



3. A Behavioural Science Approach to Pedestrian Safety

An Options Report - examining the way forward



Road Safety
Analysis



**MERSEYSIDE
ROAD SAFETY
PARTNERSHIP**

Introduction

For the last 10 years the number of adult pedestrian casualties has plateaued across the UK. In this respect Liverpool is no different. However, when ranked according to casualty rates, Liverpool holds the highest adult pedestrian casualty rates outside of London. There is no obvious explanation as to why figures are so high, nor any consensus view as to the most effective ways to address this problem.

So-Mo has been working with Road Safety Analysis to understand why this is the case and are using an approach grounded in behavioural science to address the problem. This has included analysing all available data from the period 2012 to 2016 and by conducting supplementary research designed to understand the what, where, when and who is involved. But as always the most challenging and important question is 'why'?

This resulting body of work is one of the most comprehensive studies into UK Adult pedestrian casualties to have been undertaken in the last five years and, whilst both analysis and findings focus on Liverpool, we are confident that the information contained in this document will be of interest to other urban areas, particularly those with similar road networks and demographic profiles.

This document sets out the next opportunities as well as a recommended direction of travel for the next phase of the work. It is preceded by a data report and an insight report.

Nicola Wass & Phil Rigby

CEO, So-Mo

Strategy and Relationships, So-Mo



We followed the So-Mo insight methodology to identify the most relevant investigation themes.

- Behavioural Investigation into the options available to reduce adult pedestrian collisions in the city started with broad collation of data
- Data was then analysed by our partners at Road Safety Analysis to establish the most appropriate areas to focus on
- From global data we know that mobile phones are a problem
- We also know that Liverpool has above average KSIs related to collisions with taxis
- Likewise Liverpool has a high number of arterial roads where adult pedestrian collisions occur
- As a vibrant city that is a popular destination for a night out, the night time economy was also an area of interest
- There were also a range of concerns fed in from stakeholders about speeding vehicles, engineering choices and planning



Using a variety of investigation methods, the themes became tighter and the insights more valuable

As we progressed to user observation and desktop research, combined with interviews and surveys other factors became clear.

For example taxis and night time economy were a related issue. As such we agreed with our partners that combining these under one theme was more productive.

Insights Presented on the 16th March

As a result the three themes that we focused on for this preliminary investigation were:



Arterial Routes

1. Driver and pedestrian behaviours alter when deliberate eye contact is established.
2. Diagonal crossing is 'unconscious' and unplanned.
3. 'Desire paths' of pedestrians alter faster than it is possible to alter the location of pedestrian crossings
4. The 'Pedestrian Village effect' - no cues when entering high-footfall areas e.g. local high streets

Mobile Phones

1. People who are drunk and on their phones have significantly lowered cognitive bandwidth to appreciate risk
2. It appears that lone pedestrians are not that comfortable with their own thoughts using technology to distance themselves from their environment.
3. 2007/8 iPhone is launched and there is a behavioural shift in how people interact with hand-held devices

Night Economy

1. You can't tell someone who's drunk what to do!
2. We believe that in Liverpool a significant number of taxi drivers are driving when impaired, due to fatigue
3. And a smaller subset are routinely using cocaine to combat fatigue
4. An increasing population cohort are using cocaine as a way to increase their 'recreational stamina' when drinking

The process of making optimal strategic choices is based on three specific questions.

- **Suitability & outcomes**

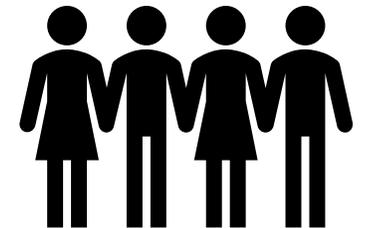
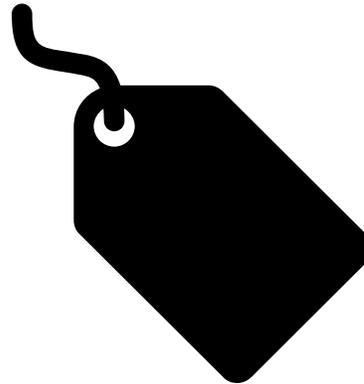
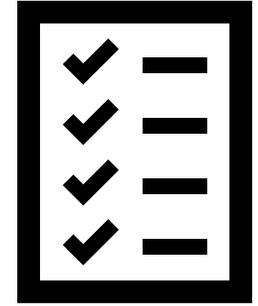
- Do the possible solutions actually achieve the needed outcomes?
- In this case, would they reduce the total number of adult pedestrian deaths?

- **Feasibility & resource**

- Do we have the necessary resource to put these solutions into practice?
- In this case, what budget is available to implement solutions?
- What would the potential cost of prototyped and scaled up solutions be?

- **Appropriateness & stakeholders**

- Given the users involved, would these solutions be appropriate?



Overall Options for Stage 3 of LCC Pedestrian Deaths Behavioural Insight Investigation

	Arterial Roads		Night Economy		Mobile Phones	
Suitable - outcomes	44% of KSIs are on Arterial Roads within the city	HIGH	21% of KSIs occur between 10pm & 6am	MEDIUM	Unknown	
Feasible – resource	<p>What are the factors that would drive up cost?</p>	<ul style="list-style-type: none"> • Time costs would be high • Financial costs medium • Environmental Factors low • Legal issues high <p>Adjustments to the infrastructure – even in terms of signs, painting and repositioning requires intensive permissions from a range of authorities. This could effect the timescale of RCTs.</p> <p>However access is good, traffic levels predictable and chances of behavioural intervention being successful and replicable are high.</p>	<p>What are the factors that would drive up cost?</p>	<ul style="list-style-type: none"> • Time costs are high (unsocial hours) • Financial cost high (understanding based solutions are not available) • Environmental factors high (low lighting, unpredictable behaviour) • Legal issues high <p>There are plans in place already to begin adjustments to the key areas of Lime Street and Hanover Street due to the connected Liverpool work etc.</p> <p>This makes setting up any intervention challenging.</p>	<p>What are the factors that would drive up cost?</p>	<p>We have no local data due to the difficulty in collecting it. As such this theme would require substantially more investigation and specialised research.</p>
Appropriate – user needs	<p>How many stakeholders are involved?</p> <p>What are their needs?</p>	<ul style="list-style-type: none"> • Pedestrians / Shoppers • Large numbers of road users (including commuters, deliveries, emergency services, etc.) • Shop owners / proprietors • Residents <p>Needs include:</p> <ul style="list-style-type: none"> • Access • Efficiency • Safety 	<p>How many stakeholders are involved?</p> <p>What are their needs?</p>	<ul style="list-style-type: none"> • Students / Young People • Older Drinkers • Bar / Club / Restaurant Owners • Emergency Services <p>Needs Include:</p> <ul style="list-style-type: none"> • Access • Safety • Enjoyable experience 	<p>How many stakeholders are involved?</p> <p>What are their needs?</p>	<p>Phones are ubiquitous and users range across ages and social demographics.</p> <p>We know through observation that this is a particular issue with lone walkers.</p> <p>Needs include:</p> <ul style="list-style-type: none"> • Safety

Recommendation

- Given the data at hand and the feedback from the event held on 16th March our recommendation would be to focus on developing RCTs that address casualties on Arterial Roads
- As well as accounting for the largest amount of KSIs, it features the most predictable cohorts and reliable environments
- Whilst there are notable challenges in terms of managing highways legislation, it still offers the most likely area of success given our investigation and the feedback from stakeholders
- Following on from the choice made by the Road Safety Partnership, we would need some guidance on the feasibility limitations of the choice

Further reading

Executive data report

The first in the series of three documents, this provides key data findings from phase 1 research.

Full data report

A detailed data analysis report is available for road safety planners. This includes a literature review.

Insight report

This report is the second of three executive reports. It outlines the process that So-Mo undertook following on from data analysis and shares a set of usable insights.

A copy of all 3 reports can be accessed from our website www.so-mo.co.uk