

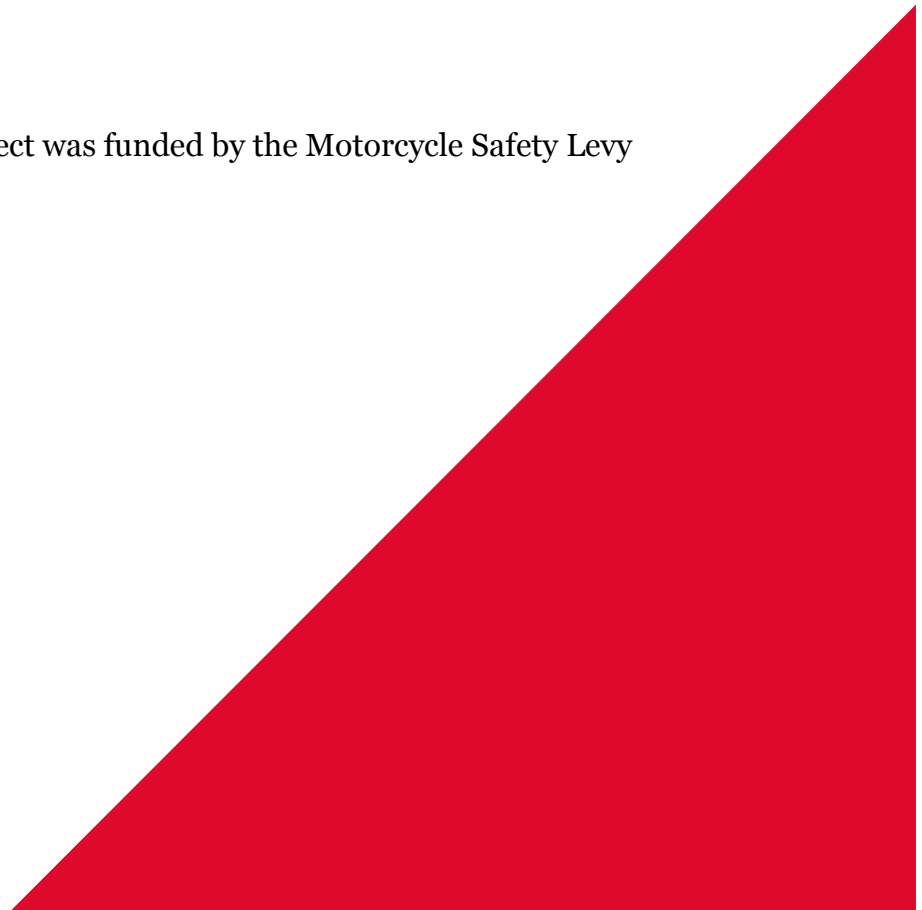


Motorcycle Safety Advisory Council

Making Motorcycling Safer

Evaluation of the 'Making Roads Motorcycle Friendly' seminar programme and guide

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1 Executive Summary

According to the New Zealand Ministry of Transport (MoT), motorcyclists face a 19 times higher risk of death or injury than other road users (MoT, 2014a). Therefore, the Motorcycle Safety Advisory Council (MSAC), at the direction of the Accident Compensation Corporation (ACC), has been tasked with evaluating potential ways of reducing the number and severity of motorcycle accidents on New Zealand roads.

Considering that approximately one third of motorcycle fatalities and injuries are caused by the motorcyclist losing control of their vehicle or leaving the road (MoT, 2014b), the MSAC wished to evaluate the potential benefit of holding New Zealand-wide seminars for roading designers, engineers and contractors on making roads motorcycle friendly. These seminars covered various roading environment factors that are known to impact motorcyclists' safety, such as issues associated with road surface conditions, and provided suggestions on how to address each of these identified factors. The seminar also included the MSAC's new *'Making Roads Motorcycle Friendly'* guide, a document which is intended to be used by designers, engineers and contractors to inform them on actions they can take in their current role to help improve the safety of motorcyclists on the New Zealand roading network.

The aim of this research project was to investigate a) what actions roading designers, engineers and contractors currently undertake to make roads motorcycle friendly, b) what their perceptions are of the *'Making Roads Motorcycle Friendly'* guide, and c) for those that had attended the seminar, whether they had found it useful and how, if at all, they intended to change their future working practices based on any new awareness and knowledge they had acquired. This aim was accomplished by conducting a series of surveys before and after the seminars, as well as a set of post-seminar interviews with a selection of attendees.

The results from the surveys, both pre and post seminar, showed that all respondents (irrespective of seminar attendance or familiarity with the *'Making Roads Motorcycle Friendly'* guide), felt that the greatest safety need for motorcyclists was adequate road surface grip, as well as a lack of road defects and debris. This was generally followed by the need for roadsides to be free from obstructions, and therefore safe for motorcyclists to safely recover their vehicle if they left the road.

Prior to the seminar, both those that did and did not attend stated the main action they undertook to make roads safer for motorcyclists was maintaining a good road surface. Following the seminar, one of the changes attendees said they would make would be to specifically think about their work from the motorcyclists' perspective. The main barrier that respondents raised to making this change was cost.

The interviews revealed that changes were being made to current projects where possible and that the interviewees had strong intentions to implement such changes in future projects if the main barrier of cost was addressed. This cost barrier will hopefully be addressed by relevant stakeholders, given how successfully the seminar and guide have raised the profile of motorcycle safety.

The seminar itself was very well received, with respondents stating it was 'very interesting' and 'useful'. Respondents also felt that the presentation of the seminar was well-run as they found the interactivity, and the well-thought out use of photos and video examples engaging (though some felt that these materials could be improved with more New Zealand-based examples). The

respondents also felt the panel discussion was a useful addition, though could have potentially been extended as some felt it was pressed for time.

Respondents who had read the *'Making Roads Motorcycle Friendly'* guide stated they would use it for their work as a 'ready-to-use' reference guide, and as a handy reminder to think about their work from the perspective of motorcyclists. They felt the guide was useful and informative and those respondents who had not yet used the guide indicated that they intend to do so in future work where possible.

In view of how well both the seminar and guide were received, the vast majority of respondents would happily recommend that people attend future seminars and read the guide when possible. Respondents were already disseminating what they had learnt from the seminar, as well as the guide itself, to those who they thought would benefit from such information.

Overall it would appear that both the seminar and guide have been positively received and the information contained is being, (or going to be) utilised to make roads more motorcycle friendly in the future.

From the research findings the following recommendations have been made:

- The *'Making Roads Motorcycle Friendly'* guide should include an evidence base on the effectiveness of reducing motorcycle crashes through following the guide's contents. This evidence can be used to help overcome barriers such as cost.
- To use New Zealand based examples where possible to make it more applicable to the New Zealand roading environment, including both example images and videos as well as initiatives that are being implemented in New Zealand.
- Discussions at future seminar series should raise the issue of motorcycle safety at roadworks to gauge whether this is an actual area where a lack of knowledge needs to be addressed.
- Better integration of the *'Making Roads Motorcycle Friendly'* guide with the NZTA's *'Safer journeys for motorcycling on New Zealand roads'* guide. This could be accomplished by integrating the two guides together into a single NZTA document with the *'Making Roads Motorcycle Friendly'* guide acting as standalone section of the *'Safer journeys for motorcycling on New Zealand roads'* guide. This offers the advantage of having the two guides as single overarching document (with common branding etc.) but with the ability to have the *'Making Roads Motorcycle Friendly'* guide as a contained standalone document if required. Having the two documents linked also has the advantage that any changes made to one of the documents should easily be propagated across both, e.g. recommendations on how high risk routes are identified can easily be linked into both documents.
- That the current format of the seminar be kept, specifically the interactive multimedia presentation, and the interactive panel discussion.
- Hold the seminars annually or bi-annually so those new to the working on the New Zealand roading network have a chance to attend rather than being reliant on just the guide.

- Use the seminar to promote/incentivise good examples of motorcycle friendly initiatives in New Zealand. Examples of such promotion could be to invite previous seminar attendees back who have successfully applied what they learned from the seminar and the wins they have had.
- Consider sponsoring a motorcycle roading award and have the winners and runner ups invited to present their work to the seminar. This may help encourage those that have the power to implement changes or control budgets to attend the seminars.
- Perform a follow up of attendees at minimum six months after attendance to see if changes are actually happening and the guide is being used, at minimum these should be interviews but ideally would involve site visits.

2 Background

Motorcyclists are 19 times more likely to suffer from a fatal or serious injury than a car user when travelling over the same distance (MoT, 2014a). Between 2009 and 2013, approximately one third of all motorcycle fatalities and injuries were the result of the motorcyclist losing control of their vehicle or running off the road (MoT, 2014b).

Loss of control can happen for a variety of reasons, such as the road surface having inadequate grip (due to debris, service covers etc.), or obstructed sight lines hiding motorcyclists from the view of other road users, requiring the motorcyclists to perform emergency manoeuvres to avoid collisions.

Loss of control is a main contributor to motorcyclists leaving the road, although motorcyclists can leave the road for other reasons, and when they do, objects at, or near, the side of the road can be a hazard to them. Therefore, it is important that all reasonable steps be taken to firstly reduce the chance that a motorcyclist will lose control of their vehicle while on the road, and secondly, where they do end up in a situation where they have left the road, that the roadside be as obstruction-free and safe as possible.

To this end, as part of their remit to reduce the number and severity of accidents involving motorcyclists, the Motorcycle Safety Advisory Council (MSAC), as part of the Accident Compensation Corporation (ACC), wished to evaluate the potential benefit of delivering a seminar discussing the safety needs of this road user group in relation to road design and maintenance. This seminar featured a presentation component, a panel discussion, and each attendee was given a copy of the *'Making Roads Motorcycle Friendly'* guide which formed the core basis of the seminar presentation. An invitation was sent to roading designers, engineers, and contractors asking them to attend a half day seminar in one of several locations (Auckland, Rotorua, Wellington, Christchurch and Dunedin).

Both those that attended the seminar, and those who were invited but did not attend, were surveyed, with an additional select sample being interviewed on their perceptions of the seminar and the *'Making Roads Motorcycle Friendly'* guide. This report presents the results of the respondents' and interviewees' feedback, and makes recommendations around whether this is an appropriate method for improving the safety of motorcyclists across the New Zealand roading network.

3 Method

Three online surveys (pre-seminar, post-seminar, and non-attendee) were designed to investigate the respondents' perceptions of *'Making Roads Motorcycle Friendly'* guide and, where appropriate, their impressions of the seminar. The interviews were designed to explore and elaborate on some of the questions contained in the surveys.

3.1 Pre-seminar survey design

The survey structure was as follows:

1. Behaviours
 - a. Respondents' perception of the three most important safety needs of motorcyclists.
 - b. How the respondents take into account the safety needs of motorcyclists in their own work.
2. Expectations and wants
 - a. What the respondents wanted and expected from the seminar.
3. Perceptions of the *'Making Roads Motorcycle Friendly'* guide
 - b. Material they expected and did not expect to be covered by the guide.
 - c. Anything absent from the guide they would have liked to see included.
4. Reasons for wanting to attend the seminar.

A copy of the survey can be seen in Appendix 8.1

3.2 Non-attendee survey design

The non-attendee survey followed the same format as the pre-seminar survey with the exception that, instead of asking why the respondent was wanting to attend the seminar, the respondent was asked why they were not attending the seminar.

A copy of the survey can be seen in Appendix 8.2

3.3 Post-seminar survey design

For the post-seminar survey, respondents were asked questions around:

1. Behaviours
 - a. Respondents' perception, before and after attending the seminar, of the three most important safety needs of motorcyclists.
 - b. How the respondents have taken into account the safety needs of motorcyclists in their own work after attending the seminar.

- c. What would stop respondents making changes to their work behaviour to make roads safer for motorcyclists.
2. Perceptions of the *'Making Roads Motorcycle Friendly'* guide
 - a. Would the respondent use the guide to inform their future work and why they would or would not use it.
 - b. Anything absent from the guide they would have liked to see included.
3. Perceptions of the seminar presentation
 - a. Level of engagement and usefulness of the presentation.
 - b. What factors made the representation engaging or disengaging.
 - c. How the presentation could be improved.
 - d. Had they discussed the content seminar with others and if so what content did they discuss.
4. Perceptions of the panel discussion
 - a. Level of engagement and usefulness of the panel discussion.
 - b. What factors made the panel discussion engaging or disengaging.
 - c. How the panel discussion could be improved.
 - d. Who the respondent thought should be on future panels.
5. Reasons for wanting to attend the seminar

A copy of the survey can be seen in Appendix 8.3

3.4 Post-seminar interviews

Those that were interviewed were asked the following questions:

1. Are respondents using the *'Making Roads Motorcycle Friendly'* guide.
2. Have they shared with others what they have learnt from the seminar
3. Whether they had made any changes to their work behaviour as a result of attending the seminar.
4. Would they recommend the seminar to others.

A copy of the interview questions can be seen in Appendix 8.4

3.5 Respondent recruitment

Of the respondents that indicated they *would* attend the seminar, half were randomly selected and invited to participate in the pre-seminar survey. Selected attendees were emailed an invitation to participate in the survey prior to going to the seminar. A sample of those originally invited to attend the seminar but who had stated that they would not be attending were recruited for the non-attendee survey.

Every person that was confirmed as having attended one of the seminars was sent an invitation to take part in the post-seminar survey.

Each survey offered an entry into a \$250 voucher prize draw to encourage respondents to take part.

Interviewee's were selected by contacting post-seminar respondents who had indicated that they would be happy to participate in a post- seminar in-depth interview regarding their impressions of the seminar and the '*Making Roads Motorcycle Friendly*' guide.

4 Results

A total of 211 people attended the seminar, with 121 people responding to the surveys and interview requests. Of these 121 respondents, 45 completed the pre-seminar survey, 27 completed the non-attendee survey, 65 completed the post seminar survey and 23 completed the phone interviews. Some respondents took part in both the pre and post seminar as well as the interviews.

The professional roles of those individuals who did respond included positions such as engineering, design, roading, network maintenance, traffic management, access and use, contracts, investments, road safety, community travel and motorcycle instructors.

4.1 Pre-seminar survey

4.1.1 What the attendees wanted from the seminar.

One thing the majority of attendees wanted most from the seminar was a better understanding of the safety needs of motorcyclists:

"To better understand the concerns of motorcyclists in road design. What are their key concerns and how can I, as a road engineer, help."

"I want to gain more understanding of the perspective of a motorcyclist. In our work, we need to cater to all road users, but it would be good to learn more about the motorcycle specific issues from the perspective of motorcyclists."

"Some practical advice on how to maintain (and design) roads to help minimise risk for motorcyclists."

"Some further insight into safety concerns for motorcyclist, especially as I'm not a motorcyclist."

Another theme that appeared frequently was the respondents' want for examples of interventions that have proven to be useful in the past and therefore they could apply in their own work:

"Improved understanding of issues, treatments and lessons learnt from treatments of trial sites"

"I want to hear about techniques which can be used to reduce risk to motorcyclists and to raise awareness of what motorcyclists believe are the greatest hazards."

"Any new ideas for effective safety interventions"

Some respondents also highlighted the benefits of making new contacts:

"To find contacts who can give feedback on issues affecting Motorcyclists."

"Be better informed on issues and opportunities to improve motorcycle safety and key contacts."

"A chance to meet some of the other people involved in this field."

4.1.2 What attendees expected from the seminar

Respondents generally expected the seminar would give them what they had indicated they wanted prior to attending, such as a better understanding of the needs of motorcyclists:

"I hope to have a better understanding of motorcycle issues as far as road design and performance is concerned."

"Better understanding of motorcyclists' needs."

"Better knowledge of motorcycling issues."

Some respondents also expected examples of interventions and initiatives they could implement to improve safety:

"To have a better understanding how to relate Motorcycle safety initiatives to the work I do."

"An awareness of investment opportunities or innovations that will benefit motorcyclists."

"More information which leads to better design practices, improved safety."

Mirroring the respondents wants, some respondents also indicated that they expected to receive the benefits of making new contacts at the seminar:

"Identify contacts or at least the best way to communicate with the Motorcyclist fraternity - acknowledging that the group may be quite fractured with a range of small/different interest groups and affiliations that might be helpful."

4.1.3 What they expected from the 'Making Roads Motorcycle Friendly' guide

When asked if they had read the 'Making Roads Motorcycle Friendly' guide, only 9 (20%) of the respondents said yes.

Of those respondents that had read the guide, the majority stated that everything the guide covered was to be expected, as seen in Table 1.

Table 1: Content respondents expected would be included in the guide (N. 9)

Expected the following content in the guide...	Responded Yes
	%
Issues surrounding the design and construction of roads	88.9
Issues around maintenance and reinstatement considerations	77.8
Issues around keeping road works safe for motorcyclists	66.7
Other	0.0

4.1.4 What they want included in the guide

When asked what they would like included in the guide that was not currently present, respondents stated they would like to have seen information on the budgetary constraints of the NZTA/RCA's, actual guidance and specifications of various interventions (e.g., curb heights, friction co-efficient),

the effectiveness of said treatments, new interventions or legislation, and finally images of expressway/motorway issues.

4.1.5 Perceived greatest needs prior to attending the seminar

Prior to attending the seminar, the vast majority of respondents (97.8%) stated that a road surface with adequate grip, which was also free from debris and defects was the greatest safety need for motorcyclists. The only other factor that the majority of respondents stated as a safety factor was the need for road shoulders which are specifically designed to allow motorcyclists who, have left the road, to recover safely (See Table 2 for a summary of responses by factor).

Table 2: Respondents perceived greatest safety factors (N. 45)

Greatest safety factor facing two wheeled motorised vehicles	%
Road surface provides adequate grip and is free from defects and debris	97.8
Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road	51.1
Roadsides free from obstructions	40.0
Drainage designed to minimise manholes in the road	40.0
Clear unobstructed sight lines	37.8
Service providers minimising the number of chambers in the roadway	20.0
Other	15.6

The factors that emerged from the “other” category covered those designs that take into account motorcyclists’ needs, motorcyclist behaviour, and treatment of out of context curves.

4.1.6 Current actions undertaken as part of job

When asked what actions the respondents currently undertook as part of their work to ensure the safety of motorcyclists, several themes emerged.

The largest theme was the maintenance of good road surfaces that are free of defects and debris.

“Making sure that the pavement surface condition is in good friction condition. Eliminating slip hazards and providing with proper drainage to prevent build-up of surface water on the roads.”

“Review skid resistance, planning to ensure sealed access to limit detritus, maintenance monitoring, annual inspection of roadsides”

“Sweeping is done as part of road maintenance. Additionally, road treatments to address texture are carried out.”

Other themes included using appropriate signage and delineation, assessing the road from the perspective of a motorcyclist, and addressing any issues regarding roadside hazards.

4.1.7 Reason for intention to attend

The predominant reason (75.6%) given for wanting to attend the seminar was the respondent attending of their own volition (See Table 3 for a complete breakdown of reasons for attending).

Table 3: Respondents reason for intending to attend the seminar (N. 45)

Reason for attending seminar	%
I decided that I wanted to attend	75.6
Other	13.3
People were asked to volunteer and I put my name forward	4.4
I was told that I was to attend	4.4
I was the only one free in my team that could attend	2.2

4.2 Non-attendee survey

4.2.1 What they expected from the ‘Making Roads Motorcycle Friendly’ guide

A total of 14 non-attendees (51.9%) had read the guide, with the majority of them having expected issues around maintenance and design to be included in the seminar. However, only half of these respondents expected issues around road works to be present (See Table 4 for all responses).

Table 4: Content respondents expected would be included in the guide (N. 14)

Expected the following content in the guide...	Responded Yes
	%
Issues around maintenance and reinstatement considerations	100.0
Issues surrounding the design and construction of roads	92.9
Issues around keeping road works safe for motorcyclists	50.0
Other	7.1

4.2.2 What they want included in the guide

When asked what they would want to be included in the guide that was not already present, it was suggested that the guide should stress that the guide itself is just one part of a system of applicable measures, that it could have a greater focus on roadside hazards, and that it should touch on the importance of timely interventions. It was also suggested that the information that was already in the guide could be put into themes (e.g., all unsuitable road surface matters together). However, a number of respondents indicated that nothing else was required.

4.2.3 Perceived greatest needs

As with the pre-seminar, those that did not attend the seminar stated the greatest factor in relation to the safety of motorcyclists was that the road surface provided adequate grip and was free from defects and debris (See Table 5 for all factors).

Table 5: Respondents perceived greatest safety factors (N. 27)

Greatest safety factor facing two wheeled motorised vehicles	%
Road surface provides adequate grip and is free from defects and debris (adequate warning and lighting in place when this is not the case)	100.0
Roadsides free from obstructions	55.6
Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road	51.9
Clear unobstructed sight lines	29.6
Service providers minimising the number of chambers in the roadway	22.2
Other	22.2
Drainage designed to minimise manholes in the road	14.8

The responses in the “other” category included; keeping roadsides clear of hazards, better delineation, motorcyclist behaviour, and better signage and maintenance repair times.

4.2.4 Current actions undertaken as part of job

The actions undertaken by the non-attendees to make roads safer for motorcyclists were very similar to the actions undertaken by the pre-seminar respondents, such as the maintenance of good road surfaces:

"Ensure road the surface always has good skid resistance particularly wet roads and road work sites are well signed."

"Ensuring maintenance work is swept and completely tidied up before leaving site, any debris around network are regularly swept etc."

"Ensure consistent quality surfacing is provided, free of defects. Minimization of service lids in trafficable areas. Consistent lane and shoulder widths"

Other responses centred on consistency of the road surface, safe roadsides, understanding the motorcyclist's perspective, and eliminating or isolating hazards where possible.

4.2.5 Reason for not attending

The main reason given for not attending the seminar was that it conflicted with other work. Other responses were uncontrollable events, miscommunication or that it was considered not applicable to their current role. Table 6 offers a complete breakdown.

Table 6: Reasons for not attending seminar (N. 27)

Reason for attending seminar	%
It conflicted with something else in my schedule	51.9
Other	40.7
I didn't have the time	7.4
I had doubts over the relevancy of the content	0.0
It was too great a distance to the venue	0.0

4.2.6 Ways to encourage future attendance

The main factor that would encourage future attendance appeared to be timing, with the majority of the respondents saying they would attend the next seminar if they were available.

Other more minor factors were greater choices in venue location and time, as well as invites being in the form of a calendar invite so respondents could book it automatically into their diary.

4.3 Post-seminar survey

4.3.1 Why would you use the 'Making Roads Motorcycle Friendly' guide

Following the seminar, the majority of respondents had read the guide and stated they would use it to inform their future work (see Table 7 for responses by respondent type).

Table 7: Have read and will use guide (No N. 49, Completed N. 15)

Question	No pre-survey	Completed pre-survey
	%	%
Have you read the making roads motorcycle friendly guide?	85.7	86.7
Will you use the guide to inform your future work?	91.8	86.7

The main reason given for using the guide was that it was a 'ready to use' reference document:

"As an aid to remembering current best practice and useful to have a document to show other people - colleagues, roading contractors, public."

"It will be used to check our standards in our Infrastructure Technical Specification. I have also circulated it to my team to have a read - it is a very readable document"

"I would use it as a prompt for road safety auditing work to ensure road designs cater for the way motorcyclists use the road."

"Have discussed making portions available for our safety engineer and designers to ensure they keep the factors for motorcyclists in mind during their decision making."

The guide also served a useful purpose of reminding the respondents that there are multiple types of road users:

"To provide info / reminders about motorcycle users"

"So that it makes me think of other users not just bikes peds and cars"

"As a reminder that we are not just dealing with trucks, cars and pedestrian/cyclists."

Finally the guide was also described as easy to use and to share as it is succinct and focused, very readable, makes sense and has a simple layout.

4.3.2 Why wouldn't you use the guide

Only six respondents stated they wouldn't use the guide and their reasons were that it didn't add anything new to their existing knowledge, was not applicable to the person's work or was too concerned with physical and not enough with the behavioural factors.

4.3.3 Want included in the guide that was not present

Nearly half of the respondents stated that the guide required no extra information. Of those that thought more could be added, there was no one theme within their responses.

Some suggestions were made that the guide could have better links into NZTA projects, such as the 'Safer Journeys for Motorcycling' guide and the 'One Network Road Classification' system. Other suggestions were providing a checklist for auditors, more specific technical information, such as intervention specifications and outlines of current innovations.

4.3.4 Perceived greatest needs prior to attending the seminar

Prior to attending the seminar, there was no difference in the order of factors in relation to motorcyclist safety between those that had completed the pre-seminar survey and those that had not. Both groups stated that having a road surface with adequate grip that is free from defect and debris is the most important factor followed by the need for roadsides to be free from obstructions and safe recovery areas Table 8 shows each factor by those respondent type.

Table 8: Respondents perceived greatest safety factors prior to seminar (No N. 49, Completed N. 15)

Greatest safety factor facing two wheeled motorised vehicles	No pre-survey	Completed pre-survey
	%	%
Road surface provides adequate grip and is free from defects and debris (adequate warning and lighting in place when this is not the case)	95.9	100.0
Roadsides free from obstructions	53.1	73.3
Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road	51.0	46.7
Clear unobstructed sight lines	34.7	40.0
Drainage designed to minimise manholes in the road	26.5	13.3
Service providers minimising the number of chambers in the roadway	24.5	26.7
Other	10.2	0.0

Responses in the other category mentioned motorcyclist training and education, visibility, improvements to roadside barriers and motorcyclist behaviour.

4.3.5 Perceived greatest needs after attending the seminar

After the respondents had completed the seminar, there was little change in the order of factors, with road surface with adequate grip being the highest ranking factor followed by having safe recovery areas. Once again, there was no difference in the order of factors between those that had completed the pre-seminar survey to those that had not. Table 9 shows each factor by respondent type.

Table 9: Respondents perceived greatest safety factors post seminar (No N. 49, Completed N. 15)

Greatest safety factor facing two wheeled motorised vehicles	No pre-survey	Completed pre-survey
	%	%
Road surface provides adequate grip and is free from defects and debris (adequate warning and lighting in place when this is not the case)	95.9	100.0
Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road	55.1	66.7
Clear unobstructed sight lines	51.0	53.3
Roadsides free from obstructions	49.0	53.3
Service providers minimising the number of chambers in the roadway	22.4	26.7
Drainage designed to minimise manholes in the road	16.3	0.0
Other	10.2	0.0

Other responses were focused on the design of barriers and other furniture, motorcyclist behaviour, communicating changes to motorcyclist and adequate education and training provided by authorities.

4.3.6 Changes to current actions undertaken as part of job

The greatest change respondents stated they would make to their working practices following the seminar was the incorporation of the motorcyclists' perspective:

"Assess each task that we do and review it from the motorcyclists' perspective. Complete additional tasks on each site that improve the safety for motorcyclists however minor they may seem."

"When we undertake safety audits we will endeavour to make sure motorcycle safety is included, and identify potential hazards to motorcyclists and how we can improve the road environment."

"Whenever I do a design for any roading work I will look at it from a motorcyclists' perspective to see if I can make it safer for them."

"Look at any scheme from a Motorcyclists perspective rather than building primarily for cars."

This theme covered factors such as ensuring a consistent road surface, understanding motorcyclists' needs around barriers, addressing issues around service covers, reviewing pedestrian rails and the importance of sight lines.

4.3.7 What would stop these changes from happening

The main barrier that the respondents raised to making any changes to their current work practice was cost:

"Cost to implement change is always an issue"

"Cost is always a factor when trying to make improvements to the road. No matter what the issue."

"Cost is the biggest problem we can't meet all the standards for cars at times so MBs get dropped off the bottom"

Another important issue that was raised by the respondents was that, at times, there are conflicting needs between different road users groups:

"Some improvements may compromise other outcomes and a balance of benefits may need to occur."

"Proportionally motorcyclists are a small user group. In addition many user groups have their own specific needs, but these will not always be complimentary with each other."

"Weighing out the needs for all road users"

Another barrier that was raised by several respondents was a lack of understanding of the needs of motorcyclists across multiple stakeholders:

"Making sure all stakeholders including contractors are aware of what can potentially be hazards to motorcyclists."

"Just getting the knowledge out to everyone that needs it"

Despite these mentioned barriers, nearly a fifth of the respondents stated they perceived no barriers in implementing changes to improve motorcyclist safety.

4.3.8 Engagement and usefulness of the seminar presentation

Overall, the vast majority of the respondents (98.4%) agreed or strongly agreed that the seminar presentation was engaging. Likewise, a vast majority of respondents (89.1 to 96.9%) agreed or strongly agreed that information on motorcyclist speed, visibility, roading surface, strike hazards, signage and barriers is useful (see Table 10 for a complete breakdown).

Table 10: Agreement of engagement and usefulness of the seminar presentation (N. 64)

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Combined percentage Strongly agree/agree
	%	%	%	%	%	%
I found, overall, the seminar presentation to be engaging...	0.0	0.0	1.6	46.9	51.6	98.4
I found the information on Barriers to be useful...	0.0	0.0	3.1	50.0	46.9	96.9
I found the information on Signage to be useful...	0.0	1.6	4.7	54.7	39.1	93.8
I found the information on Strike Hazards to be useful...	0.0	1.6	4.7	51.6	42.2	93.8
I found the information on the Roding Surface to be useful...	0.0	1.6	7.8	48.4	42.2	90.6
I found the information on Visibility to be useful...	0.0	0.0	10.9	54.7	34.4	89.1
I found the information on Reducing Rider Speed to be useful...	0.0	0.0	10.9	56.3	32.8	89.1

One of the largest factors associated with what made the seminar engaging was the presenter:

"Ken was a very good presenter. His knowledge and enthusiasm about the subject kept my attention throughout the presentation."

"The facilitator was a very engaging speaker."

"The speaker was very knowledgeable on the subject and very engaging."

"The presenter was good and has a passion for motorcyclists."

Another factor that played a large part in respondents' engagement in the seminar was use of multimedia:

"The videos were very good for visualising what happens when motorcyclists hit barriers and what they are thinking when they are riding on the road."

"The power point was very good - not many words and lots of photos and videos."

"The use of photographs and videos were very helpful in illustrating the particular issues motorcyclists face."

"Visual aids in the presentation were good, it helped explain the topics well."

There was also a consensus that the level of engagement was aided by the interactivity of the seminar:

"The presenters style the ability to ask questions as we went"

"Presentation was interactive with the audience"

"Presenter engaging with the audience"

"The audience were kept engaged through questions asked and the material was delivered in a concise, effective way while still allowing some time for discussion."

"Lively presentation, lots of interaction"

There were a small number of factors that were said to be disengaging. More specifically, some respondents felt the interactivity actually slowed things down, that the seminar ignored the needs of other road users and a few found the venues to be too noisy.

4.3.9 Factors that would improve future seminar presentations

A substantial number of respondents stated that nothing was required to improve future seminars:

"I thought the whole set up was very polished and did everything very well, no improvements to suggest."

"Needs no improvement"

"Not sure as I found it very comprehensive"

Some of the respondents did suggest that more multimedia should be incorporated into the seminar, specifically using examples from New Zealand roads.

Other suggested improvements were greater representation from groups such as the police and motorcycle motorcyclists, more information regarding the likes of the NZTAs commitment to motorcycle safety and their budget, and potentially extending the length of the seminar by half an hour.

4.3.10 Engagement and usefulness of the panel discussion

As with the seminar presentation, the majority of the respondents strongly agreed/agreed that the panel discussion was both engaging and useful (see Table 11 for a complete breakdown).

Table 11: Agreement of engagement and usefulness of the panel discussion (N. 64)

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Combined percentage Strongly agree/agree
	%	%	%	%	%	%
I found the panel discussion to be engaging...	1.6	3.1	26.6	46.9	21.9	68.8
I found the panel discussion to be useful...	3.1	1.6	32.8	39.1	23.4	62.5

Respondents stated the composition and knowledge of the panel was one the driving factors that made it engaging:

"Engagement was helped by the variety of representation on the panel"

"The people on the panel were knowledgeable and enthusiastic about the topics."

"The fact that the panel covered a range of people with different areas of experience regarding motorcycling and motorcycling-related crashes."

Respondents also felt that the open nature of question and answer style of the panel helped engage the audience:

"Being an open floor, it was a bit disjointed however it is appreciated that there needs to be an opportunity for open discussion."

"This was free format so it opened up the discussion to totally new issues other than those already raised."

"The question and answer type presentation kept me thinking all the time."

Other engaging factors were the wide range of topics covered and having the appropriate parties there such as the NZTA.

While there was no overarching factor that led to respondents feeling disengaged with the panel discussion, several issues were mentioned such as the vagueness of some of the responses, a lack of reference on how to move forward and being unable to answer questions due to them being wider problems for councils.

4.3.11 Factors that would improve future panel discussion

As with the seminar presentation, many of the respondents felt that there was no need to improve upon the panel discussion at future seminars:

"Happy as it was with a range of people/experience/perspective able to respond"

"It was pitched about right."

"It was a good, interactive panel discussion"

Where recommendations were made they were generally around increasing the amount of time for the panel discussion:

"Assign more time to allow more discussion."

"It was just squeezed in at the end and we were running out of time."

"Did not allow enough time for questions or input from attendees."

Or suggestions for alternative panel members:

"Include a council who has actually managed to implement this."

"Include other experts from road safety and motorcycling community."

"Have representatives on the panel that can and will have the power to ENACT the changes suggested rather than a body present to perhaps answer some questions."

4.3.12 Suggestions for future panel members

When asked for suggestions on who respondents would want on future panels, quite a few of the respondents stated they were happy with the panel as it was.

Many of those that did suggest potential future panel members stated that a roading contractor would be good to have or representation from government originations such as the MoT and the ACC.

Other notable suggestions were safety auditors, motorcyclists, representatives that could enact change, experts in motorcyclist behaviour, system experts, roading designers and someone familiar with urban safety issues.

4.3.13 Reasons for recommending/not recommending seminar to others

Respondents' reasons for recommending the seminar to others fell into two overarching categories. The first category captured those views that saw the seminar as advancing the understanding of roads from the perspective of motorcyclists:

"Any road engineer involved in safety works and a non-motorcycle rider needs to be able to gain the perspective of motorcyclists to understand the motorcyclists experience of roads. This is a different perspective."

"It is a useful exercise for roading engineers/designers to have to think about their work from the perspective of motorcyclists when most of us have not ridden one on the road."

"I think that it gave a good understanding of motorcycle needs from a motorcycle perspective."

The second category of responses centred on the seminar improving knowledge around the subject of motorcyclist safety:

"I would recommend this to anyone whose role could be positively influenced by more information on the topic."

"It's a good seminar for people at different levels of the industry to get an understanding of the issues and will help to get buy in from the financiers/managers down to the engineers -designers - installers/contractors"

"I would recommend this to my colleagues so that they can have an understanding of motorcycle safety and consider them in their day to day decisions at work."

Very few of the respondents stated they would not recommend the seminar to others. The reasons given were that the seminar did not address the human factors surrounding motorcyclist and that it added little more than could be have been included in the guide.

4.3.14 Seminar contents discussed with others after the seminar

The vast majority of respondents had discussed the contents of the seminar with their colleagues following their attendance. Of those that had discussed the content, the majority of the discussion focused on roading surface, barrier, strike hazard and signage issues. Less than half of conversations focused on visibility or motorcyclist speed issues. Table 12 shows each topic of conversation and the number of respondents that had discussions around it.

Table 12: Seminar contents discussed with others following attendance (N. 64)

Question	Responded Yes
	%
I have discussed Roading Surface issues with my colleagues	56.3
I have discussed Barrier issues with my colleagues	54.7
I have discussed Strike Hazards issues with my colleagues	48.4
I have discussed Signage issues with my colleagues	46.9
I have discussed Visibility issues with my colleagues	34.4
I have discussed issues with Reducing Rider Speed my colleagues	34.4
Other	28.1
No I have not discussed the seminar with my colleagues	12.5

Responses in the 'Other' category included 'general' discussions around the content, discussions about would happen at next opportunity and how they were still deciding on how to disseminate the information.

4.3.15 Reason for attending

As with those that completed the pre-seminar survey, the majority of respondents (76.6%) chose to attend the seminar on their own accord, with the next largest group being those that volunteered when asked (See Table 13 for respondents' reasons for attending the seminar).

Table 13: Respondents reason for attending the seminar (N. 64)

Reason for attending seminar	%
I decided I wanted to attend	76.6
People were asked to volunteer and I put my name forward	14.3
Other	8.2
I was told that I was to attend	6.1
I was the only one free in my team that could attend	2.0

Reasons given in the 'Other' category were to gain more knowledge, having a passion for motorcycling and representing motorcycle advocacy groups.

4.4 Post-seminar interviews

4.4.1 Have you used the ‘Making Roads Motorcycle Friendly’ guide since you attended the seminar?

All of interviewees stated that they had read through the guidelines since the seminar, and almost half said that they had referred to them for guidance to help inform their specific projects.

A range of project-specific examples were mentioned where the guidelines were being applied, including design considerations (e.g., roundabouts and general designs for safety) as well as projects addressing the road environment; road maintenance, guard rails, entanglement with roadside furniture, signage, pavements, bends and obstacles, road surfacing and ongoing minor improvement works.

While some interviewees considered only those areas of the guidelines in their particular field to be useful (e.g. signage), others felt that all sections of the guide were relevant to their work. Specifically, a number of respondents mentioned that the guide was informative in helping to establish what needed to be implemented and that it acted as useful tool for making decisions around task prioritisation (though such views may have been in part due to the scope of the different roles held).

Those who had not yet used the guidelines often expressed that this was simply due to lack of opportunity to apply them to an appropriate existing live project. One interviewee commented that he felt the follow-up survey was being undertaken too soon for many who are working on existing projects that are not relevant.

“It would be useful to repeat this follow up exercise towards the end of year in November or December, when there is a higher likelihood of people having been able to apply their new knowledge and the information in the guidelines to actual project work”

A number of people had forthcoming projects in mind where they felt the guidelines would be both relevant and useful. Such projects included work around the design of roadside facilities and intersections, as well as road and roadside improvements work related to urban street furniture, road surfacing, potholes and signage as well as culverts and rural treatments.

4.4.2 Have you discussed or shared what you learnt at the seminar with others?

4.4.2.1 Sharing internally with colleagues

All of the interviewees had shared some aspect of the seminar and/or the guidebook with colleagues, both within their own team as well as with other internal departments within their organisation, such as safety, design, engineering, transportation and maintenance. These face-to-face exchanges were often held to discuss the impact of the guidelines for future work, identify what issues needed considering and decide how they can apply the guidelines within their existing resources. In one case, the guidelines had been loaded up onto the organisations server for others to refer to as needed.

“I refer people to the guidebook as a whole in order to raise awareness of the issues and requirements and so that people have knowledge and understanding around when roads and road side environments are sub-standard”

In one case, the sharing of information had led directly to members of the safety team using the guidelines to inform their motorcycle safety work. In another case, the sharing of information had led to interesting discussions between motorcyclists and non-motorcyclists within the office environment who, through ongoing debate, were reaching a better understanding and agreement about the changes needed and how to achieve these.

4.4.2.2 Sharing with external clients and organisations

A smaller number of interviewees had also shared the information with external clients or organisations, such as the NZTA, District Councils, the ACC, the police and community motorcycle groups as well as overseas contacts in Australia.

A variety of avenues were identified for this external sharing. For example, discussions would occur when external individuals had also attended the seminar and there was a common ground for the basis of discussion. Alternatively, conversations would arise in relation to a specific project/event, such as a workshop, safety audit, strategic planning meeting around motorcycle safety, road safety action planning, to address motorcycle safety issues, the development of local guidelines or safety brochure, or an ongoing demonstration study.

A more general *“raising awareness as and when the opportunity arises”* was also stated as an reason for sharing the guidelines, with roading engineers, contractors and maintenance contacts (e.g., within Fulton Hogan and Traffic Management), with contractors being encouraged to use the guide and to think more about issues for motorcycles in their project work.

Motorcyclists have also been targeted for the sharing of this information. This has occurred, for example, through interviewee’s presenting the information at motorcycle community group events.

The Southern Region road safety organisers are considering developing a website to share information with the motorcycle community through the Motorcycle Safety Advisory Council, with a stronger focus on education at events such as organised rallies.

Some interviewees additionally used their personal connections to share the information. For example, one interviewee, a member of the Institute of Advanced Motorists, provides advanced motorcycle safety education and training to motorcyclists and has been sharing the guidelines with motorcyclists and other trainers.

4.4.3 Have you attempted to change your approach to your work since attending the seminar in relation to incorporating the safety needs of motorcyclists?

A number of interviewees have already been able to apply the information within the guidelines to existing project work.

“Immediately after the seminar we took on board the sign recommendations and applied them to a particular stretch of road with a high incidence of motorcycle accidents. We

have already seen a big reduction in crashes over the 2 to 3 months since the signs were installed.”

The recommendations within the guidelines have also been applied to a wide variety of projects such as guard rails, crash barriers, road markings, road cleanliness, roundabouts, road side furniture, lighting provision and location, sign construction and location, removal of a centre island, issues around kerb lips, manhole and service covers, minor improvements to roads and visibility.

Following the seminar, one council is considering the development of a checklist based around the 5 S's (sight lines, surface, signs, speed and strike) to identify where improvements are most needed by asking motorcyclists to feed back about their specific experiences on the network. This will assist the council to identify what needs to be done and develop an affordable action plan.

Another council is considering whether to target university students who ride scooters in their city, since these motorcyclists tend to be inexperienced, wear inappropriate clothing, and possess a fairly complacent attitude towards riding behaviour and safety.

4.4.3.1 How are these interventions being achieved

While, on the one hand, several of the interviewees felt that motorcycle safety was now much more on the radar for specific project funding from the NZTA than it had been previously, they were nonetheless fairly united in suggesting that any motorcycle specific safety interventions would have to initially be resourced within existing budgets on projects - working with what they already had rather than anticipating new motorcycle safety funded initiatives.

“At this stage there are 6 District Councils in the Southern region who are interested in addressing the issues around motorcycle safety and doing something towards making improvements. There is an ongoing pro-active approach towards motorcycle safety which has become much higher priority than previously.”

One interviewee commented that he could justify implementing changes that improve safety for motorcyclists through work aimed at benefitting other road user groups, for example, when considering enforcing appropriate speed limits for other road users, he would take that opportunity to address speed limits for motorcyclists. Several others stated that it would be possible to implement low cost improvements within existing works.

“I have to take opportunities to consider motorcycle safety aspects as they come up within other non-motorcycle focused work and align the guidelines with this work as far as I can”

Another notable example comes from others reported that, while they do not have sufficient funding to keep all roads across the network clear from gravel, they plan to identify the hotspot locations that impact most on motorcycle safety, (e.g. intersections) and implement improvements at these locations.

A few interviewees felt it best to prioritise known high risk motorcycle routes across their network most of which would be rural settings. This would allow for the exploration of how to make these particular routes safer, maximising the benefits for motorcyclists, keeping costs down and avoiding potential conflicts of interest with other road user group's needs, which they felt would be more likely in the urban traffic environment.

“We can accommodate improvements within the remit of existing project work as long as the changes do not have a detrimental impact on other road users.”

4.4.3.2 Barriers to implementation

Many interviewees felt that, historically, there has been a lack of interest from the NZTA towards funding projects that specifically target motorcycle safety and motorcyclists as a road user group.

“I have been trying to address issues around maximum speed limits on motorcycle high risk routes across our network for years without success, I have now given up trying”

The level of investment/cost of the improvements themselves were also felt to be a barrier to implementation. Examples given included the cost of removal and replacement of lighting, road cleanliness as well as the huge additional expense incurred if the council were to sweep gravel off all roads on the network for the primarily benefit of a small group of road users.

“It is one thing to know what should be done to improve safety for one road user group, but when you have a single pot of funds available it makes things more complicated.”

Having said that, there was also considerable optimism around the potential for future funded initiatives as it was felt that the seminars had significantly increased levels of awareness, knowledge and understanding around the issues for motorcyclists and consequently, increased the likelihood of funding opportunities being made available for interventions aimed at this road user group in the future.

4.4.4 Having now had time to contemplate the seminar, would you recommend others attend future seminars and why?

The seminar was highly thought of by every person interviewed. It was reported to be extremely useful, interesting, informative and well run, with excellent presenters and as such, the interviewees felt that they would encourage others to attend.

“The seminar was an excellent tool, a fantastic launching pad from which to raise awareness of the issues and encourage discussion.”

Several interviewees commented on how great it is that there is progress in this area, in terms of raising awareness, providing education and increasing knowledge around the issues for motorcycle safety. One interviewee stated that the seminar had really driven home the issues with the necessary information and reasoning behind the implementations needed to make improvements.

“I attend a lot of these types of events, but this was a particularly memorable seminar for me, the issues raised have stayed at the forefront of my mind ever since and I think more carefully now about motorcycles as part of the road user equation and what can be achieved in terms of raising safety standards for this group.”

The panel discussion was identified by many as a particularly useful and interesting highlight for several interviewees. The interviewees felt that, not only did the panel provide an opportunity to hear the perspectives of a range of different stakeholders, including the police, planners and in particular the point of view of motorcyclists, it also offered a question and answer session which

encouraged some lively discussion, plenty of opportunity to interact with different people and seek clarification around particular issues.

“There were lots of different people including senior police and some quite high powered experts present in the room, which made for very interesting, knowledgeable contributions and lively discussion around the different perspectives.”

Many non-motorcyclist interviewees found it extremely interesting to learn about the motorcyclists’ perspectives. including; how they ride, the preferred position on the road, what they are looking for (e.g., road surface), where they are looking ahead, what features they are looking for and how they approach braking and cornering, all of which provided very useful insights into what factors are important to motorcyclists.

“I am not a motorcyclist, so it helped to hear about the traffic environment from their point of view.”

“We are now thinking of motorcyclists more as a road user group, for example when considering skid resistance on bends.”

“It has become part of our way of thinking from now on.”

Several people commented on how valuable an exercise the seminar had been. In particular, people mentioned the good number and wide cross section of attendees, the excellent presentations given by the speakers and the skills of the panel in bringing all the perspectives together.

“The Australian presenter was brilliant, so passionate.”

The presentation of examples, such as the guard rail project in Australia, Coromandel study, and engineering examples, where safety interventions had been implemented to make roads safer for motorcyclists, also went down well. A number of people commented on how listening to the real-life examples had given them a much better appreciation of not only safety issues, but also the barriers to implementing improvements, what works and what doesn't work in different situations and the possible reasons for these differences in success.

“We always hear that we need to make things safer, but the examples described gave a much clearer picture about why it is necessary to make changes for the safety of this particular group of road users.”

“I will be able to apply what I have learnt in the future to inform design.”

Some interviewees felt that the bringing together of different stakeholders was extremely valuable in encouraging engagement between the various groups. Such a collaboration, greatly enabled clarification around knowing who to talk to about motorcycle related issues, such as knowing how to go about providing feedback on road environment issues, or being aware of the process for reporting specific concerns to the local councils in order to have problems addressed.

Positive feedback was also given about the guidebook, which was seen as a useful tool for engineers and others involved in the planning and implementation of motorcycle specific safety improvements, by outlining the principles and providing recommendations that ensured that everyone is on the same page and is working towards the same goal.

“The secret here will be to get it into all future roading contracts as a standard document and to keep it “live” with roading engineers in local government and with the NZTA Highways teams.”

The value of the guidebook was also recognised in terms of illustrating the issues pictorially to demonstrate the dangers to two wheelers across a range of scenarios.

Other documents shared at the seminar were also reported to be useful. Examples of such documents include; the checklist for identifying which areas across the network needed to be addressed, the MoT pamphlet and the Australian research paper in Accident Analysis and Prevention around the safe system approach to reducing accidents and injuries from static hazards.

4.4.5 Suggestions/Comments

Several people supported the idea of having a set of standardised guidelines produced by important stakeholders (such as the NZTA or AustRoads) that would clarify how to prioritise interventions while taking all road user groups into consideration and reconciling the different needs of the different groups. Such a framework would be able to help provide the best fit solution/outcome for all rather than benefitting one to the detriment of another.

“Within my role I aim to be fair and reasonable across all road group users, but I sometimes have to decide which group to prioritise over another.”

Moves towards international standardisation of road signage and road markings was also mentioned as a way to reduce accidents through unfamiliarity, misunderstanding or misinterpretation.

While the Australian presenter and examples of Australian project activities were well received, one interviewee commented that the photos and illustrations of road markings, signage and guard rails were all too specific to Australia and that it would have been useful to have had more illustrations and photographs taken from New Zealand studies/projects.

Another interviewee felt that it would have been useful to go beyond the physical road and road-side focus by including information and education around other related factors such as; safe motorcyclist behaviour, the benefits of advanced protective clothing such as torso protection, and the value in embracing new technology such as anti-lock brakes, which he felt should be an MoT legislative requirement for all bikes.

A number of suggestions were also made around the concept of active monitoring of the road network by equipped motorcycles, including both auditory and visual reporting, in order to provide feedback on routes. One individual felt that this type of survey should be completed regularly every few years and that specific survey feedback (e.g., the location and reasons behind high risk locations, the description of specific hazards), should be used in a constructive way to build a knowledge base of the types of issues that affect motorcyclists on these routes in order to inform improvements to the network. This would allow a steady, long term improvement plan to be implemented, addressing the specific issues identified as they become apparent.

5 Discussion

5.1 Perceptions of needs and current/future actions

When asked what they thought was the greatest need of motorcyclists in relation to their safety on the road network, nearly all the respondents stated that having an adequate road surface that was free from defects and debris was the greatest need. The second most important factors, with just over half the respondents choosing them, were the need for roadsides to be free from obstacles and for road shoulders to be designed to allow for the safe recovery of the vehicle if it left that road.

Road surfaces with adequate grip was still the greatest need following the seminar irrespective of seminar attendance or having read the *'Making Roads Motorcycle Friendly'* guide. Such findings indicate that maybe awareness needs to be raised around some of the other issues that had lower ratings such as service covers and drainage design.

When queried about what actions they undertook in their current role in relation to making roads safer for motorcyclists, most responses were gathered around maintaining a good road surface. This further supports the fact that nearly all the respondents rated adequate road surfaces as the greatest factor relating to motorcyclist safety. This was not to the total exclusion of all other actions however as some respondents did mention delineation, signage and road side hazards in their answers.

Following the seminar, the biggest change that respondents said they would make to their current practice was to incorporate the motorcyclists' perspective into their work. In fact, a number of those interviewed after the seminar had already changed their working practices in response to attending the seminar with greater emphasis being placed on motorcyclist safety within their current projects. This indicates that the seminar and guide should have a positive impact of motorcyclist safety, as those working in the roading sphere are putting greater thought into how their work affects motorcyclists.

While some of the survey respondents and interviewees did state there were no issues preventing them making changes to their work practice in relation to motorcyclist safety, others did mention potential barriers to making changes. The main barrier was that making motorcyclist safety a greater priority would come at a higher cost than their current work practice allowed. This was tied into the issue of competing, and sometimes mutually exclusive needs, of different road users, further linking into the need for better evidence to support prioritisation of motorcycle safety interventions. Another issue was disseminating the information to all stakeholders so everyone understood the safety needs of motorcyclists.

To some extent, the issues of cost and knowledge dissemination should be addressed by having as many and as diverse range of members of the roading community attending the seminars and being exposed to the *'Making Roads Motorcycle Friendly'* guide. If there is a more diverse range of attendees, specifically attendees that can authorise budget changes or have the ability to guide those that make budget changes, then their increased knowledge around the needs and safety concerns of motorcycles should improve the likelihood of increased funding in this area.

5.2 Content of seminar/guide

Prior to attending the seminar there did not appear to be any disparity between what respondents wanted and what they were expecting from the seminar. The largest grouping of responses was around wanting to understand the safety needs of motorcyclists and what the respondents could do to improve the safety of this group.

Only a small percentage of the Pre-seminar and half the Non-attendee respondents had read the *'Making Roads Motorcycle Friendly'* guide prior to completing the survey, but of those that had, most stated that the contents of the guide covered what was expected to be included in such a publication. However, issues around roadworks was rated the lowest expected topic across all the respondents which could be indicative of a potential issue around keeping roadworks safe. It may be worthwhile raising issues around roadworks in the next series of seminars to gauge whether this is an actual area where a lack of knowledge needs to be addressed.

Due to the small number of respondents that had read the guide, no major theme emerged in the answers to the question about what respondents would like included. Some respondents did state nothing was required while others asked for specifications of various treatments, information on budgetary constraints, or suggested that guide be ordered into themes, such as all unsuitable road surface matters be grouped together.

Of those that attended the seminar, and completed the Post-seminar survey, an overwhelming majority had both read the *'Making Roads Motorcycle Friendly'* guide and stated they would be using the guide to inform their future work. This second point shows that the guide, even in its current format, is viewed as a useful and beneficial tool for improving motorcyclist safety.

This would suggest that the guide adequately covers most areas that are considered to be of concern in relation to motorcyclist safety.

5.3 Format of seminar/guide

Regarding the actual seminar itself, including the presentation and panel discussion, the respondents' overall response was very positive. The results showed that the majority of attendees either strongly agreed or agreed that the presentation and panel discussion were both engaging and useful.

Respondents felt that their engagement during the presentation was aided by the engaging style of the presenter, the interactivity of the presentation and the use of still images and video. Engagement with the panel discussion was, according to the respondents, due to the mixture of members of the panel, the knowledge they had, the open nature of the question and answer style, as well as the topics covered.

Suggestions for improving the presentation were greater use of multimedia and using more examples from New Zealand roads, while the panel discussion could be improved by increasing the time allocated to it, as some felt it somewhat rushed. Many of the respondents felt the makeup of the current panel was well selected and where suggestions were made, it was generally for a roading contractor or greater representation from government organisations such as the MoT and the ACC.

5.4 Encouraging future attendance and guide usage

The vast majority of respondents were discussing the contents of the seminar with their colleagues, both internally and externally with other organisations and clients. These discussions were predominantly focused on road surface conditions, barriers, strike and signage issues, with less discussion around visibility and sight line issues. This means that the information in the seminar was deemed worthwhile enough to be passing onto others which has the added benefit of dissemination beyond the seminar attendees.

Nearly everyone said they would or were using the *'Making Roads Motorcycle Friendly'* guide. The main reason given for using it was that the guide was a 'ready to use' reference document to be used in any roading work that could impact motorcyclist safety. It was also mentioned by the respondents that the guide served as a very useful reminder that their work effected multiple road users. This is not only beneficial to motorcyclists but potentially has the ability to make those working in the roading sphere think of all potential groups that interact with the road and its surrounding infrastructure.

The benefit of the guide is highlighted by the fact most people said they would use it in the future and nearly half of the respondents stated that the guide required no extra information than was already in it. There was no overall theme to the respondents' suggestions for inclusion into the guide, indicating that the guide, in its current state, addresses the major roading factors affecting motorcyclist safety.

In relation to recommending the seminar to others, the interviewees were unanimous in stating the seminar was very useful and that they would definitely encourage others to attend. Their recommendations were driven by the fact that they felt that the seminar was progressing the issue of motorcyclist safety and that it exposed interviewees to the views from many different stakeholders, as well as providing insight into the perspective of motorcyclists.

The results of the surveys showed that the majority of respondents that were planning on attending the seminar were doing so of their own volition. The majority of those that did not attend the seminar stated they were unable to attend due to the seminar conflicting with something else in their schedule or due to unforeseen events. Likewise, majority of respondents also said that main factor influencing their future attendance was timing.

Such findings indicate that there is a desire in the roading community to seek out information on how to improve motorcyclist safety and that there does not appear to be an avoidance of the seminar for reasons such as a perceived lack of applicability.

Overall, respondents attended the seminar of their own accord showing that they were interested in learning how to improve motorcyclist safety on New Zealand roads. This is reflected by the fact that very few respondents would not recommend the seminar to others. Of the vast majority that would recommend the seminar, they indicated that they would do so on the basis that they believed that the seminar offered important knowledge around making roads safer for motorcyclists and that it helped respondents see roads from the perspective of motorcyclists.

The results of this research indicate that the *'Making Roads Motorcycle Friendly'* seminar and guide have both been well received by the roading community. The guide is being utilised by those that attended the seminar and the contents are also being discussed with those that didn't.

6 Recommendations

The recommendations made based on the results of this research project are:

The *'Making Roads Motorcycle Friendly'* guide should include an evidence base on the effectiveness of reducing motorcycle crashes through following the guide's contents. This evidence can be used to help overcome barriers such as cost.

To use New Zealand based examples where possible to make it more applicable to the New Zealand roading environment, including both example images and videos as well as initiatives that are being implemented in New Zealand.

Discussions at future seminar series should raise the issue of motorcycle safety at roadworks to gauge whether this is an actual area where a lack of knowledge needs to be addressed.

Better integration of the *'Making Roads Motorcycle Friendly'* guide with the NZTA's *'Safer journeys for motorcycling on New Zealand roads'* guide. This could be accomplished by integrating the two guides together into a single NZTA document with the *'Making Roads Motorcycle Friendly'* guide acting as standalone section of the *'Safer journeys for motorcycling on New Zealand roads'* guide. This offers the advantage of having the two guides as single overarching document (with common branding etc.) but with the ability to have the *'Making Roads Motorcycle Friendly'* guide as a contained standalone document if required. Having the two documents linked also has the advantage that any changes made to one of the documents should easily be propagated across both, e.g. recommendations on how high risk routes are identified can easily be linked into both documents.

That the current format of the seminar be kept, specifically the interactive multimedia presentation, and the interactive panel discussion.

Hold the seminars annually or bi-annually so those new to the working on the New Zealand roading network have a chance to attend rather than being reliant on just the guide.

Use the seminar to promote/incentivise good examples of motorcycle friendly initiatives in New Zealand. Examples of such promotion could be to invite previous seminar attendees back who have successfully applied what they learned from the seminar and the wins they have had.

Consider sponsoring a motorcycle roading award and have the winners and runner ups invited to present their work to the seminar. This may help encourage those that have the power to implement changes or control budgets to attend the seminars.

Perform a follow up of attendees at minimum six months after attendance to see if changes are actually happening and the guide is being used, at minimum these should be interviews but ideally would involve site visits.

7 References

Ministry of Transport (2014a). *Motorcycles 2014*. Retrieved from <http://www.transport.govt.nz/assets/Uploads/Research/Documents/Motorcycles-2014.pdf>

Ministry of Transport (2014b). *Motor Vehicle Crashes in New Zealand 2013, Yearly report 2014, Statistical statement calendar year 2013*. Retrieved from <http://www.transport.govt.nz/assets/Uploads/Research/Documents/Motor-Vehicle-Crashes-2013/Motor-vehicle-crashes-in-New-Zealand-2013.pdf>

Motorcycle Safety Advisory Council (2014). *Making roads motorcycle friendly. A New Zealand guide for roading asset owners, designers and maintenance contractors*. Retrieved from <http://msac.org.nz/assets/Uploads/pdf/Making-Roads-Motorcycle-Friendly-NZ-September-2014-V2.pdf>

New Zealand Transport Agency (2012). *Safer Journeys for Motorcycling on New Zealand Roads*. Retrieved from <http://www.nzta.govt.nz/resources/safer-journeys-motorcyclists/docs/safer-journeys-motorcyclists.pdf>

8 Appendix

8.1 Copy of Pre-seminar survey

Making Roads Motorcycle Friendly

The following survey has been commissioned by the Accident Compensation Corporation (ACC) and the Motorcycle Safety Advisory Council (MSAC) to investigate attendees expectations prior to completing the ‘Making roads motorcycle friendly’ seminar.

This is funded by the ACC Motorcycle Safety levy, which is administrated by the MSAC.

This is public good research aimed at improving rider safety,
your answers to this survey are completely confidential,
you are free to withdraw from this survey at any point,
at the end of the survey you have the opportunity to enter a prize draw for \$250
in MTA, supermarket or other vouchers.

For further information, please contact:

Joel Burton

Opus Research, Opus International Consultants

Email: joel.burton@opus.co.nz

Phone: 0800 444 350



Te Kaporeihana Āwhina Hunga Whara



Making Motorcycling Safer



Behaviours:

Thinking about the work you do that directly impacts on the road network, please answer the following questions...

What do you think the greatest safety needs are of motorcycle, scooter or moped riders in relation to the roading network (select the three you think are most important)		
<input type="checkbox"/>	Road surface provides adequate grip and is free from defects and debris (adequate warning and lighting in place when this is not the case)	
<input type="checkbox"/>	Clear unobstructed sight lines	
<input type="checkbox"/>	Roadsides free from obstructions	
<input type="checkbox"/>	Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road	
<input type="checkbox"/>	Drainage designed to minimise manholes in the road	
<input type="checkbox"/>	Service providers minimising the number of chambers in the roadway	
<input type="checkbox"/>	Other	<div></div> <div></div> <div></div>

How, if at all, do you take into account the safety needs of motorcycles, scooters and mopeds when carrying out your work?	<div></div> <div></div> <div></div>
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Expectations and Wants:

Thinking about the seminar you are going to attend please answer the following questions...

What do you WANT to achieve by attending the seminar...	<div></div> <div></div> <div></div>
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What do you EXPECT you will achieve from attending the seminar...	<div></div> <div></div> <div></div>
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Have you read the 'Making roads motorcycle friendly' guide that was linked to in your invite?		
<input type="radio"/>	No	
<input type="radio"/>	Yes	

Making Roads Motorcycle Friendly Guide:

The following questions are in relation to you perceptions of the guide...

What material was in the guide that you EXPECTED to see? (select all that apply)		
<input type="checkbox"/>	Issues surrounding the design and construction of roads	
<input type="checkbox"/>	Issues around maintenance and reinstatement considerations	
<input type="checkbox"/>	Issues around keeping road works safe for motorcyclists	
<input type="checkbox"/>	Other	<input type="text"/> <input type="text"/> <input type="text"/>

What material was in the guide that you DIDNT EXPECT to see? (select all that apply)		
<input type="checkbox"/>	Issues surrounding the design and construction of roads	
<input type="checkbox"/>	Issues around maintenance and reinstatement considerations	
<input type="checkbox"/>	Issues around keeping road works safe for motorcyclists	
<input type="checkbox"/>	Other	<input type="text"/> <input type="text"/> <input type="text"/>

What was absent from the guide that you would like to see included?	<input type="text"/> <input type="text"/> <input type="text"/>
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About you:

What is your job title?	
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In a few brief words what is your job role?	

Why did you decide that you were going to attend this seminar? (select one)		
	<input type="radio"/>	I decided that I wanted to attend
	<input type="radio"/>	People were asked to volunteer and I put my name forward
	<input type="radio"/>	I was the only one free in my team that could attend
	<input type="radio"/>	I was told that I was to attend
	<input type="radio"/>	Other

This is the end of the survey

Thank you

If you wish to enter the prize draw for \$250 in MTA, supermarket or other vouchers please supply either a contact number or email address below:

Contact number or email address	
---------------------------------	--

If you have any further questions please feel free to contact:

Joel Burton

Opus Research, Opus International Consultants

Email: joel.burton@opus.co.nz

Phone: 0800 444 350

8.2 Copy of Non-attendee survey

Making Roads Motorcycle Friendly

The following survey has been commissioned by the Motorcycle Safety Advisory Council (MSAC) to investigate the perceptions and opinions of those that did not attend the 'Making roads motorcycle friendly' seminar.

This is public good research aimed at improving rider safety,
your answers to this survey are completely confidential,
you are free to withdraw from this survey at any point,
at the end of the survey you have the opportunity to enter a prize draw for \$250
in MTA, supermarket or other vouchers.

For further information, please contact:

Joel Burton

Opus Research, Opus International Consultants

Email: joel.burton@opus.co.nz

Phone: 0800 444 350



Behaviours:

Thinking about the work you do that directly impacts on the road network, please answer the following questions...

What do you think the greatest safety needs are of motorcycle, scooter or moped riders in relation to the roading network (select the three you think are most important)		
<input type="checkbox"/>	Road surface provides adequate grip and is free from defects and debris (adequate warning and lighting in place when this is not the case)	
<input type="checkbox"/>	Clear unobstructed sight lines	
<input type="checkbox"/>	Roadsides free from obstructions	
<input type="checkbox"/>	Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road	
<input type="checkbox"/>	Drainage designed to minimise manholes in the road	
<input type="checkbox"/>	Service providers minimising the number of chambers in the roadway	
<input type="checkbox"/>	Other	<div></div> <div></div> <div></div>

How, if at all, do you take into account the safety needs of motorcycles, scooters and mopeds when carrying out your work?	<div></div> <div></div> <div></div> <div></div>
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‘Making roads motorcycle friendly’ Guide:

The following question is in relation to the ‘Making roads motorcycle friendly’ guide...

Have you read the ‘Making roads motorcycle friendly’ guide?		
	<input type="radio"/>	No
	<input type="radio"/>	Yes
	<input type="radio"/>	I could not find the guide

Making Roads Motorcycle Friendly Guide:

The following questions are in relation to you perceptions of the guide...

What material was in the guide that you EXPECTED to see? (select all that apply)		
<input type="checkbox"/>	Issues surrounding the design and construction of roads	
<input type="checkbox"/>	Issues around maintenance and reinstatement considerations	
<input type="checkbox"/>	Issues around keeping road works safe for motorcyclists	
<input type="checkbox"/>	Other	<input type="text"/> <input type="text"/> <input type="text"/>

What material was in the guide that you DIDNT EXPECT to see? (select all that apply)		
<input type="checkbox"/>	Issues surrounding the design and construction of roads	
<input type="checkbox"/>	Issues around maintenance and reinstatement considerations	
<input type="checkbox"/>	Issues around keeping road works safe for motorcyclists	
<input type="checkbox"/>	Other	<input type="text"/> <input type="text"/> <input type="text"/>

What was absent from the guide that you would have liked to seen included?	<input type="text"/> <input type="text"/> <input type="text"/>
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About you:

What is your job title?	
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In a few brief words what is your job role?	
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Why did you decide not to attend this seminar? (select one)		
	<input type="radio"/>	I didn't have the time
	<input type="radio"/>	It conflicted with something else in my schedule
	<input type="radio"/>	I had doubts over the relevancy of the content
	<input type="radio"/>	It was too great a distance to the venue
	<input type="radio"/>	Other

What would encourage you to attend the next series of seminars?	
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This is the end of the survey

Thank you

If you wish to enter the prize draw for \$250 in MTA, supermarket or other vouchers please supply either a contact number or email address below:

Contact number or email address	
---------------------------------	--

Would you be happy for us to contact you to ask further questions regarding your perceptions of the seminar?		
<input type="radio"/>	No	
<input type="radio"/>	Yes	

If you have any further questions please feel free to contact:

Joel Burton

Opus Research, Opus International Consultants

Email: joel.burton@opus.co.nz

Phone: 0800 444 350

8.3 Copy of Post-seminar survey

Making Roads Motorcycle Friendly

The following survey has been commissioned by the Motorcycle Safety Advisory Council (MSAC) to investigate attendees opinions on the ‘Making roads motorcycle friendly’ seminar.

This is public good research aimed at improving rider safety,
your answers to this survey are completely confidential,
you are free to withdraw from this survey at any point,
at the end of the survey you have the opportunity to enter a prize draw for \$250
in MTA, supermarket or other vouchers.

For further information, please contact:

Joel Burton

Opus Research, Opus International Consultants

Email: joel.burton@opus.co.nz

Phone: 0800 444 350



Behaviours:

Thinking about the work you do that directly impacts on the road network, please answer the following questions...

Prior to attending the seminar what did you think the greatest safety needs were of motorcycle, scooter or moped riders in relation to the road network (select the three you think are most important)		
	<input type="checkbox"/>	Road surface provides adequate grip and is free from defects and debris (adequate warning and lighting in place when this is not the case)
	<input type="checkbox"/>	Clear unobstructed sight lines
	<input type="checkbox"/>	Roadsides free from obstructions
	<input type="checkbox"/>	Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road
	<input type="checkbox"/>	Drainage designed to minimise manholes in the road
	<input type="checkbox"/>	Service providers minimising the number of chambers in the roadway
	<input type="checkbox"/>	Other

After attending the seminar what do you now think the greatest safety needs are of motorcycle, scooter or moped riders in relation to the road network (select the three you think are most important)		
	<input type="checkbox"/>	Road surface provides adequate grip and is free from defects and debris (adequate warning and lighting in place when this is not the case)
	<input type="checkbox"/>	Clear unobstructed sight lines
	<input type="checkbox"/>	Roadsides free from obstructions
	<input type="checkbox"/>	Road shoulders designed to allow safe recovery in the event of the vehicle leaving the road
	<input type="checkbox"/>	Drainage designed to minimise manholes in the road
	<input type="checkbox"/>	Service providers minimising the number of chambers in the roadway
	<input type="checkbox"/>	Other

Following the seminar, what, if any changes would you like to make to your work practices in relation to the needs of motorcycle, moped and scooter riders?	

Are there any factors that would stop you making these changes? If so what are they? (e.g. cost, time, etc)	

‘Making roads motorcycle friendly’ Guide:

The following questions are in relation to the ‘Making roads motorcycle friendly’ guide that was included in your attendance bag...

Have you read the ‘Making roads motorcycle friendly’ guide?		
	<input type="radio"/>	No
	<input type="radio"/>	Yes

Will you use the guide to inform your future work?		
	<input type="radio"/>	No
	<input type="radio"/>	Yes

Why would you use the guide for your work?		

Why wouldn't you use the guide for your work?		

Was there anything absent from the guide that you would like to see included?		

Seminar Presentation

The following questions are in relation to your perceptions of the seminar presentation...

Please answer the following questions:						
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	I found, overall, the seminar presentation to be engaging...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I found the information on Visability to be useful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I found the information on the Roading Surface to be useful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I found the information on Signage to be useful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I found the information on Strike Hazards to be useful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I found the information on Barriers to be useful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I found the information on Reducing Rider Speed to be useful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What factors contributed to your engagement/disengagement with the seminar presentation?	<input type="text"/> <input type="text"/> <input type="text"/>
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How, if at all, could the seminar presentation be improved? (content changes etc)	<input type="text"/> <input type="text"/> <input type="text"/>
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Why would/wouldn't you recommend this seminar to your colleagues?	<input type="text"/> <input type="text"/>
---	--

Have you discussed the content of the seminar with your colleagues, and if yes which parts? (select all that apply)	
<input type="checkbox"/>	No I have not discussed the seminar with my colleagues
<input type="checkbox"/>	I have discussed Visability issues with my colleagues
<input type="checkbox"/>	I have discussed Roading Surface issues with my colleagues
<input type="checkbox"/>	I have discussed Signage issues with my colleagues
<input type="checkbox"/>	I have discussed Strike Hazards issues with my colleagues
<input type="checkbox"/>	I have discussed Barrier issues with my colleagues

Have you discussed the content of the seminar with your colleagues, and if yes which parts? (select all that apply)			
	<input type="checkbox"/>	I have discussed issues with <i>Reducing Rider Speed</i> my colleagues	
	<input type="checkbox"/>	Other	<div></div> <div></div> <div></div>

Panel Discussion

The following questions are in relation to your perceptions of the panel discussion...

Please answer the following questions:						
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	I found the panel discussion to be engaging...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I found the panel discussion to be useful...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What factors contributed to your engagement/disengagement with the panel discussion?	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
--	--

How, if at all, could the panel discussion be improved?	<input type="text"/> <input type="text"/> <input type="text"/>
---	--

Is there anyone specific that you think should be on the panel in future seminars?	<input type="text"/> <input type="text"/> <input type="text"/>
--	--

About you:

What is your job title?	
-------------------------	--

In a few brief words what is your job role?	

Why did you attend this seminar? (select one)		
	<input type="radio"/>	I decided that I wanted to attend
	<input type="radio"/>	People were asked to volunteer and I put my name forward
	<input type="radio"/>	I was the only one free in my team that could attend
	<input type="radio"/>	I was told that I was to attend
	<input type="radio"/>	Other

This is the end of the survey

Thank you

If you wish to enter the prize draw for \$250 in MTA, supermarket or other vouchers please supply either a contact number or email address below:

Contact number or email address	
---------------------------------	--

Would you be happy for us to contact you to ask further questions regarding your perceptions of the seminar?		
<input type="radio"/>	No	
<input type="radio"/>	Yes	

If you have any further questions please feel free to contact:

Joel Burton

Opus Research, Opus International Consultants

Email: joel.burton@opus.co.nz

Phone: 0800 444 350

8.4 Copy of Post-seminar interview questions

Name:

Job Title:

1. Are you using the 'Making roads motorcycle friendly' guide since you have attended the seminar
 - a. Which sections of the guide have you found useful and why?
 - b. If you haven't been using it why not and what would help you to use it in the future?
2. Have you discussed/shared what you learnt at the seminar with others?
 - a. If so, who were these people and how did you go about sharing the information?
 - b. If you haven't, why is that and what would help you to share the information?
3. Have you attempted to change your approach your work since attending the seminar in relation to incorporating the safety needs of motorised two wheel vehicles.
 - a. If so how?
 - b. If you haven't what has stopped you from making these changes?
 - c. Have you had the opportunity to change but being unable to do so?
 - i. What stopped you at this opportunity?
4. Having now had time to contemplate the seminar would you recommend others attend future seminars
 - a. If so why?
 - b. If not why not?



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