ROAD SAFETY IN SPAIN:
"MEASURES FOR SAFER ROADS"

ETSC Romania 27 June, 2017

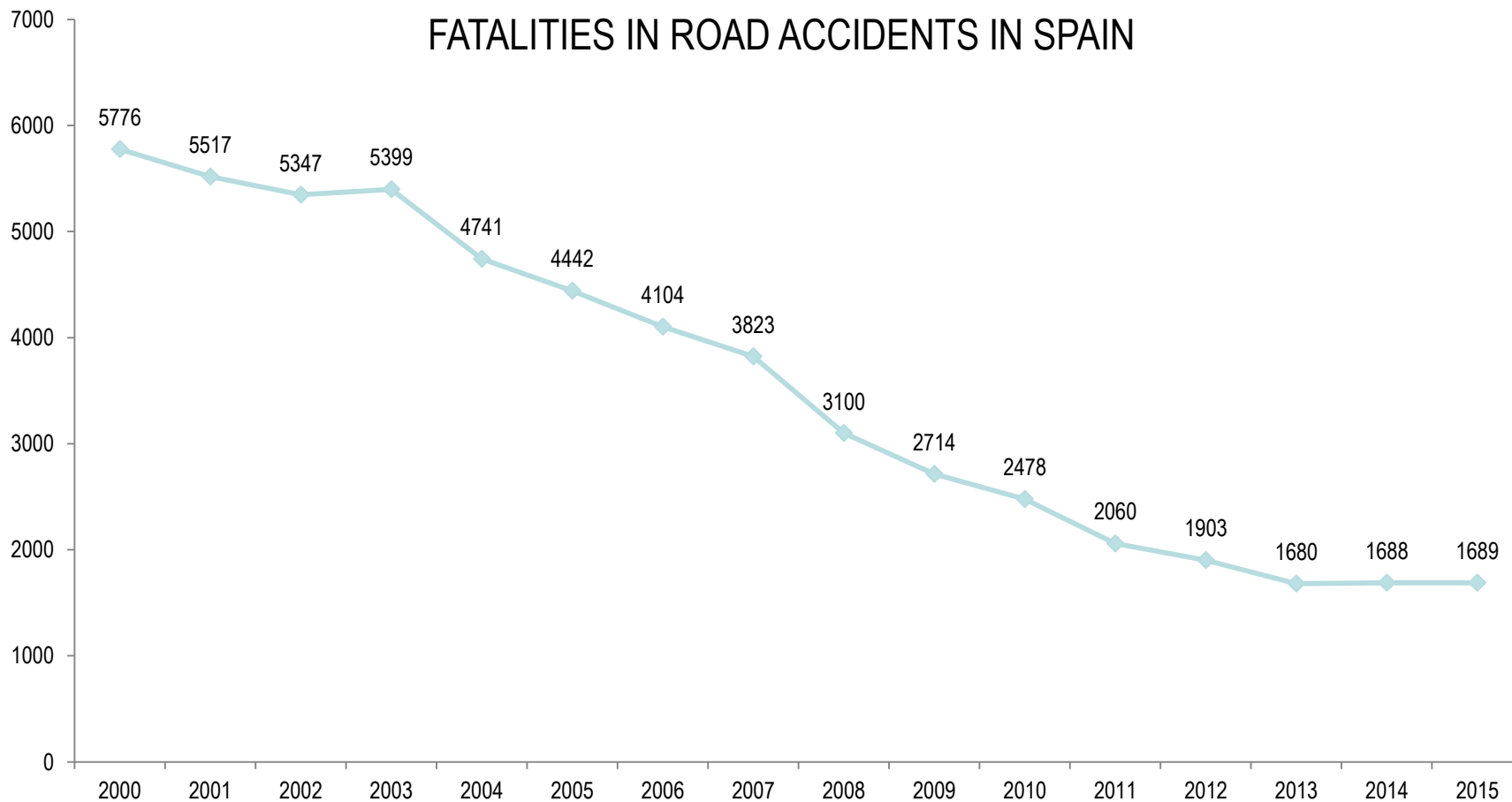MINISTERIO DEL INTERIOR

DGT
Dirección General de Tráfico

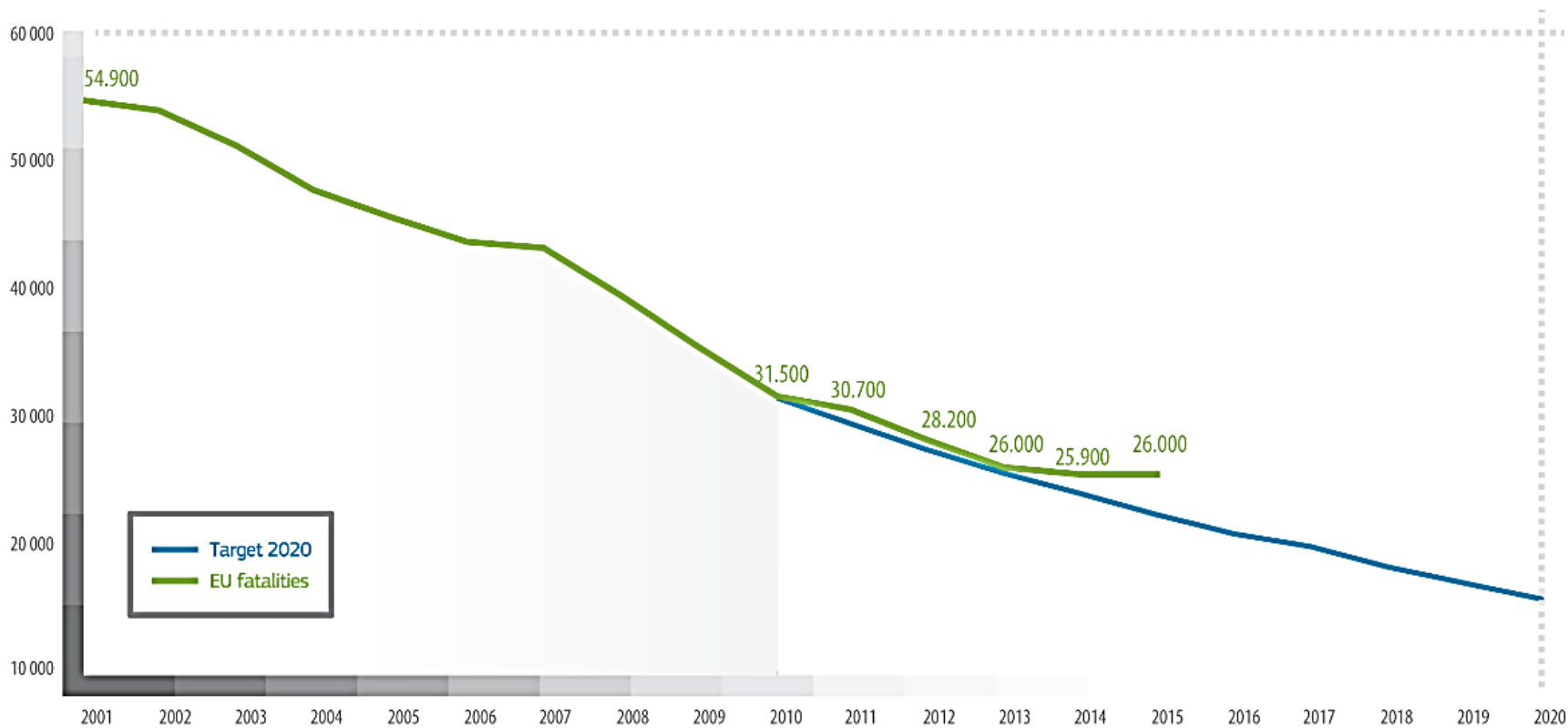*Subdirección General de Gestión de la Movilidad*

ROAD SAFETY IN SPAIN: CONTEXT AND FIGURES

MEASURES FOR SAFER ROADS

CONCLUSIONS

CONTEXT AND FIGURES

DGT
Dirección General
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FATALITIES IN ROAD ACCIDENTS IN SPAIN

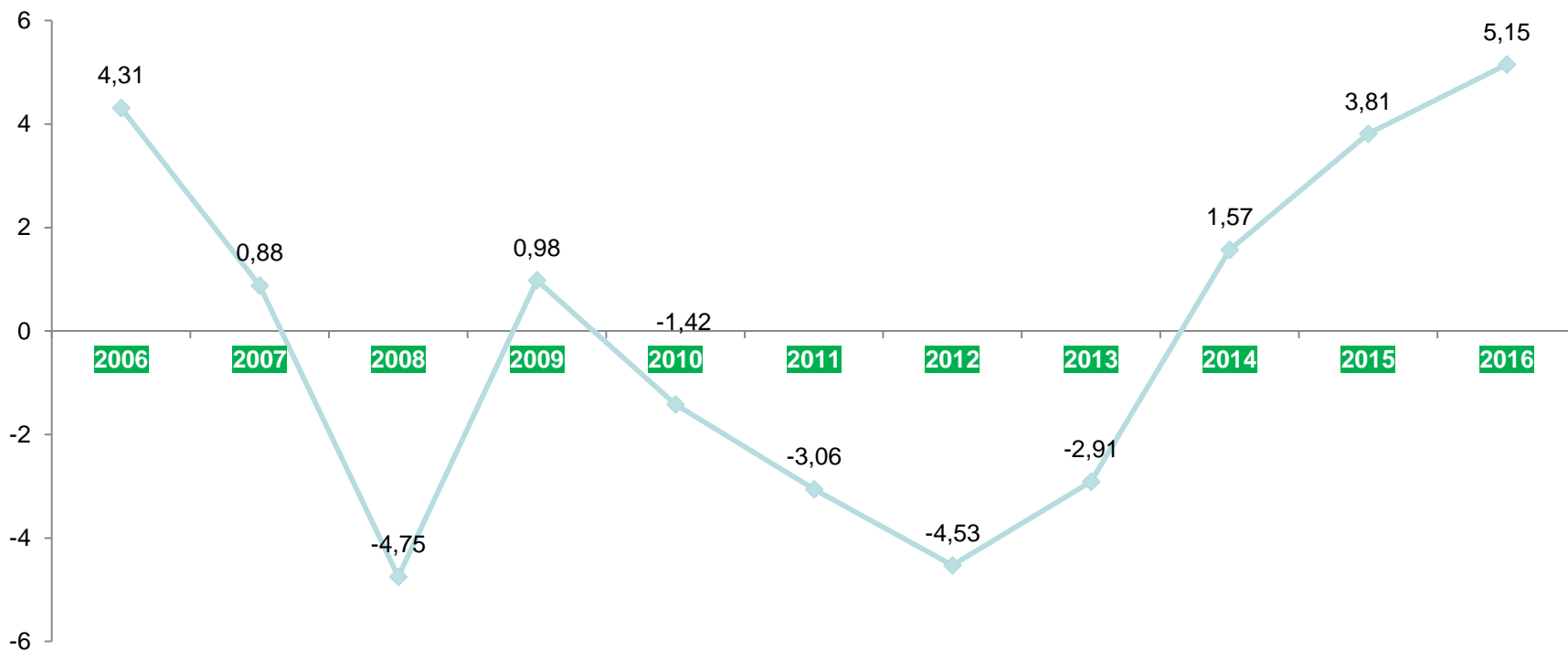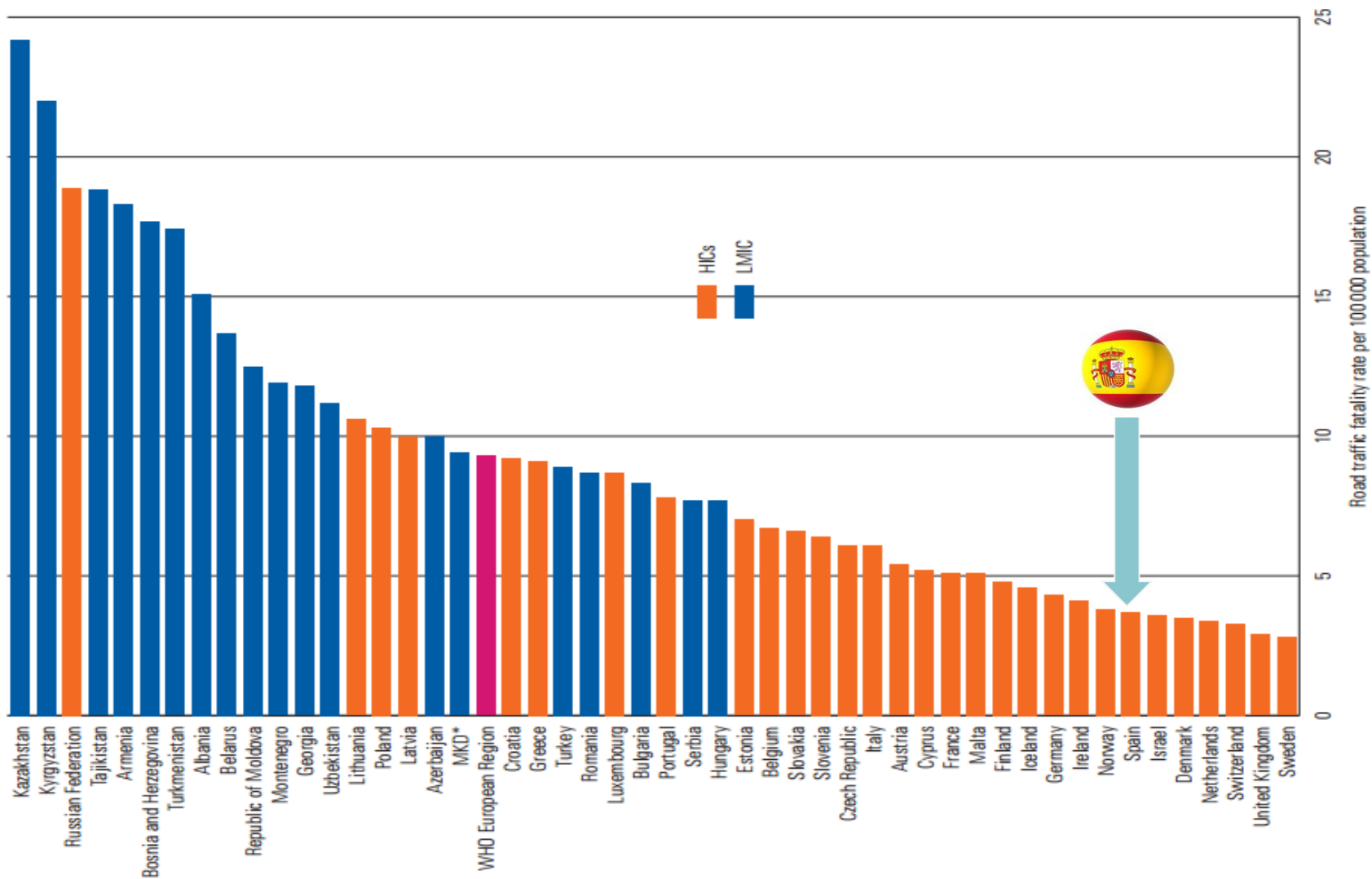| Year	Fatalities
2000	5776
2001	5517
2002	5347
2003	5399
2004	4741
2005	4442
2006	4104
2007	3823
2008	3100
2009	2714
2010	2478
2011	2060
2012	1903
2013	1680
2014	1688
2015	1689

DEATH IN ROAD ACCIDENTS IN EU
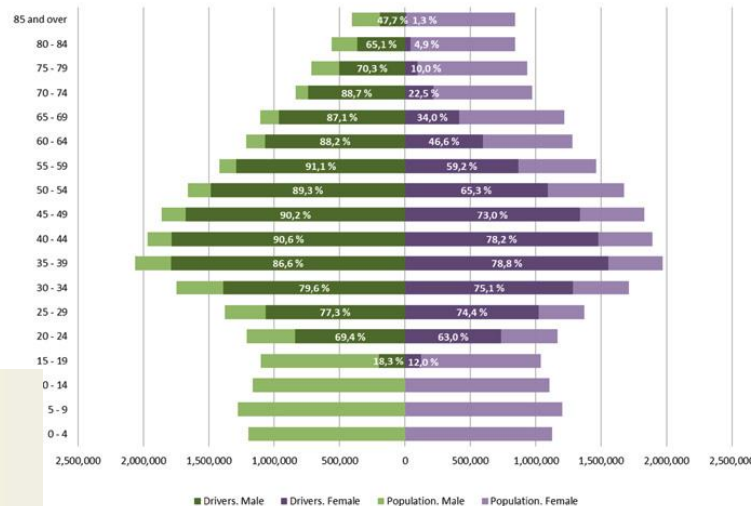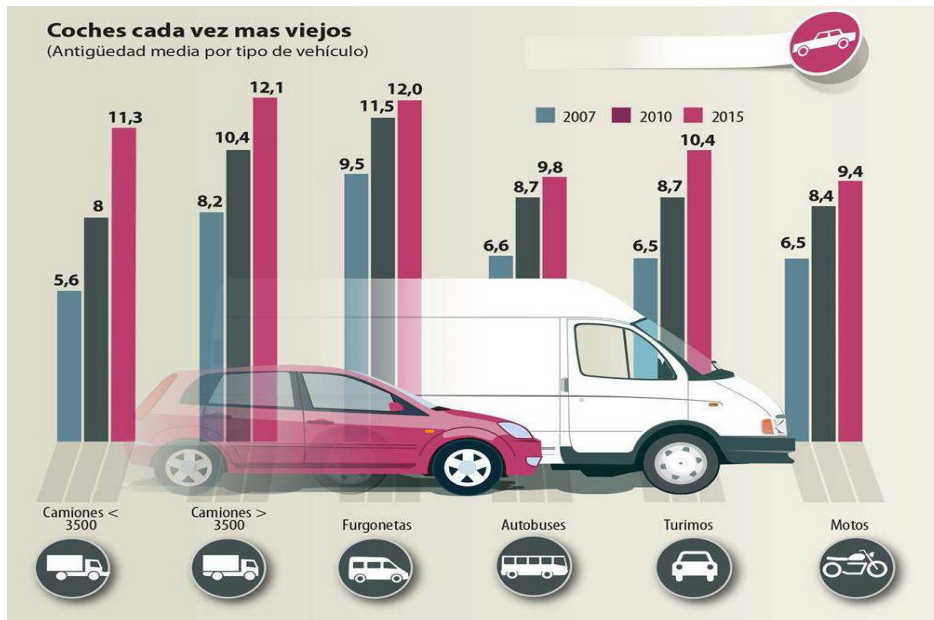

Source: - CARE (EU road accidents database)

Δ LONG DISTANCE MOVEMENTS – RISK EXPOSURE

- Population: 44 Million

- Drivers: 26 Million

- Vehicles: 33 Million

- Tourists: 75,3 Million

Coches cada vez mas viejos
(Antigüedad media por tipo de vehículo)

- Road Network Type (km)

	Estado	CCAA	Diputaciones y cabildos	Total
Separated highways	11.943	3.968	1.111	**17.022**
Non-separated highways	14.386	67.356	67.238	**148.980**
Total	**26.329**	**71.324**	**68.349**	**166.002**

- Fatalties type of road distribution (interurban)

6% Motorways
16% Dual carriageway
78% Single carriageway
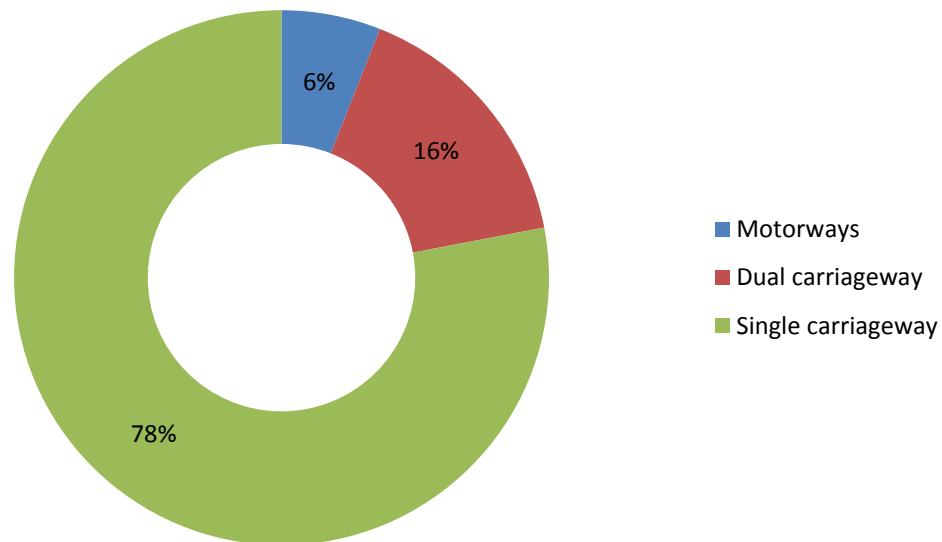
No loss of life is acceptable.

VISION ZERO APPROACH:

We are human and make mistakes

The road system needs to keep us moving. But it must also be designed to protect us at every turn.

MEASURES FOR SAFER ROADS

Spanish Road Safety Strategy 2011-2020

1. Education and training
2. Communication
3. Regulations and enforcement
4. Health and road safety
5. Vehicle safety
6. Infrastructure and ITS
7. Urban area
8. Driving for work and professional
9. Victims
10. Research and knowledge management
11. Coordination and participation

1. Information concerning infrastructure
2. Operation and preservation of infrastructure
3. Safe infrastructure design
4. ITS and Traffic management

ROAD NETWORK ASSESSMENT

- Adoption of the international methodology iRAP for the analysis and evaluation of the network (Star Rating)

- General standard of the route

- Monitor the evolution of infrastructure security – setting objectives (NL 90% veh-km in 3 star by 2025)

- 100% rated – may recommend routes (RSC)

- 2017: 10,000 km - … RFQ launched

RUMBLE STRIPS

- A-375 - 45 km

- Low cost and high effectiveness to avoid head-on collision (217 f.) & run-off-road (363 f.) accidents.

- **Priority: Non-separated dual carriageway roads**

(1) Centerline Rumble Strips – Safety Evaluation. Aalborg University – Faculty of Engineering and Science – Transportation Department. 2011

(2) Factors Influencing Operating Speeds and Safety on Rural and Suburban Roads PUBLICATION NO. FHWA-HRT-15-030 MAY 2015

SPEED WARNING

- Black-spots and sensitive areas (schools, urban crossings, etc).

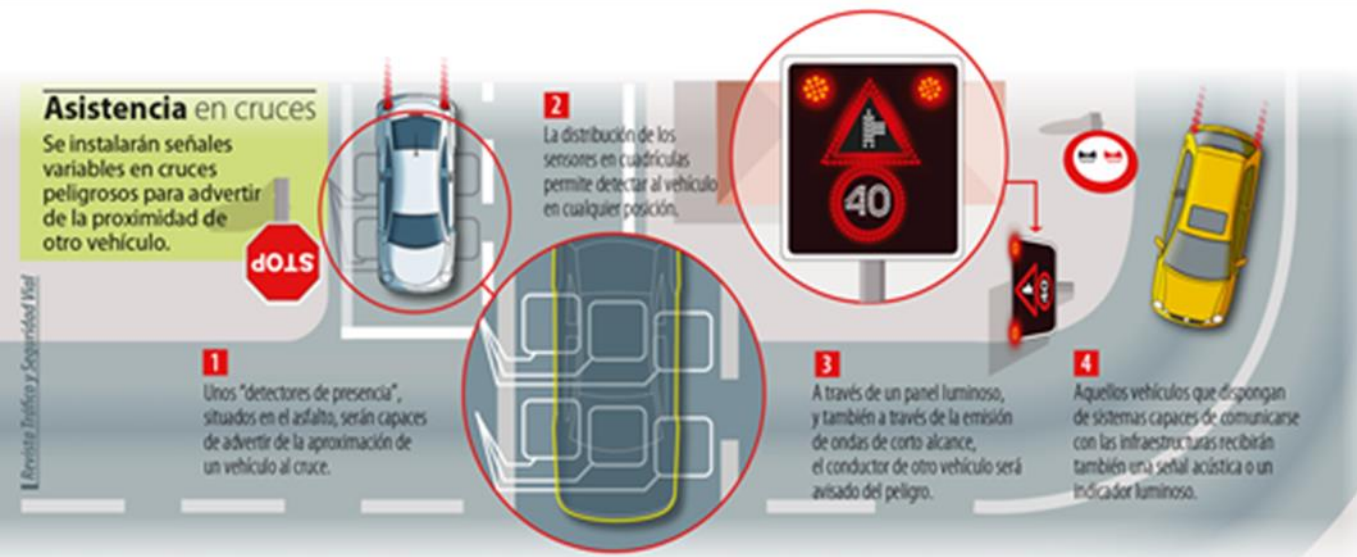- VMS showing licence plate

SPEED CAMERAS

- Black-Spots, EURORAP, INVIVE.

- Mean speed and instant speed.

SMART INTERSECTION

- Low cost.

- Credible signing.

- Welcomed by road owner.

SAFER ROUTES FOR CYCLISTS

- Frequently use routes by cyclists

- Speed limitation during weekend mornings

- Road Signs and web (47)

- National Access Point of traffic information (N.A.P)

SAFER ROUTES FOR CYCLISTS

- Frequently use routes by cyclists.

- Curves (vertical and horizontal).

- Dynamic signs.

- Specific ultrasounds bike

detection.
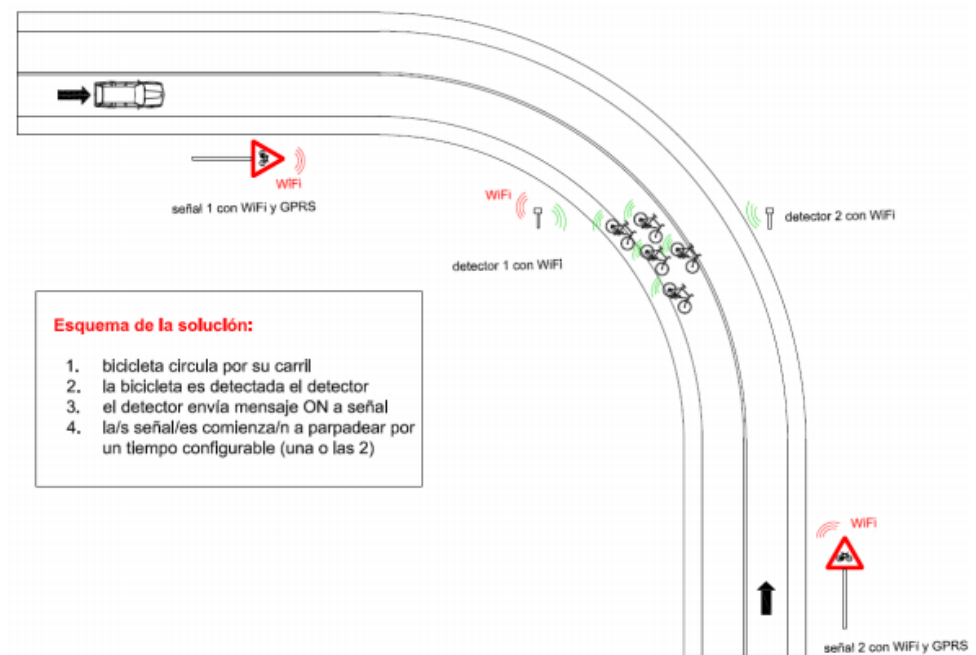
OVERTAKING LIMITATION

- Improve the safety of non-separated dual carriage roads by redistributing the road overtaking sections according with the functionality of the road (analysis and simulation).

- Provide greater certainty and safety to one of the most dangerous maneuvers.

- Low-cost road safety measures that can prevent accidents

Diseño de zonas de adelantamiento para la mejora de la seguridad y la funcionalidad de carreteras convencionales (Ana Tsui Moreno Chou, Carlos Llorca García, y Alfredo García García) 2016

GUIDE OF MEASURES FOR CROSS TOWN-LINK

- Compilation of examples of possible low-cost actions to be implemented in new infrastructures to be projected or to remodel existing ones.

- Reduce risk for vulnerable users.

- Rating system.

DYNAMIC TRAFFIC MANAGEMENT

- Specific infrastructures (long bridges, fog areas, wind problems, big cities access, etc)

- Maximize capacity.
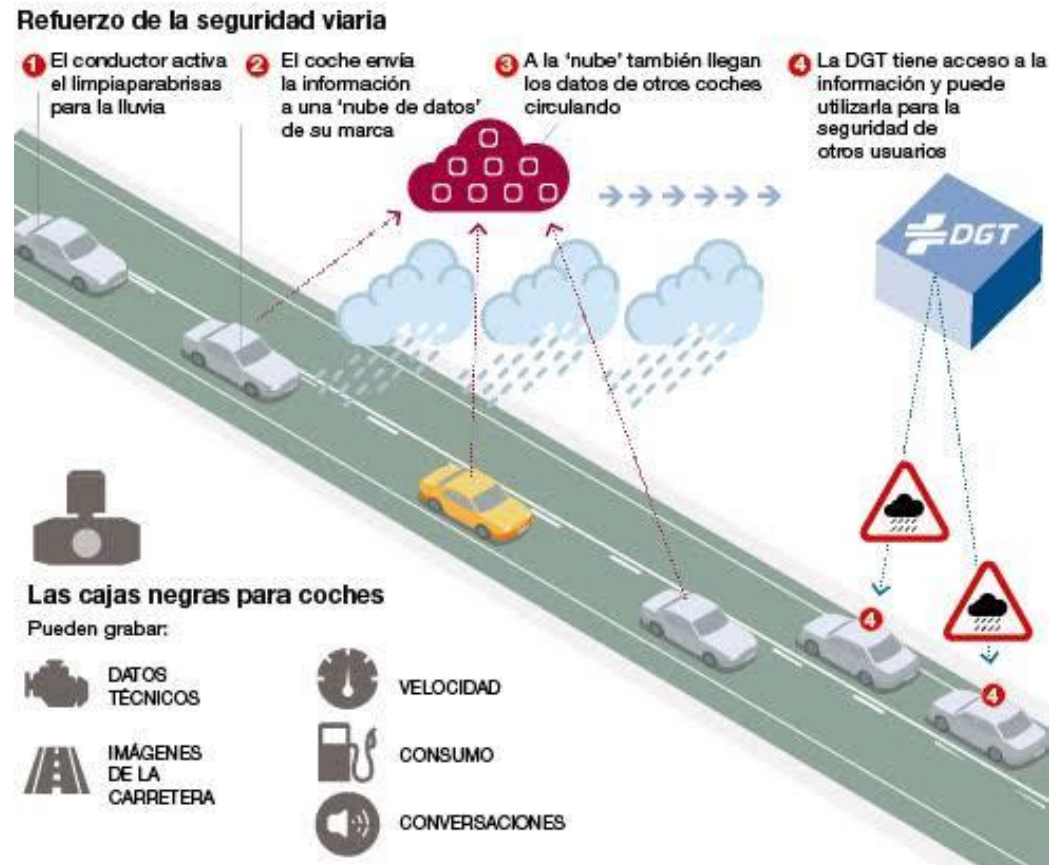
- Minimize road closures.

BLACK SPOTS

- 5 years.

- All types and all roads.

- Complementary to T.C.A (European Directive).

- First step previous to analyse the whole network (EURORAP)

- Road Safety Inspections > Low cost measures.

CONNECTED MOBILITY PLATFORM

- Cooperative hub (IoT)

- Data exchange

- Open to:
    - Plataforms
        - OEMs
        - Route providers
    - Users

- Integrate and share

- Adding value

Refuerzo de la seguridad viaria

1. El conductor activa el limpiaparabrisas para la lluvia
2. El coche envía la información a una 'nube de datos' de su marca
3. A la 'nube' también llegan los datos de otros coches circulando
4. La DGT tiene acceso a la información y puede utilizarla para la seguridad de otros usuarios

Las cajas negras para coches
Pueden grabar:

- DATOS TÉCNICOS
- IMÁGENES DE LA CARRETERA
- VELOCIDAD
- CONSUMO
- CONVERSACIONES

NO NEED FOR ROAD SIDE UNITS DEPLOYMENT!!!

CONNECTED MOBILITY PLATFORM- USE CASES

- UC1: Information by any road users: breakdown, accident, etc…

- UC2: Planned roadworks

- UC3: Info provided by vehicles (lights, wipers, warnings, ESP..).

- UC4: Virtual VMS

- UC5: X,Y dynamic event (Abnormal sized vehicles, ambulance, fog, vulnerable users, etc.)

- UC6: X,Y static event (road closures).

- UC7: Recommended speed. (Congestion or traffic lights).
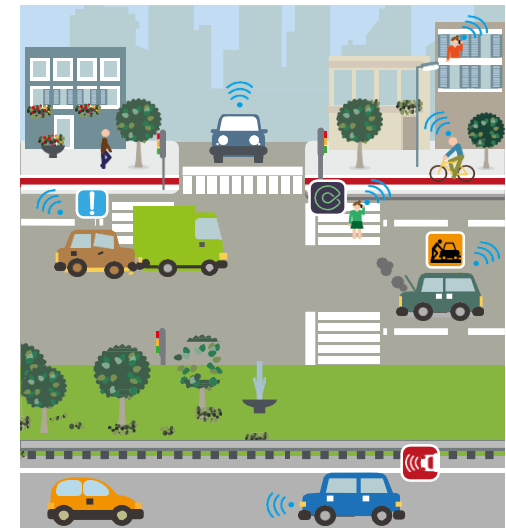
CONCLUSIONS

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- Better roads, better vehicles and better drivers have contributed to reach a situation which places Spain among the top performing countries regarding road safety.

- The stagnation of fatalities figures requires the implementation of short- and medium- term plans to continue deepening our progress towards the ultimate zero death objective.

- Speed controls and public perception to be positive.

- In this context the road system must be reliable and ready to protect us.

Thanks for your attention

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