



## **Managing Major Disruption**

### **Interim Report for Transport Scotland**

**28<sup>th</sup> November 2016**



## Background

The University of Leeds and University of Glasgow worked with Transport Scotland to conduct an assessment of the travel behaviour impacts of the Forth Road Bridge Closure of December 2015. The results of the analysis were published in September 2016. The findings were consistent with Transport Scotland's own understanding of behavioural adaptation based on traffic counts and other aggregate data sources. However, the data provided a much more in-depth understanding of which types of users and journeys were affected. Transport Scotland subsequently decided to hold a workshop to share the findings and to promote the sharing of lessons learnt from managing the Forth Road Bridge Closure. The remit of the workshop was broadened to include a range of severe weather resilience events from other parts of the UK and was supported by further funding from the Research Councils UK Impact Acceleration funding stream.

## Workshop

A workshop was held on Tuesday 15<sup>th</sup> November at the Studio, Glasgow. The event was attended by 32 participants across 24 different organisations. The event was facilitated by Professor Greg Marsden, Professor Jillian Anable and Jeremy Shires (ITS Leeds) and Professor Iain Docherty (University of Glasgow).



Participants were sent four case studies of major disruptions, the institutional response and what was understood about the wider transport impacts. The case studies were of the Forth Road Bridge, Storm Desmond in Cumbria, Storm Desmond in Calderdale and Storm Eva in the City of York.

The workshop looked at four different areas:

- Understanding the diversity of users on the network and their needs;
- The role of information and communication in managing disruptions;
- The effectiveness of actions to adapt transport and non-transport services; and
- Understanding the social and economic impacts of such events.

It concluded by exploring important findings, recommendations and knowledge gaps.

## **Preliminary Outcomes**

This section summarises some of the main findings from the workshop focussing on the outcomes of the group exercise at the end of the day. These have been grouped into six key areas on the basis of an exercise where all participants were able to prioritise the importance of different workshop generated ideas. A more detailed report will be produced subsequently to be shared with all stakeholders nationally. We recommend that the findings are incorporated into an exercise to develop a 'playbook' for areas that could be similarly affected.

### **Area 1: Importance of Multi-Agency Response**

The ability to activate a well co-ordinated and agile multi-agency response was identified as crucial to managing the impacts of disruption. It was recognised that each disruption is different, and therefore that the ability to respond flexibly according to well understood 'ground rules' was more likely to be effective than following a rigid plan that might not be adaptable to the actual conditions encountered. The early availability of a core group of appropriate officers from each partner agency/organisation with good pre-existing knowledge of joint working and who could call on appropriate specialists to inform discussions as appropriate was also seen as important.

There is a long list of potentially important organisations and it was considered necessary to maintain an up to date list of contacts for immediate access. Resilience planning and training events such as this workshop were one way to build the social capital necessary to manage such events; the wider general engagement of key personnel in collaborative working outside normal circumstances provided a base level of experience and trust that made reactions during disruption more effective. The overall feeling from those involved was that, given the depth of collaborative working in Scotland, the multi-agency response to the Forth Road Bridge closure had been effective.

Further work could be done to increase the awareness of the range of interests affected and the number of potential stakeholders that could contribute as part of the response.

### **Area 2: Communication is critical and also changing rapidly**

There are more and more channels of communication available to people nowadays, which presents the opportunity of faster dissemination of information but also the potential risks of mixed messages between official information sources and inaccurate reporting of disrupted service conditions. The information that was most helpful was that which was most up to date (e.g. social media, websites and radio). In particular, the use of images and videos was seen to be effective.

As people source now media information through multiple formal and informal channels, there is an increasing need to resource communications functions properly, with so that trust is built in advance of a disruption. Actions such as countering misinformation as well as promoting and sharing core information on service conditions was seen to be critical in each of the disruptive events discussed at the workshop. Whenever possible agencies need to have

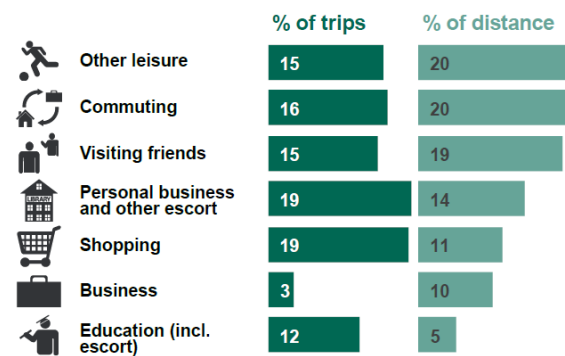
a consistent message and this process needs managing actively to ensure speed and accuracy of the information reaching end users. In all of the case studies there was very good engagement with social media channels.

There is a strong age based differential in who accesses what information sources and it is important to go beyond reliance on social media and/or to ensure that social media feeds in to other routes to community engagement including traditional broadcast media.

Whilst we know that many people see the communications put out during disruptions we know comparatively little about how they respond. It is unclear, for example, how people interpret the message to only travel if their journey is necessary. Participants agreed that more detailed understanding of public reaction to different messages would substantially improve consistency of messaging across agencies involved in managing disruption. This should consider different needs in different phases of the disruption.

### Area 3: Broadening the understanding of the impacts of disruption

Commuting and business travel form only 19% of trips and 30% of journey kilometres yet are the main point of focus for managing transport during disruptions. This is clearly an important part of managing disruption as the network is under most pressure at peak times and alternative routes and services often already close to capacity. However, this leaves 81% of trips and 70% of journey kilometres around which there is comparatively little understanding.



To understand the full social and economic impacts of disruptions we need to know more about how different user groups and different journey purposes are affected and also how people adapt when faced with different kinds of disruption. Issues were raised in the workshop about essential health trips e.g. for hospital treatment and caring trips across all kinds of disruptions discussed. For some activities it seemed easier for people to adapt by reorganising their time if the disruption was short run, but there were potentially very significant social costs if the disruptions were longer-run. This had led to loss of employment (Cumbria) and very significant reductions in visiting family and friends. Many of the non-work related journeys are seen to be non-essential but that categorisation is too simple.

It was noted that some interests are well organised and shout loudly during these events, sometimes to the exclusion of other more vulnerable users. Mitigation actions do not always adequately consider different capabilities and needs of travellers or the likelihood of their being 'heard' by those taking operational decisions during disruption. It was suggested that social impact/vulnerability assessments could be developed to understand this further.

#### **Area 4: Greater diversity of data types and better access**

Data on real behaviour during disruption was raised as an important issue from several different perspectives. First, the disruptions studied found that traffic count sites were not either in ideal locations or necessarily all working or easy to access data from in real-time when required. The challenge of not knowing exactly where disruptions will hit means a set of complimentary approaches is likely to be necessary.

It was suggested that there is a need to make greater use of a range of types of data which is held by different partners. However, for this to work easily it would be best if this formed part of resilience planning discussions.

It is important to recognise that many users have access to other information such as Google Maps and Citymapper which provide real time information. Some apps now track routes and modes and the use of such data needs to be part of the future resilience planning process. 'Official' sources of information during disruption therefore need to understand the expectations of travellers which are steadily increasing as the app ecosystem they use in day-to-day travelling evolves further.

However, much of our core transport data is about flows and not people and journey purposes. It is important that we do better at capturing and analysing the travel patterns of different groups of people so we understand more about who is vulnerable to what type of disruption and react in a more targeted manner to reduce the impacts of specific impacts of disruption.

#### **Area 5: Understanding and building community resilience**

The workshop was clear that social resilience needs to be understood in different ways. Individuals have some personal adaptive capacity which may vary with, for example, income, experience of travelling on different modes of transport or their physical or mental health. The household as a unit also needs to be considered in planning disruption responses, since the ability to cope with disruption varies with household type, i.e. single parent families being less able to reallocate tasks quickly. There is a strong emphasis on understanding community resilience and there were examples of very good local community resilience groups. However, there was also evidence that the response of businesses matters significantly since the quality of business contingency planning, and firms' attitudes to flexible working all influence people's perceived need to travel and make a material difference to the ability of the economy to react to major disruptions, especially in the immediate aftermath. The implication of this is that we cannot just communicate with individuals about what they should do but rather must do this as part of resilience engagement at many levels and with several different user groups and communities. This is also an important part of building an understanding about what kinds of risks and potential impacts exist.

There was considerable variation in personal experience of disruptions, community and business preparedness, all of which influences the outcomes of a disruptive event. Whilst

engagement can sometimes be difficult to achieve the kinds of actions which might be taken can also be of broader benefit.

The contribution and potential of the voluntary sector as an important actor in disruptions was raised. In particular these groups often have knowledge about special expertise and other local knowledge that might otherwise be overlooked.

Examples of positive outcomes from greater local community working were raised at the different sites. Whilst some of this is temporary help it was suggested that more might be done to prolong the positive effects of, for example greater use of walking buses for school or increased flexible working beyond the life of the disruption.

### **Area 6: Understanding the distribution of economic impacts**

Whilst it is easy to point to some variables that can be measured directly, such as increased journey times and fuel used, it has proven difficult to identify the loss to national accounts from even very major disruptions. This is in large part because money continues to circulate in the economy but is spent on different things, in different places or at different times. Some businesses win because of where they are located and/or what they do, and others lose. In general logistics companies and commuters absorb the additional costs and delays from diversions. Whilst we understand the journey time and costs well there is a need for much better information about the winners and losers from these events and to understand how long the effects last and how serious they are. It is therefore wise to be cautious about instant claims that a particular disruption will have a large and robustly quantifiable impact on the economy.

Area 3 suggested that more needs to be done to understand the impacts of disruptions on non-work trips and this is critical to understanding what the full economic, social and well-being impacts of disruptions are. It is not possible to fully capture these using the traditional journey time trade off methods deployed in transport.

From this it would be possible to explore local and regional social and economic vulnerability to disruption and to explore whether or under what conditions these move from being short-run costs to longer-run reputational issues for different areas.

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