

# Trail bike road trauma: intelligence-led approach to reducing community harm

Lisa Brodie<sup>a</sup> and Daniel Hilton<sup>b</sup>

<sup>a</sup>Road Policing Operations Intelligence Unit, Road Policing Command, Victoria Police; <sup>b</sup>State Highway Patrol Solo Unit, Road Policing Command, Victoria Police

## Abstract

Trail bike riding results in a high number of injuries each year. There are limited initiatives to address this unique road safety issue. Intelligence was sought to understand the nature and extent of the problem. Rider injuries during 2013/14 were identified in police collision data. Collision reports were reviewed and geospatial analysis undertaken. Over 600 injuries were identified, accounting for one-quarter of all police-reported motorcyclist injuries. Intelligence findings informed a 12 month police enforcement operation and facilitated inter-agency partnership, resulting in a local pilot program to investigate environmental solutions at a high risk location, and development of tailored educational material.

## Background

Trail bike riding throughout state forests and parks is an increasingly popular recreational pursuit in Victoria, Australia. The associated burden of injury however has attracted significant attention in recent years (Mikocka-Walus, Gabbe & Cameron, 2010; Victorian Auditor-General, 2011; Road Safety Committee, 2012). Whilst there have been numerous motorcycling safety initiatives, including enhancements to the motorcycle licensing system, such initiatives have not addressed riding on unsealed highways to the same extent as for sealed highway environments (Mickocka-Walus et al, 2010).

Road safety legislation still applies on unsealed highways in forest/park settings to ensure public safety. The State Highway Patrol's Solo Unit has a fleet of police equipped trail bikes and provides specialist training to enable members to effectively access unsealed environments to enforce road safety and to help promote safe and responsible road use. While most road users are alert and compliant a minority engage in unsafe and illegal behavior, including unlicensed and under-age riding, impaired riding and unregistered vehicle use. Low level enforcement in remote rural areas likely increases the potential for such high risk behaviour (Boschert, Pyta & Turner, 2008).

The nature and extent of trail bike activity and related trauma was not well understood. Amid police concerns, intelligence was sought to assist Road Policing Command in better understanding and responding to this unique road safety issue.

## Method

Police-reported motorcyclist collisions in the 2013/14 financial year were extracted. Recreational trail bike rider collisions were identified using a combination of fields: location type, road surface type, motorcycle make/model, purpose of journey. Collision reports were examined and geospatial analysis undertaken to gain insight into the incident circumstances and contributing factors. Collision data was combined with past enforcement results in similar geographic areas to assess trends.

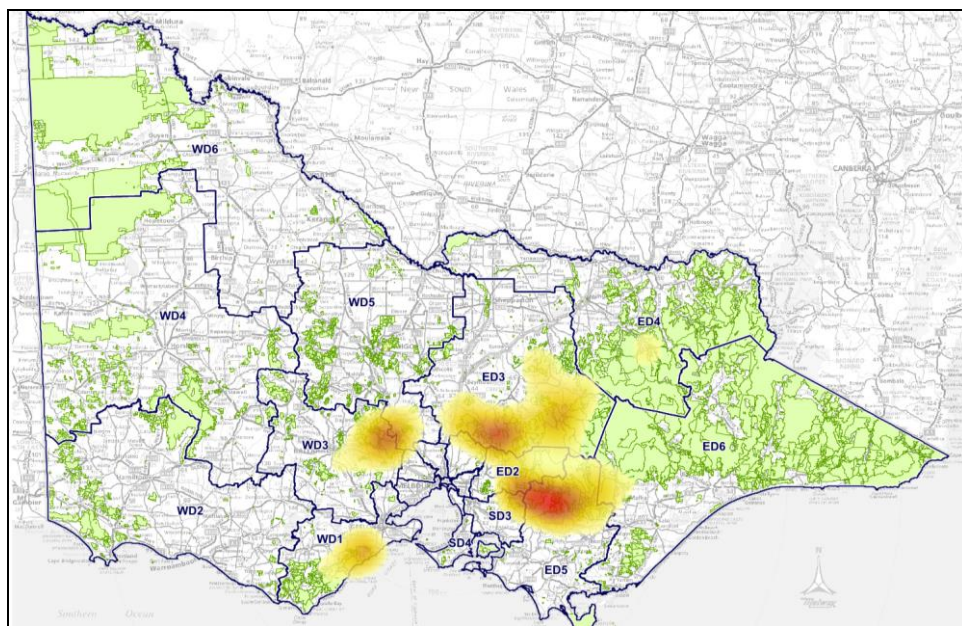
## Results

Over 600 motorcyclist injuries were identified state-wide, representing one-quarter of all police-reported motorcyclist collisions. Police rarely attended incidents (20%). Consequently, the accuracy of incident details reported is unclear and most riders were not subject to alcohol and drug testing.

Injuries were predominantly on weekends during daylight hours. A high proportion occurred over official long weekends. While most incidents were single-vehicle with no collision (67%), incidents involving more than one vehicle (including head-on with a four wheel drive) were associated with more severe rider injuries. Most riders attributed initial loss of control to environment factors: large rocks, fallen branches, loose gravel, dust, washout, ruts. Illegal behaviour was apparent in 10% but likely under-reported. Operational results revealed between 25-40% of intercepted road users had committed an offence.

## Discussion

Hospitalization figures suggest injuries are grossly under-reported to police. Contributing factors were mostly consistent with rider survey results (Social Research Institute, 2015). Surveys further revealed fatigue, inappropriate speeds and rider skill being issues, although these were less apparent in police data. Intelligence findings informed the development of a state-wide police operation (*Operation ATME*, all-terrain motorcycle enforcement) targeting priority locations (Figure 1). Recognising the Safe System framework, trauma will not be reduced through behaviour change alone. Importantly, findings facilitated closer engagement with partner agencies which has led to a local pilot program to investigate road environmental solutions at a high risk location. An educational resource is also being developed to assist riders. Collision data, police enforcement outcomes and member observations will be used to evaluate the impact of these initiatives.



**Figure 1. Hot spot analysis of trail bike collisions, Victoria Australia 2013/14**

## References

- Boschert, L., Pyta, V. & Turner, B. (2008) *Crashes on unsealed roads*. Paper presented at the 23rd ARRB Conference – Research Partnering with Practitioners, Adelaide, Australia.
- Micocka-Walus, A., Gabbe, B. & Cameron, P. (2010). Motorcycle related major trauma: On-road versus off-road incidence and profile of cases. *Emergency Medicine Australasia*, 22, 470–476
- Road Safety Committee. (2012). *Inquiry into Motorcycle Safety*. Retrieved from website: <http://www.parliament.vic.gov.au/57th-parliament/rsc/article/1409>

Social Research Institute. (2015). *Transport Accident Commission Motorcycle Client Research – Off-road crashes*. August. Retrieved from website: <http://www.tac.vic.gov.au/road-safety/statistics/about-tac-surveys/road-safety-and-marketing-surveys>

Victorian Auditor-General. (2011). *Motorcycle and Scooter Safety Programs*. (Report No. 2010-11:21. Retrieved from website: [http://www.audit.vic.gov.au/reports\\_and\\_publications/latest\\_reports/2010-11/20110209\\_motorcycles.aspx](http://www.audit.vic.gov.au/reports_and_publications/latest_reports/2010-11/20110209_motorcycles.aspx)