Road Safety Challenges Associated with Management of Local Council Managed Roads in Country Areas

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Abstract

In light of improvements to the road toll in recent years, it is disturbing that there is minimal improvement in road trauma on unclassified country roads.

Of the 180,000 kilometres of road throughout NSW, the Roads and Traffic Authority, NSW (RTA) is responsible for 21,000 kilometres, with the remainder the responsibility of local governments. However, around 45% of all casualty crashes in NSW occur on these council managed roads.

This paper examines casualty crashes occurring on NSW local council managed roads between 2004 and 2009, and identifies several roads worthy of further review based on a relatively high casualty crash history. Some of these roads are from outer metropolitan Sydney areas, and may be of increasing concern as they become more popular thoroughfares consistent with increasing population growth. Speed appears to be a key factor for some of these local roads, particularly those in country and semi-rural areas, where there tends to be fewer vehicles and lower levels of enforcement of road rules (and so drivers may be more willing to engage in risk-taking behaviours on these roads).

This paper raises several key issues relevant to the management of local roads. In particular, management of road safety is complicated by distinctions between the 'legal' versus 'administrative' classification of a road. Greater consistency regarding road classifications would allow for more effective management of local roads, and would help to curb casualties on these roads. Solutions in terms of application of the highly successful NSW Multidisciplinary Road Safety Reviews are also considered.

Keywords

Local roads; unclassified roads; road safety; country areas; casualty trends

Introduction

The annual fatality rate on NSW roads has been improving for many years. In the five years from 1999 to 2003 there were 2,804 fatalities on NSW roads, whereas in the five years from 2004 to 2008 there were 2,323 fatalities – a reduction of 481 fatalities. In terms of road classification, two aspects of the improvement are evident. First, the improvement has been greater in metropolitan areas than in country areas (58% of the reduction in fatalities was on metropolitan roads). Second, the improvement has been greater on classified roads than on unclassified roads (84% of the reduction in fatalities was on classified roads) [4]. Thus, in light of the large overall improvement, it is disturbing that there is minimal improvement in road trauma on unclassified country roads over the past decade.

There exist different ways of defining segments of the NSW roads network depending on different needs. The simplest way is to define the network as either managed by Local Government or the RTA. Of the 180,000 kilometres of road throughout NSW, the RTA manages 21,000 kilometres, with the remainder under the management of local governments. Around 45% of all casualty crashes in NSW occur on these council managed roads. It is therefore desirable that the RTA, as the lead agency for road safety, assist councils in reducing this substantial proportion of NSW road trauma.

Accurate investigation of crashes on local council managed roads has been hampered by several factors. There appear to be some inconsistencies regarding the precise classification of crashes as occurring on either a classified or unclassified road, with discrepancies between the 'legal' classification of a road (based on the Roads Act 1993) and the 'administrative' classification of a road (based on funding of administration and maintenance of the road). Further, within the crash database itself there are inconsistencies regarding the geo-coding of locations (which means that a crash coded as occurring on either a classified or

unclassified road may not correspond with the precise spatial location of the crash). Thus, spatial investigation of crash locations is required, especially given that some roads include sections that are either classified or unclassified.

The purpose of this report is to investigate crashes that have occurred on local council managed roads throughout NSW and highlight several roads that appear worthy of consideration for review based on recent crash history. This is intended to provide a starting point for discussion of future practical solutions to address the road toll on local council managed roads more generally.

Method

Roads were investigated on the basis of total casualty crash history in NSW for 2004-2009 (all data for 2009 are preliminary), based on crash data available within the RTA's crash database (Crashlink). Initially, crashes occurring on "local" roads referred to those that have been: (a) coded as "unclassified (local)" within the Crashlink database, and; (b) investigated spatially using Crashlink maps to confirm that they have actually occurred on a local road. During the course of this investigation, other regional roads (sometimes referred to as "local" depending on the definition employed) also appeared relevant on the basis of casualty crash history, and so were incorporated into the present analysis. According to RTA schedule of road classification, a "regional road" refers to a road that is not classified as "Highway", "Main Road", "Secondary Road" or "Tourist Road" under the Roads Act (i.e. a "classified" road based on 'administrative' rather than 'legal' classification).

Overall, the local council managed roads listed in this paper have been identified on the basis of:
(a) The road experiencing a comparatively higher number of crashes (although some numbers are quite small, particularly in relation to fatal crash history), and/or;
(b) The road possibly becoming a more popular thoroughfare in areas experiencing increased population growth (particularly in outer metropolitan Sydney areas).

In addition, the involvement of speed was investigated as a factor in crashes. A speed-related crash is defined as a crash which involves at least one speeding motor vehicle (where speeding is defined as travelling above the posted speed limit, or at a speed that is inappropriate for the prevailing conditions even when this speed may be below the posted speed limit).

Summary of Findings

The following sections present a summary of findings regarding the current investigation of local council managed roads, in an order consistent with the methodology described in the previous sections.

<u>Listing of Unclassified Roads Based on Total Casualty Crash History</u>

Table 1 presents a list of confirmed unclassified roads identified from an investigation of total casualty crash history, and ordered on the basis of total number of casualties from all casualty crashes. Please note that this listing does not represent an overall ranking for all NSW unclassified roads.

Table 1: Unclassified Roads Identified on the Basis of Total Casualty Crash History (and Ranked by Total Casualties from All Casualty Crashes)

Road & Town(s)	LGA	Casualty Crashes (2004-2009p)	Total Casualties	Fatalities	Injuries
Silverdale Road, Wallacia/Silverdale/Orangeville /The Oaks*	Wollondilly	95	***122***	8	114
Burwood Road, Burwood*	Burwood	90	***104***	0	104
Old Princes Highway, Corrimal/Fairy Meadow*	Wollongong City	75	***86***	2	84
Hunter Street, Newcastle/East Newcastle*	Newcastle City	72	***79***	0	79
Bigge Street, Liverpool	Liverpool City	51	***63***	1	62
Clothiers Creek Road, Bogangar/Condong/Duranbah/ Clothiers Creek	Tweed	42	***53***	2	51
The Boulevarde, Fairfield/Fairfield Heights	Fairfield City	39	***50***	0	50
Fifteenth Avenue, West Hoxton/Austral	Liverpool City	26	***40***	3	37
Moorebank Avenue, Holsworthy+	Liverpool City	24	***39***	0	39
Hue Hue Road, Jilliby	Wyong/Lake Macquarie City	22	***31***	3	28
Bucca Road, Moonee Beach/Lower Bucca/ Nana Glen	Coffs Harbour City	19	***29***	5	24
Cambridge Avenue, Glenfield/Holsworthy	Liverpool City/ Campbelltown City	24	***29***	2	27
Old South Road, Mittagong	Wingecarribee	23	***28***	2	26
Pitt Town Road, Kenthurst/Maraylya	Baulkham Hills	22	***28***	3	25
Woodberry Road, Millers Forest/Woodberry	Maitland City/ Newcastle City	15	***22***	4	18
The Horsley Drive, Horsley Park*	Fairfield City	8	***14***	2	12
Greenwell Point Road, Greenwell Point*	Shoalhaven City	6	***10***	3	7

** While this road includes sections that are either classified or unclassified, crashes listed here are confirmed to have occurred on an unclassified section*

+ Moorebank Avenue was investigated only due to initial investigation of fatal crash history on Cambridge Avenue, given that these roads run into each other and appear to be used as one route to gain access to the M5 motorway

Listing of Other Regional Roads Based on Total Casualty Crash History

Table 2 presents a list of other regional roads that appear relevant to the present investigation on the basis of recent casualty crash history, and ordered on the basis of total number of casualties from all casualty crashes.

Table 2: Other Regional Roads Identified on the Basis of Total Casualty Crash History (and Ranked by Total Casualties from All Casualty Crashes)

Road & Town(s)	LGA(s)	Casualty Crashes (2004-2009p)	Total Casualties	Fatalities	Injuries
Thunderbolts Way, Nowendoc/Giro/Bretti/Gloucester	Gloucester/ Walcha	91	117	8	109
Annangrove Road, Annangrove/Rouse Hill	Baulkham Hills	43	53	4	49
Greenwell Point Road, Greenwell Point/Pyree/Nowra^	Shoalhaven City	33	42	5	37

^ *This refers to the entire section of road comprising both classified (regional) and unclassified sections*

Overall Listing of Local Council Managed Roads by Type of Road

Table 3 presents an overall list of local council managed roads (including both unclassified and regional roads) identified as possible candidates for review based on investigation of total casualty crash history. For each type of road (country, metropolitan semi-rural and metropolitan urban), roads have been ordered on the basis of total number of casualties from all casualty crashes. Where relevant to a particular road, other notes have been added regarding the involvement of speed as a factor in crashes. Again, this does not represent an overall ranking for all NSW local council managed roads.

Table 3: Overall Listing of Local Council Managed Roads Identified as Possible Candidates for Review Based on Investigation of Casualty Crash History (and Ranked by Total Casualties from Casualty Crashes), Separately by Type of Road

Road & Town(s)	LGA	Casualty Crashes (2004-2009p)	Total Casualties	Fatalities	Injuries	Other Notes
COUNTRY ROADS						
Thunderbolts Way, Nowendoc/Giro/Bretti/Gloucester	Gloucester/ Walcha	91	***117***	8	109	Speed was a factor in 59 of 91 crashes
Clothiers Creek Road, Bogangar/Condong/Duranbah/Clothiers Creek	Tweed	42	***53***	2	51	Speed was a factor in 31 of 42 crashes
Greenwell Point Road, Greenwell Point^	Shoalhaven City	33	***42***	5	37	
Hue Hue Road, Jilliby	Wyong/Lake Macquarie City	22	***31***	3	28	
Bucca Road, Moonee Beach/Lower Bucca/Nana Glen	Coffs Harbour City	19	***29***	5	24	Speed was a factor in 10 of 19 crashes
Old South Road, Mittagong	Wingecarribee	23	***28***	2	26	
METROPOLITAN SEMI-RURAL ROADS						
Silverdale Road, Wallacia/Silverdale/Orangeville/The Oaks*	Wollondilly	95	***122***	8	114	Speed was a factor in 57 of 95 crashes
Cambridge-Moorebank Avenues, Glenfield/Holsworthy#	Liverpool City/ Campbelltown City	48	***68***	2	66	
Annangrove Road, Annangrove/Rouse Hill	Baulkham Hills	43	***53***	4	49	
Fifteenth Avenue, West Hoxton/Austral	Liverpool City	26	***40***	3	37	
Pitt Town Road, Kenthurst/Maraylya	Baulkham Hills	22	***28***	3	25	
Woodberry Road, Millers Forest/Woodberry	Maitland City/ Newcastle City	15	***22***	4	18	
The Horsley Drive, Horsley Park*	Fairfield City	8	***14***	2	12	Speed was a factor in 4 of 8 crashes
METROPOLITAN URBAN ROADS						
Burwood Road, Burwood*	Burwood	90	***104***	0	104	
Old Princes Highway, Corrimal/Fairy Meadow*	Wollongong City	75	***86***	2	84	
Hunter Street, Newcastle/East Newcastle*	Newcastle City	72	***79***	0	79	
Bigge Street, Liverpool	Liverpool City	51	***63***	1	62	
The Boulevarde, Fairfield/Fairfield Heights	Fairfield City	39	***50***	0	50	

** While this road includes sections that are either classified or unclassified, crashes listed here are confirmed to have occurred on an unclassified section*

^ This refers to the entire section of road comprising both classified (regional) and unclassified sections

 # Figures for Cambridge and Moorebank Avenues have been collapsed given that these roads run into each other and appear to be used as one route

Discussion

The present paper identifies a number of NSW local council managed roads as possible candidates for review based on investigation of total casualty crash history. While most of the roads listed in this paper have a relatively low fatal crash count, some roads experience a higher number of fatalities from these crashes. Many of these roads are in semi-rural areas from outer metropolitan Sydney (e.g. around the Baulkham Hills and Liverpool City LGAs), and may be of increasing concern as these roads become more popular thoroughfares consistent with increasing population growth. Speed appears to be a key factor for some of these roads, particularly those in country and semi-rural areas (where there tends to be less vehicles and a smaller police presence to enforce road rules, and so drivers may be more willing to engage in risk-taking behaviours on these roads). Silverdale Road and Thunderbolts Way stand out as key roads for review, given the higher number of both fatalities and injuries on these roads, and the over-representation of speed as a factor in these crashes (accounting for at least 60% of casualty crashes on both roads).

In particular, the present findings highlight the need to address crashes occurring on local council managed roads in country areas. Findings support previous work highlighting the greater number of fatal crashes occurring on unclassified than classified roads throughout NSW, particularly on local *country* roads [4]. These findings are also consistent with other previous analysis that has shown a greater contribution of behavioural factors such as speed, alcohol and fatigue in crashes occurring on local country roads.

Around 80% of the state road network (approximately 160,000 km) is managed by Local Government. The remaining 20% of roads is managed by the RTA, which sees about 80% of the state's total travel. Under the Safe System Partnership approach to road safety, the engineered roads environment plays a key role in delivering safe travel. The safe system must allow for human error by delivering a safe and forgiving road and roadside. These principles apply to all roads whether managed by Local Government or RTA.

Several issues may hamper the effective management of local council managed roads. First, Local Governments are under financial pressure to maintain their road network and it remains difficult to fund safety improvements. Blackspot programs are one source of funds able to deliver road safety improvements. This program is limited to projects able to meet defined criteria, Benefit Cost Ratios (BCR), and size of the program available. Second, there is often conjecture regarding the responsibility for local council managed roads. While the Local Government authority has prime responsibility to identify deficiencies on the network under their control and to design and deliver road safety engineering improvements, the main roads authority is purported to maintain responsibility for road safety issues according to the Safe Systems approach. One of the key areas where the RTA has authority over Local Government managed roads is speed limits. Speed limits are authorised by the RTA for all public roads using the NSW Speed Zoning Guidelines, and roads of lesser or restricted alignment or demonstrating poor crash history can have lower speed limits installed.

Separate from the above concerns, the present investigation was quite challenging for several additional reasons. First, there are discrepancies between the 'legal' classification of a road (based on the Roads Act 1993) and the 'administrative' classification of a road (based on funding of administration and maintenance of the road). Second, there exist discrepancies within the crash database itself. For example, a crash coded as occurring on an unclassified road may sometimes not correspond with the precise spatial location of the crash, or the road itself may sometimes be classified as a regional road on the database, when it is considered locally to be an unclassified road. Third, some roads include sections that are either classified or unclassified. It could be argued that these issues reflect the lack of a clear division between Local Government and RTA responsibility over some local council managed roads, particularly those in country areas.

Given these discrepancies regarding road classification as well as conjecture regarding the responsibility of local council managed roads, it is desirable that the RTA, as the lead agency for road safety, assist councils in reducing this substantial proportion of NSW road trauma. Present findings suggest that greater collaboration between RTA and Local Government would assist in improving the effective management of NSW local council managed roads, which would in turn assist in the reducing road trauma on these roads, particularly for those in country areas. An important road safety outcome is for programs to be delivered in response to local needs, and greater collaboration between RTA and Local Government would encourage establishment of local road safety programs [3].

As part of an overall Road Toll Response Package to reduce casualties on NSW roads, the NSW Government announced a substantial commitment of $45 million over five years in order to specifically address the road toll on local rural roads. Work has commenced to develop a 'governance model' that permits RTA in partnership with Local Government to identify and carefully target works while at the same time allowing Local Government to maintain full 'ownership' of works constructed. Key to this model is a steering group comprised of stakeholders through whom decisions are made and progress reported. RTA role will focus on providing advice, assisting with identification of lengths with adverse crash history and releasing of grants permitting works to be undertaken. Local Government will develop and install projects with the completed works becoming a Local Government held asset.

When Local Governments design and construct road safety engineering projects they typically employ Road Design Guide standards together with RTA-issued supplements and Technical Directions. Designing and constructing to these standards is the ideal or best standard available, but may not always be the most cost effective measure, particularly in the short to medium term, and can limit the number of locations (or kilometres) treated with remedial works. The challenge for Local Governments is to retrofit road safety engineering treatments to an existing road network on a limited budget, and this is a particular challenge on country roads [2].

The identification of key local council managed roads in the present paper may lead to future solutions in terms of application of the highly successful NSW Multidisciplinary Road Safety Reviews. These reviews outlined the key characteristics of recent fatal crashes on key highways, called for suggested road safety improvements for the highways from key stakeholder groups (such as local government, community groups, and government departments), and incorporated these suggested road safety considerations (along with identified fatal crash characteristics) into a strategic plan for each of the highways based on a safe systems approach to road safety (thus including road engineering, behavioural and enforcement components). These reviews have improved road safety particularly along the Pacific and Princes Highways, especially in country areas [1]. Input from community groups was a key aspect in the success of these reviews, suggesting that similar input regarding identified local council managed roads of concern may be an effective strategy for reducing casualties on these roads.

Conclusion

The road toll on country roads managed by Local Government must be brought down if the NSW road toll is to be reduced. A key challenge is that while RTA has ultimate responsibility for reducing the road toll it does not have responsibility to undertake works on roads under the control of Local Government. New operating models need to be developed that allow Local Government and RTA to work together to identify issues, to develop road safety engineering solutions and ultimately implement effective solutions. The present paper identifies several local council managed roads worthy of review based on total casualty crash history, and thus presents a starting point for Local Government and RTA to work together towards improving effective management of NSW local council managed roads, and ultimately reduce road trauma on these roads, particularly those in country areas.

References

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