RSEG Expert contribution to TA 1 Draft report

Key points for Road Sections Safety in Greece

THEMATIC AREA 1 ROAD SECTIONS SAFETY: GENERAL SUITABILITY OF THE ROAD SECTIONS FOR SAFETY AND MAINTENANCE UPGRADING USING SAFE ROADS INVESTMENT PLANS

EXPERT/PRESENTER: ANASTASIOS DRAGOMANOVITS & GEORGE YANNIS, NTUA

LJUBLJANA, MARCH 27TH, 2019.
Q1 - Review of methods and/or means for ranking hot spots and/or crash clusters

• **No systematic tracking of road infrastructure risk** is performed in Greece.

• Non-systematic efforts include:
  - Greek Road Rehabilitation and Safety Project (studies: 2012-2015, measures not implemented yet):
    15,000km of rural roads examined, 7,000 hazardous locations identified.
  - SENSoR Star Rating:
    3,600km of TEN-T roads examined using iRAP protocols.
  - Various studies by Greek Ministry of Infrastructure and Transport. No consistent methodology.
Q1 - Review of methods and/or means for ranking hot spots and/or crash clusters

• Traffic volumes
  - no central source of traffic volumes data
  - possibly obtained from:
    - road concession companies (motorways only),
    - records of existing traffic studies or single traffic counts in the Greek Ministry of Infrastructure and Transport, or in regional road management authorities
  - measured on a case by case basis

• National Road Accident Database
  - collected in high detail by Traffic Police officers
  - codified by the Hellenic Statistical Authority who is responsible for keeping the database and provide results to stakeholders
Q1 - Review of methods and/or means for ranking hot spots and/or crash clusters

Accuracy of data in the accident database:

- Accurate crash type and data on crash victims
- **Under-reporting** exists, as indicated by the comparison of police and hospital data. Correction co-efficients have been estimated as follows:
  - Fatalities: 1.15 (Yannis et al., 2014)
  - Serious injuries: 1.98 (Broughton et al., 2010)
- **Accident location**: Road code and chainage – No GPS used.
  Location is accurate on motorways, less accurate on the rest of the national and regional road network.

Data is accessible by road safety stakeholders after communication with ELSTAT.
Q2 - EC Directive 2008/96/EC implementation

- Adapted by Greek legislation in TEN-T network sections
- Responsible for the implementation is either the Implementation Authority or the Maintenance Authority
- Responsible for the training and accreditation of Road Safety Auditors: D14 Directorate of the Greek Ministry of Infrastructure and Transport
- First training program and examinations for 30 Road Safety Auditors took place in December 2018. Relevant accreditation has not been awarded yet.
- Actual implementation is not yet performed systematically
Q3- Selection of road sections to be reconstructed / upgraded

- No road infrastructure asset management system
- No central database for road transport infrastructure
- Greek Ministry of Infrastructure and Transport responsible for the primary national road network and Regional Road Authorities for the parts of the national road network and the regional road network
- Criteria: available budget, the maturity of pertinent designs and other mainly administrative criteria. No specific Performance Indicators used
Q4 - Selection of countermeasures to be used for reconstruction / upgrade

• No official guidelines.

• No official value of statistical life (the value of 2,148M € was used in a recent study).

• The cost of countermeasures is calculated on the basis of standard cost analysis documentation for public works (unit prices and detailed bills of quantities).

• Cost benefits ratios are not usually used.
Q5 - Safer Roads Investment Plans and countermeasure cost-benefit ratio

Economic appraisal of "Greek Road Rehabilitation and Safety Project"

- Reactive approach: Accident Analysis
- Proactive approach: Road Safety Inspections

Road safety benefits from suggested road safety interventions estimated using AASHTO Highway Safety Manual predictive method, suitably adjusted and calibrated for Greece and adapted according to data availability

Expected benefits
Construction and maintenance costs

Economic Rate of Return (ERR)
Q6 - Road authorities’ budgets

• No typical way of financing road safety related infrastructure upgrades.

• No dedicated road safety fund or budget.

• Road safety upgrades originate from:
  ➢ Public Investments Programme
  ➢ Budget of regional authorities
  ➢ Exploitation of EU funding instruments (Cohesion Funds, CEF, Interreg, EIB, etc.)
Q7 - Ideas and recommendations

- Establishment of an appropriate political and administrative framework for road safety with a dedicated funding (Inter-Ministerial Road Safety Committee)

- Improvement of the quality of road safety data (e.g. accident location)

- Update / Improve road design guidelines

- Systematic application of Road Safety Audit and Road Safety Inspection procedures
# Road Safety Progress in Greece

**Greece 2008 - 2018**

## Basic road safety figures

<table>
<thead>
<tr>
<th>Year</th>
<th>Injury Road accidents</th>
<th>Fatalities</th>
<th>Serious Injuries</th>
<th>Slight Injuries</th>
<th>Vehicle Fleet (x1000)</th>
<th>Fatalities per million vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>15,083</td>
<td>1,553</td>
<td>1,872</td>
<td>17,138</td>
<td>7,729</td>
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<tr>
<td>2009</td>
<td>14,789</td>
<td>1,456</td>
<td>1,676</td>
<td>16,965</td>
<td>7,911</td>
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<td>2010</td>
<td>15,032</td>
<td>1,258</td>
<td>1,709</td>
<td>17,399</td>
<td>8,062</td>
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<td>2011</td>
<td>13,849</td>
<td>1,141</td>
<td>1,626</td>
<td>15,633</td>
<td>8,087</td>
<td>141</td>
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<tr>
<td>2012</td>
<td>12,398</td>
<td>988</td>
<td>1,399</td>
<td>14,241</td>
<td>8,070</td>
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<tr>
<td>2013</td>
<td>12,109</td>
<td>879</td>
<td>1,212</td>
<td>13,963</td>
<td>8,035</td>
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<tr>
<td>2014</td>
<td>11,690</td>
<td>795</td>
<td>1,016</td>
<td>13,548</td>
<td>8,048</td>
<td>99</td>
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<tr>
<td>2015</td>
<td>11,440</td>
<td>793</td>
<td>999</td>
<td>13,097</td>
<td>8,076</td>
<td>98</td>
</tr>
<tr>
<td>2016</td>
<td>11,318</td>
<td>824</td>
<td>879</td>
<td>12,946</td>
<td>8,173</td>
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<td>2017</td>
<td>10,848</td>
<td>731</td>
<td>706</td>
<td>12,565</td>
<td>8,263</td>
<td>88</td>
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<tr>
<td>2018</td>
<td>10,740</td>
<td>690</td>
<td>748</td>
<td>12,243</td>
<td>8,407</td>
<td>83</td>
</tr>
<tr>
<td>2018/2008</td>
<td>-29%</td>
<td>-60%</td>
<td>-60%</td>
<td>-29%</td>
<td>9%</td>
<td>-59%</td>
</tr>
</tbody>
</table>

**Speed infringements**: 349,417  330,186  263,382  238,033  186,675  178,816  156,892  173,476  176,592  214,132  237,687  -32%

**Drink & drive infringements**: 47,257  45,901  38,033  34,992  30,707  30,853  29,597  29,191  33,192  33,620  35,099  -26%

**Seat belt infringements**: 86,353  77,274  49,703  37,120  33,722  35,478  34,526  29,611  34,831  32,500  31,395  -64%

**Helmet infringements**: 94,530  78,453  51,526  47,250  47,736  58,122  54,354  52,783  63,971  60,142  51,903  -45%

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The rate fatalities per number of vehicles has decreased by 24% since 2013.

A significant annual decrease by 5.6% of the road fatalities was recorded in 2018, also due to 500 km of new and updated motorways.

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**Notes:**
- Figures in italics are based on provisional data.
- March 31st, 2019
- www.nrso.ntua.gr
- Hellenic Statistical Authority (ELSTAT)
- NTUA - Road Safety Observatory

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Road fatalities in Greece have decreased by 22% since 2013, however injury road accidents decreased only by 11%.
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RADAR – Risk Assessment on Danube Area Roads
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