

# EuroRAP methodologies, data and potential targets for Greece

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# This presentation

- EuroRAP/iRAP – who they are and how they started



- The database that you now have in Greece
- EuroRAP – “...how we score what we score”
- Learning from other countries – policies for Greece?

## With thanks to...

- “Make Roads Safe Hellas”
- Deputy Minister M. Papadopoulos
- Ministry of Infrastructure, Transport and Networks
- Traffic Police Department
- Transportation Solutions
- Google and others

iRAP is supported by:



**FOUNDATION**



**ROAD SAFETY  
FUND**

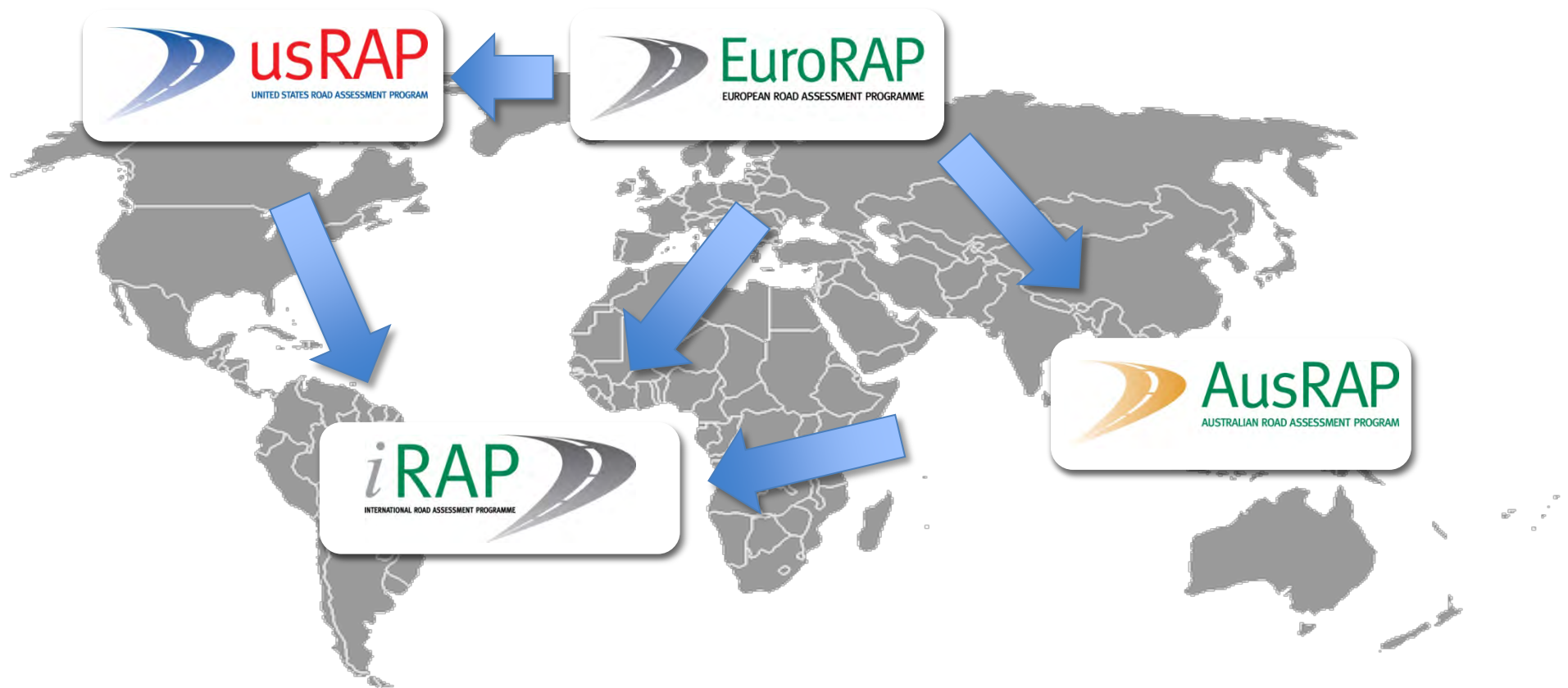


Global Road Safety Facility

# RAP – History

- **RAP – Road Assessment Programme**
- **EuroRAP AISBL**
  - 2002 – Registered in Brussels as an international **not-for-profit** organisation, building on work since 1999
- **International Road Assessment Programme (iRAP)**
  - Established in 2006
  - Registered as **UK charity** in 2010

# Road Assessment Programme – early development





## RAP on a global scale – active in 80+ countries



# EuroRAP's core activity

- Spatial description of risk, and development of infrastructure-related investment packages.
- Where and how are people killed?
- How do we match countermeasures to needs?
- What are the costs and benefits?





# European Directive on Road Safety Management [2008/96/EC]



EuroRAP development paid for by the  
European Commission



EuroRAP methods an accepted way of  
meeting the requirements of the Directive



EC Register: “...some Member States are  
content with [using] the EuroRAP method...”



# EuroRAP surveys – network level data

- EuroRAP models safety from **robust and repeatable** drive-through assessment of 52 factors every 100m

**single site – area wide – mass action – route action – route quality**

- Road accident analysis – **strong** on “cause and effect”; sometimes **weak** on statistical robustness
- Road safety audit – **strong** on detail and experience and sometimes **...strong** on personal opinion



# What data do you now have?

- You have survey data for 4,897 carriageway kilometres of roads in Greece
- 52 features every 100 metres that lead to fatal and serious injury
- Access to the database



# A few of the 52 attributes...

Posted Speed Limit, Operating speed, Traffic volumes

Lane width, Paved shoulder

Curvature, Curvature quality

Delineation, Shoulder rumble strip, Shoulder sealing

Road condition, skid resistance

Roadside object to be struck

Roadside severity (distance from carriageway)

Intersection type and quality

Intersecting road volume, minor access point density

Pedestrian facilities and activity

Land-use, area type, etc etc etc...

# Database – “...how many and where?”

- High risk bends with roadside hazards



**48% of curves where traffic flows at  
80km/h or more have hazardous  
roadsides**



# Database – “...how many and where?”

- Roads with pedestrians  
but no footways



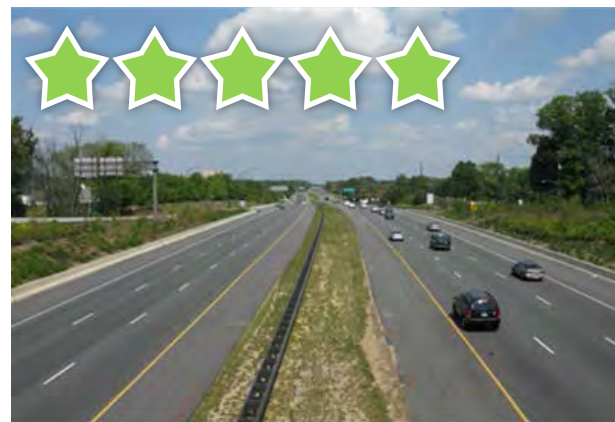
**95% of roads where pedestrians are  
present and speed flows at 40km/h  
or more have no footpath**

# Terminology ...

- **“Star Rating maps”** – based upon *road surveys* of **52 attributes every 100 meters**



# Examples of Star Ratings



<http://www.irap.org/en/about-irap-3/methodology>



# Why have protocols for testing?

- Knowing what makes a safe road
- A means of understanding risk
- Score the same thing in the same way everywhere
- Shared language and understanding



# How do we Star Rate roads for safety?

SENSoR chose the Road Assessment Programme (RAP) protocols

<http://www.irap.org/en/about-irap-3/methodology>

50+ factsheets and access to RAPcapacity tutorials

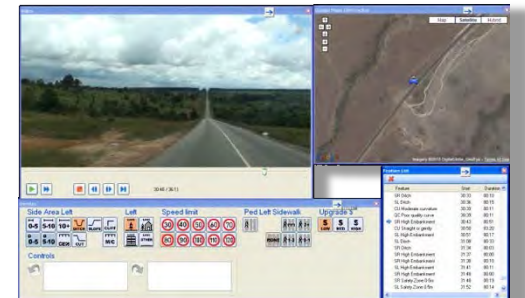
# RAP Star Ratings

Video recording of the road

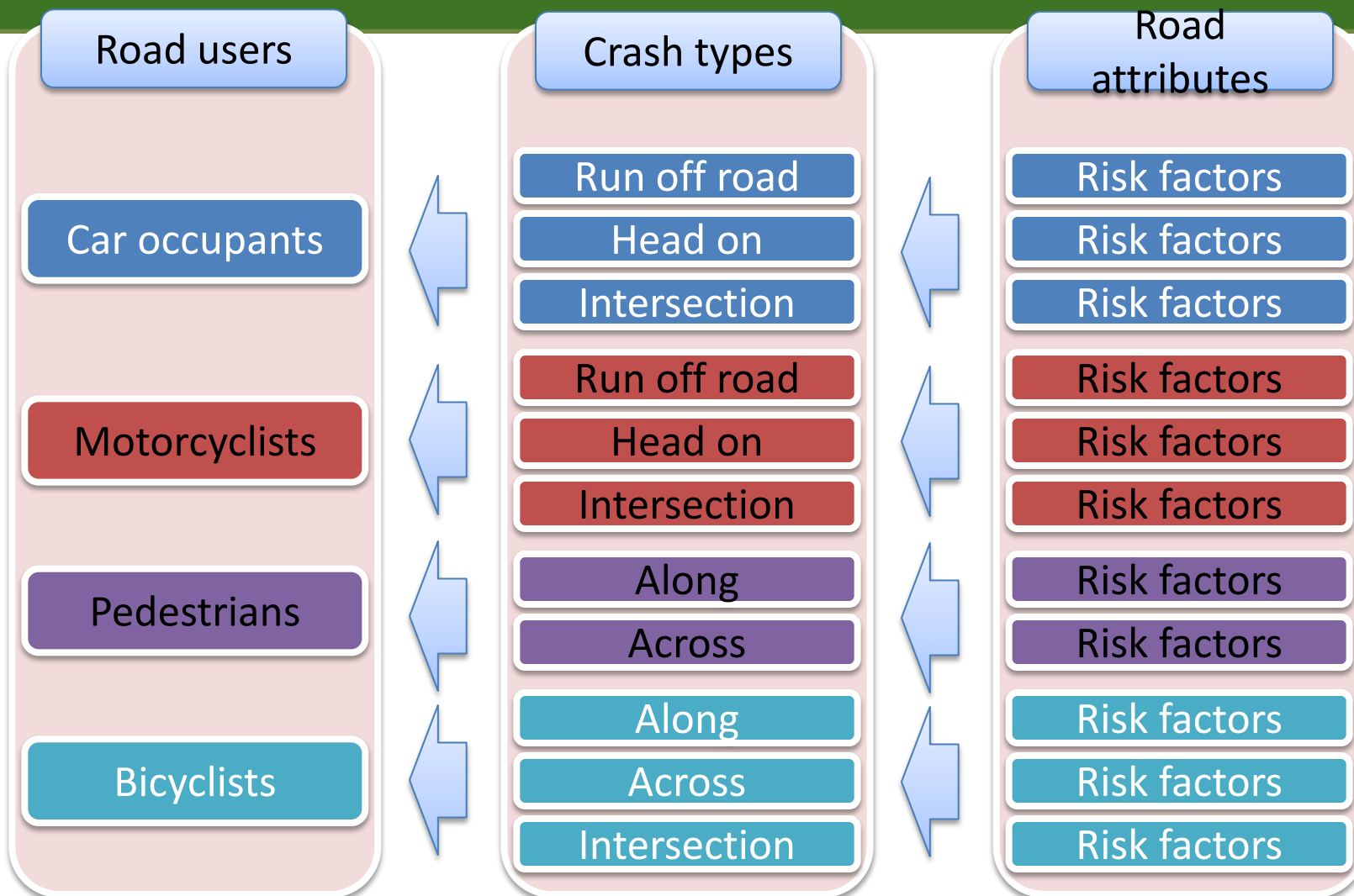
Survey of 52 road elements that lead to death or serious injury

Images every 10 metres and collated data every 100 metres

4 road users – vehicle occupants, motorcyclists, pedestrians and bicyclists







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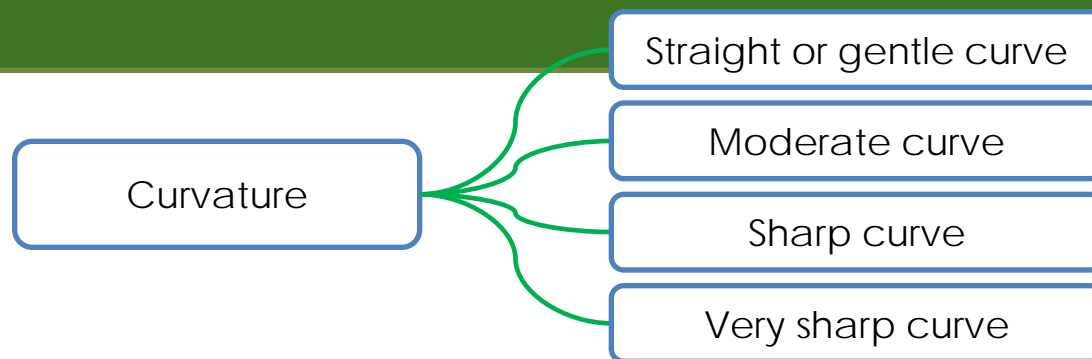




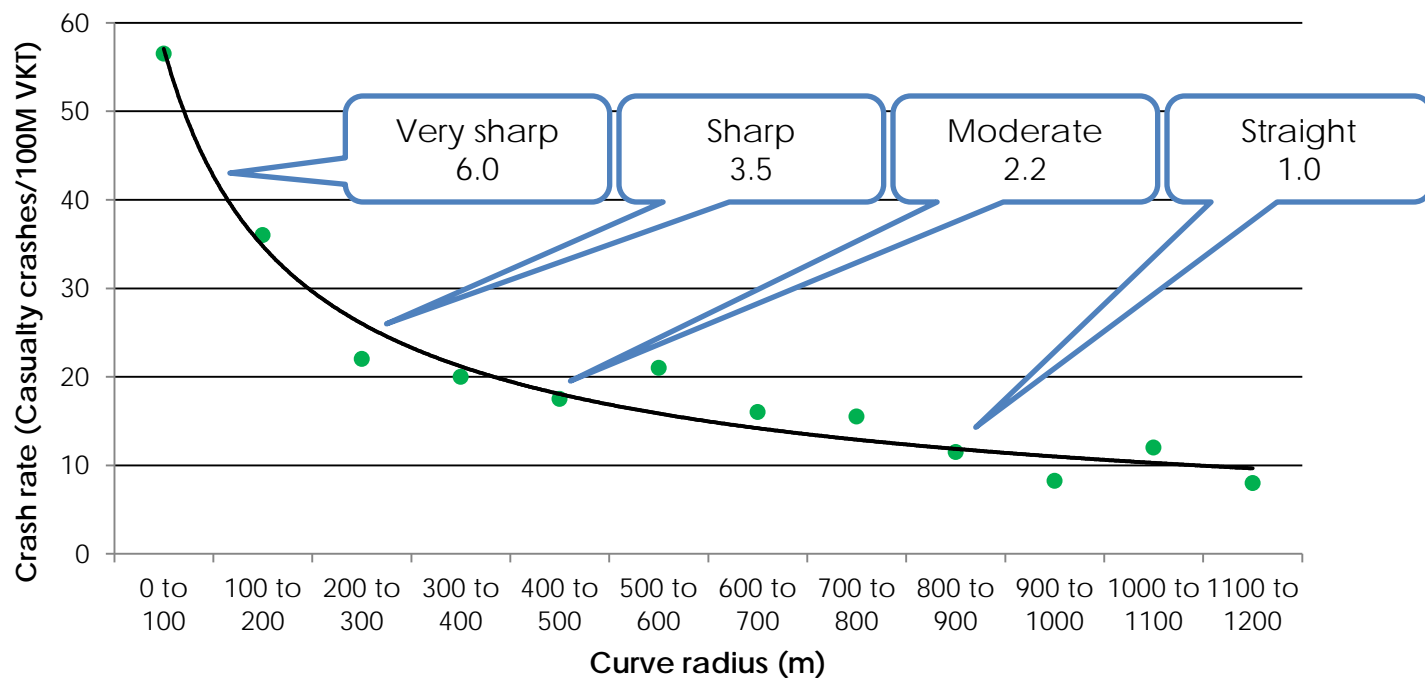
# How do we derive risk factors?

- World research used to judge how much each road attribute influences risk
- Team of experts led by TRL (Transport Research Laboratory), ARRB Group Australia, Midwest Research Institute USA, MIROS Malaysia + government partners
- 6 years of research





## Crash Rate vs. Curve Radius

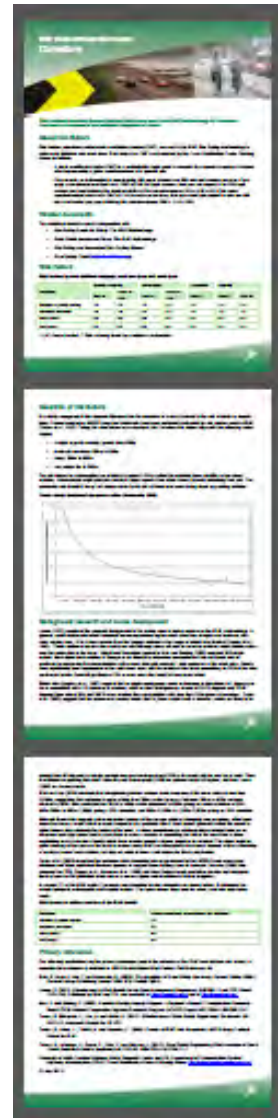


- A factsheet for each of the 52 risk factors is at [www.irap.org](http://www.irap.org)

eg “Curvature”

### iRAP Road Attribute Risk Factors: Curvature

This factsheet describes the road attribute risk factors used in the iRAP methodology for Curvature. Curvature is a measure of the horizontal alignment of a road.

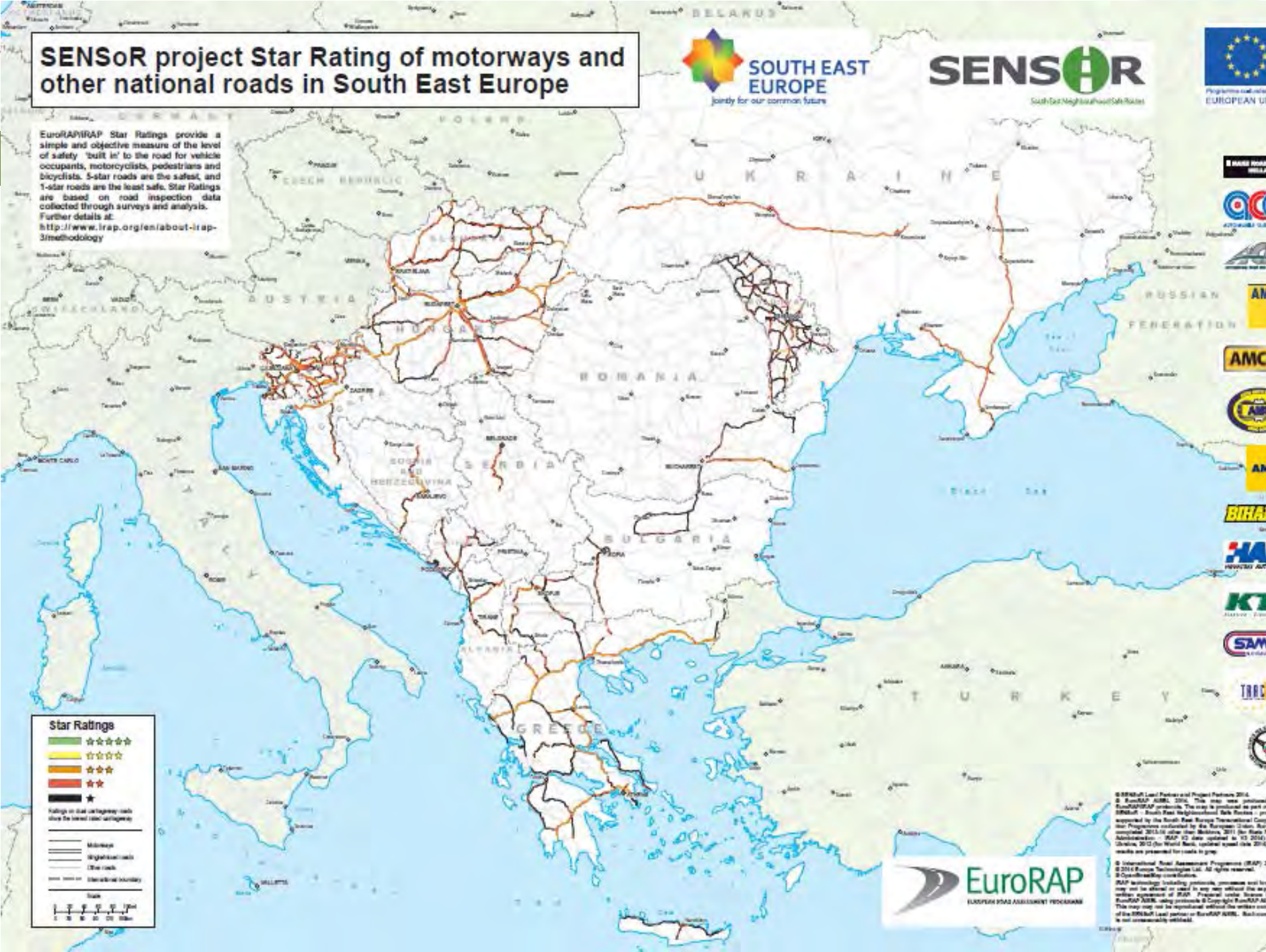


EuroRAP/IRAP Star Ratings provide a simple and objective measure of the level of safety 'built in' to the road for vehicle occupants, motorcyclists, pedestrians and bicyclists. 5-star roads are the safest, and 1-star roads are the least safe. Star Ratings are based on road inspection data collected through surveys and analysis. Further details at: <http://www.irap.org/irap/about-irap-3/methodology>

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SENSOR  
Sustainable Energy Network





# Netherlands



**Aim for minimum 3-star!**

**Netherlands – “No national roads less than 3-star by 2020”**

**(4 star scale: iRAP Version 1)**



# New Zealand

- 4-star for “roads of national significance”





# Sweden



- 75% of travel on safe (3 or 4-star) roads by 2020



# Australia -- Tasmania

## Road Safety Plan:

“lower the percentage of  
1- and 2-star roads in  
Tasmania within 3  
years” and eliminate in  
the long-term





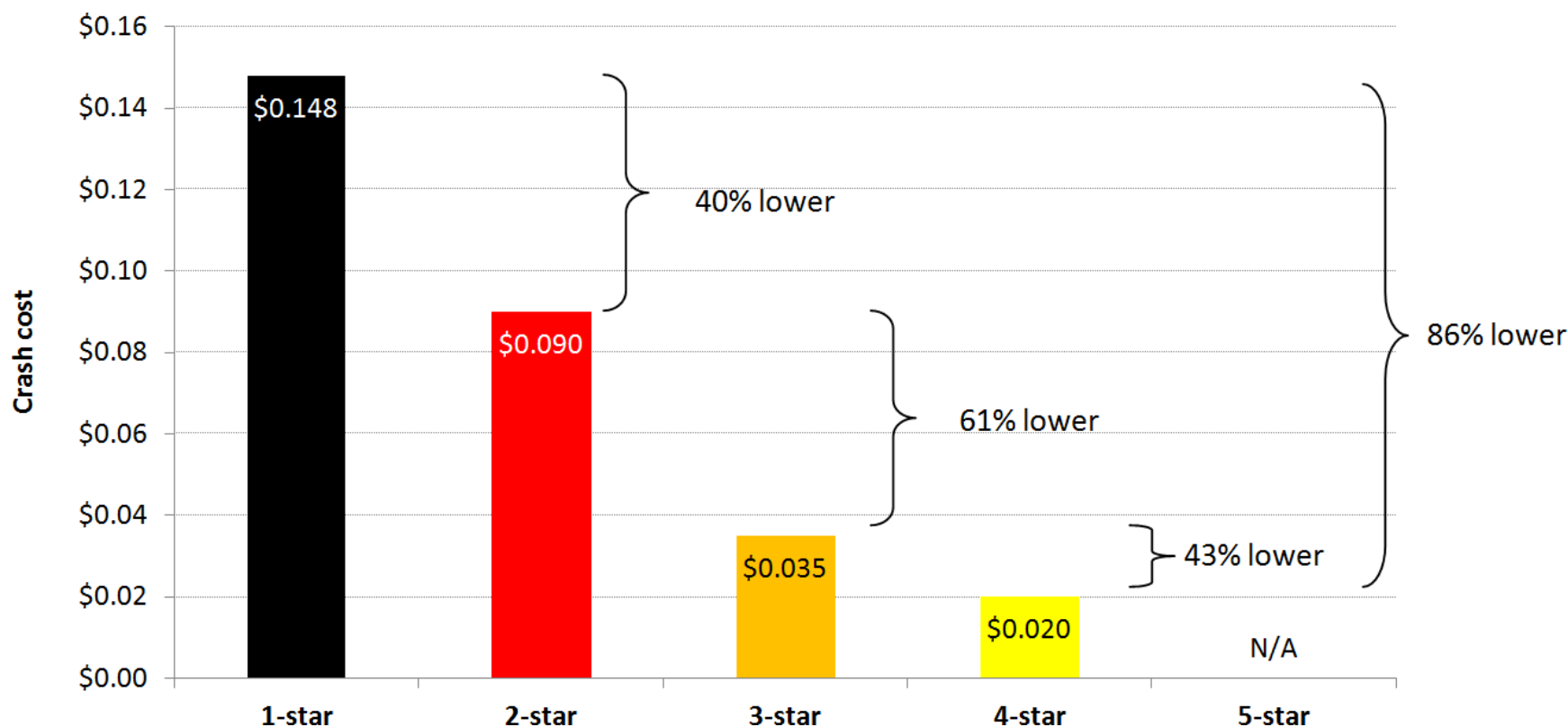
# World Bank projects

- eg “minimum 3-star designs” in India





# Star Ratings vs Crash costs (or rates)



Source: McInerney, R. and Fletcher, M. (2013). *The relationship between Star Ratings and crash costs per vehicle kilometre travelled: the Bruce Highway, Queensland*



Thank you