

# **Parliamentary Road Safety Committee Inquiry into Serious Injury**

## **Australian Road Assessment Program (AusRAP)**

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# What is AusRAP?

- A program to save lives by advocating for safer road infrastructure.
- Uses four protocols:
  - Risk mapping (crash mapping)
  - Performance tracking (changes in crashes over time)
  - Star ratings
  - Safer roads investment plans (SRIPs).
- Updated star ratings and SRIPs released in 2013 for National Highways in Victoria.



## AusRAP Star Ratings 2013

- Star Ratings involve an inspection of design elements of the road and roadside as well as intersections.
- Using VicRoads supplied video data, the attributes of each 100m section of road are then assessed and coded.
- Between 1 and 5 stars are awarded to roads depending on the level of safety which is 'built-in' to the road.
- Rural highways with speed zones of 90km/h or more assessed.



# Star Ratings

- International Road Assessment Program methodology used, to enable comparisons between countries.
- The current methodology (iRAP v3.1) does not enable AusRAP star rating results from 2013 to be compared to earlier releases.

## WHERE WE WORK

This interactive map shows the many countries where Road Assessment Programmes are active.



Powered by Phoca Maps

# 2013 Star Ratings and SRIP

## Stage 1: Victoria's National Highways

- 2,363km of nationally funded highways assessed in Victoria and released in July, as part of a national program.
- Used VicRoads asset management video data from 2010, 2011 and 2012, collected by ARRB Group.

## Stage 2: Princes Highway East and West update

- 2A: Additional 725.6km rated
  - Princes Hwy West (Colac to SA border) using 2013 data.
  - Princes Hwy East (Nar Nar Goon to NSW border) using 2013 data.
- 2B: Before and After Star Rating of TAC/VicRoads safety upgrades along Princes Highway.

Stages 1 and 2B presented today.



## Roads rated and released in July 2013

- Calder Fwy/Hwy
- Goulburn Valley Hwy
- Hume Fwy/Hwy
- Princes Fwy/Hwy East (to Sale)
- Princes Fwy/Hwy West (to Colac)
- Sturt Hwy
- Western Hwy/Fwy
- Western Ring Rd (Princes Fwy to Hume Fwy)

Sections zoned below 90km/h or with roadworks excluded.



## Required investment

To achieve a minimum 3-star National Highway network requires an investment of \$470m.

This will:

- Eliminate 1-star and 2-star sections of National Highway.
- Also implement every safety project with a BCR > 1.
- Save at least 2,700 people from serious injury or death over 20 years.



# Key treatments for high risk locations

- Roadside barriers
- Skid resistance
- Rumble strips on shoulders and centrelines
- Central median barriers
- Protected turn lanes at at-grade intersections



# Stage 1: Victoria's National Highways (before SRIP investment)

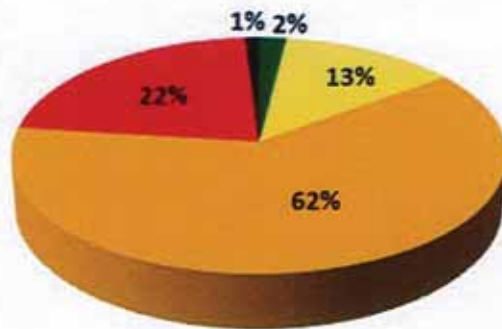


# Stage 1: Victoria's National Highways (after SRIP investment)

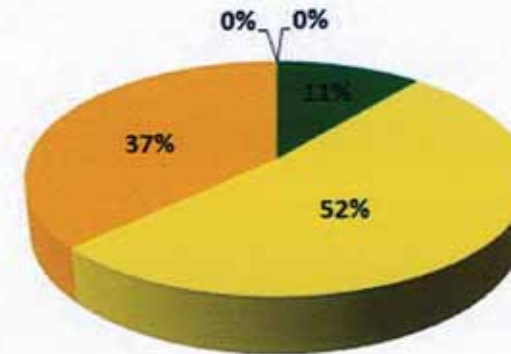


# Stage 1: Victoria's National Highways

Star Ratings Before Investment Plan



Star Ratings After Investment Plan



# 1-Star Road



# 3-Star Roads



# 5-Star Road



# Stage 2B: Star Rating Results PHE

## Nar Nar Goon to Sale

Star Ratings	Length (kms)	Percent
5 Stars	2.80	1%
4 Stars	69.10	32%
3 Stars	129.20	61%
2 Stars	12.40	6%
1 Star	0.00	0%
Not applicable	0.00	0%
<b>Totals</b>	<b>213.50</b>	<b>100%</b>

## Sale to NSW

Star Ratings	Length (kms)	Percent
5 Stars	0.00	0%
4 Stars	0.30	0%
3 Stars	143.90	54%
2 Stars	93.40	35%
1 Star	30.20	11%
Not applicable	0.00	0%
<b>Totals</b>	<b>267.80</b>	<b>100%</b>

## Total

Star Ratings	Length (kms)	Percent
5 Stars	2.80	1%
4 Stars	69.40	14%
3 Stars	273.10	57%
2 Stars	105.80	22%
1 Star	30.20	6%
Not applicable	0.00	0%
<b>Totals</b>	<b>481.30</b>	<b>100%</b>



# Stage 2B: Star Rating Results PHE





## Stage 2B: PHE (Nar Nar Goon to Sale)

- \$36 million in TAC Safer Road Infrastructure Program (SRIP) funding to trial innovative safety improvements from Longwarry to the NSW border
- May 2013 video data collected for RACV by ARRB
- Duplication underway Traralgon to Sale, but not included as part of star rating



# Stage 2B: PHE (Nar Nar Goon to Sale)

## Longwarry to Traralgon section:

- Removal of roadside hazards, in particular extensive amounts of trees and shrubs.
- Installation of significant lengths of safety barrier, mostly wire rope barriers, where roadside hazards could not be removed
- Wire rope barrier installation within the narrow median strips

## Stratford to Bairnsdale section:

- Large electronic Variable Message Signs (VMS), with the ability to display engaging road safety messages along with drivers' speeds, have been installed at strategic locations. \*
- Longer and wider linemarking along the road centreline, with an audio tactile material installed on both edgelines and the centreline
- A variety of different road surface textures have been applied, with different sized road stone that make different noises, along with 'Wake Up' signs, to keep drivers alert \*
- Safety barriers have been installed at high risk locations
- Warnings signs and guideposts have been upgraded
- Coloured posts at various locations have been installed to engage drivers and break the monotonous road environment \*
- Improvements to the existing Providence Ponds rest area, signs installed promoting the rest area, to encourage drivers to take a break. \*

\*treatment doesn't impact AusRAP results



# Stage 2B: PHE (Nar Nar Goon to Sale)

## **Orbost to NSW border:**

- Traditional 'run-off-road' treatments including shoulder sealing, safety barrier installation and sign and linemarking improvements between Orbost and Cann River.

## **Entire length from Longwarry to NSW border:**

- Improvements to signs and linemarking to assist drivers with navigating the road and staying in their designated lane. This upgrade to a higher standard of warning signs, guideposts, reflective pavements markings and tactile linemarking is being implemented along the length of highway in conjunction with above projects and will be part of the Traralgon to Sale Duplication Project to ensure route consistency.

<http://www.vicroads.vic.gov.au/Home/RoadProjects/RegionalVictoriaRoadProjects/PrincesHighwayRouteSafetyProgram/LongwarryToNewSouthWalesBorder.htm>



# Stage 2B: PHE (Nar Nar Goon to Sale)

Investment = Improvement

Before

(Dec 2011-Jul 2012)

Star Ratings	Length (kms)	Percent
5 Stars	0.00	0%
4 Stars	15.60	7%
3 Stars	150.30	70%
2 Stars	45.70	21%
1 Star	1.70	1%
Not applicable	0.00	0%
Totals	215.70	100%

After Investment

(May 2013)

Star Ratings	Length (kms)	Percent
5 Stars	2.80	1%
4 Stars	69.10	32%
3 Stars	129.20	61%
2 Stars	12.40	6%
1 Star	0.00	0%
Not applicable	0.00	0%
Totals	213.50	100%

↑ 1%

↑ 25%

↓ 9%

↓ 15%

↓ 1%



# Stage 2B: PHE (Nar Nar Goon to Sale)

Before

(Dec 2011- Jul 2012)



After

Investment

(May 2013)



Nambrok Rd duplication completion due mid 2015



# Stage 2B: PHE (Nar Nar Goon to Sale)

- In some locations, star rating has improved by 2 stars (e.g. 2 star to 4 star)

Before

(Dec 2011- Jul 2012)



After Investment

(May 2013)

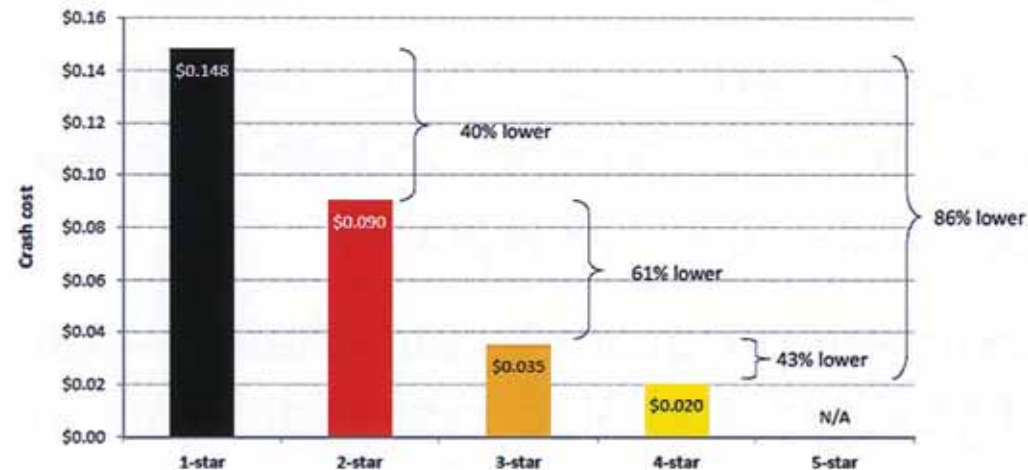
(eg median wire rope barrier)



# Crash Cost vs Star Rating

- Bruce Hwy, QLD – For every increase in the star rating, crash costs are reduced by 40-60%

Figure 2 Smoothed vehicle occupant Star Ratings and fatal and serious injury crash costs per vehicle kilometre traveled



<http://www.irap.net/about-irap-3/research-and-technical-papers?download=91:relationship-between-star-ratings-and-crash-costs-the-bruce-highway-australia>

# Recommendations

- State Government encourage ongoing Federal Government investment in AusRAP star rating for the National Highway network
- State Government should fund the collection of the data necessary to produce and update star ratings for the Victorian State road network
- An investment program to eliminate 1-star and 2-star State Highways and National Highways in Victoria
- All new undivided roads be designed to a 3-star standard, and divided roads to a 4-star standard