



**XXIVth World
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SAFER ROADS IN BANGLADESH

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About Bangladesh

- Bangladesh is a country in **South Asia**
- About **150 million** inhabitants
- Area of **147570 sq. km**
- About **1000 inhabitants** per sq. km.
- GDP of around **\$600 (US)** per person.
- Population growth remains high at **1.4%** per annum
- About **25%** of the population is living in the urban areas
- The rate of urbanization over the last decade has been between **7 and 8%**



Road Safety in Bangladesh

- 4,000 road deaths reported annually (but est. to be 20,000)
- 50% of road deaths occur on national highways
- Key crash types: Hit pedestrian (45)% of fatal crashes; rear end collision (16.5%), head on collision (13.2%) and overturning (9.3%).



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COMMITTEE TO
People's Right to Know

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“Two high-ranking government officials were killed in a head-on collision.....on Dhaka-Aricha Highway.”

“Siddiqur Rahman was a passionate advocate for raising awareness to curb road accidents as he lost two of his daughters in a tragic road crash four months ago.....”

56 people were killed in 29 crashes on a curved section near Itakhola during 2010.

CAR CRASH IN MANIKGANJ

Secretary, BSCIC chairman killed

STAFF CORRESPONDENT

Two high-ranking government officials were killed in a head-on collision between a rickety-driven bus and their car early yesterday morning at Uthul of Manikganj on Dhaka-Aricha Highway.

The deceased were Secretary in-charge of

Ministry of Women and Children Affairs Razia Begum and Bangladesh Small and Cottage Industries Cooperation (BSCIC) Chairman Siddiqur Rahman.

They were going to Gopalganj from Dhaka to join a programme, which the prime minister was supposed to attend.

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Road accidents claimed half the members of this family in just four months. Siddiqur Rahman was killed yesterday while two of his daughters (black and white) on March 26 this year. PHOTO: STAR



Razia Begum

A wife mourned

SHARIFUL ISLAM and SHAHEEN MOLLAH

During the 27 years of conjugal life, Nazrul Islam Khan never forgot to say goodbye to his wife when she left on any trip. He was there during her early morning trips to the ones she had to start very late in the night.

He made it a habit of walking his wife to her car or whatever transport she was to take. He made an exception early yesterday morning.

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নড়ক দুর্ঘটনার
জন্মা দণ্ডবিধির
৩০৪/বি ধারার
পূর্ণ প্রবর্তন
চাই।

PHOTO: STAR

A poster of Siddiqur's campaign against road crash featuring the daughters he lost just a few months ago in a road accident.

Father joins daughters

His campaign against road crash ends

MUNDLESIR RAHMAN

Siddiqur Rahman was a passionate advocate for raising awareness to curb road accidents as he lost two of his daughters in a tragic road crash four months ago.

He founded Shikha Memorial Foundation in memory of his eldest daughter Shikha, a victim of road crash.

The organization printed posters and was planning to initiate vigorous programmes to increase awareness against reckless driving. In fact, Siddiqur was supposed to hold a meeting this week with the activists of the foundation in this regard.

Little did he know that only four months after undergoing such a trauma he would meet the same fate as his beloved.

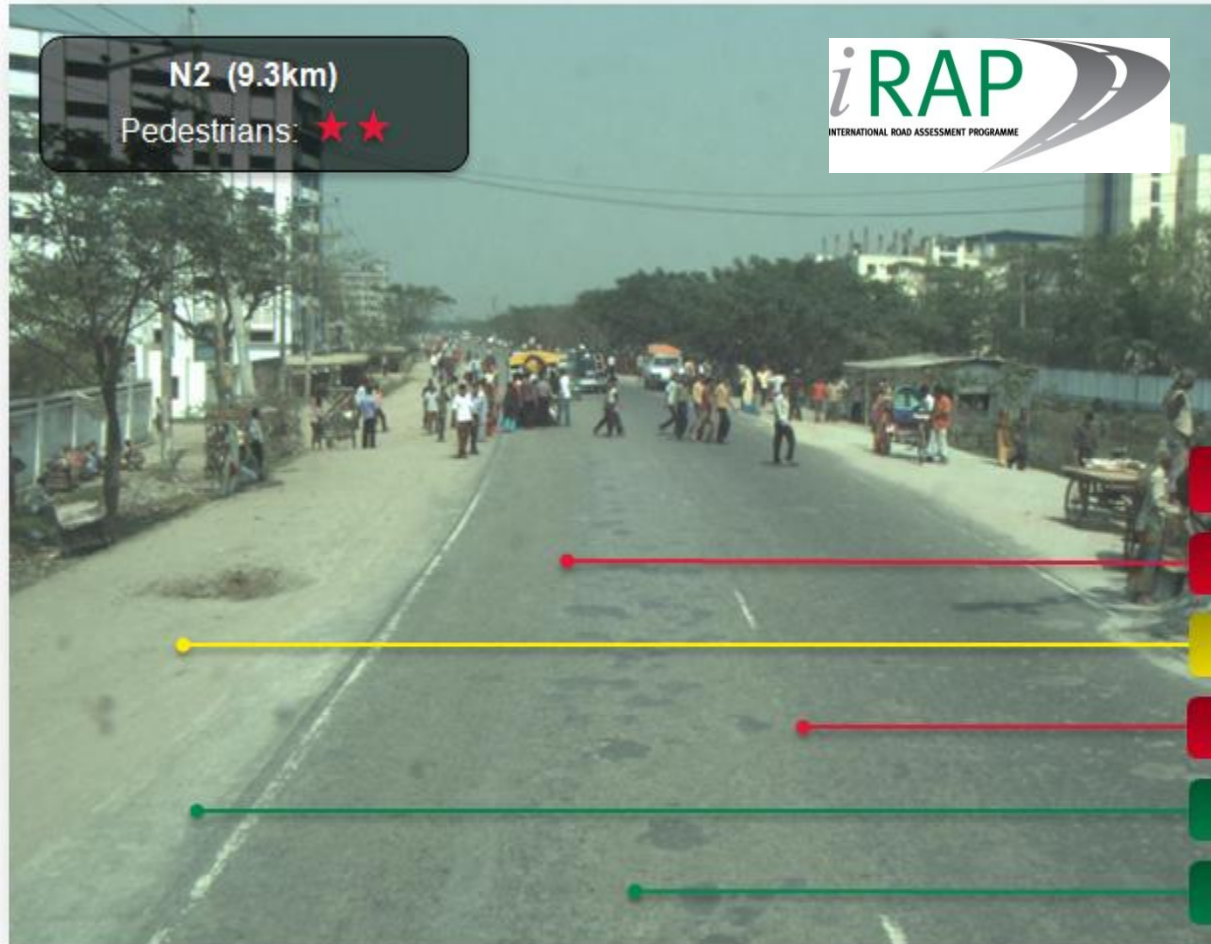
SEE PAGE 15 COL 3

The World's Most Dangerous Highways?

- Reported that in 2008:
 - 180 people were killed in road crashes on the N2
 - 89 were people were killed on the N3.
- These equate to death rates higher than 0.6 deaths per kilometre - more than 10 x higher than Britain's most persistently high risk roads
- Note: under-reporting evident



Key Engineering Challenges



N2 (9.3km)
Pedestrians: ★★



80 km/h

No crossing

Unprotected footpaths both sides

No median

Low side friction

1 lane in each direction

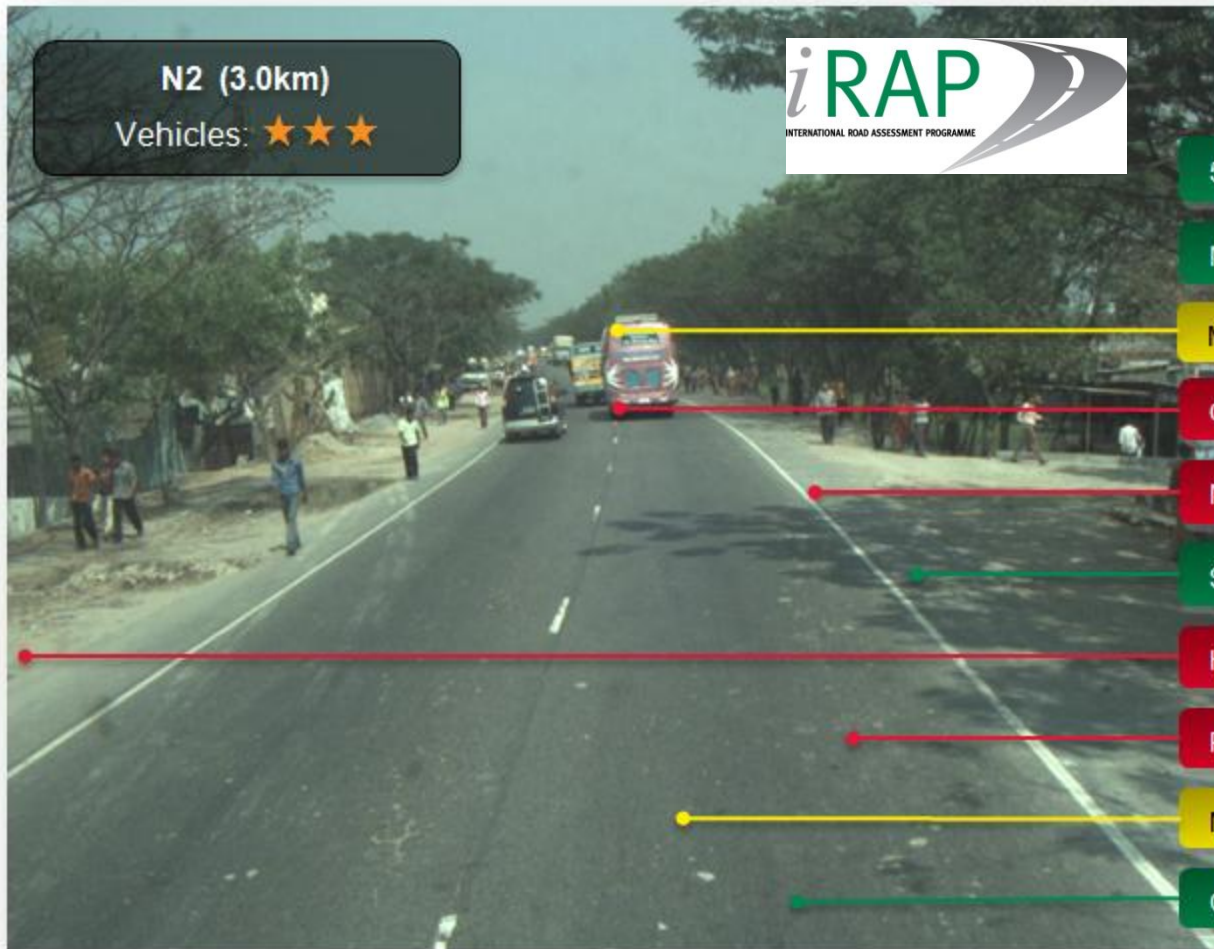
Increase risk

Moderate risk

Decrease risk



Key Engineering Challenges



N2 (3.0km)
Vehicles: ★★ ★



50 km/h

No intersection

Moderate curve

Centreline only

No rumble strips

Sealed shoulder

Hazardous roadside objects

Poor delineation

Medium width lanes

Good pavement condition

Increase risk

Moderate risk

Decrease risk



Key Engineering Challenges

Tempos picking up passengers on roads



High pedestrian movements in linear development



Stack of materials in close proximity of roadsides

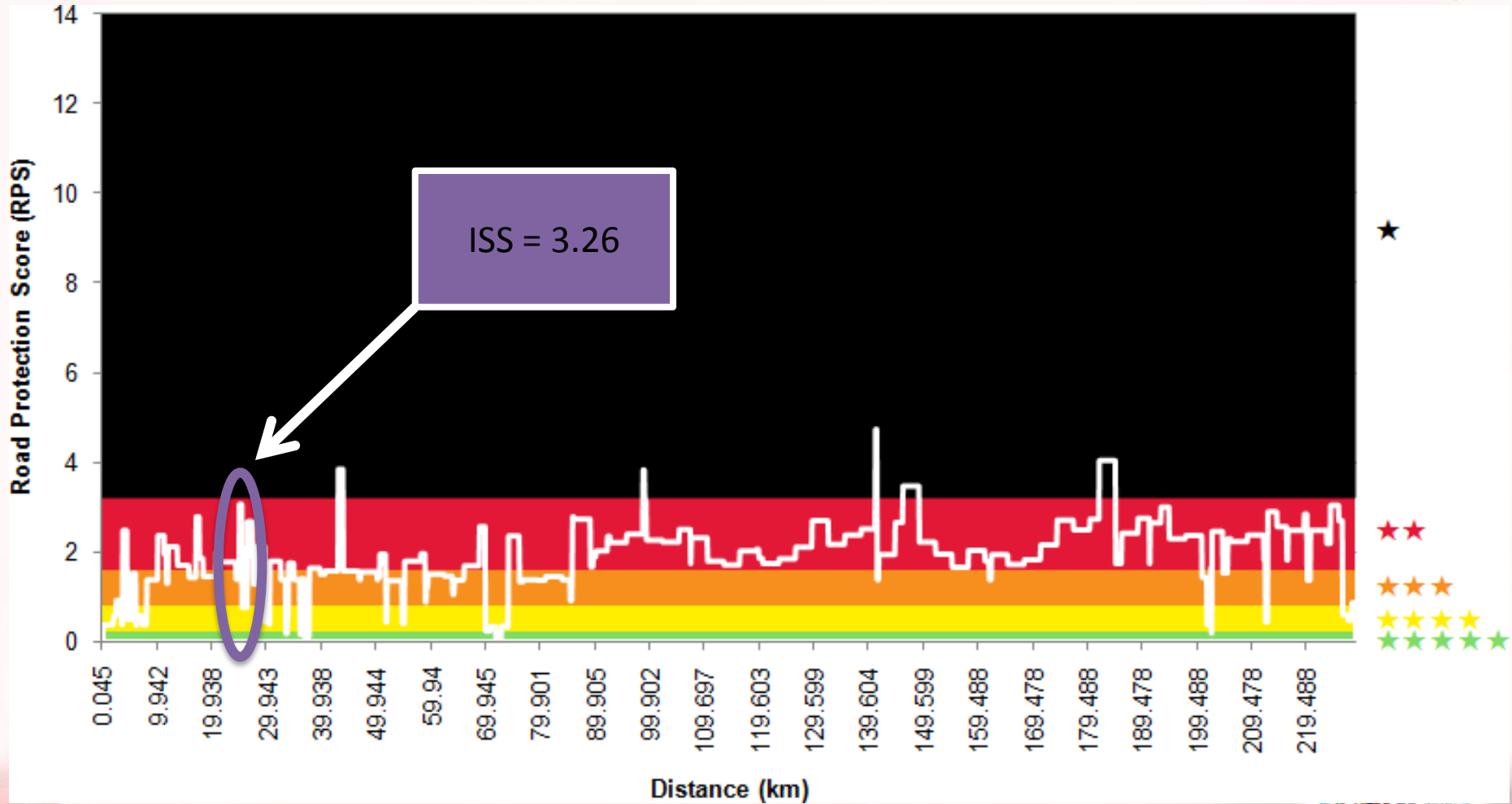


Truck loading at roadside

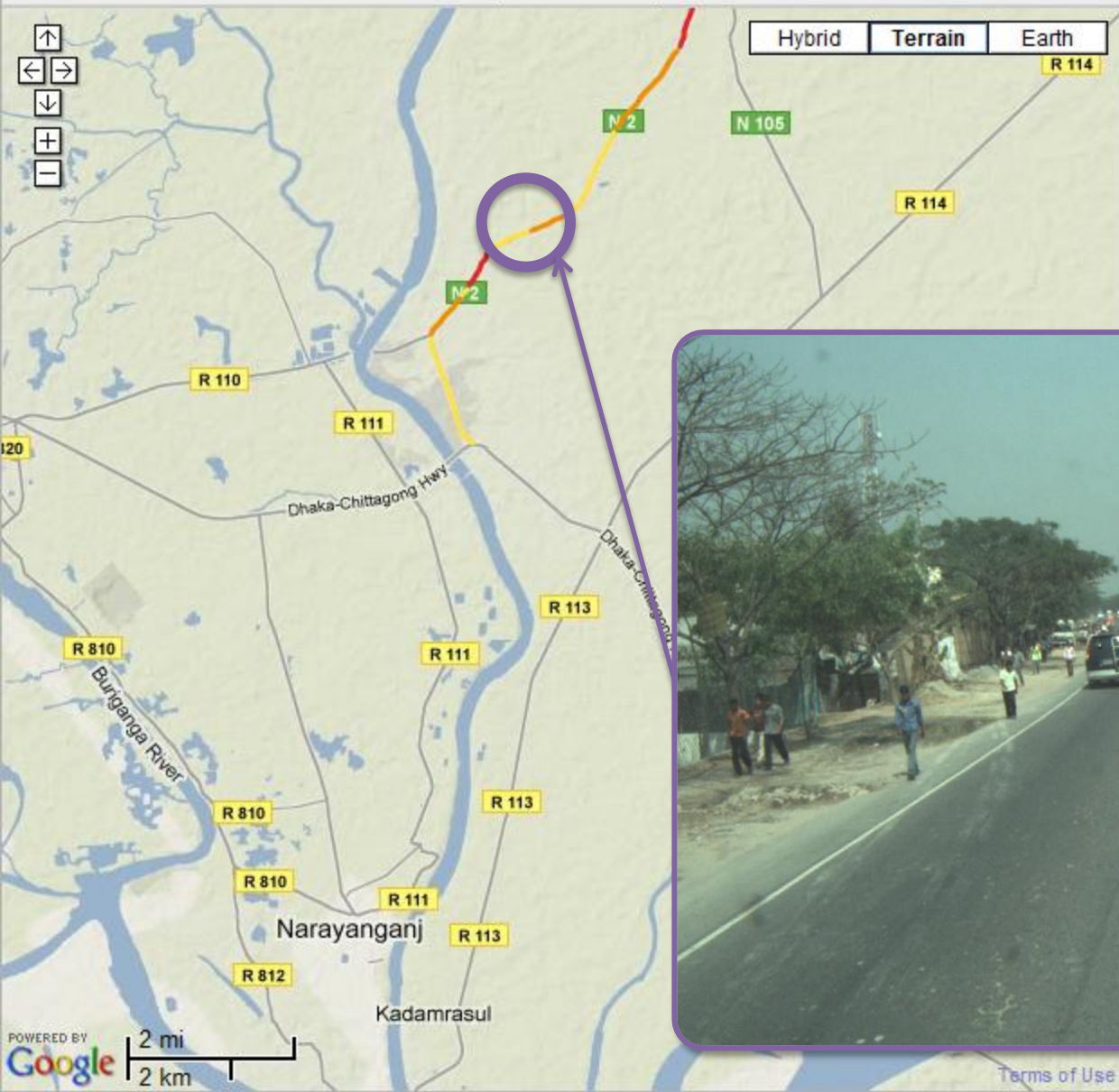


Highway N2

Vehicle ISS and Star Ratings



Bangladesh - N2 Map



Hybrid Terrain Earth



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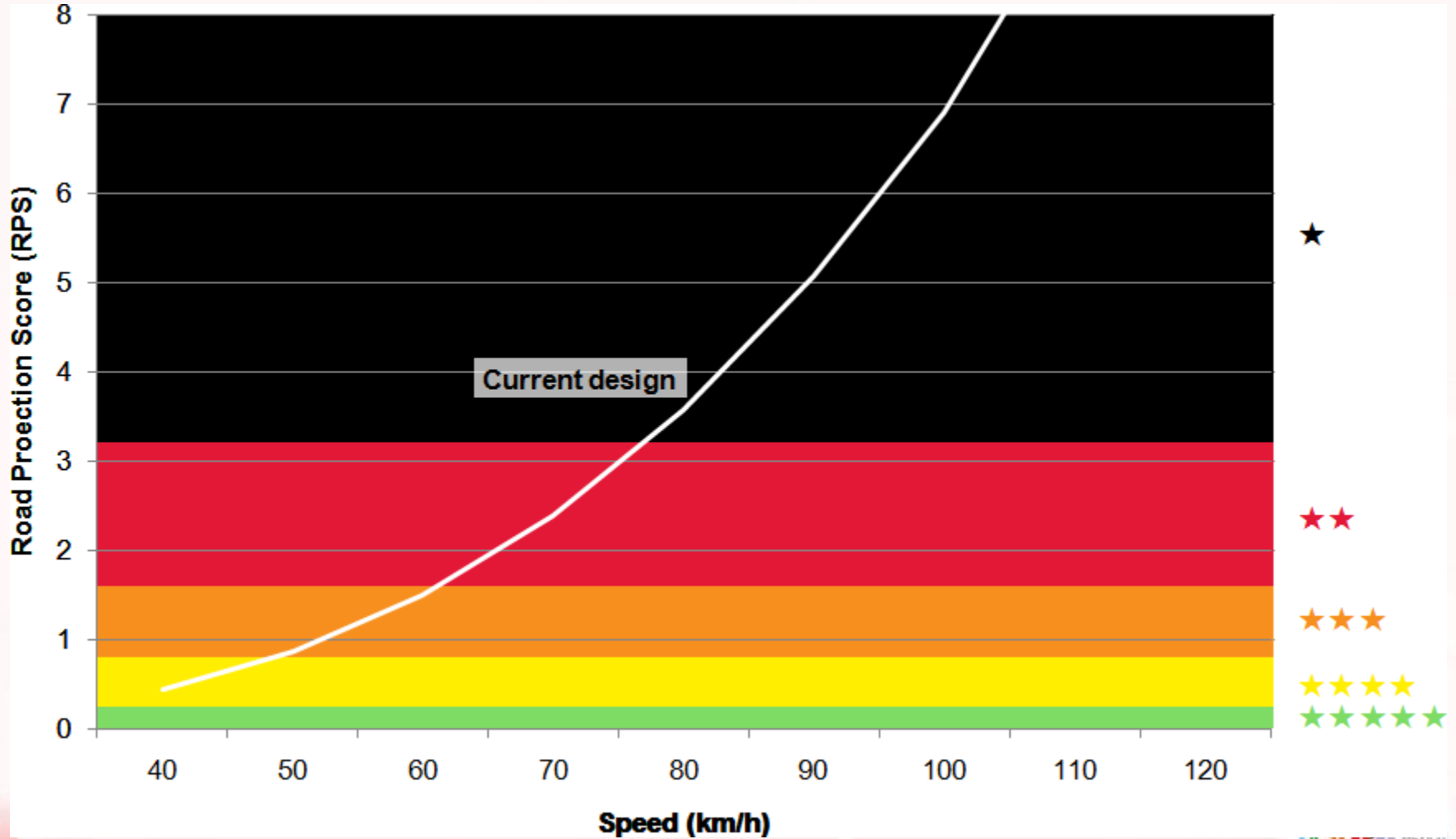
Key Results: Star Ratings

	Vehicle occupants
Highway N2 (229km)	
5 Star	1%
4 Star	6%
3 Star	20%
2 Star	70%
1 Star	3%
Total	100%



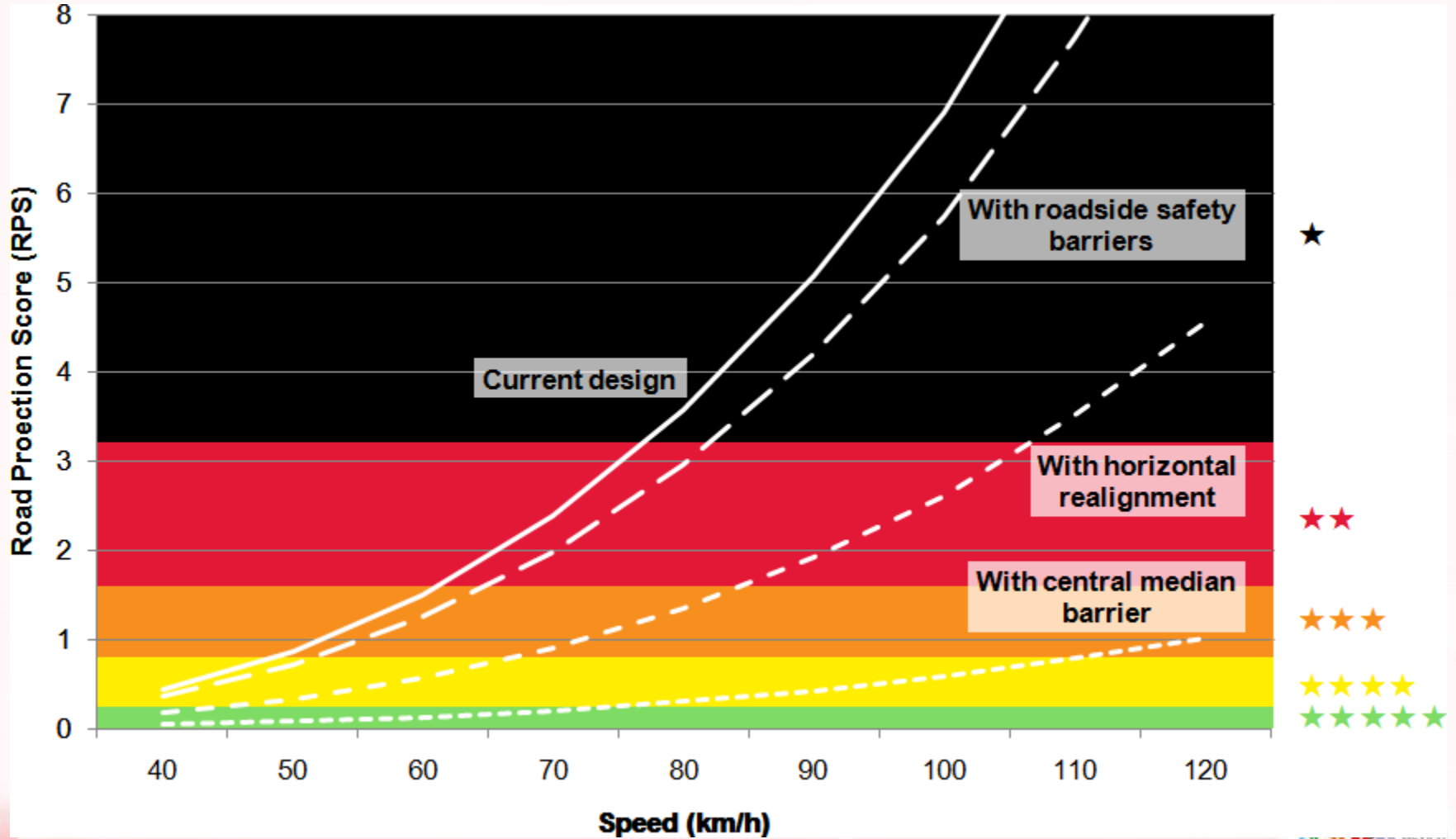
N2 (at the 3.0km point)

Vehicle occupants



N2 (3.0km)

Vehicle occupants



Example Solutions – National Highways 2 and 3



HEAD ON CRASHES

Head-on crashes are generally the most severe of all vehicle crash types. They occur with alarming frequency on the N2 and N3 highways, 95% of which are undivided. Central hatching, median safety barriers, sealed shoulders and overtaking lanes help to dramatically reduce the likelihood of head on crashes occurring.

Visit <http://toolkit.irap.org> for more



PEDESTRIANS AT RISK

Pedestrians are among the most vulnerable road users. Everyday, thousands of pedestrians walk along and across the busy N2 and N3 highways. Currently, 90% of the N2 and N3 have no footpaths and they have few safe crossing points. Building pedestrian footpaths and safe crossings would dramatically reduce risk.

Visit <http://toolkit.irap.org> for more



HAZARDOUS ROADSIDES

The highways have fixed objects or steep embankments within 10 metres of the pavement. This significantly increases the risk that a run-off road crash will result in severe injuries. Safety barriers, sealed shoulders and hazard removal can significantly reduce risk.

Visit <http://toolkit.irap.org> for more

DUPLICATION

120km

BCR = 8

23,000 KSI saved

FOOTPATHS & XINGS

190km & 280 sites

BCR = 12 & 22

10,300 KSI saved

BARRIERS

490km

BCR = 8

8,500 KSI saved





Help pedestrians cross

Reduce run-off risk
with safety barriers

Protect pedestrians

Speed
Management

Improve
delineation

Stop head on
crashes with a
median

toolkit.irap.org



Treatment > **Duplication**

new! →

Search...



Road duplication or 'dualling' involves changing a single carriageway road to a dual carriageway road by building a second separate carriageway, usually alongside the first.

Road duplication provides a safety benefit through provision of a central median barrier or strip of land (median or central reservation), thereby reducing the chances of head-on crashes.

This is costly and requires a large amount of space. Because it is so costly, road duplication projects are often carried out in a staged fashion, in order to make use of limited road funds. Duplication is typically only economically viable at higher traffic flow levels.

Benefits

Implementation Issues

- Separation of the opposing traffic flows, and therefore reduced head-on crashes.
- Simpler traffic movements leading to less opportunity for conflict.
- Redirection of turning movements to safer locations.
- Protection for turning traffic.
- Reduced traffic congestion.

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Treatment Summary

Costs	High
Treatment Life	10 years - 20 years
Effectiveness	40-60% casualty reduction



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