

Roadworks and incidents


Qualitative research

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Roadworks and incidents
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1 Background, research objectives and methodology

1.1 Background

Transport Focus wished to undertake research to develop qualitative insight into the experiences and needs of road users with regard to roadworks and incidents on England's motorways and major 'A' roads - the Strategic Road Network (SRN). Transport Focus invited proposals to conduct the research among its preferred suppliers panel of qualitative research agencies, and AECOM were selected to carry out the research.

1.2 Objectives

The research was carried out in February 2016 to get a detailed understanding of SRN users' views in relation to:

- The implementation of roadworks
- Experiences driving through roadworks
- The experience of being caught up in incidents (accidents, adverse weather, debris on road)
- The information made available about roadworks and incidents (on-road and off-road)

1.3 Research approach

The qualitative research consisted of:

- Seven two-hour focus groups with leisure users, business users and commuters
- Three 90-minute focus groups with HGV drivers
- Ten individual depth interviews with disabled road users, coach drivers and motorcyclists
- Four accompanied journeys
- Six depth interviews with industry stakeholders.

Overall we spoke to around 100 SRN users.

The sample covered a mix of gender, age and socioeconomic grades and those travelling on different days of the week and at various times of the day. The composition of the focus groups, depth interviews and accompanied journeys is shown below in Tables 1.1, 1.2 and 1.3.

Table 1.1 Focus group composition

SRN region	Journey type
M25	Leisure
M25	Business
Midlands	Leisure
Midlands	Business
South West	Business
South West	HGV
North West	HGV
North West	Commuters

North East	HGV
North East	Leisure

Table 1.2 Depth interview composition

Location	Type	Gender
M25	Disabled	Female
M25	Disabled	Male
M25	Coach driver	Male
M25	Motorcyclist	Male
North West	Coach driver	Male
North West	Disabled	Female
North West	Motorcyclist	Male
North East	Motorcyclist	Male
North East	Disabled	Female
North East	Disabled	Male

Table 1.3 Accompanied Journey composition

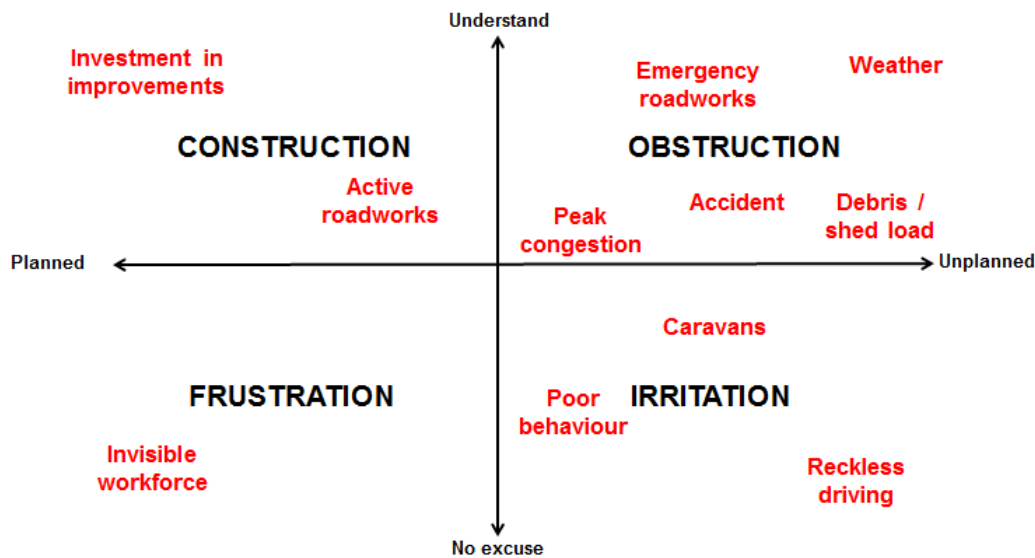
Location	Type	Gender
Midlands	Leisure	Male
Midlands	HGV	Male
North West	Business	Female
North West	HGV	Male

2 Context

2.1 Roadwork and incidents categories

There is no consistent terminology used to describe or define the various types of roadworks and incidents experienced on the SRN. Instead, it all tends to be considered in terms of the extent to which they are foreseeable in advance, or not, and the extent to which they are felt to be acceptable or unjustifiable.

Almost all frequent and commonly-experienced events can therefore be mapped on axes as shown in the diagram below. Moreover SRN users have different views of roadworks and incidents in each segment. The various types of roadworks and incidents most frequently experienced can therefore be mapped into four categories, as shown below, and described further in the following sections:



2.2 Construction – planned and understandable

SRN users said this covered the most frequent cause of delays and disruption.

This category includes all roadworks, except those that are required in an emergency as a result of an incident (such as a road needing to be resurfaced following a spillage). This type of work is therefore always planned in advance and information should be available for those who are inclined to look and know what to look for.

Road users have mostly pragmatic attitudes to this type of work since the majority recognise that roads need to be maintained and occasionally improved. Most therefore acknowledge that the short-term inconvenience caused by roadworks is almost always outweighed by the long-term benefit they will experience. Attitudes within the Construction category tend to be more positive when the nature of the end benefit is readily appreciated.

"I would be more patient if they said 'we're investing in changing this road from three lanes to four' because you could see it will improve your journey in the long term so I would feel better about knowing the work will improve my journey times." [Leisure, M25]

"These smart motorways do help and I think they were important and I can see the difference now. It just was a pain when they were being done." [Commuter, North West]

2.3 Obstruction – unplanned and understandable

This is the broadest category of incidents and covers almost every type of delay or event other than planned roadworks. In the main, road users are reasonably tolerant of these incidents that they recognise as being mostly unavoidable; many consequently adopt a sympathetic attitude to them.

*“When you see roadworks it makes you tut because you could have avoided it but an incident such as an accident is unforeseen so I think you are more accepting.”
[Leisure, Midlands]*

Typically users have a ‘that’s life’ attitude to this type of disruption. They accept it as a small but unavoidable risk when making journeys on the SRN. Incidents caused as a direct result of drivers’ carelessness or recklessness are not put in this category but in the ‘irritation’ category (see below), although it is almost always impossible to know the cause of incidents at the time and to attribute blame in this way.

Peak-time congestion is the main exception within this category and road users have interesting and consistent views on this subject. With it being such a common occurrence, they categorise it as a delay, but not as an incident happening during their journeys.

On the busiest roads (the M25, M6, M5 and A1(M) among this sample), the majority who travel at peak times have become resigned to experiencing significant congestion and factor it into their journeys. Indeed, many claim to allow a considerable amount of extra time and have the mindset of regarding it as a bonus if they are not delayed rather than an ‘incident’ if they are.

“I never get on the motorway and think ‘this is going to be a smooth journey’. I think to myself ‘let’s see what’s going to happen today’.” [Leisure, M25]

“I get in my car expecting the worse these days. It is very rare I go on a trip and not experience something.” [Commuter, North West]

Many feel peak congestion has deteriorated in the recent past and expect it to get worse rather than better in future due to the increasing volume of traffic on the roads.

2.4 Irritation – unplanned and no excuse

A common theme is that road users consider a minority, but a substantial minority nonetheless, of incidents in the Obstruction category to be caused not as a result of misfortune, but due to largely avoidable reasons outlined below. As said above, ‘obstruction’ is tolerated to a degree, but when it is felt it could have been avoided, the feeling turns to Irritation. The ‘irritation’ is often after the fact, as the cause of most incidents are not known at the time, or not until reaching the scene of the incident, at which point most of the delay has been suffered. This irritation can be broken down into a number of sub-groups:

- *Lack of driver education / knowledge:* Especially true of motorway driving since this is an acquired skill rather than one that is taught for the vast majority. In addition, many admit to not knowing how to behave on a smart motorway.
- *Poor and irresponsible driving:* This is often the result of knowledge gaps (typified by those who are unaware that middle-lane hogging is unacceptable and likely to cause delays or a more

serious incident). Also includes those who fail to ensure their vehicle is in a roadworthy condition.

- *Dangerous and reckless driving:* Behaviour often observed in others (but that motorists are unlikely to admit to themselves) such as using mobile devices, drink/drug driving and failing to observe speed limits imposed for safety reasons.

"When someone is pootling along in the middle lane it causes a lot of bottlenecks. You have to go from the inside lane to the outside and then back again to get round them so unfortunately I do undertake people quite regularly." [Business, South West]

"Other road users don't realise we are trying to get a job done and it doesn't help when there is some moron screaming up the inside of you or someone driving at 40 miles an hour on a motorway which is ridiculous." [HGV, South West]

2.5 Frustration – planned but no excuse

There is a single item in this category - long stretches of roadworks where there is no visible sign of activity. Participants consider this to occur with increasingly high frequency. The main cause of frustration is the common failure to understand the rationale for causing delays and inconvenience to road users when nothing appears to be happening on the section of road affected; it is a major cause of dissatisfaction among road users.

Many assume there must be a logical explanation for why roadworks are carried out this way. It may therefore be possible to lessen the negative impact of this type of event through information that would lead to better understanding among motorists.

"What gets me most annoyed is when there's nobody working in the road. The M3 has been like that for goodness knows how long, there's miles and miles of cones and nobody working. I find that unbelievable." [Leisure, M25]

"A lot of people get frustrated when lanes are coned off for miles and miles with a 40 or 50 mile an hour speed limit and there's actually nothing going on." [Business, M25]

"When I have the kids in the car we count how long it is before we see someone and when we do whether they will be doing anything or standing around with a clipboard, it's a running joke." [Business, M25]

"You appreciate roadworks have to happen but you go miles before you see a cluster of blokes standing there having a fag and you think 'get on with it, do something'. You'd like to see a digger moving now and again but you don't." [Leisure, Midlands]

"At night time, if they are not working on it, then just leave it at 70 miles an hour. Many a motorway if you are driving at night and there is not a person in sight, we still have to drive at 50 and it is frustrating especially when no one is on it." [HGV, North West]

"The M60 has got 50 miles an hour on it all the way round at the moment which is fine but actually they are not even working on it which is frustrating." [Commuter, North West]

"I think the ones on the A1 next to the Metro Centre seem like they have been there for ages and they haven't been doing anything. When you drive past you see people standing about and nothing seems to be different with the road." [Leisure, North East]

3 Driver information

3.1 Journey planning

Some participants were recruited on the basis of having access to a satnav and all were asked about the extent to which they use this or other tools to help plan journeys made on the SRN.

The majority accept the concept of planning journeys in advance to be good in theory. This is on the basis of 'forewarned is forearmed' and that access to relevant information could help avoid some of the delays encountered. However, road users feel that such information is relevant in the context of planned events – roadworks – only.

"I do certain journeys all the time so I know the deal and just build a little leeway into the journey time." [Business, M25]

"Bristol to Swindon is 45 minutes but you always allow an hour and a half just in case." [Business, South West]

The reality tends to be very different for most road users. Most concede they are unlikely to do any advance planning. The exception tends to be for long and/or unfamiliar journeys, when some idea of the route and likely journey time will be required. However, their search tends to be done a long while in advance of the journey being made, rather than check for any roadworks or incidents on the day.

"It depends on the journey. For a long journey I would research if there are any major roadworks. If it's just a quick shoot up three junctions of the M6 just to visit somebody then I won't look." [Leisure, Midlands]

"I might have a look if I've got to drive a long way or to catch a flight or something that is time specific." [Business, South West]

"I do sometimes, I checked yesterday how to get here and I used the internet for that. If I'm at work and I'm going somewhere that I don't know then I'll do it at work when I leave the office and print the map off from google so I know where I am going." [Leisure, North East]

"I think if I was going on a long distance to catch a plane or something like that then maybe I would try and check but I wouldn't necessarily know where to look to be honest." [Leisure, North East]

Many claim not to consider using journey planning tools due to the dynamic nature of the SRN. They feel that information available at the time of checking is either likely to already be out of date, or will be so by the time the journey is underway. This is especially true for roads that are notorious for incidents and congestion aside from roadworks (such as the M25) that are perceived to require extra time to be factored in for any journey made.

"I always put where I'm going into Google Maps and see if it tells me about any problems but ten minutes into the journey there will be a big red line saying the traffic is stationary even though there was no warning of it ten minutes before" [Leisure, M25]

"I don't start work until 8.00 but I'm out of the door by 5.30 because it's almost inevitable something will happen on the M25. It's just the sheer number of people and it's evolving

all the time. So my journey planning involves leaving early then sitting round having a cup of tea just to keep the stress level down.” [Business, M25]

“I tend to leave an hour earlier than I need to and stay later than I need to just to miss the traffic. Guaranteed it will be bad so I would rather build up flexi time than struggle to get home.” [Leisure, North East]

Some also claim they are uncertain how to interpret this type of information: in the event of an incident being detected, will it be better to divert to another route (as others may be doing) or stick to the intended route and hope the incident will have cleared by the time it is reached?

“Some incidents are unpredictable and could happen since you checked or one that is showing could have cleared and you have taken a diversion that has added an hour to the journey.” [Leisure, Midlands]

“Quite a lot of the time there’s nothing you can do so even if the radio says there’s delays you have to stay on the motorway half the time.” [Business, South West]

“More than half the times I’ve come off the motorway to take a short cut it hasn’t worked out better so usually you’re better sticking with it unless the road is actually shut.” [Business, South West]

“I’m quite a nervous driver so if I see information, I will see it but won’t be able to really do anything with it so I just stay on the route I’m on anyway.” [Commuter, North West]

3.2 Planning tools

Although these tend to play a passive rather than active role for the majority, attitudes to those used and discussed can be summarised as follows:

Google maps

Universally positive views among users, becoming the default planning tool for many. It tends to be regarded as the most reliable source of information for drivers...including those with experience of using other devices. Generally high levels of trust and confidence in information provided to the extent it is often regarded as a satnav (or negates the need for one).

“Google Maps is amazing because it gives a realistic time of arrival that I really like and it is forever updating and changing.” [Business, M25]

“Google Maps has a red line to show how much traffic is ahead of you and an estimate of how long you will be stuck in it.” [Business, M25]

“Google Maps has a red line to show heavy traffic and it gives alternative options and the fastest route” [Leisure, Midlands]

“The only problem is that if everyone takes the diversions it suggests, that route can get more clogged than the motorway.” [Business, Midlands]

“Google Maps is good because it updates and is usually quite accurate. It also shows you any alternative routes if delays or accidents happen on your route ahead.” [Leisure, North East]

"Google Maps is good because it will update and I rely a lot on that. I don't tend to look at anything else though." [Commuter, North West]

Satnavs

High penetration and experience within the sample, used primarily with an A to B focus (route planning rather than the disruption information functionality). There are mixed views regarding the ability of satnavs to help avoid delays and incidents and live traffic updates are considered to be essential. However, some concerns regarding the accuracy of information.

"Modern satnavs have built in traffic updates and they will work out your journey so I have that running in the background even if I know where I'm going because if there has been an accident it will re-route me." [Leisure, Midlands]

"You put the post code in and it will plot the best route, the quickest route and an alternative or you can put it on automatic to do it all for you." [Business, Midlands]

"A crane broke down on the M5 a fortnight ago so I put it in my satnav and didn't see a bit of traffic all day. It probably put about an hour and a half on my day but I would rather drive round traffic than be stuck in it." [Business, Midlands]

"My satnav does not update so it is a bit useless other than a route planner really. It won't tell you about any problems on the route." [Leisure, North East]

Traffic alerts

Many claim to have their radio programmed to receive these, but listen to them during rather than before their journey. Therefore used more as an information source rather than a planning tool. Users often view details as not frequent nor local enough. The information provided is often not usable to inform decision making in comparing journey options. A few who drive regularly on the Continent claim French radio has more useful dedicated traffic stations.

*"If you listen to the traffic news you won't find out about a problem until you're in it"
[Leisure, M25]*

"I used to work in France and there's a radio frequency with literally just recurring traffic information. It's up to date details about all the accidents in France in different languages so every 15 minutes they do two minutes in English." [Leisure, M25]

"I listen to traffic reports to see what's happening before I head off but why don't they have more cameras in areas where hold-ups occur so they can get information out to people more quickly via the media?" [Business, M25]

"Sometimes they are completely irrelevant to where I am in the car so I start to ignore them if I'm on a long trip." [Commuter, North West]

*"There's no consistency, it depend on who the DJ is. I think the Traffic Alerts could be better and more punctual and use a system whereby the information comes through faster."
[Business, M25]*

*"Surely in this day and age of DAB radio there could be a channel purely for travel."
[Business, Midlands]*

"The only thing I rely on is Radio Two because they do updates all over the UK."

[Commuter, North West]

Social media

This is more likely to be used for information than journey planning. Users recognise the advantage of getting real-time updates via platforms such as Twitter, but some also recognise the practical limitations on using it if driving without a passenger. Therefore Social Media was thought to be more useful when applied to rail disruption.

"If I have a passenger with me the best thing is to use something like Twitter because it's so fast compared to any other website and I find it quicker than a satnav." [Leisure, M25]

"Railways have staff at stations who can tell you what's going on and you can follow train operators on Twitter or Facebook but I don't know if there is something like that for the roads." [Leisure, M25]

"The information is poor compared to the trains that have Twitter and communicate more so you can look up what the problem is but obviously it would be irresponsible to use your phone for that when you are driving." [Business, M25]

"Social media is only useful if you have a passenger with you which most of the time I don't." [Commuter, North West]

Highways England website

The majority are unaware of it. Still known popularly as the Highways Agency rather than Highways England. Many are unlikely to consider using the website but a few are aware of the Traffic England site (but not that it is provided by Highways England) – one person uses the site for live webcams but others are more likely to use the AA site than Highways England.

"If I've got to make a short local journey on one of the motorways I sometimes have checked the webcams before." [Business, South West]

I sometimes look at that Highways England site I think it is called but it doesn't matter whether it has good or bad news for me, I've still got to go that way." [Commuter, North West]

3.3 HGV drivers

The majority of HGV drivers represented in the sample claim to have low reliance on technology, especially for the purpose of journey planning (and anticipating roadworks and incidents).

"You're not going to check the day's route when you start in the morning because you don't know what it will be like in the afternoon, it's a fluid situation so you could plan the route, set off and then there's an accident." [HGV, South West]

A small minority have Isotrak or similar specialist equipment and one or two have a direct phone link from their cab to their depot, but these tend to be used as reactive measures to facilitate responses to incidents rather than to help anticipate and avoid them.

"We've got Isotrak and if there has been an accident it sends messages to us so we do get information that way." [HGV, South West]

"If you hit roadworks or an accident you phone the office or your mates. We get most of our information by spreading it through ourselves." [HGV, South West]

Some drivers claim improved access to quality information would be helpful in certain circumstances, but this is often coupled with concerns about driver distraction (especially among major hauliers represented in the stakeholder interviews).

Many companies appear not to provide satnavs for a number of reasons (and drivers are reluctant to use their own money to buy one for work purposes):

- HGV drivers know the SRN well enough to not need help with route planning
- Vehicles will be re-routed to avoid planned work likely to have a serious impact on journeys
- Most devices are not quick or smart enough to be helpful in the event of a major incident
- Companies prefer to restrict interventions to emergencies only and trust drivers to find their own solutions to problems encountered
- Specialist software for HGV satnavs has not been widely available until recently and is still prohibitively expensive

"I've got a satnav with live updates but it's not that accurate and a lot of the time you're on top of the accident before you've got the information." [HGV, South West]

"I carry a 16 foot high trailer and the satnavs don't tell me where the low bridges are." [HGV, South West]

"You can get a satnav that will change the route for a car but not for a lorry. There is a new Snooper but I don't think the information on them is that good because you don't get a lot of the problems coming across." [HGV, South West]

"There should be a national database that that all companies sign up to but I think it would cost a lot and the companies wouldn't do it." [HGV, South West]

"The technology available isn't suitable for HGVs and PSVs because it doesn't provide sufficient detail so we don't allow our drivers to use a satnav and it's a disciplinary offence for them to have one because they're not supposed to be distracted in their cab." [Stakeholder]

"Recently operators weren't able to recommend any satnav but companies have worked hard on the software. The problem is the systems are £400 each and companies are reluctant to spend that without knowing the benefit to them" [Stakeholder]

"The technology we use doesn't have a live traffic feed or routing systems that take account of the height or weight of vehicles. It would be good to get more live information from HE to inform route choices but our policy is to not interfere with the driver on the road." [Stakeholder]

"Satnav technology for HGVs is relatively new and we are currently looking into it. We think it will be an incremental benefit rather than a silver bullet but anything that gives drivers more information and insight will be helpful." [Stakeholder]

One of the major hauliers interviewed as a stakeholder is currently evaluating the new technology that has recently become available and is planning to invest heavily in it in the near future.

4 Roadworks

4.1 Understanding and impact

At a rational level, road users understand the need for roadworks. Indeed, they are considered to be essential in order to ensure major roads are maintained to a sufficiently high quality. Participants also recognise the need for roads to be improved (for example, widening, converting to smart motorways, etc.) in order to cope with the increasing number of vehicles using the SRN. All therefore recognise the importance of roadworks that are necessary to prevent problems arising and rectify them when they do. Road users also realise conducting the work must represent a logistical nightmare for those responsible and have some sympathy in this respect.

“You can’t just leave it can you? If the road deteriorates it will cause more problems so you have to have people in certain situations working on the roads.” [Leisure, M25]

“In areas I’m sure they are doing the same bits of road, why couldn’t that have been planned better? Roads will always need doing but better management for the least inconvenience is a must.” [HGV, North East]

In emotional terms, this acceptance of the need is balanced by the reality that roadworks can be a considerable inconvenience. Those who are the most frequent users of the SRN consider roadworks to be the main cause of problems they experience. This is due to the fact that they encounter planned work more frequently than incidents and, although often less severe, roadworks tend to have a bigger cumulative impact on their journeys and their lives.

4.2 Planning

A critical factor in terms of how roadworks are viewed by road users is the extent to which it appears they are well planned. When road users perceive an absence of planning, it significantly reduces tolerance levels towards roadworks and increases negativity when experienced. In some instances, this negative feeling can be projected onto ‘the highways authorities’ (where known - Highways England).

The common perception is that roadworks tend to be poorly planned. This is due to a number of factors including lack of adequate warning, the frustration associated with the lack of visible activity when lanes are coned off and questions about why the work is carried out when it is.

“What winds me up is when there are roadworks and speed restrictions and there are cones for miles and miles and you never see anybody doing anything.” [Leisure, Midlands]

“What frustrates me is being in one set of roadworks, coming out of them for about a mile and then going into another set. It is really hard work, especially at night.” [HGV, North West]

These views are exacerbated by uncertainty over who is responsible for planning roadworks. Only a small minority are aware of what they thought to be the Highways Agency (even though it is now Highways England) and attribute responsibility for planning roadworks to them. Most assume planning decisions will be made by the Department for Transport (DfT) or another ‘invisible public sector body’.

Regardless of who makes decisions about roadworks, road users tend to feel that the body responsible lacks accountability to those who will be affected by the work. This perception of such

important decisions being made in isolation often leads to a view that works are unlikely to be planned to ensure minimal inconvenience to road users.

Many participants assume Highways England does not talk to Local Authorities to ensure there are no adjacent works in the area that would make diversions away from the SRN difficult. This is occasionally supported by anecdotal evidence from motorists who have experienced problems of this nature in the past. Road users also think it unlikely that Highways England will coordinate with the rail industry to ensure roadworks do not coincide with major engineering work that will restrict modal choices in the local area or region.

“If you’re going to Birmingham and the railway has engineering works and the roads are chock-a-block due to roadworks then that wouldn’t work.” [Business, M25]

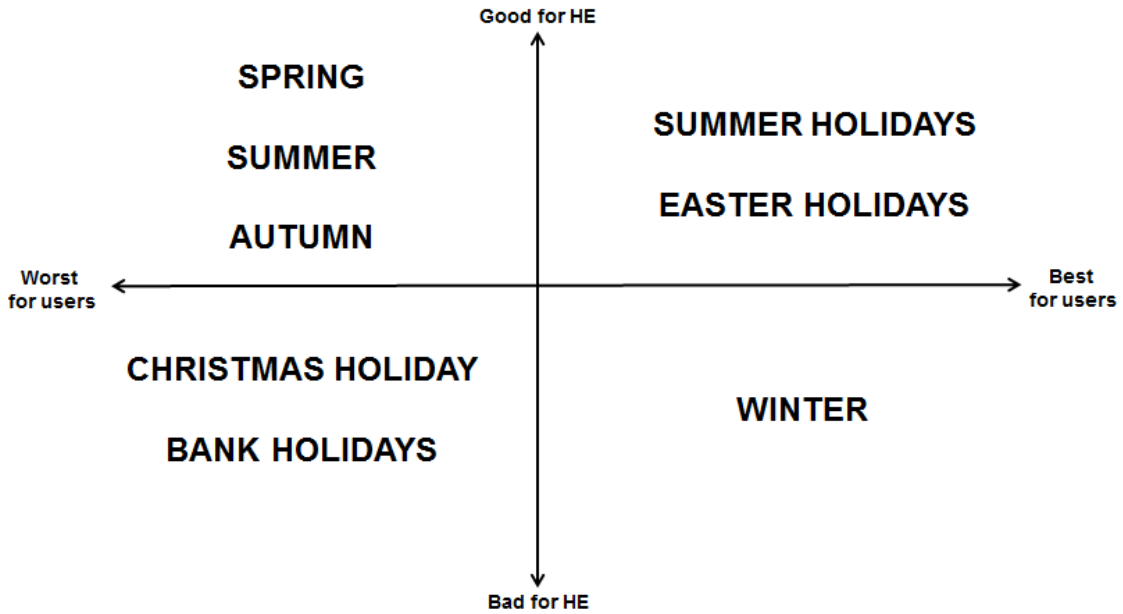
“I don’t think the roads people plan their roadworks at the best times. There seems to be no communication with local authorities or the train services.” [Leisure, North East]

“Road works need to be coordinated and thought through so HE and Local Authorities need to talk to each other and consider traffic flows. Things are improving but more could be done.” [Stakeholder]

Views on the general lack of planning have important implications for how roadworks are perceived to be managed once in place. During the course of the research, participants were asked in detail for their views on how roadworks are implemented and the impact of decisions made on them as road users. These views are outlined in the following sections.

4.3 Time of year - overview

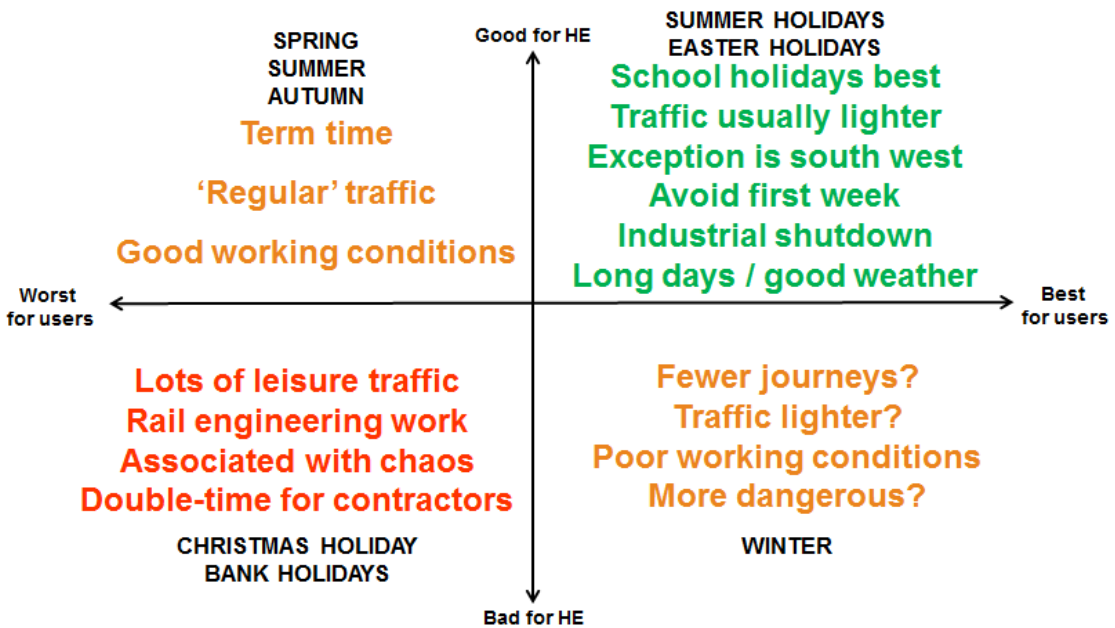
As previously explained, the ‘top of mind’ response to when roadworks should best be conducted tends to be that ‘no time of year is good’ for road users. However, many understand the difficulties associated with planning roadworks and on reflection consider some times to be less bad than others. There is no consensus among the different types of road user, but certain times emerged as best and worst for them and times that are expected to be good and bad for Highways England. In simple terms, this can be expressed as follows:



4.4 Time of year - explanation

Preferences (in terms of best and worst times to conduct roadworks) take into account a variety of factors including: traffic volumes; holiday periods; journey purpose (business or leisure use); and working conditions (daylight hours and weather).

Through analysis of responses, it is possible to provide an ‘explanation’ of why road users feel certain times of the year are good or bad for conducting roadworks. There is most consistency in terms of times likely to be best and worst for users and Highways England (that is the top right and bottom left quadrants) with the other areas subject to more uncertainty or disagreement among participants:



“It would be worst over Christmas when the weather is poor and it’s raining. The more daylight there is the better everything feels.” [Leisure, Midlands]

“The best time is the summer because you have more hours of daylight and the weather conditions will be more favourable.” [Business, Midlands]

“There is less traffic on the roads during the school holidays. This week is half term and it’s been great on the roads.” [Business, Midlands]

“There is less traffic on the roads during the school and summer holidays. This would be much better but not ideal for everyone.” [Leisure, North East]

“There are different problems at different times of year. There is no question that there is less traffic on the motorways during school holidays because our punctuality always improves and we can run ahead of schedule.” [Stakeholder]

Since this is not a universally agreed picture, there are certain anomalies and exceptions that are important to explain:

- Some participants knew from experience that holiday routes to the South West are exceptionally busy in summer and roadworks would have a severe additional impact. Participants in Birmingham have similar views about the first week of the summer holidays due to the industrial shutdown in the West Midlands.

“When I’m going to the West country, however long Google Maps tells me the journey will take I always add at least an extra hour” [Leisure, M25]

“There’s only one way to Devon and Cornwall and I always think who in their right minds would decide to do roadworks during the six weeks of the summer holidays? It always amazes me.” [Leisure, M25]

“One of the worst times is the industrial shutdown when lots of people are heading south.” [Business, Midlands]

“On the M5 they normally do the work in August when the mid-summer peak holiday traffic is heading down to the south coast.” [Business, South West]

“Everyone knows the M5 going south is an absolute nightmare but they tend to do work in the summer months instead of in the winter when you would have thought it would have been easier.” [HGV, South West]

- Business users and commuters agree the best time to conduct work is during holiday periods, even though this may impact on leisure journeys. Most are prepared to concede that doing roadworks when traffic is lighter will benefit the majority of road users, even if this means one-off holiday journeys being disrupted. This conflict is also apparent in responses to preferences expressed towards the best time of the week to conduct work, outlined below.

4.5 Time of week

Findings on this are also mixed, since road users understandably agree there is likely to be no time of the week that is consistently preferred by all. Also, preferences expressed by participants tend not to follow the logic used to identify the best and worst time of year to conduct work.

Saturday and Sunday are generally considered to be days to avoid having roadworks. There is some resistance to Friday on the basis that many will be travelling on this day if going away for the

weekend. Monday to Thursday therefore emerge as the least bad days of the week for planned work to be conducted.

These findings are more likely to reflect emotional preferences than actual traffic volumes on the SRN. We hypothesise that the apparent contradiction with findings about time of year is that many are able to accept disruption to a 'once a year' journey more readily than frequent journeys made at the weekend. There may also be an element of finding impact on work-related journeys easier to tolerate than having quality time with family and friends affected by roadworks delays.

Some stakeholders representing the logistics sector have a different perspective on this issue. Although many businesses work seven rather than five day weeks, their preference is to be for work to be conducted at a weekend. This will be less disruptive to those whose drivers work a conventional five day week and is likely to suit lower traffic volumes at weekends for those businesses with seven day operations.

"A lot of jobs now are five days out of seven so you don't have weekends as such, you just have to be more flexible but when they do roadworks they don't seem to be as flexible." [HGV, South West]

"As it stands, I have roadworks all the time during the week when I'm going to and from work so I don't want to have to deal with them at the weekend too. Night time has to be the best time for most people surely?" [Commuter, North West]

4.6 Time of day

There is more consensus on the best time of day to conduct roadworks. When a choice of working at night or day is available (for example, in the case of minor works lasting less than 24 hours), conducting the work at night is widely preferred as being least inconvenient for the majority of road users.

For projects lasting longer than 24 hours, day and night working is considered to be optimal. The simple rationale applied is that rolling shifts will increase the efficiency of the work programme and minimise the time road users experience disruption.

"They should have 24 hour rolling shifts seven days a week with one shift taking over from another to keep the thing going and get the roads opened as quickly as possible." [Business, M25]

"In an ideal work working 24 hours would be the best but that has a cost implication. Also they don't seem to be working now, so why would working 24 hours round the clock make a difference to what we see happening." [Leisure, North East]

There is felt to be an increasing trend towards conducting work at night, but participants occasionally identify practical and safety reasons as to why this may not always be possible. Although most of the SRN is located away from residential areas, all acknowledge the limitations of conducting work at night in specific sections of the network.

"Obviously safety is an issue if work is being done at night. There will be fewer cars on the road but it will be dark." [Leisure, M25]

"The majority of motorways don't back onto people's homes so they should do the work at night when there is less traffic say from ten at night to five in the morning." [Business, M25]

"I can imagine more construction workers die if they're doing stuff in the dark so I understand the argument to do it in the day if it's safer, but there's less traffic at night so that will be safer too." [Business, Midlands]

"Ideally work should be done at night if possible because that would be better for everyone. When you hit roadworks at night you very rarely stop you just slow down but keep going so you don't lose much time." [Coach driver, M25]

Some HGV drivers who work nights disagree that this is the best time to conduct roadworks. Understandably, if they drive at night when the roads are less busy, the impact of any delay to these journeys will be magnified.

"Some of the worse, annoying things for me are night closures because I do night driving as well. They always seem to close the roads at night and have diversions and it makes my job impossible." [HGV, North West]

"It used to be that I could drive at night without any problems but I'm noticing more road closures and roadworks during the night which affects my night driving trips. It adds to what is already a tough job." [Coach driver, North West]

Some of the stakeholders also strongly disagree that work should be conducted at night. Those representing industries that rely on time-critical deliveries say their business models is based on being able to guarantee journeys made at night. If roadworks are planned at night, it is therefore essential for certain businesses to know details of it as far in advance as possible. One stakeholder highlighted problems that can be caused by night works starting earlier than the scheduled time, which they consider to be an increasingly common trend.

"Roadworks are always bad news for freight and the authorities often overlook freight issues. Doing work at night can be a problem for freight and diversions can have major implications for operators who are unable to meet delivery deadlines." [Stakeholder]

4.7 Length of works (the distance not the time they go on for)

Road users do not like long stretches of roadworks. There were strong spontaneous views that the length of a section of roadworks is likely to correlate with the amount of inconvenience caused to journeys. Participants were asked to consider a simple trade-off: is it preferable to have constant roadworks for a 12-mile stretch taking a year to complete; or is it preferable to have three four mile stretches each completed before the next one starts but taking 18 months in total. The latter option is almost always chosen for the following reasons:

- Shorter sections of work *feel* like they cause less impact on journeys than longer stretches (irrespective of whether this is actually the case)
- It is perceived that there is less likelihood of incidents such as accidents or breakdowns occurring in a shorter section of roadworks.
- Participants said driving through long stretches of works can be tiring and demanding due to the concentration required to focus on narrow lanes and observing speed limits, especially if encountered frequently over a long period of time
- They also said that concentrating roadworks activity in short sections is likely to have the important psychological advantage of minimising frustration caused by perceptions that lanes are coned off unnecessarily when nothing appears to be happening

“Smaller sections would definitely be better because you could see things developing and wouldn’t feel so bad about it.” [Business, M25]

“If a job takes five guys three months why don’t they put fifteen guys on it and get it done in one month?” [Leisure, Midlands]

“You wouldn’t get so frustrated if was a short section and you could see men working because you would think they’re going to get it done quickly” [Leisure, Midlands]

“The M1 was coned off from the bottom of the M6 to Northampton with a 50 limit and that must be about 30 miles. They should do it on a rolling basis so they keep all the plant and just keep progressing up the motorway. It wouldn’t seem so long if each section was only 10 miles.” [Business, Midlands]

“I’m not really bothered about how long roadworks go on for as long as I keep moving so it’s about how the work is managed rather than the length of it for me.” [Coach driver, M25]

“In France and Germany they do the work in shorter bursts and there’s so little disruption it’s unbelievable.” [HGV, South West]

“When you are travelling through miles and miles of roadworks but only see something happening for half a mile of the stretch, it is frustrating as you are still having to go through miles at 50 miles an hour and you wonder why.” [Leisure, North East]

We also asked for participants’ views on the ‘big bang’ alternative whereby a section of road would be completely closed for a short period of time in order to minimise the duration of impact on road users. This elicits a very negative response among all road user groups, and especially among HGV drivers and logistics stakeholders. Even if adequate notice could be provided, most associate this solution with chaos and severe consequences to be avoided at all costs, except in emergencies only. Furthermore, many consider this would be impractical for much of the SRN, especially in areas such as the M25, the South West and the North East where they didn’t think there were suitable alternative roads to re-route traffic.

“It doesn’t matter what time of the year or month the work has to be done as long as the road isn’t shut.” [Business, Midlands]

4.8 How long roadworks take to complete

This was also identified as a big issue for many who perceive there to be an increasing trend towards major roadworks that go on for long periods of time.

Importantly, however, the extent of disruption is widely agreed to be more important than the duration of the work. In simple terms, road users would prefer any duration of work causing minimal impact than works causing significant delays.

Many emphasise the importance of providing advance notice of how long work is expected to last and also to provide ongoing updates on progress.

“There’s no way they can work on the whole stretch they close off because it can go on for miles and miles, so why not just do one junction at a time?” [Leisure, Midlands]

“At 1am or 2am in the morning, by the time you get where you are going, you are sick of roadworks especially if you start on the M5 heading north up the M6 because all there is in front of you is cones and more cones.” [HGV, North West]

Many would also like to know that a bonus and penalty scheme is in operation for early or late completion, but tend not to have a view on how this could be easily communicated, other than by providing details of a website to visit for further information.

“There needs to be some kind of accountability to ensure fines that are supposed to be applied actually are so we’re not having the wool pulled over our eyes.” [Business, M25]

“I know there are penalty clauses but there should be performance bonuses as an incentive to get the work finished early.” [Business, Midlands]

“You should say to the contractor ‘you’ve got six months to do this so if you do it in four you’ll get a bonus and if you take longer there will be penalties’.” [Business, South West]

“The companies should be fined if the work is delayed or overruns because it is more disruption to the people on the roads.” [HGV, North East]

Road users have mixed views on what they consider acceptable or too long for the duration of work. This is partly due to the experiences of participants using different sections of the SRN; a six month project might be tolerable on one road, but could cause extreme difficulty on another.

“Just do it a junction at a time so it is not as much in one go. On the M60 they could just concentrate on it a junction at a time which would be much easier to drivers.” [HGV, North West]

4.9 Cost

As part of the research, road users were asked to trade off different approaches to duration of works and associated costs. Most assumed it to be cheaper to conduct roadworks during the day than at night, and cheaper to do longer stretches than short stretches, and that cost is therefore the reason why work tends to be done the way it is.

“It must all boil down to money. I assume night work will cost them time and a half or double time. It must be cheaper to cone off 20 miles at a time rather than to do it in sections. Someone must do the maths and work out what will cost less or make most profit.” [Business, M25]

Almost without exception, road users think the relative cost of the different length/duration options should be one of the least important issues in the decision making process, because:

- Work to maintain and improve the SRN is viewed as essential rather than discretionary and therefore easy to justify from a cost point of view

- They believe roadworks are paid for from road taxes and driving fines as well as from general taxation, so the needs of road users should be prioritised over the cost of works – essentially a “it’s our money, spend it how we want” view.

“Haven’t they got unlimited money the Highways Agency, isn’t there pots of money for roadworks? Imagine how much money they must get from all the fines for speeding on motorways; that would be enough to pay for all the work that need doing I would think.” [Leisure, M25]

“Well we are paying for it ultimately so does that not mean we should get them at suitable times for us? It is the taxpayer’s money after all.” [Leisure, North East]

- Although exact costs were not discussed, the numbers involved are meaningless to the majority who have no idea of whether a project should cost £10 million or £100 million
- Some feel the perceived lack of accountability results in money being wasted through procurement inefficiencies and unnecessary work being commissioned in order to use budgets at the end of the financial year

“Often there will be roadworks in the same place they were a couple of months before. I wonder whether the DfT or whoever issues a budget to contractors to do maintenance and they have to spend it whether the work needs doing or not.” [Leisure, M25]

“If you were spending your own money you might be more sensible or caring about it but they’re not spending their money because the rest of us are footing the bill. That’s what irritates me, it’s a waste.” [Leisure, Midlands]

“Some projects seem to drag on for a long time so I assume there must be some back-handers involved with lots of contractors making lots of profit out of it and lots of public money being wasted.” [Motorcyclist, M25]

The overall feeling is therefore that the cost of roadworks should be a less important consideration than the impact they have. Many road users feel that if delays can be reduced by paying more to plan or complete roadworks in a particular way, then this is a price worth paying. Some went further and spontaneously said that it may be incomplete or misleading to look at the cost of roadworks in isolation. Instead, they said ‘overall cost’ of the various options to carry out the work should be evaluated in the broader context of the impact of roadworks on the economy. The common perception is that a ‘silo’ mentality is adopted and only direct costs are considered rather than the true costs to ‘UK plc’. They perceive it may be more expensive to complete work quickly using rolling shifts but the additional cost could be justified if the overall cost to the economy is considered.

“There will be an indirect cost if you slow traffic down significantly for a long period of time, a cost to everyone who will avoid using the motorway and putting wear and tear on side roads and having more minor accidents.” [Leisure, Midlands]

“It might not cost so much to do the work in the day because they don’t have to pay double time but you have to consider the cost to people who have businesses to run and can’t make deliveries because they are being held up.” [Business, Midlands]

“Why do roadworks on such long stretches of road and why not work 24/7 especially during the summer months? Where is the consideration of the impact and cost for UK PLC?” [Stakeholder]

4.10 Safety

In previous work for Transport Focus, we found that safety firmly sits at the base of a needs hierarchy for all road users when making journeys on the SRN. This research reaffirmed this with regard to safety when driving through sections of roadworks. An important point of note is that road users accept the rationale for safety measures within a stretch of roadworks, but do not always consider those safety measures to be obvious and therefore they have the potential to be misunderstood.

Views expressed tended to focus on the use of speed cameras. Participants find it easier to understand the need for speed limits through roadworks when the workforce is visibly present, when lanes are narrower than usual or if a contraflow is in operation. However, many fail to understand why reduced speeds need to apply at other times, especially when all lanes are open and when there are no workers present. Some suggest there may be a reason for imposing speed limits that motorists are unaware of, in which case irritation could be allayed by providing an explanation.

*“You’re less likely to have an accident if the speed limit is lower because if you’ve seen an accident in a contraflow or something like that the whole thing can come to a standstill.”
[Leisure, M25]*

“I can understand a 50 limit to protect workers but if there’s no workers there why not put it back to 70?” [Business, Midlands]

*“In the evening when the traffic is quiet I don’t see the need for the speed limits because everything’s at the side of the road so there’s no need to be doing 50 at 11.30 at night.”
[Business, South West]*

*“Average speed cameras should be turned off at night when the roads are empty and there’s no work going on and three lanes are open, why not put it back to 70?”
[HGV, South West]*

Much of the irritation caused by safety cameras is due to their effectiveness. This is especially true of average speed cameras that road users consider to be more effective and safer than single cameras that cause erratic behaviour, as drivers look for the cameras rather than at the road and brake sharply before them and then accelerate away.

“You can slow down when you come to a speed camera but when they are five miles apart and they time you as you go through, you know you’ve got to stick to the speed limit.” [Leisure, M25]

“Cameras can be distracting because you’re more focused on watching your speed than what’s happening around you and that can cause accidents.” [Leisure, Midlands]

“I hate it but it works so if you want to reduce speed average speed cameras are the way to go.” [Business, South West]

“Sometimes the drivers are looking out for the cameras rather than watching everything else that is going on around them.” [Commuter, North West]

“The constant speed changes due to the cameras can cause more accidents than if they kept the speed constant.” [Leisure, North East]

The combined effect of the effectiveness of cameras and the feeling they are used over-zealously often creates a feeling that such safety measures are unnecessarily punitive and compound the ‘misery’ for road users already inconvenienced by roadworks. Indeed there is considerable cynicism regarding the underlying intentions of some cameras, which are assumed to have the primary motive of generating revenue rather than acting as a safety device in the interests of road users.

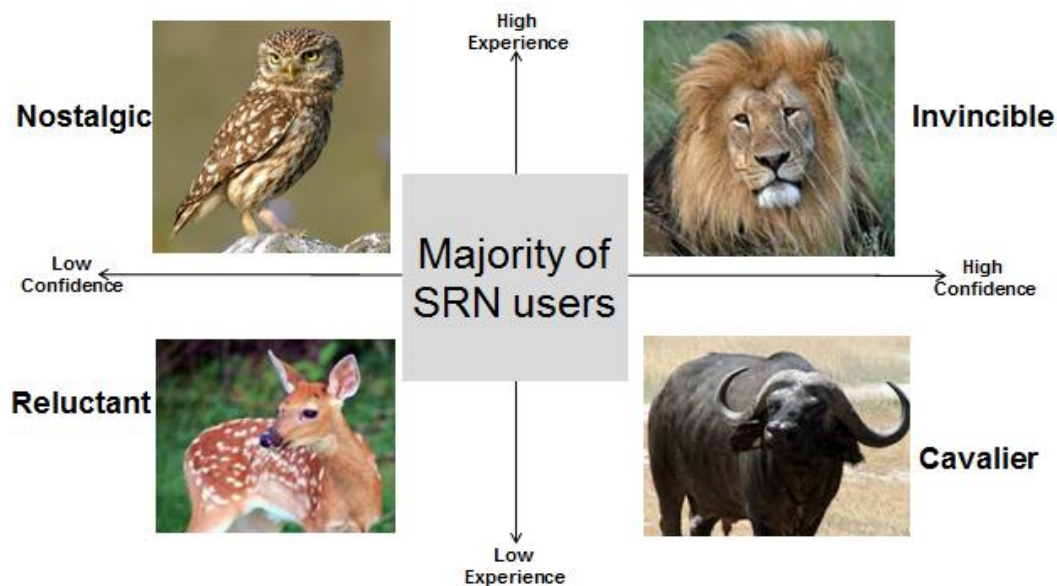
“Sometimes the limit will fluctuate between 50 and 60 and there’s no rhyme or reason for it and you think they are just adjusting it to catch you out so they can issue a fine. I honestly feel it’s just a way to hand out speeding tickets.” [Leisure, Midlands]

“When they put the variable speed limits in at the Almondsbury interchange it was allegedly for safety but it turned out to be a massive money making ruse and tens of thousands of motorists were prosecuted.” [Business, South West]

“Sometimes you have to concentrate on the fluctuating speed changes from 50 to 60 which means you are not noticing other drivers and the road layout and lane changes etc. which is not good.” [Commuter, North West]

4.11 Narrow lanes

Attitudes to narrow lanes are closely linked to road user typologies we identified in previous work for Transport Focus based on two key dimensions, levels of experience and confidence when making journeys on the SRN, as follows:



Those in the Invincible and Cavalier groups generally feel more confident in their driving ability and claim narrow lanes not to be a problem in terms of their ability to drive through them. Any problems with these groups are more related to their attitude to the presence of narrow lanes; they easily become impatient with speed limits, and especially with others who may be adopting a more cautious approach. This can lead to speeding or frequently switching lanes in an attempt to gain an advantage that others can perceive as aggressive or dangerous behaviour.

“Narrow lanes are a problem for me because I get stuck behind other vehicles and can’t go down the inside.” [Motorcyclist, M25]

HGV drivers (Invincible) are aware that others can be intimidated by them when driving through narrow lanes. They tend to be less concerned about narrow lanes and the speed limits that apply through them due to their confidence as drivers and because they are less affected by the speed reduction. They think all road users would benefit from a wider inside lane for HGVs only to give other drivers more room and for HGV drivers to avoid the possibility of being stuck behind a car travelling at a low speed.

“A lot of the cars are slower than us in roadworks and they all sit in the inside lane doing 35 and we can’t overtake them because there is a width restriction on the outside.” [HGV, South West]

“Narrow lanes can be a problem for us too as you get stuck behind car drivers who are not confident or used to driving at night and through roadworks so they are travelling at 30 miles an hour in the left hand lane and we cannot necessarily overtake”. [HGV, North West]

“You can’t get two wagons and car through some of them lanes, they make them too narrow and then that forces some car drivers to drive too erratically to get past us. You are going slow and then cars start trying to cut you up” [HGV, North West]

Car drivers drive too quick, too near and if you leave space in between wagons, they will be straight in to the space and then you hit them. They blame you for your braking distance but if you have got 44 ton behind you then you cannot stop that quickly and neither the car driver nor people designing the roadworks take this into account.” [HGV, North East]

“Narrow lanes are a non-issue for trucks that have to travel at a limited speed but are a problem for other drivers who are intimidated by them” [Stakeholder]

Nostalgic and Reluctant drivers adopt a more cautious approach through narrow lanes and admit to being intimidated by other road users. They recognise that they may drive more slowly than the speed limit allows and are aware this causes others to be impatient and drive aggressively around them. Some recognise that they cause additional delay to others, but are reluctant to drive in a way that will compromise their safety.

“You are in your little car and you have got big trucks at the side of you and in the narrower lanes and it is raining, well that then starts to stress me out and I start feeling more stressed. It feels quite intimidating especially when there is spray from the rain and you are trying to stay in your lane.” [Commuter, North West]

“They narrow the roads and I’ve been beeped at a couple of times before because I must have gone slightly into another lane but it has not been deliberate and sometimes it is really hard to stay within the narrow lane.” [Leisure, North East]

We therefore hypothesise that narrow lanes may have an impact at a number of levels:

- Speed limits that apply will naturally extend the time it takes to drive through affected areas
- The presence of narrow lanes will cause certain types of road users to drive in a different way. An impatient or overly-cautious approach is likely to create further delays

- In extreme cases, driver behaviour in response to narrow lanes may be more likely to cause accidents which have the potential to cause considerable further disruption on top of the delays being caused by the roadworks

4.12 Roadworks signage – specifics

Orange roadworks trial*



These signs tend to elicit mixed views since their intention is not always understood.

Those who recognise the intended safety message tend to respond positively to this type of sign. The more emotional tone of the message combined with images is welcomed on the basis of softening attitudes to the roadworks and potentially creating a more positive feeling among road users who might be feeling impatient or irritated if their journey is being affected.

"It's to make you slow down and drive more carefully. You don't want to kill anybody because you'll upset a child. It sort of humanises the roadworks." [Leisure, M25]

"It's just trying to make it more personal isn't it, to make you drive more safely. That's what it's all about." [Business, M25]

"It makes you smile and reminds you to be careful because there's always the possibility of accidents in construction and it's someone's family." [Leisure, Midlands]

"I think that's a brilliant sign because I work in construction and it brings it home to have a bit of consideration." [Business, Midlands]

Those who fail to recognise the safety message have a less positive response. They either fail to see the point of these type of signs, or regard them as patronising. In either case they tend to elicit a cynical response and are likely to be dismissed as unnecessary clutter.

"I think 'let's all get home safely' is very patronising, it feels like you are in primary school. 'Drive safely' or 'kill your speed' is better because they are more direct and to the point."
[Leisure, M25]

"The one with the guy smiling in the builder's hat I find very patronising. None of us are smiling as we are driving through the roadworks." [Business, M25]

"That's totally irrelevant to me, I don't want to know your dad works there."
[Business, M25]

"These signs can be as much of a hazard as the roadworks because people slow down to look and they are unaware of what's around them, like the advertising signs along the side of the motorway." [Leisure, Midlands]

"You always see signs don't you, like this. Nice one, but where are they? I've never seen them. I think it is supposed to encourage us but it does not encourage me, it just annoys me." [Commuter, North West]

"I suppose it makes you aware and slows you down but I find that sort of thing patronising and condescending." [HGV, South West]

"Yes we know there are parents working there, I mean people's parents work everywhere don't they? So we don't need to know that in my view." [HGV, North West]

On balance, this safety signage serves a more positive than negative purpose of reminding road users of the need to drive carefully and observe any speed restrictions through roadworks, although a less subtle approach may be more readily appreciated among a wider audience.

Work starts here



This sign is often considered to be (depressingly) familiar among all road user groups. Although it elicits initially negative responses, most recognise it serves a useful function, primarily to provide advance warning of the likely disruption caused by the roadworks. Participants agree it is useful to be told how long the works are scheduled to last, even if this is unwelcome news. Some feedback from the research suggests this type of sign could have a more positive effect by highlighting the benefits rather than disadvantages of the work to road users.

"They put a big yellow sign up giving advance warning of roadworks and sometimes they give a phone number for inquiries." [Leisure, M25]

Sometimes there is too much information to take in and it takes three or four times of driving past to understand what is happening, when it is starting and how long it will be going on for.” [Commuter, North West]

Diversion



Although a sign labelled as ‘diversion’ is readily understood, the symbols in isolation tend not to be recognised or understood by most road users. When shown in the focus groups, the type of sign shown almost always achieved low levels of familiarity among participants. The notable exception to this is HGV drivers who are more likely to encounter diversions and diversion signage than other types of road users (see below).

Summary of roadworks signage

Findings on signage used during roadworks are relatively consistent. At a spontaneous level, it is not a subject road users tend to express strong views on, especially in the context of discussions on roadworks and incidents. However, when prompted with stimulus materials to allow discussion of signage in a more considered way, a number of principles emerge that are likely to better meet the needs of the majority of road users:

- Advance warning of any roadworks is essential for planning purposes (and in the absence of other planning tools being widely used)
- Provide a start date and the anticipated duration
- Provide an indication of the reason for the work
- Attempt to position works as an improvement and ideally communicate the end benefit to road users
- Avoid unnecessary clutter likely to detract from the key information content of the signs
- Provide website details and a phone number for access to further details

“When they did the M23 they said it would take two years but you sort of accept it more if you know there will be the payoff of a better journey at the end of it.” [Leisure, M25]

“The slip road that comes into Birmingham by Ikea was closed for over a year and when they opened it you couldn’t tell what had been done and I was thinking ‘what on earth has it taken a year to do here because it’s not visible’.” [Leisure, Midlands]

“It would be nice to know how your taxes are being spent. It would be a nice touch to explain what’s happening and it would be interesting and informative.” [Business, South West]

“Because people get annoyed when no one is there they could provide a way to get updates and say ‘we’re not here today because it’s too hot or cold to lay tarmac or we’re waiting for this to happen or that to be delivered’.” [Business, South West]

“Sometimes there can be too much signage and it is a lot to take in, especially at night.” [HGV, North East]

“The M1 has recently had a 17 mile section of repairs with a 50 mile an hour speed limit. 17 miles is efficient for contractors but not for motorists who would benefit from having more information available about why workers are often not visible.” [Stakeholder]

“The emphasis needs to be on getting more information to road users about what is happening, when it will end and why it takes so long in the same way that passengers now get information on rail.” [Stakeholder]

4.13 Other signage

Overview

During the focus groups, participants were shown and asked for their views on a range of signs relating to road incidents.

The overall conclusion from this exercise is that road users have relatively simple and consistent information needs in the context of all potential types of road events. The majority of road users are not interested in knowing the detail about an incident and prefer the communication to be as concise as possible. A few of the more experienced drivers in the research said information on the nature of the incident helps them to assess how serious it is likely to be, but all agree the most useful information in any situation is to have an indication of the likely length of the delay.

Specifics

Naturally, there are differences of opinion that make it difficult to strike the correct balance and tone to suit all road users. However there is sufficient consistency to be able to draw some broad conclusions, summarised below:



Identified as the most helpful information in all circumstances. Best if shown exactly as in the example above. It is essential to show miles and minutes (otherwise it is meaningless to those unfamiliar with the road). It helps motorists to estimate the extent of any delay. Junction number and place is important (J55 in isolation will be meaningless to many)

*“This is the most useful sign because it gives an indication of whether the road is clear or not in a way that is easy to pick up quickly without needing to read anything.”
[Coach driver, M25]*

“The frustration you feel when you’re delayed I think is dramatically reduced if you know how long you’re going to be delayed for.” [Business, South West]



This tended to elicit negative responses. It was considered to be unnecessary if fog can obviously be seen. Participants thought an instruction to use fog lights would be more useful, accompanied by a reminder to switch them off when no longer required.

“Rear fog lights are terrible because they make people brake all the time. It should say ‘check your fog lights and turn them off.’” [Business, Midlands]

“‘Turn fog lights on’ would be better than ‘slow, fog, use lights’ and how about having one that says ‘turn your bloody fog lights off?’” [Business, South West]

“One of the most frustrating things with car drivers is fog lights. They switch their fog lights on and blind everybody and don’t switch them off.” [HGV, South West]

“If you need to be told to put lights on because of fog then you shouldn’t be driving really should you?” [HGV, North West]



This was universally recognised as speed sign, but not always correctly interpreted. Some are unaware of difference between compulsory and advisory speed limits and as a consequence a few ignore them and drive at what they consider to be a safe speed. One or two claim to take no notice and ‘risk it’.

“I look at the signs differently. If I’m able to move fast on a motorway I’m off, I don’t care what the sign says, I’m off.” [Business, M25]

“Perhaps somebody could help me; what’s the difference between a speed limit and an advisory limit, because I just accept everything they say and stick to it?” [Business, Midlands]

Information / advice signs*



These signs elicit a polarised response among road users, similar to the orange 'my dad works here' roadworks signs. Some dismiss them as patronising and claim to be offended by this level of interference and 'nannying'; many drivers consider such signage to be common sense and therefore unnecessary. Others see no problem in providing sensible reminders in the form of safety messages. This is especially true of leisure drivers and those who make long journeys on the SRN on a less frequent basis.

"I think the 'tiredness can kill' one is good because sometimes on a long stint back from the West Country it's only the fruit pastilles that are keeping me awake." [Leisure, M25]



Almost all recognise the potential value of this sign (and other similar ones) to remind or inform all road users that this is a requirement of the Highway Code rather than optional behaviour. Some believe increased use of this sign could make an important contribution to reducing delays and driving-related incidents on the SRN.

"Signs that say 'no tailgating' or 'get in lane' or don't sit in the middle lane' are handy because how often do you see people doing that?" [Business, South West]

"If they're going to do it they will do it and the type of person who will tailgate wouldn't give a toss about a sign." [HGV, South West]

"How can they enforce this sign though? Plenty of people sit in the middle lane but I don't understand how this can be enforced." [Leisure, North East]

4.14 Diversions

Diversions are considered to be a minor issue by most road users who feel they are more likely to be encountered in the context of roadworks, but may also be employed as an emergency measure to deal with an incident. Experiences of diversions among the drivers in our research were too infrequent to generate strong opinions, but the general view is that they are usually sufficiently well planned to minimise inconvenience to road users.

Diversions are a much more important issue for HGV drivers who are reluctant to leave the SRN. They find diversions especially difficult if they are not carefully planned; their concern is being diverted onto roads unsuitable for HGVs due to height, width or weight restrictions and then being unable to find a place to turn round. This was often offered as an illustration of why many HGV drivers do not use a standard satnav, since the majority of those devices are not equipped with the software necessary to identify appropriate diversion routes off the SRN for HGVs.

Participants are uncertain about whether diversions are the responsibility of Highways England or its contractors, but a critical issue raised is the amount of notice that needs to be given which some feel is often too short for many companies to react by adjusting drivers' routes and schedules.

This is consistent with findings from previous research we conducted for Transport Focus on road user needs and experiences. The logistics sector further highlights a lack of consultation in relation to how diversions are planned (which compounds the frequent lack of notice given). As previously explained, HGV drivers are less happy about roadworks happening at night and the introduction of a diversion tends to exacerbate the inconvenience that night work can cause.

"I was following a diversion off the A30 and it said turn left but this car came out and said 'don't go down there mate, I struggled to turn round so you've got no chance'. What actually happened was they put the sign the wrong way and it should have been a right turn." [HGV, South West]

"Some diversions aren't very well marked. I was following one off the A30 and it was pitch black and hammering with rain and getting narrower and narrower and I was thinking 'where's the sign?'" [HGV, South West]

"I've got a trailer that's taller than a double decker bus so my main worry is low bridges and branches on trees." [HGV, South West]

"I was sitting on the M2, so they diverted traffic off and they sent us under a 15.9 bridge. I've got a 16.2 foot trailer on here and they sent us a diversion that way. I was stuck." [HGV, North West]

"It depends if you can find them or understand them. They should have one sign with them all on." [HGV, North West]

"Friday night on the A1 was horrible. I got diverted across to Middlesbrough on all sorts of roads because they were doing roadworks on the A1. It is adding time on the journey all the time and to any manager that time is money." [HGV, North East]

"I did a big circular route once going through Middleton on the M60. I followed a diversion and then picked up the diversion later on which was coming back in the other direction and ended up exactly where I started. It was confusing." [Commuter, North West]

"If you have a diversion in place, put diverted signs at every single junction because you follow one and you will get to a roundabout and there are no signs. Then you panic and potentially take the wrong junction and then you end up going miles out of your way." [Leisure, North East]

"I got diverted into three diversions on the one journey. I ended up in Hartlepool from A1 and in the end I had to stop and ask for directions as the diversion signs were confusing. It took about forty five minutes extra to get home and was so frustrating." [Leisure, North East]

"You never know how long the diversion is going to be. It would be useful at the start of the diversion to know how many miles or minutes this will add onto your journey." [Leisure, North East]

5 Road incidents

5.1 Understanding and impact

Road users say they consider these events to be unpredictable (by their nature) and therefore impossible to factor into journey planning (assuming journey planning has taken place). They claim the disruption caused is often worse than for roadworks since it tends to be an immediate emergency that needs dealing with and in certain cases can have a significant impact on journeys.

“These are spontaneous events that happen without any notice. I probably find them less frustrating because I know they can’t be helped.” [Leisure, M25]

In spite of this, most tend to display high levels of tolerance and understanding towards these events. There is an acceptance that they are likely to be highly distressing and stressful for those unfortunate enough to be involved in them, and puts any unhappiness at being delayed into perspective. Generally speaking, most have sympathy for those involved and are grateful not to have been the cause themselves.

“When you see flashing lights and the emergency services I just think of the people affected and hope nobody’s hurt. I sympathise with them and don’t feel so angry about the delay.” [Leisure, M25]

“It can be frustrating to sit in a queue but when you realise it’s due to an accident you feel sorry for the people involved. Sitting in traffic isn’t as bad as having to be cut out of a car.” [Leisure, Midlands]

“If there is an accident my view is that I’m going to be late but I’m going to get there safely.” [Business, South West]

“Once I spot emergency vehicles then suddenly I’m a lot less frustrated and just glad I’m not involved in it.” [Leisure, North East]

As previously indicated, incidents are unexpected and fall into two broad categories for road users, those that are understandable and others that are considered to be inexcusable. Although it is not always possible to know which category an incident falls into (and indeed the categories are not recognised as such by road users), attitudes to the most common occurrences are summarised in the following sections.

5.2 Understandable (Obstruction category)

Peak congestion

Road users understand why peak congestion occurs on certain roads but consider it similarly to roadworks without any visible activity – i.e. they are inconvenienced without any beneficial outcome. This puts it in the Obstruction category.

Some commuters, HGV drivers and frequent business users claim peak congestion to be an extremely frequent, if not daily occurrence for them. Some of those who travel on the busiest roads at peak times mentioned that congestion is becoming a fact of life. Many have become resigned to it

if needing to make journeys on the SRN at these times of day. For certain roads or sections of roads known to be especially busy, participants are aware that this type of congestion may occur at any time of day rather than being restricted to peak times only.

As a consequence, congestion tends to be categorised as a delay to journeys made rather than an incident by most commuters and others who experience it. Most consider there to be no way to avoid these delays (even with the help of planning tools) and they are often factored into journeys rather than thought of as an unpredictable event.

"I would never use the M25 to get to the airport because it's too unpredictable. I've been told by taxi drivers they won't take you on the M25 to get to Heathrow because they can't guarantee to get you there for your flight" [Leisure, M25]

"Every morning we come up the M4 to the M32 and it's stacked solid back to Almondsbury and you know it will be like that so you know you will be held up there at a certain time of day so you're expecting it." [HGV, South West]

"I think if you are a worker who is in a 9-5 job and you have to be in at a certain time, you could be anxious that you are going to get in trouble and it is completely not your fault." [Commuter, North West]

"It means we now have much longer working days as we have to set off a lot earlier than we would normally which is annoying." [Commuter, North West]

Weather

Most felt this can be factored in and most weather-related incidents cause mild rather than significant delays and most do not take account of weather conditions when planning a journey. Participants see this as a cause of additional incidents, with many saying the main problem is other road users not driving sensibly to suit conditions. This is a good example of how an Obstruction event can move into the Irritation category. Occasionally weather can cause severe disruption to a journey (especially snow and ice).

"The wind always shuts down one of the Severn bridges but you can't do anything about the wind or the weather. It's all part of the job and I find it easier to accept than an accident really." [HGV, South West]

"I've seen lorries blown over due to the weather and that can cause whole roads to be close for substantial amounts of time. Wind notices are important I think." [HGV, North East]

Debris / shed load

Road users spontaneously identify this as a potential cause of incidents, but debris on the road or HGVs shedding their loads had not been frequently experienced by participants. Discussions of these events therefore focused on how they should be handled.

The key requirement is for a rapid response to incidents once they have occurred. The common perception among road users is that generally there is no reason to prevent removal of the obstruction quickly. Debris and shed loads are perceived to be easier to deal with than an accident, as they are unlikely to require police involvement and are not subject to the same health and safety regulations. They expect the emphasis to be on moving the obstruction as quickly as possible in order to get traffic moving.

Some suspected these incidents are often caused by poor or careless driving, in which case their tolerance levels will be considerably lower (although in reality most recognise the responsibility/cause will not be apparent).

Accidents

Considered to be a frequent Obstruction event, but hard to mitigate by advance journey planning. Potentially the incident that can have the most significant impact on a journey. It elicits considerable sympathy from drivers, but our research shows they think a reasonable proportion to be the result of irresponsible driving.

Emergency roadworks

Understood as a necessary response to an extreme event (e.g. resurfacing due to a spillage), and therefore virtually no opportunity for advance planning. When it occurs it can have an extreme impact on a journey, so participants feel fortunate that it is rarely encountered.

5.3 Unacceptable (Irritation category)

In previous work for Transport Focus we highlighted a number of concerns in relation to driving standards. The findings in this research add to that understanding in respect of roadworks and incidents specifically.

In this work road users frequently believe poor driving to be a cause of delays through roadworks and incidents on the SRN. Some consider this causes accidents or other Obstruction events and contributes to the number of delays experienced in roadworks. Poor driving is felt to be attributable to a number of factors:

Lack of education

Many think this is a particular issue for motorway driving and some are prepared to admit to their own knowledge gaps in the focus groups and depth interviews. The problem is felt to be that motorway driving is generally self-taught with little or no further formal training or instruction. There is a common feeling that the conditions and dangers associated with driving on the fastest roads require a skill set which many have yet to acquire, and different from the urban driving that most road users are used to (with the exception of HGV drivers) .

"We all do CPC training so we get updated but what does the average car driver get; nothing. They pass their test at 17 and can drive until they are 70 and quite frankly some of the people on the road shouldn't be driving, simple as that." [HGV, South West]

A minority issue raised in this category is towing a caravan. This is considered to be a frequent cause of delays on the SRN, especially during holiday periods, and is also associated with drivers lacking adequate training.

Lack of knowledge

This is a similar issue but tends to be characterised by drivers who may have the necessary education, but have either forgotten it due to the time that has elapsed since they passed their test or choose to ignore it. Three key themes were consistently identified:

- **Lane hogging:** Motorists being unaware that they should not use the middle lane unless overtaking and common uncertainty about when 'undertaking' is allowed.

*"You often see someone sitting in the middle lane doing 40 or 50 and that drives me nuts."
[Leisure, Midlands]*

"Gritters use the middle lane and everyone thinks they have to overtake in the outside lane. Because they assume undertaking isn't allowed so the signs should encourage use of both lanes." [Coach driver, M25]

"More effort should be made to make people aware of the rules because lane-hogging may be due to people not knowing the rules." [Coach driver, M25]

*"Too many people sit in the middle lane and it can cause accidents."
[Commuter, North West]*

- **Smart motorways:** Many of the participants are unaware of what these are (including some who frequently drive on them). Some are uncertain about how to behave and how to respond to signs (especially in relation to a red X indicating a lane should not be used and when the hard shoulder may be used).

"Maybe someone can fill me in, what is a smart motorway?" [Business, M25]

"Smart motorway, is that where you can now go on the hard shoulder? I don't like that, what about breakdown vehicles? Is that what it is?" [Leisure, North East]

- **Speed Awareness Course:** A number of participants had attended a course and unanimously recognise the main benefit to be the role it plays in filling knowledge gaps, especially in relation to motorway driving. This supports the view expressed by several participants that many would benefit from having their knowledge and skills refreshed or even re-tested on an occasional basis.

"My mum lives in Spain and they have to retake the driving test when you are 65 and I strongly believe people should have to do that here." [Business, M25]

"People just don't know enough. We've just proved [that] by looking at these [example road] signs that we haven't got a clue. Enforcement should be to go on an awareness course rather than getting three points or a fine." [Business, Midlands]

"I got caught speeding and it was one of the best things I've ever done because I went on a speed awareness course. We've all passed our test and think we are masters of the road but if you had to take it again you wouldn't pass. They were asking questions and so many people got them wrong, it's unbelievable." [Business, South West]

"As soon as you get points for anything you should have to go on a refresher course, like you do for speeding because all of us would admit they've learned something they didn't know on a CPC course." [HGV, South West]

Poor / reckless driving

Participants consider this to cover all dangerous behaviours having the potential to cause accidents and therefore it is felt to be an important contributing factor to delays through roadworks and other incidents on the SRN. Participants commonly refer to speeding (including through restrictions imposed for roadworks) and using mobile devices while driving, but this also includes activities such as tailgating and failing to observe any rules or signs on the SRN. Drink or drug driving and failing to ensure a vehicle is roadworthy would also fall into this category.

*“The thing that annoys me is reckless drivers who keep motoring on when everyone else is being sensible. Why are there always one or two who could cause an accident?”
[Leisure, Midlands]*

*“A lot of the problems are due to poor driving. When there’s a red cross over a lane people disregard it and cut in at the last minute which makes everybody jam their brakes on”
[Business, Midlands]*

“Warning signs are there for a purpose but what frustrates me is when people still blast past you at 70, 80, 90 miles an hour because they could cause an accident I will get stuck in.” [Business, Midlands]

“In Germany driving standards are much higher on the faster roads they have there because they seem to give each other more space and aren’t obsessed with needing to get ahead of each other.” [Motorcyclist, M25]

*“I see a lot of bad driving by overseas registered vehicles and I think those people cause problems and they’re never traced or prosecuted or held accountable.”
[Business, South West]*

“People push in and out if they think another lane is moving quicker and that’s half the problem, driver behaviour and trying to push into other lanes.” [Business, South West]

“An accident will be Eastbound and you’re stuck in traffic Westbound because of rubberneckers which is more frustrating than being stuck on the same side as the accident.” [HGV, South West]

“You have got to be aware of how incompetent the car drivers are, though that is what you are concentrating on, not yourself.” [HGV, North East]

“You get some drivers who just get really frustrated and angry and that is when the road rage and the dangerous driving starts.” [Commuter, North West]

Many participants said they are unable to understand why these ‘soft’ laws are not more rigorously enforced and believe that doing so would have the benefits of raising money in fines that could be used to fund road improvements (or refresher courses), making the SRN a safer place for everyone

“There’s always somebody up your backside pushing you to go faster or someone sitting in the middle lane. I don’t think people are educated well enough and I don’t think certain laws are enforced enough.” [Business, Midlands]

“Some people sit in the middle lane and others pull into your braking space. There are cameras on the motorways so why don’t the police pick these drivers up? I want to see more training.” [Business, Midlands]

“When cars just sit in the middle lane, leave the left hand lane for the trucks but that is not working and is not helpful on the road. Sometimes the truck can be going faster but they will remain in the middle lane causing all sorts of problems.” [HGV, North West]

5.4 Major incidents

The issue of major incidents was topical at the time of the research since the M5 and M6 had both been closed due to separate incidents in the week or so before the focus groups were conducted. On both occasions, some of the road users who took part in our research had been trapped in one of these incidents for nine hours and one of the HGV drivers in Bristol had been caught in the M5 incident.

Major incidents are rare on the SRN and so participants were therefore unable to provide observations from first-hand experience. The common view (although recognised to be easier said than done) is that the priority should be to prevent more traffic joining the queue as soon as possible, even if this means closing the ‘joining’ slip roads and risking major congestion on the surrounding roads. This is considered to be preferable to being trapped for many hours.

By their nature, each event is likely to involve a specific set of circumstances that may be unique or rarely experienced in the area in which it occurs. Road users acknowledge this makes the problem extremely challenging for the authorities to deal with.

Most accept drastic measures may be necessary (and indeed hope these will be adopted) in order to ensure driver welfare is prioritised. In extreme situations this may include the following:

- Once the road has been closed, marshalling drivers to turn round and drive the wrong way back down the carriageway until they are able to exit using the nearest entry ramp or slip road that will have been secured by the authorities. Naturally this needs to be done from the back of the queue and will take time so the disadvantage is that those trapped for longest will be the last to be released.
- Remove a section of the crash barrier from the central reservation to allow vehicles to cross to the opposite carriageway (assuming only one side of the road is affected by the incident). The advantage is that those at the front of the queue are relieved first but the disadvantages are the disruption this would cause if traffic on the opposite carriageway has to be halted and the logistics associated with mobilising the necessary plant to remove the crash barrier.. In relation to this latter point, some are aware of new concrete barriers being installed on certain roads and raised the question about how easy or difficult these would be to remove if required (although some mentioned they believed them to be more effective at preventing vehicles accidentally crossing the central reservation).

“At the moment they (Highways England) have limited ability to do anything very effective in the event of major problems. Even if it’s possible to divert traffic, where is it supposed to go without creating more problems?” [Stakeholder]

“If it’s a catastrophic thing and it’s clear it won’t be cleared for ages they have to start changing the lanes around, allowing people to turn round and come back up slip roads, that sort of thing, whatever it takes to get people off the motorway.” [Business, M25]

“The road needs to be closed as close as possible to the incident and all traffic should be diverted away from the motorway. Then all the traffic that is stuck can be turned round in a safe and controlled way and exit off a slip road.” [Leisure, Midlands]

There was a minibus in front of us that people going to the airport when the motorway was shut due to an oil spillage. They managed to get a taxi to come and pick them up at the junction behind them but that meant they had to walk along the hard shoulder to get

it in order to make their plane in time. They only knew because someone came down along the queue to tell us all what was happening.” [Commuter, North West]

“On the M1 not so long ago I saw them dropping pre-cast sections of barriers off a wagon and slotting them into place.” [Business, Midlands]

“They need to take out the central reservation, even if it’s one of those massive new concrete sections and put a contraflow round it because it’s not going to be hard to replace” [Business, South West]

“In that situation, you almost expect them to come down, take a bit out of the central reservation, turn everybody around and get them all off the road that way.” [Leisure, North East]

- Getting information and supplies to trapped drivers. As a minimum measure, road users expect to see someone on a motorbike or walking through the queue providing reassurance to drivers and giving them an idea of what has happened, what is being done about it, and how long the delay is likely to be. This would also ensure emergency assistance could be directed to anyone needing it.

“Even if it’s just someone on a motorbike or walking through the traffic with a board so you’re not sitting there trying to keep warm with your petrol going down and starting to panic.” [Business, M25]

“Something like emergency services are there because then you become a bit more patient don’t you?” [Commuter, North West]

The majority hold a pragmatic view about how these incidents are dealt with. They are considered to be too infrequent for pre-emptive measures to be cost-effective or worth putting up with the disruption associated with installing them (e.g. removable ‘gate’ sections of crash barriers at regular intervals).

Instead, road users felt the emphasis needs to be on providing a rapid response as well as ensuring incidents are analysed and lessons learned and shared for future occasions.

The following sections discuss methods of managing and mitigating all incidents (not just major incidents).

5.5 Resolution management

Road users are broadly satisfied with the way in which incidents are resolved by Traffic Officers and the emergency services. However, it is possible to identify some differences by how different types of incidents are responded to and how effectively they are then managed.

Response

Attitudes in this respect are generally positive. Road users generally agree that the ‘authorities’ are usually quick to respond, albeit often on the basis of limited first-hand experience. Nevertheless, the perception tends to be that response times are getting better and faster and that those who are first on the scene are doing the best they can. This is occasionally assumed to be due to the increased

presence of cameras and technology that allows the location of incidents to be more quickly and accurately identified.

Management

Opinions are less uniformly positive about what happens when the relevant authorities arrive at the scene. A common perception is it often seems to take a long time for the situation to be assessed and dealt with in a way that allows traffic to move as quickly or efficiently as possible. Road users are unclear about the reason for this. They often suggest those responsible are likely to be operating under Health and Safety constraints that require procedures to be followed to a prescribed approach. While all agree safety must be the main priority, there is a feeling that 'regulations' prevent a common sense approach being adopted. Those in the research with experience of driving in other countries perceived that the priority abroad is to clear the carriageway as quickly as possible to get traffic moving and then to deal with the incident.

"In the States and other parts of the world, if they have a major accident it's cleared within about an hour but over here it always seems to take all day but maybe that's because they have wider roads and a lower volume of traffic." [Business, Midlands]

"Sometimes they don't do the job fast enough because health and safety has to come first. In Germany and France they are on it straight away. They get a tow truck in to clear the road so rather than dithering around they just get on with it." [Motorcyclist, M25]

"With accidents, they used to drag them over to the side years ago to get things flowing again but now it's all about health and safety and it's treated as a crime scene." [HGV, South West]

5.6 Traffic Officers

Some attitudes to Traffic Officers are covered in the previous section. The majority of road users have positive views of Traffic Officers and feel they do a good job, often under difficult circumstances. They assume Traffic Officers will generally be first to respond to the majority of incidents likely to be experienced on the SRN, as previously identified. Most believe Traffic Officers will do what they can to minimise disruption for motorists, despite the dangerous conditions they often work under, and the Health and Safety constraints expected to apply to much of their work. Indeed, participants in one focus group suggested the efficiency of Traffic Officers is a possible reason for inaccurate information being displayed on VMSs on smart motorways.

"I've been on a motorway when there has been a big accident and the Highway Patrol drove in front of the traffic at 20 miles an hour. I think that's a good thing because you know something has happened and it's something more visible than a sign." [Leisure, M25]

"Sometimes the sign will say 'accident' but when you get there there's no sign anything has happened so that must be a measure of how efficient they are at clearing things and getting everybody under way." [Leisure, Midlands]

"They clear debris and assist with incidents by closing lanes, directing traffic and reassuring vulnerable people. They don't have as much power as the police." [Coach driver, M25]

“Also they have all these big posh boards, but the information is out of date a lot of the time and you get there and nothing has happened. Usually this is because it has not been updated from the previous evening closure and it frustrates you as it is still there.”
[Leisure, North East]

Any less positive opinions tend to be due to a lack of knowledge and understanding about the role of Traffic Officers, rather than being based on negative experiences of them.

“It doesn’t have to be roadworks, it can be one little accident with a little car and you get two of them traffic officers blocking three quarters of the motorway and then you’ve got one little lane for everybody to go past. If they would just keep out of the way it would be much easier.” [HGV, North East]

“There seems to be less of the Highway Patrol people than there used to be, the people that used to help people out when they were broken down. There used to be loads and you used to see them whenever you saw a broken down car, I have not seen them as much recently.” [Commuter, North West]

Although a familiar presence on the SRN, many road users are uncertain of the role of Traffic Officers in terms of their range of responsibilities and the extent of their authority. There is considerable confusion with the police in this respect, primarily due to the similarity of liveried vehicles and uniforms worn by officers. However, the common perception is that Traffic Officers have no law enforcement powers and their primary role is to ensure the smooth running of the SRN by fulfilling a range of responsibilities such as attending incidents and removing debris from roads.

“If you see a Traffic Officer you think there might be a breakdown but if you see the police you know there has been an accident or something more serious.” [Leisure, M25]

“They don’t have any authority do they? If someone breaks down they make sure the AA is called and if there’s an accident they probably coordinate with the police to make sure it’s managed as best as it can be. They do seem to be sitting by the road quite a lot.”
[Business, M25]

“Traffic Officers are there to keep things moving but they’re not enforcement officers. I think there’s a difference.” [Leisure, Midlands]

This lack of knowledge of what Traffic Officers do can create a perception that they contribute to delays rather than help to prevent them in certain circumstances. This is due to frequent experiences of Traffic Officers cruising at low speeds on motorways at the front of a long queue of vehicles whose drivers are reluctant to overtake a symbol of authority.

“They sit in the inside lane doing 50 miles an hour and I know I can overtake as long as I’m not over the speed limit but a lot of people don’t do that and think they can’t go past them and it causes a hold up when they are just trundling along patrolling.”
[Leisure, Midlands]

“Sometimes they like to park up and everyone thinks it’s a copper and immediately slam on the brakes and that causes congestion.” [Business, South West]

“They cause delays because they travel at 60 and everybody inches past them at 62 miles an hour because people are unsure what they can and can’t do in terms of prosecution so no one goes past them at the speed they were going, they all slow down.”
[Business, South West]

5.7 Smart motorways

Attitudes to smart motorways are generally positive although the concept and role of them is not always understood. Some recognise the primary purpose of smart motorways is to help regulate the flow of traffic in especially busy areas, rather than to help manage incidents. In this respect, smart motorways are considered to have an important role to play in reducing peak time congestion (categorised as delays rather than incidents, as explained before).

Participants who have attended a Speed Awareness Course (and HGV drivers through their training) are more likely to recognise the theoretical benefits of smart motorways even if these are not always delivered in practice.

“I assume there’s a computerised system that looks at the speed cars are going and works out the best speed and puts it up on the signs.” [Leisure, Midlands]

“On managed motorways what they aim for is to slow us down to stop us catching up with the traffic. I’d rather drive slowly for an hour and a half than sit still for half an hour.”
[Business, Midlands]

“I’m not sure if they work but in time we will know if they do as the one in Manchester is finished now.” [Commuter, North West]

“At peak periods it just opens up the hard shoulder. It does make a difference, doesn’t it?”
[HGV, North East]

Some participants think smart motorways are more likely to cause delays rather than prevent them, for a number of reasons:

- Speed limits are considered to be too slow / cautious (when not understood). This may cause irresponsible drivers to ignore the limit or weave in and out of lanes in an attempt to gain an advantage.

“One of the worst things is when they put 40 miles an hour signs up and everyone hits the brakes and the traffic tails back and when you get through it you think ‘what was that all about?’” [Business, Midlands]

- The variable speed limit may cause some drivers to focus on the signs rather than the road, due to concerns about speeding and being fined.

“Variable speed limits assume everyone drives efficiently, like robots, but everyone starts breaking and getting in the wrong lane and worrying about being busted for speeding.”
[Business, South West]

“Speed limits don’t make any difference other than the fact that some people are now more concerned about looking for cameras than looking at the road ahead.”
[Motorcyclist, M25]

- Some are concerned about what will happen if they need to use the hard shoulder in an emergency. They are worried about putting themselves (and any passengers) at risk in the event of a breakdown and can imagine how this could lead to an accident and therefore more disruption.

“Surely not having a hard shoulder is a danger in itself because as soon as someone breaks down there is a problem. If there is a hard shoulder you can pull off and the traffic can keep moving.” [Business, M25]

“Even though I know I can go on the hard shoulder, I tend to avoid it as I don’t like travelling on there, it just doesn’t feel right.” [Leisure, North East]

- Some participants are confused about the hard shoulder and uncertain about when it can be used. The majority assume this is possible when Variable Message Signs (VMS) indicate that to be the case, but a minority think the hard shoulder can be used whenever there is congestion. Some HGV drivers are reluctant to cross a solid white line, since this is contrary to their instincts and training. One of the accompanied journeys we undertook with a HGV driver illustrated how road users are invited to use the hard shoulder that is also the filter lane for an approaching junction. This participant knew the road well enough to not use the hard shoulder at that point, but felt the sign could potentially cause problems for others.

“It’s becoming more and more common for people to use it but people were hesitant to use them to start with but some still like to hammer up the hard shoulder though.” [Business, South West]

The counter argument to this latter point is that smart motorways are extremely helpful in mitigating the impact of incidents due to their ability to convey information to drivers through VMSs and manage the traffic flow. Smart motorways are considered to have major advantages over other SRN roads and the long-term benefits were agreed to outweigh the short-term impact associated with conversion.

However, road users consider the quality of information provision to be critical to whether smart motorways are perceived to be successful or not.

5.8 Information quality

Two themes are consistently identified in relation to the quality of information available to road users on smart motorways:

Accuracy

- Spontaneously raised by many participants; information displayed is frequently known or assumed to be inaccurate
- Many fail to understand why this should be the case since they expect cameras to be constantly relaying live information to a control centre
- Signs (or speed limits) often seem to be inappropriate for the traffic conditions
- Information needs to be real time in order to be useful and many are unable to understand why this is not possible to achieve

- Frequent experience of inaccurate information affects trust and credibility over time
- In some instances, this may result in mandatory signs being disregarded thereby increasing the likelihood of an accident

“There’s cameras everywhere so how can they not see what’s going on? Presumably they have a control room so they have everything on their screens and they can see where the hold-ups are and when to put the signs on.” [Leisure, M25]

“You have to decide whether to turn off the motorway and take a long detour or take a chance that the incident has cleared and they have left the sign on.” [Leisure, M25]

“They have signs up about an accident that may have been cleared three quarters of an hour ago but they haven’t changed the warning signs” [Business, M25]

“It’s a problem when warning signs aren’t turned off properly because you lose your confidence and trust in them. Things evolve very quickly on motorways so from a driver’s point of view it only takes a few incidents for you to lose confidence.” [Leisure, Midlands]

“The signs are operated by guys looking at screens because the whole motorway is on cameras so if the information is wrong someone is not doing their job correctly.” [Business, Midlands]

“The information has to be updated otherwise people get immune to it. If you see a couple of accident signs and there’s no accident you don’t take any notice, do you?” [HGV, South West]

“Sometimes I don’t know where the sign is referring to so I immediately panic when I see a sign but can’t place if that is on my journey or not and whether it will affect me. Junction numbers mean nothing to me.” [Leisure, North East]

“I don’t understand why it is that hard to keep the signs up to date. I have seen too many signs which are wrong and people base their decisions on those signs. It needs to be better.” [HGV, North East]

“The problem with VMS messages is that they aren’t all set from the same place because there are national and regional control centres.” [Stakeholder]

“The problem with smart motorways is that some of the speed limits set don’t make sense and get ignored because road users don’t trust them which undermines perceptions of HE as a service provider.” [Stakeholder]

Clarity

- Some VMS information is considered to be confusing (illustrated especially during the accompanied journeys)
- Queue Caution warnings are felt to be ambiguous when displayed on the approach to a junction since it is unclear whether the queue is ahead on the motorway or on the slip road
- Many are unsure whether the sign about congestion and using the hard shoulder is an instruction or for information only (and whether this applies at all times when the road is congested)
- Some feel that additional details would help to clarify information provided in certain circumstances (although all prefer signs to be easily legible and not overcrowded)
- The link between improved driver education and the ability to understand and interpret information is occasionally made

"I was driving back from Swindon last night and saw a queue caution sign and traffic backing up ahead and I wasn't sure whether to come off or stay on the M4 but the queue was on the slip road and that was causing the problem." [Business, South West]

"I sometimes do not know where the sign is referring to. The junction numbers mean nothing to me, especially on a new journey which is quite often due to my work. I ignore it as I don't know where it is referring to." [Commuter, North West]

Any information is considered to be better than none. The research has identified an opportunity for improved signage on the SRN and information provided on smart motorways to play an important role in the management of incidents.

6 Other user groups

6.1 Drivers with a disability

The disabled motorists interviewed have broadly consistent views in relation to the impact of delays and incidents on journeys they make on the SRN.

These drivers recognise the need for journeys to be carefully planned, especially long and unfamiliar journeys. However, this is not exclusively the case as some are still reluctant to plan, especially when travelling short distances.

"I can only drive for a maximum of 45 to 60 minutes so I need to take frequent breaks. I try to avoid peak time and need to know where roadworks are so I always check for any delays before I set out." [Driver with a disability, M25]

"I have to make frequent pit stops every 20 or 30 minutes and I have to drive because my husband works shifts so it makes even short journeys difficult." [Driver with a disability, M25]

"I don't plan journeys because I usually know where I'm going. I don't know how to search or where to look for that type of information and no help was given when I got my blue badge but I would welcome it if it was available." [Driver with a disability, M25]

"Have to rely on local knowledge when we get stuck in any traffic. My back is really bad and the worst thing for me is to be sat and not moving so we will always try and go another route." [Driver with a disability, North East]

"I don't plan journeys because I usually know where I'm going. I will only plan if it is an unfamiliar journey but we don't make many of those journeys these days." [Driver with a disability, North East]

This partly explains why incidents are of greatest concern. Although roadworks may cause a journey to be delayed they are unlikely to cause severe disruption but an incident could have unpredictable and serious implications for a disabled driver (or passenger).

"I get a bit nervous when I'm approaching something I don't know about because I wonder how long I will be in traffic for and I'm relieved if I'm not stuck for hours." [Driver with a disability, M25]

"My child is not of an age where he can administer the oxygen himself so any delays or roadworks means I may have to stop the car to give him his oxygen if he starts to struggle which can happen quite quickly at any given point." [Driver who's passenger has a disability, North West]

In all cases, the primary concern is for the welfare of the person with a disability (one participant was not disabled but made frequent journeys with a child with a disability). Drivers with disabilities feel their journeys are more stressful than those without a disability and that this is magnified considerably when their journeys are affected, especially if the length of the likely delay is unknown. The primary reasons stated are the need to take or administer medication, not being able to sit in the same position for extended periods, or needing frequent access to a toilet.

"I need constant medication and have to plan things carefully because if I miss medication I will have to suffer three days of extra pain so it's the bane of my life."

[Driver with a disability, M25]

*"I have been delayed to appointments and it has been a case of arriving late for the appointment but still being able to be seen. On occasions I have been unable to make the appointment and then it is another month to wait for the next available appointment."
[Driver with a disability, North East]*

If any of these needs cannot be met due to a disrupted journey, these drivers said they are more likely to panic and resort to extreme measures such as pulling onto the hard shoulder or even into a coned off section of roadworks to take remedial action. It could also cause them to drive slowly or erratically, which can cause others to behave even more impatiently or aggressively while experiencing disruption. In these circumstances, one or two suggested it may be helpful for a driver with a disability to display a sign to alert other road users to their plight in the hope of promoting a more sympathetic response.

"There aren't enough clearly marked places to stop safely so sometimes I have to stop where I can and what makes it worse is the stares and insults I get from other drivers because my disability isn't visible." [Driver with a disability, M25]

"In the past, I've often had to stop in the slow lane going through roadworks to administer oxygen to my son due to his condition as there is no hard shoulder to pull over into and other drivers beep and shout at me because they don't realise I've got a poorly son. That then puts pressure on me and makes me erratic." [Driver who's passenger has a disability, North West]

6.2 Coach drivers

The two main concerns for coach drivers in the context of roadworks and incidents is the responsibility for their passengers, both in terms of needing to adhere to a schedule and also for their welfare in a broader sense.

Coach drivers feel an overriding sense of their journeys being dictated by a timetable and the additional pressure of having time-critical deadlines to meet for their passengers (when going to an airport, ferry terminal or an event). This places extra pressure on journeys if an incident is experienced. Coach drivers explained their response will depend on their employer's policy. Some companies will not allow drivers to use a satnav or any other journey planning tool and will expect them to stick to the prescribed route (indeed, it may be a disciplinary offence for a driver to use any type of device). Other companies allow drivers more flexibility to use their discretion to find an alternative route.

These drivers have a strong sense of responsibility for passengers' welfare, but pre-planned comfort breaks built into schedules may be difficult to achieve if a journey is disrupted. In such situations drivers said they have to decide whether to adhere to the original stop, stop somewhere else or not to stop at all. These coach drivers know from experience appropriate places where coach parties are welcomed, unless needing to make diversions away from the SRN.

"It's difficult to plan stops because I don't do tours and the passengers I carry have different needs at different times. I try to think in advance about where I might stop but it doesn't always work out." [Coach driver, M25]

"I don't use satnav as such, but we will plan the quickest route but will take into consideration any hotspots or events on the route that could cause disruption and make sure we have a route B in mind. Also it is not possible to divert due to the passenger needs, whether you are going to a concert, a football game or a ferry."

[Coach driver, North West]

If you are under pressure to reach the ferry or go to a football match and there is a couple of miles of traffic delaying you, it is difficult when passengers need breaks and you are not able to stop.” [Coach driver, North West]

In addition to this, coach drivers have similar issues to HGV drivers in terms of needing to adhere to strict rules governing the hours they can drive and when breaks must be taken, so delays from roadworks and incidents therefore have the potential to cause considerable difficulties.

“I take it as it comes but I do tend to look at an app before a shift to check for any major delays because I need to regulate my tachograph breaks. You can’t always avoid disruption so I try to plan my breaks around it.” [Coach driver, M25]

6.3 Motorcyclists

All the motorcyclists interviewed also have experience as car drivers on the SRN and recognise the difficulties caused by roadworks and incidents to be less of an issue for motorcyclists. The main reason for this is they are able to drive between lanes through queues of traffic when it is moving very slowly or at a standstill.

This is considered to be acceptable and a legal practice, but the main concern when doing so is safety; other vehicles are more likely to behave unpredictably and switch lanes more frequently in those circumstances.

“It can be dangerous on a bike when you are filtering through traffic and it can be especially difficult in heavy traffic because other drivers are more likely to keep changing lanes frequently.” [Motorcyclist, M25]

These concerns can be magnified when driving through roadworks. The reason for this is that lane markings can be unclear or confusing which makes it difficult for motorcyclists and others to place themselves correctly in the road. These concerns are exacerbated by narrow lanes since there is less space for motorcyclists to share with other road users.

“Roadworks still slow the journey down even on a bike and it can be quite frightening if you are under pressure from other bikes who want to weave through the traffic at speed.” [Motorcyclist, M25]

“Sometimes it is hard to tell where the lane lines are and as a motorcyclist you have to try and stay in the middle of the lane and sometimes it is hard to tell where that is.” [Motorcyclist, North East]

Through some roadworks, the lanes are so narrow that even I cannot filter through them without it being too narrow and too dangerous so you have to judge it before you try to filter through.” [Motorcyclist, North East]

7 Stakeholders

The views of the stakeholders interviewed for the research have mostly been incorporated into the main findings. However, there were a number of specific issues raised by these participants that fall outside the primary objectives of the work but are directly relevant to them.

7.1 Their relationship with Highways England

This varied considerably across the stakeholders with potentially important implications for managing the impact of roadworks and incidents. Encouragingly, there is unanimous agreement that the transition from the Highways Agency to Highways England is a positive move and a cause for optimism for developing closer relationships in future. The nature of current relationships is discussed below.

Distant relationships

Most of the stakeholders claim to have weak relationships with Highways England and would like these to be stronger; especially in the context of roadworks and incidents. Stakeholders feel roadworks are not sufficiently well planned to minimise the impact on businesses or their members who rely on the SRN.

“Doing roadworks at night isn’t ideal for many of our members but it depends on the extent of the disruption because HGVs don’t need to go at 70 miles an hour.” [Stakeholder]

“There may be a good reason why roadworks are planned as they are but providing information that customers need or want to know isn’t high on the HE agenda as yet.” [Stakeholder]

“There are some really bad times to do roadworks and Highways England are not always good at considering the impact of specific projects. For example, any work in the run up to Christmas will have a big impact on distribution and logistics.” [Stakeholder]

“HE need to think more about when roadworks will cause minimum disruption and we need the opportunity to have some upfront dialogue about it. The problem is that contractors only need to provide eight hours’ notice to close a motorway.” [Stakeholder]

“We need the road network to be at its best at night so we are absolutely not happy with work being done then. The problem is that HE regard the voice of car drivers as king and we understand the logic of why they prefer work to be done at night but we don’t like it.” [Stakeholder]

“Planning of roadworks tends to happen too late in the day and minimal consideration is given to businesses. If we were consulted more we could help HE come up with solutions that would avoid some of the disruption for all road users.” [Stakeholder]

“Night work always used to start at eight or ten pm and if it’s earlier than this the Highways Agency need to communicate it and understand the problems this causes for some operators” [Stakeholder]

As these comments show, a big concern is a perceived lack of consultation between Highways England and key companies and bodies regarding how and when roadworks should be conducted. There was a common view of stakeholders we spoke to that too much decision making happens in

a vacuum and that much of the impact that occurs could be avoided if their 'industry expert' views are taken into consideration. This would help with issues such as ensuring suitable diversions are put in place and with improved contingency planning. It should be noted however that all except one of the stakeholders represent the views of specific segments rather than road users generally.

"I would like to see HE engaging more with Trade Associations and taking their views into consideration because they speak on behalf of their members." [Stakeholder]

Interestingly, these stakeholders have access only to the same information in relation to roadworks as other road users. This means looking at the Highways England website on a daily basis to check the status of current and planned work and making plans accordingly. Strong interest was expressed in having improved access to better quality information, especially advance notice of roadworks plans and, ideally, a live, real-time information feed with alerts to incidents and other significant events.

"We don't get any information from HE about roadworks. Maybe they think the data is available but we can only get it from their website then disseminate it to various places in the UK." [Stakeholder]

"HE admit there is a problem with the flow of information. Their new website is better but is only accurate for a 24 hour period so a longer term approach of providing details of disruption up to a week in advance would be a lot better." [Stakeholder]

"We only have the same access to HE information via their website as any member of the public. I don't even know if this is something we have considered or looked into before." [Stakeholder]

Close relationships

Two of the stakeholders appeared to have a much closer relationship with Highways England that both considered it to be as a consequence of their investing time and effort to develop it over time. This is manifest in a number of ways:

- Attending National Road User Committee meetings (although other stakeholders acknowledge this option is available to them but have not yet attended (m)any meetings)
- Having a data-sharing arrangement (although this is not as open as a similar agreement that one stakeholder has with TfL)
- Having a named contact or 'Account Manager' at Highways England
- Having an input into planning decisions regarding roadworks
- Feeling that Highways England are proactive rather than reactive

The closer relationship is welcomed, although both acknowledge the potential for further improvements in future. One suggested Highways England should be more forthcoming with information in relation to planned works and the other suggested contingency planning is not robust enough and could be strengthened in future.

"We have an excellent relationship with Highways England. We have a data sharing arrangement with them and are often involved in joint discussions which have mutual benefits. We also have 24 hour contact via a control centre that we can use in an emergency." [Stakeholder]

“We are trying to actively engage with Highways England much more than when they were the Highways Agency and we have arranged exchange visits to each other’s control centres.” [Stakeholder]

“We get some advanced information and knowledge and have the opportunity to influence discussions if not always the outcomes. TfL are much more accessible and more open to discussions and meetings but we are at the beginning of a long journey with HE and hope to be able to get to a better place with it but we don’t understand each other well enough yet.” [Stakeholder]

“Highways England is better than the Highways Agency at a number of levels because now they’re not just following government policy. They like the idea of longer term planning and have ideas to keep infrastructure flowing and there is more urgency in hitting targets.” [Stakeholder]

“We work closely with HE and have been able to put things right if necessary. We have access to some of their internal communications which is priceless because it informs us of unforeseen issues and we get direct updates if there are any major issues.” [Stakeholder]

7.2 Stakeholders’ views of Operation Stack

All acknowledge the difficulties that have been experienced and are keen to find a resolution to the problems that were especially prevalent in 2015. All recognised the complexity of the issues involved and that it will be challenging to find an arrangement that will be acceptable to all parties involved. Some of the stakeholders mentioned that proposals for a contraflow had been put forward but that the suggestion had been declined by Highways England.

All agreed that driver welfare is a critical consideration and the general consensus is that an off-road solution is likely to be required. Encouragingly, all stakeholders are of the opinion that Highways England is currently instrumental in constructive discussions on this issue and all see this as a further cause for optimism in the future.

“You’ve got to feel sorry for the guys parked up there, I can’t imagine they have many facilities, can you? The problem is the welfare of the drivers, if you’re sat there for a couple of days then you’re in trouble aren’t you?” [HGV, South West]

“The main priority for Operation Stack is to liaise with truck stops to provide facilities for drivers. The problem so far has been that the bar for driver welfare hasn’t been set high enough and not delivered consistently.” [Stakeholder]

“Operation Stack needs a way to deal with problems when they occur and deal with the atrocious conditions faced by drivers stuck in the queues. There needs to be an off-road solution that is managed and robust. It’s an important issue and we are in deep discussion with HE and others who are looking hard to find a solution.” [Stakeholder]

8 Conclusions

8.1 Roadworks

Users said roadworks are the most frequent cause of delays on SRN journeys and the greatest source of inconvenience (especially for those spending a lot of time on these roads). Road users have an ambivalent attitude to roadworks. Instant impressions are negative; users' stereotypical view of roadworks being long stretches with very little activity, contractors taking tea breaks, and the whole scene appearing disjointed. But on reflection users accept the ongoing need to maintain and improve the SRN and are positively disposed to the anticipated benefits that will result once a scheme is completed.

How an individual stretch of roadworks is rated comes down to how well organised and industrious the site appears, coupled with how much benefit they feel they will derive from them. Where they are considered necessary and well executed, they are viewed as 'construction' – building a better network; feelings about the current inconvenience being set against the greater good of the outcome. Where the purpose is considered less necessary or they are perceived to be badly organised, this elicits feelings of 'frustration' (epitomised by a long stretch of coned-off road with minimal sign of activity).

Road users consider decisions on how roadwork schemes are designed/scheduled to be opaque and question what is taken into consideration when choosing between different options to get the works done. They draw their own conclusions, assuming a mix of cost and minimal inconvenience to the contractors rather than to road users, to be top criteria. Users question whether evaluation of the options would yield the same answer if they factored in the impacts on them (cost of time). They feel the whole process could be more transparent. They didn't articulate a consistent way of doing this, but felt they could be alerted 'on-road' to the 'consultation' and then provide comments online.

Users dislike driving through roadworks; they mention the heightened level of concentration required, difficulty of variable speed limits, and the narrow lanes. In fact roadworks tended to bring to the fore polarised driving approaches; the cautious get more cautious, the bold/reckless are inclined to ignore the restrictions and get more impatient with those who become extra-cautious.

Rather than one long stretch of roadworks, road users have a strong preference for shorter stretches of roadworks each completed before the next one starts, and accept that it would mean taking longer to get the whole job done. Drivers believe this keeps traffic moving better, reduces concentration fatigue, and reduces chances of there being accidents/vehicle breakdowns in the roadworks (often considered to be a cause of further delay).

There isn't a single optimal time of year or best time of day to conduct roadworks, different user groups have specific priorities. The broad consensus is that work during school holiday periods when traffic is lighter and concentrating activity on weekdays and at night is preferable. Interestingly, the rationale for those preferences was often subjective rather objective, except notably HGV drivers and the logistics sector. Also, the summer holiday period is viewed as worst on routes to/from the South West.

When there are roadworks, drivers' key information need is how long the delays will be. The variable message signs are generally liked and those with wording "Junction number, city/town name, miles, minutes" are best. Within a stretch of roadworks drivers prefer information to be short and concise. If more needs to be said, then simply point to an easy to remember web address, where more information is available.

Users welcome advance notice of roadworks, but they find it difficult to read complex on-road signs. So again, if more needs to be said, point to more information elsewhere. Helping road users

understand how the roadworks will deliver tangible benefits for them could help increase acceptance of the short-term pain.

Generally, road users seem do little checking on the status of roadworks prior to setting off. Regular users just accept the delay will be within a relatively estimable range and that staying on the SRN is usually quicker than coming off it. The exception is HGV drivers and industry stakeholders who would like to know more. They asked whether it is possible to have more of a 'client' status with Highways England so they could obtain detailed information to plan how to meet the logistical challenges of roadworks. It is worth adding that HGV drivers are occasionally sceptical of diversion routes that they report can be insufficiently signposted and poorly planned (low bridges/branches, tight bends/roundabouts, etc.).

Peak time congestion is viewed much like roadworks, in that it requires extra time to be factored into journeys, but unlike roadworks has no end benefit. Regular users are resigned to it, expect it only to get worse, and generally see no way to avoid it (even with the help of journey planning tools). The variable message signs with journey time estimates are helpful to drivers and allow them to manage the consequences of delays.

8.2 Incidents

Incidents are felt to be much more disruptive to journeys than roadworks, even though they are experienced less often. The majority adopt a mainly tolerant and pragmatic attitude to these events. Largely they are sympathetic; better to be in the queue of traffic than the cause of it. They do not occur frequently enough to be considered a deterrent to using the SRN.

Many are unclear about how responsibility divides between the various authorities for dealing with incidents and there is some ambiguity about the role of Traffic Officers. However, response times to get on the scene are generally considered to be good (and better than in the past). But once the authorities are there, many would like greater emphasis placed on quick resolution with a view to getting traffic moving again. Many road users cannot see why removing an obstruction (as an example) takes so long; they perceive there is a bias towards excessive health and safety adherence over pragmatism.

Drivers want more information on what is happening quickly enough to be able to make decisions on their journey options. It makes sense to them to prevent more drivers joining long queues of traffic, certainly before the last option to turn off. They think it is better to have congestion on the local roads (where drivers have more options to rest or divert) than end up stuck for hours on the SRN carriageway. They didn't consistently suggest any particular medium to receive information within the car (only some listened to radio traffic bulletins) but Variable Message Signs are seen as the best option by most. Some information on these signs is criticised as vague or out of date, but they can play an important role in managing the flow of traffic in advance of incidents. Smart motorways are advantageous in that speeds can be controlled up to an incident and that they have been constructed with many more VMS gantries than other roads.

Motorists trapped within an incident also want more information, but didn't consistently suggest a way this could be achieved. However, some suggested a motorcycle going up and down the line with information (or possibly a 'pointer message' to a more detailed source of information). Their key need is to know how long the delay is likely to be and the options available.

It should be noted that the welfare of those with a disability can be at risk even with modest delays that result from incidents.

8.3 Major incidents

When there is a major incident, users want their welfare prioritised. They wanted bold, exceptional measures taken so they are not trapped at the scene for many hours. A couple of examples mentioned are getting drivers off the SRN by reversing back along the carriageway, or opening up a section of central reservation. The needs of those with a disability can be extreme in such circumstances.

When caught in a major incident, road users want the decision about rescuing them to be made more quickly. The feeling is that such decisions are taken only after many experts have been to the scene, rather than accepting an assessment by experienced personnel who are first there.

The majority thought it would be difficult to justify significant investment in order to be better prepared for extreme events (due to the fact that their location is unpredictable, they are infrequent and each circumstance different). Nonetheless road users want resources earmarked for these events, reserved to pay for any unusual welfare solutions required when major incidents occur.

Users and stakeholders hope the authorities will learn lessons from previous incidents and implement learnings in future, especially if this can be used to help mitigate the impact of severe incidents (two of which occurred immediately prior to this research in which drivers were trapped in long queues).

8.4 Driver behaviour

Road users consider driving standards (or poorly maintained vehicles) to be an important contributing factor to a substantial minority of incidents. Most in the research consider other drivers to be the bad ones! However, with the research being anonymous, some drivers acknowledge that they lack some knowledge or skills required for driving on the SRN generally, and on Smart Motorways specifically. This is illustrated by generally positive attitudes from those in the research who had attended a Speed Awareness Course. They said it highlighted their own knowledge gaps.

When discussing 'driving standards' many question whether the current tuition and testing processes are adequate to deal with the demands of driving on the SRN (with the notable exception of HGV/PSV drivers who undergo compulsory ongoing training). The behaviours that cause most concern are lane-hogging, using mobile devices, tailgating, ignoring mandatory signs, lane hopping when there is slow moving traffic, cutting in at the last minute and speeding. Many would like to see a zero-tolerance approach to these transgressions and stricter enforcement. Equally there is common agreement that awareness programmes on SRN driving, or refresher courses, or even re-testing could be beneficial.

The benefits of Smart Motorways are diluted by a considerable knowledge gap about rules on their usage (notably uncertainty/reticence to use the hard shoulder, concerns about breaking down in the hard shoulder, and uncertainty about when the hard shoulder can and cannot be used).

Appendix – focus groups discussion guide

Introduction and warm up (10 mins)

Explain AECOM, Transport Focus (publish report), MRS Code of conduct

Outline research area: roadworks and delays on SRN (show map)

- critique experience of going through them
- attitudes towards authorities who run roadworks, manage incidents
- information needs
- anything that could be improved

Paired introductions (first name, occupation, background details)

Last disruption experienced and how it made you feel

ROADWORKS – 30 mins

Roadworks – top of mind

- 1) When is it roadworks (how big, impactful)
- 2) Top of mind thoughts/emotion when encountering roadworks
- 3) Would you know in advance about roadworks / do you plan / where do you find out?
- 4) Impact on journey
- 5) Extent to which need for roadworks acknowledged / accepted
- 6) Top of mind good/bad examples of roadworks (and why)

Roadworks – the experience

- 1) Driving through – safety, speed limits, contraflows
- 2) Channelling drivers in lanes – how justified, views on enforcement
- 3) Comfort/rest issues, also passengers

Roadworks – information/advisory details

Use the stimulus material to prompt opinion on current provision

- 1) Road signs – clarity, usefulness of messages and location – what works / what doesn't
- 2) Information – generic, website, enquiries, complaints – role of technology

- 3) Information about the roadworks activity as a whole – useful or not

Roadworks – design/implementation

- 1) Best and worst times to do roadworks
- 2) Big bang approach or better smaller packets of roadworks or close road –the trade off
- 3) Any appreciation of cost of these options (ownership of cost?)
- 4) Working hours (day/night/24-7-365)
- 5) Roadworks as a workplace – do drivers see roadworks as someone's 'office'?
- 6) Should there be a maximum length of roadworks – can we quantify a maximum?

Roadworks – who runs the whole thing

- 1) Responsibility: knowledge of HA, the contractor
- 2) How much say when/where roadworks happen? (who speaks for motorists/needed?)
- 3) Organisation: approachable/accessible (do they engage with motorists)
- 4) How coordinated with other roadworks, either on the SRN or on local roads. Do HE / LA's work together? Should work be managed together better?

DELAYS/INCIDENTS – 30 mins

Delays/incidents – top of mind

- 1) How big or bad does it have to be (congestion??)
- 2) What incidents are included (sheer weight of traffic?)
- 3) Top of mind thoughts/emotion when encountering incident
- 4) Impact on journey length

Delays/incidents – information

Use the stimulus material to prompt opinion on current provision

- 1) Before you set off – do you plan / check road conditions?
- 2) On road warnings, off road, use of electronic info, ability to access info whilst on road
- 3) Reliability/accuracy /trust
- 4) Scope of info required (incident itself, updates, alternative routes)
- 5) Getting messages (set expectations) to friends/relatives/work/meetings
- 6) After an incident – do you want / need to know what happened?

Delays/incidents – management

- 1) Revised speed limits, keeping lanes opens, variable speed limits
- 2) Emotional experience driving through accidents
- 3) Emergency services / Highways England Traffic Officer Service – how well deployed? Do you know what role HETO's have in managing incidents?
- 4) Risk balance (cautious, pragmatic, variable) – understand how decision made, agree?
- 5) Diversions – thought through? standard of signage/info?
- 6) Major delays – rearward relief, opening central reservations, imaginative/closed minded
- 7) Driver comfort, facilities, tiredness, refreshments etc.
- 8) Know who is in control?

DOING IT BETTER – 30 mins

Separate into two groups – one on roadworks, one on delays/incidents

Now imagine each group runs the situation

1. Roadworks group: you decide when and where roadworks happen, speed limits, whether to close the road/cone off/contraflow, the information you can put on signs and elsewhere.
2. Delays/incidents group: you decide what should happen after the lorry has shed its load/accident/congestion gridlock

For each group discuss between you for 15 minutes what could be improved. Agree on your top three improvement ideas and write them on the A2 sheet provided. Appoint a spokesperson and explain to the other group your ideas and why. Be prepared to be quizzed by the other team on why you felt those suggestions to be the most important, but also workable ideas.

CLOSE – 5 mins

Thank for time

Any final comments