



National Technical University of Athens  
School of Civil Engineering  
Department of Transportation Planning and Engineering

# Development of a Strategic Plan for the improvement of road safety in Greece, 2011-2020

## Summary

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HELLENIC REPUBLIC

MINISTRY OF INFRASTRUCTURE, TRANSPORT AND NETWORKS



## Framework of the project

Greece, with almost 1.300 fatalities in road accidents per year, is one of the worst performing countries, as far as road safety is concerned, among the 27 members of the European Union. The low level of road safety in Greece is due to the fact that road accidents have never been treated effectively. The responsible authorities (Ministries, municipalities) lacking organization and by implementing fragmentary road safety measures without coordination and continuity in time, are not able to achieve the desirable results neither to inform and sensitize the public for the importance of road safety and the need for responsible driving behaviour.

The project titled “Development of a Strategic Plan for the improvement of road safety in Greece, 2011-2020” was assigned to the Department of Transportation Planning and Engineering (DTPE) of the School of Civil Engineering of the National Technical University of Athens (NTUA) by the Ministry of Infrastructure, Transport and Networks.

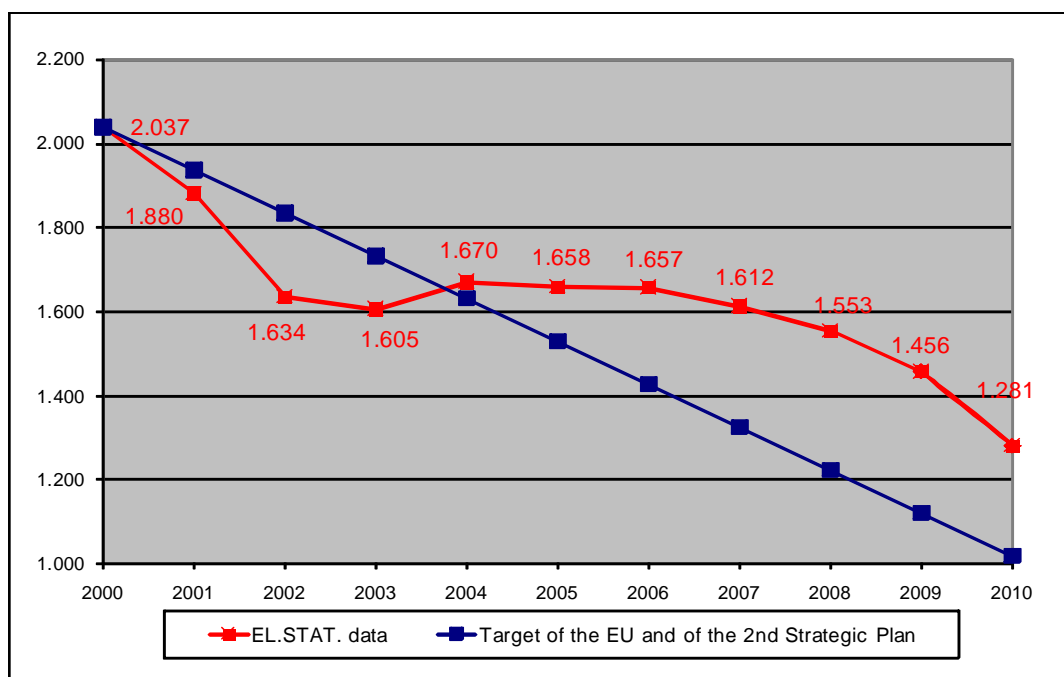
The objective of this project is the development of the Strategic Plan for the improvement of road safety in Greece for the period 2011-2020 which will have specific quantitative targets and appropriate structure. This will result to the selection, application, monitoring and assessment of the necessary measures for the reduction of road accidents and corresponding deaths and injuries as well as to the achievement in Greece too, of the European target according to which the number of deaths in road accidents in 2020 must be reduced by 50% comparing to 2010.

## Assessment of previous Road Safety Strategic Plans

For the assessment of the implementation of previous Strategic Plans, the basic characteristics of the 1<sup>st</sup> and the 2<sup>nd</sup> Strategic Plan are analysed and data on their implementation are recorded and evaluated. The implementation problems are identified and the effectiveness of the implementation of the 1<sup>st</sup> and of the 2<sup>nd</sup> Strategic Plan for the improvement of road safety in Greece is overall assessed.

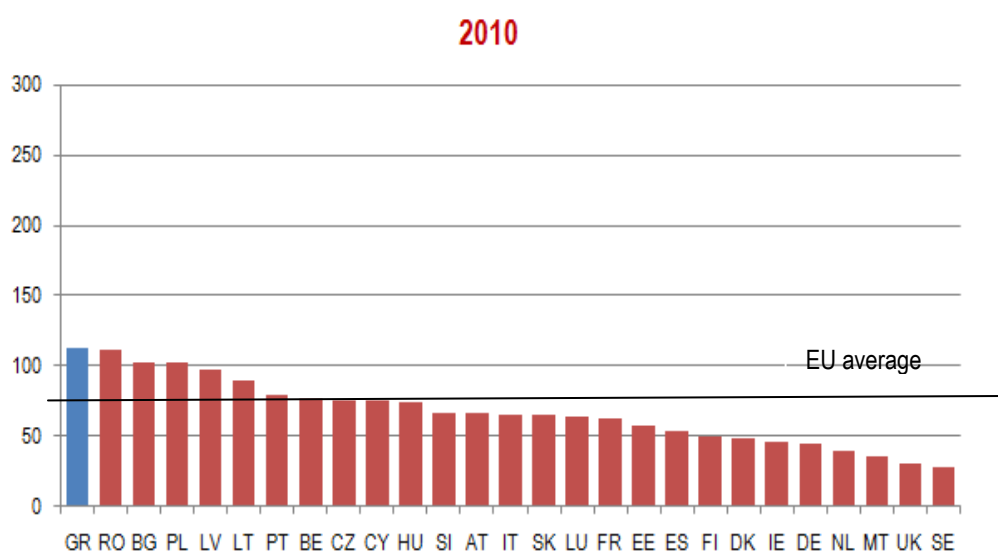
Years 2001-2010 can be characterised as another poorly exploited period for road safety in Greece since the efforts of both the State and the public could have been more effective so that the outcomes would be closer to the targets. Basic road safety indicators were improved, nevertheless the changes that occurred were among the lowest in the European Union and Greece remained one of the worst performing countries, as far as road safety is concerned, among the 27 members of the European Union, during the whole decade.

The reduction of the number of road fatalities during the period 2001-2010 was 37,1%. The reduction of the number of road accidents and injuries was 34,5% and 39,0% respectively. Consequently, although there is an important reduction in the number of deaths, there is also a not negligible deviation from the target set in Greece as well as in the European Union (Figure 1).



**Figure 1.** Evolution of road fatalities in Greece, 2000 – 2010  
and target of the European Union and of the 2<sup>nd</sup> Strategic Plan (2006 - 2010)  
(Source: EL.STAT., ETSC Processing: D.T.P.E. / N.T.U.A.)

The deviation from the target was greater than the corresponding deviation in the 1<sup>st</sup> Strategic Plan and it is possibly due to the fact that the target of the 2<sup>nd</sup> Strategic Plan was more ambitious. Furthermore, the potential for road safety improvement which was developed during the 1<sup>st</sup> Strategic Plan was not fully exploited. During the period 2002 - 2008 a no improvement in the road fatalities performance was observed, while after 2008 a reduction was observed. Nevertheless, it is noted that in 2010, as well as in 2005, there wasn't any improvement in the ranking of Greece comparing to the other members of the European Union as far as road fatalities are concerned (Figure 2).



**Figure 2.** Number of road fatalities per million population in the European Union, 2010  
(Source: ETSC, 2011)

Assessing in total the implementation of the two five-year long Strategic Plans, it is noted that this was the first organized attempt to deal with the problem of road accidents in Greece. The first step for the improvement of road safety was taken and the basis for facing the problem efficiently was set. However, some important barriers existed. These barriers mainly concerned the coordination and the monitoring of the implementation of the Strategic Plans. The mechanism that would support the work of the Inter-Ministerial Committee never worked properly and the necessary resources were never allocated to the related road safety actions. Therefore, any efforts made by all public and private stakeholders were limited.

The Inter-Ministerial Committee worked (with no support mechanism) during the period 2001-2003 and was re-established in January 2010. In order to be able to fulfill its mission, the relative Secretariat must also perform efficiently.

The analysis of road accident data in Greece as well as of the relative road safety indicators (accident rates, driving behaviour, etc.) showed that, in Greece, the critical traffic rule violations are travelling at speed higher than the appropriate, driving under the influence of alcohol or using mobile phones while driving and not wearing seat belts and helmets. In addition, accident rates are higher for riders of motorcycles and mopeds as well as for pedestrians.

## Analysis and evaluation of road safety developments in Europe and worldwide

During the last decade, in countries with the highest road safety performances, such as Sweden and the Netherlands, the way in which the problem of road accidents is dealt with has changed and the Safe System approach has been adopted. According to the Safe System approach:

- No one should be killed or seriously injured for life in road traffic.
- Those who design and operate the road transport system bear the ultimate responsibility for road safety. It is the responsibility of the individual person to abide by laws and regulations.
- Road safety problems are dealt with by considering how several components of the road transport system interact rather than by implementing individual countermeasures in relative isolation.
- Road system design must be adapted to the needs and limitations of the users, a forgiving road environment must be created and a forgiving driving behaviour must be adopted.

According to the principles of Sustainable Road Safety, developed in the Netherlands, the road environment and the driving demands imposed by this must be adapted to the level that the majority of road users can deal with, so that serious unintentional mistakes are prevented. The principles of sustainable road safety are shown in Table 1.

**Table 1. Sustainable Road Safety Principles**

Road Safety Principle	Description
Functionality of roads.	Monofunctionality of roads as either through roads, distributor roads, or access roads in a hierarchical road network.
Homogeneity of mass and/or speed and direction.	Equality in speed, direction, and mass at moderate and high speeds
Forgivingness of the environment and of road users.	Injury limitation through a forgiving road environment and anticipation of road user behaviour.
Predictability of road course and road user behaviour by a recognizable road design.	Road environment and road user behaviour that support road user expectations through consistency and continuity in road design.
State awareness by the road user.	Ability to assess one's task capability to handle the driving task.

Internationally, the adoption of an integrated approach for road safety is considered necessary. This is achieved through the development and the implementation of Road Safety Strategic Plans. These Strategic Plans include specific road safety measures of certain duration and quantitative targets.

The importance of Strategic Plans lies in the fact that their successful development and implementation ensure the commitment of the State for achieving the targets, the implementation of an integrated policy and public consent. Moreover, effective coordination, timelessness of efforts, sufficient financing and monitoring and assessment of all measures are achieved.

The main prerequisites for the achievement of road safety targets are strong political will, a sound management framework, the coordination of all stakeholders, public participation and support, coordinated and continuous monitoring and evaluation of the road safety measures and sufficient financing. In good practice, the lead authority is a governmental body and takes responsibility within government for the development of the national road safety strategy and its results focus on the overarching institutional management function.

During the last decades, several road safety measures have been implemented worldwide and many of them have been assessed. Such measures concern the improvement of road users' safety, road infrastructure and vehicles as well as the post-accident care of road victims. The most effective measures and those with the greater potential for Greece are:

- Road safety education and campaigns
- Traffic enforcement including speed controls, controls for seat belt, helmet and child restraint use, alcohol controls and mobile use controls.
- Road Safety Audit
- Speed management systems in the urban and the rural road network

- Identification of hazardous locations and implementation of countermeasures
- Improvement of post-accident care

## Objective and Targets of the Road Safety Strategic Plan, 2011-2020

**The development of “Road Safety Culture” is the final aim of the Strategic Plan.** In order to achieve this final aim, continuous and systematic collective efforts as well as long-term planning are needed. Today, it is recognized, worldwide, that “Road Safety Culture” is the solid basis for the achievement of the particular road safety targets.

Road Safety Culture is related to a positive attitude towards road safety and to the rejection of dangerous driving behaviours. It is also related to the application of an effective system of road safety measures and their acceptance by Society.

Road Safety Culture concerns the substantial development of the personality, the way of thinking and the behaviour, the interests, the assessments, the expectations, the sense of boundaries and the desires that someone has. Within this framework, road safety must be elevated to a value, to be recognized by people as important to them and to be a measure for the assessment of people and behaviours.

Road Safety Culture refers to values, attitudes and behaviours adopted not only by isolated persons but also by families, communities, authorities that propose and enforce road safety policy and by the members of the Parliament and the governments. It is noted that the development of Road Safety Culture must be considered part of the efforts made to improve the national culture which is related to a more consensual and creative public dialogue to fundamentally revise the values and priorities to support the road safety goals.

Based on provisional data, the number of road fatalities in 2010 was 1.281. In accordance to the European target, **the quantitative target of the Strategic Plan for the improvement of road safety in Greece, 2011-2020 is:**

- **the number of road fatalities in 2020 must be lower than 640.**

In addition, a mid-term target for the first five years is set: the number of road fatalities in 2015 must be lower than 880.

## Structure of the Road Safety Strategic Plan, 2011-2020

The structure of the Road Safety Strategic Plan for the period 2011-2020 was based on the experience gained from the implementation of the previous Strategic Plans in Greece, the special characteristics of the authorities involved in road safety in Greece as well as on good practice from countries with high performance in road safety.

For the effective implementation of road safety measures, six road safety Programs were developed. The Programs should be further specified by four Ministries (Ministry of Education, Ministry of Infrastructure, Transport and Networks, Ministry of Citizen Protection and Ministry of Health) and will be applied at national, regional and local level by the Ministries, the Regions and the Municipalities (Figure 3).

**The Inter-Ministerial Road Safety Committee** is responsible for setting the national road safety strategy, setting and monitoring the overall and the specific targets, ensuring and allocating sufficient funding for the realization of the Programs as well as for coordinating and continuously monitoring all central regional and local authorities which implement the Programs and measures.

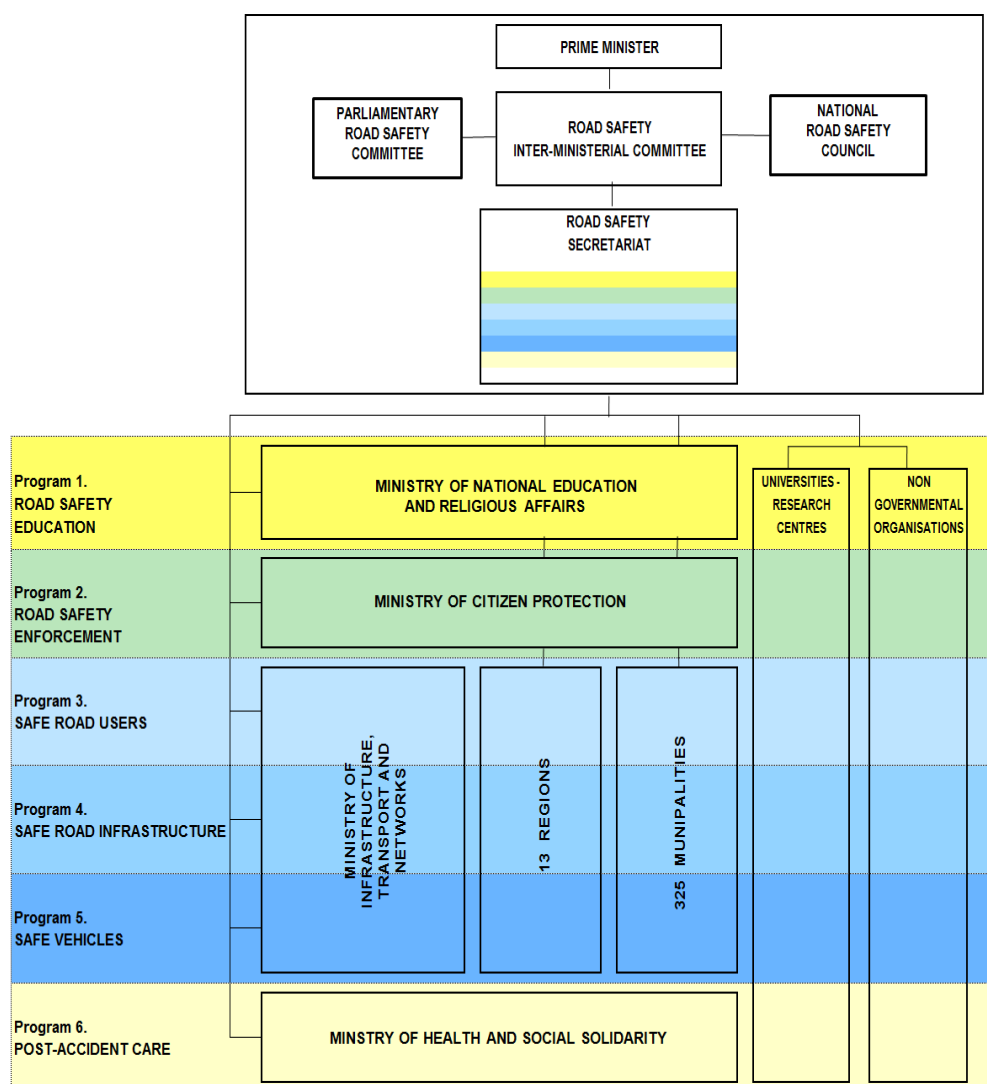
One of the main responsibilities of the Inter-Ministerial Committee is the development of the Road Safety Culture through the information and sensitization of citizens on road safety issues. Furthermore, it is the responsibility of the Inter-Ministerial Committee to ensure the cooperation among the several responsible authorities in every case where there is need for combined and coordinated implementation of various measures (e.g. information and sensitization campaigns in combination to enforcement measures).

Due to the need of showing strong political will at the highest political level as well as for the development of the feeling of urgency, it is suggested that the Prime Minister chairs over the Inter-Ministerial Committee and is replaced by the Minister of Infrastructure, Transport and Networks.

Due to the importance and the complexity of the work of the Inter-Ministerial Committee it is necessary to be supported by a Special Secretariat. The **Road Safety Special Secretariat** is a specialized administrative unit which, with the appropriate resources, will be able to support the Inter-Ministerial Committee in all its responsibilities.

The Inter-Party Parliamentary Road Safety Committee assists and contributes to the work of the Inter-Ministerial Committee. The responsibility of the Parliamentary Committee is to monitor and assess road safety conditions and to contribute as advisor to the decision making and the setting of the national road safety policy.

The National Road Safety Council gathers all road safety stakeholders, comes directly under the Minister of Infrastructure, Transport and Networks and has an advisory role. Its meetings are held regularly and it provides its opinion on all issues of responsibility of the Inter-Ministerial Committee.



**Figure 3.** Structure of the Strategic Plan for the improvement of road safety in Greece, 2011-2020.

## Development of road safety programs and measures

The specific road safety problems in Greece, the measures that had previously been implemented and the successful measures from other countries were taken into account for the development of the six Road Safety Programs (Table 2). Attention was given to road safety measures that had been successfully implemented in countries that are developed in road safety such as the Netherlands, the United Kingdom, Sweden and Australia.

It is noted that for those measures of a program, which require the cooperation of several Ministries, there will be provision for an efficient cooperation within a framework of clearly defined roles and responsibilities and with the coordination of the Inter-Ministerial Road Safety Committee.



**Table 2. The Six Programs of the Road Safety Strategic Plan, 2011-2020**

<b>1. Program «Road Safety Education»</b>
1.1. Content and framework for the development of road safety education for children and young people up to 17 years old
1.2. Road safety education activities in cooperation with other Ministries
<b>2. Program «Road Safety Enforcement»</b>
2.1. Organization of road safety enforcement
2.2. Enforcement of Traffic Rules
2.3. Surveillance of road accidents and violations of traffic rules
<b>3. Program «Safe Road Users»</b>
3.1. Driving license training and examination system for young - novice drivers
3.2. Instructors' training
3.3. Measures for the improvement of the safety of motorcyclists
3.4. Measures for the improvement of the safety of bicyclists
3.5. Issues concerning sensitization / training and license renewal of older drivers
3.6. Improvement of the safety of school trips
3.7. Research on road accidents causes
3.8. Driving license database
<b>4. Program «Safe Road Infrastructure»</b>
4.1. Implementation of an integrated system for road infrastructure safety management
4.2. Speed management system
4.3. Formation of road infrastructure taking into account older users' needs
4.4. Road safety programs in urban areas
4.5. Maintenance and improvement of the road network
4.6. Implementation of road safety measures in hazardous locations
4.7. Road Network Database
4.8. Development and updating of road design guidelines and recommendations
<b>5. Program «Safe Vehicles»</b>
5.1. Upgrading of vehicle technical inspections
5.2. Joint Control Teams
5.3. Incentives for safer vehicles
5.4. Special measures for heavy vehicles
5.5. Special measures for school buses
5.6. Intelligent systems for drivers' support
5.7. Conspicuous vehicles
5.8. Reliability of vehicle database
<b>6. Program «Post-accident care»</b>
6.1. EKAB intervention units
6.2. Special Trauma Units
6.3. First aid education
6.4. Efficient emergency response
6.5. Psychological support to road accidents victims
6.6. Systematic recording of statistical data

## Development of an implementation, monitoring and assessment plan

At the proposed program for the implementation and the quantified monitoring and assessment of programmes implementation, the related recent developments, worldwide, as well as the road safety conditions in Greece are taken into account. Furthermore, issues concerning information and sensitization of the public regarding road safety measures are examined. The objective for an efficient implementation plan is to ensure active participation and consent of the public which are prerequisites for the success of the Strategic Plan.

The successful implementation of the Strategic Plan requires systematic and quantitative monitoring of the road safety level, of the progress of the implementation and of the effectiveness of adopted measures at national, regional and local level, with the use of the appropriate information systems for the collection, analysis and publication of reliable data.

Informing and sensitizing the public about road safety issues can be achieved through appropriate campaigns which must be focused on specific behaviours and support other road safety measures such as: announced enforcement measures, new legislative regulations and educational programs. The target of these campaigns must be to encourage people to adopt road safety as their objective purpose at personal level as well as to understand why traffic regulations must be enacted and how important it is to enforce their application.

Promotion of the Strategic Plan concerns planning and realizing the appropriate campaigns targeted at systematically informing the public on road safety issues as well as at sensitizing the public in order to ensure their consent and the support of the implementation of the Strategic Plan.

## Working team

The Strategic Plan for the improvement of road safety in Greece, 2011-2020 was developed by the team of the Department of Transportation Planning and Engineering of Civil Engineering, National Technical University, consisting of:

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- George Yannis, Associate Professor,
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In cooperation with Ms Magda Pitsiava - Latinopoulou, Professor at Aristotle University of Thessaloniki.