, and ensure their practical implementation.
- Creation of electronic database of black-spots and the solution of these locations.
- Improve road signalling in military premises and buildings.



### *Traffic education*

- Create adequate content, material and personnel conditions for the improvement of traffic education at elementary schools.
- Create conditions for the practical training of pupils on traffic playgrounds by their activation.
- In the framework of the curricular transformation at elementary schools, create conditions for the improvement of traffic education.
- Organise competitions for pupils of elementary schools aimed at verification of the knowledge, skills and habits in the area of road safety.
- Execute efficient state supervision of the activities of driving schools.
- Driving licence, theoretical knowledge and practical skills of the applicants, the improvement of driving knowledge and habits (particularly the observance of speed limits, the utilisation of safety belts etc.).
- Activate the basic classification and regular training of professional drivers of selected road vehicles.
- Increase the awareness of obligatory vehicle outfit and its utilisation.
- Organise an international conference on road safety.
- Organise a seminar on road safety.
- Actively participate in the execution of measures with preventive educational character, organised within EU, particularly in the framework of the International Week of Road Safety, the event Apple – Lemon etc.
- Through educational activity, systematically influence all age groups of road traffic participants.
- Execute the vocational and regular training of drivers of military motor vehicles.

### *Health education and traffic psychology*

- Health education and traffic psychology should become an integral part of traffic education at schools and driving schools.
- Execution of health education and traffic psychology through well-informed experts invited to the instruction at schools and driving schools.
- Use the knowledge of the influence of alcohol and intoxicating and psychotropic substances on the ability to drive and on road safety in programmes of schools and driving schools.
- To increase the awareness of the drivers of the influence of some drugs on the ability to drive and their influence on the conduct of the other road traffic participants.
- To put stress on the medical and mental fitness of driving school instructors, applicants for driving licence and holders of driving licence.

### *Road safety legislation*

- Ensure the implementation of provisions of the Act No 725/2004 Coll. on conditions of the operation of vehicles in road traffic, as amended by later regulations, by an efficient Decree and Regulations of the Government of SR.
- Upon the entry into force of the Act on driving schools and on amendment of certain Acts, ensure the implementation of its provisions by an efficient Decree.
- Submit to the legislative process a Decree stipulating the focus of psychological examinations of driving school instructors and their scope.
- Prepare the Bill on basic qualification and regular training of the drivers of certain types of road vehicles.
- Inform the Council of the Government on road safety about the prepared amendment of Act No 315/1996 Coll. on road traffic, as amended by later regulations.
- Prepare the Bill on roads (Road Act).
- Prepare required legislative changes aimed at the improvement of road safety in compliance with the European legislation, UN ECE legislation and international conventions and project them into each element of road safety, i.e. vehicles, road infrastructure and operation, drivers and other road traffic participants, etc.

### *Supervision of road safety and traffic flow*

- In performing functions in the area of road safety, closely cooperate with competent entities and in particular execute checks of commercial vehicles in accordance with the EU Directives aimed at the technical condition of vehicles in road traffic, the observance of social legislation by the drivers and the transport of dangerous goods.
- Orient the supervision of road traffic to black-spots, the most frequented sections of the international network of motorways, expressways and 1st class roads, with focus on the violation of the provisions of traffic regulations that are the main causes of serious road accidents, the violation of the provisions on driving speed, driving style, consumption of alcohol and utilisation of safety belts.
- Pay special attention to the observance of the prohibition of the consumption of alcoholic beverages and other addictive drugs by drivers of motor and non-motor vehicles before or during the drive, as well as pedestrians under the influence of alcohol and other addictive drugs menacing the road safety and traffic flow. Pay attention to the utilisation of safety belts.
- Taking into account the negative trend of accident rate (reflected) in the increase of the number of road accidents caused by drivers, particularly due to non-observance of speed limits, ensure more intensive utilisation of speedometers and the execution of checks aimed at the observance of prescribed driving speed by the drivers of motor vehicles.
- Pay special attention to non-motorised traffic participants, putting stress on the conduct of pedestrians and cyclists (especially on the lighting and outfit of bicycles) in the urban area of cities and communities and at close quarters.
- Ensure the efficient execution of checks aimed at the observance of social legislation in road traffic and the ADR, AETR Agreements, etc.

- The supervision of road traffic of military motor vehicles and vehicles falling within the competence of the Military Police, aimed especially at the technical condition, violation of the provisions of traffic regulations and prescribed driving speed, consumption of alcoholic beverages and utilisation of safety belts, observance of legislation in road traffic and ADR Agreement in road transport of dangerous goods.

#### *Promotion in media*

- Campaign aimed at the risk of driving under the influence of alcohol, intoxicating and psychotropic substances.
- Campaign aimed at the need for utilisation of safety belts and baby seats.
- Campaign aimed at the need for observance of the speed limit.
- Awareness of black-spots.
- Campaign aimed at the need for and method of giving first aid, and conduct of participants following road accidents.
- The issue of instructional guides relating to road safety, aimed at different categories of population and the distribution of the guides to school, health and social establishments.
- Provision of the public with information on activities and topical road safety issues through promotion materials and the website of MTPT SR.

#### *National coordination*

- Development of the coordination of road safety
- Involvement of the regional and local levels in the solution of road safety issues.
- Coordination of preventive information and repressive action.
- Interconnection of ministries, central bodies of government, self-government and communities by electronic means – mutual awareness (information sharing).
- Cooperation with interest groups, automobile associations, insurance companies etc. in the solution of road safety issues.
- Examination of the efficiency of the measures of the National Road Safety Plan for the 2nd half-year 2005, with outlook until the year 2010.
- Introduction of the information system for children accident rate as a result of road accidents.

#### *International cooperation*

- Ensure participation in the international negotiations and in EU/EC bodies dealing with road safety.
- Involvement of the Slovak Republic in the design and functioning of the Road Safety website of V4 and other countries.
- Development of cooperation at the level of V4 countries.

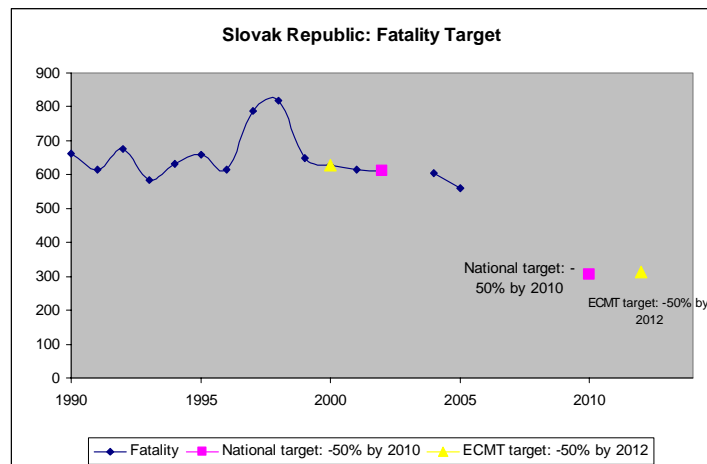
- Access of the Slovak Republic and the provision of data to the Community database of accidents on the European roads CARE.
- Ensure the drawing from European funds through suitable road safety projects.
- Inform the Commission of the wording of the National Plan.
- Inform the Commission and the European institutions of results from the implementation of measures and the development of accident rate and its consequences.

### C. Road safety targets

In Slovak Republic, there is a general target to reduce by 50% the number of road fatalities between 2002 and 2010. Currently, there are no more specific targets, but these will be introduced in the next National Plan.

General target:

| Type       | Targets (in % or absolute figures) | Base year | Target year | Base year figure | Current results (figure in 2005) | Intermediate target      |
|------------|------------------------------------|-----------|-------------|------------------|----------------------------------|--------------------------|
| Fatalities | -50%                               | 2002      | 2010        | 610              | 560                              | Will be in National plan |



### D. Success story cards

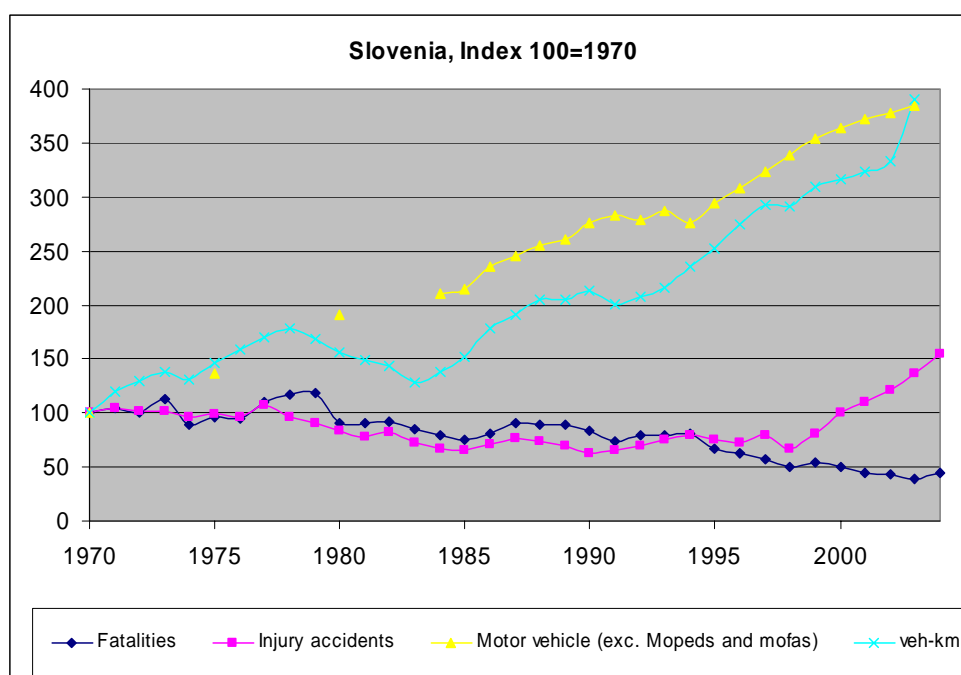
None.

## SLOVENIA

### A. General trend in road safety

#### Key road safety data for 2004

- 274 road fatalities (242 in 2003)
- 13.7 killed per 100 000 population
- Around 500 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



Note: injury accidents data do not include accidents with a trace of injury (introduction of minor methodological changes in injuries definition in 1994; these data slightly differ from IRTAD data on injury accident, but they are available for longer period).

Between 1970 and 2003, the vehicle fleet and mileage were multiplied by almost 4. At the same time, the number of fatalities decreased by 61%. While the trends for injury accidents had been close to those for fatalities, since 1994 there has been a decoupling trend.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>Road Safety Act (2005) includes new, tougher penalties for speeding.</li> <li>Improved speed measurement devices system used by the Police.</li> <li>Strict Police control and actions 'chain', including more radars nearer areas of possible speed violations.</li> </ul> <p>These measures relate to the target "decrease by 50% in the number of fatalities due to speeding between 1995 and 2005".</p>                                |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>Road Safety Act from 1998 introduced speed limit changes (important changes: motorway from 120 km/h to 130 km/h, main road from 80 km/h to 90 km/h and built-up areas from 60 km/h to 50 km/h).</li> <li>Road Safety Act from 2005 changed speed limits in calm traffic/pedestrian areas from 5 km/h to 10 km/h</li> </ul> <p>These measures are connected to the target "decrease by 50% in the number of fatalities due to speeding"</p> |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                     | <ul style="list-style-type: none"> <li>Important changes introduced with the Road Safety Act of 1998 – new BAC limits and tougher penalties.</li> <li>Road Safety Act of 2005 made some changes regarding alcohol-influenced driving and raised fines.</li> </ul> <p>These measures relate to the target "Reduction to less than 7% in number of accidents caused by intoxicated drivers between 1995 and 2005"</p>   |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <p>Infrastructure improvements incorporated in:</p> <ul style="list-style-type: none"> <li>Traffic safety issues within the National Programme of Construction of State Roads.</li> <li>Long-term Development Programme for Development and Maintenance of State Roads.</li> <li>Black Spot Management.</li> </ul> <p>These measures relate to the target "Decrease in injury accidents" and "decrease by 50% in the number of fatalities due to speeding".</p>                   |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>Determined and implemented on the basis of Road Safety Acts.</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>According to Road Safety Act of 1998, novice drivers treated differently from other drivers for two years after acquiring the driving licence</li> <li>New provisions for novice drivers introduced with the Road Safety Act of 2005</li> </ul> <p>These measures relate to the target "Decrease by 50% in the number of Young Drivers killed between 1995 and 2005".</p>  |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>Road Safety Council programmes – annual and specially targeted</li> </ul> <p>These measures relates to the general casualty reduction target.</p>  |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>Obligatory technical check-ups of vehicles, determined by Road Safety Acts and supported by Rules on preventive check-ups of motor vehicles and trailers</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>  | N.A.  |

### B.1.2. Strategies to decrease risk of injury:

|   |   |
|---|---|
| <i>Safety equipment: enforcement of seatbelt wearing/ helmet use</i>  | <ul style="list-style-type: none"> <li>Police performs regular seat-belt wearing controls and 2 two-week actions per year.</li> <li>Police performs regular helmet wearing controls.</li> </ul> <p>These measures relate to the target "Decrease by 50% of fatalities; Decrease of motorised 2-wheeler risks"</p> |
| <i>Emergency services</i>   | N.A.  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>Arrangement of protective fences on the motorways in accordance with the EU Directive</li> </ul> <p>This relates to the target of improving safety on motorways</p>  |

## B.2. National Diagnosis in key safety areas

### Road users

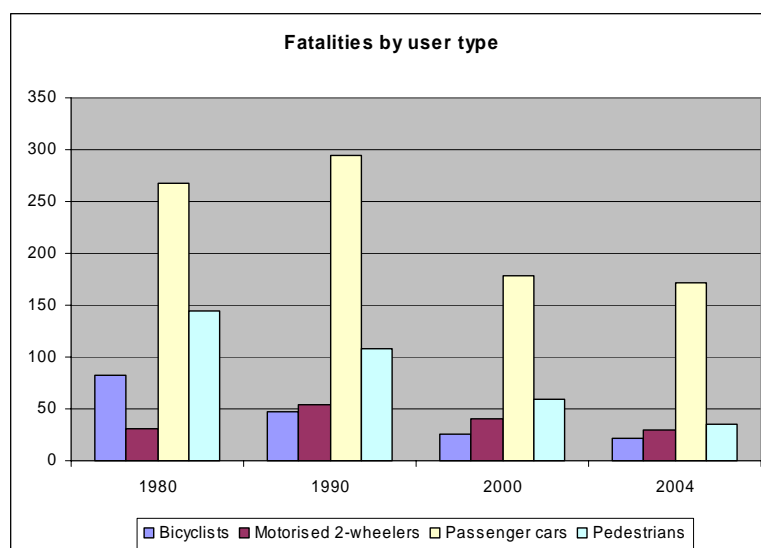
Although the number of registered motor vehicles and the kilometrage is increasing constantly, the number of road traffic fatalities decreased significantly in all traffic modes.

Bicyclists and pedestrians are the groups with the greatest improvement in safety. (83% less bicyclist fatalities in 2003 than in 1980 and 74% less pedestrian fatalities). Since 1998, the use of bicycle helmets is obligatory for children under 14 years.

The number of passenger car fatalities also decreased, but not proportionally to all fatalities. Their share among all fatalities increased from 48% in 1998 to 60% in 2003. The share of passenger car kilometrage is relatively constant – around 86%.

On the other hand, the number of motorcycle fatalities did not decrease and in 2003 represents 13% of all fatalities.

**Evolution in fatalities by road user type**



### *Age groups*

Since 1980, all fatalities in all age groups decreased significantly.

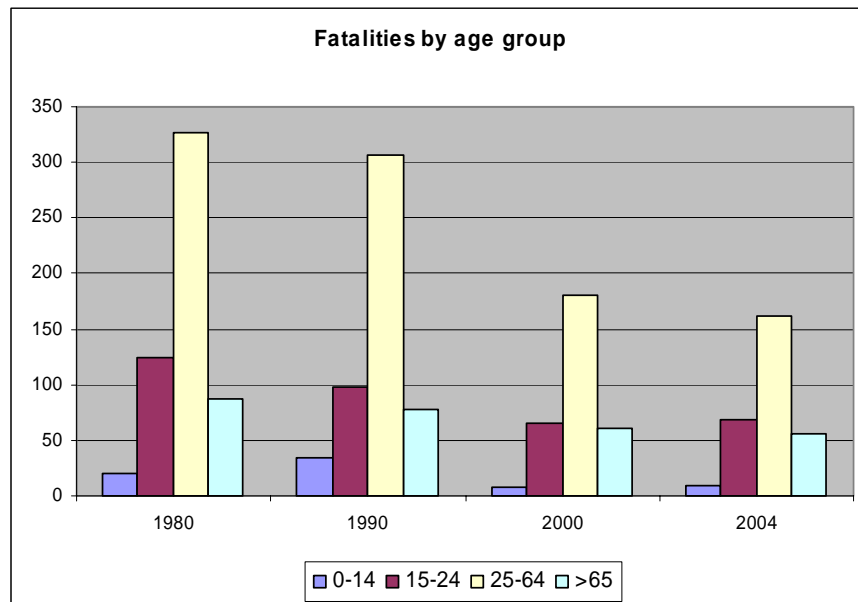
Among the youngest traffic participants the decrease of fatalities was the biggest (-85%). This is mostly the result of extensive traffic safety programmes in kindergartens and schools.

Safety of traffic participants between 15 and 24 years old also improved (-55%), but their share among all fatalities remained the same (23%). This age group represents 14% of population and 17% of motor vehicle licence holders. In the 90s, Slovenia went through political and social changes and motor vehicles became widely available also for younger persons.

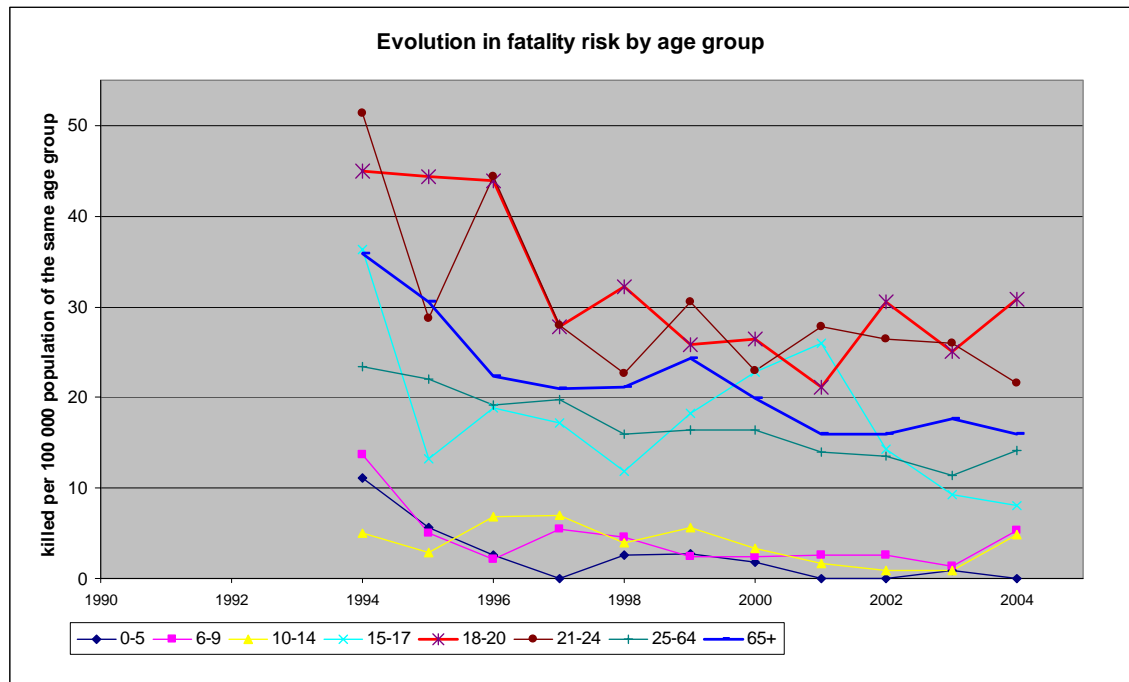
The age group between 25 and 64 represents 52% of all fatalities. This age group represents 57% of population and 75% of motor vehicle licence holders.

The oldest traffic participants are the most endangered. The number of fatalities has decreased since 1980 by 33%, but their share among all fatalities increased to 24%. This age group is over-represented in fatalities distribution, since it represents only 15% of population and 8% of motor vehicle licence holders.

### ***Evolution in fatalities by age group***







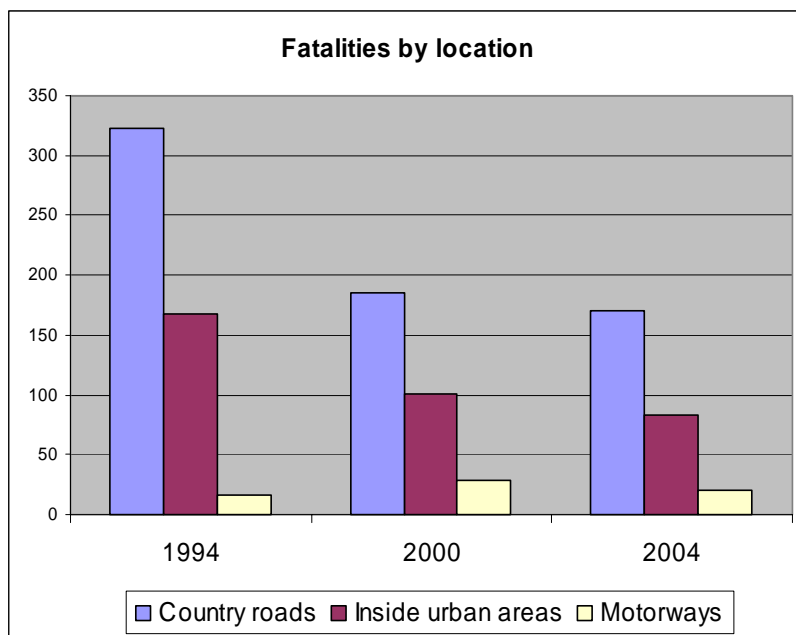
#### *Type of road / location*

Data for fatalities by road location before 1994 are not available.

Number of fatalities decreased on country roads and inside urban areas and increased by 38% on motorways.

Slovenia began with realisation of National Motorway Construction Programme in 1994. Since 1980, when the length of Slovene motorways was 122 km until 1994, 106 km of new motorway sections were constructed, and from then until 2003 another 251 km were constructed

Evolution in fatalities by location



### *Speed*

Speeding is the major reason for traffic accidents in Slovenia. Fatal accidents caused by speeding represented 43% of all fatal traffic accidents in Slovenia in 2003, and in 2004 the situation even deteriorated. Percentage of fatal accidents caused by excessive speed increased to 46% of all fatal accidents.

Legal provisions related to speeding changed significantly with the Road Safety Act of 1998. Speed limits were changed in settlements from 60 km/h to 50 km/h, on other roads from 80 km/h to 90 km/h, on expressways the limit stayed the same at 100 km/h and on motorways the limit was increased from 120 km/h to 130 km/h. These changes were accompanied by newly introduced high penalties and penal points. Police control was very strict, which caused higher observance of new rules. The consequence was a general lowering of traffic accidents and especially a lowering of the number of fatalities due to inappropriate speed in the years around the introduction of the new act. Some results were achieved, but the general problem of speeding remained.

The Road Safety Act of 1998 was replaced with a new Road Safety Act in January 2005. The latter includes even stricter penalties for speeding. Speed limits have not changed, but the penalties have grown much higher. An increase in fine amounts and stricter application of the penal points system represents a threat for all speed limit violators. The consequences of the newly introduced act should be seen in the near future.

Speed regulations have been accompanied by other measures intended for prevention of fatal accidents related to speeding, namely road measures (motorway construction, black spot management, inclusion of traffic safety measures to all investments on the road network, arrangement through settlements and implementation of traffic calming measures), safer vehicle fleet on Slovenian roads (safety equipment in vehicles) and of the precisely planned repressive and preventive work that influences the behaviour of traffic participants.

**Evolution in percentage of fatal crashes where speed is a causation factor**

|  | <b>1994</b>          | <b>2000</b>          | <b>2003</b>          |
|--|----------------------|----------------------|----------------------|
| % of fatal crashes where speed is a causation factor | 40% of all accidents | 42% of all accidents | 43% of all accidents |

*Drink driving*

The maximum permissible blood alcohol content is 0.5 g/l.

Driving under the influence of alcohol represents a major problem in Slovenia. Every third major traffic accident involves persons with blood alcohol levels higher than allowed by law. Around 40 000 drivers driving under the influence of alcohol are penalised by the Police every year.

The Road Safety Act of 1998 and the newly introduced Road Safety Act of 2005 brought strict legal provisions and high penalties for driving under the influence of alcohol. However, it appears that the problem of drinking and driving is more a general social problem, since alcohol is a part of many social activities in Slovenia. The latter can be supported also with data on alcohol consumption that places Slovenia at the top among the European countries.

Police enforcement of legal provisions is extensive. In the field of prevention, the Slovenian Road Safety Council organise several educational programmes addressed to all road users of all age groups. However, drinking and driving is a very complex problem with various interacting factors, therefore no major improvements can be expected in the short term.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | <b>1994</b>          | <b>2000</b>  | <b>2003</b>  |
|--|----------------------|--|--|
| Number of citations                            | NA – Police data     | 147 223 performed breath tests<br>35 869 positive breath tests | 247 191 performed breath tests<br>34 603 positive breath tests |
| % of fatal accidents where alcohol is a factor | 31% of all accidents | 32% of all accidents   | 35% of all accidents   |

\*% of fatal accidents represents the % of fatal accidents caused by drunken drivers, where the fatality was either the driver, his passengers or drivers/passengers in other vehicles involved.

*Seatbelt and helmet wearing*

Seatbelt wearing rates for Slovenia are relatively high, which reflects general approval of traffic rules and effective enforcement of the latter. Slovenian Police performs seatbelt wearing control mainly with general actions throughout the year. In addition it carries out two, two-week actions per year. Even though the use of seatbelts increased after the introduction of the Road Safety Act of 1998,

when the use of seatbelts became obligatory for all seats in a vehicle, about 14 % of Slovenian drivers still receive fines for not using seatbelts. Police and preventive actions are therefore also necessary in the future.

Helmet wearing is compulsory for all motorised 2-wheelers.

#### Evolution in seatbelt wearing rate

|                      | 1980             | 1994 | 2000 | 2003 |
|----------------------|------------------|------|------|------|
| Motorway – driver    | NA – Police data | 85%  | 94%  | 96%  |
| Rural roads – driver | NA – Police data | 85%  | 94%  | 95%  |
| Urban areas –driver  | NA – Police data | 78%  | 91%  | 92%  |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Data available within Police databases, otherwise poor availability.

#### *Other factors*

##### Institutional organisation

The General Police Directorate is divided into 11 Police Directorates, operating at regional level. Police Directorates are further sub-divided into Police Stations, executing their tasks at the local level. In the field of traffic safety the Police co-operates with governmental institutions, responsible for implementation of national goals, as well as implementation of preventive activities and control of road traffic. The Police is involved also in implementation of individual projects of the National Road Safety Programme of the Republic of Slovenia. Police actions regarding drink driving and speeding controls are monitored and supported also by the media. The police prepares preventive materials, organises conferences and performs several preventive actions, often in cooperation with the Road Safety Council. Some Police Directorates also organise their own preventive activities (visits to kindergartens, schools, homes for the aged and organisation of traffic safety contests).

##### Infrastructure development

Engineering measures contributing to higher traffic safety include construction and adequate maintenance of Slovenian road network, with special emphasis on the encouraged construction of the motorway network. In 2004, there were 441 km of four-lane motorways and expressways and 130 km of access roads to them in Slovenia. After the accomplishment of the National Motorway Construction Programme, there will be 660 km of motorways and expressways. Extensive motorway construction contributed significantly in assuring traffic safety in Slovenia. Traffic safety proved to be four times higher on the motorways than on other roads. Important and constant improvement of traffic safety is managed on the national road network by the Directorate of the Republic of Slovenia for Roads, and likewise by the local government, through low-cost engineering measures, including construction of roundabouts, arrangement of pedestrian and cyclist facilities, implementation of traffic calming measures and black spot management.

##### Road Safety Council

The Road Safety Council governs prevention and road safety education in Slovenia. In performing its tasks it cooperates with its members, ministries and other government offices, working bodies of the National Assembly, agencies of the local communities, public institutions,

non-governmental organisations and associations as well as with economic operators working in the fields of road safety. The Road Safety Council implements actions and programmes for education of children, youth and other vulnerable road users. The Council took an active part in preparing the National Road Safety Programme that is intended to make road safety in Slovenia equal to that in Europe in the shortest time possible.

Evaluation of results and goals reached is rarely carried out, since the strategies approved often do not have any action plans. They mainly contain facts and guidelines for improvement of the traffic safety situation. It would, however, be necessary to establish a system of control for actual accomplishment of tasks set.

### ***B.3. Major road safety problems today***

1. Speeding
2. Driving under the influence of alcohol
3. Safety of young drivers
4. Safety of pedestrians
5. Safety of cyclists

### ***B.4. Forthcoming road safety initiatives to address these problems***

The National Road Safety Programme of the Republic of Slovenia was issued in 2002. It is a time-limited programme, with the purpose of forming an integral Slovenian traffic safety policy in the time-period until the year 2006 (end of 2005). It determines purposes, goals, projects, measures, holders and other sources for its implementation at the state and local level. The national programme includes long-term goals regarding overall number of traffic fatalities, as well as specific issues such as pedestrians, young drivers, cyclists, speeding and driving under the influence of alcohol. (See detail below in section C on Targets.)

## **C. Road safety targets**

In the previous National Programme,<sup>16</sup> goals were formulated as a step towards the 'Vision 0' and comprise the following:

- Lowering the number of road traffic fatalities by 50% - 210 fatalities at the most by 2005.
- Lowering the number of pedestrian fatalities by 50% - 41 pedestrian fatalities at the most and zero children pedestrian fatalities by 2005.
- Lowering the number of cyclist fatalities by 50% - 17 cyclist fatalities at the most by 2005.
- Lowering the number of young driver and passenger fatalities by 50% - 29 young driver and passenger fatalities at the most by 2005.
- Lowering the number of fatalities due to speeding by 50% - 83 fatalities at the most by 2005.
- Lowering the share of accident causers, driving under the influence of alcohol, to 7%.

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<sup>16</sup> The National Road Safety Plan expired at the end of 2005. A new road safety Plan is currently under preparation. It will probably include a new target for road safety, consistent with the EC target.

The National Programme refers only to the period until the beginning of 2006. Still, Slovenia is bound also to the White Paper on European Transport Policy (White Paper: European Transport Policy for 2010: Time to Decide) and the European Road Safety Action Programme (Halving the Number of Road Accident Victims in the EU by 2010: A Shared Responsibility), adopted by the EU National Programme will therefore represent only the first step to implementation of even more ambitious tasks, set by the EU.

#### General road safety targets

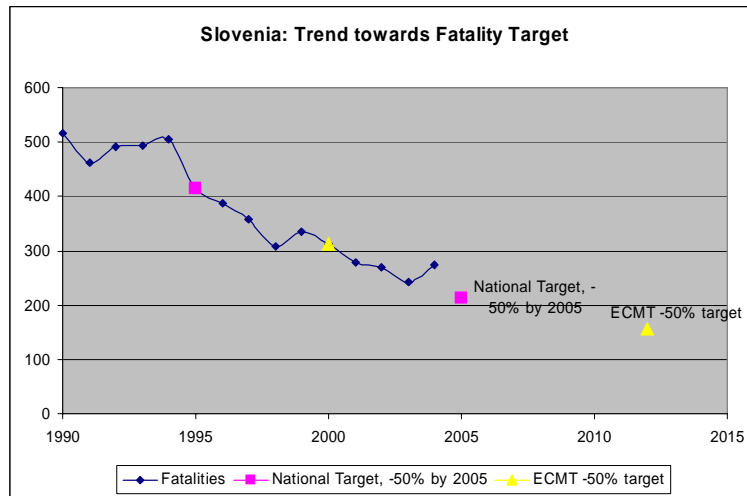
| Type       | Targets<br>(in % or<br>absolute<br>figures) | Base<br>year | Target<br>year | Base year<br>figure | Current<br>results (figure<br>in 2003) | Intermediate<br>targets ? |
|------------|---|--------------|----------------|---------------------|--|---------------------------|
| Fatalities | -50%  | 1995         | 2005           | 415                 | 242                                    | None                      |

#### Specific targets for particular road users

| User specific<br>target groups (e.g.<br>motorcyclists,<br>pedestrian, etc.)                                       | Targets<br>(in % or<br>absolute<br>figures) | Base<br>year | Target<br>year | Base year<br>figure | Current<br>results (figure<br>in 2003) | Intermediate<br>targets ? |
|---|---|--------------|----------------|---------------------|--|---------------------------|
| <b>Young Drivers:</b><br>Decrease in number<br>of young drivers and<br>passengers (18-24)<br>killed in a accident | -50% / not<br>more than<br>29 fatalities    | 1995         | 2005           | 73                  | 51                                     | None                      |
| <b>Pedestrians:</b><br>Decrease in number<br>of pedestrian<br>fatalities  | -50% / not<br>more than<br>41 fatalities    | 1995         | 2005           | 83                  | 38                                     | None                      |
| <b>Cyclists:</b><br>Decrease in number<br>of cyclist fatalities   | -50% / not<br>more than<br>17 fatalities    | 1995         | 2005           | 35                  | 14                                     | None                      |

#### Targets related to accident causation factors and road users protection

|   | Targets<br>(in % or absolute<br>figures)  | Base<br>year | Target<br>year | Base year<br>figure | Current<br>results<br>(figure in<br>2003) | Intermediate<br>targets ? |
|---|---|--------------|----------------|---------------------|---|---------------------------|
| <b>Speeding:</b><br>Decrease in<br>number of fatalities<br>in accidents caused<br>by excessive speed      | -50% / not more than<br>83 fatalities   | 1995         | 2005           | 166                 | 102                                       | None                      |
| <b>Drink driving:</b><br>Decrease in<br>number of fatalities<br>in accidents caused<br>by drunken drivers | -decrease the<br>percentage of<br>accident causers with<br>BAC over limit to 7% | 1995         | 2005           | 12.7%               | 9.1%                                      | None                      |



## D. Success story cards

### Children safety

In 1972 the Slovene Road Safety Council was established. The main mission of the Slovene Road Safety Council is to implement actions and programmes for the education of children and youth on road safety in schools and in cooperation with other agencies.

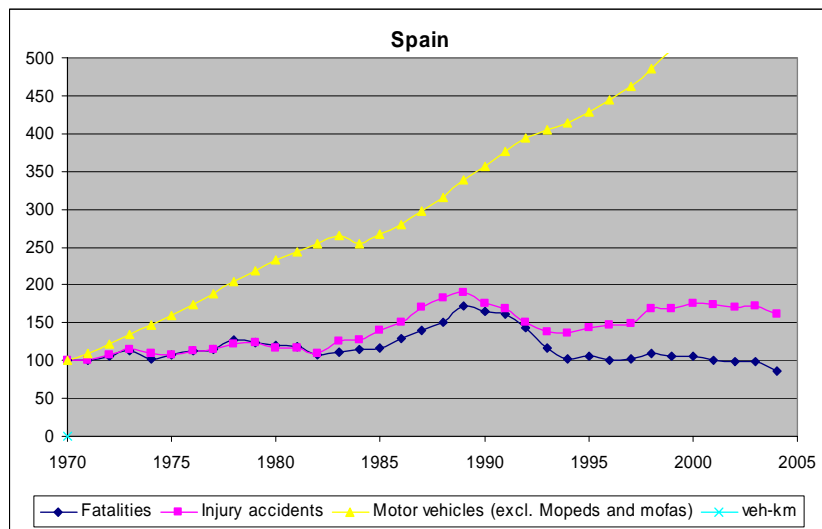
As a result of constant work in the field of children safety number of fatalities old from 0 to 14 years significantly decreased since 1970, from 42 (1970) to 3 (2003).

## SPAIN

### A. General trend in road safety

#### Key road safety data for 2004

- 4 741 road fatalities (5 399 in 2003)
- 94 009 injury accidents (99 987 in 2003)
- 11.0 killed per 100 000 inhabitants
- Around 500 cars (passenger cars and light duty vehicles) per 1 000 inhabitants





## **B. Current state of affaires and national diagnosis**

### ***B.1. Recent (after 2002) road safety initiatives***

#### ***B.1.1. Strategies to decrease risk of crashes:***

In Spain a strategic Project of Road Safety, which embraces a set of measures to apply, is being prepared in order to achieve the ends stated by the Government (-40% in the number of dead in 2008) and by the same European Union (-50% before 2010).

These measures are mainly focused on:

#### ***Introduction of license on points***

With that it is intended to replace the present-day conception of driving license with a social reputation which is disappearing through points deduction by committing serious or very serious offences related to road safety and whose complete loss means the loss of one's license, which requires a new training process to recover it.

The results in those countries where it has been applied guarantee its effects against relapse, sensitize the public opinion about the effects of offender behaviours and introduce the continuous specific training to recover the points.

#### ***Creation of the Road Safety National Observatory***

The entry and analysis of all the variables with regard to road safety is essential to taking decisions and to the correct direction of the different measures and actions to take.

With that it is intended to have a reference centre for data collection and indicators about the evolution of road accidents in Spain and its comparison to the countries in the European Union. It intends to coordinate the researches that are carried out in close relation to the different universities, institutes and foundations in the country related to road safety.

#### ***Powering of the Council for Traffic and Road Traffic Safety***

With that it is intended to check and update the Council for Traffic to power its function as a permanent analysis and debate forum where all those actors whose role is outstanding to the improvement in road safety take part: the State Administration, the Autonomous Communities and the associations and entities related to mobility.

That's why road safety does not depend on just one actor, but it requires the cooperation and consent of everybody to manage a new social valuation.

#### ***Traffic Policemen significant increase***

It is intended to manage an increase in 3 000 traffic policemen in order to reach a staff of 11 000 effective to be able to carry out a surveillance and control work provided to the existing road net. That will guarantee a larger presence, better control of offences and increase of checks in the main behaviours against road safety: mainly speed, alcohol level and safety belt and helmet wearing.

Increase in mobility has not been accompanied by a similar increase in the number of police effective when its sole presence constitutes an essential element of control and dissuasion of improper behaviours.

### ***Introduction of surveillance technological devices***

Introduction of 500 fixed radars for speed automatic control which, complemented with the present 300 mobile radars, will enable to have 800 equipments of speed control in our roads. This is in order to finish with excessive speeds and reduce the average traffic speeds as an important risky factor.

### ***New information campaigns by risky groups***

Design and carrying out of special and different information and advertising campaigns to each risky group: young and leisure, parents with children, professional drivers, motorcyclists, older persons, etc.

### ***New model of drivers training***

It is intended to check the present training model by favouring a bigger presence of contents related to road safety and the behaviours at exam programmes to obtain the driving license. Because having knowledge of the traffic rules is not enough. You must become aware of the risks and be prepared to face the diversity of situations, which is what the contents update requires making them suitable to the new needs.

### ***Road Safety Municipal Plans***

It is intended to make a guide or manual to the carrying out of road safety municipal plans, as 52% of the accidents with casualties take place in the urban field with some differentiated characteristics that recommend a different treatment and a specific attention.

### ***Regional strategies?***

Strategies are stated at first at national level regardless the Autonomous Communities make their own action plans with the purpose to resolve their own road safety problems in their territories.

### ***Ends description:***

There have only been stated general reduction ends at first about the number of dead. At the same time as the Strategic Plan is being developed, the possibility to determine specific reduction ends to determined users groups or determined specific ends with regard to accidents reasons will be studied.

|  |   |
|--|---|
| Improved speed compliance / enforcement  | <ul style="list-style-type: none"> <li>• Creation of a speed camera plan to reduce speed as a risk factor</li> </ul>  |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>• There is no intention of reducing existing speed limits.</li> </ul>  |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs                                     | <ul style="list-style-type: none"> <li>• Existing alcohol limits are kept up and alcohol tests are increased.</li> <li>• Review of the possibility of onsite detection of drivers under the influence of drugs</li> </ul> |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.) | <ul style="list-style-type: none"> <li>• Budget increase for the construction of new roads and improvement of the existing ones</li> </ul>  |
| Enforcement of other road rules  | <ul style="list-style-type: none"> <li>• Increase of the number of agents for traffic surveillance and control.</li> <li>• Implementation of the Penalty point driving permit</li> </ul>                                  |
| Graduated Licensing for novice drivers   |   |
| Education and information programmes   | <ul style="list-style-type: none"> <li>• Specific campaigns targeted to different risk groups</li> </ul>  |
| Regulation on vehicle inspection   | <ul style="list-style-type: none"> <li>• The existing regulation for technical vehicle inspection applied to control vehicle inspections</li> </ul>   |
| Regulation on active vehicle safety equipment  |   |

*B.1.2. Strategies to decrease risk of injury:*

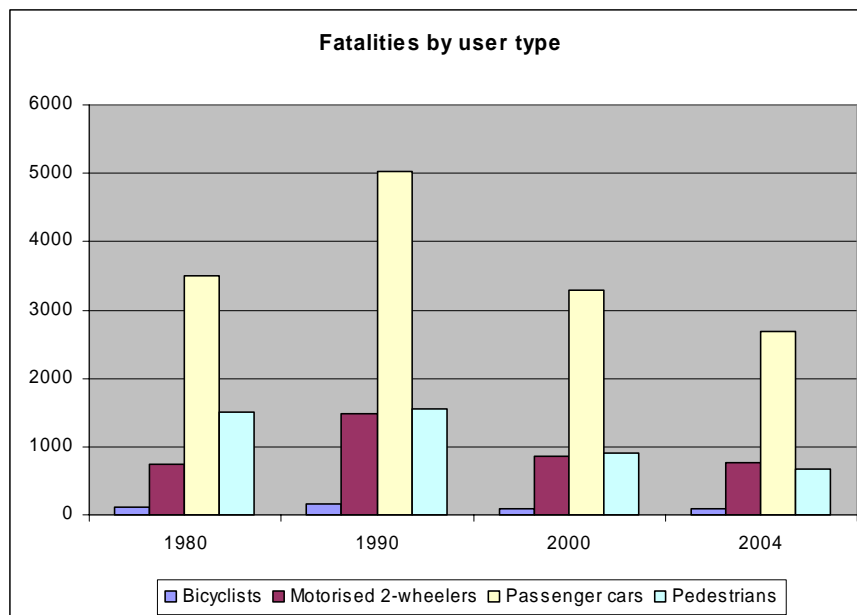
|  |   |
|--|---|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>• Increase surveillance of seatbelt wearing and helmet use through special campaigns. Both issues imply deduction of points according to the Penalty point system</li> </ul> |
| Emergency services   | <ul style="list-style-type: none"> <li>• Among the objectives of the Road safety plans are the improvement of performance of emergency calls.</li> </ul>  |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway |   |

## ***B.2. National Diagnosis in key safety areas***

### *Road users*

Per users' type bicycles and pedestrians are the ones which have shown a major decreased along these years with reductions of 36% and 48% respectively. Vehicle passengers have gone down by 8%. Two-wheeled vehicle users have shown an increase of 1%.

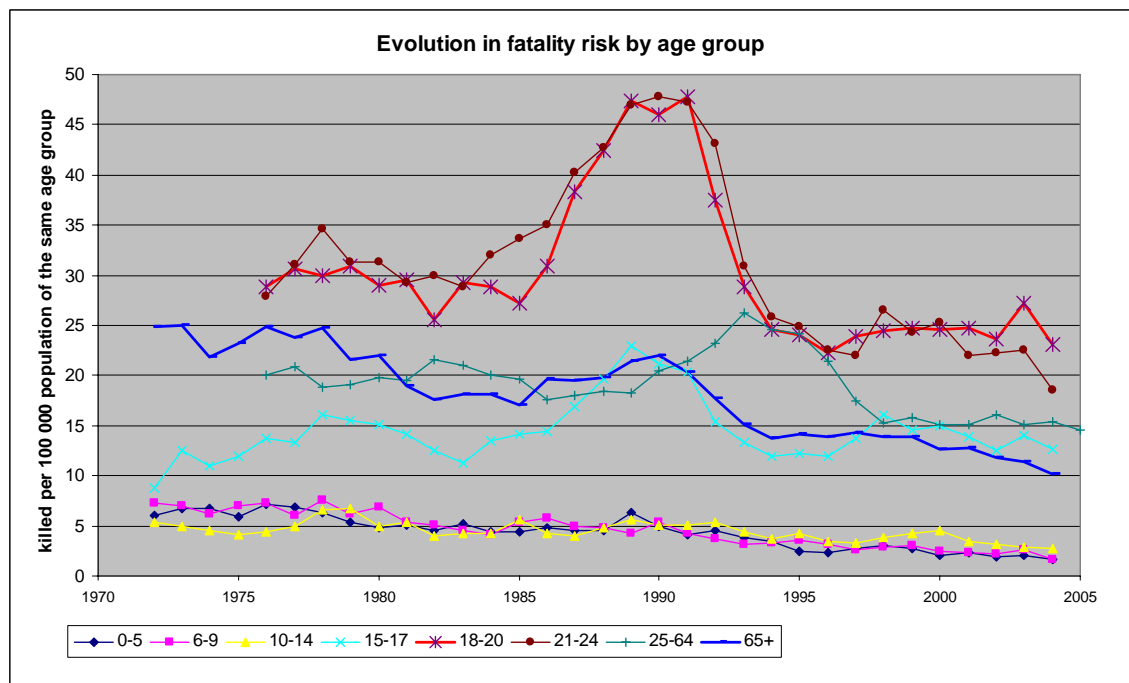
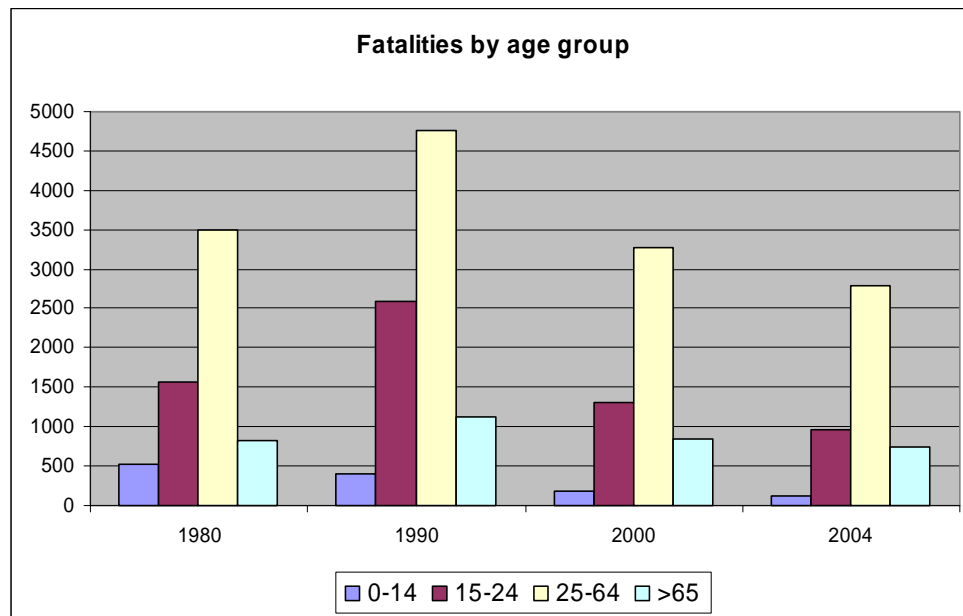
**Evolution in fatalities by road user type**



### *Age groups*

There has been a decrease in fatalities in all groups, being especially relevant for the younger people group and more moderate in the case of the older people group.

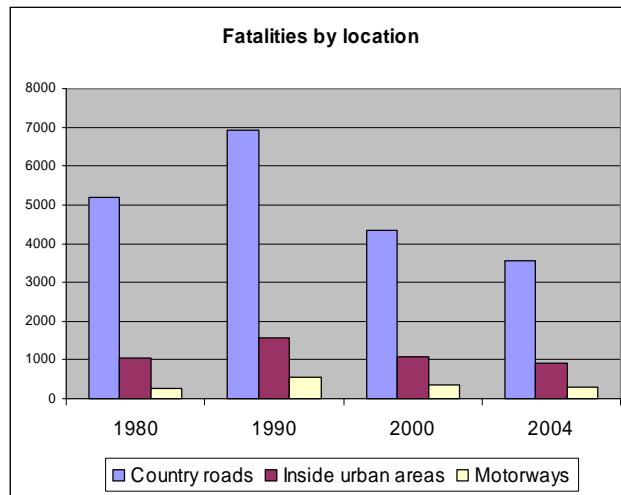
### Evolution in fatalities by age group



### Type of road / location

Rural roads are the scene of 75-80% of fatal accidents. 16-20% of fatal accidents occur on urban roads and 6-7% on motorways.

### Evolution in fatalities by type of road



### *Speed*

|  | 1980           | 1990 | 2000 | 2004 |
|--|----------------|------|------|------|
| Nº of speeding citations                             | No information |      |      |      |
| % of fatal crashes where speed is a causation factor |                |      |      |      |
| % of drivers over the posted speed limit in :        |                |      |      |      |
| - urban areas<br>- rural roads<br>- motorways        |                |      |      |      |

### *Drink driving*

Spain has the following maximum authorised blood alcohol content:

- 0.5 g/l for drivers in general.
- 0.3 g/l for novice drivers and professional drivers

### *Seatbelt and helmet wearing*

Seatbelt wearing is compulsory for both front and rear seats.

#### **Evolution in seatbelt wearing rate**

|                      | 1980 | 1994 | 2000 | 2003 |
|----------------------|------|------|------|------|
| <i>General</i>       |      |      |      |      |
| <i>Rear Seat</i>     |      |      |      |      |
| <i>Front Seats</i>   |      |      |      |      |
| Motorway – driver    |      |      |      |      |
| Rural roads – driver |      |      |      |      |
| Urban areas –driver  |      |      |      |      |

Helmet wearing is compulsory for all motorised two –wheelers. It is also compulsory for cyclists (except in built-up areas).

### *Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Taking into account that driver's distraction is one of the main risk factors, specific campaigns of surveillance and control on mobile phone use while driving were carried out. Research still goes on the possibility of Police action for controlling drivers' drug consumption.

### *Other factors*

**Enforcement:** efforts to increase the number of agents controlling offending drivers.

Budgets for road construction, conditioning and improvement are being increased.

Education is still considered as an action within the National Road Safety plans.

Information campaigns will be focused on the main problems according to different risk factors and will be specifically performed according to different age groups.

### ***B.3. Major road safety problems today***

1. Speed as a risk factor
2. Alcohol for all drivers
3. Rule compliance – restriction to offenders.
4. Action on use of drugs by drivers
5. Seatbelt use by all passengers and in all roads.

### ***B.4. Forthcoming road safety initiatives to address these problems***

1. Reducing speed as a risk factor: there is already working a plan of speed cameras which automatically control drivers' speed.
2. Reducing alcohol as risk factor: the number of alcohol tests will be increased so that drivers will sense the possibility of being caught by alcohol tests.
3. The Penalty point system is being implemented aiming at reducing commission of infractions while driving and at the same it allows to act against reoffenders.
4. Specific information campaigns will be designed targeted to the different risk groups with the aim of dealing in a special way different risk factors according to the various age groups
5. Actions intending to introduce procedures which will allow on site detection of drivers under the influence of drugs will be intensified.

## **C. Road safety targets**

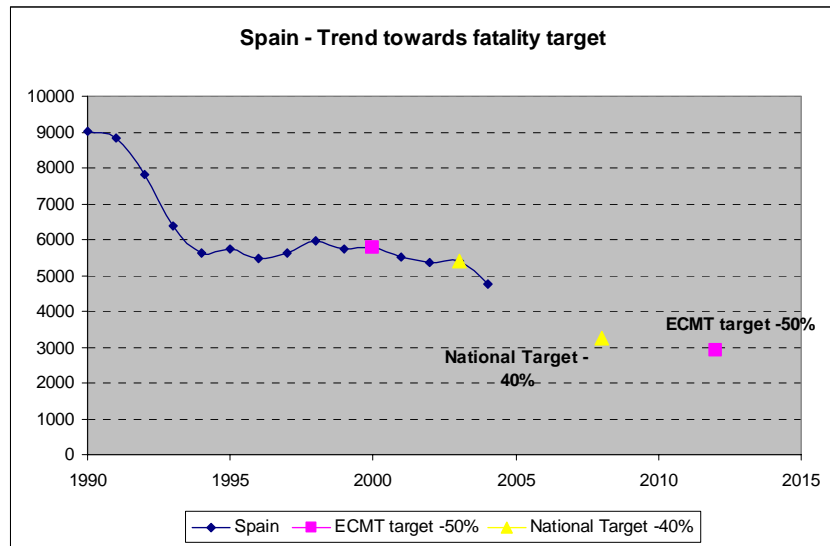
Spain has a Safety Road Strategic Plan 2005-2008 with a main target to decrease road fatalities by 40% by 2008 compared to 2004 level. Spain also agreed to the EU target to reduce fatalities by 50% by 2010.

This target was only a political target, to contribute to improve the road safety situation, based on the EU's example.

The Plan also has another quantified strategic targets and 180 measures which all Ministries with safety road competencies will have to start.

Spain is currently preparing a strategic project on road safety, which will include a set of measures in order to achieve the objectives set by the Government :



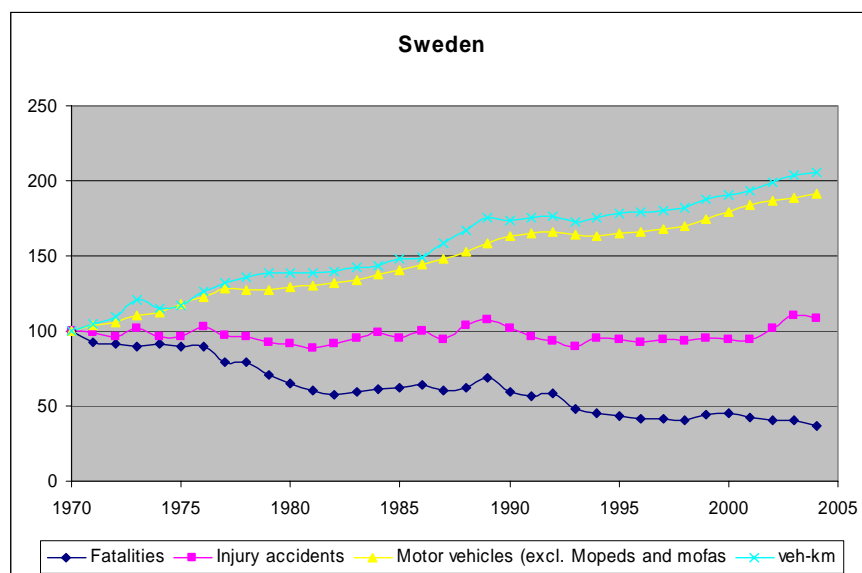


## SWEDEN

### A. General trend in road safety

#### Key road safety data for 2004

- 480 road fatalities (529 in 2003)
- 18 029 injury accidents (18 365 in 2003)
- 5.4 killed per 100 000 inhabitants
- Around 500 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affaires and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |  |
|--|--|
| Improved speed compliance/enforcement  | <ul style="list-style-type: none"> <li>• <b>Automatic Speed Control:</b> The Automatic Speed Control system using speed cameras has proven to have very positive effects on road safety and will therefore be continued.</li> <li>• A committee of inquiry will be appointed to examine the possibility of extending the use of this system and making it permanent, and will present proposals for financing.</li> </ul>  |
| Reduced speed limits   | <ul style="list-style-type: none"> <li>• <b>New system for speed limits:</b> Speed limits should be based on Vision Zero. For this reason, the National Road Administration has been given the task of developing a strategy for gradually adjusting speed limits based on Vision Zero as well as the demands for accessibility, sound environment and positive regional development.</li> </ul>   |
| New Regulation and enforcement related to :<br>Drink driving, driving under the influence of drugs | <ul style="list-style-type: none"> <li>• <b>Alcolocks required in all new cars:</b> An inquiry has been appointed to examine the possibility of introducing a requirement that all new cars in Sweden be equipped with an alcolock no later than 2012. The inquiry will also consider measures that can be taken to increase the acceptance and use of alcolocks system before such a requirement is introduced. The steps to be examined prior to a general introduction include: <ul style="list-style-type: none"> <li>– how to stimulate technological development,</li> <li>– how to extend the pilot programme involving conditional driving licence suspension,</li> <li>– the possibility of an earlier introduction of the alcolock requirement for certain categories of vehicles, and</li> <li>– the possibility of using alcolocks in combination with rehabilitation for people with alcohol-related problems.</li> </ul> </li> <li>• Today, there is an increasing voluntary use of alcolock in taxi, buses and heavy vehicles. Under certain conditions alcolock could be installed as an alternative to a withdrawal of the driver's licence.</li> </ul> |

|   |   |
|---|---|
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..) | <ul style="list-style-type: none"> <li>• <b>New road design:</b> Vision Zero has created a need to develop new solutions to improve road safety and thereby also a demand for a wide range of development and pilot projects. New measures and methods for designing roads have been developed and introduced, for example, median guardrails.</li> <li>• <b>SEK 4.9 billion for physical road safety measures:</b> Efforts to reduce the risk and consequences of head-on, single vehicle and overtaking accidents on country roads will continue. Therefore, SEK 4.9 billion, for the period 2004 – 2015, will be earmarked for physical road safety measures such as roads with median guardrails, safer intersections and road shoulders.</li> </ul>  |
| Enforcement of other road rules   | <ul style="list-style-type: none"> <li>• <b>Fines for road traffic offences:</b> A committee of inquiry will be appointed to review the level of fines for road traffic offences.</li> </ul>  |
| Graduated Licensing for novice drivers  |   |
| Education and information programmes  | <ul style="list-style-type: none"> <li>• <b>A more efficient market for safety solutions</b> to provide consumers with the possibility to choose products that improve safety. Consumer information programmes, such as the European crashworthiness evaluations carried out by Euro NCAP, is one such example.</li> <li>• <b>Information initiatives to reduce driver distractions such as the use of mobile phones:</b> Information initiatives to highlight the increased risks associated with driver distractions will be intensified. The sensible use of mobile phones while driving, combined with advanced technology for safe use, should help minimise safety risks.</li> <li>• <b>Road safety education in schools:</b> Road safety education in schools is to provide thorough knowledge about traffic and develop positive attitudes to safe behaviour in traffic. Knowledge about traffic and attitudes towards risk behaviour in traffic must be built up over a long period of time. The National Agency for Education, in collaboration with the National Road Administration, is conducting a survey of the current status of road safety education in compulsory schools in order to present proposals for how it may be further developed</li> </ul> |
| Regulation on vehicle inspection  | <ul style="list-style-type: none"> <li>•</li> </ul>   |

|   |   |
|---|---|
| Regulation on active vehicle safety equipment | <ul style="list-style-type: none"> <li>• <b>A market for car equipment that contributes to improved road safety:</b> The public sector plays an important role when it comes to creating a market for Intelligent Speed Adaptation (ISA), alcolocks and seat belt reminders. Measures for creating a market of this kind include quality assurance for transport and consumer information. ISA is a very promising method for helping drivers keep to the speed limit. Sweden will promote the inclusion of ISA in the consumer information programme, Euro NCAP. Retrofitting cars with seat belt reminder systems is important since seat belts are a car's most important piece of safety equipment. Swedish Road Administration is working to facilitate retrofitting in older vehicles.</li> </ul>   |
| Others  | <ul style="list-style-type: none"> <li>• <b>Co-operation:</b> In August 2002 the Swedish Government took the initiative for a process in which traffic stakeholders would be inspired and encouraged to better coordinate their activities for safer use of the road transport system – The National Coalition for Road Safety. A number of actors have made far-reaching pledges to improve road safety.</li> <li>• <b>New quality system:</b> provides new information about road accidents and what can be done to prevent them. The National Road Administration conducts in-depth studies of all fatal accidents and examines whether they could have been prevented. After each in-depth study, a declaration of intent is presented outlining the measures to be taken as a result of the accident.</li> <li>• <b>Continued road safety initiatives in the municipalities:</b> Municipalities should continue their successful road safety initiatives with further improvements to urban traffic environments. Examples of measures that have been effective in urban areas is roundabouts and separated bicycle lanes. The responsibility they have for their citizens is extensive, and includes their role as employer and transport purchaser. This should serve as a guide for municipalities' road safety initiatives.</li> <li>• <b>Initiatives by government agencies and companies:</b> Government agencies and companies, in line with the expectations of society, should develop their own initiatives that take into consideration the requirements of the environment and road safety. This applies to both the procurement process and the provision of transport services. The Government will continue to take initiatives aimed at accelerating these efforts.</li> </ul> |

*B.1.2. Strategies to decrease risk of injury:*

|  |  |
|--|--|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | <ul style="list-style-type: none"> <li>• <b>Bicycle helmet requirement for children under the age of 15:</b> The Government has decided that from 1 January 2005 it is obligatory for children under the age of 15 to wear a bicycle helmet when they ride a bicycle or are a passenger on a bicycle. The helmet requirement means children will be cycling under safer conditions.</li> </ul> |
| Emergency services   | <ul style="list-style-type: none"> <li>•</li> </ul>  |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway<br>Others | <ul style="list-style-type: none"> <li>• See above.</li> <li>• <b>Crash protection devices for heavy vehicles:</b> Sweden must be proactive in the EU and globally when it comes to the development of crash protection devices for all categories of heavy vehicles.</li> </ul>   |

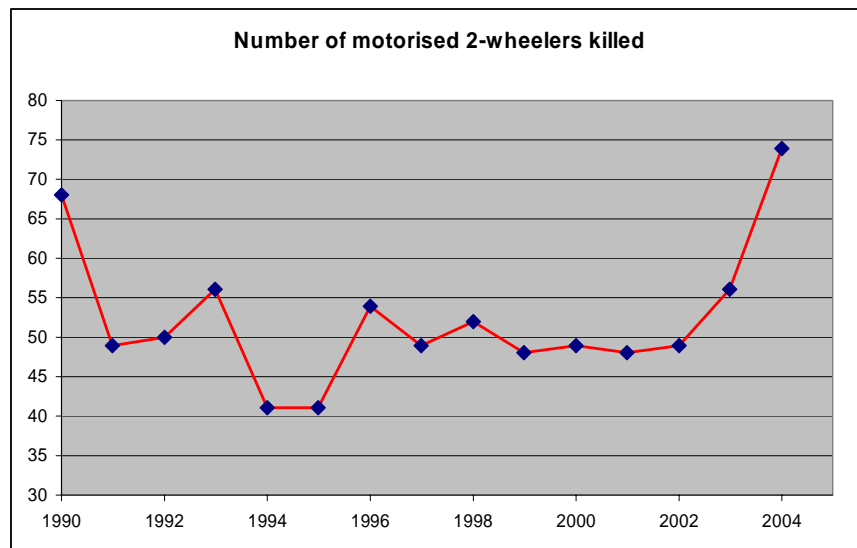
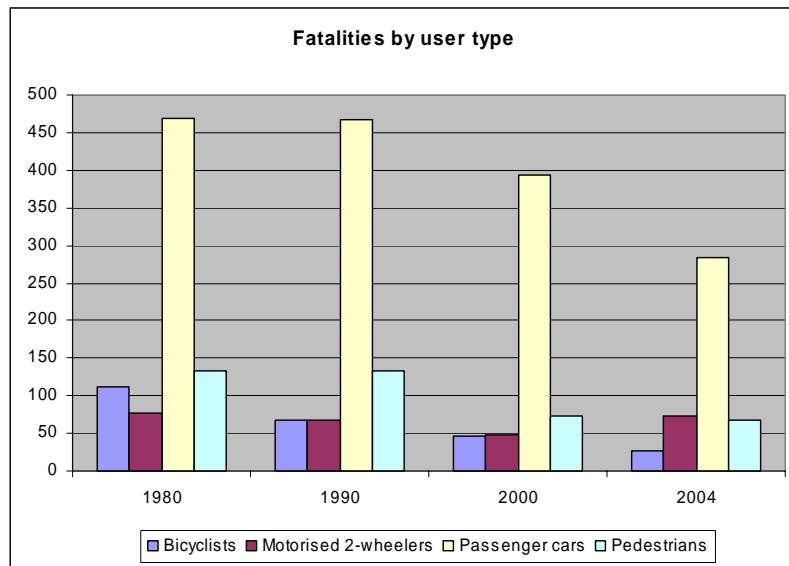
More information is available at: <http://www.sweden.gov.se/sb/d/574/a/30266>.

*B.2. National Diagnosis in key safety areas*

*Road users*

The traffic safety situation has improved during the last twenty years especially for bicyclists and pedestrians in urban areas. It has also improved for occupants in passenger cars but to a relatively lesser extent. There are small changes over the years in the traffic safety situation for motorised 2-wheelers and it is feared that the number of fatalities in this group will increase due to what is called *the EU-mopeds* i.e. mopeds that are allowed to run as fast as 45km/h. The total number of killed on motorised 2-wheelers was 74 in 2004.

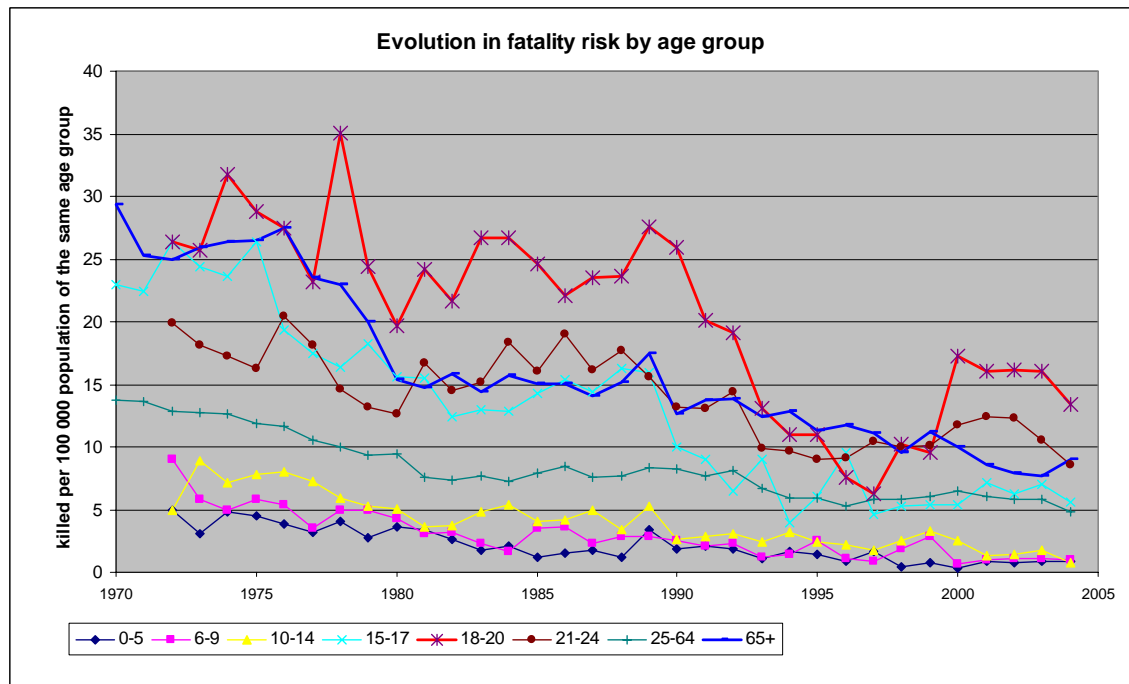
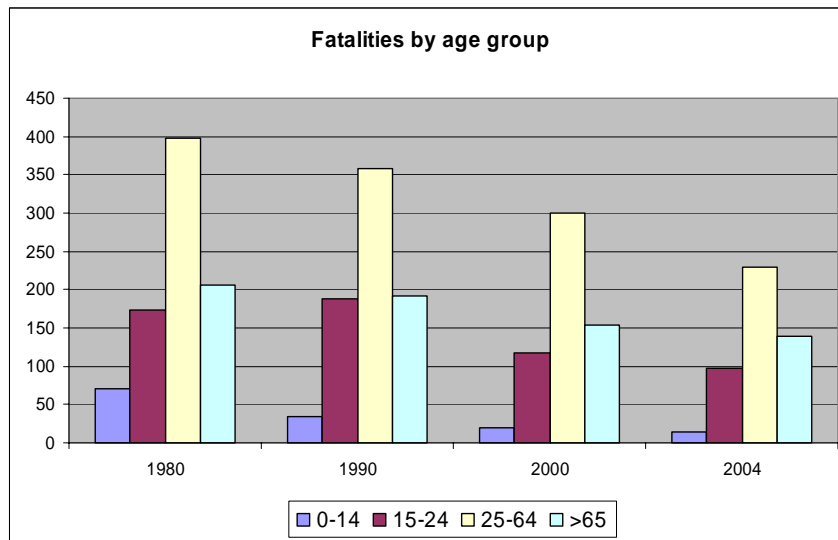
### Evolution in fatalities by road user type



### Age groups

There is a decrease in fatalities for all age groups, especial for persons younger than 15, but there is probably an increase in the risk of being killed for young drivers as the proportion of youngsters under the age of 25 holding a drivers licence has decreased dramatically during the last 20 years

### Evolution in fatalities by age group

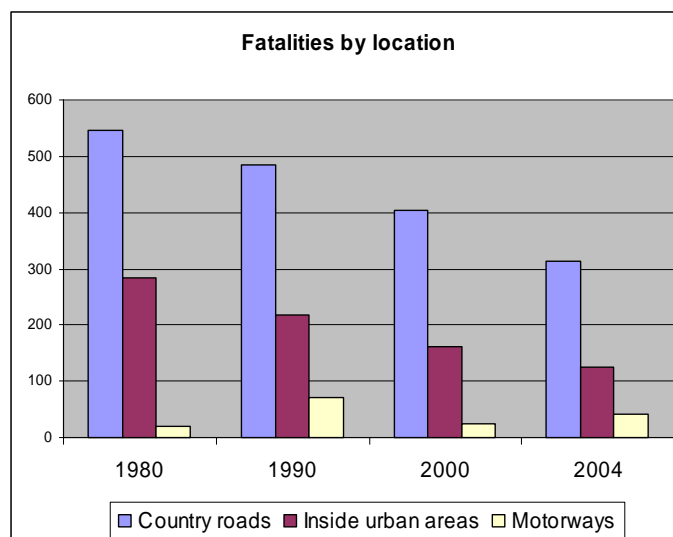


### Type of road / location

The relative safety improvement is greater in urban areas than on country roads. This is mainly due to the improvement for pedestrians and bicyclists by the construction of mini roundabouts, bicycle lanes and so on.



### Evolution in fatalities by type of road



## Speed

The speed was by definition too high if an accident happened. It is probably more constructive to concentrate on the factors that could explain speeding. Speeding is a major problem in Swedish road traffic and the percentage of drivers exceeding the speed limits is increasing over the years.

|   | 1980 | 1990                                     | 2000                                     | 2003                                  |
|---|------|--|--|---------------------------------------|
| <b>Nb of speeding citations</b>                             |      | 136 000                                  | 143 000                                  | 153 000 (0.027 per licensed drivers)  |
| <b>% of fatal crashes where speed is a causation factor</b> |      |  |  |                                       |
| <b>% of drivers over the posted speed limit in :</b>        |      |  |  |                                       |
| - urban areas   |      | 49,5% on urban roads                     | 48,5% on urban roads                     | Motorway ; 68,0% (+/- 3,5)            |
| - rural roads   |      | 53,0% on rural roads inclusive motorways | 55,0% on rural roads inclusive motorways | Total main highways 58,7% (+/- 2,4%), |
| - motorways   |      |  |  |                                       |

## Drink driving

In Sweden, the legal BAC limit is 0.2 g/l.

In 1980, 14% of the accidents reported by the police involved drivers above the legal limit, in 1990, 13% and in 2000, 11%. Official statistics also indicate that in 1990, 2000 and 2003 respectively, 7.8%, 7.0% and 8.3% of drivers involved in an accident were suspected of being under the influence of alcohol.

These figures are based on official statistics and it is likely that the real figures are much higher.

An increase in alcohol-related accidents could be expected as the price of alcohol is going down and alcohol consumption seems to be on the increase.

## Seatbelt and helmet wearing

VTI has made repeated observations on seatbelt wearing in traffic on arterial roads in urban areas annually since 1983, which are reported in the second table below.

Even though the seatbelt wearing rate is very high in Sweden; the non-wearing of seatbelt is still a serious problem; the risk of being killed or seriously injured is so much higher for unbelted car occupants compared to those who do wear seatbelts.

**Evolution in seatbelt wearing rate**

|                      | 2000 | 2003 |
|----------------------|------|------|
| Motorway – driver    | 98%  | 98%  |
| Rural roads – driver | 89%  | 89%  |
| Urban areas –driver  | 87%  | 88%  |

Source: IRTAD

**Evolution in seatbelt wearing rate in urban and arterial roads:**

|                            | 1983  | 1990  | 2000  | 2003  |
|----------------------------|-------|-------|-------|-------|
| <b>General</b>             | 83.9% | 87.6% | 91.3% | 90.1% |
| <b>Front Seats</b>         | 85.8% | 91.1% | 92.3% | 92.7% |
| <b>Rear seat, adults</b>   | 7.5%  | 64.6% | 72.3% | 73.6% |
| <b>Rear seat, children</b> | 17.3% | 78.5% | 89.3% | 90.1% |

Source: VTI

Helmet is compulsory for riders of all motorised two-wheelers. Helmet wearing is also compulsory for young cyclists under the age of 15 since 1 January 2005.

**Estimation of helmet wearing rate in 2004**

|  |             |
|--|-------------|
| Motorised two-wheelers - (helmet wearing compulsory)                     | Almost 100% |
| Bicyclists – adult (helmet not compulsory)                               | 15-20%      |
| Bicyclists - children between 13 and 15 (helmet wearing is compulsory)   | 20%         |
| Bicyclists – children under the age of 13 (helmet wearing is compulsory) | 75%         |

*Other violations*

It should be noted that using a mobile phone while driving is not a violation in Sweden.

*Other factors*

Given the much higher accident risk for young drivers, education must be a key activity of any road safety programme, and driver education must be reformed.

**B.3. Major road safety problems today**

1. Speeding
2. Drinking and driving
3. Fatigue
4. Non-wearing of seatbelts
5. Young novice drivers
6. Head on collisions on rural roads
7. Bicycle helmets for all age groups

#### **B.4. Forthcoming road safety initiatives to address these problems**

**Speeding:** *Speed cameras* are going to be used much more frequently in the future, and to such an extent that the probability of being checked is very high.

**Drink Driving:** *Alcolock* could become compulsory. This means the driver has to prove, through taking a breath test, that he/she is not drunk before starting the vehicle. The device is already quite common in public vehicles such as school buses and company cars.

**Fatigue:** There is intense research going on regarding fatigue and driving, but no reliable measure is currently within sight.

**Non-wearing of seatbelt:** More vehicles are now equipped with *seatbelt remainders*.

Within a couple of years, a *new speed limit system* is likely to be introduced.

#### **C. Road safety targets**

A Swedish Parliament decision from October 1997 established “Vision Zero” as the long-term objective for road safety within the road transport system. This Vision states that nobody should be killed or seriously injured as a result of a traffic accident, and that the design and functioning of the road transport system should be adapted to the requirements resulting from this ruling.

An intermediate objective was set that the number of road fatalities should be reduced by 50 % to less than 270 by the end of 2007 compared to the base-line year 1996.

**Road Safety Target (general target)**

| Type       | Targets<br>(in % or absolute figures)  | Base<br>year | Target<br>year | Base year<br>figure | Current results<br>in 2004 | Intermediate<br>targets ? |
|------------|--|--------------|----------------|---------------------|----------------------------|---------------------------|
| Fatalities | -50%<br>no more than 270<br>fatalities | 1996         | 2007           | 537                 | 480                        |                           |

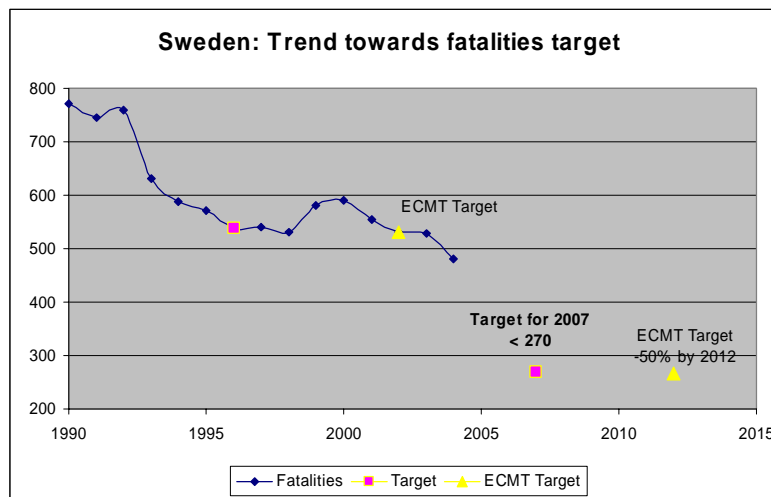
### **Road safety sub target**

To provide an idea of what is required from society, road users and other parties, the Swedish Road Administration has reported the most important condition states within road safety and the changes necessary to achieve the target for 2007.

| <b>Condition state</b>   | <b>State in 2002</b> | <b>Target level 2007</b> | <b>Consequences of target level in 2007, fatalities per year</b> |
|--|----------------------|--------------------------|--|
| <i>Proportion of traffic volume on busy state roads that are protected from serious head-on and single accidents</i>                         | 10 %                 | 100 %                    | - 90   |
| <i>Proportion of traffic volume on state roads with little traffic that are protected from serious single accidents</i>                      | 5 %                  | 100 %                    | - 45   |
| <i>Travel speed on the state road network, excluding roads that are protected from serious head-on and single accidents</i>                  | Footnote 1           | - 6km/h                  | - 60   |
| <i>Travel speed on the municipal road network</i>  | Footnote 2           | - 4 km/h                 | - 40   |
| <i>Proportion of traffic volume with unprotected road users in safe urban traffic</i>  | Footnote 3           |                          | - 35   |
| <i>Proportion of drivers influence of alcohol involved in fatal accidents</i>  | 28 %                 | 17 %                     | - 20   |
| <i>Proportion wearing seat belt in private cars</i>  | 91 %                 | 96 %                     | - 45   |
| <i>Proportion cyclists using cycle helmets</i>   | 17 %                 | 80 %                     | - 15   |
| <i>Proportion of traffic volume with crashworthy cars with at least four stars in EuroNCAP ratings</i>                                       | 17 %                 | 50 %                     | - 40   |
| <i>Improved rescue assistance, medical care and rehabilitation</i>   | Footnote 4           |                          | - 10   |
|  |                      |                          | <i>Total - 400</i>   |
| <i>To compensate for double-counting the decrease has been reduced by a quarter, bringing the total reduction by the target year 2007 to</i> |                      |                          | - 300  |

1. Average speed limit violations for all traffic on state roads, excluding motorways, is about 5 km/h ("Hastigheter och tidsluckor 2002. Vägverkets publikation 2003:7"). A travel speed reduction of 6 km/h would more than eliminate current speed limit violations on the state road network.
2. An average speed limit violation in urban areas is 3.2 km/h. Compare this with the above.
3. The maximum road safety potential is 100 unprotected road user lives per year. No measurements are available for the proportion of traffic volume with unprotected road users in safe urban traffic. There is therefore no calculation for the current situation. It has, however, been seen as necessary to save 35 lives through municipal infrastructure measures.
4. Reliable measurements are not available for an assessment of the current situation. About two thirds of people that die as a result of traffic injuries do so at the scene of the accident, and one third in hospital. Very few die while being transported in an ambulance. Improved rescue assistance, medical care and rehabilitation is seen as necessary in order to save a further ten lives.

## Current trend towards targets



## D. Success story cards

### Success story from Sweden

#### **2+1 lane roads**

The most effective traffic safety measure that has been introduced during the last years is what is called 2+1 lane roads. The centre lane is alternately used by the traffic in the opposite directions. And the two traffic flows are always separated by a barrier. This design seems to be as safe as motorways but the costs are much lower.

### Less recommended story from Sweden

#### **EU - mopeds**

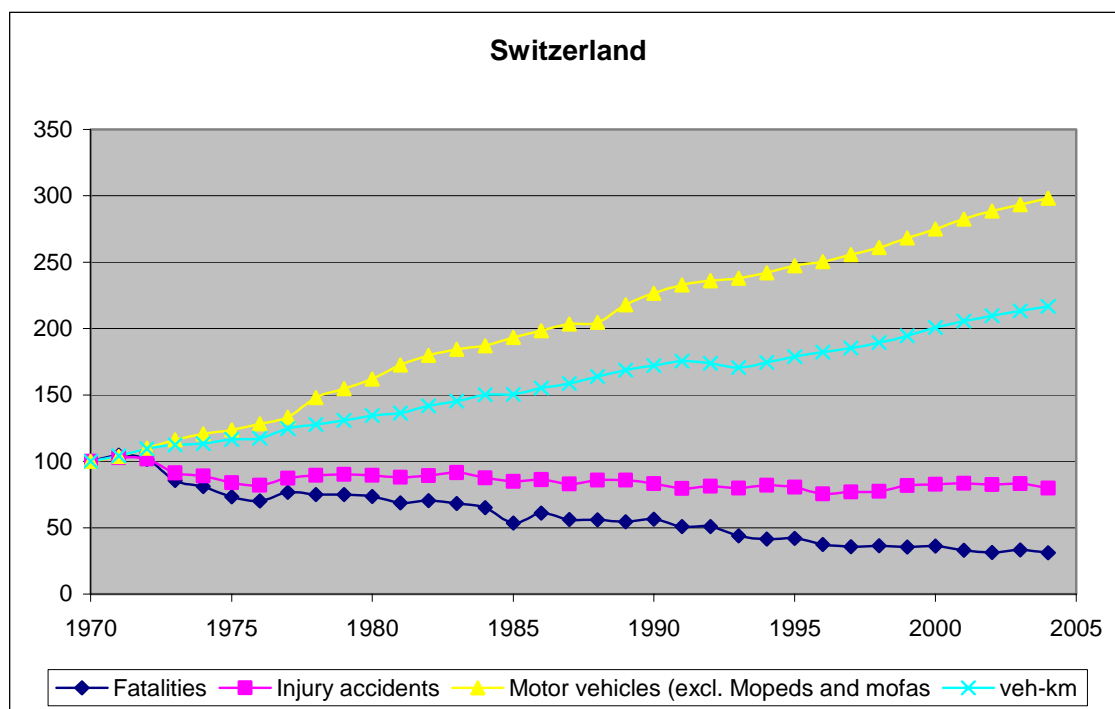
It has become allowed to use so called EU-mopeds – that is mopeds that has a legal top speed of 45 km/h compared to 30 km/h for the traditional type of moped – without having a drivers licence for driving motorbikes. The old type of moped has become less and less popular among young people because of its low top speed and the safety problem with mopeds has decreased since the 70's. But the new type of moped is much more attractive and can easily be trimmed in such a way that you can drive much faster than 45 km/h. There is now in Sweden an increasing number of moped drivers being killed.

## SWITZERLAND

### A. General trend in road safety

#### Key road safety data for 2004

- 510 road fatalities (546 in 2003)
- 22 891 injury accidents (23 840 in 2003)
- 6.9 killed per 100 000 inhabitants
- Around 520 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



Since the peak at the beginning of the 1970s, with 1 773 fatalities and 18 785 seriously injured, Switzerland has made significant improvement in road safety. Despite road traffic volume having more than doubled, the number of fatalities and seriously injured has decreased by two thirds.

In recent years, however, the number of casualties has remained stable, although at a level which is still too high (slightly less than 600 killed).

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>• Since 2002: reinforcement of trucks controls (working hours, rest time, loads, etc.).</li> <li>• Digitalisation of speed control</li> </ul>  |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>• No</li> </ul>  |
| <i>New Regulation and enforcement related to: Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>• 1.1.05 : for drivers: maximum permissible BAC is reduced from 0,8‰ to 0,5‰. The police is now allowed to proceed with test without signs that the driver may be intoxicated.</li> <li>• There is a zero tolerance, regarding maximum value drug content.</li> </ul>                                  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>• Continuous activity</li> </ul>   |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>• Continuous activities of the Canton police</li> </ul>  |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>• 1.12.05 : Licensing in two phases. Drivers who succeed the driving test have a provisional licence for a period of 3 years. To obtain a permanent licence, they have to follow a complementary training. In addition, during the provisional period, a more severe sanction system apply.</li> </ul> |
| <i>Education and information programmes</i>   | <ul style="list-style-type: none"> <li>• Continuous activity</li> </ul>   |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>• 1.6.04 : Frequency for truck inspection is reduced to one year.</li> </ul>   |
| <i>Regulation on active vehicle safety equipment</i>  | <ul style="list-style-type: none"> <li>• Speed limiter is compulsory for trucks (&gt; 3.5 t) and coaches (more than 9 seats), registered for the first time after 1 January 2005.</li> <li>• All trucks must be equipped with a fire extinguisher (1.1.05).</li> </ul>  |
| <i>Others</i>   | <ul style="list-style-type: none"> <li>• More stringent regulation regarding driving licence withdrawal.</li> </ul>   |

#### B.1.2. Strategies to decrease risk of injury:

|   |   |
|---|---|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"> <li>• Continuous activity</li> </ul>   |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• None</li> </ul>  |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• Continuous activity</li> <li>• Following several severe accidents in tunnels in Europe, in-depth audit of tunnels &gt; 600 m, optimization of the infrastructure, maintenance and upgrade of the tunnels. Protection galleries have also been audited and improved when required.</li> </ul> |



### *Other information*

The number of fatalities and severe injuries has been reduced by two thirds since the early 1970s. However, stagnation is observed in the number of casualties in the last few years, as the number of fatalities remains just below 600. The government is firmly engaged to reduce further the number of casualties. It has asked the Federal Ministry in charge of environment, transport, energy and communication to undertake the necessary measures to improve road safety with a view to reducing by 50% the number of fatalities by 2010 compared to the level in 2000. Within this framework, the Road Agency (Office Fédéral des Routes) is currently developing a new road safety policy to achieve this objective. The Road Agency is working in very close cooperation with the Parliament, the Federal Court, the local governments and other stakeholders as well as with road users association. This co-operative process is a very important feature.

This new policy was translated into a federal programme called “Via Secura”. See more information at: <http://www.astra.admin.ch/html/fr/news/viasicura/index.php>

### ***B.2. National Diagnosis in key safety areas***

#### *Road users*

A peak in road fatalities was reached in 1971. Between 1971 and 1975, the number of fatalities was significantly reduced. The average annual reduction was initially 7.5%, and then 3%, until 1996. Between 1997 and 2000, the number of casualties remained almost stable – around 600 killed every year. In 2004, an important reduction was achieved as the number of fatalities was reduced to 510.

The important reduction in the number of fatalities since 1971 was not the same for all road users. The best results were achieved for mopeds (-91% fatalities, mainly due to an important diminution of the exposure) and for pedestrians (-83%). Regarding car passengers (-61%), cyclists (-60%) and motorcyclists (-48%), the reductions were below average.

***The number of motorcyclists killed*** has increased over the past two years, while for all other roads users there has been a reduction in the number of fatalities.

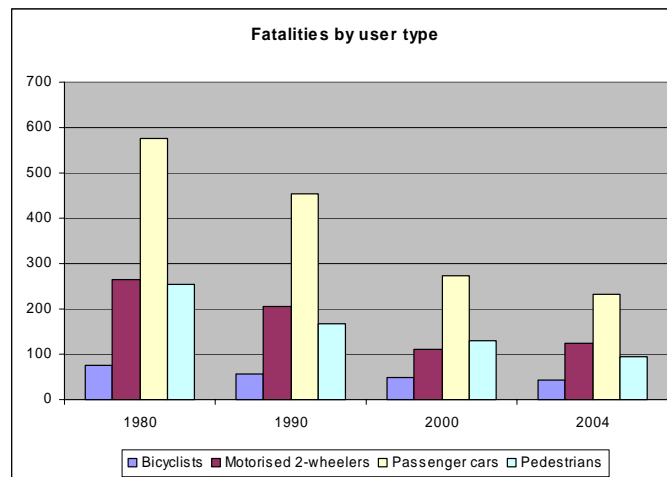
Most of the victims are car passengers (55%), followed by motorcyclists (18%), cyclists (11%), pedestrians (8%) and mopeds (3%). It is for pedestrians that the “case fatality rate” (which measures the severity of a crash) is the highest, with 360 fatalities for 10 000 persons injured. Motorcyclists are the second group with the highest fatality case, at 182.

If compared with the number of kilometres driven, mopeds are the user group most involved in a fatal or serious accident. They are followed by motorcyclists and cyclists.

Important measures which contributed to this evolution:

- Construction of motorways
- Permanent information campaigns (such as “think before overtaking”)
- Improving dangerous spots
- Permanent improvement in the vehicle safety
- Mandatory first aid training (1977)
- Strong increase in fines (1996)
- Addition braking warning lights (1998)
- Recommended use of daytime running lights (2002).

**Evolution in fatalities by road user type**



### *Age groups*

Among all road users (including pedestrians), young people in the 16 to 26 age group – with a peak for the 17-21 year olds – are over-represented in crashes. They represent 26% of total victims.

There are more victims among males. (In 2003, two-thirds of those seriously injured were male.)

Since 1980, the number of children (0-14) killed in crashes was reduced by two-thirds, and the number of those seriously injured was reduced by 75% (around 400 children seriously injured in 2004). Children are injured as pedestrians first, then as car passengers, and finally, and to a lesser extent, as cyclists.

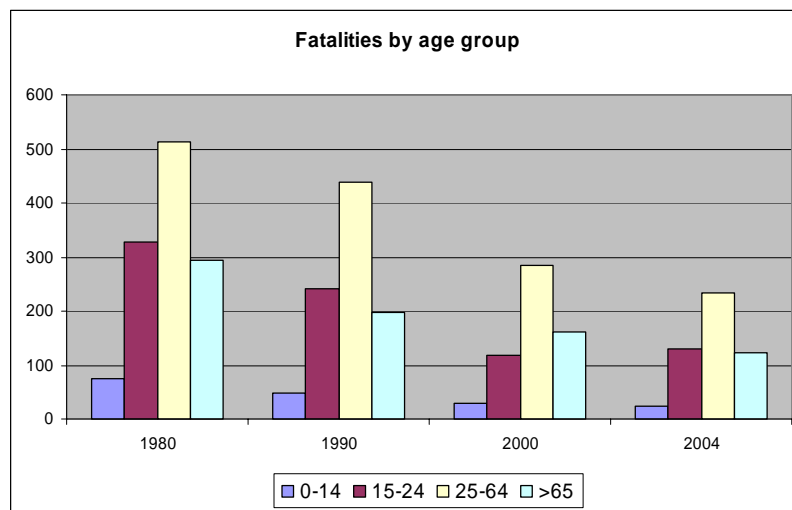
Relative to the number of inhabitants, young people between the ages of 18-24 represent the largest group of casualties, mainly as car occupants and motorcyclists. This age group continues to be over-represented in traffic accidents. Measures have been introduced to reduce this risk, including the 2-phase driving license and the provisional licence.

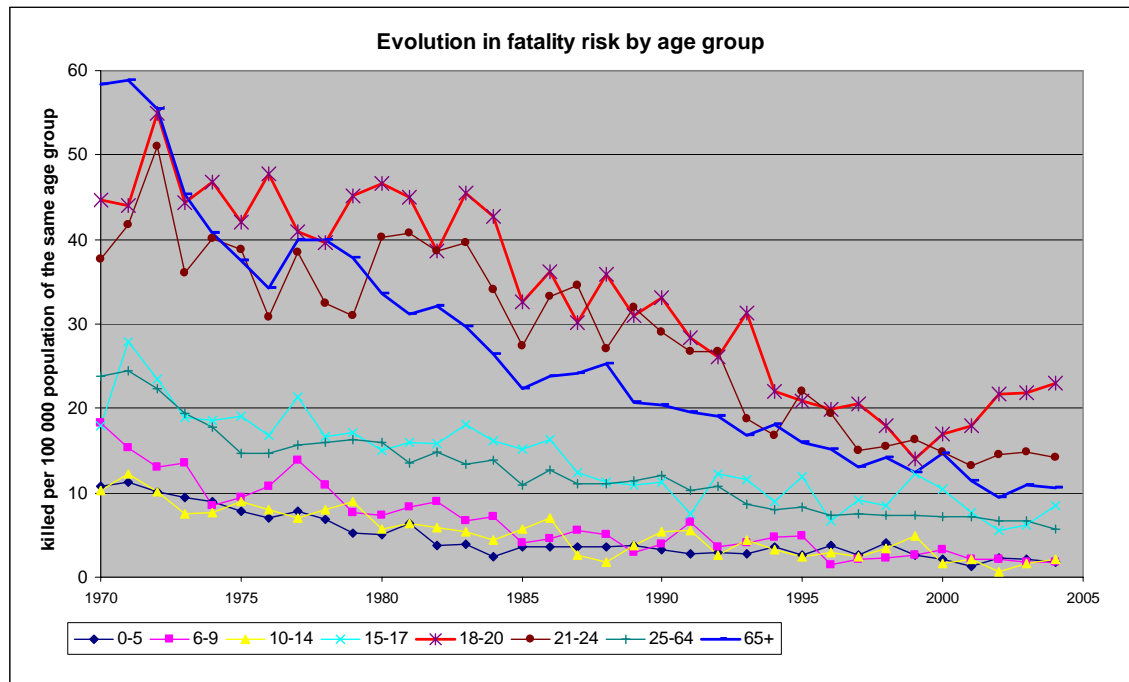
Over the past few years there has been a reduction in the number of casualties among the senior population (65 and more), although less so than for other age groups. The proportion of seniors in the population is increasing and the safety problem for this age group is likely to become more important. Senior people are most at risk as pedestrians, then as car occupants.

Important measures which contributed to this evolution:

- Complementary training for recidivist careless drivers (1991).
- Mandatory training (8 hours) on traffic theory (1991).

***Evolution in fatalities by age group***





#### *Type of road / location*

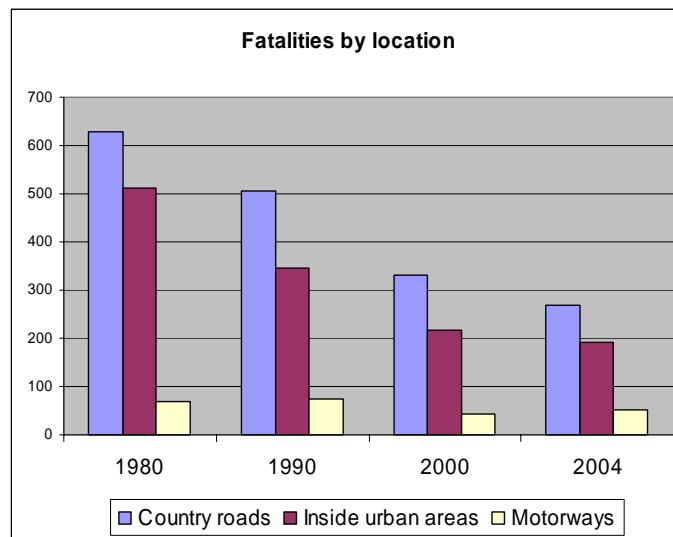
Of the serious injury accidents, 53% occur in built-up areas, 40% on rural roads and 7% on motorways. Of fatalities, 31% occurred in built up areas, 58% in rural roads and 11% on motorways. As the number of kilometres driven is similar for all three types of road (18 billion veh-km each year), these accident data are comparable. In more than one third of cases, the accident is due to the loss of control of a vehicle, while 17% of accidents are due to changes in direction.

Most fatal accidents occur on rural roads. Motorways remain the safest type of roads, even if the diminution of fatalities and injuries has been less marked recently. Relative to 100 million veh-km, rural roads are the most dangerous, followed by urban roads.

Important measures which contributed to this evolution:

- Mandatory wear of front and back reflectors by cyclists (1995).
- Mandatory side bar for heavy good vehicles to avoid a car becoming embedded in the truck (Barre latérale anti-encastrement) (1995).
- Additional rear-view mirrors for trucks (blind spot) (1998).

**Evolution in fatalities by type of road**



### *Speed*

Distraction, non-respect of traffic rules and speeding are responsible for around 25% of serious injury accidents.

Impaired driving and speed are the prime causes of fatalities (around 30-40%). Speeding is the primary cause of accidents for men up to 35 years of age.

Speeding is a contributing factor in around 40% of fatal accidents. In most cases, inappropriate speed is to blame rather excessive speed.

Important measures:

- Introduction of 100 km/h speed limit on rural roads, and 130 km/h on motorways (1977).
- Introduction of 50 km/h speed limit in built-up areas (1984).
- Introduction of 80 km/h speed limit on rural roads, and 120 km/h on motorways (1990).

**Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.**

|   | 1980                   | 1994                    | 2000                    | 2003                    |
|---|------------------------|-------------------------|-------------------------|-------------------------|
| <i>Nb of speeding citations</i>                             | <b>ADMAS<br/>-----</b> | <b>ADMAS<br/>17'881</b> | <b>ADMAS<br/>25'536</b> | <b>ADMAS<br/>31'692</b> |
| <i>% of fatal crashes where speed is a causation factor</i> | <b>40.5%</b>           | <b>44.5%</b>            | <b>38.7%</b>            | <b>40.1%</b>            |
| <i>% of drivers over the posted speed limit in :</i>        |                        |                         |                         |                         |
| - urban areas   | <b>42%</b>             | <b>...</b>              | <b>...</b>              | <b>21%</b>              |
| - rural roads   | <b>...</b>             | <b>35%</b>              | <b>...</b>              | <b>24%</b>              |
| - motorways   | <b>22%</b>             | <b>35%</b>              | <b>35%</b>              | <b>38%</b>              |

*Drink driving*

According to police statistics, alcohol is a contributing factor in around 20% of fatalities.

Based on official accident statistics, the “influence of alcohol” is underestimated, as in Switzerland not all drivers involved in a crash are tested for drink driving. However it is estimated that alcohol is a contributing factor in 30% of serious accidents and the main factor in 20% of these accidents. In comparison, the influence of other drugs is less frequent or less dangerous. Prevention is very important, in particular regarding sleeping pills and tranquilizers

Given the importance of the driving problem, new measures entered into force on 1 January 2005, including: reduction of the maximum legal BAC from 0.8 g/l to 0.5 g/l; testing for drink driving without evidence that the driver is intoxicated; more severity in licence withdrawal.

Important measure:

- Maximum legal BAC is 0.5 g/l since 1 January 2005.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|   | 1980                   | 1994                    | 2000                    | 2003                    |
|---|------------------------|-------------------------|-------------------------|-------------------------|
| <i>Number of citations</i>                            | <b>ADMAS<br/>9'648</b> | <b>ADMAS<br/>14'749</b> | <b>ADMAS<br/>15'767</b> | <b>ADMAS<br/>17'502</b> |
| <i>% of fatal accidents where alcohol is a factor</i> | <b>21.3%</b>           | <b>16.6%</b>            | <b>19.3%</b>            | <b>20.2%</b>            |

*Seatbelt and helmet wearing*

***Seatbelt***

In 2003, 189 car drivers were killed in accidents: of those, 85 wore a seatbelt (45%) and 78 did not – there is no information for the remaining 26 victims. Based on observations, the seatbelt wearing rate for drivers was around 80% in 2003. Of the 44 front seat passengers killed in that year, 24 wore

seatbelts and 15 did not – there is no information for the remaining 5 passengers. Finally, 80 passengers in front seats wore their seatbelt. Of the 27 passengers in the back seats who were killed, 3 were wearing seatbelts and 19 were not. Based on observations, the seatbelt wearing rate for passengers in the back seats is around 57%.

Seatbelt wearing is one of the most effective ways to improve the chance of survival in a crash and to reduce the severity of the injuries. If all car occupants wore seatbelts, it is estimated that 60 lives could be saved each year.

It is therefore necessary to deploy further efforts to increase the seatbelt wearing rate. In 2006-2008, intensive campaigns will be launched on the wearing of safety belts, and more controls will be carried out. Mandatory seatbelt-wearing in trucks and coaches will also be reinforced, and other measures are currently being examined.

### ***Helmet***

In 2003, 100 motorcyclists were killed, of which 87 were wearing a helmet and 11 were not. Based on observations, the helmet wearing rate is 99%.

In 2003, 17 moped riders were killed, of which 6 were wearing a helmet and 9 were not. Based on observation, the helmet wearing rate for moped riders is 88%.

In 2003, 48 cyclists were killed, of which 6 were wearing a helmet and 42 were not. Helmet wearing is not compulsory for cyclists. Intense information campaigns contributed to the increase in cyclists wearing helmets (from 14% in 1998 to 34% in 2004). It would be desirable to increase this rate further. However it would be difficult, politically, to make helmet wearing compulsory for cyclists

#### **Important measures:**

- Mandatory wear of seatbelt in front seats (1981).
- Permanent information campaigns.
- Mandatory wear of helmets by motorcyclists (riders and passengers) (1981).
- Mandatory wearing of helmets by moped riders (1990)
- Mandatory use of seatbelts in back seats (1994)
- Minibuses and delivery vans must be equipped with seatbelts (1998)
- Mandatory use of child restraint systems for children under 7 years of age on all seats (2002).

#### Evolution in seatbelt wearing rate

|                      | 1980 | 1994 | 2000 | 2003 |
|----------------------|------|------|------|------|
| <i>General</i>       | ...  | ...  | ...  | ...  |
| <i>Rear Seat</i>     | ...  | ...  | 32%  | 57%  |
| <i>Front Seats</i>   | 35%  | 67%  | 77%  | 80%  |
| Motorway – driver    | 52%  | 80%  | 89%  | 90%  |
| Rural roads – driver | 35%  | 71%  | 76%  | 81%  |
| Urban areas –driver  | 23%  | 53%  | 66%  | 67%  |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

The use of mobile phones and insufficient inter-vehicle distance are common infractions. There is, however, no statistical evidence on their contribution to road accidents.

#### **B.3. Major road safety problems today**

1. Inappropriate or excessive speed.
2. Drink driving and drug driving.
3. Safety outside built-up areas.
4. Vulnerable road users.
5. Seatbelt wearing.
6. Motorcyclists.
7. Young and novice drivers.

#### **B.4. Forthcoming road safety initiatives to address these problems**

An exhaustive set of measures has been developed in the framework of the new road safety policy “Via Secura”. The proposed 56 measures correspond to 12 categories of action, *e.g.* education, enforcement and infrastructure. For example, the following measures are included:

- Control by the police based on safety criteria and intensification of enforcement.
- 0 BAC for young drivers and professional drivers.
- Treatment of black spots.
- Road Safety Audit.
- Mandatory complementary training for motorcyclists and car drivers.
- Education on mobility and safety at all levels at school.
- Limitation of the validity period of the driving licence (regularly control of ability to drive).

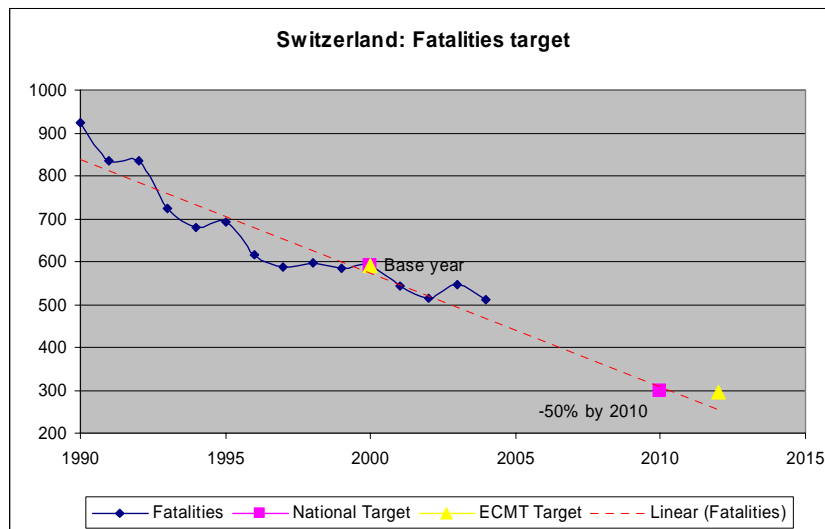
N.B. The Via Secura project was not yet approved by the government when this report was written (August 2005).



### C. Road safety targets

#### General road safety targets

| Type              | Targets<br>(in % or absolute figures) | Base year | Target year | Base year figure | Current results<br>(figure in 2004) | Intermediate targets? |
|-------------------|---------------------------------------|-----------|-------------|------------------|-------------------------------------|-----------------------|
| <b>Fatalities</b> | -50% (300)                            | 2000      | 2010        | 592              | 510                                 | No                    |
| Seriously injured | -50% (3000)                           | 2000      | 2010        | 6 191            | 5500                                | No                    |



### D. Success story cards

#### Success story from Switzerland

##### Daytime running lights

Since 1 January 2003, daytime running lights are recommended. A first (short) evaluation of this measure led to the following conclusions:

In 2001, before the introduction of the new regulation, the proportion of cars that used lights on a sunny day was 11%. This proportion increased to 48% in 2005. There is a higher rate on motorways than in built-up or rural areas. Drivers turn on the lights when the efficiency of the measure is the greatest.

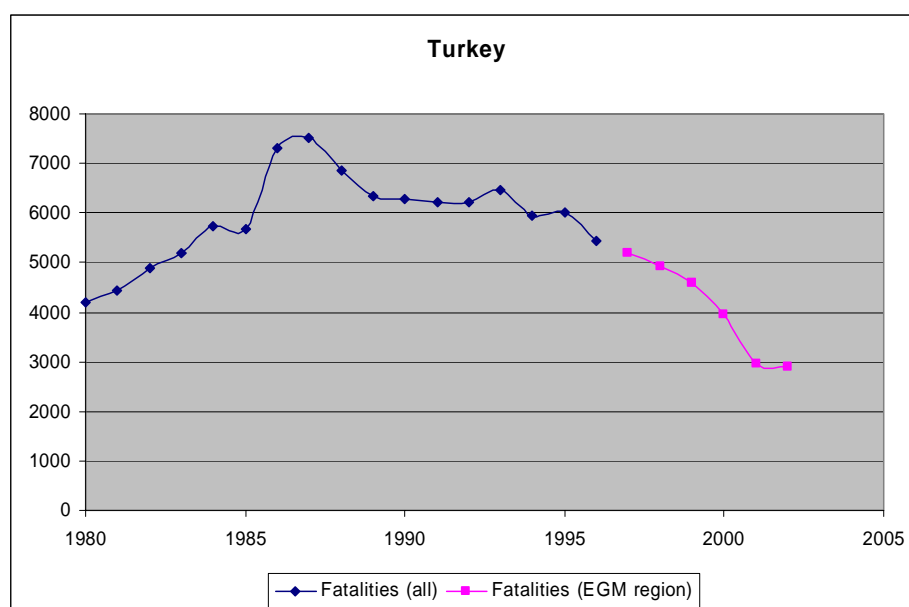
Preliminary analysis of 2003 accident data (to be confirmed with more recent data) showed that daytime running lights reduced the number of serious accidents involving cyclists and cars during the daytime. There is also a positive impact on accidents involving pedestrians, in particular at pedestrian crossings. It has not yet been possible to assess the impact of the measures on the safety of motorcyclists.

## TURKEY

### A. General trend in road safety

#### Key road safety data for 2004

- 5 756 road fatalities (on the road network under the responsibility of the police, EGM)
- Around 100 cars (passenger cars and light duty vehicles) per 1 000 inhabitants.



#### Important Note:

- Before 1997, data corresponds to the total number of fatalities in Turkey (at the accident spot).
- From 1997 onward, data provided includes only fatalities, at the accident spot, occurring on the road network under the responsibility of the police (EGM).
- In both cases, persons who died on the way to, or in, hospital following the accident are not included.

**Data shown in the above graph should not be considered as representative of the entire Turkish territory.**

## B. Current state of affaires and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |  |
|---|--|
| <i>Improved speed compliance / enforcement</i>  | <ul style="list-style-type: none"> <li>From 20 November 1998, 450 radar equipments with video cameras have been used actively in speed enforcement. With this equipment it was intended to increase the perception of control on drivers by increasing the risk of being detected in order to reduce the number of accidents caused by high speed.</li> </ul>  |
| <i>Reduced speed limits</i>   | <ul style="list-style-type: none"> <li>No</li> </ul>   |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                     | <ul style="list-style-type: none"> <li>According to Article 48 of No 2918 of the Road Traffic Law (amended in 2003), it is forbidden to drive under the influence of alcohol or drugs.</li> </ul>  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc.)</i> | <ul style="list-style-type: none"> <li>Construction of divided roads.</li> </ul>   |
| <i>Enforcement of other road rules</i>  | <ul style="list-style-type: none"> <li>Regular controls of infringements which have greatest effect upon the formation of accidents and leading to death: speeding, too close follow -up, faulty overtaking, alcohol and safety belt.</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>   | <ul style="list-style-type: none"> <li>With the EU harmonisation process, a draft law is being discussed in Parliament to redefine conditions required for obtaining a driving licence. When the draft law is legalised, driving licence classes and conditions will be put into effect</li> </ul>   |
| <i>Education and information programmes</i>   | <ol style="list-style-type: none"> <li>2004 was announced as the Traffic Year. In this context; a number of road safety campaigns were launched: <ol style="list-style-type: none"> <li>Tyres</li> <li>Seat Belt</li> <li>Fatigue</li> <li>Safe walk for children</li> <li>Extreme speed (Break yourself)</li> <li>Alcohol</li> </ol> </li> <li>Educational programmes on radios and TVs aimed at drivers and pedestrians have been organised</li> </ol> <p>Seminars have been organised regarding the risks that drivers and pedestrians may face in traffic.</p> |
| <i>Regulation on vehicle inspection</i>   | <ul style="list-style-type: none"> <li>Yes, ongoing.</li> </ul>  |

|  |   |
|--|---|
| <i>Regulation on active vehicle safety equipment</i> | <ul style="list-style-type: none"> <li>• In order to prevent traffic accidents incurred by the intercity passenger buses, tachograph (displaying speed, how long the vehicle is used, calibration and intervention), instalment of the lights, license, registry and other traffic documents, insurance policies, certificate for using commercial vehicles, and D1-D3 authorization documents are all examined. The technical examinations of the cars, as well as the drivers against intoxication, are checked in a computer based environment at the entrance and exit of the terminals. Those drivers who are problematic are disallowed, and the necessary legal transactions are made for those who have deficiencies.</li> <li>• In order to prevent traffic accidents incurred by trucks, officials of the concerned bodies and institutions should take part in inspections including those mentioned above for the inspection of weights.</li> </ul> |
|--|---|

*B.1.2. Strategies to decrease risk of injury:*

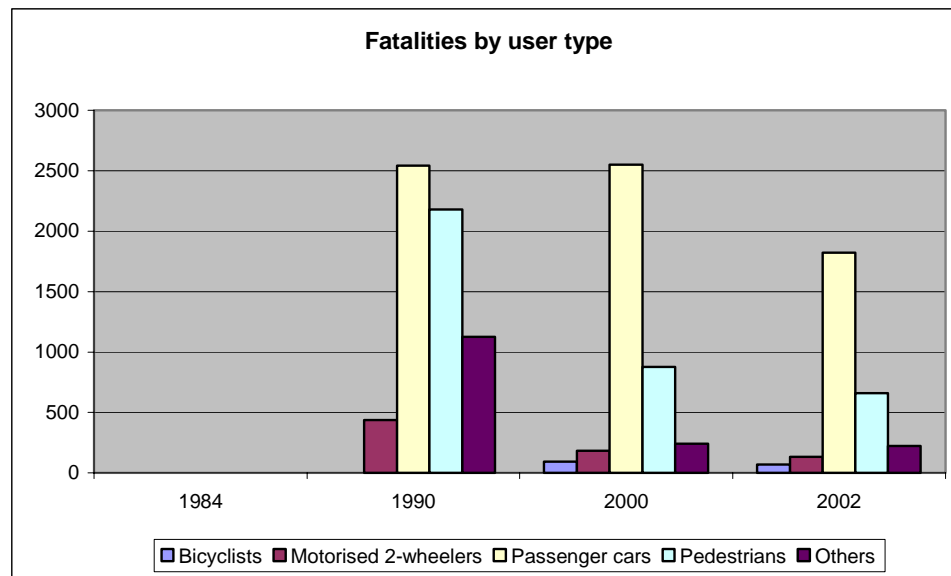
|   |   |
|---|---|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"> <li>• No recent changes</li> </ul> |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• No</li> </ul>                |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• No</li> </ul>                |

**B.2. National Diagnosis in key safety areas**

*Road users*

In traffic accidents, passengers and pedestrians make up the largest group of victims. Throughout the years there has been decrease in the death toll.

### Evolution in fatalities by road user type

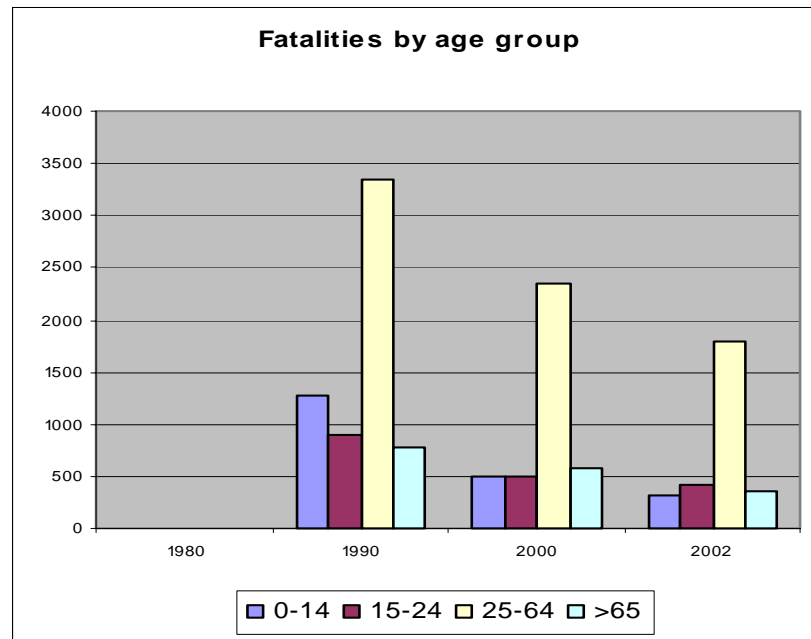


Note Before 1997, data correspond to the total number of fatalities (at the accident spot) in Turkey. From 1997 onward, data provided only includes fatalities (at the accident spot) occurring on the road network under the responsibility of the police (EGM). In both cases, people who died after the accidents on the way to hospital or in hospital are not included in the data.

### Age groups

In traffic accidents, the death toll for people aged between the ages of 25 to 64 is higher compared to other age groups. This is because young and middle aged people are more active in traffic.

### Evolution in fatalities by age group



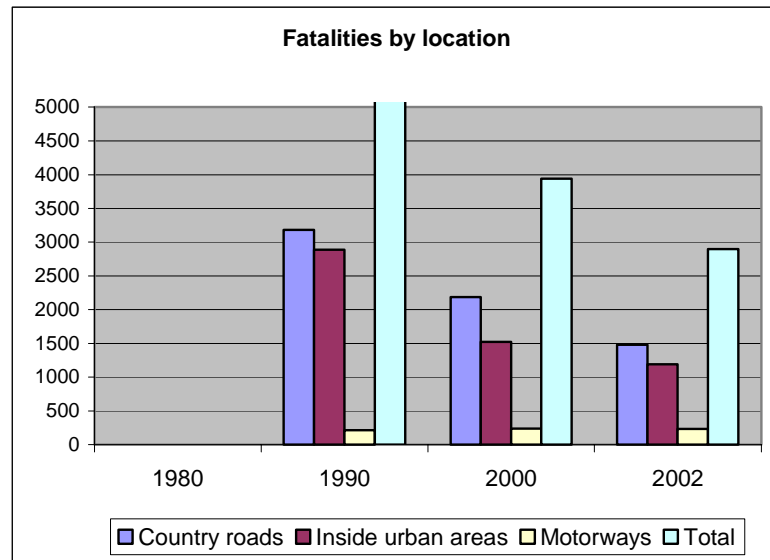
Note Before 1997, data correspond to the total number of fatalities (on the spot of the accidents) in Turkey. From 1997 onward, data provided only include fatalities (on the spot of the accidents) occurring on the road network under the responsibility of the police (EGM). In both cases, persons who died after the accidents on the way to hospital or in hospital are not included.

### Type of road / location

Fatalities in intercity roads (State road-Province Road) are higher compared to other types of roads. The main reason for this is that the speed limits are much higher on inter-city roads compared to central city roads.

However, given the emphasis on the construction of divided roads in recent years, the injured and death toll is expected to decrease considerably.

### Evolution in fatalities by type of road



Note Before 1997, data correspond to the total number of fatalities (on the spot of the accidents) in Turkey. From 1997 onward, data provided only include fatalities (on the spot of the accidents) occurring on the road network under the responsibility of the police (EGM). In both cases, persons who died after the accidents on the way to hospital or in hospital are not included.

### Speed

Speed related accidents are decreasing. The use of technical equipment for detection of high speed and for the limitation of speed has been effective.

Because of dense traffic in central city roads, most of the infringements occur on intercity roads

### Evolution in speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of driver over the posted limit.

|  | 1990    | 2000      | 2004    |
|--|---------|-----------|---------|
| Nb of speeding offences                              | 301 294 | 1 203 990 | 995 278 |
| % of fatal crashes where speed is a causation factor | 16,22   | 11,90     | 3,13    |
| % of drivers over the posted speed limit in :        | 14,1    | 13,38     | 2,94    |
| - urban areas  | 26,37   | 10,56     | 3,33    |
| - rural roads  | -       | -         | -       |
| - motorways  | -       | -         | -       |

### *Drink driving*

The BAC limit is 0.5 g/l.

Drivers with a BAC above the limit are subject to a license withdrawal of 6 months and a fine of TRY 349 (around EUR 210).

In the case of repeated offence, the license is withdrawn for 2 years and the fine is TRY 427 (around EUR 260). In addition, the drivers are requested to follow a training course to improve driver behaviour, the content and method of which is determined according to the Directive prepared by the Ministry of Health and Interior and applied by the Ministry of Health. Those who successfully complete the training course have their licences returned.

In the case of 3 or more repeated offences, the licence is withdrawn for 5 years and the drivers are subject to light imprisonment of not less than 6 months (in a low security prison) and a fine of TRY 684 (around EUR 420). In addition, they are exposed to psychological evaluation and an examination by a psychiatrist. Those who are considered fit to drive have their licences returned at the end of the given period. The procedure and content of the psychological and psychiatric examination are conducted according to the Directive.

Those who drive with narcotics or other impairing substances; even if they are convicted of another crime, are subject to light imprisonment of 6 months, a monetary fine of TRY 684 Liras and their driving licenses withdrawn indefinitely.

According to present statistics, number of drivers who drive with alcohol is decreasing and in parallel the number of deaths because of traffic accidents caused by alcohol is in a tendency to decline

#### **Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|   | <b>2000</b> | <b>2003</b> |
|---|-------------|-------------|
| Number of citations                                 | 95 412      | 76 865      |
| Number of fatal accidents where alcohol is a factor | 77          | 56          |

### *Seatbelt and helmet wearing*

Seatbelt :

With the law amendment in Road Traffic Law No: 2918, dated 19.06.1985, it was rendered obligatory to use safety belts, and this law was put into practice on 18.06.1986.

With the Law No: 22078 dated 11.10.1994, which was issued in the Official Gazette, it was made obligatory for vehicles, manufactured in Turkey or imported into Turkey, to have rear seatbelts as of 11.01.1995. Provision concerning safety belts in the back seats of vans, trucks, lorries, tractors and intercity buses are applied to vehicles manufactured after 1/8/1998.

It is also forbidden to transport children under 10 years old in the front passenger seat.



### Helmets for motorcyclists

In accordance with Article 150 of the Regulation of Road Traffic No: 2918, it is obligatory for drivers to use protective helmets and protective glasses, and for passengers to use protective helmets, on motorbikes and mopeds.

#### Evolution in seatbelt wearing rate

|                      | 1980           | 1994 | 2000 | 2003 |
|----------------------|----------------|------|------|------|
| <i>General</i>       | <i>No data</i> |      |      |      |
| <i>Rear Seat</i>     |                |      |      |      |
| <i>Front Seats</i>   |                |      |      |      |
| Motorway – driver    |                |      |      |      |
| Rural roads – driver |                |      |      |      |
| Urban areas –driver  |                |      |      |      |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

Other violations concern: extreme speed, close follow-up, faulty overtaking, alcohol, non-use of seatbelt, sleepless, tired or distracted driving, non compliance with traffic lights, signs or signallers, not giving the right of first passage to the pedestrians, not keeping vehicle in good order with respect to technical condition.

#### *Other factors*

The most important issue in traffic safety is **education**. Traffic education involves many aspects: driver education, pedestrian education, passenger education, education of controllers, or the education of accident informants, regarding the problems that may arise.

The success of educational activities depends on providing a regular and safe traffic environment; making compliance with traffic rules a habit, hence making the society more conscious of the reasons for traffic accidents (such as driving under the influence of alcohol, sleepless, tired or speedy driving) through the use of educational broadcasting (radio, tv and press).

#### ***B.3. Major road safety problems today***

1. Extreme speed.
2. Drink Driving.
3. Non-use of seatbelt.
4. Fatigue and distracted driving.
5. The non-use of protective gear for motorcyclists.
6. Pedestrian safety.

#### ***B.4. Forthcoming road safety initiatives to address these problems***

##### *Speeding:*

In order to reduce accidents due to speeding, 451 traffic supervision team vehicles, equipped with radar and video-cameras, are put into use by traffic institutions. These take into account the existing number of radars and the characteristic of the routes – main artery, average daily traffic density and accidents. These vehicles carry out speed controls in-transit, as well as fixed locations where traffic accidents occur frequently.

##### *Drinking and Driving:*

In order to reduce drink driving, it is planned to progressively increase controls, with the objective of controlling at least 30% of the total number of drivers each year. To achieve this, it is planned to increase control by 5% each year in the forthcoming years.

##### *Safety Belt:*

It has been shown that the use of safety belt during long-distance travels is 93%, but only 16% in local traffic. Studies to increase the amount of safety-belt usage in local traffic have been undertaken.

##### *Sleepless and Tired Driving:*

In our country, 95% of freight and passenger transport is carried by road. Hence, frequent controls are undertaken on long-distance drivers of freight and passenger transporters.

##### *Usage of Protective Equipment by Motorcycle Riders:*

Controls on motorcycle riders are carried out at least one hour per day, in order to minimise accidents involving motorcycles.

##### *Pedestrian Safety:*

Coordination is provided among the relevant institutions in order to review cross-walks and deficiencies in signalling for unprotected road users (pedestrians, bike riders and children). Controls are undertaken to ensure that unprotected road users comply with the traffic lights, signals and warnings from the officers in charge.

#### **C. Road safety targets**

The general target is to decrease by 40% the number of fatalities and injury accidents between 1999 and 2011 (on the road network operated by the Police). .

### General road safety targets

| Type             | Targets (in % or absolute figures)     | Base year (starting year for the target) | Target year: | Base year figure | Current results (in 2004) | Intermediate targets ?               |
|------------------|--|--|--------------|------------------|---------------------------|--------------------------------------|
| Fatalities       | -40% (i.e. less than 2 758 fatalities) | 1999                                     | 2011         | 4 596            | 3 082                     | -20% by 2006 (i.e. less than 3677)   |
| Injury accidents | -40% (i.e. less than 36 760 accidents) | 1999                                     | 2011         | 62 268           | 61 268                    | -20% by 2006 (i.e. less than 49 014) |

In addition, there are the following objectives:

- Decrease by 20% the number of fatalities among vulnerable road users
- Decrease by 25% the number of children (0-14) killed in traffic

### D. Success story cards

Reduction in the number of fatalities on the road network operated by the police

Since 1999, there has been a significant improvement in the road safety situation on the road network operated by OGM as illustrated in the table below.

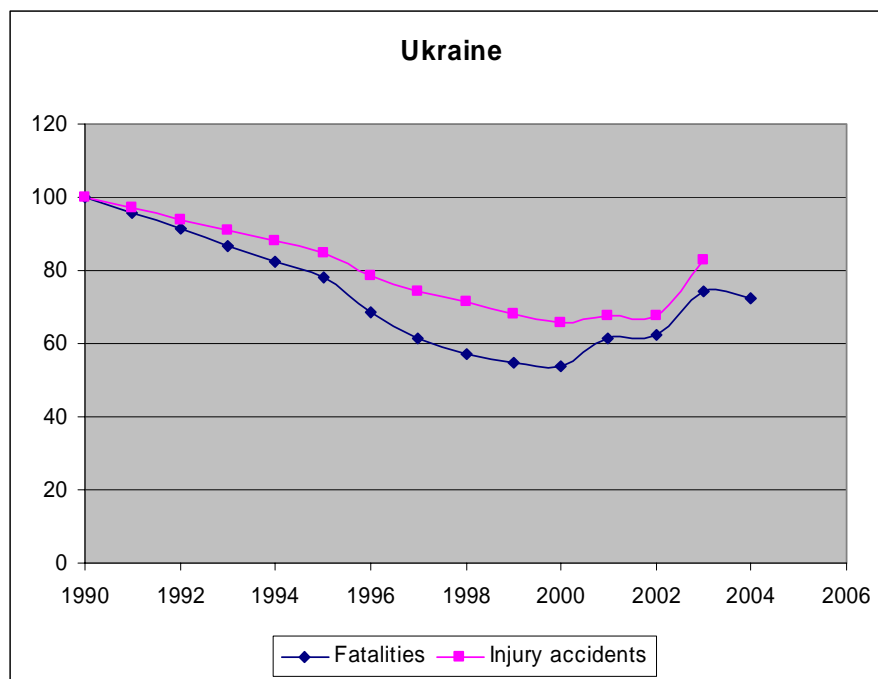
|                 | 1999    | 2000    | 2001    | Change 1999-2001 |
|-----------------|---------|---------|---------|------------------|
| Road fatalities | 4 596   | 3 941   | 2 954   | -36%             |
| Accidents       | 438 338 | 466 385 | 409 707 | -7%              |
| Injured persons | 109 899 | 115 877 | 94 497  | -14%             |

## UKRAINE

### A. General trend in road safety

#### Key road safety data for 2004

- 6 966 road fatalities
- 47 158 injury accidents (in 2003)
- 14.5 killed per 100 000 inhabitants
- Around 115 passenger cars per 1 000 inhabitants



### B. Current state of affairs and national diagnosis

#### B.1. Recent (after 2002) road safety initiatives

The State Road Transport Research Institute has prepared some proposals for the Ministry of Transport and Communications of Ukraine with regard to the following:

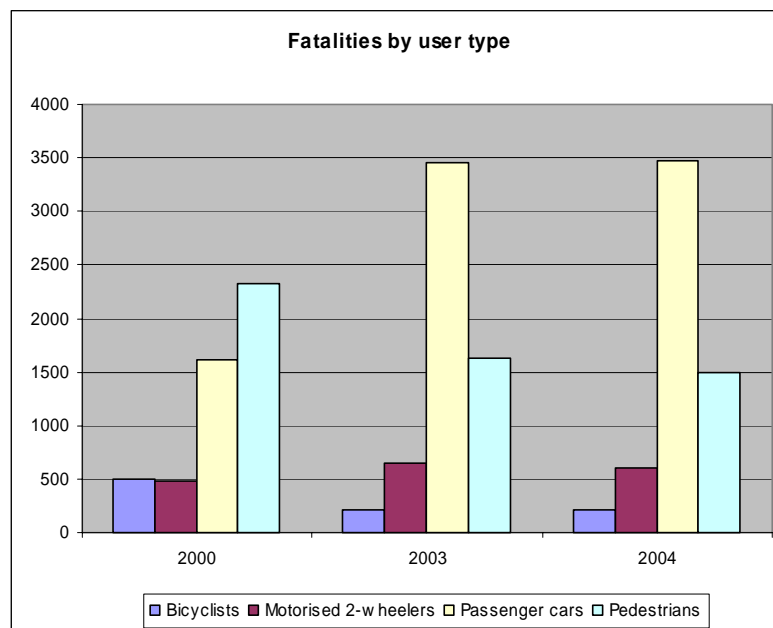
- Institutional changes in the system of road safety management (establishing of National Body in charge of road safety, distribution of responsibility and control among governmental bodies).
- Development of statistic reporting system, taking into account ECMT recommendations on specific characteristics of road accident number and severity.
- Involvement of representatives of research institutes, testing laboratories, insurance companies, mass media, voluntary organisations, associations for protection of people in fatal accident/severe injuries investigation (to enable determination of realistic factors causing road accidents).
- Introduction of road vehicles in the market on the basis of passive and active safety characteristics under the procedure, harmonised with provisions of Directive 70/156/EEC and Geneva 1958 Agreement.

A governmental programme, aimed at ensuring road safety on motorways, in urban areas, other settlements and railroad crossings for the years 2003-2007, is being implemented currently. Elaboration of the programme up to 2012 is underway.

## ***B.2. National Diagnosis in key safety areas***

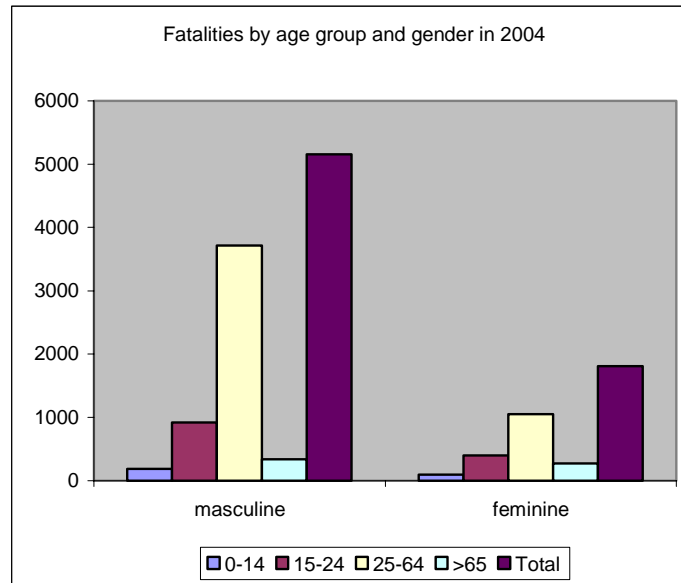
### *Road users*

**Evolution in fatalities by road user type**



### *Age groups*

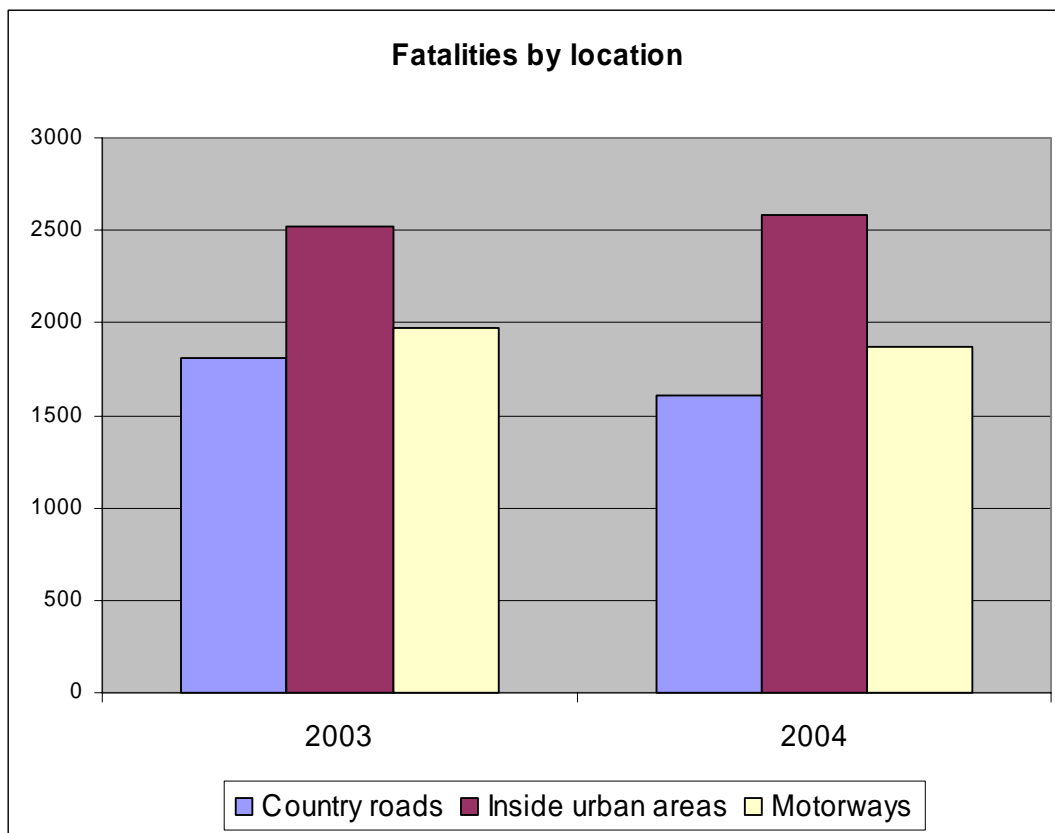
#### **Evolution in fatalities by age group**



### *Type of road / location*

In 2004, 43% of fatal accidents occurred on rural roads, 31% on motorways and 26% in urban areas.

#### Evolution in fatalities by type of road



#### Speed

##### Speeding citations and percentage of fatal crashes where speed is a causation factor in 2004

|   |                    |
|---|--------------------|
| <i>Nb of speeding citations</i>                             | <b>4 310</b>       |
| <i>% of fatal crashes where speed is a causation factor</i> | <b>912 (21.2%)</b> |

#### Drink driving

The BAC limit in Ukraine is 0.0 g/l.

##### Number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor in 2004

|  |                    |
|--|--------------------|
| Number of citations                            | <b>1677</b>        |
| % of fatal accidents where alcohol is a factor | <b>243 (14.5%)</b> |

### *Seatbelt and helmet wearing*

Seatbelt wearing is compulsory both in front seats and rear seats of vehicles, which are fitted with seatbelts.

Helmet wearing is compulsory for all motorised 2-wheelers. It is not obligatory for cyclists.

No information available.

**Evolution in seatbelt wearing rate**

|                      | 1980            | 1994 | 2000 | 2003 |
|----------------------|-----------------|------|------|------|
| <i>General</i>       | <i>No data.</i> |      |      |      |
| <i>Rear Seat</i>     |                 |      |      |      |
| <i>Front Seats</i>   |                 |      |      |      |
| Motorway – driver    |                 |      |      |      |
| Rural roads – driver |                 |      |      |      |
| Urban areas –driver  |                 |      |      |      |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

In 2004 there were 3 084 road crashes (including 189 fatalities) caused by violations of traffic rules on the *crossroads* and 1620 road crashes (including 120 fatalities) where *inter-vehicle distance* was a factor.

*Other factors*

None.

### ***B.3. Major road safety problems today***

1. Low drivers' responsibility for violations and the opportunity of avoiding it.
2. Drink driving.
3. Bad technical condition of road network.
4. Education of drivers.
5. Safety of buses.
6. Technical condition of motor vehicles and aged automotive fleet.
7. Low level of road vehicle active and passive safety.

### ***B.4. Forthcoming road safety initiatives to address these problems***

The following actions related to improving the road safety in Ukraine are to be taken over 2005-2006:

- Elaboration of the draft of the National conception on improving road safety, as well as the measures aimed at a 50% decrease in the number of road fatalities by 2012 (in accordance with ECMT resolution.
- Amendment of the Law of Ukraine “On road traffic” in conformity with the EU road safety requirements.



- Preparation of the proposals on amending the legislative acts and other legal/normative documents with regard to increased responsibility of road users for violation of the road safety rules.
- Amendment of the Procedure for periodical technical inspection of road vehicles.

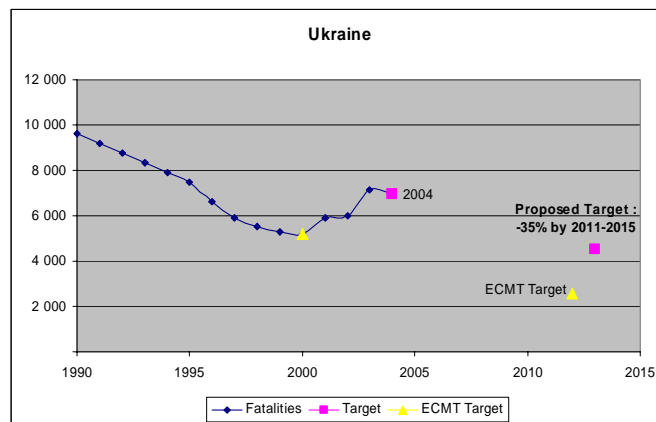
### C. Road safety targets

Unfortunately, there are no targets (set in measurable indices) concerning decrease in road accident number and severity.

The process of implementation of ECMT recommendation (-50% by 2012) has just started in Ukraine. The Table below includes the State Road Transport Research Institute proposals regarding decrease in road accident number.

*Proposed* target by the State Road Transport Research Institute

| Characteristics                      | Base year<br>2004<br>figures | Reduction (in<br>% of base figures) |                    |                    |
|--------------------------------------|------------------------------|-------------------------------------|--------------------|--------------------|
|                                      |                              | 2005-2006<br>years                  | 2007-2010<br>years | 2011-2015<br>years |
| Number of road accidents             | 45593                        | 7                                   | 15                 | 30                 |
| Number of fatalities/injured persons | 6966/53638                   | 10                                  | 20                 | 35                 |



### D. Success story cards

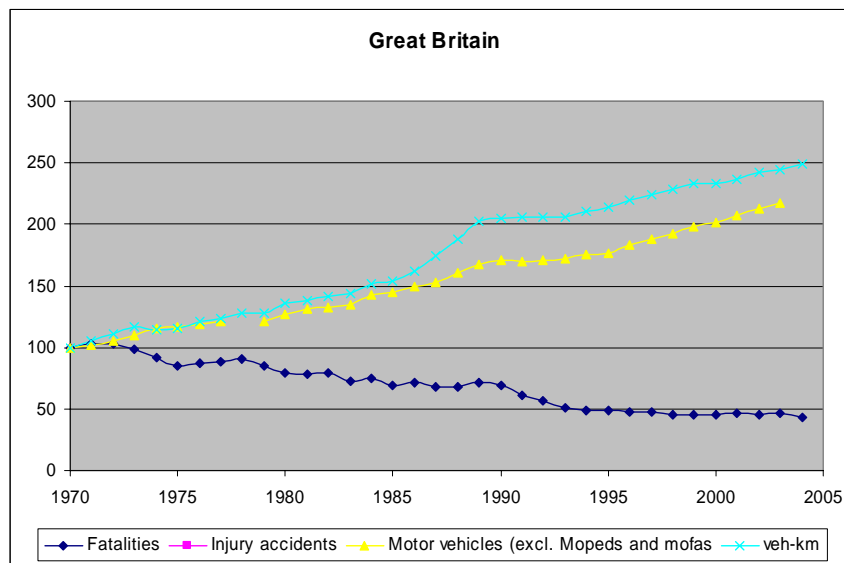
None.

## UNITED KINGDOM (GREAT BRITAIN)<sup>17</sup>

### A. General trend in road safety

#### *Key road safety data for 2004 in Great Britain*

- 3 221 road fatalities
- 5.5 killed per 100 000 inhabitants
- Around 500 cars (passenger cars and light duty vehicles) per 1 000 inhabitants.



17. Information provided is for Great Britain only.

## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|  |   |
|--|---|
| <i>Improved speed compliance / enforcement</i>   | <ul style="list-style-type: none"> <li>• Further extension of automatic safety camera enforcement 2002 onwards. Evaluation published June 2004 shows 40% reduction in KSI at camera sites.</li> <li>• Continuing publicity campaigns to improve compliance.</li> <li>• Review of safety camera criteria autumn 2005.</li> <li>• New funding regime announced for 2007.</li> </ul> |
| <i>Reduced speed limits</i>  | <ul style="list-style-type: none"> <li>• Implementation of 20 mph zones continues to increase, e.g. use outside schools in Scotland.</li> </ul>   |
| <i>New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs</i>                                      | <ul style="list-style-type: none"> <li>• Power to test for drugs at the roadside (2004)</li> </ul>  |
| <i>Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..)</i> | <ul style="list-style-type: none"> <li>• Although there are not completely new measures there is continuing activity in application of existing measures.</li> </ul>  |
| <i>Enforcement of other road rules</i>   | <ul style="list-style-type: none"> <li>• Continuing activity to enforce existing rules</li> </ul>   |
| <i>Graduated Licensing for novice drivers</i>  | <ul style="list-style-type: none"> <li>• Measures have concentrated on improvements to the driving test with introduction of hazard perception test into theory test in 2002</li> </ul>   |
| <i>Education and information programmes</i>  | <ul style="list-style-type: none"> <li>• Continued development of THINK! road safety campaigns.</li> <li>• Extension of pilot child pedestrian training programme.</li> </ul>   |
| <i>Regulation on vehicle inspection</i>  | <ul style="list-style-type: none"> <li>• Continued application of current regulations and planned improvements in control of vehicle testing through computerisation.</li> </ul>  |
| <i>Regulation on active vehicle safety equipment</i>   | <ul style="list-style-type: none"> <li>• Research on active safety in progress.</li> </ul>  |

#### B.1.2. Strategies to decrease risk of injury:

|   |  |
|---|--|
| <i>Safety equipment: enforcement of seat belt wearing/ helmet use</i>   | <ul style="list-style-type: none"> <li>• New regulations to implement EU Directive on seatbelts being introduced in 2006.</li> <li>• Continuing publicity and monitoring to encourage cycle helmet use.</li> </ul> |
| <i>Emergency services</i>   | <ul style="list-style-type: none"> <li>• No</li> </ul>   |
| <i>Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway</i> | <ul style="list-style-type: none"> <li>• Continued implementation of proven safety engineering measures</li> </ul>   |

Note: New measures have not in general been implemented since 2002, but there is continued implementation of existing measures. There is also a Road Safety Bill going through Parliament at the moment that will bring in new regulations on driver improvement courses, alcohol interlocks, drink-drive rehabilitation, penalties for speeding, drivers' hours, driver licensing, grants to local authorities. Penalties for bad driving have been reviewed and changes are being consulted upon

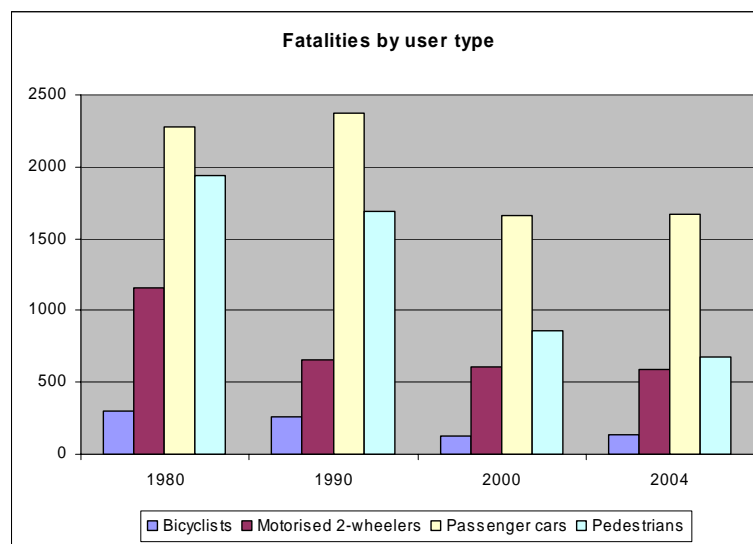
## B.2. National Diagnosis in key safety areas

### Road users

Since 1980, fatalities have decreased for all road user types. However, since the late 1990's the number of pedestrian and car fatalities has levelled out. The number of bicyclists fatalities has continued to fall, but the number of motorised 2-wheeler fatalities has risen. In 2004 the downward trend in fatalities resumed with a 6% decrease in car user deaths, and motorised 2-wheeler and pedestrian deaths fell by 16% and 13% respectively.

Overall, deaths in 2004 were 10% below the 1994-98 baseline for the 2010 target.

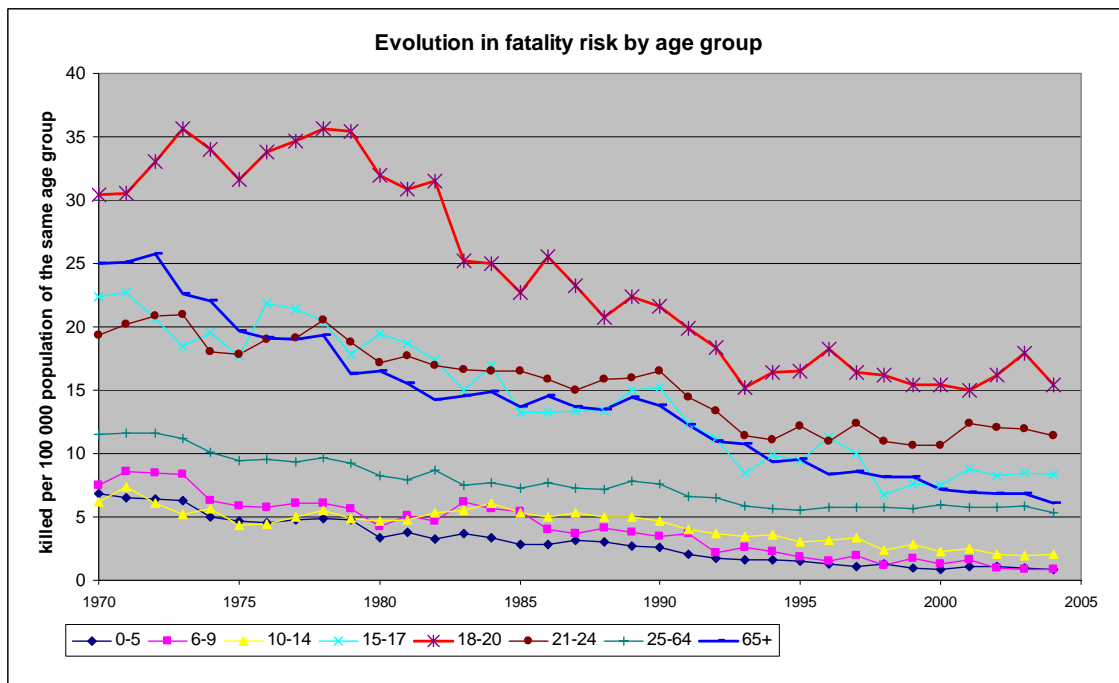
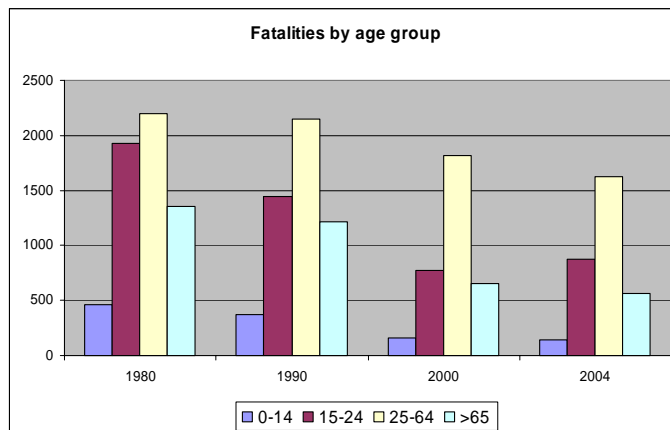
Evolution in fatalities by road user type



### Age groups

The number of child (0-15 year old) fatalities dropped by almost two thirds between 1980 and 2004. The number of fatalities dropped for most other age groups, with the exception of the 35-44 year olds where the number has increased – probably due to a large increase in the number of motorised two-wheeler fatalities amongst this age group.

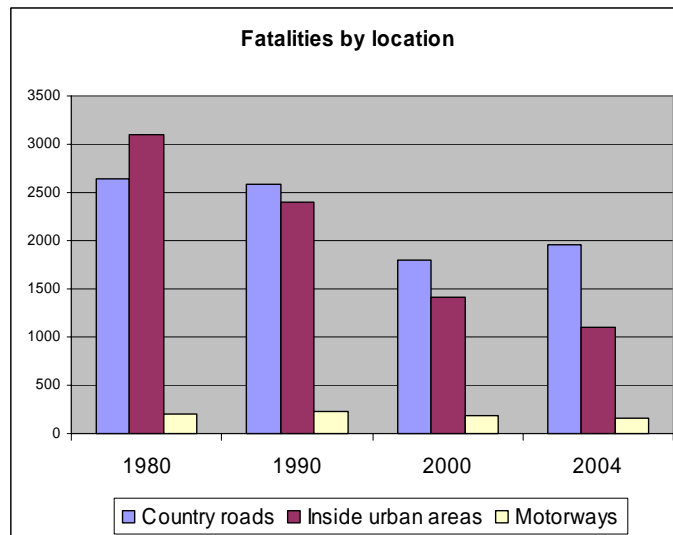
### Evolution in fatalities by age group



### Type of road / location

The number of fatalities has dropped across most types of road since 1980 - with the largest drop occurring on roads in urban areas. The exception to this is motorway fatalities, which has oscillated over the last 25 years and are currently at a similar level to 1980. However, as the amount of traffic on motorways has more than tripled during this time, the rate of fatalities on motorways has actually decreased.

### Evolution in fatalities by type of road



## *Speed*

The data below are the key points of the analysis of the 2004 speed survey. All the results relate, broadly, to the speeds at which drivers, on roads in Great Britain, travel when not constrained by congestion or other road conditions.

### **Non-built-up roads - 2004 estimates**

The average recorded vehicle speeds hardly changed from those observed in previous years. The average speed of cars on motorways (71 mph) has remained about the same since 1998. The proportion of cars exceeding the speed limit fell slightly in 2004 to 56% compared with 57% in 2003.

More than half of all cars observed at the survey sites on motorways exceeded the speed limit and 19 per cent were travelling at more than 80 mph. 28 per cent of motorcycles travelled at more than 80 mph, the same as in 2003.

Nearly half of all cars on dual carriageways exceeded the speed limit; 14% were travelling faster than 80 mph. 21% of motorcycles travelled at more than 80 mph, compared with 23% in 2003.

On non-built-up single carriageway roads, 10% of cars exceeded the 60 mph limit, 2 per cent travelling at 70 mph or over.

There was a very high incidence of speeding by heavy goods vehicles (HGVs) on non-built-up dual and single carriageway roads. On dual carriageways, 86% of articulated HGVs surveyed exceeded their 50 mph limit, almost the same proportion as in 2003 (87%). On single carriageways, 78% per cent of articulated HGVs exceeded their 40 mph limit, up from 74% in 2003; 28% were travelling faster than 50 mph compared with 23% in 2003.

### **Built-up roads - 2004 estimates**

On 40 mph roads, 27% of cars exceeded the speed limit the same as in 2003 and 2002; 10% travelled faster than 45 mph, also the same percentage as in 2003 and 2002. 36% of motorcycles exceeded the speed limit, the same as in 2003; 19% of motorcycles travelled faster than 45mph again the same as in 2003.

The percentage of cars exceeding the speed limit at 30 mph sites was 53% compared with 58% in 2003. The proportion of motorcycles exceeding the speed limit decreased from 54% in 2003 to 48% in 2004. These trends are also reflected in the proportion of vehicles travelling at more than 35 mph: for motorcycles the proportion decreased from 29% in 2003 to 24% in 2004. For cars, the proportion decreased from 25% in 2003 to 22% in 2004.

On built-up 30 mph roads, 49% of rigid HGVs exceeded the speed limit compared with 53% in 2003, 18% by more than 5 mph (slightly less than the 21% observed in 2003) In 2004, the proportion of cars exceeding the speed limit on 30mph roads decreased from 58% in 2003 to 53% in 2004, continuing the downward trend seen since 1999 when the proportion of cars exceeding the 30mph limit was 69%.

Under a voluntary scheme, several police forces recorded contributory factor data for the period 1999 to 2002 that covered 25% of all recorded personal injury road traffic accidents. Excessive speed is one of 54 possible contributory factors. It was identified as contributing to 12% of all accidents and 28% of fatal accidents between 1999 and 2002 where contributory factors were recorded. In the case of fatal accidents, excessive speed was the most frequently recorded factor. The proportion of accidents where excessive speed was cited as a contributory factor was highest for accidents

precipitated by two-wheeled motor vehicle accidents (21% for 1999-2002), and lowest for those precipitated by HGVs (9% for 1999-2002). Among car accidents, excessive speed was most frequently cited in accidents precipitated by young drivers. The proportion of accidents on rural roads associated with excessive speed was twice that of accidents on urban roads. Excessive speed also contributed to a slightly higher proportion of accidents on minor than on major roads. In 2002, excessive speed was a contributory factor to 12% of slight, 19% of serious and 30% of fatal accidents for which contributory factor data was available. If these percentages were extrapolated to the whole of Great Britain, it would imply that it contributed to over 1 000 deaths and to injuries to over 38 000 people in 2002 alone.

**Speeding citations, percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit in 2002**

|   |  |
|---|--|
| <i>Nb of speeding citations</i>                             | 1 629 600  |
| <i>% of fatal crashes where speed is a causation factor</i> | About one-third  |
| % of drivers over the posted speed limit in :               | <p><b>Motorway (limit = 70 mph)</b><br/> Cars 57% &gt;80mph =20%<br/> Motorcycles 59% &gt;80mph =28%<br/> Light goods vehicles 51% &gt;80mph =17%</p> <p><b>Main highway</b><br/> Cars 9%<br/> Motorcycles 22%<br/> Articulated Trucks (limit = 40 mph) 74%<br/> &gt;50mph=23%</p> <p><b>Urban, arterial roads: (limit = 40 mph)</b><br/> Cars 27% &gt;45mph=10%<br/> Motorcycles 36% &gt;45mph= 19%</p> <p><b>Urban, local streets (limit = 30 mph)</b><br/> Cars 58% &gt;35mph=25%<br/> Motorcycles 54% &gt;35mph=29%<br/> Light Goods vehicles (&lt;3.5T) 61% &gt;35mph=27%</p> |

*Drink driving*

In Great Britain, the maximum authorised blood alcohol content is 0.8 g/l.

A considerable part of tackling drinking and driving is about changing cultural attitudes and this has involved a combination of enforcement and intensive publicity campaigns. This approach has been successful and by 2000 deaths in drink-related accidents had fallen by two-thirds compared with the level in the 1970's. However, there is now evidence that as well as a continuing "hard-core" of drink-drivers, there is an increase in the younger age groups, in particular men aged 20-29. There has been a steady rise in the number of drink drive accidents since 1999 and casualties are now back to the levels seen in the early 1990's.

There has been a decline in breath-testing with screening tests in England and Wales falling from the peak of 815 000 in 1998 to 534 000 in 2003. The percentage that were positive increased from 13% to 20%.



**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|   | 1980                  | 1990                   | 2000                            | 2004                                    |
|---|-----------------------|------------------------|---------------------------------|---|
| <b>Number of citations*</b>                           | <b>91 000 E&amp;W</b> | <b>102 000 E&amp;W</b> | <b>95 000 England and Wales</b> | <b>106 000 (2003) England and Wales</b> |
| <b>% of fatal accidents where alcohol is a factor</b> | <b>23.2 GB</b>        | <b>13.7 GB</b>         | <b>14.5 GB</b>                  | <b>17.8 GB</b>                          |

*Seatbelt and helmet wearing*

Seatbelt wearing is compulsory (front seat 1983, Rear seats - 1989 - Children, 1991 - adults), as is helmet wearing for motorcyclists. Helmet wearing is not compulsory for pedal cyclists.

**Evolution in seatbelt wearing rate**

|                    | 1982      | 1990      | 2000      | 2003      |
|--------------------|-----------|-----------|-----------|-----------|
| <b>Rear Seat</b>   | <b>-</b>  | <b>43</b> | <b>78</b> | <b>83</b> |
| <b>Front Seats</b> | <b>38</b> | <b>93</b> | <b>93</b> | <b>94</b> |

*Other violations (drugs, mobile phone, red-light, inter vehicle distance, etc.)*

It is illegal to operate a hands-held **mobile phone** whilst driving. Infringement of **red lights** is detected by use of cameras. There are no routine statistics for **drug use** but post mortem evidence shows 18% incidence of illegal drugs, mainly cannabis, but this does not indicate causation.

**B.3. Major road safety problems today**

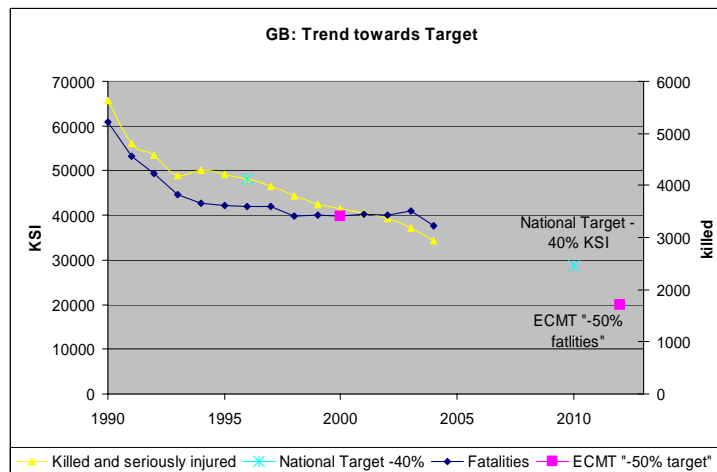
- Slower rate of reduction of fatal casualties.
- Possible reduction in reporting of injury accidents.
- Motorcycling casualties.
- Rise in drink driving in younger age groups.
- Possible increase in drug use, particularly combined with alcohol in young drivers.
- Declining driver behaviour indicated by rise in single vehicle and loss of control accidents.

**B.4. Forthcoming road safety initiatives to address these problems**

1. Research in hand to examine detailed fatal accident reports - expected to report in 2007
2. Research in hand to assess whether level of under reporting has changed. Due to report in 2007
3. Motorcycling Strategy published February 2005:
4. Review of road safety strategy to commence in April 2006.  
[http://www.dft.gov.uk/stellent/groups/dft\\_roads/documents/page/dft\\_roads\\_035439.pdf](http://www.dft.gov.uk/stellent/groups/dft_roads/documents/page/dft_roads_035439.pdf)

### C. Road safety targets

| Type                                     | Targets<br>(in % or<br>absolute figures)  | Base<br>year             | Target<br>year | Base year<br>figure                                 | Current<br>results<br>(figure in<br>2003 or 2004) | Intermediate<br>targets? |
|--|---|--------------------------|----------------|---|---|--------------------------|
| Fatalities and serious injuries -all     | 40% reduction   | 1994-98<br>average       | 2010           | 47,656  | 34,351<br>(2004)                                  | no                       |
| Fatalities and serious injuries-children | 50% reduction   | 1994-98<br>average       | 2010           | 6,860   | 3,905<br>(2004)                                   | no                       |
| Slightly Injured persons                 | 10% reduction in<br>casualty rate per<br>km   | 1994-98<br>average       | 2010           | 61<br>(casualties<br>per 100m<br>vehicle km)        | 49<br>(2004)                                      | no                       |
| Disadvantaged areas                      | Greater reduction<br>in number of<br>casualties in 88<br>Neighbourhood<br>Renewal areas in<br>England than for<br>England as a<br>whole | 1999-<br>2001<br>average | 2005           | Average for<br>the period<br>1999-2001 –<br>118 345 |   | no                       |



### D. Success story cards

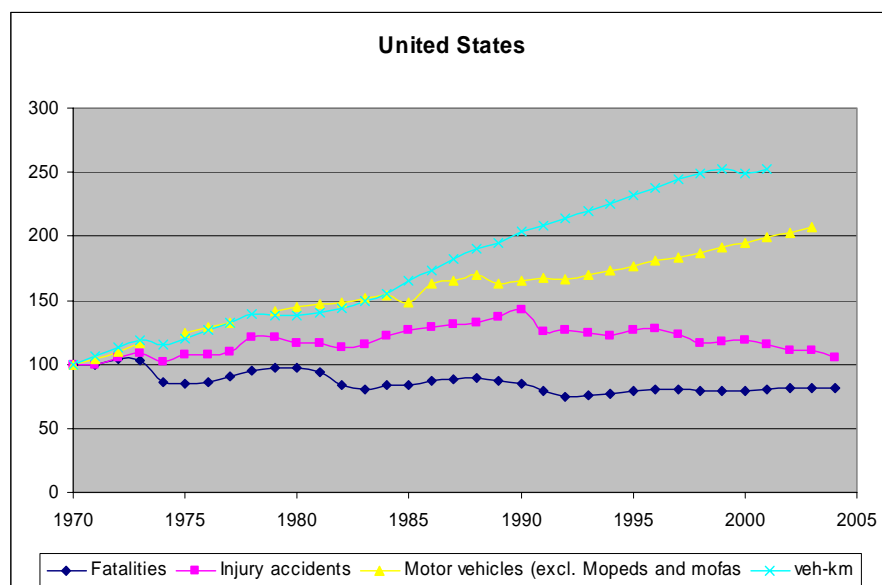
No information provided.

## UNITED STATES

### A. General trend in road safety

#### Key road safety data for 2004:

- 42 636 fatalities road fatalities
- 1 862 000 injury accidents
- 14.5 killed per 100 000 inhabitants
- Around 800 cars (passenger cars and light duty vehicles) per 1 000 inhabitants



## B. Current state of affairs and national diagnosis

### B.1. Recent (after 2002) road safety initiatives

#### B.1.1. Strategies to decrease risk of crashes:

|   |   |
|---|---|
| Improved speed compliance / enforcement   | June 2005, See <a href="http://www.nhtsa.dot.gov/people/injury/enforce/DOTSpeedManagementStrategicInitiative.pdf">http://www.nhtsa.dot.gov/people/injury/enforce/DOTSpeedManagementStrategicInitiative.pdf</a><br>Related to following targets: PVMT, MVMT, 0.08+, Belt Use   |
| Reduced speed limits  | No:   |
| New Regulation and enforcement related to : Drink driving, drunk pedestrians, driving under the influence of drugs                                      | Both 2003<br>Related to BAC target  |
| Major infrastructure improvement programmes (fully controlled intersections, roundabouts, lighting, sealed shoulders, tactile edge line marking, etc..) | State and local level authorities have infrastructure decision authority, using design and operations guidelines jointly developed with Federal Highway Administration (FHWA). FHWA develops and support safety best practices and technology that have been shown to be most effective in saving lives; states & locals to varying degrees implement these products. FHWA focus areas for safety improvement include roadway departure (enhanced visibility, rumble strips, shoulders & clear zones, barriers), intersections (better engineering & enforcement, roundabouts), and pedestrians (community-based plans, engineering solutions.) |
| Enforcement of other road rules   | NA  |
| Graduated Licensing for novice drivers  | Ongoing   |
| Education and information programmes  | Ongoing<br>related to the following targets: PVMT, MVMT, Non-occupant fatalities per 100 M VMT, 0.08+BAC, Belt Use, Child Restraint Use   |
| Regulation on vehicle inspection  | NA  |
| Regulation on active vehicle safety equipment   | Ongoing.<br>Related to the following targets: PVMT, MVMT, Non-occupant fatalities per 100 M VMT, Belt Use, Child Restraint Use  |

### B.1.2. Strategies to decrease risk of injury:

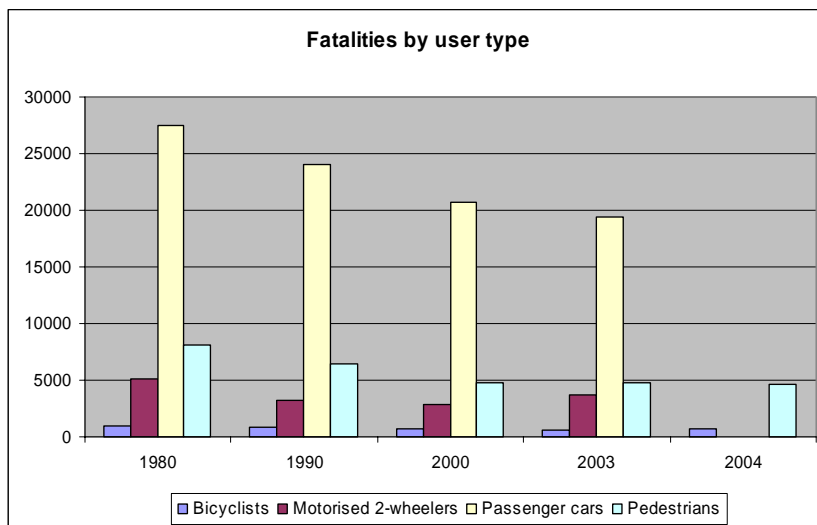
|  |   |
|--|---|
| Safety equipment: enforcement of seat belt wearing/ helmet use   | Regulatory Evaluation: Effectiveness of NHTSA's Regulations and Programmes <a href="http://www.nhtsa.dot.gov/cars/rules/regrev/evaluate/">http://www.nhtsa.dot.gov/cars/rules/regrev/evaluate/</a><br>NHTSA Motorcycle Helmet Law Repeal Evaluations: -Arkansas and Texas 2000 Traffic Tech #231 -Kentucky and Louisiana 2003 Traffic Tech #285 -Florida 2005 Traffic Tech #431 (Not yet released)<br><br><i>Related to the following targets: PVMT, Belt Use, MVMT</i> |
| Emergency services   | 2003 Priority Plan, 2004 Next Generation, 2004 911 Act Currently, drafting management plan to implement the Enhance 911 Act for Congress.<br><br><i>Related to the following targets: PVMT, MVMT, Non-occupant fatalities per 100 M VMT</i>   |
| Infrastructure improvements: Divided road (median barrier), roadside safety barriers, fewer obstacles further from roadway | See above. The infrastructure-related elements discussed within the table above include both crash avoidance and severity mitigation elements.  |

### B.2. National Diagnosis in key safety areas

#### Road users

Since 1980, the United States has experienced a marked reduction in *passenger vehicle fatalities* – from 27 499 to 19 460. A further reduction in passenger car fatalities is expected with increased availability of front and side airbags, electronic stability control, safety belt use, use of age-appropriate child safety seats and a continued reduction in alcohol and drug impaired driving. At the same time, the number of *non-occupants* of all types (pedestrians, pedalcyclists and occupants of motor vehicles not in transport and of non-motor vehicle transport devices) killed in motor vehicle crashes have also continued to fall and remain pretty stable today – 9 164 in 1980 to 5 511 in 2003. However, beginning in the late 1990's, *motorcycle rider fatalities* have increased each year since reaching a historic low of 2 116 fatalities in 1997. In 2003, motorcycle rider fatalities made up 8.6% of all motor vehicle traffic crash fatalities and claimed 3 661 lives, an increase of 73% between 1997 and 2003. Without this substantial increase in motorcycle rider fatalities between 1997 and 2003, overall highway fatalities would have experienced a marked reduction of about 3.6% over this same time period. Almost three-fourths of the fatally injured motorcycle riders were not wearing a helmet in states without universal helmet laws compared to 15% in states with universal helmet laws. And, alcohol-related crashes killed over 1 500 motorcyclists, increasing by more than 5%.

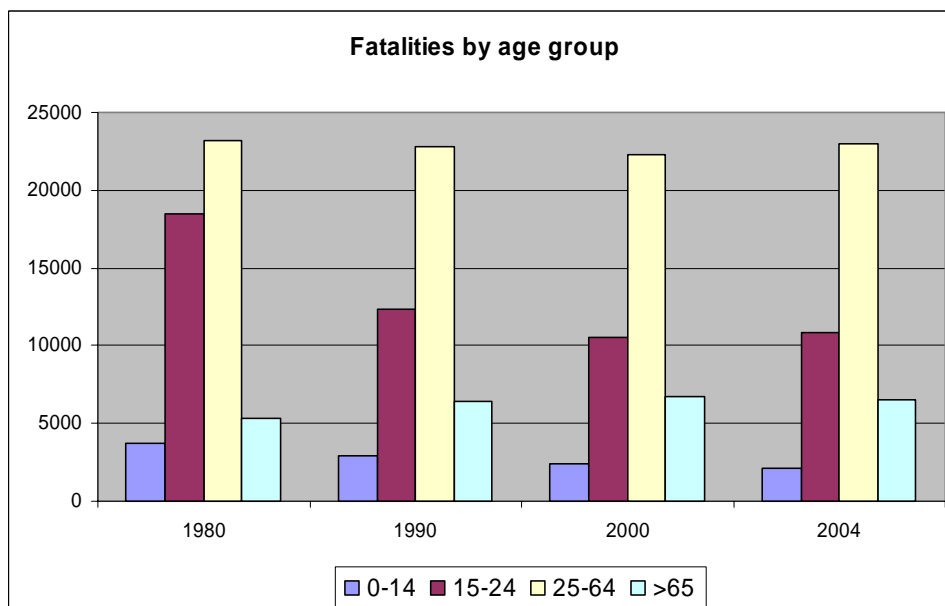
### Evolution in fatalities by road user type

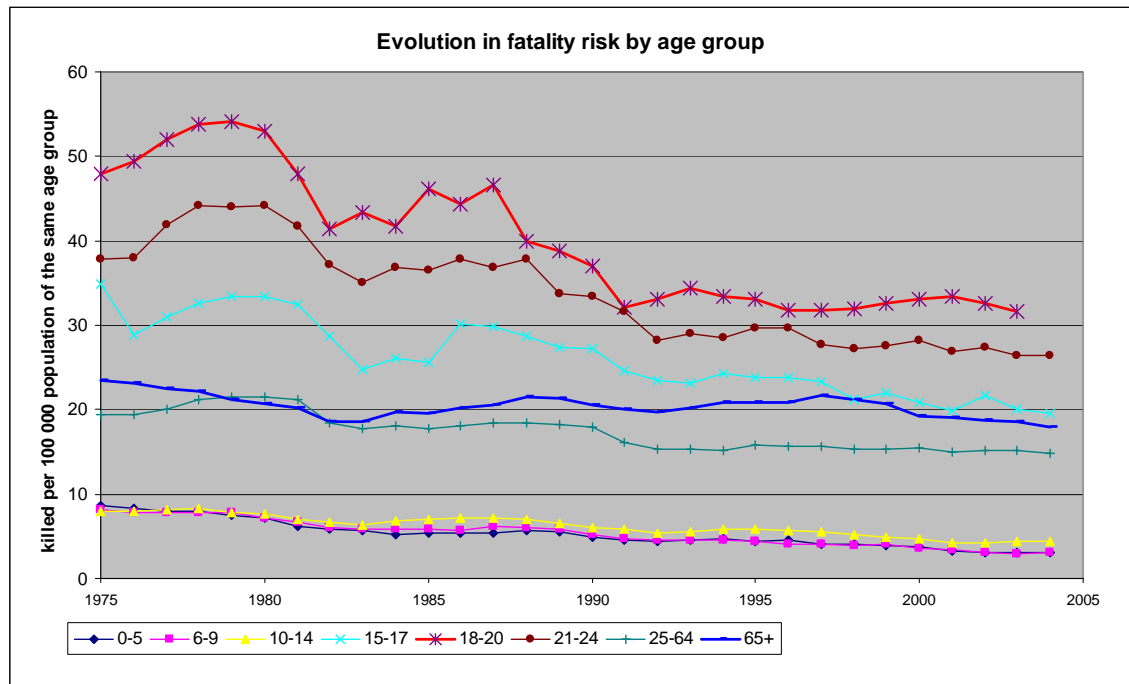


### Age groups

From 1980 to 2000, the United States experienced fatality reductions in all age groups, but 65 and over. This age group has remained stable at around 7 000 fatalities since 1990. The 0-14 year olds have continued to decline and today account for 6% of fatalities. While the 15-24 year olds levelled out in 2000 and result in around 10 000 fatalities per year. The 25-64 year olds have remained high (age group spans 40 years), but relatively stable over the last 20 years

### Evolution in fatalities by age group

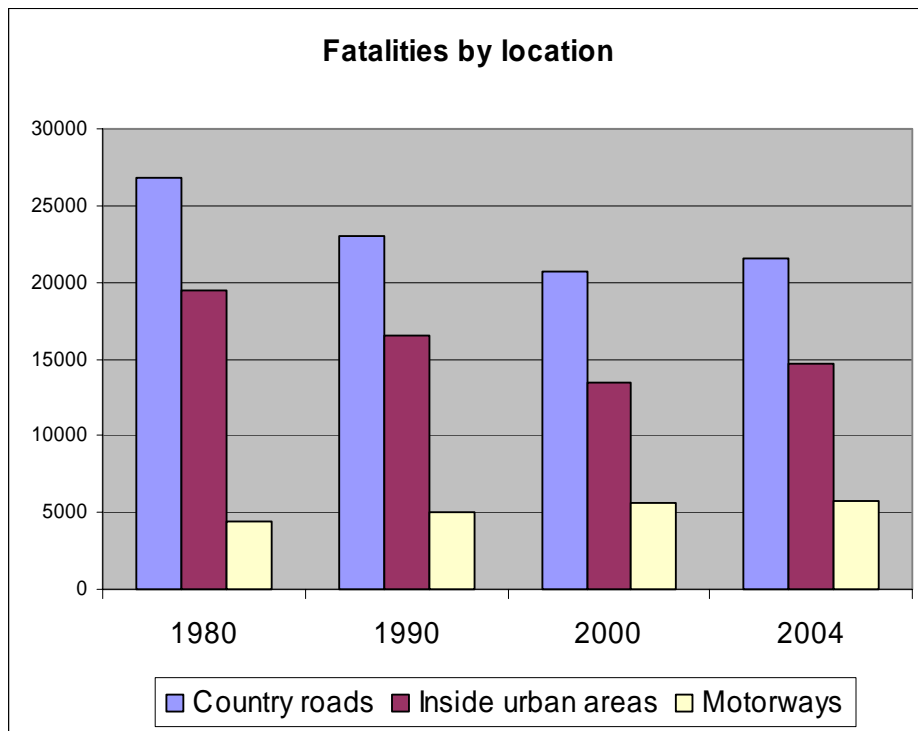




#### *Type of road / location*

By location, *country roads (rural)* have given drivers in the United States the most problems. From 1980 to 2000 these roads have claimed over 20 000 lives each year. *Inside urban areas* have experienced significant reductions from close to 20 000 in 1980 to 13 000 in 2000. Current data (2003) shows that fatalities for this type of roadway have risen slightly in the last three years. *Motorways* have experienced the least amount of fatalities over the years and have held steady around 5 000 fatalities per year.

Evolution in fatalities by type of road



### Speed

In 2002, 13 713 persons, about 32% of all motor vehicle traffic fatalities, were killed in speeding-related crashes as depicted in Table 1. After reaching a high of 16 947 in 1986, speeding-related fatalities declined to a low of 12 592 in 1993 and thereafter maintaining a relatively constant trend up to 2000. However, since 2000, the number of speeding-related fatalities has been increasing every year.

Speeding-related fatalities, as a percent of total fatalities, show a downward trend from the highest level of 36.8% in 1986 to the lowest level at 29.9% in 2000. Since 2000, as total fatalities increased, the proportion has also continuously increased indicating that the rate of increase in speeding-related fatalities is more than rate of increase in total fatalities.

In 1987, Congress allowed States to Raise Speed Limit to 65 mph and abolished the National Maximum Speed Limit (NMSL) in December 1995.

See Analysis of Speeding-Related Fatal Motor Vehicle Traffic Crashes, June 2005 - <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/Rpts/2005/809839.pdf>



**Evolution percentage of fatal crashes where speed is a causation factor and percentage of drivers over the posted limit.**

|  | 1980 | 1994 | 2000 | 2003   |
|--|------|------|------|--|
| % of fatal crashes where speed is a causation factor                                     | 40   | 32   | 29   | 32% Source: FARS (2002) 31% in 2003  |
| % of drivers over the posted speed limit in :<br>urban areas<br>rural roads<br>motorways |      |      |      | Varies from states<br>Motorways: 41-66%<br>Main Highway 50-76%<br>Rural roads 47%<br>Urban arterial roads: 73%<br>Urban Local roads: 74% |

*Drink driving*

Establishment of laws governing BAC levels for law enforcement action is under the express jurisdiction of each State. In general, BAC laws in the U.S. fall into three categories: Zero Tolerance, .08 BAC per se, and High BAC (0.08+). All 50 States have enacted zero tolerance laws (primarily, per se laws at .02% BAC or lower) that make it illegal for drivers under the age of 21 to have any detectable amount of alcohol in their bodies. As of August 2005, all 50 states, the District of Columbia, and Puerto Rico have enacted .08 BAC per se laws. Additionally, as of January 2005, 32 States have enacted high BAC laws.

In 2003, NHTSA estimates that about 7% of all police-reported crashes were alcohol-involved – amounting to 40% of all fatal crashes, claiming 17 013 lives. High BAC drivers (.08 and above) make up 85% of the alcohol problem. The median BAC value for alcohol-involved drivers was 0.16, meaning half of all alcohol-involved drivers had BACs higher than twice the legal limit in most states (all states as of July 2004). While there is still work that needs to be done to prevent alcohol-related fatalities in their totality, NHTSA is taking aggressive action to implement strategies to continue to focus on the high BAC crash fatality at-risk population. In addition, with all 50 states (Delaware became the final state to adopt in July 2004), the District of Columbia and Puerto Rico lowering their state's legal threshold for impaired driving to a .08 blood alcohol concentration (BAC) the United States hopes that alcohol-related fatalities specifically high BAC crash fatalities will continue to decline in the coming years.

**Evolution in the number of citations for drink-driving, and the percentage of fatal accidents where alcohol is a causation factor**

|  | 1980                            | 1994 | 2000 | 2003                               |
|--|---------------------------------|------|------|------------------------------------|
| % of fatal accidents where alcohol is a factor | <i>No Information Available</i> | 44   | 35   | 34% (BAC>0.8)<br>Source: FARS 2003 |

## *Seatbelt and helmet wearing*

### **Seatbelt**

Seatbelt wearing laws are issued and enforced by the individual States; there is no national law requiring safety belt use. Requirements under each State law vary as to applications and exceptions.

A primary belt law allows law enforcement to conduct a traffic stop and issue a vehicle violation based solely on the instance of non-usage of a safety belt. A secondary law means that law enforcement must have pulled the vehicle over for a separate violation in order to issue the non-usage violation. As of April 2005, 21 States, plus the District of Columbia and Puerto Rico, have enacted primary belt laws.

NHTSA's National Occupant Protection Use Survey (NOPUS) in September 2004 showed a five percentage-point increase in belt use to 80% since 2002 (an all-time high), which translated into an additional fourteen million users. Primary laws are the most effective way to ensure more vehicle occupants buckle up. Over the past several years, the United States has been converting approximately 8.5% of the non-safety belt users, to more regular users. Continuing to convert this number each year becomes more difficult as the set of "hard core" non-users becomes a higher proportion of all remaining non-users. States and communities will need to continue to pass and enforce safety belt laws, and encourage their use in order for National targets to be met. Especially since, in 2003, while the percentage of unrestrained passenger vehicle occupants killed in crashes experienced the largest percentage point decrease (-3) since 1993, nearly two-thirds (63%) of teen passenger vehicle occupants (ages 16-20) killed were unrestrained. This compares to 55% of fatally injured adults (21 years of age or older) who were unrestrained.

Safety belts are approximately 50% effective in preventing fatalities in severe crashes. The 80% safety belt usage will save 15 200 lives and prevent more than 330 000 serious injuries, saving \$60 billion in medical care, lost productivity and other injury related costs every year. Conversely, the failure of crash victims to wear safety belts leads to an estimated 5 800 preventable fatalities and 79 000 serious injuries. In 2004, failure to wear safety belts cost society \$17 billion in medical care and other preventable economic costs. Twenty-six percent of overall crash costs are paid by those individuals directly involved in these crashes, the remaining 74% is paid by the public through insurance premiums, taxes, and higher health care costs. For each percentage point increase in safety belt use, an additional 2.8 million people buckle up, saving approximately 270 lives each year.

**Evolution in seatbelt wearing rate**

|                | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2003</b> |
|----------------|-------------|-------------|-------------|-------------|
| <b>General</b> | N/A         | N/A         | 71 %        | 79 %        |

### **Helmet**

Motorcycle helmet laws are issued and enforced by the individual States; there is no national law requiring helmet use. 20 States, the District of Columbia, and Puerto Rico require helmet use by all operators and passengers. In 27 States, only a specific population segment is required to wear helmets. Three States have no helmet use laws. As of December 2004, 20 States (including the District of Columbia) have enacted age-specific bicycle helmet laws and more than 131 localities have enacted some form of bicycle helmet legislation.

### Evolution in motorcycle helmet use in the United States

|                   | 1994 | 1996 | 1998 | 2000 | 2002 | 2004 |
|-------------------|------|------|------|------|------|------|
| <b>Helmet Use</b> | 63%  | 64%  | 67%  | 71%  | 58%  | 58%  |

1. See Motorcycle Helmet Use in 2004 – Overall Results <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/RNotes/2005/809867.pdf>
2. See Calculating Lives Saved By Motorcycle Helmets <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/RNotes/2005/809861.pdf>

#### ***B.3. Major road safety problems today***

1. Deaths from Roadway Departure Crashes (60%)
2. Deaths at Intersections (22%)
3. Deaths in crashes involving commercial vehicles (*i.e.* large trucks) (12%)
- 3 Pedestrian Deaths (11%)

#### ***B.4. Forthcoming road safety initiatives to address these problems***

US DOT Strategic Plan: Reducing the number of people who die on the Nation's highways each year is one of the top priorities of the U.S. government. The U.S. Department of Transportation (DOT) has established a goal to reduce the highway fatality rate to not more than 1.0 per 100 million vehicle miles travelled by 2008 from 1.7 per 100 million vehicle miles travelled in 1996. Our central strategies for reducing transportation fatalities and injuries are to reduce alcohol-impaired driving, increase safety belt use and improve the safety of commercial vehicle operations.

Specific programmes to achieve the target reductions in transportation-related fatalities and injuries are listed each year in U.S. DOT's Annual Performance Budgets. Each year DOT reassesses its performance goals based on appropriations. The DOT's primary strategies are summarized below.

##### ***Leadership***

- Propose legislation to streamline and consolidate surface transportation safety grant programmes.
- Propose legislation to reduce collisions at highway rail crossings and address related issues.
- Collaborate with Tribes, States, local governments and other stakeholders on the development, implementation, enforcement and evaluation of safety countermeasures and programmes that promote safe behaviour and practices in all modes of transportation.
- Collaborate with safety advocates and other stakeholders to design incentives for improving safety including financial inducements, third-party or self-certification of safety compliance for private and commercial operators, and partnerships to accelerate deployment of safety technologies.
- Develop, promote and enforce performance-based, national and international safety standards and regulations that allow innovation while improving safety levels.

### ***Building Expertise***

- Conduct, support and publish research in all modes on safety enhancing technologies and on topics related to safety such as human performance, differing cultural norms, behaviour, and unsafe trends.
- Work with Tribes, states, local governments and other stakeholders to develop intermodal safety standards and comprehensive highway safety plans.
- Develop, promote and support public education and information activities that advance safe behaviour, safe operations, and best safety practices in all modes of transportation.
- Provide training and technical assistance to industry, Tribal governments, states, and other levels of government on safety issues and safety management practices.
- Become the employer of choice for individuals seeking careers in transportation safety by providing job opportunities, internships, training and rotational assignments in safety core competencies.

### ***Technology***

- Work with Tribes, States, local governments and other stakeholders to build safety into the transportation infrastructure and into operational procedures through research, planning, design, engineering, incentives, and incorporation of safety enhancing technologies.
- Mitigate the consequences of safety incidents through more effective response, technology, and coordination with private transportation providers and state and local government.
- Capitalize on secure, advanced technology to provide information to the public in languages and formats they understand on the benefits of safe behaviour and practices in all modes of transportation.
- Increase the implementation of infrastructure and operational improvements focused on enhancing the ability of travellers to remain on the roadway, reducing the adverse consequences of roadway departure, improving intersection safety and protecting pedestrians in the roadway environment.

### **C. Road safety targets**

| Type              | Targets  | Base Year | Target Year | Base Year Figure | Current Results | Intermediate Targets |
|-------------------|--|-----------|-------------|------------------|-----------------|----------------------|
| <i>Fatalities</i> | 1.0 Fatalities Per 100 Million Vehicle Miles Travelled | 1996      | 2008        | 1.7              | 1.48 (2003)     | 1.38 (2006)          |

### Specific Targets for Particular Road Users

| Type   | Targets   | Base Year | Target Year | Base Year Figure | Current Results | Intermediate Targets |
|--|---|-----------|-------------|------------------|-----------------|----------------------|
| <i>Passenger Vehicle Occupant Highway Fatalities</i> | 1.0 Fatalities Per 100 Million Passenger Vehicle Miles Travelled (PVMT) | 2002      | 2008        | 1.24             | 1.20 (2003)     | 1.12 (2006)          |
| <i>Motorcycle Rider Highway Fatalities</i>           | 46.00 Fatalities Per 100 Million Motorcycle VMT*                        | 2002      | 2006        | 33.96            | 38.38 (2003)    | 37.00 (2005)         |
| <i>Non-Occupant Highway Fatalities**</i>             | 0.16 Fatalities Per 100 Million VMT                                     | 2002      | 2006        | 0.20             | 0.19 (2003)     | 0.16 (2005)          |
| <i>Fatalities In Crashes Involving Large Trucks</i>  | 1.65 Fatalities Per 100 Million Truck Vehicle Miles Travelled (TVMT)    | 1996      | 2008        | 2.81             | 2.31 (2003)     | 1.96(2005)           |

\* Motorcycle rider fatalities have increased significantly each year since reaching a historic low of 2,116 fatalities in 1997. NHTSA has set a target rate of 46.00 fatalities per 100 million motorcycle miles travelled for 2006. This is a very ambitious target considering agency projections show an increase to 55.00 in 2006. These targets reflect NHTSA's efforts to reduce the rate of increase.

\*\* Non-occupants include pedestrians, pedalcyclists and occupants of motor vehicles not in transport and of non-motor vehicle transport devices

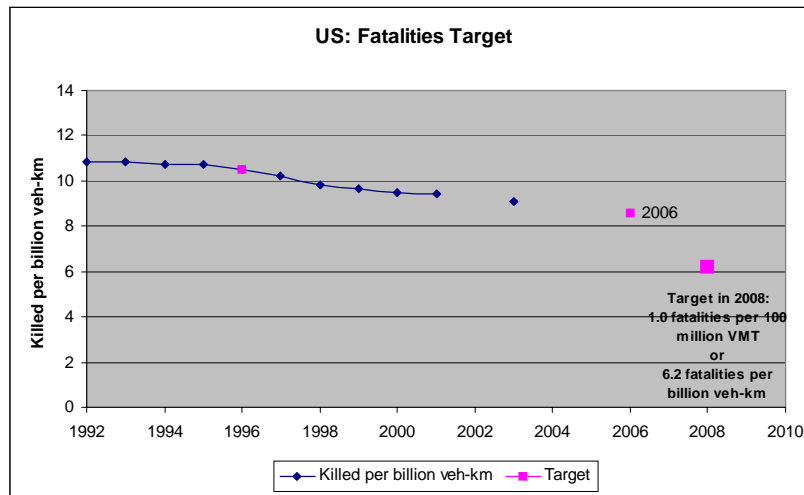
### Targets related to accident causation factors and road users protection

| Type                                      | Targets                  | Base Year | Target Year | Base Year Figure | Current Results | Intermediate Targets |
|---|--------------------------|-----------|-------------|------------------|-----------------|----------------------|
| Fatalities in high BAC (0.08+) crashes    | 0.51 per 100 million VMT | 2003      | 2006        | 0.51             | 0.51 (2003)     | NA                   |
| Safety belt use                           | 82%                      | 2001      | 2006        | 73%              | 80%             | 80%-85%* (2005)      |
| Restraint use among 0 through 7 year olds | 92%                      | 2002      | 2006        | 88%              | NA**            | 91% (2005)           |

\* 2005 and 2006 targets depend on States enacting and enforcing primary safety belt use laws. Using a refined projection model, NHTSA set its 2006 target at 82 percent.

\*\* Data was not collected on this measure for the 2003 National Occupant Protection Use Survey (NOPUS).

Trend towards target (data indicated in terms of fatalities per billion veh-km)



#### D. Success story cards

##### *Success story from the United States*

###### **Increased Seatbelt Use**

See The 2003 Click It or Ticket Campaign <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/Rpts/2004/809-713/2003ciot.htm>

###### **Decreased Large Truck-Related Fatalities -**

The U.S. Federal Motor Carrier Safety Administration (FMCSA) is a separate agency within the U.S. DOT that specifically focuses on reducing fatalities and injuries related to crashes involving large trucks. FMCSA has made solid progress in reducing both the number and rate of fatalities involving large trucks. Based on preliminary estimates for 2004, the number of deaths in crashes involving large trucks decreased by almost 23 percent from its all-time high in 1979, and the rate of these fatalities decreased over 61 percent during the same time period. Additionally, over the past decade, the rate for large vehicle fatalities involving alcohol has been cut by more than two-thirds and is substantially below the rate for passenger vehicles (1.8% v. 22.3%).