Motorcycle safety strategies in North East Scotland.

HOOD, C.

2021

Motorcycle Safety Strategies In North East Scotland

Acknowledgments

Executive Summary

Background to the Research

Although representing less than 1% of all road users, motorcyclists accounted for 7% of all casualties on Scotland's roads in 2019. Moreover, data from 2019 shows that across Scotland there has been little reduction in fatal or all serious motorcycle casualties compared to the 2004-08 average.

As a consequence of their over representation in Scottish road collisions and fatalities, motorcyclists are rightly acknowledged as being vulnerable road users and key targets in ongoing road safety campaigns. The distinct characteristics of motorcycling and motorcycles and their inherent difference from cars and driving are cited as potential contributors to this risk of being involved in a serious collision or fatal accident.

Reductions in road safety resources and activity, particularly in the fields of educational inputs and data analysis, mean longer-term evaluation can make an important contribution to the underlying policy for continued investment in motorcycle-specific casualty reduction strategies, and will inform, develop, and improve existing policy. Furthermore, successful casualty reduction strategies can contribute to wider public health goals of preventing premature death and injury among vulnerable road users such as motorcyclists.

The initiatives evaluated during this research project are those motorcycle-specific road safety initiatives operated by Police Scotland, the former Grampian Police, and Aberdeenshire Council across North East Scotland. The various approaches taken by these initiatives have sought to: (a) positively influence the road-using behaviour of motorcyclists; (b) raise awareness of their road-based vulnerabilities; (c) highlight specific road-based motorcycle risks; (d) increase skill levels - with the goal of changing behaviours and leading to reductions in both the number of motorcycle-involved road traffic collisions and related fatal and serious injuries.

The following targeted initiatives have included elements such as group-based discussions, on-road and classroom-based training, motorcycle engagement events, media campaigns, self-evaluation and reflection of riding skills, bespoke engineering interventions:

- **Motorcycle specific road signage** on key north east routes used by motorcycles (2001 -)
- **BikeSafe Scotland** (1999 - 2010)
- **Operation Zenith** (2009 - 2017)
- **Live Fast Die Old** (2015 - present) - General observance of and reaction to the national initiative, as perceived by local motorcyclists
- **Rider Refinement North** (2018 - present)

While the content of some of the initiatives has generally been quite rigid, certain approaches used as part of Operation Zenith evolved over its duration, with the introduction of new formats to specifically engage with motorcyclists. These changes occurred with the specific desire to understand the needs and opinions of local motorcyclists and to tailor organisational responses to gain maximum road safety impact.

More recently in the North East of Scotland, Police Scotland secured national funding to provide rider education and training for its '*Rider Refinement North*' programme. This saw the introduction of new technology (video recording) in a road-based setting to provide visual 'evidence' to highlight both good and bad riding practice. While this initiative has already been the subject of independent evaluation as part of the framework funding review process, it is considered important to include this contemporary addition to the range of motorcycle initiatives as part of this longer-term review.

The initiatives' primary aim was to stem high rates of motorcycle casualties and during their operation, local casualty numbers fell over several years, despite an increase in motorcycle ownership. This occurred both generally and on targeted routes where specific remedial action had been taken.

As with most commentaries associated with road casualty reduction, it is usually very difficult - if not impossible – to reliably attribute recorded casualty reductions to specific preventative interventions, irrespective of how positive the participation and feedback has been. That said, the fact that reductions were achieved cannot be overlooked and we are now afforded a potential opportunity to conduct further research which harnesses the benefit of longer-term reflection.

Another important local benefit was the removal of perceived barriers in the relationship which 'officialdom' (i.e., police, local authorities etc.) had with motorcyclists. Staging public events which demonstrated that organisations were keen to work with the motorcycling community to enhance their safety led to a free flow of information developing between all parties.

Importantly, while some of the nationally identified vulnerable road user groups have a restricted individual-based 'lifespan' (i.e., young drivers, children, and older drivers), which sees age-related parameters apply, motorcyclists will potentially have many decades of road use, both behind them and/or in the future. The ability and benefit of capturing their longer-term opinion and experience of various road safety initiatives during their personal motorcycling 'journey' is considered vital in ensuring that targeted casualty reduction strategies are maximising their effectiveness. Motorcyclists are traditionally an enthusiastic and engaging group of road users, and it is not uncommon for them to refer to aspects of previous road safety 'experiences' which have remained with them over many years and led to positive changes in their riding behaviour and levels of awareness. These important personal commentaries are readily available and eliciting this information should provide invaluable insight for the future. There is also a potentially wide audience in the region, with 33, 171 Category A driving licence holders' resident within the AB and IV30 – IV36 postcodes as of February 2019[1].

Aim and Objectives

This aim of the research is to evaluate motorcycle-specific road safety initiatives in the North East of Scotland.

The research has three objectives:

- **Objective 1:** bring together existing data, policy and background information held by Police Scotland and agencies involved with the North East Scotland Road Casualty Reduction Strategy on targeted motorcycle safety initiatives deployed by Grampian Police/Police Scotland in the North East of Scotland. Specifically: Operation Zenith/Bike Safe and Rider Refinement North and engineering approaches including targeted road signage.
- **Objective 2:** to apply this data to an analysis of the effectiveness of targeted road safety campaigns on motorcycle safety in the North East of Scotland
- **Objective 3:** based on this initial analysis, to propose research-based objectives capable of influencing the development of road safety initiatives in the North East of Scotland and identify future areas of research.

Key Conclusions and Recommendations

The research design enabled the first two objectives of the research to be addressed as follows:

   (i)   Synthesising academic and professional publications from relevant sources allowed for the identification of several key themes in the literature of: (i) the role of motorcyclists in

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[1] FOI request submitted to DVLA, 4 March 2019

their own safety; (ii) the role of car drivers in motorcycle safety; and (iii) stigma and associated concepts (**Objective 1**)

(ii) The use of primary data to provide an understanding of the lived experiences of motorcyclists and the professional knowledge and understanding of motorcycle trained officers from the Road Policing Division attached to the North Command Area to construct an analysis of targeted road safety campaigns on motorcycle safety in the North East of Scotland (**Objective 2**).

The research has established that several key themes were influential in the effectiveness of road safety initiatives designed to reduce motorcyclists' involvement in serious and fatal collisions:

- Motorcycling, self, and identity
- Stigma and being an 'out-group'
- The role of other road users
- Approach to risk
- External factors – road surface conditions
- Structure of future initiatives

On this basis, the following recommendations are made (**Objective 3**):

- **That motorcycle trained officers from the Road Policing Division should be prioritised for participation in engagement strategies with motorcyclists [Recommendation 1]**

- **That 'stop and blether' engagement initiatives such as road shows that involve civilian participants (e.g., local motorcycle dealerships), alongside motorcycle trained officers from the Road Policing Division are explored to use the shared experience of motorcycles and motorcycling to introduce the topic of road safety and promote further training opportunities [Recommendation 2]**

- **That a more nuanced approach is adopted in communicating the purpose of road safety initiatives, prioritising engagement, and education over enforcement [Recommendation 3]**

- **That co-ordinating parallel road safety initiatives are established which seek to expand education to other road users to raise awareness and understanding of motorcycles and promote responsible sharing of road space [Recommendation 4]**

- **That initiatives that build on motorcyclists' lived experiences of riding, and seek to develop riders' skills and improve riders' roadcraft, are favoured over risk-based or enforcement-based campaigns [Recommendation 5]**

- **That local authorities raise awareness with their officers of the unique hazards that engineering, and road surface conditions can present to motorcyclists so that appropriate mitigating measures can be taken [Recommendation 6]**

- **That initiatives such as Rider Refinement North should form the basis for future campaigns promoting motorcycle safety in North East Scotland [Recommendation 7]**

- **that work is undertaken to emphasise the benefits of further training to motorcyclists, with a view to focussing on the practical benefits of such training (e.g., skills building) rather than solely focussed on risk reduction and overt road safety messages [Recommendation 8]**

- **That further research is undertaken to investigate the potential for initiatives such as Rider Refinement North being offered as an alternative to prosecution for motorcyclists reported to the Crown Office and Procurator Fiscal Service in connection with certain road traffic offences, with related outputs likely being delivered by third-party suppliers as part of a wider road traffic diversionary course programme [Recommendation 9]**

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1. **Background and Introduction**

Although representing less than 1% of all road users, motorcyclists accounted for 7% of all casualties on Scotland's roads in 2019 (Scottish Government 2021). Moreover, data from 2019 shows that across Scotland there has been little reduction in fatal or all serious motorcycle casualties compared to the 2004-08 average (Scottish Government 2021).

As a consequence of their over representation in Scottish road collisions and fatalities, motorcyclists are rightly acknowledged as being vulnerable road users and key targets in ongoing road safety campaigns. The distinct characteristics of motorcycling and motorcycles and their inherent difference from cars and driving are cited as potential contributors to this risk of being involved in a serious collision or fatal accident (see Elliott et al 2003).

Reductions in road safety resources and activity, particularly in the fields of educational inputs and data analysis, mean longer-term evaluation can make an important contribution to the underlying policy for continued investment in motorcycle-specific casualty reduction strategies, and will inform, develop, and improve existing policy. Furthermore, successful casualty reduction strategies can contribute to wider public health goals of preventing premature death and injury among vulnerable road users such as motorcyclists (Scottish Government 2021).

The initiatives evaluated during this research project are those motorcycle-specific road safety initiatives operated by Police Scotland, the former Grampian Police, and Aberdeenshire Council across North East Scotland. The various approaches taken by these initiatives have sought to: (a) positively influence the road-using behaviour of motorcyclists; (b) raise awareness of their road-based vulnerabilities; (c) highlight specific road-based motorcycle risks; (d) increase skill levels - with the goal of changing behaviours and leading to reductions in both the number of motorcycle-involved road traffic collisions and related fatal and serious injuries.

The following targeted initiatives have included elements such as group-based discussions, on-road and classroom-based training, motorcycle engagement events, media campaigns, self-evaluation and reflection of riding skills, bespoke engineering interventions:

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While the content of some of the initiatives has generally been quite rigid, certain approaches used as part of Operation Zenith evolved over its duration, with the introduction of new formats to specifically engage with motorcyclists. These changes occurred with the specific desire to understand the needs and opinions of local motorcyclists and to tailor organisational responses to gain maximum road safety impact.

More recently in the North East of Scotland, Police Scotland secured national funding to provide rider education and training for its '*Rider Refinement North'* programme. This saw the introduction of new technology (video recording) in a road-based setting to provide visual 'evidence' to highlight both good and bad riding practice. While this initiative has already been the subject of independent evaluation as part of the framework funding review process, it is considered important to include this contemporary addition to the range of motorcycle initiatives as part of this longer-term review.

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As with most commentaries associated with road casualty reduction, it is usually very difficult - if not impossible, to reliably attribute recorded casualty reductions to specific preventative interventions, irrespective of how positive the participation and feedback has been. That said, the fact that reductions were achieved cannot be overlooked and we are now afforded a potential opportunity to conduct further research which harnesses the benefit of longer-term reflection.

Another important local benefit was the removal of perceived barriers in the relationship which 'officialdom' (i.e., police, local authorities etc.) had with motorcyclists. Staging public events which demonstrated that organisations were keen to work with the motorcycling community to enhance their safety led to a free flow of information developing between all parties.

Importantly, while some of the nationally identified vulnerable road user groups have a restricted individual-based 'lifespan' (i.e., young drivers, children, and older drivers), which sees age-related parameters apply, motorcyclists will potentially have many decades of road use, both behind them and/or in the future. The ability and benefit of capturing their longer-term opinion and experience of various road safety initiatives during their personal motorcycling 'journey' is considered vital in ensuring that targeted casualty reduction strategies are maximising their effectiveness. Motorcyclists are traditionally an enthusiastic and engaging group of road users, and it is not uncommon for them to refer to aspects of previous road safety 'experiences' which have remained with them over many years and led to positive changes in their riding behaviour and levels of awareness. These important personal commentaries are readily available and eliciting this information should provide invaluable insight for the future. There is also a potentially wide audience in the region, with 33, 171 Category A licence holders' resident with the AB and IV30 – IV36 postcodes as of February 2019[2].

The baseline applied will centre around Killed and Seriously Injured (KSI) statistics as gathered by Aberdeen City, Aberdeenshire, and Moray Council in the preceding 10 years. The qualitative data gathered directly from motorcyclists is regarded as a novel approach and will be compared against the institutional understanding of the effectiveness of targeted campaigns. Effectiveness will be measured not only in reduced levels of serious and fatal incidents but also by the reception of targeted initiatives by the motorcycling community thereby informing future policy development.

1.1. Purpose of the Research

This aim of the research is to evaluate motorcycle-specific road safety initiatives in the North East of Scotland.

The research has three objectives:

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- **Objective 2:** to apply this data to an analysis of the effectiveness of targeted road safety campaigns on motorcycle safety in the North East of Scotland.
- **Objective 3:** based on this initial analysis, to propose research-based objectives capable of influencing the development of road safety initiatives in the North East of Scotland and identify future areas of research.

1.2. Road Safety Framework

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[2] Information obtained via a FOI request submitted by the author to DVLA, 4 March 2019.

Critically, at the time of commissioning, the research related to the following **Road Safety Framework** (RSF) commitments:

- **RSF 19** – continue to publicise and educate people about the risks associated with speeding
- **RSF 76** – provide support for motorcyclists, e.g., through advanced rider training schemes and raise awareness of bad or dangerous riding behaviour through safety awareness initiatives such as Operation Zenith
- **RSF 77** – through RSS, support targeted publicity campaigns aimed at motorcyclists
- **RSF 92** – consider the needs and vulnerabilities of motorcyclists in developing motorcycle-friendly roads and roadsides where this may support casualty reduction, while ensuring that motorcycle safety is fully considered when other traffic calming schemes are introduced.

1.3. **Limitations of the Research**

It is important to acknowledge the potential limitations of the research, specifically the size and geographic location of the survey sample. In common with all qualitative research, caution is therefore required in relation to the generalisability of the research findings to other settings.

All information is correct at the time of publication (September 2021). Any errors that remain are the author's sole responsibility.

2.   **Existing Research**

The purpose of this section is to provide an overview of the existing research into motorcycle safety that has relevance to the project. Given the scope of the current project, it is not intended to be a comprehensive analysis but rather to provide context for the findings of this research and to provide an appreciation of the unique challenges surrounding policy formulation in this area. It is also anticipated that the outcomes of existing research will be helpful in informing the future direction of road safety initiatives in the North East of Scotland and beyond.

2.1.   **The Role of Motorcyclists in their own Safety**

The literature is consistent in its emphasis of the different characteristics that motorcycle collisions have when compared to other vehicle groups (see e.g., Elliott et al 2003; Clark et al 2007). Significantly, that a crash which can have little consequence for a car driver can have serious consequences for a motorcyclist (Keall and Newstead 2012). The literature also identifies that the perception of risk by motorcyclists, and how this is contextualised in their own practice, is a critical component to understand (Natalier 2001; Musselwhite et al 2012). Therefore, it is suggested that it remains important to acknowledge these unique characteristics and the role that they can play when both designing and evaluating specific road safety interventions directed towards motorcyclists.

2.1.1. Vulnerabilities and Motorcycling

As stated above, both motorcycles and the act of motorcycling are manifestly different to other modes of vehicular transport. It has been suggested that these differences are, in part, 'potential contributors' to the 'high accident liability' of motorcyclists (Elliott et al 2003 para 1.3). Specifically, the 'single track' nature of motorcycles means that they are prone to instability under braking, acceleration, or in conditions causing diminished adhesion (Elliott et al 2003 para 1.3.1). It has been observed that such potential for instability under certain conditions means that cornering, sudden changes to road surface (including longitudinal ridging/grooving and raised road markings), and emergency braking can create conditions for steering instability (see further Elliott et al 2003 para 1.3.1). It should be noted that technological improvements such as ABS has contributed to improving the stability of motorcycles in recent years (see Rizzi et al 2016). However, despite such technological advances, attention is drawn to the impact that substances such as diesel, mud, debris, over-banding, and others can have on motorcycles due to their single-track nature and how this shapes the experiences of motorcyclists when compared with other road users (see further Elliot et al 2003; RoSPA 2020).

There are also other vulnerabilities inherent to motorcyclists including: (i) a lack of crash protection, aside from protective clothing; (ii) being a consequence of 'look but fail to see' errors by other road users; and (iii) the potential difficulties presented by impacts with crash barriers designed for other vehicle types (see Elliott et al 2003 para 1.3.2). Ensuring that riders are aware of these risks and their own vulnerability has been indicated as forming a potential component of safety-based interventions for motorcyclists (Sexton et al 2004; Sexton et al 2006). However, research has also demonstrated that motorcyclists are aware of the risks and may be calculated risk takers (Musselwhite et al 2012), and that their behaviour is not shaped through under-estimation of these risks (Sexton et al 2006). Indeed, the observation that although motorcyclists are over-represented in crash statistics, most journeys made by motorcycle do not result in a crash, is an important consideration (Crundall et al 2012). Therefore, it has been suggested that rather than emphasising risk, focussing campaigns on training, education, and skills-building should also be considered alongside risk-based campaigns to achieve maximum effect (Sexton et al 2006; see further Natalier 2001).

2.1.2. Characteristics of Motorcycle Collisions

To understand the role that motorcyclists can play in their own safety, it is helpful to understand the general characteristics of motorcycle collisions. RoSPA (2020) provides guidance on common accident crashes based on analysis of accident studies. Some of these are caused by riders failing to ride within their own capabilities but there is also a role played by other road users. Common crashes include:

- Failure to negotiate bends, especially on country roads
- Other vehicles pulling out into the path of motorcyclists
- Collisions at junctions
- Collisions while overtaking
- Loss of control, due to poor road surface or high speed (RoSPA 2020)

Review of accident reports for the three local authority areas relevant to this report reveals that these factors are similarly a common causes of motorcycle crashes in the North East of Scotland[3]. Other contributing factors identified by RoSPA (2020) are noted as: poor weather; diesel spills; mud; manhole covers; painted road markings.

To further supplement these examples, research undertaken as part of the *Motorcycle Safety and Transport Policy Framework* (2016) provides a helpful overview of characteristics of motorcycle accidents and is summarised below:

Table 1: Characteristics of Motorcycle Accidents (adapted from Motorcycle Safety and Transport Policy Framework (2016 p. 31).

What are the causes of collisions?	- Driver error at junctions – 'look but fail to see' - Rider error on bends - During overtakes/filtering where speed and inexperience are also contributing factors - Group riding - Lack of anticipation/poor speed choice
When are incidents most likely to happen?	- Weekends (more likely on a Sunday) - Seasonal – more likely to occur in summer
Where are incidents most likely to happen?	- Junctions (urban) – obstructions/distractions ('look but fail to see') - Junctions (rural) – higher speeds impact on ability to see an approaching vehicle - Bends – road surface conditions contributing to diminished adhesion; speed - Overtakes – either filtering or overtaking a line of traffic

The generalised picture above is intended to be applicable for the UK, but it is also supported by more Scotland-specific research such as that conducted by Sexton et al in 2006. Here it was noted that

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[3] Information provided to the report author by Aberdeen City Council, Aberdeenshire Council, and Moray Council.

most fatal and serious collisions occurred on major roads in non-built-up areas during the summer months, which reflects the recreational nature of motorcycling (2006 pp. 974-975). Furthermore, as noted above, review of local accident reports demonstrates a similarity with these identified patterns.

To address the identified causative factors, the 2016 Framework document also makes several recommendations for potential areas of action, including:

- Rider behaviour, rider skills, rider attitudes
- Rider and driver training
- Driver behaviour, driver skills, driver attitudes
- Traffic engineering and design
- Transport planning re vulnerable road users
- Training infrastructure with reference to post-test training
- Enforcement
- Attitudes to motorcycling among non-motorcyclists
- Attitudes to motorcycling among transport experts, planners, and road safety officers (Motorcycle Safety and Transport Policy Framework 2016 p. 32)

As can be seen, these include actions which allow motorcyclists to have agency in their own safety but there are also several recommendations external to the rider that are of importance, and which will be explored in further detail below.

2.1.3. Further Training and Rider Safety

A desired outcome of specific safety initiatives for motorcyclists has been to encourage riders to seek further training (see, e.g., BikeSafe Scotland; Operation Zenith; Rider Refinement North). Therefore, it is important to understand the impact that additional training can have on rider safety.

Research conducted by Crundall et al using a motorcycle simulator with riders of different experience level (novice, experienced, and advanced) suggested that both experience and advanced training have a positive impact on road safety, however the amount of benefit is mediated by circumstances (2014 p. 88). There was also a difference in the strategy adopted by experienced vs advanced riders in relation to side road junctions, indicating that further training has a positive impact on hazard perception (Crundall et al 2013). They also note that no evidence was found to suggest that advanced riders adopted riskier behaviours because of increased training (Crundall et al 2014 p. 89; and see further Crundall et al 2013). However, increased confidence of riders is a concern that has previously been expressed in other research, including a 2003 review of the BikeSafe Scotland initiative (Ormston et al 2003).

A study undertaken in relation to the IAM RoadSmart advanced motorcycle test has sought to determine the impact of such training on the attitudes and behaviours of riders (Fosdick and Smith 2019). The research concludes that when compared to demographically similar respondents, riders who had completed the IAM RoadSmart test: (i) demonstrated more positive attitudes towards behaviours associated with collision risk; and (ii) reported fewer collisions (once mileage is account for) (Fosdick and Smith 2019). However, the research also notes that IAM RoadSmart respondents tended to select a higher speed choice and that this could potentially be attributed to increased confidence on the part of the IAM RoadSmart respondents (Fosdick and Smith 2019). The authors caution that the presence of confidence in a rider should not be construed negatively, especially when combined with the finding of collision prevalence amongst this rider group (Fosdick and Smith 2019). The authors go on to suggest that there is an opportunity for training to discuss this increased confidence within the context of speed awareness (Fosdick and Smith 2019), which offers opportunities to emphasise the attitudinal and behavioural aspects of riding alongside increased skill.

Recommendations in the literature around further training for motorcyclists include:

- Skills training (Elliott et al 2003; Sexton et al 2006), including cornering techniques (Clarke et al 2007)
- Forward planning and anticipation (Clarke et al 2007)
- Promotion of 'safe' goals (Sexton et al 2006)
- Encouragement of further training (Sexton et al 2006)
- Attitudinal and emotional management to control impulses (Musselwhite et al 2012)

2.1.4. Perceptions of Risk

Research into attitudes to risk taking and the understanding of risks by motorcyclists has previously been undertaken in Scotland (Sexton et al 2006). The findings of the research indicate that riders do not appear to: (i) under-estimate the risks associated with motorcycling; or (ii) consider giving up riding due to those risks (Sexton et al 2006). Similarly, in research undertaken in Australia, motorcyclists are identified as displaying ambivalence towards risk, instead preferring to favour lived experience to frame their riding over 'expert' knowledge (Natalier 2001). Therefore, the research suggests that furnishing riders with a greater understanding of the risks associated with motorcycling may well not be the most effective casualty reduction strategy (Sexton et al 2006; Natalier 2001).

Research has sought to examine rider attitudes to risk and risky behaviours (e.g., Musselwhite et al 2012; Chen and Chen 2011; Clark et al 2007; Broughton et al 2009; Chen 2009) that relate to different motivations and relationships with risk. Natalier offers an interpretation of this approach to risk through the sociological lens of Giddens (1990, 1991) and Beck (1992) and their writings on risk and how humans understand risk in modern society. Both Beck and Giddens discuss the role of society's trust in experts as a critical component of how risk is conceptualised (Beck 1992; Giddens 1990). For present purposes, the observation that the reality of an individual's lived experience can contradict the claims of science, thereby undermining faith in experts (Beck 1992) is of significance. Therefore, for motorcyclists, the primary source of information is their own lived experiences (Natalier 2001 p. 67) rather than the interpretations of their experiences offered by some road safety campaigns. Furthermore, notions of control are an important factor in the marginalisation of risks – loss of control can be blamed on perceived failures of the victim, thereby transforming how riders conceptualise an activity that could potentially be dangerous (Natalier 2001 p. 67).

There is a distinction, for motorcyclists, between knowledge that comes from doing versus knowledge that comes from theory (Natalier 2001). Indeed, as has been observed, 'any motorcyclist is to some degree an expert, or at least has a greater claim to expertise than those who do not ride, and their own knowledge is important in avoiding hazards and determining risks' (Natalier 2001 p. 70). This is an important factor in the planning and implementation of road safety campaigns, as research demonstrates that campaigns that seek to emphasise risk to motorcyclists are unlikely to have the desired outcomes.

This is even the case when contemplating issues of speed – a known concern and priority area for road safety initiatives. As observed, speed limits can be conceptualised as being a component of an expert system – the speed limit is defined based on what is safe and appropriate for a given section of road (Natalier 2001 p. 73). However, research has shown that motorcyclists freely admit to breaking speed limits (see Natalier 2001; Musselwhite et al 2012) and this can be construed as being based on both the knowledge of their own limitations as riders but also through their understanding of the type of road on which they are travelling in a given moment in time (Natalier 2001 p. 73). It is their lived experience that frames their behaviour, rather than a technically defined notion of risk. Therefore, understanding a motorcyclist's interpretation of risk is critical when considering how best to frame road safety campaigns.

2.2. The Role of Other Road Users in Motorcycle Safety

2.2.1. Right of way violations

It has been observed that motorcyclists are over-represented in right of way violations or so-called 'look but fail to see' errors by other motorists (see e.g., Clarke et al 2007; Crundall et al 2012). Most recently, Robbins and Fotios (2020) note that a possible explanation for 'look but fail to see' errors by drivers is 'poor conspicuity'. They describe conspicuity as being the 'combined effects of visibility (perceptual conspicuity) and expectation (cognitive conspicuity)' (Robbins and Fotios 2020). In summary, 'a motorcyclist is **visible** when **seen** by a driver who has reason to expect a motorcyclist to be present; a motorcyclist is **conspicuous** when **recognised** by a driver who had **no advance warning or expectation** of encountering a motorcyclist' (Robbins and Fotios 2020, emphasis added). This is an important distinction in understanding the operation of the 'look but fail to see' phenomena and in understanding how this could potentially shape road safety initiatives.

Although potential solutions such as driver education are offered, the authors note that further research is required as to how best to raise conspicuity of motorcyclists at junctions (Robbins and Fotios 2020). However, earlier work had concluded that, 'past safety campaigns that put the emphasis on other drivers to be more vigilant regarding motorcycles would seem to be as relevant as ever' (Clarke et al 2007 p. 908). Furthermore, it has been suggested that experience and exposure to motorcycles, 'feed the drivers' schemata for dealing with a variety of driving situations' (Crundall et all 2008 p. 983). This is also supplemented by existing research into how riders can potentially improve their conspicuity and thereby reduce their chance of involvement in 'look but fail to see' type collisions. Current research suggests that wearing a light or white helmet is associated with a lower risk of injury, along with use of reflective or fluorescent clothing (Wells et al 2004). In the same research, it was concluded that there was 'no association' between risk and the frontal colour of a rider's clothing or their motorcycle (Wells et al 2004). However, in line with more general observations around road safety made elsewhere in this report, the onus should not be placed solely on the motorcyclist to ensure their safety in such situations.

2.2.2. Drivers as Agents of Motorcycle Safety

Attitudes towards motorcyclists are shaped by socio-cultural expectations and beliefs surrounding motorcyclists. For example, the increasing prevalence of dashcams, helmet cameras and the ubiquity of CCTV cameras has seen clips of dangerous and anti-social rider behaviours appearing on both mainstream media and social media platforms (Motorcycle Safety and Transport Policy Framework 2016). While the successful prosecution of such incidents is positive, it is argued that these clips can contribute to shaping poor driver attitudes towards motorcyclists (Motorcycle Safety Transport and Policy Framework 2016). This is of significance for broader considerations around road safety, particularly when it has been identified that drivers play an active role in the safety of motorcyclists (e.g., Musselwhite et al 2012; Crundall et al 2008; Clark et al 2007). Critically, it has been identified that attitudes of drivers towards motorcyclists, particularly in relation to empathy, are an important component in such attitudes to the safety of motorcyclists (Musselwhite et al 2012; Crundall et al 2008). Females were identified as displaying the least empathy towards motorcyclists, a notable contrast with existing research that demonstrates females show greater empathy to other road users and one which the researchers observed required further study (Musselwhite et al 2012).

Research assessing car drivers' attitudes towards motorcyclists stated that car drivers who reported a lot of road safety infractions aligned themselves with motorcyclists, concluding that they would enjoy the experience of motorcycling (Crundall et all 2008). The researchers note that it can be suggested that such drivers in effect project their own behaviours onto motorcyclists, believing them to be 'thrill seekers' and that this bias perpetuates an unhelpful stereotype of motorcyclists (Crundall et al 2008 p. 991). This is also an image that can be perpetuated by representations of motorcyclists in the media (Osgerby 2020 pp. 80-81). Hence, the perpetuation of stereotypes can be regarded as unhelpful and

potentially damaging to the promotion of positive messages in relation to motorcycle safety and other road users.

More broadly, research has also advocated for a 'mode neutral' policy in relation to road user education (Motorcycle Safety and Transport Policy Framework 2016). This is road user education that is not specific to any mode of transport but instead encourages uses to develop a positive attitude to road safety in general and can be carried across all modes (Motorcycle Safety and Transport Policy Framework 2016). This could offer a potential solution to the risks posed by the 'in-group/out-group' focus of some road safety campaigns that can give the false belief that responsibility for an individual's safety is entirely in the hands of another road user (see Musselwhite et al 2012). Indeed, this in-group/out-group distinction can further perpetuate the abovementioned stereotypes through a broader process of 'othering' and the creation of stigma (see further Miyake 2015).

2.3. **Stigma**

The qualitative nature of this research seeks to understand the lived experiences of motorcyclists and is therefore interested in the social construction of reality. As mentioned in the previous section, the representation of motorcyclists in the media and how motorcyclists are perceived by other road users can have a consequent impact on their safety. Specifically, if riding a motorcycle is perceived by the public as being an inherently dangerous activity (Musselwhite et al 2012), it is suggested this impacts the general perception of motorcycles and motorcyclists.

An important concept to understand within this area of research is that of 'stigma'. The work of Goffman (1990; first published in 1963) is most frequently cited in relation to concepts of stigma. However, within the context of this research, the conceptualisation of stigma offered by Link and Phelan (2001) will be explored with the purpose of providing a deeper understanding of why such representations and perceptions of motorcyclists are of material importance to this research.

Building on the work of Goffman and others, Link and Phelan observe that stigma can be defined as, 'a relationship between an 'attribute and a stereotype' to produce a definition of stigma as a 'mark' (attribute) that links a person to undesirable characteristics (stereotypes)' (2001 pp. 364-365). Essentially it is a process of association, and in the case of the present research, it links the attribute of riding a motorcycle with certain stereotypes.

Link and Phelan note that stigma exists when the following converge:

- Distinguishing and labelling human differences
- Dominant socio-cultural beliefs linking labelled persons to negative stereotypes
- Categorising of labelled persons, creating an 'us and 'them narrative (akin to 'othering')
- Labelled persons experience discrimination
- Imbalances of power are reinforced in social, economic, and political spheres (2001 p.367)

As noted in the previous section, research suggests that motorcyclists are perceived as being an 'out-group' (Miyake 2015) and represent a concept that is steeped in myth and a distinctive subculture (Osgood 2020 p. 80). It can be argued that through the representational power of the media, motorcyclists have always been conceived of as potentially dangerous (Miyake 2015; Osgood 2020). For example, reflecting on the moral panics of the 1960s, and Stan Cohen's exploration of the mods and rockers clashes, motorcyclists have long been established in the post-war era as 'folk devils' who are deviant outsiders (see Cohen 2011 [originally published 1972]). This notion of being an outsider, of being othered, effectively grants road users permission to treat motorcyclists differently. Therefore, the social construction of motorcyclists, it is suggested, has an impact on how those who choose to ride a motorcycle are perceived. Furthermore, in line with the analysis of Link and Phelan (2001), this can also have consequences for how those in positions of authority view motorcyclists as road users. Specifically, policy makers and police officers.

3. **Methodology**
   3.1. **Overview**

The methods adopted for this research were twofold and intended to meet the project objectives:

- Desk-based research (**Objective 1**)
- Questionnaire surveys (**Objective 2**)

Both approaches are then intended to provide the necessary information to achieve **Objective 3** of the project.

As part of **Objective 1**, a literature review was undertaken comprising of: (i) relevant policy materials; and (ii) academic literature relevant to the research area. Reflecting on the project objectives, questionnaire surveys were designed and distributed to both members of the public and motorcycle trained officers from the Road Policing Division attached to the North Command Area, with a view to obtaining appropriate primary data to fulfil the requirements of **Objective 2** and **Objective 3**.

   3.2. **Questionnaires**

Three separate web-based questionnaire surveys were used to obtain original research data for the project. A copy of each of the questionnaires can be found in Appendix B. Consistent with accepted approaches in social research methods, in each instance data was coded and analysed using an open-coding process, followed by a thematic analysis (see further Bryman 2016).

   3.2.1. **Members of the Public**

A web-based survey was distributed to members of the public through publicity via local media and social media channels. The survey was accessible online from 3rd July to 14th August 2019. In total, 449 responses were received of which 443 (98.7%) were appropriate for inclusion in the research (discarded responses had indicated 'No' to consent requirements and their response was removed from the dataset).

A variety of open and closed questions were included in the questionnaire with the purpose of extracting relevant data in relation to age, gender, awareness and perception of road safety campaigns, and key concerns around road safety. The quantitative and qualitative findings are set out in Sections 6 and 7 respectively below.

   3.2.2. **Members of the Public – COVID-19 and Motorcycling in North East Scotland[4]**

A web-based survey was distributed to members of the public through two means: (i) directly via email - making use of participants to the original survey (see section 3.2.1) who had consented to participate in follow up research; and (ii) indirectly – via social media. The social media response made use of a local Facebook group for motorcyclists ('Aberdeen/shire Bikers'), and this was boosted with the support of local motorcycle dealer Shirlaws, who shared a link to the survey on its Facebook page.

The survey was accessible online from 17 July 2020 until 17 August 2020. In total, 277 responses were received of which 276 (99.6%) were appropriate for inclusion in the research. The discarded response had indicated 'No' to the use of anonymised quotes in published research and/or reports and this response was therefore removed from the dataset prior to analysis.

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[4] Participants were asked about the period since 'lockdown' and in the context of this questionnaire this refer to the imposition of restrictions from 23rd March 2020. More information can be found here - https://www.gov.scot/publications/coronavirus-covid-19-framework-decision-making-scotlands-route-map-through-out-crisis/

A variety of open and closed questions were included in the questionnaire with the purpose of extracting relevant data in relation to riding habits during the initial COVID-19 lockdown in Scotland and perceptions of road safety during this period. The findings are set out in Section 8 below.

3.2.3. Police Scotland – Motorcycle Trained Officers, Road Policing (North Command Area)

A web-based survey was distributed with the assistance of Police Scotland to motorcycle trained officers from the Road Policing Division within the North Command Area. The survey was available from 7 May 2021 until 4 June 2021. In total 13 responses were received of which all were appropriate for inclusion in the research. Although this is a small number, it is regarded as being representative of officers in the North Command Area who are appropriate for inclusion in the research.

The officers who responded had between **12** and **29** years of service with the police. These officers had also service specifically with Road Policing for periods of between **5** and **14** years.

A variety of open questions were included in the questionnaire with the purpose of extracting relevant data in relation to perceptions and lived experience of delivering road safety initiatives that are developed for the benefit of the motorcycling community in the North East of Scotland. Their broader experience within Road Policing was also beneficial for the purposes of this research. The findings are set out in Section 7 below.

4. **Motorcycle-Specific Safety Initiatives in North East Scotland (2001 – present)**

The purpose of this section is to provide a general overview of the motorcycle-specific safety initiatives that have historically operated or are currently operating in North East Scotland. Five initiatives are discussed: (i) specific road signage; (ii) BikeSafe Scotland; (iii) Operation Zenith; (iv) Live Fast Die Old; and (v) Rider Refinement North.

The road signage and Rider Refinement North initiatives are (at present) specific to the North East of Scotland. BikeSafe Scotland, Operation Zenith[5], and Live Fast Die Old are initiatives that have had a nationwide presence in Scotland. The purpose of each initiative is presented below, along with relevant discussion around their content and structure.

4.1. **Road Signage (2001 – present)**

Since 2001, specific road signage has been in present on both the A93 (Aberdeen to Braemar) and B974 (Banchory to Fettercairn) roads. Historically, these have been popular routes for motorcycles in the North East of Scotland due to their design and the overall riding experience this provides. Specific signage was implemented in segments of the road known to pose a potential hazard to bikers (e.g., ahead of bends), with a view to reducing serious and fatal collisions on these routes. It is also suggested that the signs act as visual reminders to other road users that there may be motorcycles in the vicinity and that drivers should be alert to their presence.

The signage was initially installed as a temporary road safety measure. However, 20 years later, the signs remain in place and have become a permanent feature of the road side infrastructure on these routes.

Figure 1: Example of signage located on A93 and B974

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[5] It should be noted that Operation Zenith was initially a Grampian Police initiative that was subsequently adopted and modified by Police Scotland.

4.2.   BikeSafe Scotland (1999-2010)

Between 1999 and 2010, Grampian Police participated in the BikeSafe Scotland initiative. It was a response to concerns raised around rising numbers of motorcycle collisions in Scotland and sought to achieve a reduction in the number and severity of motorcycle crashes (Ormston et al 2003). Another expressed intention of the initiative was to address some concerns around the number of 'born again bikers' retuning to rider, to enable them to have their skills assessed and their knowledge refreshed. At the time, there was also concern expressed around riders who had obtained their licence through the Direct Access system and that this permitted very new riders to ride bikes of any engine size (i.e., 1000cc sports bikes) (see further Ormston et al 2003). It was also hoped that the initiative could work towards bridging the gap between motorcyclists who pass their test and undergo no further training, and motorcyclists who do undertake that further training (Grampian Police 2009).

The initiative provided motorcyclists with practical information on road safety, first aid, basic machine maintenance, and riding skills (Fraser 2012). An important part of the BikeSafe initiative was the Assessed Ride programme (Ormston et al 2003). This was a free assessment of motorcycling skills provided by police motorcyclists (and IAM members) and was available to all holders of a full motorcycle licence in Scotland (Ormston et al 2003). The ride consisted of participants following a set route and being observed by a police rider, who would then provide an appropriate debrief at the end (Ormston et al 2003). Another feature of BikeSafe more generally was the deployment of high visibility policing strategies in areas where high numbers of motorcyclists were likely to be found (Ormston et al 2003), fulfilling the enforcement objectives of the strategy.

In an evaluation of the BikeSafe Scotland initiative, it was reported that in a 2002 survey of participants[6], almost 100% reported finding BikeSafe as 'very' or 'fairly useful' (Ormston et al 2003). It was also reported that both police representatives and motorcyclists felt that the initiative had improved relations between these two groups (Ormston et al 2003).

4.3.   Operation Zenith (2009-2017)

Operation Zenith was an early intervention scheme, developed to reduce the number of motorcyclists killed and seriously injured in the North East of Scotland (Moray Council 2018; Fraser 2012). With motorcyclists disproportionately represented in serious and fatal collisions, the overall objective of Operation Zenith was to improve rider behaviour and riding standards, thereby reducing the number of motorcyclists involved in all injury collisions, (Moray Council 2018). In addition to educating motorcyclists, the initiative also encouraged other road users to be aware of the high number of collisions involving motorcyclists in the North East of Scotland and to 'think twice, think bike, think biker' (Moray Council 2018 p. 17).

The underlying rationale of the programme was based around the Four E's: Education, Engagement, Engineering, Enforcement and using Evaluation to monitor progress (Fraser 2012). Furthermore, a target of reducing the total number of injury collisions by 15% during the five years to 2015 was also established (Fraser 2012).

A wide variety of initiatives were used in pursuing the Four E's approach, which are summarised below[7]:

- Education

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[6] Note that this survey was not specific to participants in the North East of Scotland but is persuasive in understanding the general perception and impact of the initiative

[77] This information is summarised from an unpublished Grampian Police internal document provided to the researcher.

- o **Training** – internal training for Grampian Police officers was developed by the Force Motorcycling Section to address any potential knowledge gap. This was to allow for effective engagement with motorcyclists on road safety.
  - o **Rider skills** – in the knowledge that some motorcyclists would not be reached by the campaign, individuals who were identified by the Force Motorcycling Section for poor riding standards or behaviour were offered an independent skills assessment via the Driver Standards Agency Enhanced Rider Scheme. At this time, Grampian Police was the first force to use such a scheme to support rider improvement
  - o **Information Safety Packs** – during Operation Zenith, 1,000 riders received information on enhanced rider training, BikeSafe and other rider behaviour. These were distributed via local motorcycle dealers. These were viewed favourable by recipients with 49.4% or respondents to an online evaluation rating then as high or very effective at increasing motorcycle safety awareness, and 26.5% rating them as effective.
- Engineering
  - o **Engineering intervention** – trialling of non-slip manhole covers by local authorities and BEAR Scotland
  - o **Engineering** intervention – partnership working with local authority to identify engineering issues across the network
  - o **Temporary Signage –** allowing enforcement of safety messaging around common factors leading to motorcycle collisions
- Encouragement
  - o **Targeting messaging** – use of customer databases of local motorcycle dealers to forward a road safety message (approx. 7,000 customers)
  - o **Open Days** – collaboration with partners to host a Motorcycle Safety Day attended by approx. 350 riders. Motorcycle Unit officers also participated in the local Alford Motorcycle Cavalcade
  - o **Engagement** – a screen at a local cinema was hired to show the documentary *TT3D: Closer to the Edge* (focussed on the 2010 Isle of Man TT) that was well attended
- **Enforcement**
  - o Using a 'stop and chat' format to engage with riders which online survey feedback demonstrated was favourably received.

Overall, the campaign received a positive reception in its work to raise awareness of motorcyclists and their safety (Fraser 2012).

An evaluation of Operation Zenith conducted in 2012 reports a reduction in the number of fatalities and the number of serious and slight collisions, as follows:

Period	No. of Fatalities	No. of Serious and Slight Collisions
March to October 2009 (before Operation Zenith)	6	134
Operation Zenith Year 1 – March to October 2010	5 (-17%)	115 (-14%)
Operation Zenith Year 2 – March to October 2011	2 (-66%)	97 (-30%)

Figure 2: Injury and Collision data in Grampian (2009-2011), adapted from Fraser (2012).

Operation Zenith also ran across the whole of Scotland between 24 March and 1 October 2017, albeit encompassing broader road safety objectives. During this period, there were 24 motorcycle fatalities (21 motorcycle riders and 3 pillion passengers) and the number of motorcycle related fatalities remained largely static during this period, when compared to the previous year. These statistics were

a significant impetus in the development of the Rider Refinement North initiative, to adopt more innovative approaches to tackling casualty numbers (see further **Section 4.5** below).

4.4. Live Fast Die Old[8] (2015 – present)

'Live Fast Die Old' is a Road Safety Scotland initiative intended to promote safe riding across Scotland's rural road network. Operational since 2015, what has been described by motorcycle journalists as a 'cool road safety campaign' (Visordown 2019) combines riding tips with 'breathtaking' routes across Scotland to engage motorcyclists with the underlying road safety message. Road Safety Scotland's Michael McDonnell stated that, 'We understand the thrill of biking and don't want to take that away, but we want to ensure that groups of motorcyclists are looking out for each other on the road and practicing safe manoeuvres together' (Visordown 2019).

Figure 3: Live Fast Die Old landing page. Copyright Road Safety Scotland

The website has a strong visual appeal, with striking photographs of the Scottish landscape, depicting a motorcyclist on the open road (see Figure 3 above). The initiative also has a social media presence on Facebook that seeks additional ways to engage with its target audience and bikers are encouraged to share experiences, thoughts, and comments via social media[9].

4.5. Rider Refinement North[10] (2018 – present)

The aim of Rider Refinement North (RRN) is to educate motorcyclists: (i) about the types of collision occurring in their area, on the roads they ride on; and (ii) that rider error and inappropriate speed are common factors in most crashes. The initiative is delivered through a day-long course that comprises a presentation and riding assessment with the purpose of increasing the rider's hazard awareness and knowledge of riding techniques. The overall objective is to enable riders to use this knowledge to improve their skills and to thereby reduce motorcycle casualties in the North of Scotland.

RRN is grounded in the use of behaviour change mechanisms to achieve this improvement in skill by utilising scenario-based learning where riders are educated on best practice, drawing on guidance from *Motorcycle Roadcraft, The Police Rider's Handbook*.

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[8] See generally https://livefastdieold.scot/
[9] See 'Live Fast Die Old – Scottish Motorbiking' on Facebook.
[10] Information on the RRN programme has been gathered from internal documentation shared with the researcher. These documents are not currently in the public domain.

The rationale is that by enhancing observational and planning skills, riders are better equipped to deal with potential hazards. The classroom session is supplemented by: (i) a demonstration ride by the Police rider; and (ii) an observed ride. Participants ride their own machines on a pre-determined route and a demonstration ride is given by the Police rider, allowing for practical application of the theory discussed in the classroom session, ahead of an observed ride. The observed ride portion allows participants to receive feedback from the Police rider, alongside encouragement to undertake further advanced training.

The introduction of RRN was seen as an innovative extension of Operation Zenith and presented an opportunity to work towards further reduction of motorcycle casualties on the rural routes of North East Scotland. Like most initiatives, speed as a contributory factor to motorcycle collisions is core motivation and riders are encouraged to adopt appropriate speeds and the dangers of speeding are emphasised to all riders.

5. **Current Policy & Guidance**

The purpose of this section is to provide a high-level overview of existing policy to situate the research within the current policy landscape in the North East of Scotland (**Objective 1**). It is not designed to be a comprehensive policy review, as this is not possible within the confines of the current project. However, it contains an appropriate level of detail to enable an understanding of the existing policy framework and how it relates to motorcyclists.

This section begins by providing an outline of national policy before discussion of regional and local strategies and initiatives. For context, it also considers the current guidance and specific advice offered by Police Scotland to motorcyclists.

5.1. **Motorcycle Collision Data**

This section provides a summary table overview of killed and seriously injured (KSI) statistics for motorcyclists in the region. It is intended to demonstrate the trend in KSI statistics for the region and to provide context for the research.

5.1.1. **Aberdeen City**

ABERDEEN CITY	FATAL	SERIOUS
2011	2	14
2012	1	17
2013	1	29
2014	2	25
2015	2	6
2016	1	6
2017	0	7
2018	0	6
2019	0	6

In Aberdeen City:

- Motorcycle fatalities have always been limited in number, primarily due to the urban nature of the road network and the lower speed limits which prevail. It is worthy of mention that the final three years of the review period (2017, 2018, 2019) have resulted in no fatalities
- Serious injuries come in two distinct year bands; 2011-2014, followed by 2015-2019. When reviewing the average serious casualty total during the period 2011 to 2014 and comparing it against the average between 2015 and 2019, a **significant reduction of 64%** is achieved.

5.1.2. **Aberdeenshire**

ABERDEENSHIRE	FATAL	SERIOUS
2011	2	39
2012	4	47
2013	2	31
2014	2	34
2015	4	23
2016	3	23
2017	2	19
2018	2	21
2019	1	13

In Aberdeenshire:

- Fatal motorcycle casualties have remained relatively constant on an annual basis and in a similar vein to Aberdeen City, the three final years (2017, 2018, 2019) have produced fewer annual casualties than earlier in the period
- Once again two distinct casualty periods can be seen, firstly 2011-2014 with annual casualty numbers ranging between 31 and 47. While the latter years, 2015-2019 see fewer seriously injured casualties which total between 13 and 23 per year. When taking the average serious casualty total during the period 2011 to 2014 and comparing it against the average seen between 2015 and 2019, a **significant reduction of 48%** is identified

5.1.3. Moray

MORAY	FATAL	SERIOUS
2011	0	7
2012	0	12
2013	0	9
2014	0	7
2015	0	11
2016	1	6
2017	1	7
2018	2	3
2019	0	3

In Moray:

- Given the smaller geographic area of this local authority, the total number of casualties is usually considerably lower than its neighbouring local authority, Aberdeenshire. Importantly, with reduced casualty totals, some caution should be exercised when drawing conclusions from the available data.
- Fatal motorcycle casualties in Moray have been historically low, however, in a reversal to the experience in Aberdeen and Aberdeenshire, Moray has seen several fatalities in the period 2016-2019, whereas in the period 2011-2015 there were none.
- Moray replicates the reductions seen elsewhere in terms of serious injury motorcycle casualties, with the period between 2011-2015 experiencing an annual casualty rate between 7 and 12, with the period 2016-2019 leading to casualty totals of between 3 and 7 per year. The percentage reduction compared the average number from both these periods is **59%**.

Across all three local authority areas in the North East of Scotland, the data clearly shows that significant progress has been made in reducing the number of killed and seriously injured motorcycle casualties.

5.2. **National Policy**

Published in February 2021, the latest Scottish Government *Road Safety Framework* document establishes an interim target that by 2030 there will be a 30% reduction in the number of motorcyclists killed or seriously injured on Scotland's roads (Scottish Government 2021). This is in support of much more ambitious 'Vision Zero' target set by the Scottish Government for there to be no one killed or seriously injured on Scotland's roads by 2050 (Scottish Government 2021).

This is set against the broader context of the Scottish Government's National Transport Strategy (NTS2) and the commitments of the associated Delivery Plan for 2020-2022 (Scottish Government 2020). Notably, these include strategic policies under the heading of 'Improves our health and wellbeing' to 'Increase safety of the transport system and meet casualty reduction targets', and 'Reduce the negative impacts which transport has on the safety, health and wellbeing of people' (Scottish Government 2020 p. 33).

5.3. Regional Policy

5.3.1. Nestrans - Regional Transport Partnership

Nestrans is the regional transport partnership (RTP) for Aberdeen City and Aberdeenshire and is tasked with the remit of developing and delivering a long-term Regional Transport Strategy (RTS) alongside strategic improvements across the region (Nestrans 2021a). Moray is not included in the geographic remit of Nestrans and is affiliated with another RTP – HiTrans. No motorcycle-specific policy was identified in relation to HiTrans; therefore, its remit will not be further considered within the confines of this research.

In 2021, a new RTS was finalised and is currently awaiting Scottish Government approval[11]. The RTS 2040 document incorporates a specific target of zero fatalities on the road network by 2040, in line with the 'Vision Zero' strategy pursued at national level (Nestrans 2021b para 11.184). It is stated that there will be a specific emphasis on reducing the number and severity of vulnerable road users, including motorcyclists, involved in RTCs (Nestrans 2021b para 10.7).

5.3.2. Road Safety North East Scotland

Road Safety North East Scotland (RSNES) also play an important role in the promotion of road safety and identification of appropriate strategy in the North East of Scotland, with the production of an associated Casualty Reduction Strategy (RSNES 2017). RSNES consists of several organisations[12], working together to reduce casualty levels in Aberdeen, Aberdeenshire, and Moray. Additionally, RSNES maintains a positive social media presence, promoting awareness of road safety and the specific needs of vulnerable road users[13].

The Casualty Reduction Strategy (2017) identifies three priority areas – Speed, Age, and Vulnerable Road Users – that acts as a focus for RSNES' activities. In respect of motorcyclists, these objectives are defined as follows:

> **Speed and Motorcyclists**
> Speed Outcome – increase in the proportion of vehicles travelling at appropriate speeds on Scotland's roads to support reducing road casualty numbers
> Motorcyclists' Outcome – improve the safety of motorcycling by reducing the levels of motorcycle injury accidents on the road network to support reducing road casualty numbers

Figure 4: Adapted from North East Scotland Road Casualty Reduction Strategy, para 4.1 (RSNES 2017).

A key component of the strategy is the emphasis on road safety being the responsible of all road users and on the wider impact of road casualties on society and the economy (RSNES 2017).

5.4. Local Policy

Under the Road Traffic Act 1988, local authorities have a statutory duty prepared and carry out a programme of measures designed to promote road safety. Within this remit, local authorities in Scotland generate a road safety plan. These are discussed below in respect of each local authority located in the North East of Scotland.

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[11] At the time of writing (August 2021)
[12] Aberdeen City Council, Aberdeenshire Council, Moray Council, Nestrans, North Safety Camera Unit, NHS Grampian, Police Scotland, Road Safety Scotland, Scottish Fire and Rescue Service and Transport Scotland
[13] See further Twitter via @RoadSafetyNEScotland

5.4.1. Aberdeen City

In the five years to 2017, motorcyclists represented 20% of all persons killed or seriously injured on Aberdeen's roads (Aberdeen City Council 2019). Aberdeen City Council's Road Safety Strategy recognises motorcyclists specifically as vulnerable road users and contains specific commitments to: (i) support Rider Refinement North as a mechanism for casualty reduction; and (ii) support community work with individuals at risk of offending or misusing motorcycles in communities (Aberdeen City Council 2019 p. 23). Further details on motorcycle specific casualty data can be found in **Section 5.1.1** above.

5.4.2. Aberdeenshire

Motorcyclists are a key focus area for Aberdeenshire Council as evidenced by its most recent Road Safety Plan (Aberdeenshire Council 2018). Through this plan, the local authority has sought to address the road safety issue of speed and motorcyclists through a combination of educational and engineering initiatives (Aberdeenshire Council 2018). As with Aberdeen City Council, this includes support of the Rider Refinement North initiative that was launched in 2018.

In pursuit of these road safety objectives, Aberdeenshire Council has engaged in targeted campaigns with motorcyclists in mind, both independently and in partnership with other organisations. For example, in 2021, the Road Safety Unit within Aberdeenshire Council engaged with local motorcycle dealers in the region to publicise a targeted campaign highlighting the risks to riders. Through this campaign, specific facts were emphasised to motorcyclists about riders' risk with the intention of provoking discussion about such risks. See **Appendix A** for examples of the infographics used.

5.4.3. Moray

Reflecting national and regional priorities, Moray Council identify the following three priority areas: (i) Speed & Motorcyclists; (ii) Age; and (iii) Vulnerable road users (Moray Council 2018 p.10). in Moray, it is reported that in the five years preceding the report, motorcyclists represented 6% of fatalities and 11% of all injuries across the road network (Moray Council 2018 p. 13). It is also reported that in the same period, speed was recorded as a factor in approximately 1/3 of rural accidents in the area (Moral Council 2018 p. 17). Consequently, as part of the action plan focussed on motorcyclists in Moray, emphasis is placed upon rural accidents and those associated with speed (Moray Council 2018 p. 18).

5.5. Police Scotland Guidance and Advice

At the time of writing, Police Scotland's new strategy – *Road Safety Strategic Delivery Plan* – was not yet published. Therefore, this section is based on current information provided by Police Scotland via its website and from its 2015 *Road Safety and Road Crime Strategy 2015-18* which will be considered first.

5.5.1. Road Safety and Road Crime Strategy 2015-18

The stated strategic intention of the 2015-18 Strategy is 'to influence road user behaviour and make Scotland's roads safer' (Police Scotland 2015 p. 4). This priority aligns with the relevant Scottish Government Road Safety Framework and is supported by two Strategic Priorities. These are: (i) to reduce road casualties; and (ii) to reduce road crime and positive impact on the use of roads by criminals (Police Scotland 2015 p.4). For the purposes of this research, only the first Strategic Priority is of significance.

Further defining the broad Strategic Intention and Strategic Priorities are five objectives that encompass themes such as, 'effective patrolling of the roads', 'improve road user behaviour', and

'tackle anti-social use of the roads' (Police Scotland 2015 p. 4). It is noted that all these objectives are in turn informed by the 'Three E's' approach of enforcement, education, and engineering (Police Scotland 2015 p. 7).

5.5.2. General Advice to Motorcyclists

As part of the annual National Calendar of Road Safety Activity, Police Scotland identify several weekend periods between May and September during which operational resources are tasked with focussing on motorcycle and road safety. These weekends occur during this summer period when motorcycle casualty numbers traditional peak. To supplement these operation activities, Police Scotland also offer the following guidance via its website to motorcyclists with a view to reducing their risk while using the road network:

- Take time on bends on country roads
- Take extra care at junctions
- Take care when overtaking
- Only overtake when it is safe
- Know your motorcycle and what to do if you feel like you are losing control (Police Scotland 2021).

It should be noted that this guidance is also supported by appropriate messaging across social media channels, particularly at the start of the biking season (Spring) and at regular intervals throughout the biking season. For example:

Figure 5: Police Scotland, 2021. #Think Bike. Twitter, 25 July. Available at: https://bit.ly/3zSncWU [Accessed 13 August 2021].

6. Statistical Information

The initial focus of this section (**Sections 6.1 and 6.2**) is on the statistical data gathered from the two surveys that were distributed to members of the public during the project. This is to help provide context for the remainder of the report, which is based on the qualitative data drawn from each of the surveys and is intended to provide a deeper understanding of emerging themes.

6.1. Questionnaire – Members of the Public

Gender

- **391 (88.3%)** of the respondents identified as male
- **50 (11.3%)** of the respondents identified as female
- **2 (0.4%)** of the respondents declined to indicate the gender with which they identify

The gender split of the survey respondents is in line with expectations given published statistics on motorcycling in the UK (e.g., DfT 2016) and with previous research samples (see e.g., Sexton et al 2004). For example, in England, between 2002-2016 women made 11% of motorcycle trips and travelled 9% of total motorcycle miles (DfT 2016 p. 5)[14].

Age

Age Range	Participant Response
18-24	12 (2.7%)
25-34	60 (13.5%)
35-44	95 (21.4%)
45-54	142 (32.1%)
55-64	116 (26.2%)
65+	18 (4.1%)
TOTAL	**443 (100%)**

Do you currently own a motorcycle?

98.2% (435) of respondents indicated they owned at least one motorcycle at the date of completion of the questionnaire.

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[14] DfT statistics are relied on here for a comparator as Scottish Household Survey statistics in Scotland do not report motorcycle usage in the required detail (see Transport Scotland 2020).

How would you describe your motorcycle?

A variety of bike styles were self-selected from a pre-formed list by participants:

Style	Number of participants indicating they owned a motorcycle in this category
Sports Tourer	133
Naked	110
Sports	107
Adventure	102
Cruiser	71
Retro	36
Other	36
Café Racer	21
I do not own a motorcycle	6*

This is inconsistent with the answer to the previous question where 8 individuals indicated they did not currently own a motorcycle. This anomaly is attributed to participant error.

The variety of bikes owned by participants demonstrates that motorcyclists exist beyond the traditional stereotype of a sports bike rider (see further **Section 2.3** above) that is so often represented in the media an in promotional material for motorcycle safety initiatives.

Are you aware of any of the following road safety initiatives?

Road Safety Initiative	Yes	No	No Response
Operation Zenith	264 (59.6%)	179 (40.4%)	0 (0%)
Rider Refinement North	156 (35.2%)	287(64.8%)	0 (0%)
Live Fast Die Old	212 (47.7%)	232 (52.3%)	0 (0%)
Bike Safe	358 (80.8%)	85 (19.2%)	0 (0%)
Specific motorcycle warning signage on the A93 Aberdeen-Braemar Road	301(67.9%)	140 (31.6%)	2 (0.5%)
Specific motorcycle warning signage on the B974 Banchory-Fettercairn road	271 (61.1%)	170 (38.4%)	2 (0.5%)

Have you participated in road safety events/training offered through the following initiatives?

	Yes	No	No Response
Bike Safe	101 (22.8%)	342 (77.2%)	0 (0%)
Operation Zenith	35 (7.9%)	408 (92.1%)	0 (0%)
Rider Refinement North	53 (11.9%)	388 (87.6%)	2 (0.5%)

There is a notable difference between awareness of campaigns and participation in named campaign activities. It is suggested that, as noted by Ormston et al (2003), this could potentially be due to the limited capacity of such initiatives rather than an unwillingness to participate.

Have you undertaken any advanced motorcycle training since obtaining your full licence?

Yes	No
153 (34.5%)	290 (65.5%)

The topic of further training is discussed in more detail below (**Section 7.5**).

6.2. Questionnaires – Members of the Public – COVID-19 and Motorcycling in North East Scotland

Since lockdown, have you used your motorcycle?

252 (91.3%) of research participants indicated that they had used their motorcycle since lockdown restrictions were imposed in Scotland on 23rd March 2020.

Was this during the period 23 March to 28 May 2020 when all but essential journeys were prohibited?

Yes	No	Not applicable
160 (58%)	109 (39.5%)	8 (2.9%)

Did you ride your motorcycle as lockdown eased during Phase 1 (29 May to 18 June 2020)?

Yes	No	Not applicable
212 (76.8%)	64 (23.2%)	2 (0.7%)

Did you ride your motorcycle during Phase 2 (from 19 June to 9 July 2020)?

Yes	No	Not applicable
245 (88.8%)	30 (10.9%)	2 (0.7%)

If you used your motorcycle during lockdown, what has been the main purpose of your journey?

Commuting	74 (29.4%)
Essential journey (e.g., food shopping, pharmacy	120 (47.6%)
Leisure/enjoyment	121 (48%)
Other	23 (9.1%)

If you have used your motorcycle during lockdown, did you?

Feel safer due to a reduction in traffic	212 (92.6%)
Feel increased confidence due to reduction in traffic	60 (26.2%)
Engage in riding behaviours you would not otherwise have done so had there been normal traffic levels	11 (4.8%)

As a motorcyclist, have you felt safe using the road network during the COVID-19 pandemic?

Yes	No	Not applicable
237 (85.9%)	18 (6.5%)	23 (8.3%)

7. **Results**

The purpose of this section is to present the main findings of the research, as interpreted from the qualitative data gathered from all three questionnaires. The findings of the research are synthesised with commentary from existing literature to enable fulfilment of **Objective 2** of this research. A significant amount of data was generated across the three surveys, and the selected quotations are intended to be representative of the research findings.

7.1. Meaning and Motorcycling

7.1.1. The Experience

Participants were asked to describe what being a motorcyclist meant to them. The purpose of this question was to allow respondents to convey the meaning of motorcycling so that it can be understood that it differs not only practically from other modes of transport but also experientially.

In line with the findings of existing research (see, e.g., Miyake 2015), survey respondents described the experiential quality of riding a motorcycle as going beyond more conventional modes of transportation. One participant describes the act of riding as, *'Travelling **in** the environment rather than **through** it'* (Participant A74, emphasis added). Another tells of it being a *'…much more visceral, encompassing experience than driving a car, a means of expression'* (Participant A127). This idea of being an active participant is also conveyed in the words of another respondent who states, *Heightened senses make you an active participant rather than just a passenger going from A to B. A motorcyclist mitigates the risk of injury or harm through care, experience and dynamic assessment'* (Participant A33). This is of relevance when we consider the commentary around risk perception in section 2.1.4 above.

Multiple participants used the word 'freedom' or synonymous words to capture the essence of what it means to ride a motorcycle and the experiences that accompany riding. For example, one participant described motorcycling as permitting, *'…a feeling of freedom and connection with the environment. You cannot experience the same total immersion in your surroundings from within an enclosed space like a car. Simple things like smelling wild garlic as I leave Fyvie Station on the A947…'* (Participant A289). This experiential quality of riding is something that is similarly replicated in the survey responses detailed in Section 8 below.

7.1.2. Self – community and identity

Another key theme that emerged from the meaning ascribed to being a motorcyclist was one of 'self'; expressed through the individual's identity and through feelings of a shared community. Respondents described, *'…being part of the biker community'* (Participant A186) and how, *'It defines who I am, and I'm surrounded by friends that I've met through having motorbikes'* (Participant A279). It is evident from the findings of this research that this strong sense of identity is very much present and aligns with the findings of previous research that motorcyclists want to be seen as a motorcyclist and communicate this identity to others (Musselwhite et al 2012). It is suggested that understanding this aspect of motorcycling is important in facilitating appropriate engagement strategies when designing road safety campaigns.

Other respondents reflected on the sense of identity that being a motorcyclist provides, for example stating, *'It is central to my identity, my social activity, my relationships and leisure time'* (Participant A121). Or simply affirming that, *'Motorcycles are part of who I am'* (Participant A229). For one female participant, it represented an act of defiance and rebellion too, noting that, *'As a woman…it means freedom and two fingers up to the patriarchy'* (Participant A260). This is consistent with existing research (Miyake 2015) that the concept of identity and community is a prevalent theme when researching motorcycles and motorcyclists. Communities are created through shared senses of identity and as observed, the motorcycle acts as an 'anchor' in this process (Miyake 2015).

7.2. **Concerns**

Participants were asked to identify their key concerns as motorcyclists in the North East of Scotland. The responses can be categorised into four separate themes: (i) road surface conditions; (ii) infrastructure; (iii) other road users; and (iv) risk to self. Each of these themes is considered in turn below.

7.2.1. **Road Surface Conditions**

A significant proportion of the comments related to the practice of surface dressing:

> *'Whoever thinks that's a good method needs to ride a bike through it when they've just been done' (*Participant A396).

> *'Gravel dressing that is being used to protect road surfaces is extremely dangerous to bikers'* (Participant A45).

> *'Surface dressing in [sic] roads. It's lethal on two wheels and bad when a driver goes [in] the opposite direction quickly and fires gravel in the air'* (Participant A84).

> *'Road conditions, for example the councils [sic] insistence to use 'surface dressing' to repair roads making them a hazard for weeks after'* (Participant A200).

> *'Poor laying of surface dressing with ridges along the centre line'* (Participant A274).

> *'This road condition leads to slides or loss of control even at low speed, especially for new riders, not to mention stones being thrown from oncoming traffic. I would like to see this practice terminated in [sic] Britain's roads.'* (Participant A100)

Respondents also commented in more general terms on the quality of the road surfaces throughout the region:

> *'Gravel on roads where I place the bike to turn'* (Participant A432)

> *'Appalling road surfaces in many places'* (Participant A74)

> *'The condition of road surfaces in NE Scotland' (*Participant A92)

> '*Another main concern is road quality, poorly repaired roads, holes and debris'* (Participant A176)

> *'The condition of the roads, i.e., potholes, top dressing, diesel spills and the uneven surfaces in bends where shellgrip has partly worn away'* (Participant A362)

> *'Poor road conditions – potholes and lethal surface dressing. I crashed on spilt diesel a few years ago so paranoid about that also'* (Participant A381)

As explored above, (**Section 2.1**), due to the single-track nature of motorcycles, road surface conditions that can cause diminished adhesion or cause the motorcycle to deviate from its path are hazardous (Elliott et al 2003). Therefore, it can be reasonably concluded that improved road surface conditions and appropriate warning signs have an important role to play in ensuring motorcyclists can maintained the needed stability, particularly under braking, and to potentially prevent collisions associated with diminished adhesion (see Elliott et al 2003). RoSPA (2020) also note that loss of control due to poor road surface features in assessments of common types of motorcycle crash.

7.2.2. Infrastructure

Several participants commented on the quality of infrastructure across the road network. This ranged from road signage:

> *'Quality of road signs particularly [the] accuracy of corner signage on A and B roads'* (Participant A296).

> *'Road signs dirty and overgrown'* (Participant A305)

To maintenance of roadside vegetation:

> *'Get the hedges and roadside verges growth cut back so that drivers and riders can see vehicles coming in [the] opposite direction'* (Participant A94)

This point around vegetation is also picked up by respondents to the COVID-19 survey, discussed in **Section 8** below.

Finally, some participants noted the location of ironworks as being particularly problematic and that this conveyed a lack of understanding in relation to road design:

> *'One thing though is the almost consistent placing of manhole/drainage covers on bends or junctions exactly where you want to place the bike when cornering. It's incredible how poorly placed they invariably are.'* (Participant B122)

As stated above, due to the single-track nature of motorcycles, road surface conditions that can cause diminished adhesion or cause the motorcycle to deviate from its path are hazardous (See **Section 2.1**). RoSPA identifies manhole covers as being commonly cited in contributing to riders losing control of their motorcycles (2020).

7.2.3. Other Road Users

A significant number of responses to the survey cited the role that other road users play in their own safety and that they represented a significant area of concern to motorcyclists. In general terms, many riders were concerned about,

> *'Almost every other road user. You can never guarantee that anyone else's experience or ability will account for your safety on the road which makes yourself [sic] the most vulnerable road users [sic] whenever you go out'* (Participant A251).

One participant describes other road users being on 'auto pilot' when scanning for other road users and the inherent danger this represents:

> *'My main concern is other drivers not looking properly for motorcyclists, they are in [sic] auto pilot for large moving vehicles and don't take a good enough glance to be able to see motorcyclists most times'* (Participant A192).

Some of these concerns relate to the 'look but failed to see' incidents described above, with respondents noting they had concerns about:

> *'Car drivers not aware of your presence, especially at junctions and roundabouts'* (Participant A345).

> *'Car drivers who are not always aware of a bike near them or don't see them coming at junctions'* (Participant A92).

However, concerns also extend to the attitudes that are displayed by other road users towards motorcyclists, that are based on poor understanding of motorcyclists. A notable concern is the misunderstanding represented around the topic of 'filtering':

> *'Car drivers being deliberately obstructive to, or unaware of, bike riders – some car drivers will put both themselves and the biker in a dangerous position at times as they are frustrated at bikers filtering through traffic in busy periods'* (Participant A356)

> *'Lack of understanding from car drivers regarding filtering through traffic. Many drivers to not seem to realise that filtering is legal and will actively move position in their lane to block a motorbike from filtering'* (Participant A308)

> *'…drivers that blatantly don't give bikers room when filtering or overtaking'* (Participant A45)

> *'Other road users lack of awareness of the obstacles that can be a danger to motorcyclists. It isn't just about not seeing you at junctions, it's about substances left on road surfaces, diesel, oil, gravel, barley, horse muck, silage, fish brie [sic]. Not to mention potholes or debris left by adverse weather'* (Participant A243).

> *'…the lack of knowledge car drivers have when it comes to motorcycles with their road positioning and manoeuvrability'* (Participant A428)

A further area of concern also related to the technical competencies and abilities of other road users:

> *'The level of driver skills of other motorists who haven't ridden a bike. Tend not to read the road ahead and take a second look for riders'* (Participant A87)

> *'…lane cutting, especially when they are approaching right hand bends and [a] motorcycle [is] heading in the opposite direction'* (Participant A176)

> *'…boy racers cutting corners and pushing me into the verge'* (Participant A210)

> *'Other drivers on my side of the road on blind bends'* (Participant A432)

It is unsurprising to see other road users being reported as an area of concern for motorcyclists, given their overrepresentation in right of way violations (see **Section 2.2.1**).

As noted above (**Section 2.2.2**), the focus on specific road users in road safety campaigns can create an 'in-group/out-group' focus. In addition to 'othering' the out-group (the motorcyclists), this approach also creates the false impression that responsibility for one individual's safety lies in the hands of another. The experiences of motorcyclists outlined above indicate that there is a lack of empathy towards motorcyclists on the roads, and a lack of understanding of the specific needs of motorcyclists. This is also supported by the literature, as discussed above (see e.g., Musselwhite et al 2012).

7.2.4. Risk to Self

As noted above in **Section 2.1.4**, research has suggested that motorcyclists frame the risk to themselves in a different way and this is also supported by the findings of this research. Participants appear to externalise the risk to, '*Things not within your personal control or reasonable judgement'* (Participant A332). While some respondents acknowledge the role their own actions play in risk mitigation - *'Any mistake, mine or someone else's could have massive consequences'* (Participant A175) – for many, it is the role that other road users play that is the dominant theme:

'The potential to be killed or seriously injured through another person's actions or incompetence' (Participant A127)

'The driving standard of some other road users putting me at risk' (Participant A145)

'My own safety. When riding I was always worried if people were checking their mirrors and properly looking at T-junctions before pulling out' (Participant A388).

Lived experience is also an important indicator for some participants, both in terms of their own behaviours and the behaviours of others:

'Safety, other drivers not looking for bikes, currently I am injured after a RTC as the car driver pulled out in from of me and I crashed into them' (Participant A34)

'My personal inability to keep speed reasonable and the likelihood of this resulting in death. The trade off between adrenaline and fear' (Participant A296).

As emphasised previously, this research aligns with the assessment of previous work in the area that, 'measures…focussing on giving riders a better appreciated of the risks they may run, may well not be very effective in reducing motorcycle accidents' (Sexton et al 2006 p. 3) and therefore suggests that any approach that seeks to emphasise risk will not be efficient use of resources.

7.3. Perceptions of Road Safety Initiatives

An important aspect of this research was gaining an insight into the perceptions of the road safety initiatives that are set out in **Section 4**. This section examines the lay perspective of motorcyclists in the region, along with the perceptions of Police Scotland officers from the North Command Area of the National Motorcycle Unit. Consideration is also given to further training that motorcyclists have (or have not) undertaken, and to consider the shape of future road safety initiatives in the region.

7.3.1. Public Perspective – the views of Motorcyclists

Respondents were asked to discuss their feelings of both the role and effectiveness of road safety campaigns that are directed at motorcyclists. The responses can be arranged into several overarching themes: (i) positivity; (ii) an awareness of the limitations of such initiatives; (iii) scepticism; and (iv) role of other road users. Each of these themes is covered below.

Positive response

'I'm all for campaigning to promote awareness of and for motorcyclists' (Participant A8)

'It is very good. As an ex-police biker who started Op Zenith and also delivered many BikeSafe sessions, it was a shame BikeSafe stopped but good the Rider Refinement is now on' (Participant A32).

'Useful, most motorcyclists welcome constructive comments and additional training opportunities' (Participant A61).

'Excellent for developing knowledge and skills as a rider' (Participant A65)

'Great idea if helping riders improve their riding skills' (Participant A84)

'Very good, I learned a lot from BikeSafe and went on to complete advance motorcycle test with IAM' (Participant A248).

'I found Rider Refinement to be very beneficial and hugely enjoyable. However, I consider myself a reasonably cautious rider, and feel educating drivers is just as important as improving rider skills' (Participant A253).

'Rider Refinement courses are very effective - and also introduce riders to Police in a non-confrontational manner.' (Participant A405)

'Recent Rider Refinement was great. It helped me to reassess my riding as my IAM test was many years ago. It also put across the message very strongly that the Police want us to be safer riders - brilliant PR!' (Participant A175)

'Raising motorcyclists' awareness of hazard avoidance and improving their roadcraft has to be beneficial' (Participant A246)

'Campaigns such as Rider Refinement and BikeSafe are excellent and provide great knowledge and training from experienced police riders, they also promote further advanced rider training' (Participant A281).

The nature of these responses again aligns with previous research that safety is a high priority for motorcyclists and assimilates with their identity (Musselwhite et al 2012), therefore it is anticipated that there would be a positive response from a section of the survey respondents. In the responses to the survey, there is also an emphasis on words associated with skills building and that therefore assist motorcyclists in maintaining control over their environment (as per Natalier 2001).

Limitations of initiatives

For many participants, there was a sense of positivity about road safety initiatives, tempered with an understanding of the limits of their reach:

'Good for those that actually use them. But some people seem to feel they're 'above' them or they know it already' (Participant A30).

'Ok except the sensible people tend to participate in these initiatives rather than the less sensible people.' (Participant A64)

'Great idea but only a certain type of rider will attend' (Participant A221).

'…the people who attend already have a good attitude. Those who attend probably won't [have a good attitude]' (Participant A232).

'Short, one off courses miss the vulnerable audience. Tend to boost confidence without teaching baseline skills so increasing [sic] risk taking' (Participant A320).

*'…it's a good way to engage with bikers, although there's a percentage who will never want to be engaged with and only enforcement can deal with them' (*Participant A32).

'…those who take safety seriously already do…it's those that don't that we need to reach out to…' (Participant A64)

'Police involvement in these events, while it clearly has a place, is probably enough to put some sections of the community off. This should be considered in future. Police motorcyclists are not the only advanced motorcyclists.' (Participant A327)

'There are idiots on the road, a campaign won't do much for these people most of the time. Unfortunately experience and sometimes loss are what does [sic] most impact' (Participant A192).

'As an older rider with many hours experience, I am appalled at the level of riding ability demonstrated by some riders. The cry in the biker community would be against four-wheeled road users and their failure to look out for bikes; undoubtedly this is a valid point, but some riders need to realise that having a very fast, large capacity road bike, and using it to its full potential on the roads in the north east, WILL bring them into potentially fatal) conflict with other road users. The riders who suffer this fate would be the very same who think that they know better, and who would tend to disregard any of the above targeted road safety campaigns' (Participant A313).

The idea of riders who are 'hard to reach' is a theme that comes out in both the public questionnaires and in Police Scotland officers' responses. It is also a theme contained within the literature, that frequently the individuals who would benefit most from participating do not engage (Ormston et al 2003) and was therefore an expected outcome of the research.

Scepticism

Some respondents demonstrated quite a high level of scepticism around road safety initiatives that are aimed at motorcyclists:

'They're purely speed enforcement campaigns, I'm not aware of training being offered, or anything else. More speed cameras won't make me a better rider' (Participant A52).

'I welcome them as long as they are not used as witch hunts towards motorcyclists, and they raise public awareness of bikes' (Participant A94).

'Can be very condescending' (Participant A129).

'The reality is the majority don't have much trust in the police so don't get involved'. Motorcyclist [sic] perceive they are often targeted by police especially when the weather gets better' (Participant A134).

'Campaigns like Live Fast Die Young do not resonate with me at all and actually strengthen the impression that public agencies to not truly take the time to understand bikers and how they perceive these messages' (Participant A327)

'Often unproductive, being didactic and condescending' (Participant A405).

'Generally seen as discriminating against motorcyclists through enforcement' (Participant A427)

'I think that some campaigns may convey the wrong message about bikers, and some may feel victimised' (Participant A346).

'I'm unsure how getting pulled over by the police to go over your bike, ask where you've been and where you're going is going to help' (Participant A189).

'Riders know the risks' (Participant A205).

'Part of the fun is riding fast especially on corners' (Participant A261)

'I rely on my many years' experience to try and stay alive, younger less experienced riders I feel will benefit more from campaigns' (Participant A94)

'…Operation Zenith, which is more about generating revenue' (Participant A281)

From the responses above, it can be suggested that there is potentially a misconception around the purpose of road safety campaigns; that their focus is on enforcement. It is suggested that the labelling of motorcyclists in the context of some initiatives can contribute to the creation of an 'us' and 'them' narrative, that is further exacerbated by the power dynamic between motorcyclists and Police Scotland (see commentary in **Section 2.3**; Link and Phelan 2001). Police Scotland are viewed as enforcers and are thus viewed with suspicion. This in turn creates a feeling or victimisation or stigma for the motorcyclist and emphasises the in-group/out-group divide between road users.

Role of other road users

'Every initiative has value if it avoids a single casualty or fatality. Their profile, however, may allow car drivers to assume the entire responsibility for m/c safety lies with the motorcyclist; giving the car driver leave to abdicate their responsibility' (Participant A74)

'They are a valuable part of improving motorcyclists' safety by providing defensive skills but do nothing for the dangers posed by other motorists lack of observation/ability/care…' (Participant A127).

'I can still learn from the safety campaigns but the most danger I'm in, I think, is from other road users not from myself' (Participant A171).

'I think it's a great idea however it seems to have had a negative impact on perception of other road users assuming motorcyclists are the issue' (Participant A176).

'Motorcyclists are not the main concern. Not all riders are perfect, they have their own individual accidents due to carelessness, but when it comes to car drivers not looking for or driving unsafe [sic] around bike riders it can cause far more damage and loss' (Participant A211)

'I believe the road safety campaigns aimed at motorcyclists are good but more needs to be done for other road users. As an ex-motorcycle instructor, I spent most of my day telling new riders to be aware of the vehicle coming to side road junctions who will not have seen you and will pull out. And the vehicle in front who is not paying attention to his mirrors who again will not have seen you and move over just as you are about to filter. A rider can hone their skills and make the best judgment for evasive action to preserve life.' (Participant A87)

'Only so much rider training can teach you in observations and reading road conditions when a distracted or less observant driver pulls out in front at a junction etc. There needs to be more driver safety campaigns on offer with driver refinement courses. I feel that motorcyclists are far more aware of their vulnerability and when offered further training most are usually very keen to participate, with the population of car drivers I don't see this being reciprocated' (Participant A158).

'In my 11 years on the roads I've had one accident, non fault, and have had 100s of near misses, mostly down to other road users (mostly car and tractor drivers)' (Participant A329).

'You can be the best motorcycle [sic] in the world and do all the training courses, advanced riding courses but you can never totally anticipate what other road users are going to do' (Participant A334)

The responses above concerning other road users are insightful in that they provide a valuable understanding of the lived experiences of motorcyclists, while demonstrating the inherent difficulties of the 'in-group/out-group' focus of road safety initiatives described by Musselwhite et al (2012), and as explored previously section (**Section 6.3.2.3**). They are also important in understanding where motorcyclists perceive the greatest risk lies to them. However, as noted by Musselwhite et al (2012), this is a problematic approach that is exacerbated by the 'in-group'/'out-group' focus of some road safety initiatives, that gives a false belief that someone else is responsible for their safety on the road.

7.4. Professional Perspective – the views of Police Scotland Participants

An important component of this research was ensuring that the professional knowledge and experience of motorcycle trained officers from the Road Policing Division attached to the North Command Area was incorporated into the work. Presented below are the observations of these officers on: (i) motorcycle specific initiatives; (ii) the effectiveness of such initiatives; (iii) the relationship between Police Scotland and motorcyclists; and (iv) further training for motorcyclists.

7.4.1. Views on Motorcycle Specific Initiatives

As anticipated, Police Scotland officers emphasised the importance of these initiatives as components of casualty reduction strategies and in highlighting to riders that they are vulnerable road users:

> *'Due to the fact that so many motorcyclists are being killed and seriously injured on Scotland's roads I believe that targeted campaigns aimed at motorcyclists are essential to try to educate and reduce these'* (Participant C1).

> *'It is important given the vulnerability of motorcyclists to ensure those using them are aware of that vulnerability'* (Participant C2).

While some officers expressed support for enforcement initiatives, others noted that pre-emptive engagement and education of motorcyclists was preferable:

> *'I think it is a good idea to have pre-emptive engagement with motorcyclists rather than reactive. The idea of engaging with motorcyclists through road safety campaigns promotes road safety such as the rider refinement scheme which promotes better road positioning, hazard awareness and forward planning'* (Participant C6).

> *'Campaigns that focus on motorcycles is [sic] important due to the fact that they are vulnerable road users in comparison to those in cars or larger vehicles. Having been involved in previous, extensive campaigns, it is evident that enforcement alone will not solve the problem, a multi-agency approach which involves the community is important as it is evident that one plan will not cover the whole country as each area will have their own specific motorcycle related issues, whether it is speeding, volume of traffic, noise related or all of these. By getting others involved, funding streams can be made available to get more road policing officers on duty (via funded overtime) to specifically target the problem in which the overtime was made available for.'* (Participant C8).

Finally, it should be noted that one officer felt there was a risk of 'initiative fatigue' and that officers should be allowed to use their judgement to achieve the same objectives:

> *'There is a time and a place for such things. There is a tendency to fatigue officers with too many endless 'initiatives' to the detriment of just doing their job which if they were left alone to do, would end up targeting their attention to the right places at the right time anyway.'* (Participant C10).

7.4.2. Effectiveness

Police Scotland respondents offered differing perspectives on the perceived effectiveness of road safety initiatives concerned with motorcyclists. Aligning with the comments of many of the motorcyclists who responded to the survey, the difficulty of engaging with riders who are hard to reach was noted:

> *'…the difficulty is that from my experience the riders that we need to attend these courses do not attend…We need to find a way of attracting riders who take risks and need to be taught how their actions could affect themselves and others'* (Participant C1)

The same respondent later reiterates that, in respect of Rider Refinement North:

> '*…our target/required audience is not attending these courses in their current format.'* (Participant C1)

As noted above, there are groups of riders for whom road safety initiatives will have limited appeal. This is something that both members of the public and Police Scotland officers commented upon and is an area that presents a significant challenge and has been discussed in previous literature (Ormston et al 2003). One officer acknowledged that language was important in communicating the message about initiatives to motorcyclists:

> *'I do not like the word 'targeting' as such, motorcyclists are road users like any other motorist and I feel that motorcyclists get a bad press, you will never be able to educate or influence everyone, but I find good positive interaction, for example Rider Refinement North is a prime example of good communication with bikers and has always received great feedback. I think more education rather than enforcement is needed.'* (Participant C4)

While another commented that, *'…bikers respond better to Police bikers, not Police car drivers'* (Participant C7), tapping into this idea of identity and community that was discussed earlier in this report.

Finally, a route that was mentioned by respondents in a previous evaluation of BikeSafe Scotland (Ormston et al 2003) and by one of the Police Scotland respondents to the current research (Participant C1), was the potential for alternative to prosecution initiatives to be developed for motorcyclists. Although support exists for such initiatives, concern has been expressed about such initiatives is the potential conflict that is present should they be delivered by Police Scotland officers and that instead, they should be delivered by an independent civilian organisation (Ormston et al 2003).

7.4.3. Relationship between Motorcyclists and Police Scotland

Police Scotland participants commented on the importance that effective engagement can have on improving relations between motorcyclists and Police Scotland. Several officers commented on the ability of initiatives to break down barriers between Police and motorcyclists and the benefits this can bring:

> *'I think Rider Refinement North breaks down the barriers between police motorcyclists and the public…'* (Participant C1)

> *'Positive initiative it breaks down barriers between Public and Police and also introduces important aspects of rider safety from credible practitioners of motorcycling'* (Participant C2)

> *'They break down barriers with the motorcycling public, they provide a relationship between the police and motorcyclists that otherwise would not be there and they see the police bikers as real people as a result.'* (Participant C7)

Other officers reflected on the positive perception the initiative had created and the benefits this has brought both in terms of building the relationship between Police Scotland and motorcyclists but also as an educational tool:

> *'[Re Rider Refinement North] This has been a major success. Every time I am on patrol on a motorcycle I get asked by motorcyclists when the next course is. It is highly popular and it builds a good relationship between the police and members of the public' (Participant C5)*

> *'I believe that they have a very strong relationship with the public as engagement and education can go a very long way to assisting in the reduction of casualties.' (Participant C13).*

Finally, another officer noted the role such initiatives have in reducing the 'in-group/out-group' tensions mentioned above:

> *'They provide a place for Police to interact in a constructive way with the public and perhaps helps add to the idea that the Police are not just out to get everyone. Perhaps contributing more to a shared societal responsibility that we should all be doing what we can to keep the roads safe.' (Participant C10)*

Overall, Police Scotland respondents were overwhelmingly positive about the benefits initiatives such as Rider Refinement North can bring to improving relations between Police Scotland and motorcyclists and breaking down barriers.

7.5. Further Training

7.5.1. Types of Training Undertaken

Research participants had participated in a wide variety of initiatives with **153 respondents (34.5%)** indicating that they had participated in some form of further training since passing their test.

Respondents were encouraged to include any sort of additional instruction received and the type of training listed by research participants was diverse in its scope. For example, from formal qualifications associated with employment (IAM First, RoSPA Gold), to road safety initiatives such as BikeSafe and Rider Refinement North. Other respondents also mentioned having undertaken road race training, formalised trackday instruction (e.g., Ron Haslam Race School), and off-road training.

Some riders also speak of improving skills through reading books (e.g., Police Roadcraft) or watching YouTube to gain deeper understanding: *'I have also watched many YouTube tutorials which I find have better explained how a bike reacts to certain rider inputs'* (Participant A45)

7.5.2. Perceptions of Further Training and Rationale for (Non)Participation

Respondents were asked to describe why they had: (i) elected to undertake further training; or (ii) elected not to undertake further training. The purpose of this section of the survey was to understand the barriers and motivators to undertaking further training and to gather information on perceptions of the utility of such training.

Many respondents conveyed positivity about their experiences of further training:

> *'More confidence and skill as a rider'* (Participant A13 – Rider Refinement North)

> *'Self preservation, better road craft'* (Participant A19 – IAM RoadSmart)

> *'Needed it for my job, But I wanted to regardless seeing how much better other riders were after completing their training.'* (Participant A30 – intensive local advanced course; intensive national advance course; local IAM instruction).

'I am an authorised advanced Police driver. I appreciate the advanced motorcycle training is of great benefit, due to previous training I recognise risk and threat and react sooner than those who haven't undertaken any training.' (Participant A58)

To rider safer [sic] on the road as well as increasing the control level of my motorcycle. formal track day instruction is far more beneficial for motorcycle control as the motorcycle is more towards its limit whilst in a safer environment. (Participant A158 - Institute of Advanced Motorists Motorcycle and Car training and assessment.)

'To improve my riding and bike control in a safe environment with professional tuition.' (Participant A128 – Ron Haslem Race School)

'Riding safely is not all about not going fast it is about controlling and anticipating risk. The IAM course is based on the police training and produces a rider which is more confident at identifying and managing risk and hazards on the roads.' (Participant A285 – IAM RoadSmart)

'Improve my skills / confirm that I have them.' (Participant A383 - Private training day courses, BikeSafe, Rider Refinement North)

'I raced off road for a number of years and had expert tuition from SACU accredited instructors. Much of what I learned was directly applicable to riding on the road.' (Participant A420 – training not specified)

For many respondents, practical constraints such as time and money were significant factors in their ability to undertake further training such as IAM RoadSmart. However, many individuals expressed feelings around the applicability and utility of such training. For example:

'I consider, having a grounding in off road motorcycle use from an early age and many thousands of miles on a motorcycle, that my road craft and bike handling are excellent. I am a very safe and alert rider. It seems quite patronising that motorcyclists are targeted as the road users that require extra training when it's often the case that other road users are to blame for the accidents.' (Participant A100 – no further training).

Participant A100's comment is representative of many respondent's feelings towards further training and the underlying rationale for not seeking out such opportunities, due to the role that lived experience plays in shaping knowledge and understanding. Similarly:

'I like to think after 12 years of safe riding I would be able to class myself not requiring the need for advanced training' (Participant A33 – no further training)

'More training for me does not make a car driver see me' (Participant A27 – no further training)

'The DVSA training and certification is very comprehensive. I'm not a racer so at the present time I don't think I warrant further training. Much like I didn't take further training when I passed my car test.' (Participant A321 – no further training)

However, for some participants, it was their own lived experiences that motivated the pursuit of further training:

'I was prosecuted for dangerous riding and wanted to improve the standard of my riding and become a safer rider. I enjoyed the training and noticed an improvement in my riding so have continued to attend further courses, retest (IAM) and became part of groups that promote rider safety.' (Participant A82 - BikeSafe and IAM Advanced Riding).

'As a motorcyclist since 16 years of age, mainly track riding until 1996 when I decided to ride on the roads (dangerous place not everybody going the same direction) I had only one accident non blameworthy which made me apprehensive about riding on the road again. I decided to become a bike instructor to pass on my experience and how to avoid possible collisions. Then my son followed in my footsteps and wanted a bike. He passed his test at 17 bought a 600cc sports bike and that's when I booked us both on a Bikesafe course to make sure he had a good idea how to ride safely and correctly under supervision from a police motorcyclist. We both left at the end of the day with better roadcraft and riding knowledge' (Participant 87 – BikeSafe x 2)*

'I was not happy with my riding ability and having too many near miss events.' (Participant A136 – IAM RoadSmart)

'Non fault accident but wanted to improve skills to spot situations before I get hurt' (Participant A214 – BikeSafe)

'High sided on a diesel spill loss confidence' (Participant A268 – training not specified)

'My realization that I didn't have the talent to properly ride my bike. I stepped up from a 250cc single to a 4 cylinder 1000cc bike with a layoff of 10 years in between.' (Participant A393 - IAM, RoSPA, Bike Safe & Rider Refinement)

7.6. Suggestions for Future Change

7.6.1. Views of the Public

An important part of the research is also understanding how motorcyclists think they can best be served by future road safety campaigns. In common with emergent themes across the research, many participants felt that other road users should be part of any future initiatives:

'More could be done to educate all road users, not just motorcyclists' (Participant A17)

'Car drivers could benefit from highlights awareness of other road users – not only motorcyclists' (Participant A61).

'…Riders can be their own worst enemy and, given the seasonal nature of many people's riding we need to remind people every year about how to ride safe. However riders are more vulnerable than many other road users and so will come off badly in any collision. We need to educate other road users of the importance of generally good driving and looking out for vulnerable road users including motorcyclists, cyclists, horse riders, etc.' (Participant A82)

An important theme that emerged from this section was the perception that more needed to be done to raise awareness of motorcycles and motorcyclists:

'The campaigns want riders to ride safety and be able to read the road ahead BUT more should be done to target car drivers' awareness…' (Participant A11).

'Something targeting car drivers to raise awareness of motorcyclists (and cyclists) could be more beneficial I think' (Participant A79).

'…I think there needs to be a focus on non motorcyclists [sic] awareness of motorbikes. Most motorcyclists are already aware of the dangers of the road and other road users but not so much other road users have good awareness of motorbikes on the road. Personal experience of near misses proves this' (Participant A 107).

'The Think Bike/Think Biker campaign should also be pushed more. It really hits home that bikers are real people' (Participant A342).

'…other road users to understand the significant differences between riding and driving' (Participant A137).

This sense that other road users should be involved is a theme that is present elsewhere in this research. It is suggested that this emphasises the need for there to be greater parity in road safety initiatives to ensure that as a society we are gradually moving towards the 'mode neutral' policy of road user education (Motorcycle Safety and Transport Policy Framework). There are clear benefits in terms of reducing the stigma associated with motorcycling in adopting this approach, as explored in **Section 2.3** above.

7.6.2. Views of Police Scotland Participants

Police Scotland respondents indicated the potential for several road safety initiatives they felt could be of benefit to motorcyclists. As follows:

- **Road shows/public engagement events** (Participant C1; Participant C6; Participant C7; Participant C9; Participant C10; Participant C11)
  - 'I just feel more positive interaction is required between Police and motorcyclists in general' (Participant C4)
  - 'Perhaps a road show / police stand to go to events throughout the year, where the police are approachable and there to offer help and advice to bikers who would otherwise perhaps not engage with the police' (Participant C7)
  - 'For our area we discussed having a meet at Ski centre carparks. The Lecht and Glenshee. This included a local motorcycle dealership offering to show some bikes to help draw people to stop. Police Bikers to have a blether with and give advice. There was also the potential for some of the AIM Motorcycle Group to attend to promote advanced riding' (Participant C9)
  - '…promoting safe riding and road safety not only for bikers but heightening motorcycle safety to non-bikers' (Participant C4)
  - 'We could break down some of the barriers created with more initiatives. Bikers like to blether with likeminded people whether they are police or not.' (Participant C9)
- **Unmarked motorcycles** (Participant C1)
- **Hazard perception training for motorcyclists** (Participant C2)
- **Dedicated teams on key motorcycle routes** (Participant C5; Participant C10)
  - 'I think a dedicated police motorcycle team should be created in the North to carry out patrols on motorcycle routes. This is to engage and interact with all other riders to promote road safety and increase relationships between the police and members of the public' (Participant C5)
- **Working with local motorcycle dealers** (Participant C4; Participant C10)
  - 'I think we should liaise with local motorcycle dealerships to provide 'drop in' days where Police are on site at a dealership to offer advice and information regarding safer riding (Participant C4).'
  - 'More proactive work could be done with bike dealers, with the opportunity through them to break down some barriers' (Participant C7)

However, there was an awareness that resources are a barrier to implementing current initiatives:

'I think that largely the right sort of things are being done, the Police just do not have the resources to do them to their full effect. If there were more officers available then more patrolling could be done, we could be on more major routes at the same time or more areas where motorcyclists are likely to be. If we had more Police motorcyclists we could have more positive interactions with

more motorcyclists, provide more high visibility deterrent, even provide more rider refinement spaces etc.' (Participant C10).

This is not a new issue and was reported in the prior evaluation of BikeSafe Scotland (Ormston et al 2003).

8. COVID-19 and Motorcycling

The originally contemplated timescales for this research were interrupted due to the COVID-19 pandemic. The opportunity was taken to undertake some additional motorcycle-specific research into the experiences of motorcyclists during the pandemic. This focussed on: (i) whether riders had used their motorcycles during the lockdown periods; (ii) their experiences of riding during this time; (iii) understanding their approaches to risk; and (iv) gathering information on perceptions of the road network during a period when repairs/maintenance were severely restricted. This section presents the findings of this research and explores how they complement and support the original research objectives.

8.1. To ride or not to ride?

For riders who chose not to ride their bike during the lockdown period, this was broadly due to the following reasons:

- Practical – expired MOT/bike in need of repair/SORN applied to bike
    - '*My MOT expired before lockdown commenced*' (Participant B39)
- Potential impact on the NHS if involved in a collision
    - '*Unwilling to be a possible burden to NHS resources in the event of an accident*' (Participant B16)
- Compliance with Scottish Government guidance
    - '*Not deemed an essential trip, my bike is typically only used for fun*' (Participant B87)
    - '*Found reading comments on social media made me feel angry and that many chose to ride. I actually removed myself from many motorcycle related groups and also removed people from my friends lists*' (Participant B50)
- Risk perception – either behaviours of other road users or not feeling safe to do so
    - '*The standard [of] driving throughout lockdown has been horrendous*' (Participant B24)

The question of risk perception is present here too, with participant B24 focussing on the behaviour of others presenting a material risk to their safety. This aligns with findings elsewhere in this research in relation to risk and motorcycling (see Section **7.2.4**)

8.2. Experiences of Riding during the Pandemic

Of those participants who reported riding their motorcycle during the lockdown period, the responses conveyed two clear themes: one of caution, and one of wellbeing.

'Wary that my skills are not as well tuned as they feel when riding regularly. During the earlier spells of lockdown, I had witnessed a change in driving habits so have remained more cautious.' (Participant B13).

'If anything I felt a bit more aware of the road surfaces and other road users as less attention seemed to be paid [sic] by car drivers' (Participant B19)

'Somewhat apprehensive given the long time off the bike. I had done a thorough check on my bike and equipment before heading off but knew I'd be 'rusty'. The increase in people out walking and cycling, and the occasional car travelling well in excess of the speed limits creates new hazards on the road which need to be observed and acted on. Despite all that it was a pleasure to get out on the bike again even if only for fairly short journeys.' (Participant B46)

'When there was much less traffic, cars seemed to be more erratic and more prone to unusual manoeuvres (pulling out, sudden u-turns, poor lane discipline) perhaps as they assumed there was less reason to be careful. I did enjoy the quieter roads though, although the there was

more loose debris, sand/stones etc on the road a from lack of use which I had to take into consideration - especially on roundabouts' (Participant B122).

'Less traffic was good but I found driving standards were lower than usual so additional care was required.' (Participant B187)

As in **Section 8.1**, survey respondents displayed similar approaches to risk as is evident elsewhere in this research (**Section 7.2.4**) and elsewhere in the literature (Natalier 2001). Linking with previously explored themes of identity and self (**Section 7.1.2**), several respondents also reported the impact that riding their bike had on their overall wellbeing.

'A great sense of freedom. Motorcycling is a great distraction and a way to de-stress from working at home. It balances work, home life and pleasure.' (Participant B40).

'Riding my motorcycle has been an antidote to the claustrophobic element of lockdown. I believe it has been very good for my psychological well-being.' (Participant B42)

'Riding has helped my mental health during this time to bring a sense of hope for normality' (Participant B69)

'It has been good for my mental health' (Participant B229)

'I find driving my bike therapeutic helping my mental state through several episodes of depression over the years. It allows me time on my own, to think things through while enjoying the drive, the scenery and enjoying the comradery of fellow likeminded people.' (Participant B251)

'It is an important part of my mental health to deal with anxiety and stress.' (Participant B274).

These findings further reinforce the data discussed earlier in this report (**Section 7.1.1**) in relation to the experiential quality of motorcycle riding and the importance that riders attach to this aspect of motorcycling.

8.3.   Perceptions of Safety

The responses can be categorised into two themes: (i) a feeling of safety induced by a reduction in traffic and therefore perceived risk; and (ii) a feeling of caution induced by the behaviours of other road users.

Feelings of safety

'In terms of personal safety, I felt more safe [sic]. There was a marked reduction in traffic. However, there was a lot of negative local media in terms of motorcycles being out and I felt I was being judged by other road users who clearly had no idea that I was commuting. For that reason, I probably made my riding as safe as possible not to attract negative attention, although I already consider that I am not a risk taker.' (Participant B180)

'There is an appreciable drop in road use from cars, vans and trucks. As the principal dangers come from cars, I have been able to enjoy the riding more, and have used the hiatus in road use to ease myself back into good habits and techniques.' (Participant B42).

Feelings of caution

As before, the feelings of caution expressed by survey respondents related to the behaviours of other road users and the risk that this posed to them personally, again further reinforcing the data elsewhere in this report (**Section 7.2.4**):

> *'Too many drivers engaged in inappropriate speeding due to quiet roads (Risk Homeostasis?) and drivers with no observation skills.'* (Participant B16)

> *'I have however noticed a greater frequency of drivers taking the 'racing line' on corners and on more than one occasion had a close call with an oncoming car on the wrong side of the road.'* (Participant B29)

> *'Although roads were quieter, the cars using the roads were travelling beyond the speed limit regularly. I also noticed a lack of lane discipline and vehicles pulling out of junctions in front of oncoming traffic.'* (Participant B48)

> '*Really shocked at the deterioration in road behaviour and driving standards across the board - no policing, speeding, unable to maintain their road position'* (Participant B66)

> *'…felt that some road users were oblivious to it all too and out of practice after a few months of not driving.'* (Participant B129)

> *'Less traffic means more debris on roads, roadside vegetation over grown and even less observation from other road users.'* (Participant B239)

8.4.   Approach to risk

Most respondents reported no change in their response to risk:

> *'In theory I ought to be more conscious of the consequences of a traffic accident, since requiring medical care might expose me to greater infection risk, but I ride with a heightened sense of awareness at all times because of the inattentive stupidity of so many road users.'* (Participant B32)

> *'There will always be an increased risk with motorcycling over driving. My risk mitigations have not changed; I ensure the bikes are in first-class condition, I do not use loud exhausts, I do not listen to music, or have a phone earpiece when riding, I wear appropriate clothing, and I never over-reach the capabilities of myself, or the bike I am riding. I suspect that the next accident I have will be my last on a motorcycle (I am 64 years old), so I do not take unnecessary risks, and as far as possible, try to read situations as they may develop.*' (Participant B42)

Those respondents who did report a change were focussed on the following:

- **Consequences of risk**
  - *'Became more aware of consequences of the risk, i.e., not just the risk of an accident but the risk to others and NHS resources. Conversely, as only essential journeys were to be made in early stages of lockdown, the roads should have been safer for motorcycles, as I see the risk as being from other road users, not my own actions'* (Participant B26)
  - *'I had concerns, if I was involved in an accident and required hospital treatment, I would be using valuable time the NHS might not have due to the pandemic'* (Participant B48)
- **Steps to mitigate risk**
  - *'I've taken less risks, and not been riding for pleasure'* (Participant B29)
  - *'… I'm more conscious of the burden my choices might make on the NHS. I'm probably more risk averse than the average motorcyclist regarding other road users, but I have*

found myself backing off a bit during riding to mitigate against single vehicle driver error RTC risk.' (Participant B160)

o *'Many riders will have had a longer break or much reduced riding time. IAM and other organisations (including insurers) are reminding riders to be aware of the potential impact and to practise their skills. I feel that to great extent readers of these messages are hearing 'preaching to the choir' and those who need to heed the warning may overlook the message.'* (Participant B6)

8.5. Quality of the Road Network

Comments in relation to the quality of the road network broadly relate to concerns around road surface quality and visibility at points on the network (e.g., junctions and bends). There was a mixed response as to whether this was any different to normal, with some respondents commenting that lockdown had made little difference to the quality of the network and others reporting a deterioration. It is suggested that experiences of respondents will naturally vary across the geographic area of the North East of Scotland and that neither perspective diminishes the validity of the other.

Unsurprisingly, given the concerns around surface dressing detailed above, a significant area of commentary in the responses was also devoted to the delay to surface dressing activities in the region. For example:

'The one massive improvement in terms of safety on a motorcycle was the distinct lack of surface dressing throughout this period. This is without a shadow of a doubt the thing I dread most on my bike.' (Participant B44).

Road Surface Quality

The comments in relation to road surface quality generally echoed those detailed above and are of relevance given the single-track nature of motorcycles (see **Section 2.1.1**). Some comments of note were as follows:

'…lower volumes of traffic have allowed debris to build up at junctions on centre lines' (Participant B79)

Lack of maintenance impacts more on bikers than car users as little skill is involved in driving a car compared to riding a motorcycle.' (Participant B56).

'Some roads have been terrible with potholes everywhere' (Participant B77)

'Less surface dressing has improved the quality of roads for motorcycles, potholes etc has caused the usual problems that existed prior to lockdown although less traffic has allowed more time and space to re-act to be able to avoid.' (Participant B114)

Visibility

Several respondents to the survey noted that the lack of verge maintenance and grass cutting had negatively impacted on visibility:

'Grass cutting has stopped so some junctions are now poorly sighted' (Participant B3)

'…hedgerows and trees becoming overgrown at the sides of some B roads' (Participant B11)

'…verge trimming causing more blind spots' (Participant B19)

> *'Verge cutting is less [sic] and road signs are obscured. Sight lines are reduced again due to overgrowth of vegetation' (Participant B40).*

However, one respondent noted that, *'Some overgrown trees and verges restrict vision but that's easily countered by adjusting speed and position to match visibility'* (Participant B46).

8.6.   Conclusions

This COVID-19 specific research captured the lived experiences of motorcyclists in the North East of Scotland during a period of significant social change. The experiential element of riding that was explored in **Section 6.3.1** is also evident in **Section 7.2**, where riders emphasise the wellbeing aspects of riding a motorcycle and how this benefited their mental health during lockdown. This further emphasises the meaning that is ascribed to motorcycling that goes beyond purely utilitarian concerns and so informs how motorcyclists should be framed in policy initiatives.

Section 7.3 and **Section 7.4** are instructive in that they add further information to the picture of risk and risk perception by motorcyclists. As with the prior discussions of risk in this report, the approach to risk is one that fixes on the actions of others and their own knowledge, rather than any objective assessment of risk provided by an external source. It is suggested this is of particular significance, given the risk amplification present in the media around the pandemic that was being communicated via the media. It is the motorcyclists' lived experiences that frame their behaviour and perceptions and construction of risk. This is evident through the number of respondents who reported no change in their response to risk because of the pandemic, and considerations of the consequences of riding their motorcycle during the pandemic.

Finally, it is suggested that the research has a practical application for local authorities in providing an insight into potential areas of concern across the road network. For example, respondents' observations in relation to quality of the road network in **Section 7.5** where specific concerns that can impact motorcyclists are explored. However, it should be noted that the nature and type of concern reported differed very little to concerns reported in the original survey, except for commentary around visibility.

9. Conclusion and Recommendations

9.1. Overview

This aim of the research was to evaluate motorcycle-specific road safety initiatives in the North East of Scotland.

To achieve this aim, the following objectives were established.

- **Objective 1:** bring together existing data, policy and background information held by Police Scotland and agencies involved with the North East Scotland Road Casualty Reduction Strategy on targeted motorcycle safety initiatives deployed by Grampian Police/Police Scotland in the North East of Scotland. Specifically: Operation Zenith/Bike Safe and Rider Refinement North and engineering approaches including targeted road signage.
- **Objective 2:** to apply this data to an analysis of the effectiveness of targeted road safety campaigns on motorcycle safety in the North East of Scotland
- **Objective 3:** based on this initial analysis, to propose research-based objectives capable of influencing the development of road safety initiatives in the North East of Scotland and identify future areas of research.

The research design outlined in **Section 3** above enabled the first two objectives of the research to be addressed as follows:

(i)   Synthesising academic and professional publications from relevant sources allowed for the identification of several key themes in the literature of: (i) the role of motorcyclists in their own safety; (ii) the role of car drivers in motorcycle safety; and (iii) stigma and associated concepts (**Objective 1**)

(ii)   The use of primary data to provide an understanding of the lived experiences of motorcyclists and the professional knowledge and understanding of motorcycle trained officers from the Road Policing Division to construct an analysis of targeted road safety campaigns on motorcycle safety in the North East of Scotland (**Objective 2**).

In setting out the results of the research, the preceding sections (**Sections 7** and **8**) established that several key themes were influential in the effectiveness of road safety initiatives designed to reduce motorcyclists' involvement in serious and fatal collisions:

- Motorcycling, self, and identity
- Stigma and being an 'out-group'
- The role of other road users
- Approaches to risk
- External factors – road surface conditions
- Structure of future initiatives

The remainder of this section will fulfil the ambition of **Objective 3** by drawing on key research findings to propose research-based objectives capable of influencing the development of road safety initiatives in the North East of Scotland and identify future areas of research.

9.2. Conclusions and Recommendations

The final objective of this research is to make research-based objectives capable of influencing the development of road safety initiatives in the North East of Scotland and identify future areas of research (**Objective 3**). These objectives are based on the preceding Sections and are presented in the form of recommendations below.

9.2.1. Motorcycling, self, and identity

As demonstrated by both the data above and in common with previous research undertaken (see **Sections 7.1.1** and **7.1.2**) the act of riding a motorcycle carries with it significance for the sense of identity of an individual that is important for considering how to engage with motorcyclists. Specifically, the idea of the physical object of the motorcycle acting as an anchor is important when considering how to engage with motorcyclists. It suggests that being perceived as part of the community – through knowledge and understanding of the lived experiences of motorcyclists – may offer an advantage (see **Section 7.1.1**). This approach is also reinforced by comments made by motorcycle trained officers from the Road Policing Division with respect to the relationship between Police Scotland and motorcyclists (see **Sections 7.4.2**, **7.4.3**, and **7.6.2**).

Therefore, it is **recommended that motorcycle trained officers from the Road Policing Division should be prioritised for participation in engagement strategies with motorcyclists [Recommendation 1]**.

It is also **recommended to explore 'stop and blether' engagement initiatives such as road shows that involve civilian participants (e.g., local motorcycle dealerships), alongside motorcycle trained officers from the Road Policing Division are explored to use the shared experience of motorcycles and motorcycling to introduce the topic of road safety and promote further training opportunities [Recommendation 2]**

9.2.2. Stigma and being an 'out-group'

It is suggested that caution needs to be exercised around the message that is communicated to motorcyclists and the wider public about road safety initiatives, whether that is directly from Police Scotland or disseminated through the media. As noted in **Section 2.3**, the socio-cultural representations of motorcyclists, their depiction in the media, and the power that media messaging represents, can have a contributing factor to the perpetuation of stereotypes and hence stigma surrounding motorcyclists. A motorcycle trained officer from the Road Policing Division identified these issues as acting as barriers to effective engagement (**Section 7.4.1**). Such approaches also risk alienating motorcyclists due to imbalances in power that are created with the Police (see **Sections 2.3** and **7.3.1**) Furthermore, it could potentially impact on the empathy shown by other road users towards motorcyclists (see **Sections 2.2.2** and **7.2.3**).

It is recognised that for some motorcyclists, enforcement will be the only viable option. It is also acknowledged that speed remains a contributing factor in motorcyclists' involvement in RTCs and irresponsible riding. However, the stigma which can attach to motorcyclists through the emphasis on speed enforcement campaigns can act as a barrier to positive engagement with the broader motorcycling community and its willingness to engage with focussed initiatives (see **Section 7.3.1**). Therefore, it is **recommended that a more nuanced approach is adopted in communicating the purpose of road safety initiatives, prioritising engagement, and education over enforcement [Recommendation 3].**

9.2.3. The role of other road users

The role of other road users has been a recurring theme throughout this research (see **Sections 7.2.3**, **7.3.1**, **8.1**, and **8.3**). As previously observed (**Section 2.1.4**), motorcyclists rely on their own lived experiences (knowledge) over 'expert' knowledge. To the motorcyclists whose responses are listed above, their experiences of other road users' actions is a more reliable source of knowledge than information conveyed via road safety campaigns. Hence, to overcome this potential barrier to engagement, it is suggested that effort is directed to co-ordinated campaigns that highlight motorcyclists to other road users, while simultaneously seeking to engage motorcyclists (as stated above in **Section 7.3.1**)

It is suggested that to avoid the creation of further divisions between road users (in-group/out-group tensions), simultaneous road safety campaigns are run aimed at both road users generally and

motorcyclists. This could take the format of encouraging road users to be aware of motorcyclists and their specific needs, alongside Rider Refinement North style initiatives that promote skills development, hazard perception, and forward planning for motorcyclists. This is an approach that is supported by the literature (for example, Musselwhite et al 2012) and it is suggested that it could reduce some of the tensions between these distinct groups of road users and promote responsible use of the road network by all road users (see **Section 7.2.3**).

It is therefore **recommended that parallel road safety initiatives are co-ordinated that seek to expand education to other road users to raise awareness and understanding of motorcycles and promote responsible sharing of road space [Recommendation 4].**

9.2.4. Approaches to risk

In common with previous research (Sexton et al 2006), it does not appear that individual bikers underestimate the risks of motorcycling. Rather, that risk is conceptualised in a different manner than would perhaps be objectively expected (see **Section 7.3.1**). Rather than relying on expert knowledge to form the basis of their individual risk assessment, motorcyclists instead rely on their lived experiences and reliance on systems of control to neutralise risk (**Sections 2.3** and **7.3.1**)

In parallel with existing research (Sexton et al 2006), it is also evident from the findings above that participants were committed to riding motorcycles and that nothing would impact on their desire to do so. This is particularly evident from the findings obtained from the COVID-19 dataset (see **Section 8**) as well as the main findings (**Section 7.2.4**). It is suggested that the findings of the present research correspond with Natalier's (2001) interpretation of risk and therefore that risk-based initiatives are not the best use of scarce resources. This is also supported by the wider literature too (Sexton et al 2006).

Therefore, it is **recommended that initiatives that build on motorcyclists' lived experiences of riding and seek to develop riders' skills and improve riders' roadcraft, are favoured over risk-based or enforcement-based campaigns [Recommendation 5].**

9.2.5. External factors – road surface conditions

Although not directly connected to road safety initiatives, the vulnerability of motorcyclists to changes in road surface conditions is of significance to this research as it has been identified as a contributor to common motorcycle collisions (**Section 2.1.2**). Also of relevance are the expressions of concern about this aspect of their riding experiences, as noted by research participants (**Sections 7.2.1** and **8.5**).

While it is appreciated that surface dressing is advocated as a cost-effective option for preserving the road surface; local authorities should be mindful that a road which is appropriate for a four wheeled vehicle to travel on safely, may not be appropriate for a motorcycle. Due to the single-track nature of motorcycles, they are inherently vulnerable to surface changes and substances that can cause a loss of traction and diminished adhesion. These points are of relevance when surface rolling and sweeping are conducted within a broader programme of surface dressing (see **Section 7.2.1**) Therefore, it is **recommended that local authorities raise awareness with their officers of the unique hazards that engineering, and road surface conditions can present to motorcyclists so that appropriate mitigating measures can be taken [Recommendation 6].**

9.2.6. Structure of future initiatives

From the positive responses of both the public (**Section 7.3.1**) and the motorcycle trained officers from the Road Policing Division who engaged with our research (**Section 7.4**), it is evident that motorcycle specific initiatives have a continued place in the broader programme of road safety education in Scotland. The statistics presented in **Section 6.1** indicated a good general level of awareness of these initiatives by motorcyclists.

Many research respondents indicated the value opportunities such as BikeSafe Scotland and Rider Refinement North present to gain practical skills and knowledge (**Section 7.3.1**). Police Scotland officers emphasised the importance of initiatives considering the vulnerable nature of motorcyclists and the opportunity to be pro-active rather than reactive in their engagement with motorcyclists (**Section 7.4.1**). Critically, there has also been a sustained reduction in both fatalities and motorcyclists suffering serious injuries in collisions in the region (**Section 5.1**). While it cannot be claimed that improvements in KSI statistics are solely related to road safety initiatives, it is suggested that the continued reduction is persuasive.

The recent Rider Refinement North initiative has been singled out in its approach to rider engagement, rider awareness and rider skills building. Crucially, Police Scotland respondents were overwhelmingly positive about the benefits initiatives such as Rider Refinement North can bring to improving relations between the Police and motorcyclists and breaking down barriers (**Section 7.4.3**). It is suggested that the content of such initiatives should be regularly reviewed, with reference to the existing knowledge and understanding around the perception of risk by motorcyclists, to ensure that the information conveyed has maximum effect. Furthermore, it is suggested that data sharing, and trend analysis are also an important part of understanding KSI statistics and that the new Local Partnership Forums are an appropriate venue to facilitate this vital information exchange and further support this regular review of initiatives.

Therefore, it is **recommended that initiatives such as Rider Refinement North should form the basis for future campaigns promoting motorcycle safety in North East Scotland [Recommendation 7].**

An established goal of initiatives such as BikeSafe and Rider Refinement North is to encourage riders to undertake further training. It is acknowledged that there is some difficulty in converting attendees to Police Scotland sponsored initiatives into participants in training opportunities such as IAM RoadSmart. However, the literature demonstrates that advanced training has a positive impact on road safety, even when concerns around increased confidence are considered (**Section 2.1.3**).

Therefore, it is **recommended that work is undertaken to emphasise the benefits of further training to motorcyclists, with a view to focussing on the practical benefits of such training (e.g., skills building) rather than solely focussing on risk reduction and overt road safety messages [Recommendation 8].**

However, it is acknowledged that the target audience of 'hard to reach' riders is not being impacted by such road safety initiatives (see Ormston et al 2003; **Section 7.4.2**). As noted above (**Section 9.2.2**) it is recognised that for some individuals, enforcement will be the only viable option. However, it is suggested that enforcement does little to develop the knowledge and understanding of riders or to assist in the development of experience that can mediate impulses when riding. Based on conclusions drawn in existing research (Ormston et al 2003) and the comments of Police Scotland participants in this research (**Section 7.4**), it is **recommended that further research is undertaken to investigate the potential for initiatives such as Rider Refinement North being offered as an alternative to prosecution for motorcyclists reported to the Crown Office and Procurator Fiscal Service in connection with certain road traffic offences, with related outputs likely being delivered by third-party suppliers as part of a wider road traffic diversionary course programme [Recommendation 9].**

Appendix A – Sample Road Safety Resources from Aberdeenshire Council

Aberdeenshire Council Road Safety Poster – Example 1 (2021)

Aberdeenshire
COUNCIL

From mountain to sea

Motorcyclists in Aberdeenshire – Facts

1% of vehicles on the road are motorcyclists

13% of fatal collisions are motorcyclists

26% of collisions were attributed to inappropriate or excessive speed

60% of all serious or fatal collisions are motorcyclists

★ **Don't take risks**
★ **Be visible**
★ **Wear protective clothing**

roadsafety@aberdeenshire.gov.uk

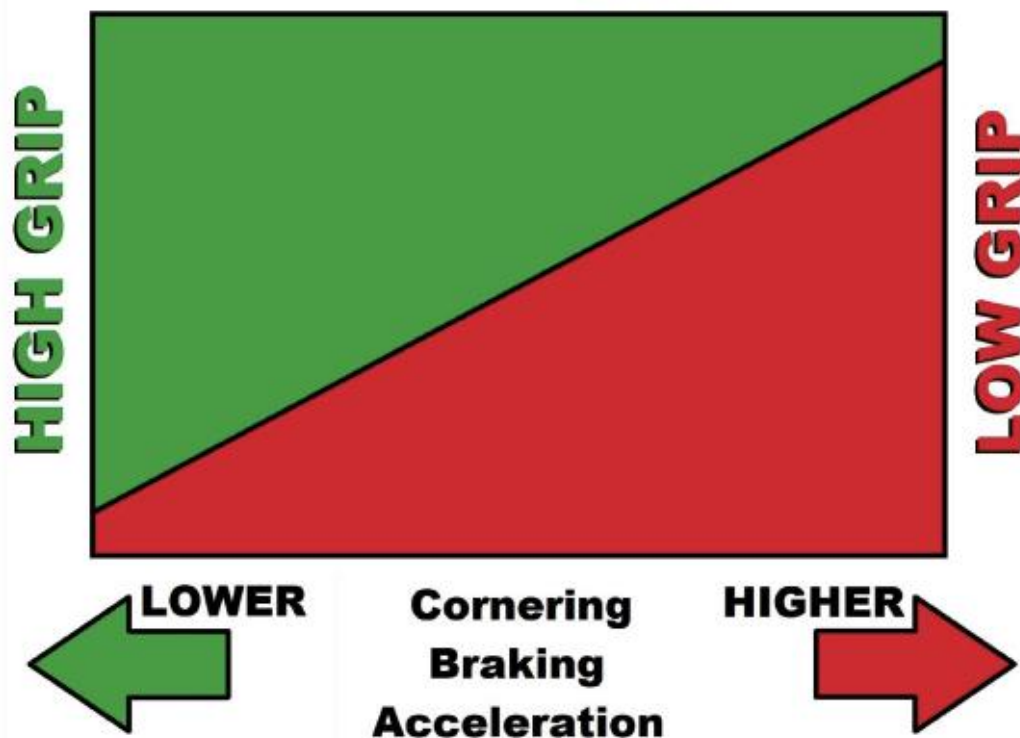**Appendix B – Copy of Questionnaire Surveys used in the Project (excluding pro-forma consent questions)**

Survey 1: July – August 2019 (Members of the Public)

1. Age
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65+
2. Gender
    - Female
    - Male
    - Prefer not to say
    - Other
3. How many years (approximately have you held a full (Category A) motorcycle licence?
4. Do you currently own a motorcycle?
5. How would you describe your motorcycle(s)?
    - Adventure
    - Naked
    - Retro
    - Cruiser
    - Café Racer
    - Sports Tourer
    - Sports
    - I do not own a motorcycle
    - Other
6. What does being a motorcyclist mean to you?
7. What are your main concerns as a road rider?
8. Are you aware of the following safety initiatives? (Y/N answer options)
    - Operation Zenith
    - Rider Refinement North
    - Live Fast Die Old
    - BikeSafe
    - Specific motorcycle warning signage on the A93 Aberdeen-Braemar Road
    - Specific motorcycle warning signage on the B974 Banchory - Fettercairn road
9. Have you participated in road safety events/training offered through the following: (Y/N answer options)
    - BikeSafe
    - Operation Zenith
    - Rider Refinement North
10. What is your opinion of targeted road safety campaigns aimed at motorcyclists?
11. Do you believe that targeted road safety campaigns aimed at motorcyclists are effective in reducing casualties on the roads in NE Scotland? Please explain
12. Have you undertaken any advanced motorcycle training since obtaining your full licence?
    - Yes
    - No
13. If you answered 'yes' to the previous question, can you please describe the type of training undertaken?
14. What motivated you to: (i) undertake further training; OR (ii) why have you not considered undertaking further rider training? Note: this could be IAM approved instruction; formal trackday instruction; or other forms of advanced motorcycling tuition.

15. Any other comments

Survey 2: July-August 2020 (Members of the Public – COVID-19)

1. Since lockdown, have you used your motorcycle? (All answers remain confidential and your response will not be passed to any other organisations)
   - o Yes
   - o No
2. Was this during the period 23 March to 28 May 2020 when all but essential journeys were prohibited?
   - o Yes
   - o No
   - o Not Applicable
3. Did you ride your motorcycle as lockdown eased during Phase 1 (29 May to 18 June 2020)?
   - o Yes
   - o No
   - o Not Applicable
4. Did you ride your motorcycle during Phase 2 (from 19 June to 9 July 2020)?
   - o Yes
   - o No
   - o Not Applicable
5. If you have used your motorcycle during lockdown, what has been the main purpose of your journey?
   - o Commuting
   - o Essential journey (e.g., food shopping, pharmacy)
   - o Leisure/enjoyment
   - o Other
6. If you have used your motorcycle during lockdown, did you:
   - o Feel safer due to a reduction in traffic
   - o Feel increased confidence due to reduction in traffic
   - o Engage in riding behaviours you would not otherwise have done so had there been normal traffic levels
7. If you have NOT ridden your motorcycle since lockdown started on 23 March 2020, please explain why you made this decision
8. If you have been using your motorcycle during lockdown, how have you felt when out for a ride?
9. As a motorcyclist, have you felt safe using the road network during the COVID-19 pandemic? Please explain
10. Periods of significant social change can impact how we feel about risk, both the risks we are prepared to take and the risks we think others take. Thinking about your own approach to risk, how has COVID-19 changed the way you feel about motorcycling?
11. How would you describe the overall quality of the road network since the beginning of lockdown (March 23 2020) to now? (e.g., potholes, surface dressing, road markings, visibility at junctions and/or bends)
12. Please include any other relevant comments here

Survey 3: May – June 2021 (Police Scotland – North Command Area)

1. How many years of service do you currently have?
2. How many of these are within Roads Policing?
3. What is your opinion of targeted road safety campaigns aimed at motorcyclists?
4. Please indicated (briefly) any motorcycle-specific road safety initiatives that you have been involved with during your career to date
5. Do you feel that targeted road safety campaigns aimed at motorcyclists are effective in reducing casualties on the roads in the North of Scotland? Please explain.
6. Reflecting on the relationship between the Police and the public, what role do you think initiatives such as Rider Refinement North have?
7. Thinking specifically about motorcyclists, what additional road safety initiatives would you like to see being developed and implemented?
8. Please add any additional comments here

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