

Vehicle Activated Signs: an emerging treatment at high risk rural intersections

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Background

VicRoads Safer Road Infrastructure Program (SRIP)

- What is a vehicle activated sign (VAS)?
 - Alerts drivers
 - The alert is activated by a specific trigger
 - vehicle presence



Background



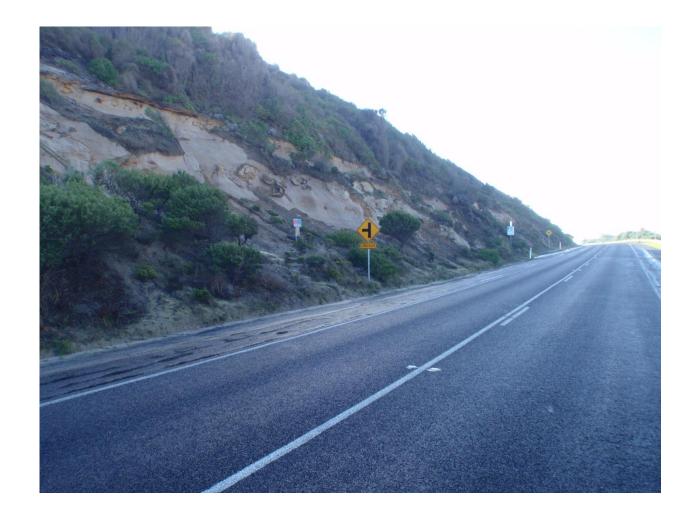


Key aims of VAS

- Improve safety via forewarning
- Increase awareness
- Reduce travel speed



Pre-treatment



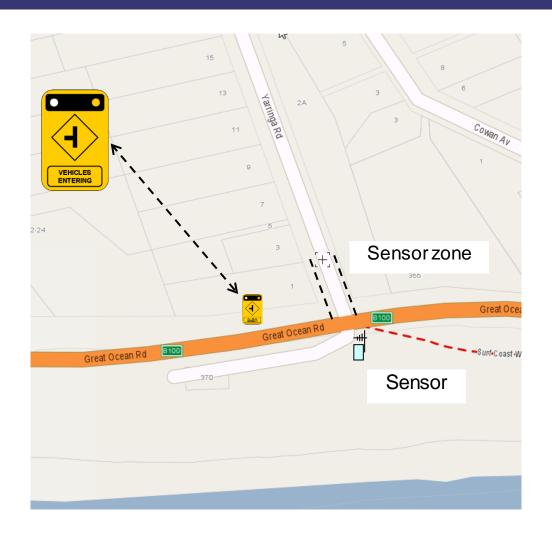


Sites (Source: Copyright Melway Publishing 2010, adapted from Melway Edition 38)



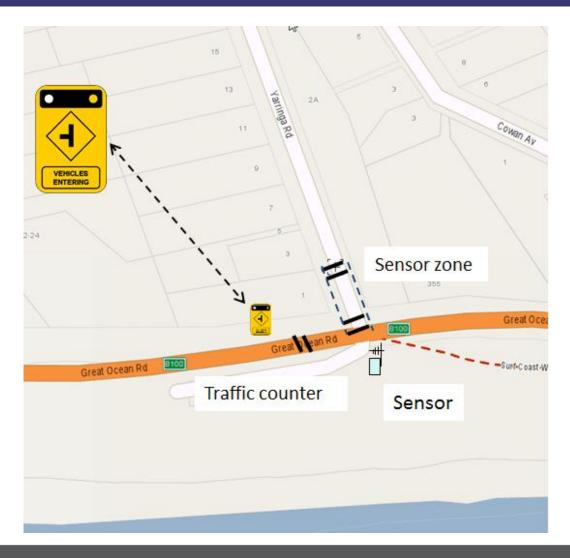


Site configuration



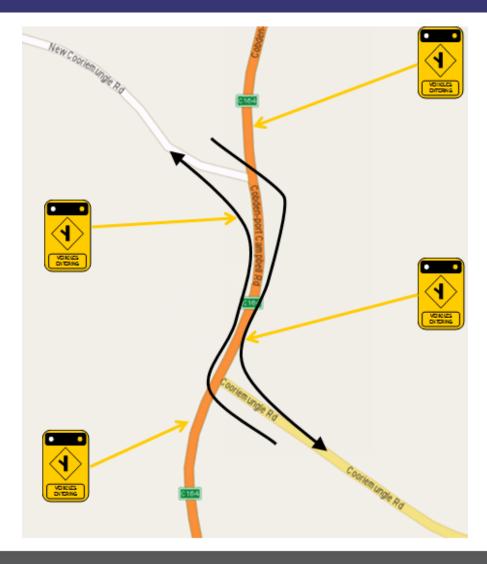


Method





Cooriemungle location (Source: Copyright Melway Publishing 2010, adapted from Melway Edition 38)





Data collection

- Baseline data May 2010
- Treatment installation Dec 2010
- After treatment Oct/Nov 2011



Comparisons

1. A standard static vs active (flashing lights) VAS:





2. A standard static vs inactive VAS (large static sign):





Comparisons

• 3. Inactive VAS (large static) vs active VAS:

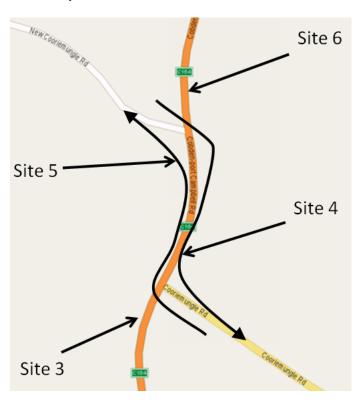






Statistically significant findings - 1

- 1. A standard static vs active (flashing lights) VAS
- Lower speeds active VAS (4/6 sites)
 - Fairhaven
 - Murgheboluc
 - Cooriemungle sites 3 & 6
- Higher speed active VAS
 - Cooriemungle site 4





Statistically significant findings - 2

2. A standard static vs inactive VAS (large static sign)





- Lower speeds inactive VAS (4/6 sites)
 - Murgheboluc
 - Cooriemungle Sites 3, 5, 6
- Higher speed inactive VAS (1/6 sites)
 - Cooriemungle Site 4



Statistically significant findings - 3

• 3. Inactive VAS (large static) vs active VAS





- Lower speeds active VAS (3/6 sites)
 - Fairhaven
 - Murgheboluc
 - Cooriemungle Site 3



Practical effect on speeds

Standard static sign and active VAS





- Speed reductions
 - 4.85 km/h mean speed average across 4 independent VAS sites (mean speeds)



Crash reduction factors (Elvik's model)

Potential to reduce:

- fatal crashes by an average of 18%
- serious injury crashes by an average of 12%
- other injury crashes by an average of 8%



Limitations

- Differences between treatment and comparison sites
- Road maintenance activities unaccounted for
- Pneumatic tubes
 - accuracy
 - functionality with slow driver speeds



Conclusions

Largest total speed reduction from standard to active VAS

- VAS most effective in 'simpler' environments
 - flatter grade
 - no nearby intersections (or dog-leg manoeuvers)

Driver alertness



Thank you

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